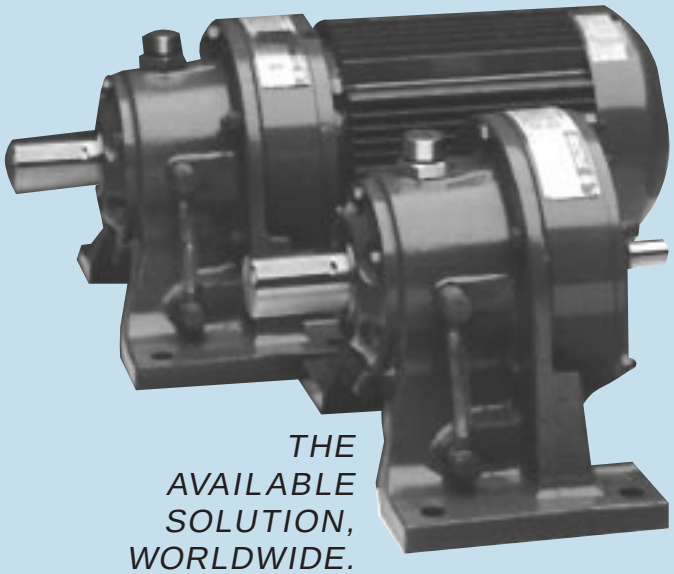
SM-CYCLO®
Speed Reducers and Gearmotors

4000 SERIES



THE AVAILABLE SOLUTION, WORLDWIDE.

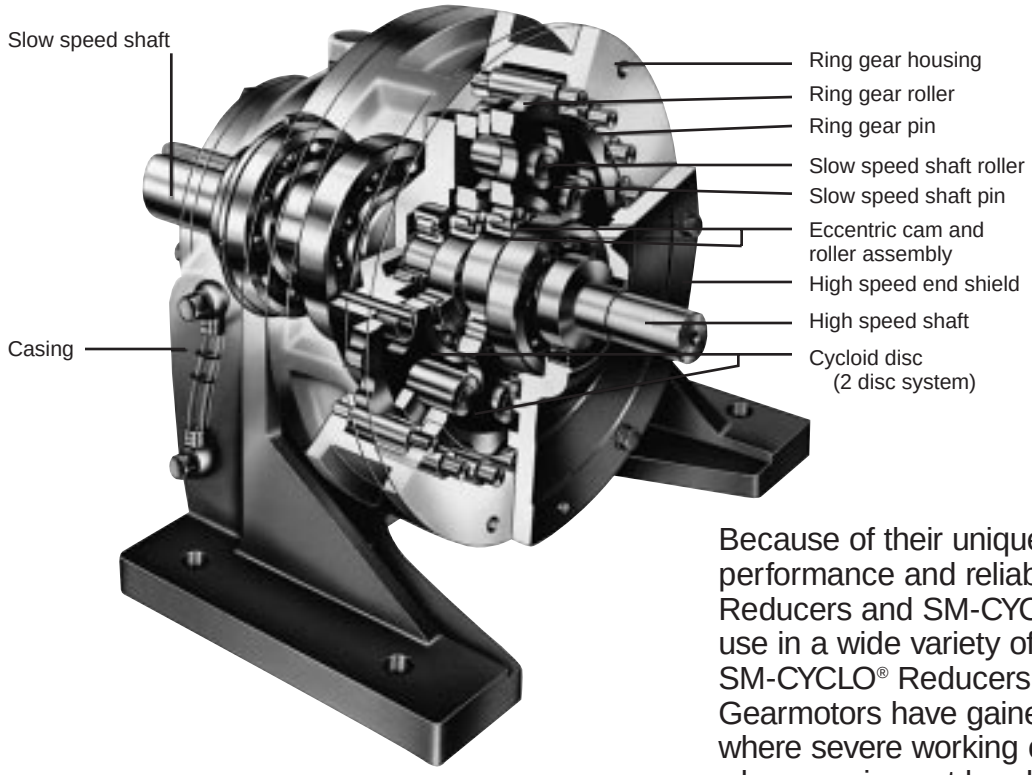
SUMITOMO
MACHINERY CORPORATION OF AMERICA

Catalog
04.401.50.009

A UNIQUE CONCEPT IN SPEED REDUCERS & GEARMOTORS

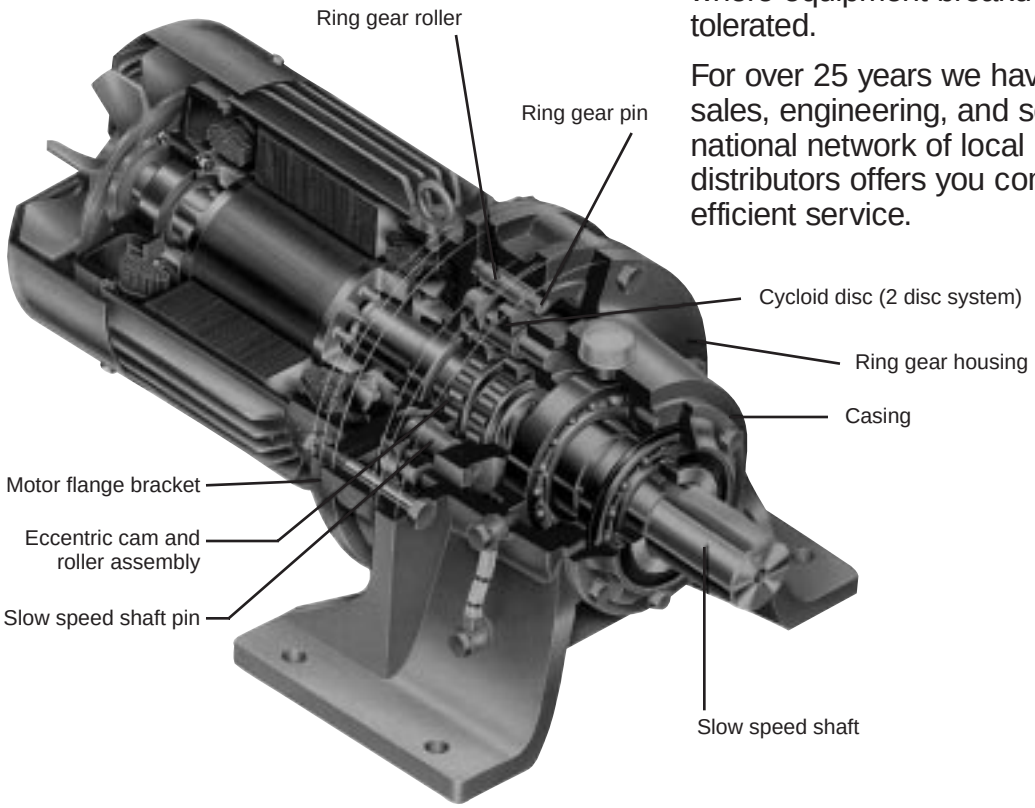
SM-CYCLO cycloidal reducers and gearmotors are able to withstand shock loads to 500% of their ratings, and we warrant them for two full years.

Sumitomo Machinery Corporation of America, a world leader in power transmission, has produced well over 6 million SM-CYCLO® Drive Speed Reducers and SM-CYCLO® Gearmotors.



Because of their unique advantages, exceptional performance and reliability, SM-CYCLO® Reducers and SM-CYCLO® Gearmotors are in use in a wide variety of industries worldwide. SM-CYCLO® Reducers and SM-CYCLO® Gearmotors have gained special recognition where severe working conditions prevail and where equipment breakdowns cannot be tolerated.

For over 25 years we have provided a nationwide sales, engineering, and service organization. Our national network of local representatives and distributors offers you comprehensive, fast and efficient service.



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NOTE: Previous nomenclature is shown in (parentheses).

FEATURES AND BENEFITS

Highest Overload Capacity — 500% plus

The SM-CYCLO® speed reducer has the strength to withstand overloads that break the teeth of other reducers. Here's why:

At least 2/3 of SM-CYCLO® speed reducer's teeth share the shock of overload, and each tooth is cycloidally shaped — it can't be sheared off.

Compare that to conventional reducers, where one or two teeth absorb the entire shock — teeth which have a defined shear point and can break off.

Exceptional Life — 24 month warranty

Test SM-CYCLO® speed reducers show negligible wear after 50,000 hour life tests, and indications are future wear would be negligible. No one knows how long an SM-CYCLO® speed reducer, used correctly, will last. Virtually no wear failures have occurred in the over five million drives put into operation since 1939.

This remarkable record is due to SM-CYCLO® speed reducer's unique rolling action and the use of 52100 high-carbon chromium bearing steels, through-hardened and tempered to Rockwell C57-63 in all major torque-transmitting parts.

High Efficiency Even at High Ratios

Torque transmitting parts roll, do not grind. There is no sliding friction, so output torque/input horsepower ratio approaches 95% efficiency in single reduction units.

Capacity for Frequent Stop-Start and Severe Reversing

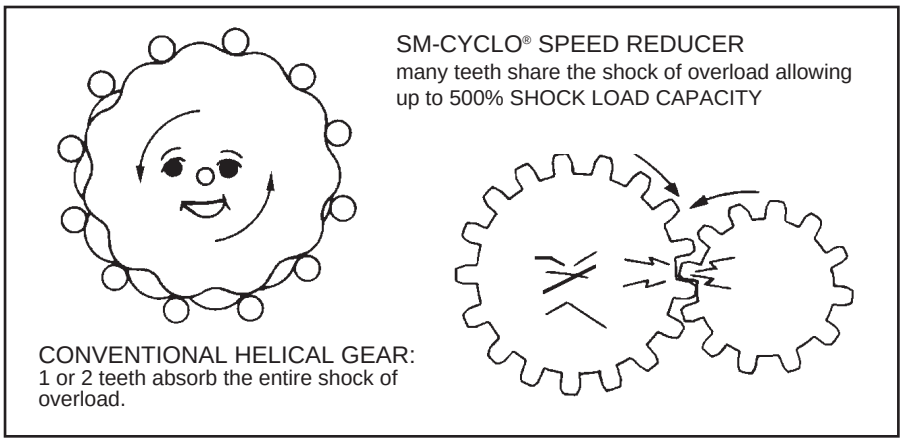
Flywheel (WR^2) effect in the SM-CYCLO® speed reducer is reduced to a minimum, so that it responds quickly in these applications. The shear-free cycloidal teeth also make the unit ideal for those applications which quickly wear out competitive reducers.

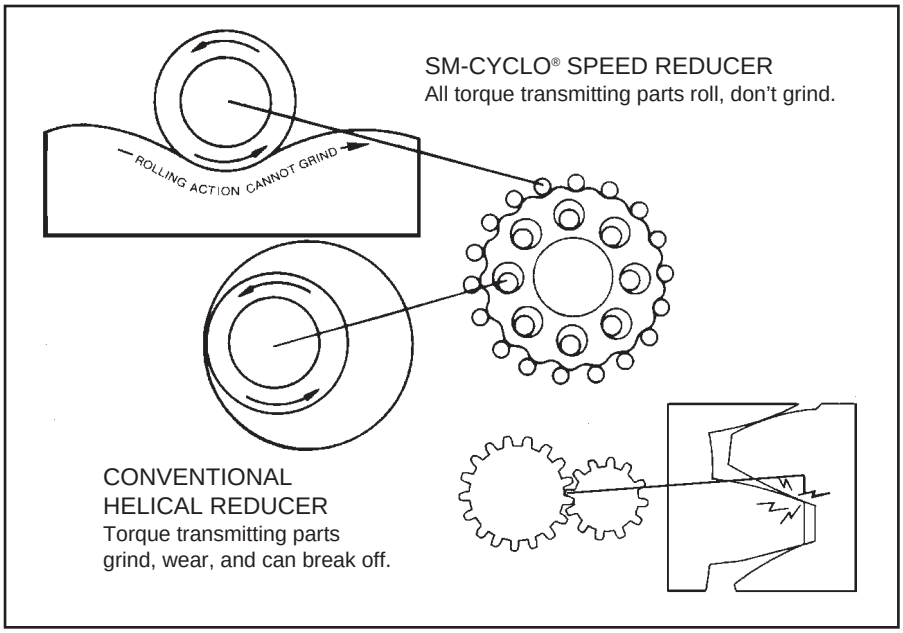
Compactness

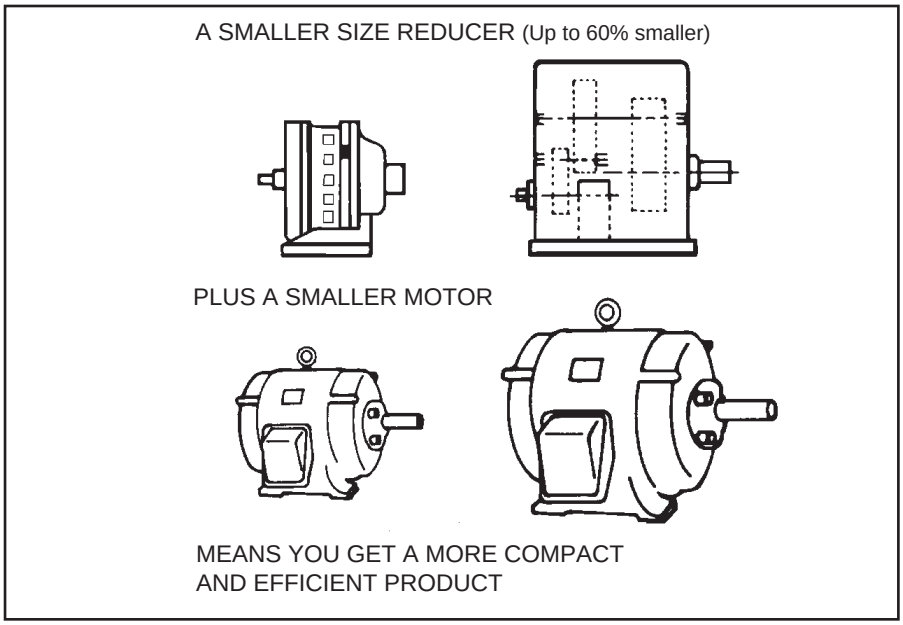
SM-CYCLO® speed reducers are considerably smaller than conventional reducers, but they don't sacrifice efficiency in the higher ratios as other compacts must. This means you can use not only a smaller reducer, but a smaller motor too, because the high efficiency lets you obtain the same output torque you previously derived from a larger motor.

No Thermal Factor Limitations

SM-CYCLO® speed reducer's smooth, almost frictionless operation all but eliminates the conventional limitations due to heat. In all sizes, the drive has a thermal rating that exceeds mechanical capacities.







Smooth, Silent Operation

All parts of the speed reducer are completely symmetrized around the shafts, and the two cycloid discs which transmit the power are balanced in 180° opposition, for perfectly balanced centrifugal force. The result is smooth, vibrationless and quiet operation.

Wide Range of Ratios, Input Power and Mountings

Single stage reductions from 6:1 to 119:1, double stage to 7,569:1; triple stage to 658,503:1; with practical ratios over 10 billion to 1.

Input horsepower from 1/16 to over 200 HP. Output torque to 521,000 IN-LBS.

A wide variety of horizontal and vertical mounts, with various adaptors, are available.

Reliable, Maintenance-Free Service

SM-CYCLO® speed reducer's basic construction and simple principle of operation make it extremely reliable. Grease lubricated means no oil, no leaks, minimum maintenance and long trouble-free life.

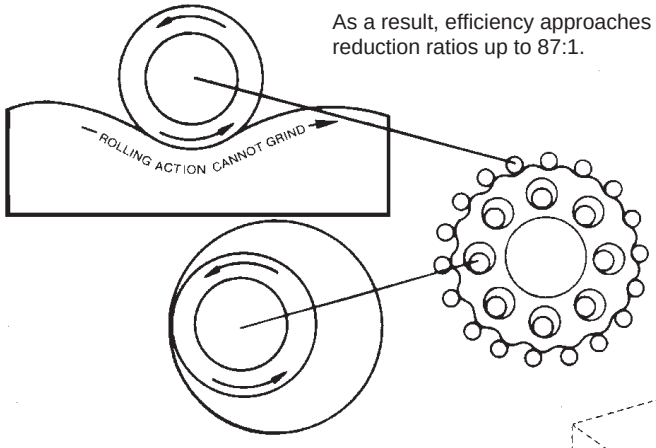
Concentric Shafts for Easy Mounting

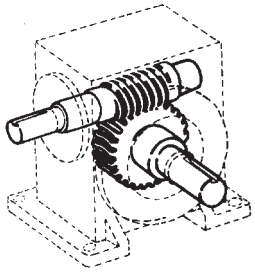
Permits quick, easy, compact mounting, and direct, inline power transmission.

SM-CYCLO® SPEED REDUCER

All torque transmitting parts roll, don't slide.

As a result, efficiency approaches 95% even in single reduction ratios up to 87:1.





Conventional worm gear reducers have sliding friction – and much lower efficiency.

HOW IT WORKS

The reducer has only three major moving parts

1. The high speed input shaft with integrally mounted eccentric cam and roller assembly
2. The cycloid discs
3. The slow speed shaft assembly

Operation

As the eccentric (high speed shaft) rotates, it rolls the cycloid discs around the internal circumference of the stationary ring gear.

The resulting action is similar to that of a wheel rolling along the inside of a ring. As the wheel (cycloid discs) travels in a clockwise path around the ring (ring gear), the wheel turns in a counter-clockwise direction around its own axis. In the SM-CYCLO®, the teeth of the cycloid discs engage successively with the pins of the fixed ring gear, thus providing a reverse rotation at a reduced speed. For each complete revolution of the high speed shaft, the cycloid discs are advanced a distance of one tooth in a reverse direction.

In general, there is one less tooth per cycloid disc than there are pins in the fixed ring gear, which results in reduction ratios being equal to the number of teeth in each disc. (NOTE: On some ratios, there are two less teeth per cycloid disc than there are pins in the fixed ring gear.)

The movement of cycloid disc is transmitted to the slow speed shaft by the projection of pins through the bores of the discs.

A two disc system is used to increase torque capacities and offer an exceptionally smooth vibrationless drive.

BASIC INFORMATION AND RECOMMENDATIONS

General

Selection of the SM-CYCLO® speed reducer should be based on actual horsepower and torque requirements at the output shaft. Contrary to conventional gear reducers, the SM-CYCLO® speed reducer has very high efficiencies over a wide range of reduction ratios. Proper selection frequently permits the use of reduced input power requirements without sacrificing torque at the output shaft.

Drive Ratings

Standard SM-CYCLO® speed reducers are designed and built for long, maintenance-free, 10-hour daily service under conditions of uniform loads (equivalent to AGMA service factor 1.0). When your application involves more severe conditions, catalog ratings must be divided by the proper S.F., or the actual load must be multiplied by this factor.

Service Factor

In general, gear drives are rated for a specific application by the use of Service Factors. Each application has its own conditions and operating requirements. There are three load classifications: uniform, moderate shock and heavy shock. These are further classified into duration of service per day and the prime mover. (See table below and load classification table on page 11.)

Service Factors

Time of operation, frequency, and severity of shock must be determined in order to select the proper SM-CYCLO® reducer for a specific application. To assist in the selection process, AGMA has defined standard Service Factors. However, the Service Factors to be used for the selection of the SM-CYCLO® reducers differ from the standard Service Factors of AGMA as shown in the table.

The SM-CYCLO® Reducer Service Factors are smaller than those of the AGMA because AGMA Service Factors are determined on the basis of the strength of gears in the conventional helical or worm gear speed reducers.

The SM-CYCLO® reducer has higher overload capacity than conventional Helical or Worm gear speed reducers as a result of the tooth shape, greater number of teeth in contact, and the high material quality of the components.

RECOMMENDED REDUCER SERVICE FACTORS

PRIME MOVER	DURATION SERVICE	LOAD CLASSIFICATIONS					
		UNIFORM		MODERATE SHOCK		HEAVY SHOCK	
		AGMA	SM-CYCLO reducer	AGMA	SM-CYCLO reducer	AGMA	SM-CYCLO reducer
Electric Motor	Occasional 1/2 hr. per day	0.50	**0.50**	0.80	**0.80**	1.25	**1.20**
	Intermittent 3 hrs. per day	0.80	**0.80**	1.00	**1.00**	1.50	**1.35**
	Up to 10 hrs. per day	1.00	**1.00**	1.25	**1.20**	1.75	**1.50**
	24 hrs. per day	1.25	**1.20**	1.50	**1.35**	2.00	**1.60**
Multi-Cylinder Internal Combustion Engine	Occasional 1/2 hr. per day	0.80	**0.80**	1.00	**1.00**	1.50	**1.35**
	Intermittent 3 hrs. per day	1.00	**1.00**	1.25	**1.20**	1.75	**1.50**
	Up to 10 hrs. per day	1.25	**1.20**	1.50	**1.35**	2.00	**1.60**
	24 hrs. per day	1.50	**1.35**	1.75	**1.50**	2.25	**1.70**
Single-Cylinder Internal Combustion Engine	Occasional 1/2 hr. per day	1.00	**1.00**	1.25	**1.20**	1.75	**1.50**
	Intermittent 3 hrs. per day	1.25	**1.20**	1.50	**1.35**	2.00	**1.60**
	Up to 10 hrs. per day	1.50	**1.35**	1.75	**1.50**	2.25	**1.70**
	24 hrs. per day	1.75	**1.50**	2.00	**1.60**	2.50	**1.80**

Excessive Overloads

SM-CYCLO® Speed Reducers provide 500% momentary intermittent shock load capacity and are warranted for 2 years from date of shipment. Refer to our standard terms and conditions for our complete warranty.

Selection for Applications Involving Shock Loading

For applications involving frequent start-stop, braking or reversing, or quick starting of load having large inertia, consult factory for model selection or recommended modifications.

Allowable Radial and Thrust Loads

The loads imposed on the slow speed shaft vary with the method of connecting the shaft to the driven machine. Frequently, in addition to torsional forces, radial and thrust loads are applied to the slow speed shaft at the same time. For example, coupling connections normally involve torsional forces only. However, when power is transmitted through spur gears, belts, pulleys or chains, both torsional and radial forces may be applied to the slow speed shaft. When driving through helical or bevel gears, all three conditions (torsional, radial and thrust load) may be referred to the reducer shaft.

The slow speed shaft and bearings must have sufficient strength to withstand these loads, and it is, therefore, necessary to determine the allowable limits for each condition.

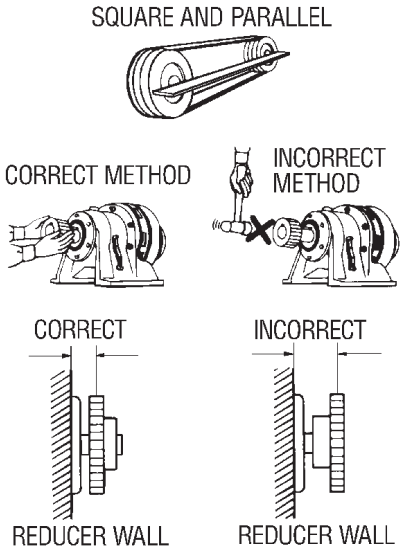
Load Centering

The radial load capacities are calculated with the load concentrated at the midpoint of the slow speed shaft extension. Radial load capacities decrease if the center of the load is moved farther from the reducer and the values obtained from the charts must be adjusted accordingly.

Shaft Connections

Pulley, sprocket or sheave connection —Mount any of the above as close to the unit housing as possible, never beyond the midpoint of the shaft projection, to avoid undue bearing load and shaft deflection. Never overtighten belts or chains. Careful and accurate installation is essential for best results and for trouble-free operation. Before installing, the shafts should be checked to make sure that they are parallel and level. Perfect alignment after mounting can be checked with a string or straight edge held against the sides of the sprocket or pulley base.

Couplings should be properly aligned to the limits specified by the manufacturer. On coupled speed reducers coupling alignment should be checked prior to initial startup.



Shaft Rotation

On single reduction SM-CYCLO® speed reducers, the slow speed shaft rotates in a reverse direction to that of the high speed shaft.

On double reduction units, both the high speed and the slow speed shaft rotate in the same direction.

Input Speeds

In general terms, the standard input speeds of single reduction units are 1750 and 1165 RPM.

When non-standard input speeds are used, the horsepower and torque ratings will also vary.

Thermal Capacity

The SM-CYCLO® speed reducer's smooth, almost frictionless operation all but eliminates the conventional limitations due to heat. In all sizes, SM-CYCLO® speed reducers have thermal ratings that exceed their mechanical capacity.

Mounting Tips

Horizontal and vertical oil-lubricated units should be mounted in exact planes whenever possible. When they are mounted on inclined surfaces, minor modifications are necessary, since an inclined mounting could lower the oil to a level that will starve reduction parts and bearings. On the other hand, overfilling a unit with oil may cause leakage through the air vent, foaming and churning and consequently overheating. Any of the above could result in damage to the unit. In many cases we can provide grease lubrication to solve this problem.

Warranty

Sumitomo warrants that its SM-CYCLO® Speed Reducers will deliver their continuous catalog ratings and up to 500% intermittent SHOCK LOAD CAPACITY, provided they are properly installed, maintained and operated within the limits of speed, torque or other load conditions under which they were sold. Sumitomo further states that SM-CYCLO® Speed Reducers are warranted to be free from defects in material or workmanship for a period of two years from the date of shipment. Sumitomo assumes no liability beyond product repair or replacement under this limited warranty.

For construction purposes, be sure to obtain certified dimension sheets or drawings. Although we take every precaution to include accurate data in our catalog, we cannot guarantee such accuracy. If performance guarantees are required, they should be obtained in writing from the factory. Full consideration will be given to such requests when complete details are given of the proposed installation.

Installation

Be sure to install and operate SM-CYCLO® speed reducers in compliance with applicable local and national safety codes. Appropriate guards for rotating shafts should be used and are available from local stocks.

Lubrication Information

With the exception of sizes 4125 and smaller, and some multiple reduction units that are grease lubricated, SM-CYCLO® speed reducers are oil lubricated as standard.

Grease-Lubricated Units

All grease-lubricated units are grease packed when they leave our Factory and are ready to operate.

NOTE:

Frame size: 4075 — 4125 Maintenance Free Type — These frame sizes (single reduction) in horizontal or vertical shaft type are filled with "SHELL ALVANIA #2 GREASE" before shipment from the factory and need no replacement for 20,000 operating hours or 4-5 years.

Oil-Lubricated Units

All oil-lubricated units must be filled to the proper level with oil before operating. Be sure to use a lubricant that meets nameplate specifications. Please refer to our current Operating & Maintenance Manual for complete details.

Recommended Lubricants for SM-CYCLO® Speed Reducers

Ambient Temp.	14°F~32°F (-10°C~0°C)	32°F~95°F (0°C~35°C)	95°F~122°F (35°C~50°C)
Viscosity @ 40C (104°F) cSt.	61.2 ~ 74.8	90 ~ 165	198 ~ 506
ISO Viscosity Grade	68	100 ~ 150	220 ~ 460
AGMA Viscosity Grade	2EP	3EP 4EP	5EP 7EP
Viscosity @ 100F (38C) SSU	284 ~ 347	417 ~ 765	916 ~ 2719
SAE Grade (Gear Oils)	80W	85W 90	90 140

NOTE: Lubricant brand names are occasionally changed. Be sure to use proper lubricants shown on nameplate or lubrication tags.

NOMENCLATURE AND MOUNTING POSITIONS

NEW NOMENCLATURE

With the rapid expansion of industry requiring Sumitomo Products on a global basis, there is a need for a common worldwide standard for Sumitomo speed reducers and power transmission products. To help Sumitomo customers all over the industrial world, we will use a common descriptive nomenclature to identify our products.

The 3000 Series Cyclo designation has been changed to a uniform worldwide designation of 4000 series. There have been no changes to the product itself other than description.

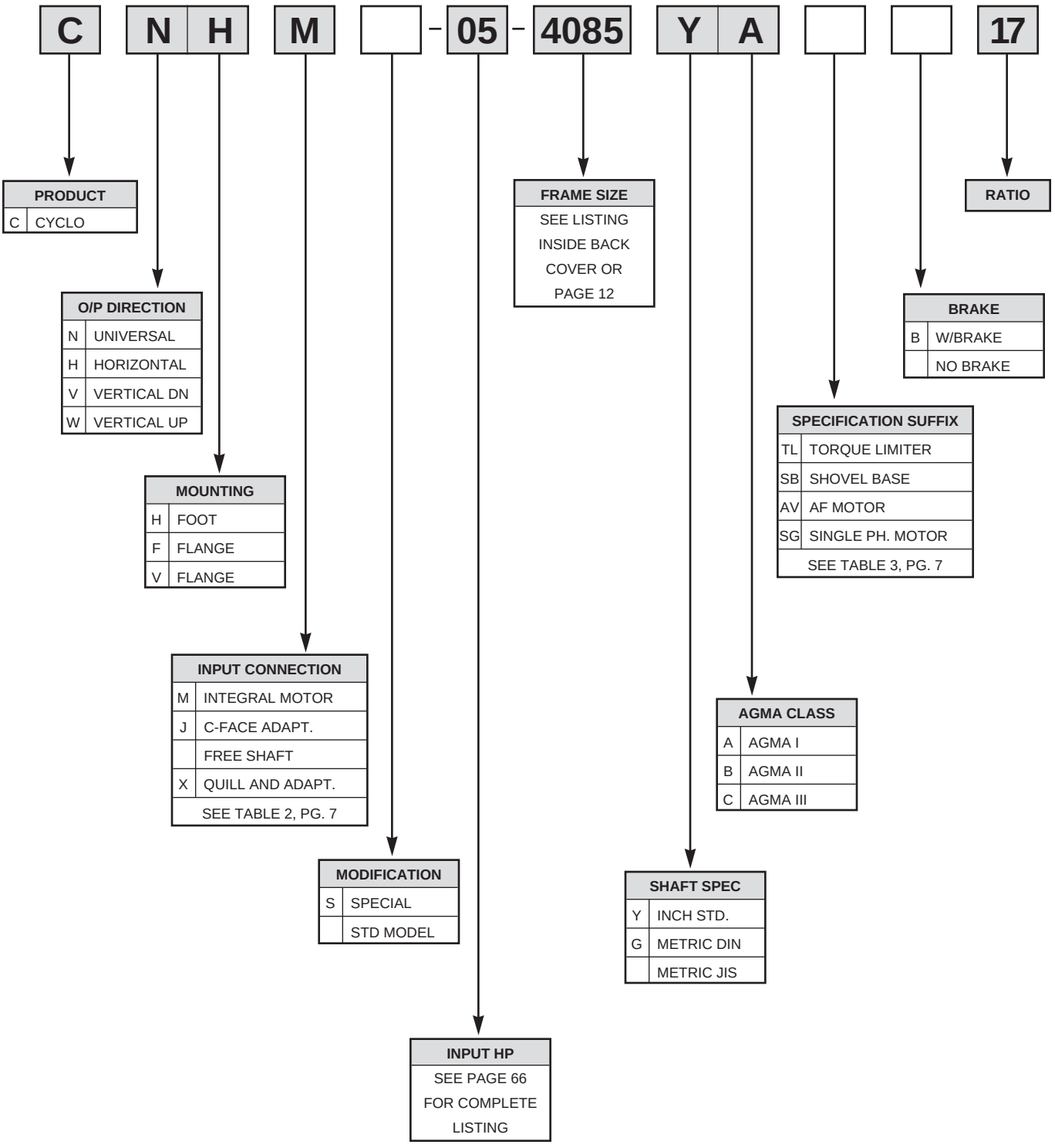
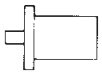
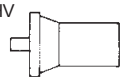
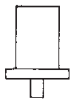
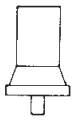
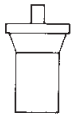
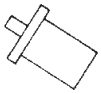
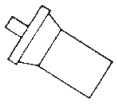


Table 1. Standard Assemblies

MOUNTING STYLE / O/P SHAFT DIRECTION	FOOT H	FLANGE F	V FLANGE V (CYCLO ONLY)
HORIZONTAL H	HH *	HF 	HV 
VERTICAL DOWN V	VH	VF 	VV * 
VERTICAL UP W	WH	WF	WV 
UNIVERSAL† N	NH	NF 	NV 

†Grease lubricated only. See note 4 below.

NOTE:
1) **FRAME SIZES** – For complete listing see page 12.
2) **FRAME INTERCHANGE** (3000 to 4000) – See Inside Back Cover.
3) **MOUNTING POSITIONS** – See page 8.
4) **UNIVERSAL** (N) output shaft direction applies to grease lubricated cyclos only (frame size 4125 and smaller). Any mounting position is permitted.

Table 2. Input Connection

TYPE OF MOTOR CONNECTION	LETTER	
	REDUCER	W/MOTOR
INTEGRAL MOTOR		M
HYDRAULIC MOTOR		L
FREE SHAFT	—	
BEIER	B	BM
W/C-FACE ADAPTOR	J	JM
W/QUILL I/P ADAPTOR	X	XM
SIDE MOUNT	(V) P	(V) PM
TOP MOUNT	(H) P	(H) PM

Table 3. Suffix

REDUCER SPECIFICATION		SYMBOL
TORQUE LIMITER		TL
HIGH CAP. BRG.		R1 *
HIGH CAP. BRG. DUCTILE CASING		R2 *
BASEPLATE		BP
SHOVEL BASE		SB
NEMA C-FACE OUTPUT		C1 *
TOP MOUNT	CENTER RIGHT LEFT	– PR PL
HH TYPE MODIFICATION	CEILING LEFT WALL RIGHT WALL	H1 * H2 * H3 *
LOW BACKLASH		LB
MOTOR SPECIFICATION		
AF MOTOR		AV
SINGLE PHASE MOTOR		SG *
SERVO MOTOR		SV
DC MOTOR		DV

*CHANGE FROM EXISTING

Model Examples

	W/C FACE MOTOR	RATIO	PREVIOUS	NEW
CYCLO REDUCER	NO	21	H 311H	CNH-4125Y-21
	NO	1479	V 3205/11	CVV-4205DAY-1479
	NO	87	HC 3175	CHHJ-4175Y-87
	YES	17	HC 3145	CHHJM-4135Y-17
	NO	29	H 3155-SB	CHH-4145Y-SB-29
	NO	35	HPC 3165	CHHP-4165Y-35
	NO	11	H-3100-HS	CNHX-4100Y-11

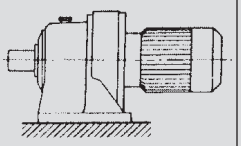
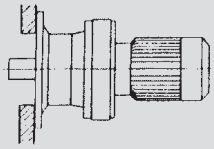
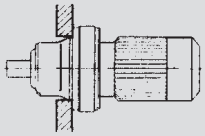
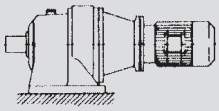
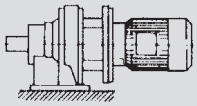
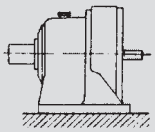
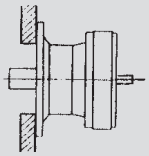
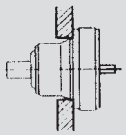
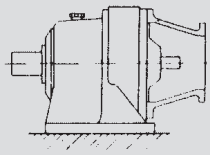
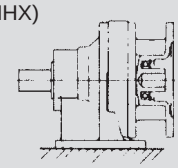
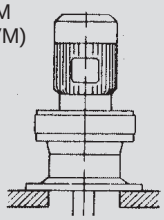
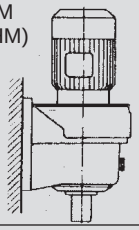
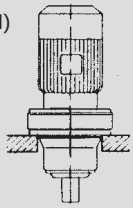
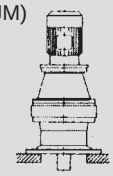
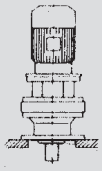
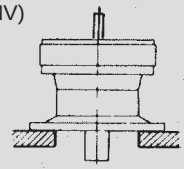
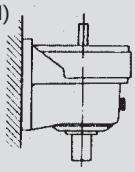
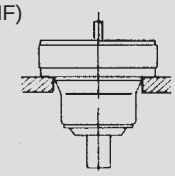
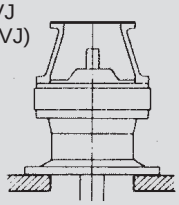
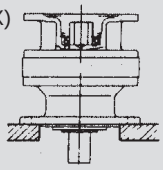
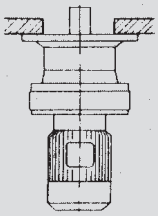
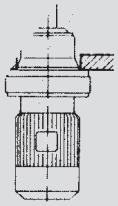
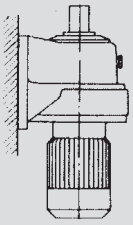
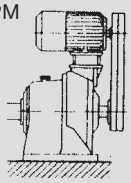
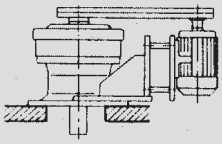
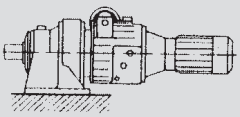
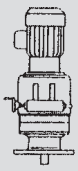
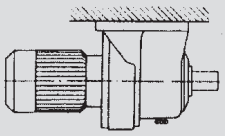
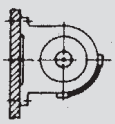
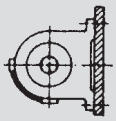
	HP	MOTOR PHASE	BRAKE	AGMA CLASS	RATIO	PREVIOUS	NEW
CYCLO GM	1/3	3ø	NO	1	11	HM 3075-A	CNHM 03-4075YA-11
	1-1/2	3ø	YES	2	17	VM 3100-B	CNVM 1H-4100YB-B-17
	3/4	1ø	NO	1	11	HFM 3090-AS	CNFM 08-4090YA-SG-11
	5	3ø	NO	2	29	HM 3145-B	CHHM 5-4135YB-29
	0.04 KW	3ø	NO	1	15	–	CNHM 004-5065YA-15
	2	3ø	YES	1	35	–	CNVM 2-5115YA-B-35

New Nomenclature Symbols

SPECIFICATION	PREVIOUS	NEW
UNIVERSAL MOUNT		N
C-FACE ADAPTOR	C	J
QUILL INPUT ADAPTOR	HS	X
SINGLE PHASE MOTOR	S	SG
BEIER VARIATOR INPUT		B
HIGH CAPACITY BEARING	XC	R1
H.C. BEARING, DUCTILE HOUSING	XD	R2
HH TYPE CEILING MOUNT	1H	H1
HH TYPE LEFT WALL MT.	2H	H2
HH TYPE RIGHT WALL MT.	3H	H3
1.5 HP	1.5	1H

NOMENCLATURE AND MOUNTING POSITIONS

EXAMPLES OF MOUNTING POSITIONS

CHHM (CNHM) 	CHVM (CNVM) 	CHFM (CNFM) 	CHHJM (CNHJM) 	CHHXM (CNHXM)  Input Side Hollow Shaft
CHH (CNH) 	CHV (CNV) 	CHF (CNF) 	CHHJ (CNHJ) 	CHHX (CNHX)  Input Side Hollow Shaft
CVVM (CNVM) 	CVHM (CNHM) 	CVFM (CNFM) 	CVVJM (CNVJM) 	CVVXM (CNVXM)  Input Side Hollow Shaft
CVV (CNV) 	CVH (CNH) 	CVF (CNF) 	CVVJ (CNVJ) 	CVVX (CNVX)  Input Side Hollow Shaft
CWVM (CWV) 	CWFM (CWF) 	CWHM (CWH) 	CHHPM  Top Mount Type	CVVPM  Side Mount Type
CHHBM (CHHB)  Beier Cyclo Variator	CVVBM (CVVB)  Beier Cyclo Variator	CHHM (CNHM) H1 	CHHM H2 	CHHM H3 

SM-CYCLO®
SPEED REDUCERS

“H” Type Housing

“V” Type Housing

“F” Type Housing

HOW TO SELECT FRAME SIZE AND MODEL

Selection Procedure

The following information is necessary for proper selection of SM-CYCLO speed reducers:

1) Application
2) Hours of operation per day
3) Input speed of SM-CYCLO® speed reducer
4) Required slow speed shaft RPM of SM-CYCLO® speed reducer
5) Running power or torque required at input of driven machine
6) Input and output shaft connections
7) Mounting position and special modifications if any

With this information known, follow the procedure at right:

Step 1
Refer to Basic Information and Recommendations pages 4 and 5.

Step 2
Determine the Load Classification for the application from AGMA Load Classifications tables on page 11.

If the application is not listed refer to the Factory.

Step 3
Establish the service factor for the application from "RECOMMENDED REDUCER SERVICE FACTORS" shown on page 4.

Multiply service factor by input horsepower (or output torque required) for frame size selection.

Step 4
Select unit size for horsepower, input and output RPM. Refer to Rating tables on pages 12 through 27 and determine frame size.

Step 5
Check overhung load when drive is not direct (i.e., coupled to the driven machine). When a chain, gear or belt is connected to the input or output shaft, calculate the overhung load by using the Allowable Overhung Load Data on pages 120 to 122.

Step 6
Select type of SM-CYCLO® speed reducer by referring to "NOMENCLATURE" & "MOUNTING POSITIONS" on pages 8 and 9.

Selection Example 1

Conditions:

1) Driven machine: apron feeder
2) Operation time: 24 hrs. per day
3) Motor speed: 1750 rpm
4) Required output speed: approx 30 rpm
5) Motor to be used: 10 HP frame 215TC
6) The reducer is to have a "C" Face coupled input. The output shaft will be coupled to the apron feeder.
7) A standard horizontal mounting is required.

Selection:

Step 1
Review Basic Information and Recommendations on pages 4 and 5.

Step 2
Load Classification from page 11 is: feeders; apron — moderate shock -M.

Step 3
The SM-CYCLO service factor for moderate shock (M) and 24 hours per day operation is 1.35 from page 4. Selection HP is 10 HP motor times 1.35 S.F. equals 13.5 HP.

Step 4
Ratio required is:

$$\frac{\text{1750 input rpm}}{\text{30 output rpm}} = 58{:}1$$

From Rating table on page 13, the closest ratio is 59:1 and unit frame size to suit 13.5 HP requirement is 4185.

Step 5
Overhung load does not have to be considered because of coupling connections.

Step 6
Complete model designator would be: HJ-4185 @ 59:1 ratio with "C" Adaptor to suit frame 215TC motor.

Selection Example II

Conditions:

1) Driven machine: sludge collector
2) Operation time: 24 hours per day
3) Motor speed: 1750 rpm
4) Required output speed: approx 0.85 rpm
5) Required running torque: 50,000 lbs-in.
6) A 1 HP, 143TC motor is to be coupled to the input shaft. The output shaft will be coupled to the sludge collector shaft.
7) A vertical assembly with mounting base is required.

Selection:

Step 1
Review Basic Information and Recommendations on pages 4 and 5.

Step 2
Load classification from page 11 is: sludge collector - uniform loading -U.

Step 3
The SM-CYCLO service factor for uniform loading (U) and 24 hours per day operation is 1.2, from page 4. Selection output torque is 50,000 lbs-in. times 1.2 SF equals 60,000 lbs-in.

Step 4
Ratio required is:

$$\frac{\text{1750 input rpm}}{\text{0.85 output rpm}} = 2059{:}1$$

From Rating table on page 22, and 17 the closest ratio is 2065:1 and unit frame size to suit 60,000 lbs-in. output torque requirement is 4195DA.

Step 5
Overhung load does not have to be considered because of coupling connections.

Step 6
Complete model designation would be VJ-4195DA @ 2065:1 ratio with "C" adaptor to suit frame 143TC motor.

AGMA LOAD CLASSIFICATIONS

TYPE OF APPLICATION	TYPE OF LOAD
Agitators	
Pure liquids	U
Liquids and solids	M
Variable-density liquids	M
Blowers	
Centrifugal	U
Lobe	M
Vane	U
Brewing and Distilling	
Bottling machinery	U
Brew kettles, cont. duty	U
Cookers, cont. duty	U
Mash tubs, cont. duty	U
Scale hopper, frequent starts	M
Can Filling Machines	U
Cane Knives	M
Car Dumpers	H
Car Pullers	M
Clarifiers	U
Classifiers	M
Clay Working Machinery	
Brick press	H
Briquette machine	H
Clay working machinery	M
Pug mill	M
Compressors	
Centrifugal	U
Lobe	M
Reciprocating, multi-cylinder	M
Reciprocating, single-cylinder	H
Conveyors — Uniformly Loaded or Fed	
Apron	U
Assembly	U
Belt	U
Bucket	U
Chain	U
Flight	U
Oven	U
Screw	U
Conveyors — Heavy Duty, Not Uniformly Fed	
Apron	M
Assembly	M
Belt	M
Bucket	M
Chain	M
Flight	M
Live roll oven	M
Reciprocating	H
Screw	M
Shaker	H
Cranes (Except for Dry Dock Cranes)	
Main hoists	U
Bridge travel	S
Trolley travel	S
Crusher	
Ore	H
Stone	H
Sugar	M
Dredges	
Cable reels	M
Conveyors	M
Cutter head drives	H
Jig drives	H
Maneuvering winches	M
Pumps	M
Screen drive	H
Stackers	M
Utility winches	M
Dry Dock Cranes	S
Elevators	
Bucket, uniform load	U
Bucket, heavy load	M
Bucket, cont.	U
Centrifugal discharge	U
Escalators	U
Freight	M
Gravity discharge	U
Man lifts	S
Passenger	S
Extruders (Plastics)	
Blow molders	M
Coating	U
Film	U
Pipe	U
Pre-plasticizers	M
Rods	U
Sheet	U
Tubing	U
Fans	
Centrifugal	U
Cooling towers	S
Forced draft	S
Induced draft	M
Large (mine, etc.)	M
Large (industrial)	M
Light (small diameter)	U
Feeders	
Apron	M
Belt	M
Disc	U
Reciprocating	H
Screw	M
Food Industry	
Beet slicer	M
Cereal cooker	U
Dough mixer	M
Meat grinders	M
Generators (Not Welding)	U
Hammer Mills	H
Hoists	
Heavy duty	H
Medium duty	M
Skip	M
Laundry Washers — Reversing	M
Laundry Tumblers	M
Line Shaft	
Drive processing equipment	M
Light	U
Other line shafts	U
Lumber Industry	
Barkers — hydraulic and mechanical	S
Burner conveyor	M
Chain Saw and Drag Saw	H
Chain transfer	H
Craneway transfer	H
De-barking drum	H
Edger feed	H
Gang feed	M
Geen chain	M
Live rolls	H
Log haul-lockline	H
Log turning device	H
Main log conveyor	H
Off bearing rolls	M
Planer feed chains	M
Planer floor chains	M
Planer tilting hoist	M
Re-saw merry-go-round conveyor	M
Roll cases	H
Slab conveyor	H
Small waste-conveyor-belt	U
Small waste-conveyor-chain	M
Sorting table	M
Tipple hoist conveyor	M
Tipple hoist drive	M
Transfer conveyors	M
Transfer rolls	M
Tray drive	M
Trimmer feed	M
Waste conveyor	M
Machine Tools	
Bending roll	M
Notching press, belt driven	S
Plate planer	H
Punch press, gear driven	H
Tapping machine	H
Other machine tools	
Main drives	M
Auxiliary drives	U
Metal Mills	
Draw bench carriage and main drive	M
Forming machines	H
Pinch, dryer and scrubber rolls, reversing	S
Slitters	M
Table conveyors, nonreversing	
Group drives	M
Individual drives	H
Table conveyors, reversing	S
Wire drawing and flattening machine	M
Wire winding machine	M
Mills, Rotary Type	
Ball	M
Cement kilns	M
Dryers and coolers	M
Kilns	M
Pebble	M
Rod, plain and wedge bar	M
Tumbling barrels	H
Mixers	
Concrete mixers, cont.	M
Concrete mixers, intermittent	M
Constant density	U
Variable density	M
Oil Industry	
Chillers	M
Oil well pumps	S
Paraffin filter press	M
Rotary kilns	M
Paper Mills	
Agitators (mixers)	M
Barker, hydraulic	M
Barker, mechnical	M
Barking drum	H
Beater and pulper	M
Bleacher	U
Calenders	M
Calenders, super	H
Converting machine (except cutters, platers)	M
Conveyors	U
Couch	M
Cutters, platers	H
Cylinders	M
Dryers	M
Felt stretcher	M
Felt whipper	H
Jordans	H
Log haul	H
Presses	U
Pulp machine reel	M
Stock chest	M
Suction roll	U
Washers and thickeners	M
Winders	U
Printing Presses	S
Pullers, Barge Haul	H
Pumps	
Centrifugal	U
Proportioning	M
Reciprocating	
Single acting, 3 or more cylinders	M
Double acting, 2 or more cylinders	M
Rotary-gear type	U
Rubber and Plastics Industries	
Crackers	H
Laboratory equipment	M
Mixing mills	H
Refiners	M
Rubber calenders	M
Rubber mill (2 on line)	M
Rubber mill (3 on line)	U
Sheeter	M
Tire building machines	S
Tire and tube press openers	S
Tubers and strainers	M
Warming mills	M
Sand Muller	M
Screens	
Air washing	U
Rotary, stone or gravel	M
Traveling water intake	U
Sewage Disposal Equipment	
Bar screens	U
Chemical fenders	U
Collectors, circuline or straightline	U
Dewatering screws	M
Grit collectors	U
Scum breakers	M
Slow or rapid mixers	M
Sludge collectors	U
Thickeners	M
Vacuum filters	M
Slab Pushers	M
Steering Gear	S
Stokers	U
Sugar Industry	
Cane knives	M
Crushers	M
Mills	H
Textile Industry	
Batchers	M
Calenders	M
Cards	M
Dry cans	M
Dryers	M
Dyeing machinery	M
Knitting machines	S
Looms	M
Mangles	M
Nappers	M
Pads	M
Range drives	S
Slashers	M
Soapers	M
Spinners	M
Tenter frames	M
Washers	M
Winders	M
Windlass	S

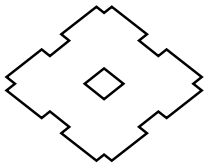
U = Uniform Load
M = Moderate Shock
H = Heavy Shock
S = Contact Sumitomo

RATING TABLES

SINGLE REDUCTION REDUCERS — INPUT SPEED 1750 RPM

FRAME SIZE *	RATIO	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119	WT. (LB)	DIM (PG)
	O/P RPM	292	219	159	135	117	103	83.3	70.0	60.3	50.0	40.7	34.3	29.7	24.6	20.1	14.7	TYPE H TYPE V TYPE HF	
4075	INPUT (HP)			0.38	0.38	0.38	0.38	0.31	0.22	0.22	0.19	0.15						5.5	32
	TORQUE (IN LB)			141	166	192	217	217	187	208	217	217						8	44
	OHL (LB)			207	207	211	211	211	211	211	211	211						5.5	37
4085	INPUT (HP)	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.39	0.38	0.37	0.30	0.19	0.18				6.6	32
	TORQUE (IN LB)	108	144	198	233	269	306	378	325	371	434	434	326	361				11	44
	OHL (LB)	280	311	353	341	375	397	397	397	397	397	397	397	397				6.6	37
4090	INPUT (HP)	0.93	0.93	0.93	0.93	0.93	0.93	0.72	0.63	0.62	0.62	0.39	0.32	0.31	0.15	0.15	0.13	24	32
	TORQUE (IN LB)	186	248	341	402	463	526	504	525	599	723	559	544	608	355	435	516	22	44
	OHL (LB)	592	657	744	744	744	750	750	750	750	750	750	750	750	750	750	750	16.5	37
4095	INPUT (HP)	1.45	1.45	1.45	1.45	1.40	1.40	0.96	0.93	0.90	0.73	0.61	0.46	0.41	0.28	0.28	0.16	24	32
	TORQUE (IN LB)	289	386	532	626	698	792	672	775	870	851	870	782	805	664	812	635	22	44
	OHL (LB)	592	657	744	744	744	750	750	750	750	750	750	750	750	750	750	750	16.5	37
4097	INPUT (HP)	1.89	1.89	1.89	1.88	1.79	1.68	1.51	1.15	1.04	0.90	0.80	0.56	0.51	0.40	0.40	0.20	24	32
	TORQUE (IN LB)	377	503	694	814	894	951	1060	962	1010	1050	1150	960	1000	949	1160	793	22	44
	OHL (LB)	592	657	744	744	744	750	750	750	750	750	750	750	750	750	750	750	16.5	37
4100	INPUT (HP)	2.40	2.40	1.96	1.96	1.95	1.95	1.95	1.68	1.40	0.98	0.93	0.73	0.63	0.48	0.48	0.28	29	32
	TORQUE (IN LB)	480	640	719	846	972	1100	1360	1400	1140	1140	1330	1240	1240	1140	1390	1110	27	44
	OHL (LB)	858	954	1080	1120	1180	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	21	37
4105	INPUT (HP)	3.01	3.01	3.01	3.01	3.01	2.65	2.60	2.01	1.68	1.38	1.26	0.90	0.82	0.67	0.67	0.34	29	32
	TORQUE (IN LB)	601	801	1104	1300	1500	1500	1820	1670	1620	1610	1800	1530	1610	1590	1940	1350	27	44
	OHL (LB)	858	954	1080	1120	1180	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	21	37
410H	INPUT (HP)	4.22	4.22	4.22	4.22	4.22	3.26	3.10	2.22	2.11	1.59	1.44	1.03	0.94	0.77	0.75	0.38	31	32
	TORQUE (IN LB)	844	1130	1550	1830	2110	1850	2170	1860	2040	1860	2060	1760	1850	1820	2170	1520	27	44
	OHL (LB)	858	954	1080	1120	1180	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	21	37
4110	INPUT (HP)	4.80	4.80	4.80	4.80	4.80	4.80	4.13	2.86	2.86	2.40	1.96	1.45	1.32	0.98	0.98		49	32
	TORQUE (IN LB)	958	1280	1760	2080	2400	2720	2890	2380	2760	2800	2810	2460	2590	2320	2840		46	44
	OHL (LB)	1080	1190	1350	1400	1500	1550	1670	1760	1840	1940	1940	1940	1940	1940	1940		44	37
4115	INPUT (HP)	6.80	6.80	6.80	6.80	6.80	6.80	5.17	5.01	4.45	4.22	3.01	2.78	2.15	1.51	1.44		49	32
	TORQUE (IN LB)	1360	1810	2490	2950	3400	3860	4360	4170	4300	4930	4320	4720	4230	3570	4170		46	44
	OHL (LB)	1080	1190	1350	1400	1500	1560	1670	1760	1840	1940	1940	1940	1940	1940	1940		44	37
4125	INPUT (HP)	10.5	10.5	7.51	7.51	7.51	7.51	6.22	5.25			3.16			1.59			51	32
	TORQUE (IN LB)	2110	2820	2750	3250	3760	4260	4360	4380			4540			3770			46	44
	OHL (LB)	1080	1200	1370	1410	1510	1510	1680	1770			2100			2200			44	37
4130	INPUT (HP)	12.0	12.0	9.80	9.75	9.75	9.75	6.51	6.20	4.80	4.55	3.40	2.82	2.69	1.96	1.51		95	32
	TORQUE (IN LB)	2400	3190	3590	4220	4870	5520	4550	5160	4640	5300	4870	4790	5290	4640	4380		93	44
	OHL (LB)	1250	1390	1580	1640	1680	1810	1940	2030	2140	2270	2450	2560	2700	2870	3090		80	37
4135	INPUT (HP)	13.5	13.5	13.5	13.5	11.9	11.0	9.40	7.90	7.09	5.64	4.58	3.89	3.35	2.88	2.66		95	32
	TORQUE (IN LB)	2700	3590	4950	5870	5970	6240	6580	6590	6860	6580	6570	6620	6610	6810	6570		93	44
	OHL (LB)	1250	1390	1580	1640	1680	1810	1940	2030	2140	2270	2450	2560	2700	2870	3090		80	37
4145	INPUT (HP)					13.5	13.5	10.5	9.15	7.63	7.46	4.91	4.55	4.43	3.26	3.03		97	32
	TORQUE (IN LB)					6780	7680	7390	7630	7380	8710	7040	7730	8720	7720	8790		95	44
	OHL (LB)					2270	2340	2510	2620	2730	2890	3090	3220	3310	3310	3310		82	37
4155	INPUT (HP)	20.1	20.1	20.1	15.7	15.6	14.2	11.1	10.5	9.11	8.17	6.04	5.60	4.85	4.03	3.29		101	32
	TORQUE (IN LB)	4030	5370	7390	6830	7820	8080	7790	8800	8810	9550	8660	9530	9550	9540	9550		95	44
	OHL (LB)	1960	2170	2430	2500	2610	2730	2930	3070	2730	3370	3530	3600	3600	3600	3600		82	37
4160	INPUT (HP)				16.6	16.6	16.6	15.6	13.5	9.75	8.81	8.07	6.56	5.92	4.65	3.44		185	32
	TORQUE (IN LB)				7190	8290	9400	10900	11200	9430	10300	11600	11100	11600	11000	9890		174	44
	OHL (LB)				2460	2650	2930	3150	3320	3480	3700	3970	4140	4370	4410	4410		146	37

*Please refer to interchange table inside back cover.



SINGLE REDUCTION REDUCERS

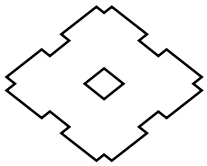
INPUT SPEED 1750 RPM

FRAME SIZE *	RATIO	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119	WT. (LB)	DIM (PG)
	O/P RPM	292	219	159	135	117	103	83.3	70.0	60.3	50.0	40.7	34.3	29.7	24.6	20.1	14.7	TYPE H TYPE V TYPE HF	
4165	INPUT (HP)	27.2	26.4	26.4	26.4	25.1	21.5	20.1	16.5	13.9	13.2	10.1	7.51	7.00	5.27	4.75		185	32
	TORQUE (IN LB)	5430	7030	9680	11400	12500	12200	14100	13700	13400	15400	14500	12800	13700	12500	13800		174	44
	OHL (LB)	2030	2250	2560	2640	2650	2930	3150	3320	3480	3700	3970	4140	4370	4410	4410		146	37
416H	INPUT (HP)	31.3	31.3	31.3	28.8	26.5	23.4	20.9	18.0	15.1	13.4	10.5	8.82	7.63	6.35	5.17		199	32
	TORQUE (IN LB)	6280	8370	11500	12500	13200	13300	14600	15000	14600	15600	15000	15000	15000	15000	15000		174	44
	OHL (LB)	2130	2370	2670	2800	2970	3080	3310	3480	3650	3880	4180	4370	4880	4880	4880		146	37
4170	INPUT (HP)	34.2					24.9		19.6	18.0	14.9	12.5	9.80	8.58	6.76	6.20		264	32
	TORQUE (IN LB)	6840					14100		16300	17400	17400	17900	16600	16900	16000	18000		267	44
	OHL (LB)	2400					3460		3890	4100	4360	4700	4910	5170	5490	5920		212	37
4175	INPUT (HP)	38.7		38.7	38.7	35.5	29.5	28.8	24.2	22.2	19.4	14.4	12.9	11.0	9.30	7.46		264	32
	TORQUE (IN LB)	7760		14200	16800	17800	17100	20200	20200	21500	22600	20600	21900	21700	22000	21600		267	44
	OHL (LB)	2400		3020	3130	3280	3460	3730	3890	4100	4360	4700	4910	5170	5490	5920		212	37
4180	INPUT (HP)			39.0	39.0	39.0	32.5	30.1	26.0	22.7	22.3	16.1	14.9	12.1	9.80	8.90		330	32
	TORQUE (IN LB)			14300	16800	19400	18400	21100	21700	21900	26000	23100	25300	23800	23200	25800		331	44
	OHL (LB)			4060	4210	4420	4650	5010	5230	5510	5860	6310	6600	6940	7380	7950		287	37
4185	INPUT (HP)			45.1	45.0	45.0	45.0	42.2	35.7	28.8	28.8	23.0	17.7	14.4	13.0	11.4		330	32
	TORQUE (IN LB)			16500	19500	22500	25600	29600	29700	27800	33600	33000	30100	28300	30800	33100		331	44
	OHL (LB)			4060	4210	4420	4650	5010	5230	5510	5860	6310	6600	6940	7380	7950		287	37
4190	INPUT (HP)			49.1	49.0	49.0	48.2	45.1	36.9	32.7	29.9	25.2	19.6	16.5	15.3	13.6		528	32
	TORQUE (IN LB)			18000	21200	24500	27300	31600	30700	31600	34900	36100	33300	32400	36300	39400		496	44
	OHL (LB)			5680	5890	6170	6500	7000	7320	7710	8190	8830	9230	9710	10300	11100		430	37
4195	INPUT (HP)			59.0	59.0	59.0	59.0	57.0	53.7	47.0	37.2	32.1	27.8	23.4	20.7	18.1		528	32
	TORQUE (IN LB)			21700	25600	29500	33500	39900	44800	45500	43400	46100	47300	46000	49100	52500		496	44
	OHL (LB)			5680	5890	6170	6500	7000	7320	7710	8190	8830	9230	9710	10300	11100		430	37
4205	INPUT (HP)			79.1		79.1		72.3		60.6		42.2		29.5		21.1		553	32
	TORQUE (IN LB)			29000		39600		50700		58700		60500		58000		61200		525	44
	OHL (LB)			11000		11800		13200		14400		16300		17800		18900			37
4215	INPUT (HP)			96.7		96.7		92.7		74.8		57.5		43.0		28.4		704	32
	TORQUE (IN LB)			35500		48400		65000		72400		82500		84700		82500		660	44
	OHL (LB)			11100		11900		13400		14600		16500		18000		20300			37
4225	INPUT (HP)			132		132		111		89.7		70.9		51.6		35.5		887	32
	TORQUE (IN LB)			48400		66000		77600		86800		102000		102000		103000		840	44
	OHL (LB)			11700		12600		14100		15400		17400		19000		21400			37
4235	INPUT (HP)																		
	TORQUE (IN LB)																		
	OHL (LB)																		
4245	INPUT (HP)																		
	TORQUE (IN LB)																		
	OHL (LB)																		
4255	INPUT (HP)																		
	TORQUE (IN LB)																		
	OHL (LB)																		
4265	INPUT (HP)																		
	TORQUE (IN LB)																		
	OHL (LB)																		
4275	INPUT (HP)																		
	TORQUE (IN LB)																		
	OHL (LB)																		

RATING TABLES

SINGLE REDUCTION REDUCERS — INPUT SPEED 1165 RPM

FRAME SIZE *	RATIO	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119	WT. (LB)	DIM (PG)
	O/P RPM	194	146	106	89.6	77.7	68.5	55.5	46.6	40.2	33.3	27.1	22.8	19.7	16.4	13.4	9.75	TYPE H TYPE V TYPE HF	
4075	INPUT (HP)			0.29	0.29	0.29	0.26	0.21	0.17	0.15	0.12	0.10						5.5	32
	TORQUE (IN LB)			158	187	216	217	217	211	217	217	217						8	44
	OHL (LB)			211	211	211	211	211	211	211	211	211						5.5	37
4085	INPUT (HP)	0.54	0.54	0.54	0.54	0.54	0.51	0.41	0.29	0.29	0.25	0.20	0.14	0.14				6.6	32
	TORQUE (IN LB)	161	215	296	349	403	434	434	365	417	434	434	366	406				11	44
	OHL (LB)	333	366	397	397	397	397	397	397	397	397	397	397	397				6.6	37
4090	INPUT (HP)	0.87	0.87	0.87	0.87	0.87	0.87	0.54	0.52	0.46	0.39	0.31	0.25	0.23	0.14	0.14	0.09	24	32
	TORQUE (IN LB)	261	347	478	566	653	740	567	651	667	680	680	638	680	498	609	536	22	44
	OHL (LB)	677	744	750	750	750	750	750	750	750	750	750	750	750	750	750	750	16.5	37
4095	INPUT (HP)	1.24	1.24	1.24	1.24	1.18	1.02	0.75	0.70	0.60	0.50	0.40	0.34	0.29	0.21	0.20	0.11	24	32
	TORQUE (IN LB)	372	496	683	807	886	870	788	870	870	870	870	870	870	747	870	655	22	44
	OHL (LB)	677	744	750	750	750	750	750	750	750	750	750	750	750	750	750	750	16.5	37
4097	INPUT (HP)	1.56	1.57	1.41	1.40	1.34	1.26	1.07	0.86	0.78	0.64	0.52	0.42	0.38	0.30	0.26	0.13	24	32
	TORQUE (IN LB)	470	628	779	914	1000	1070	1130	1080	1130	1130	1130	1080	1130	1070	1130	774	22	44
	OHL (LB)	677	744	750	750	750	750	750	750	750	750	750	750	750	750	750	750	16.5	37
4100	INPUT (HP)	2.05	2.05	1.95	1.68	1.67	1.42	1.32	1.23	1.03	0.71	0.63	0.57	0.48	0.36	0.31	0.24	29	32
	TORQUE (IN LB)	616	821	1070	1090	1250	1210	1390	1540	1490	1240	1360	1460	1420	1280	1340	1430	27	44
	OHL (LB)	981	1080	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	21	37
4105	INPUT (HP)	2.33	2.33	2.33	2.33	2.33	2.04	1.70	1.47	1.23	0.99	0.84	0.70	0.64	0.50	0.48	0.29	29	32
	TORQUE (IN LB)	700	930	1280	1520	1750	1790	1790	1840	1780	1790	1810	1790	1890	1780	2090	1730	27	44
	OHL (LB)	981	1080	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	21	37
410H	INPUT (HP)	3.15	31.5	31.5	3.15	2.89	2.44	2.06	1.66	1.49	1.19	1.01	0.77	0.70	0.57	0.50		31	32
	TORQUE (IN LB)	948	1270	1740	2060	2170	2080	2170	2080	2170	2090	2170	1980	2080	2040	2170		27	44
	OHL (LB)	981	1080	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210		21	37
4110	INPUT (HP)	4.49	4.12	4.12	3.97	3.97	3.66	3.53	2.45	1.89	1.68	1.18	1.14	1.14	0.84	0.65		49	32
	TORQUE (IN LB)	350	1650	2270	2580	2980	3110	3710	3070	2740	2940	2540	2910	3370	2990	2830		46	44
	OHL (LB)	1230	1350	1550	1610	1670	1760	1890	1940	1940	1940	1940	1940	1940	1940	1940		44	37
4115	INPUT (HP)	5.82	5.82	5.82	5.64	5.70	5.46	4.67	3.74	3.33	2.97	2.25	2.04	1.61	1.13	1.08		49	32
	TORQUE (IN LB)	1750	2330	3210	3680	4280	4660	4910	4690	4830	5210	4850	5210	4750	4020	4690		46	44
	OHL (LB)	1230	1350	1550	1610	1670	1760	1890	1940	1940	1940	1940	1940	1940	1940	1940		44	37
4125	INPUT (HP)	7.89	7.89	5.85	5.84	5.85	5.84		3.93			2.37			1.19			51	32
	TORQUE (IN LB)	2370	3160	3220	3810	4400	4980		4920			5100			4230			46	44
	OHL (LB)	1240	1370	1560	1620	1680	1770		2030			2200			2200			44	37
4130	INPUT (HP)	8.24	8.24	8.24	8.24	8.00	7.40	5.26	4.62	3.42	3.34	2.60	2.48	2.01	1.41	1.34		95	32
	TORQUE (IN LB)	2480	3290	4530	5360	6000	6300	5530	5780	4960	5850	5590	6340	5930	5010	5830		93	44
	OHL (LB)	1430	1580	1810	1870	1940	2030	2200	2320	2450	2560	2790	2960	3090	3310	3310		80	37
4135	INPUT (HP)	11.6	11.6	11.4	10.8	8.92	8.23	7.03	5.91	5.30	4.22	3.43	2.91	2.50	2.15	1.70		95	32
	TORQUE (IN LB)	3500	4660	6270	7010	6700	7010	7400	7400	7710	7400	7400	7440	7400	7650	7400		93	44
	OHL (LB)	1430	1580	1810	1870	1940	2030	2200	2320	2450	2560	2790	2960	3090	3310	3310		80	37
4145	INPUT (HP)					10.9	10.7	7.89	6.84	5.71	5.44	3.67	3.40	3.23	2.44	2.19		97	32
	TORQUE (IN LB)					8190	9080	8300	8570	8300	9550	7910	8700	9550	8690	9550		95	44
	OHL (LB)					2510	2620	2810	2990	3090	3220	3310	3310	3310	3500	3600		82	37
4155	INPUT (HP)	15.6	15.6	15.6	11.8	11.7		8.32	7.62	6.57		4.43	3.74		2.68			101	32
	TORQUE (IN LB)	4700	6250	8590	7670	8780		8760	9550	9550		9550	9550		9550			95	44
	OHL (LB)	2230	2430	2730	2830	2930		3290	3450	3530		3600	3600		3600			82	37
4160	INPUT (HP)				13.7	13.5		9.66	7.81	6.70	6.50	4.73	3.95	3.41	2.90	2.30		185	32
	TORQUE (IN LB)				8910	10100		10150	9770	9720	11400	10200	10100	10100	10300	10000		174	44
	OHL (LB)				3040	3150		3590	3840	3970	4140	4390	4410	4410	4830	4960		146	37



SINGLE REDUCTION REDUCERS

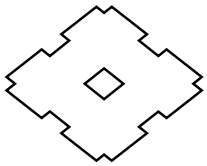
INPUT SPEED 1165 RPM

FRAME SIZE *	RATIO	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119	WT. (LB)	DIM (PG)
	O/P RPM	194	146	106	89.6	77.7	68.5	55.5	46.6	40.2	33.3	27.1	22.8	19.7	16.4	13.4	9.75	TYPE H TYPE V TYPE HF	
4165	INPUT (HP)	22.5	21.5	17.8	16.4	16.4	16.3	12.9	11.4	10.5	8.25	6.19	5.04	5.02	3.62	3.30		185	32
	TORQUE (IN LB)	6760	8580	9790	10700	12300	13900	13600	14300	15300	14400	13300	12900	14900	12900	14400		174	44
	OHL (LB)	2310	2560	2930	3040	3150	3320	3590	3840	3970	4140	4390	4410	4410	4830	4830		146	37
416H	INPUT (HP)	23.4	23.4	23.4	21.5	19.8	17.5	14.8	12.5	10.7	8.91	7.25	6.11	5.28	4.39	3.58		199	32
	TORQUE (IN LB)	7050	9400	12900	14000	14900	14900	15600	15600	15600	15600	15600	15600	15600	15600	15600		174	44
	OHL (LB)	2440	2670	3080	3190	3310	3650	3750	3980	4180	4370	4760	4910	4960	4960	4960		146	37
4170	INPUT (HP)	28.3					19.5		15.8	12.5	9.75	8.81	7.61	6.38	5.23	4.08		264	32
	TORQUE (IN LB)	8500					16600		19800	18100	17100	19000	19400	18800	18600	17800		267	44
	OHL (LB)	2750					3930		4460	4700	4910	5350	5660	5920	6320	6630		212	37
4175	INPUT (HP)	32.5		31.5	3.13	26.5	22.6	21.5	18.1	16.1	13.4	10.8	9.17	7.92	6.59	5.38		264	32
	TORQUE (IN LB)	9770		17400	20400	19900	19200	22600	22600	23400	23400	23200	23400	23400	23400	23400		267	44
	OHL (LB)	2750		3460	3580	3730	3930	4210	4460	4700	4910	5350	5660	5920	6320	6630		212	37
4180	INPUT (HP)			36.5	34.9	28.6	28.6	23.1	22.2	17.3	14.2	12.0	10.6	8.30	7.89	5.97		330	32
	TORQUE (IN LB)			20100	22700	21500	24300	24300	27800	25100	24900	25800	27100	24600	28000	26000		331	44
	OHL (LB)			4650	4820	5010	5280	5660	6000	6310	6600	7180	7610	7950	8490	9090		287	37
4185	INPUT (HP)			45.0	43.0	35.9	34.9	31.5	26.6	21.5	19.8	16.1	13.2	10.8	9.73	7.76		330	32
	TORQUE (IN LB)			24800	28000	27000	29800	33200	33400	31300	34700	34700	33700	31800	34600	34700		331	44
	OHL (LB)			4650	4820	5010	5280	5660	6000	6310	6600	7180	7610	7950	8490	9090		287	37
4190	INPUT (HP)			48.0	47.0	40.2	40.2	32.9	30.2	28.2	20.6	18.8	16.3	11.7	11.0	10.5		528	32
	TORQUE (IN LB)			26400	30580	30200	34200	34600	37800	40900	36100	40400	41600	34600	39100	45700		496	44
	OHL (LB)			6500	6730	7000	7370	7910	8380	8830	9230	10000	10600	11100	11800	12700		430	37
4195	INPUT (HP)			54.1	53.0	53.0	53.0	42.6	40.1	35.2	27.8	24.0	20.8	17.5	15.5	13.5		528	32
	TORQUE (IN LB)			29800	34600	39900	45200	44800	50200	51100	48800	51700	53200	51700	55100	59000		496	44
	OHL (LB)			6500	6730	7000	7370	7910	8380	8830	9230	10000	10800	11100	11800	12700		430	37
4205	INPUT (HP)			71.8		70.3		54.2		46.2		32.5		24.2		15.4		553	32
	TORQUE (IN LB)			39600		52900		57100		67000		70200		71500		67000		525	44
	OHL (LB)			12400		13200		14700		16300		18400		18900		19600			37
4215	INPUT (HP)			92.2		88.7		72.8		56.8		43.2		32.3		18.9		704	32
	TORQUE (IN LB)			50900		66700		76600		82500		93000		95500		82500		660	44
	OHL (LB)			12600		13400		14900		16500		18600		20300		23000			37
4225	INPUT (HP)			121		118		96.8		71.8		53.3		38.7		24.9		887	32
	TORQUE (IN LB)			66700		88600		102000		104000		115000		114000		109000		840	44
	OHL (LB)			13200		14100		15800		17400		19600		21400		24100			37
4235	INPUT (HP)			132		132		115		86.3		66.5		46.4		31.8		1107	32
	TORQUE (IN LB)			72700		99100		121000		125000		143000		137000		139000		1005	44
	OHL (LB)			16500		17600		19800		21700		24300		26700		30100			37
4245	INPUT (HP)			160		160		148		108		86.7		60.2		42.6		1344	32
	TORQUE (IN LB)			88000		120000		155000		157000		187000		178000		186000		1030	44
	OHL (LB)			18300		19600		21900		24100		27100		29700		33500			37
4255	INPUT (HP)			193		193		182		148		105		86.3		56.9		2035	32
	TORQUE (IN LB)			106000		145000		192000		215000		227000		255000		248000		1840	44
	OHL (LB)			22400		24000		26700		29500		33200		36300		41000			37
4265	INPUT (HP)			232		232		221		211		148		116		70.9		2552	32
	TORQUE (IN LB)			128000		174000		233000		307000		318000		343000		309000		2385	44
	OHL (LB)			27400		29300		32700		36000		40500		44300		50000			37
4275	INPUT (HP)											195		156				5346	32
	TORQUE (IN LB)											421000		461000					44
	OHL (LB)											57400		55700					37

RATING TABLES

SINGLE REDUCTION REDUCERS — INPUT SPEED 870 RPM

FRAME SIZE *	RATIO	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119	WT. (LB)	DIM (PG)
	O/P RPM	145	109	79.1	66.9	58.0	51.2	41.4	34.8	30.0	24.8	20.2	17.0	14.8	12.2	10.0	7.31	TYPE H TYPE V TYPE HF	
4075	INPUT (HP)			0.24	0.23	0.22	0.19	0.16	0.13	0.11	0.09	0.08						5.5	32
	TORQUE (IN LB)			177	205	217	217	217	217	217	217	217						8	44
	OHL (LB)			211	211	211	211	211	211	211	211	211						5.5	37
4085	INPUT (HP)	0.43	0.47	0.47	0.47	0.43	0.38	0.31	0.24	0.22	0.19	0.16	0.12	0.11				6.6	32
	TORQUE (IN LB)	174	252	346	409	434	434	434	400	434	434	434	401	434				11	44
	OHL (LB)	366	393	397	397	397	397	397	397	397	397	397	397	397				6.6	37
4090	INPUT (HP)	0.72	0.72	0.72	0.72	0.72	0.59	0.45	0.40	0.34	0.29	0.23	0.20	0.17	0.14	0.11	0.06	24	32
	TORQUE (IN LB)	289	385	531	627	724	672	634	670	661	680	680	680	680	680	680	479	22	44
	OHL (LB)	744	747	750	750	750	750	750	750	750	750	750	750	750	750	750	750	16.5	37
4095	INPUT (HP)	0.96	0.96	0.96	0.96	0.87	0.76	0.54	0.52	0.45	0.37	0.30	0.25	0.22	0.16	0.15	0.08	24	32
	TORQUE (IN LB)	386	515	708	836	870	870	760	870	870	870	870	870	870	765	870	638	22	44
	OHL (LB)	744	747	750	750	750	750	750	750	750	750	750	750	750	750	750	750	16.5	37
4097	INPUT (HP)	1.28	1.28	1.16	1.15	1.09	0.99	0.80	0.67	0.58	0.48	0.39	0.33	0.29	0.24	0.19	0.10	24	32
	TORQUE (IN LB)	515	687	853	1000	1100	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	798	22	44
	OHL (LB)	744	747	750	750	750	750	750	750	750	750	750	750	750	750	750	750	16.5	37
4100	INPUT (HP)	1.55	1.55	1.55	1.37	1.27	1.15	1.01	0.93	0.65	0.54	0.47	0.42	0.35	0.27	0.24	0.19	29	32
	TORQUE (IN LB)	623	831	1140	1190	1280	1310	1420	1560	1260	1270	1360	1440	1380	1290	1400	1520	27	44
	OHL (LB)	1080	1180	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	21	37
4105	INPUT (HP)	1.92	1.92	1.92	1.92	1.78	1.57	1.32	1.11	0.92	0.76	0.52	0.52	0.45	0.38	0.33	0.23	29	32
	TORQUE (IN LB)	772	1030	1420	1670	1790	1790	1860	1860	1790	1790	1820	1780	1770	1820	1920	1830	27	44
	OHL (LB)	1080	1180	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	21	37
410H	INPUT (HP)	2.58	2.58	2.58	2.49	2.16	1.90	1.54	1.29	1.12	0.92	0.75	0.63	0.55	0.46	0.37		31	32
	TORQUE (IN LB)	1040	1380	1900	2170	2170	2170	2170	2170	2170	2170	2170	2160	2170	2170	2170		27	44
	OHL (LB)	1080	1180	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210		21	37
4110	INPUT (HP)	3.70	3.50	3.50	3.35	3.35	3.04	2.74	1.95	1.79	1.51	1.21	0.96	0.96	0.69	0.60		49	32
	TORQUE (IN LB)	1490	1880	2580	2790	3370	3460	3860	3270	3480	3550	3490	3290	3780	3300	3500		46	44
	OHL (LB)	1350	1500	1670	1760	1840	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940		44	37
4115	INPUT (HP)	4.76	4.76	4.76	4.61	4.66	4.47	3.70	3.06	2.68	2.22	1.81	1.52	1.31	0.92	0.88		49	32
	TORQUE (IN LB)	1920	2560	3510	4030	4690	5100	5210	5130	5210	5210	5210	5210	5200	4400	5130		46	44
	OHL (LB)	1350	1500	1670	1760	1840	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940		44	37
4125	INPUT (HP)	6.45	6.45	4.78	4.78	4.78	4.56		3.11						0.97			51	32
	TORQUE (IN LB)	2600	3460	3530	4170	4820	5210		5210						4630			46	44
	OHL (LB)	1370	1510	1680	1770	1850	1950		2200						2200			44	37
4130	INPUT (HP)	7.40	7.40	6.50	6.32	6.00	5.89	4.41	3.47	2.98	2.45	2.15	1.90	1.35	1.26	0.92		95	32
	TORQUE (IN LB)	2980	3960	4790	5510	6030	6710	6210	5810	5790	5760	6200	6520	5340	6020	5360		93	44
	OHL (LB)	1580	1760	1940	2060	2140	2270	2450	2560	2700	2870	3090	3260	3310	3310	3310		80	37
4135	INPUT (HP)	9.51	9.51	9.30	8.79	7.29	6.73	5.54	4.66	4.01	3.33	2.71	2.28	1.97	1.64	1.34		95	32
	TORQUE (IN LB)	3830	5110	6860	7670	7340	7680	7810	7810	7810	7810	7810	7810	7810	7810	7810		93	44
	OHL (LB)	1580	1760	1940	2060	2140	2270	2450	2560	2700	2870	3090	3260	3310	3310	3310		80	37
4145	INPUT (HP)					8.91	8.37	6.45	5.60	4.67	4.07	3.00	2.78	2.42	2.00	1.64		97	32
	TORQUE (IN LB)					8970	9550	9090	9390	9080	9550	8660	9520	9550	9510	9550		95	44
	OHL (LB)					2730	2890	3090	3220	3310	3310	3310	3410	3500	3600	3600		82	37
4155	INPUT (HP)	12.8	12.8	12.8	9.63	9.48		6.78	5.69	4.91		3.31						101	32
	TORQUE (IN LB)	5150	6860	9430	8400	9550		9550	9550	9550		9550						95	44
	OHL (LB)	2430	2650	2930	3070	3200		3530	3600	3600		3600						82	37
4160	INPUT (HP)				11.1	11.1	10.6	8.00	6.24	6.02	5.54	3.99	2.74	2.70	2.28	2.14		185	32
	TORQUE (IN LB)				9670	11200	12100	11300	10500	11700	13000	11500	9400	10600	10900	12500		174	44
	OHL (LB)				3320	3480	3700	3970	4140	4370	4410	4410	4620	4830	4960	4960		146	37



SINGLE REDUCTION REDUCERS

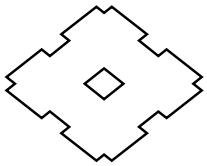
INPUT SPEED 870 RPM

FRAME SIZE *	RATIO	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119	WT. (LB)	DIM (PG)
	O/P RPM	145	109	79.1	66.9	58.0	51.2	41.4	34.8	30.0	24.8	20.2	17.0	14.8	12.2	10.0	7.31	TYPE H TYPE V TYPE HF	
4165	INPUT (HP)	18.4	17.9	14.6	13.4	13.4	13.0	9.67	8.32	8.03	6.35	5.02	3.78	3.72	2.71	2.54		185	32
	TORQUE (IN LB)	7440	9600	10760	11700	13500	14800	13600	13900	15600	14900	14500	13000	14700	12900	14800		174	44
	OHL (LB)	2560	2820	3150	3320	3480	3700	3970	4140	4370	4410	4410	4620	4830	4960	4960		146	37
416H	INPUT (HP)	19.2	19.2	19.2	17.6	15.5	13.7	11.1	9.31		6.65	5.41	4.57	3.95	3.28	2.68		199	32
	TORQUE (IN LB)	7720	10300	14100	15300	15600	15600	15600	15600		15600	15600	15600	15600	15600	15600		174	44
	OHL (LB)	2670	3000	3310	3530	3650	3880	4180	4370		4880	4960	4960	4960	4960	4960		146	37
4170	INPUT (HP)	21.8					14.7		11.9	10.0	8.34	6.79	5.71	4.98	3.79	3.36		264	32
	TORQUE (IN LB)	8760					16700		19900	19600	19600	19600	19600	19600	18100	19600		267	44
	OHL (LB)	3020					4360		4910	5170	5490	5920	6250	6510	6630	6630		212	37
4175	INPUT (HP)	26.6		25.8	25.6	21.7	18.4	16.6	14.0	12.0	9.78	8.12	6.85	5.92	4.92	4.02		264	32
	TORQUE (IN LB)	10700		19000	22300	21800	21100	23400	23400	23400	23400	23400	23400	23400	23400	23400		267	44
	OHL (LB)	3020		3730	3950	4100	4360	4700	4910	5170	5490	5920	6250	6510	6630	6630		212	37
4180	INPUT (HP)			27.9	26.6	25.9	24.4	19.7	16.6	14.3	11.8	9.63	8.11	7.06	5.82	4.77		330	32
	TORQUE (IN LB)			20600	23200	26000	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800		331	44
	OHL (LB)			5010	5310	5510	5860	6310	6600	6940	7380	7950	8390	8750	9370	9380		287	37
4185	INPUT (HP)			36.9	35.2	29.4	28.6	24.6	20.7	17.6	14.8	12.0	10.1	8.77	7.29	5.95		330	32
	TORQUE (IN LB)			27300	30700	29600	32000	34700	34700	34200	34700	34700	34700	34700	34700	34700		331	44
	OHL (LB)			5010	5310	5510	5860	6310	6600	6940	7380	7950	8390	8750	9370	9380		287	37
4190	INPUT (HP)			39.3	38.6	32.8	32.8	26.2	24.8	21.9	17.0	15.2	13.4	10.9	9.09	8.08		528	32
	TORQUE (IN LB)			29000	33600	33000	37300	36900	41500	42600	40000	43900	46000	42900	43400	47100		496	44
	OHL (LB)			7000	7430	7710	8190	8830	9230	9710	10300	11100	11700	12200	13100	13250		430	37
4195	INPUT (HP)			44.2	43.4	43.4	43.4	34.8	32.8	28.7	22.7	19.6	17.0	14.3	12.7	10.7		528	32
	TORQUE (IN LB)			32700	37800	43700	49500	49000	55000	55900	53400	56600	58300	56600	60400	62500		496	44
	OHL (LB)			7000	7430	7710	8190	8830	9230	9710	10300	11100	11700	12200	13100	13250		430	37
4205	INPUT (HP)			60.6		57.9		44.4		35.4		25.3		18.5		11.8		553	32
	TORQUE (IN LB)			44300		58300		62500		68700		72900		74800		68700		525	44
	OHL (LB)			13200		14400		16300		17800		18900		18900		18900			37
4215	INPUT (HP)			78.4		73.2		58.5		42.5		33.1		24.2		14.2		704	32
	TORQUE (IN LB)			57900		73700		82500		82500		95500		95500		82500		660	44
	OHL (LB)			13400		14600		16500		18000		20300		22200		23400			37
4225	INPUT (HP)			103		93.4		80.6		58.6		42.1		30.7		18.7		887	32
	TORQUE (IN LB)			75900		93900		114000		114000		121000		121000		109000		840	44
	OHL (LB)			14100		15400		17400		19000		21400		23300		26400			37
4235	INPUT (HP)			130		120		97.7		72.2		54.0		37.4		23.8		1107	32
	TORQUE (IN LB)			96800		121000		138000		141000		156000		148000		137000		1005	44
	OHL (LB)			17600		19200		21700		23600		26700		29100		32900			37
4245	INPUT (HP)			159		150		120		89.5		69.3		48.5		32.7		1344	32
	TORQUE (IN LB)			117000		151000		169000		174000		200000		191000		191000		1030	44
	OHL (LB)			19600		21400		24100		26300		29700		32400		34500			37
4255	INPUT (HP)			193		188		159		125		90.2		66.0		42.5		2035	32
	TORQUE (IN LB)			143000		189000		224000		244000		260000		260000		248000		1840	44
	OHL (LB)			24000		26100		29500		32200		36300		39600		44700			37
4265	INPUT (HP)			232		232		194		169		119		94.3		57.3		2552	32
	TORQUE (IN LB)			171000		233000		273000		329000		345000		373000		334000		2385	44
	OHL (LB)			29300		31900		36000		39300		44300		48300		54600			37
4275	INPUT (HP)											158		127				5346	32
	TORQUE (IN LB)											458000		501000					44
	OHL (LB)											55700		55700					37

RATING TABLES

SINGLE REDUCTION REDUCERS — INPUT SPEED 580 RPM

FRAME SIZE *	RATIO	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119	WT. (LB)	DIM (PG)
	O/P RPM	96.7	72.5	52.7	44.6	38.7	34.1	27.6	23.2	20.2	16.6	13.5	11.4	9.83	8.17	6.67	4.87	TYPE H TYPE V TYPE HF	
4075	INPUT (HP)			0.18	0.17	0.14	0.13	0.11	0.09	0.07	0.06	0.05						5.5	32
	TORQUE (IN LB)			195	217	217	217	217	217	217	217	217						8	44
	OHL (LB)			211	211	211	211	211	211	211	211	211						5.5	37
4085	INPUT (HP)	0.29	0.35	0.35	0.33	0.29	0.25	0.21	0.18	0.15	0.12	0.10	0.09	0.07				6.6	32
	TORQUE (IN LB)	174	285	392	434	434	434	434	434	434	434	434	434	434				11	44
	OHL (LB)	397	397	397	397	397	397	397	397	397	397	397	397	397				6.6	37
4090	INPUT (HP)	0.53	0.53	0.53	0.51	0.44	0.40	0.32	0.27	0.23	0.19	0.16	0.13	0.12	0.10	0.08	0.04	24	32
	TORQUE (IN LB)	320	426	586	667	663	680	680	680	680	680	680	680	680	680	680	479	22	44
	OHL (LB)	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	16.5	37
4095	INPUT (HP)	0.72	0.72	0.72	0.69	0.59	0.51	0.41	0.35	0.30	0.25	0.20	0.17	0.15	0.12	0.10	0.05	24	32
	TORQUE (IN LB)	434	579	796	870	870	870	870	870	870	870	870	870	870	870	870	599	22	44
	OHL (LB)	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	16.5	37
4097	INPUT (HP)	0.96	0.96	0.87	0.86	0.75	0.69	0.53	0.45	0.39	0.32	0.27	0.22	0.19	0.16	0.13	0.07	24	32
	TORQUE (IN LB)	581	777	964	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1140	840	22	44
	OHL (LB)	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	16.5	37
4100	INPUT (HP)	1.25	1.25	1.02	1.02	0.85	0.78	0.68	0.62	0.57	0.38	0.34	0.29	0.24	0.19	0.15	0.11	29	32
	TORQUE (IN LB)	754	1010	1130	1330	1280	1340	1440	1560	1660	1340	1470	1480	1420	1360	1340	1320	27	44
	OHL (LB)	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	21	37
4105	INPUT (HP)	1.43	1.43	1.43	1.37	1.19	1.05	0.88	0.77	0.62	0.51	0.42	0.35	0.30	0.25	0.25	0.15	29	32
	TORQUE (IN LB)	862	1150	1580	1790	1790	1800	1860	1930	1810	1760	1810	1790	1735	1780	2170	1800	27	44
	OHL (LB)	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	21	37
410H	INPUT (HP)	1.94	1.94	1.94	1.66	1.44	1.27	1.03	0.86	0.74	0.62	0.50	0.42	0.37	0.30			31	32
	TORQUE (IN LB)	1170	1560	2150	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170			27	44
	OHL (LB)	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210			21	37
4110	INPUT (HP)	2.66	2.66	2.54	2.54	2.42	1.99	1.82	1.30	1.19	1.00	0.81	0.64	0.58	0.46	0.40		49	32
	TORQUE (IN LB)	1600	2140	2810	3320	3650	3400	3840	3270	3470	3520	3500	3280	3440	3280	3500		46	44
	OHL (LB)	1570	1730	1910	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940		44	37
4115	INPUT (HP)	3.58	3.58	3.58	3.47	3.45	3.04	2.46	2.07	1.78	1.48	1.20	1.01	0.88	0.70	0.60		49	32
	TORQUE (IN LB)	2160	2890	3970	4550	5210	5210	5210	5210	5210	5210	5210	5210	5210	4960	5210		46	44
	OHL (LB)	1570	1730	1910	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940		44	37
4125	INPUT (HP)	4.31	4.31	3.60	3.60										0.73			51	32
	TORQUE (IN LB)	2600	3470	3990	4710										5210			46	44
	OHL (LB)	1580	1770	1950	2100										2200			44	37
4130	INPUT (HP)	4.80	4.80	4.21	4.21	4.21	3.81	2.88	2.51	1.95	1.85	1.49	1.10	1.10	0.84	0.74		95	32
	TORQUE (IN LB)	2890	3860	4660	5500	6350	6510	6080	6310	5680	6510	6440	5640	6510	5990	6510		93	44
	OHL (LB)	1810	2000	2270	2360	2450	2560	2780	2940	3090	3310	3310	3310	3310	3310	3310		80	37
4135	INPUT (HP)	7.16	7.16	7.00	5.97	5.17	4.57	3.70	3.11	2.68	2.22	1.81	1.52	1.32	1.09	0.89		95	32
	TORQUE (IN LB)	4330	5770	7750	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810		93	44
	OHL (LB)	1810	2000	2270	2360	2450	2560	2780	2940	3090	3310	3310	3310	3310	3310	3310		80	37
4145	INPUT (HP)			7.16	6.90	6.32	5.58	4.52	3.80	3.27	2.72	2.21	1.86	1.61	1.34	1.09		97	32
	TORQUE (IN LB)			7930	9030	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550		95	44
	OHL (LB)			2890	3000	3120	3220	3310	3310	3310	3380	3500	3600	3600	3600	3600		82	37
4155	INPUT (HP)	8.62	8.62	8.62	7.25													101	32
	TORQUE (IN LB)	5210	6940	9550	9490													95	44
	OHL (LB)	2760	3030	3320	3320													82	37
4160	INPUT (HP)				7.89	7.36	7.32	5.33	4.26	4.11	3.70	2.77	2.09	1.95	1.52	1.48		185	32
	TORQUE (IN LB)				10200	11100	12500	11300	10700	12000	13000	12000	10700	11600	10800	13000		174	44
	OHL (LB)				3850	4010	4180	4390	4410	4410	4700	4960	4960	4960	4960	4960		146	37



SINGLE REDUCTION REDUCERS

INPUT SPEED 580 RPM

FRAME SIZE *	RATIO	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119	WT. (LB)	DIM (PG)
	O/P RPM	96.7	72.5	52.7	44.6	38.7	34.1	27.6	23.2	20.2	16.6	13.5	11.4	9.83	8.17	6.67	4.87	TYPE H TYPE V TYPE HF	
4165	INPUT (HP)	13.0	13.0	11.3	10.1	8.92	8.87	6.52	5.21	5.15	4.40	3.48	2.66	2.61	1.81	1.75		185	32
	TORQUE (IN LB)	7810	10500	12000	13200	13400	15200	13700	13100	15000	15500	15000	13300	15500	12900	15300		174	44
	OHL (LB)	2970	3270	3640	3850	4010	4180	4390	4410	4410	4700	4960	4960	4960	4960	4960		146	37
416H	INPUT (HP)	14.4	14.4	14.1	11.9	10.3	9.13	7.39	6.21	5.35	4.43	3.61	3.04	2.63	2.19	1.78		199	32
	TORQUE (IN LB)	8680	11600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600		174	44
	OHL (LB)	3080	3480	3880	4040	4180	4960	4730	4900	4960	4960	4960	4960	4960	4960	4960		146	37
4170	INPUT (HP)	16.2					10.2		6.92	5.97	4.95	4.03	3.39	2.93	2.44	1.98		264	32
	TORQUE (IN LB)	9770					17400		17400	17400	17400	17400	17400	17400	17400	17400		267	44
	OHL (LB)	3460					4910		5630	5920	6290	6630	6630	6630	6630	6630		212	37
4175	INPUT (HP)	20.0		19.4	17.9	15.5	13.7	11.1	9.31	8.03	6.65	5.42	4.57	3.95	3.28	2.68		264	32
	TORQUE (IN LB)	2100		21500	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400		267	44
	OHL (LB)	3460		4360	4530	4700	4910	5320	5630	5920	6290	6630	6630	6630	6630	6630		212	37
4180	INPUT (HP)			20.8	20.8	18.5	16.3	13.2	11.06	9.63	7.92	6.44	5.44	4.69	3.90	3.18		330	32
	TORQUE (IN LB)			23000	27200	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800	27800		331	44
	OHL (LB)			5860	6090	6310	6600	7140	7570	7950	8460	9060	9380	9380	9380	9380		287	37
4185	INPUT (HP)			25.9	25.9	22.1	20.3	16.4	13.8	11.9	9.86	8.02	6.76	5.85	4.86	3.97		330	32
	TORQUE (IN LB)			28600	33900	33400	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700		331	44
	OHL (LB)			5860	6090	6310	6600	7140	7570	7950	8460	9060	9380	9380	9380	9380		287	37
4190	INPUT (HP)			28.0	28.0	25.6	25.6	21.4	17.5	16.1	12.8	10.8	8.34	7.97	6.27	5.60		528	32
	TORQUE (IN LB)			31000	36600	38600	43800	45200	44000	46900	45000	46600	42800	46600	44700	48600		496	44
	OHL (LB)			8190	8510	8830	9230	9980	10600	11100	11800	12600	13250	13250	13250	13250		430	37
4195	INPUT (HP)			33.3	32.6	32.6	32.6	26.2	24.7	21.4	17.1	14.5	12.2	10.6	8.75	7.15		582	32
	TORQUE (IN LB)			36900	42700	49300	55900	55400	62100	62500	60300	62500	62500	62500	62500	62500		496	44
	OHL (LB)			8190	8510	8830	9230	9980	10600	11100	11800	12600	13250	13250	13250	13250		430	37
4205	INPUT (HP)				44.0	43.0		29.6		23.5		16.9		12.4		7.85		553	32
	TORQUE (IN LB)			48600		64900		62500		68700		72900		72900		68700		525	44
	OHL (LB)			15200		16300		18300		18900		18900		18900		18900			37
4215	INPUT (HP)			56.5		53.1		39.1		28.3		22.1		16.3		9.42		704	32
	TORQUE (IN LB)			62500		80200		82500		82500		95500		95500		82500		660	44
	OHL (LB)			15500		16500		18500		20300		22900		23400		23400			37
4225	INPUT (HP)			76.0		68.3		56.4		40.9		28.1		20.5		12.4		887	32
	TORQUE (IN LB)			84100		103000		119000		119000		122000		122000		109000		840	44
	OHL (LB)			16300		17400		19500		21400		24000		27300		27300			37
4235	INPUT (HP)			86.3		88.5		65.8		52.4		36.1		26.3		15.9		1107	32
	TORQUE (IN LB)			95500		134000		139000		153000		156000		156000		139000		1005	44
	OHL (LB)			20300		21700		24200		26700		30000		34000		34000			37
4245	INPUT (HP)			110		113		82.4		59.7		47.4		33.7		21.8		1344	32
	TORQUE (IN LB)			122000		171000		174000		174000		200000		200000		191000		1030	44
	OHL (LB)			22600		24100		27000		29700		33400		37700		37700			37
4255	INPUT (HP)			141		132		118		89.2		60.2		44.3		28.3		2035	32
	TORQUE (IN LB)			156000		200000		248000		260000		260000		260000		248000		1840	44
	OHL (LB)			27600		29500		33000		36300		40900		46300		46300			37
4265	INPUT (HP)			180		172		144		114		86.4		64.3		38.1		2552	32
	TORQUE (IN LB)			200000		260000		304000		334000		374000		382000		334000		2385	44
	OHL (LB)			33700		36000		40300		44300		49900		56400		56400			37
4275	INPUT (HP)											119		87.9				5346	32
	TORQUE (IN LB)											517000		521000					44
	OHL (LB)											55700		55700					37

RATING TABLES

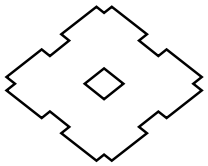
DOUBLE REDUCTION REDUCERS — INPUT SPEED 1750 RPM

FRAME SIZE †	RATIO	[17x6]	[11x11]	[15x11]	[29x6]	[17x11]	[35x6]	[21x11]	[43x6]	[17x17]	[29x11]	[59x6]	[35x11]	[29x15]	[43x11]	[29x17]	[87x6]	[35x17]	[59x11]	WT. [LB]	DIM [PAGE]
		102	121	165	174	187	210	231	258	289	319	354	385	435	473	493	522	595	649		
	O/P RPM	17.2	14.5	10.6	10.1	9.36	8.33	7.58	6.78	6.06	5.49	4.94	4.55	4.02	3.70	3.55	3.35	2.94	2.70	TYPE H TYPE V TYPE HF	
4075 DA	INPUT (HP)		0.12	0.12		0.12		0.12		0.12	0.12		0.12	0.12	0.12	0.12		0.12		9	38
	TORQUE (IN LB)		217	217		217		217		217	217		217	217	217	217		217		12	50
	OHL (LB)		211	211		211		211		211	211		211	211	211	211		211		10	43
4085 DA	INPUT (HP)		0.12	0.12		0.12		0.12		0.12	0.12		0.12	0.12	0.12	0.12		0.12	0.12	10	38
	TORQUE (IN LB)		434	434		434		434		434	434		434	434	434	434		434	434	15	50
	OHL (LB)		397	397		397		397		397	397		397	397	397	397		397	397	10	43
4097 DA	INPUT (HP)	0.36	0.30	0.22	0.21	0.19	0.17	0.15	0.14	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	27	38
	TORQUE (IN LB)	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	25	50
	OHL (LB)	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	20	43
4105 DA	INPUT (HP)	0.54	0.59	0.43	0.41	0.38	0.34	0.31	0.27	0.25	0.22	0.20	0.18	0.16	0.15	0.14	0.14	0.12	0.12	33	38
	TORQUE (IN LB)	1680	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	31	50
	OHL (LB)	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	26	43
4115 DB	INPUT (HP)	1.67	1.41	1.03	0.98	0.91	0.81	0.74	0.66	0.59	0.53	0.48	0.44	0.39	0.36	0.34	0.33	0.29	0.26	64	38
	TORQUE (IN LB)	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	61	50
	OHL (LB)	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	55	43
4135 DC	INPUT (HP)	2.50	2.11	1.55	1.47	1.36	1.21	1.11	0.99	0.88	0.80	0.72	0.66	0.59	0.54	0.52	0.49	0.43	0.39	117	38
	TORQUE (IN LB)	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	115	50
	OHL (LB)	3250	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	88	43
4145 DB	INPUT (HP)			1.89	1.80	1.67	1.48	1.35	1.21	1.08	0.98	0.88	0.81	0.72	0.66	0.63	0.60	0.52	0.48	110	38
	TORQUE (IN LB)			9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	108	50
	OHL (LB)			3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	86	43
4165 DC	INPUT (HP)	5.01	4.22	3.09	2.94	2.73	2.43	2.21	1.97	1.76	1.60	1.44	1.32	1.17	1.08	1.03	0.98	0.86	0.79	207	38
	TORQUE (IN LB)	5600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	196	50
	OHL (LB)	4610	4830	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	181	43
4175 DC	INPUT (HP)	6.80	5.83	4.63	4.41	4.09	3.64	3.31	2.96	2.65	2.40	2.16	1.99	1.76	1.62	1.55	1.46	1.28	1.18	271	38
	TORQUE (IN LB)	21300	21700	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	274	50
	OHL (LB)	6230	6510	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	232	43
4185 DB	INPUT (HP)	11.1	7.74	6.87	6.54	6.06	5.40	4.91	4.39	3.93	3.56	3.20	2.95	2.60	2.40	2.30	2.17	1.90	1.75	363	38
	TORQUE (IN LB)	34700	28600	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	364	50
	OHL (LB)	8360	8750	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	320	43
4190 DA	INPUT (HP)										4.98	4.48	4.12	3.65	3.36	3.22	3.04	2.67	2.45	530	38
	TORQUE (IN LB)										48600	48600	48600	48600	48600	48600	48600	48600	48600	498	50
	OHL (LB)										13250	13250	13250	13250	13250	13250	13250	13250	13250	443	43
4195 DA	INPUT (HP)																		3.13	530	38
	TORQUE (IN LB)																		62500	498	50
	OHL (LB)																		13250	443	43
4195 DB	INPUT (HP)	13.5	13.1	11.7	11.4	10.6	9.64	8.82	7.90	6.88	6.36	5.73	5.27	4.69	4.29	4.11	3.88	3.41		550	38
	TORQUE (IN LB)	42300	48600	59000	60700	60800	62100	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500		518	50
	OHL (LB)	11700	12200	13250	13260	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250		452	43
4205 DA	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4205 DB	INPUT (HP)			12.8	13.0				9.23		7.04	6.68		5.16	5.00		4.30		3.65	581	38
	TORQUE (IN LB)			64900	68700				72900		68700	72900		68700	72900		68700		72900	553	50
	OHL (LB)			18900	18900				18900		18900	18900		18900	18900		18900		18900		43

NOTES: MOTOR HP shown in the darker shaded areas is to overcome breakaway torque requirements in cold temperature or high inertia applications. It is recommended that a torque limiting device be used to protect the unit or driven machine.

*With the exception of units marked, all ratio combinations are shown in the same orders as the frame size designations.

†Please refer to interchange table inside back cover.



DOUBLE REDUCTION REDUCERS

INPUT SPEED 1750 RPM

FRAME SIZE	RATIO	[17x6]	[11x11]	[15x11]	[29x6]	[17x11]	[35x6]	[21x11]	[43x6]	[17x17]	[29x11]	[59x6]	[35x11]	[29x15]	[43x11]	[29x17]	[87x6]	[35x17]	[59x11]	WT. [LB]	DIM [PAGE]
		102	121	165	174	187	210	231	258	289	319	354	385	435	473	493	522	595	649		
	O/P RPM	17.2	14.5	10.6	10.1	9.36	8.33	7.58	6.78	6.06	5.49	4.94	4.55	4.02	3.70	3.55	3.35	2.94	2.70	TYPE H TYPE V TYPE HF	
4215 DA	INPUT (HP)										8.40	8.81		6.19	6.55	5.43	5.13		4.78	733	38
	TORQUE (IN LB)										82500	95500		82500	95500	82500	82500		95500	689	50
	OHL (LB)										23400	23400		23400	23400	23400	23400		23400		43
4215 DB	INPUT (HP)		16.8	15.9	15.6			11.6	12.1											788	38
	TORQUE (IN LB)		62500	80200	82500			82500	95500											744	50
	OHL (LB)		22200	23400	23400			23400	23400												43
4225 DA	INPUT (HP)													8.93	8.43	7.89	6.82		6.15	849	38
	TORQUE (IN LB)													119000	122000	119000	109000		122000	802	50
	OHL (LB)													27300	27300	27300	27300		27300		43
4225 DB	INPUT (HP)		22.2	20.8	22.4			16.8	15.4		12.2	11.3								942	38
	TORQUE (IN LB)		82500	105000	119000			119000	122000		119000	122000								895	50
	OHL (LB)		23300	25900	26400			26600	26600		26600	26600									43
4235 DA	INPUT (HP)				28.8				19.7		15.7	14.4		11.5	10.8	10.1	8.64		7.86	1239	38
	TORQUE (IN LB)				153000				156000		153000	156000		153000	156000	153000	139000		156000	1135	50
	OHL (LB)				32900				33100		33100	34000		34000	34000	34000	34000		34000		43
4235 DB	INPUT (HP)		25.7	26.5				19.5												1278	38
	TORQUE (IN LB)		95500	134000				139000												1180	50
	OHL (LB)		29100	32300				33100													43
4245 DA	INPUT (HP)								25.3			18.4		13.1	11.9	11.5	11.9		8.71	1456	38
	TORQUE (IN LB)								200000			200000		174000	200000	174000	191000		200000	1140	50
	OHL (LB)								34500			37700		37700	37700	37700	37700		37700		43
4245 DB	INPUT (HP)		33.0	34.0				24.5			17.7										38
	TORQUE (IN LB)		122000	172000				174000			174000										50
	OHL (LB)		32400	34500				34500			35900										43
4255 DA	INPUT (HP)								32.9			24.0		18.6	17.8	16.4	15.5		13.0	2119	38
	TORQUE (IN LB)								260000			260000		248000	260000	248000	248000		260000	1925	50
	OHL (LB)								45000			46300		46300	46300	46300	46300		46300		43
4255 DB	INPUT (HP)		41.9	39.3				35.1			25.4									2231	38
	TORQUE (IN LB)		156000	200000				248000			248000									2040	50
	OHL (LB)		39600	44700				45000			45000										43
4265 DA	INPUT (HP)		53.8	51.1				42.7			34.2			25.1	26.4	22.1			17.1	2571	38
	TORQUE (IN LB)		200000	260000				304000			334000			334000	382000	334000			382000	2505	50
	OHL (LB)		48300	54600				54900			54900			56400	56400	56400			56400		43
4275 DA	INPUT (HP)														35.7				26.1	3456	38
	TORQUE (IN LB)														521000				521000		50
	OHL (LB)														55700				55700		43

NOTES: MOTOR HP shown in the darker shaded areas is to overcome breakaway torque requirements in cold temperature or high inertia applications. It is recommended that a torque limiting device be used to protect the unit or driven machine.

*With the exception of units marked, all ratio combinations are shown in the same orders as the frame size designations.

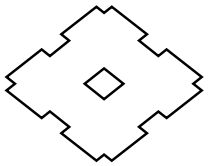
RATING TABLES

DOUBLE REDUCTION REDUCERS — INPUT SPEED 1750 RPM

FRAME SIZE	RATIO	[43x17]	[29x29]	[87x11]	[59x17]	[35x35]	[43x29]	[87x17]	[43x35]	[59x29]	[43x43]	[59x35]	[59x43]	[87x35]	[59x59]	[87x43]	[87x59]	[87x71]	[87x87]	WT. [LB]	DIM [PAGE]
		731	841	957	1003	1225	1247	1479	1505	1711	1849	2065	2537	3045	3481	3741	5133	6177	7569		
	O/P RPM	2.39	2.08	1.83	1.74	1.43	1.40	1.18	1.16	1.02	0.95	0.85	0.69	0.57	0.50	0.47	0.34	0.28	0.23	TYPE H TYPE V TYPE HF	
4075 DA	INPUT (HP)	0.12	0.12			0.12	0.12		0.12		0.12									9	38
	TORQUE (IN LB)	217	217			217	217		217		217									12	50
	OHL (LB)	211	211			211	211		211		211									10	43
4085 DA	INPUT (HP)	0.12	0.12		0.12	0.12	0.12		0.12	0.12	0.12	0.12	0.12							10	38
	TORQUE (IN LB)	434	434		434	434	434		434	434	434	434	434							15	50
	OHL (LB)	397	397		397	397	397		397	397	397	397	397							10	43
4097 DA	INPUT (HP)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12			27	38
	TORQUE (IN LB)	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130			25	50
	OHL (LB)	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750			20	43
4105 DA	INPUT (HP)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12			33	38
	TORQUE (IN LB)	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170			31	50
	OHL (LB)	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210			26	43
4115 DA	INPUT (HP)	0.23	0.20	0.18	0.17	0.14	0.14	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	64	38
	TORQUE (IN LB)	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	61	50
	OHL (LB)	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	55	43
4135 DC	INPUT (HP)	0.35	0.30	0.27	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	117	38
	TORQUE (IN LB)	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	115	50
	OHL (LB)	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	88	43
4145 DB	INPUT (HP)	0.43	0.37	0.33	0.31	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	110	38
	TORQUE (IN LB)	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	108	50
	OHL (LB)	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	86	43
4165 DC	INPUT (HP)	0.70	0.61	0.53	0.51	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	207	38
	TORQUE (IN LB)	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	1560	196	50
	OHL (LB)	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	181	43
4175 DC	INPUT (HP)	1.04	0.91	0.80	0.76	0.62	0.61	0.52	0.51	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	271	38
	TORQUE (IN LB)	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	274	50
	OHL (LB)	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	232	43
4185 DB	INPUT (HP)	1.55	1.35	1.19	1.13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	363	38
	TORQUE (IN LB)	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	364	50
	OHL (LB)	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	320	43
4190 DA	INPUT (HP)	2.17	1.89	1.66	1.58	1.30	1.27	1.07	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	530	38
	TORQUE (IN LB)	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	498	50
	OHL (LB)	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	443	43
4195 DA	INPUT (HP)	2.77	2.41	2.12	2.02	1.66	1.62	1.37	1.34	1.18	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	530	38
	TORQUE (IN LB)	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	498	50
	OHL (LB)	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	443	43
4195 DB	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4205 DA	INPUT (HP)						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00*	2.00	2.00	565	38
	TORQUE (IN LB)						72900	68700	72900	72900	72900	72900	72900	72900	72900	72900	72900	68700	68700	537	50
	OHL (LB)						18900	18900	18900	18900	18900	18900	18900	18900	18900	18900	18900	18900	18900		43
4205 DB	INPUT (HP)	3.23	2.67	2.35	2.35															581	38
	TORQUE (IN LB)	72900	68700	68700	72900															533	50
	OHL (LB)	18900	18900	18900	18900																43

NOTES: MOTOR HP shown in the darker shaded areas is to overcome breakaway torque requirements in cold temperature or high inertia applications. It is recommended that a torque limiting device be used to protect the unit or driven machine.

*With the exception of units marked, all ratio combinations are shown in the same orders as the frame size designations.



DOUBLE REDUCTION REDUCERS

INPUT SPEED 1750 RPM

FRAME SIZE	RATIO	[43x17]	[29x29]	[87x11]	[59x17]	[35x35]	[43x29]	[87x17]	[43x35]	[59x29]	[43x43]	[59x35]	[59x43]	[87x35]	[59x59]	[87x43]	[87x59]	[87x71]	[87x87]	WT. [LB]	DIM [PAGE]
		731	841	957	1003	1225	1247	1479	1505	1711	1849	2065	2537	3045	3481	3741	5133	6177	7569		
	O/P RPM	2.39	2.08	1.83	1.74	1.43	1.40	1.18	1.16	1.02	0.95	0.85	0.69	0.57	0.50	0.47	0.34	0.28	0.23	TYPE H TYPE V TYPE HF	
4215 DA	INPUT (HP)	4.23	3.18	2.80	3.08		2.48	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	733	38
	TORQUE (IN LB)	95500	82500	82500	95500		95500	82500	95500	95500	95500	95500	95500	82500	95500	95500	95500	82500	82500	689	50
	OHL (LB)	23400	23400	23400	23400		23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400		43
4215 DB	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4225 DA	INPUT (HP)	5.44	4.62	3.72	3.96		3.19	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	849	38
	TORQUE (IN LB)	122000	119000	109000	122000		122000	109000	122000	122000	122000	122000	122000	122000	122000	122000	122000	109000	109000	802	50
	OHL (LB)	27300	27300	27300	27300		27300	27300	27300	27300	27300	27300	27300	27300	27300	27300	27300	27300	27300		43
4225 DB	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4235 DA	INPUT (HP)	6.96	5.94	4.72	5.07		4.08	3.04	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00*	3.00*	3.00	3.00	1239	38
	TORQUE (IN LB)	156000	153000	139000	156000		156000	139000	156000	156000	156000	156000	156000	156000	156000	156000	156000	139000	139000	1135	50
	OHL (LB)	34000	34000	34000	34000		34000	34000	34000	34000	34000	34000	34000	34000	34000	34000	34000	34000	34000		43
4235 DB	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4245 DA	INPUT (HP)	8.92	6.71	6.52	6.50		5.23	4.21	3.74	3.29	3.07	3.00	3.00	3.00	3.00	3.00*	3.00*	3.00	3.00	1456	38
	TORQUE (IN LB)	200000	174000	191000	200000		200000	191000	200000	200000	200000	200000	200000	191000	200000	200000	200000	191000	191000	1140	50
	OHL (LB)	37700	37700	37700	37700		37700	37700	37700	37700	37700	37700	37700	37700	37700	37700	37700	37700	37700		43
4245 DB	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4255 DA	INPUT (HP)	11.5	9.63	8.47	8.39		6.75	5.46	5.59	5.00	5.00	5.00	5.00	5.00	5.00	5.00*	5.00*	5.00	5.00	2119	38
	TORQUE (IN LB)	260000	248000	248000	260000		260000	248000	260000	260000	260000	260000	260000	248000	260000	260000	260000	248000	248000	1925	50
	OHL (LB)	46300	46300	46300	46300		46300	46300	46300	46300	46300	46300	46300	46300	46300	46300	46300	46300	46300		43
4255 DB	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4265 DA	INPUT (HP)	17.0	13.0	11.4	12.4		9.98	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50*	7.50*	7.50	7.50	2671	38
	TORQUE (IN LB)	382000	334000	334000	382000		382000	334000	382000	382000	382000	382000	382000	334000	382000	382000	382000	334000	334000	2505	50
	OHL (LB)	56400	56400	56400	56400		56400	56400	56400	56400	56400	56400	56400	56400	56400	56400	56400	56400	56400		43
4275 DA	INPUT (HP)	23.1			16.8		13.5		11.2	10.0	10.0	10.0	10.0		10.0	10.0*	10.0*			3456	38
	TORQUE (IN LB)	521000			521000		521000		521000	521000	521000	521000	521000		521000	521000	521000				50
	OHL (LB)	55700			55700		55700		55700	55700	55700	55700	55700		55700	55700	55700				43

NOTES: MOTOR HP shown in the darker shaded areas is to overcome breakaway torque requirements in cold temperature or high inertia applications. It is recommended that a torque limiting device be used to protect the unit or driven machine.

*With the exception of units marked, all ratio combinations are shown in the same orders as the frame size designations.

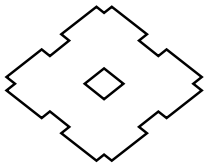
RATING TABLES

DOUBLE REDUCTION REDUCERS — INPUT SPEED 1165 RPM

FRAME SIZE	RATIO	[17x6]	[11x11]	[15x11]	[29x6]	[17x11]	[35x6]	[21x11]	[43x6]	[17x17]	[29x11]	[59x6]	[35x11]	[29x15]	[43x11]	[29x17]	[87x6]	[35x17]	[59x11]	WT. [LB]	DIM [PAGE]
		102	121	165	174	187	210	231	258	289	319	354	385	435	473	493	522	595	649		
	O/P RPM	11.4	9.63	7.06	6.70	6.23	5.55	5.04	4.52	4.03	3.65	3.29	3.03	2.68	2.46	2.36	2.23	1.96	1.80	TYPE H TYPE V TYPE HF	
4075 DA	INPUT (HP)		0.12	0.12		0.12		0.12		0.12	0.12		0.12		0.12	0.12		0.12		9	38
	TORQUE (IN LB)		217	217		217		217		217	217		217		217	217		217		12	50
	OHL (LB)		211	211		211		211		211	211		211		211	211		211		10	43
4085 DA	INPUT (HP)		0.12	0.12		0.12		0.12		0.12	0.12		0.12		0.12	0.12		0.12	0.12	10	38
	TORQUE (IN LB)		434	434		434		434		434	434		434		434	434		434	434	15	50
	OHL (LB)		397	397		397		397		397	397		397		397	397		397	397	10	43
4097 DA	INPUT (HP)	0.24	0.20	0.15	0.14	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	27	38
	TORQUE (IN LB)	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	25	50
	OHL (LB)	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	20	43
4105 DA	INPUT (HP)	0.46	0.39	0.28	0.27	0.25	0.22	0.20	0.18	0.16	0.15	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	33	38
	TORQUE (IN LB)	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	31	50
	OHL (LB)	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	26	43
4115 DB	INPUT (HP)	1.11	0.93	0.68	0.65	0.60	0.54	0.49	0.44	0.39	0.35	0.32	0.29	0.26	0.24	0.23	0.22	0.19	0.17	64	38
	TORQUE (IN LB)	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	61	50
	OHL (LB)	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	55	43
4135 DC	INPUT (HP)	1.65	1.39	1.02	0.97	0.90	0.80	0.73	0.65	0.58	0.53	0.48	0.44	0.39	0.36	0.34	0.32	0.28	0.26	117	38
	TORQUE (IN LB)	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	115	50
	OHL (LB)	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	88	43
4145 DB	INPUT (HP)			1.25	1.19	1.10	0.99	0.89	0.80	0.71	0.65	0.58	0.54	0.50	0.50	0.50	0.50	0.50	0.50	110	38
	TORQUE (IN LB)			9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	108	50
	OHL (LB)			3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	86	43
4165 DC	INPUT (HP)	3.30	2.79	2.04	1.94	1.80	1.61	1.46	1.31	1.17	1.06	0.95	0.88	0.78	0.71	0.68	0.65	0.57	0.52	207	38
	TORQUE (IN LB)	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	196	50
	OHL (LB)	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	181	43
4175 DC	INPUT (HP)	4.99	3.89	3.09	2.93	2.72	2.43	2.20	1.97	1.76	1.60	1.44	1.32	1.17	1.08	1.03	0.98	0.86	0.78	271	38
	TORQUE (IN LB)	23400	21700	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	274	50
	OHL (LB)	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	232	43
4185 DB	INPUT (HP)	7.39	5.13	4.57	4.33	4.03	3.59	3.27	2.92	2.61	2.37	2.13	1.96	1.73	1.60	1.53	1.45	1.27	1.16	363	38
	TORQUE (IN LB)	34700	28600	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	364	50
	OHL (LB)	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	320	43
4190 DA	INPUT (HP)				5.24	4.87	4.34	3.92	3.53	3.15	3.31	2.99	2.75	2.42	2.23	2.14	2.02	1.78	1.63	530	38
	TORQUE (IN LB)				41900	41900	41900	41900	41900	41900	48600	48600	48600	48600	48600	48600	48600	48600	48600	498	50
	OHL (LB)				13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	443	43
4195 DA	INPUT (HP)																		2.09	530	38
	TORQUE (IN LB)																		62500	498	50
	OHL (LB)																		13250	443	43
4195 DB	INPUT (HP)	12.9	8.72	7.77	7.80	7.06	6.46	5.87	5.26	4.57	4.23	3.81	3.51	3.11	2.85	2.74	2.58	2.27		550	38
	TORQUE (IN LB)	60800	48600	59000	62500	60800	62500	62500	62500	60800	62500	62500	62500	62500	62500	62500	62500	62500		518	50
	OHL (LB)	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250		452	43
4205 DA	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4205 DB	INPUT (HP)			8.50	8.53			5.84	5.24		4.65	4.45		3.41	3.33	3.01	2.84		2.43	581	38
	TORQUE (IN LB)			64900	68700			62500	62500		68700	72900		68700	72900	68700	68700		72900	553	50
	OHL (LB)			18900	18900			18900	18900		18900	18900		18900	18900	18900	18900		18900		43

NOTES: MOTOR HP shown in the darker shaded areas is to overcome breakaway torque requirements in cold temperature or high inertia applications. It is recommended that a torque limiting device be used to protect the unit or driven machine.

*With the exception of units marked, all ratio combinations are shown in the same orders as the frame size designations.



DOUBLE REDUCTION REDUCERS

INPUT SPEED 1165 RPM

FRAME SIZE *	RATIO	[17x6]	[11x11]	[15x11]	[29x6]	[17x11]	[35x6]	[21x11]	[43x6]	[17x17]	[29x11]	[59x6]	[35x11]	[29x15]	[43x11]	[29x17]	[87x6]	[35x17]	[59x11]	WT. [LB]	DIM [PAGE]
		102	121	165	174	187	210	231	258	289	319	354	385	435	473	493	522	595	649		
	O/P RPM	11.4	9.63	7.06	6.70	6.23	5.55	5.04	4.52	4.03	3.65	3.29	3.03	2.68	2.46	2.36	2.23	1.96	1.80	TYPE H TYPE V TYPE HF	
4215 DA	INPUT (HP)										5.58	5.03		4.10	4.36	3.61	3.41		3.19	733	38
	TORQUE (IN LB)										82500	82500		82500	95500	82500	82500		95500	689	50
	OHL (LB)										23400	23400		23400	23400	23400	23400		23400		43
4215 DB	INPUT (HP)		13.2	10.5	10.2			7.71	6.91											788	38
	TORQUE (IN LB)		62500	80200	82500			82500	82500											744	50
	OHL (LB)		23400	23400	23400			23400	23400												43
4225 DA	INPUT (HP)													5.91	5.57	5.21	4.51		4.06	849	38
	TORQUE (IN LB)													119000	122000	119000	109000		122000	802	50
	OHL (LB)													26600	26600	26600	26600		26600		43
4225 DB	INPUT (HP)		14.7	13.7	14.8			11.1	10.2		8.06	7.45								942	38
	TORQUE (IN LB)		82500	105000	119000			119000	122000		119000	122000								895	50
	OHL (LB)		26600	26900	27000			27300	27300		27300	27300									43
4235 DA	INPUT (HP)				19.0				13.2		10.4	9.58		7.60	7.16	6.70	5.75		5.24	1239	38
	TORQUE (IN LB)				153000				156000		153000	156000		153000	156000	153000	139000		156000	1135	50
	OHL (LB)				33600				34000		34000	34000		34000	34000	34000	34000		34000		43
4235 DB	INPUT (HP)		17.1	17.5				13.0													
	TORQUE (IN LB)		95500	134000				139000													
	OHL (LB)		33100	33500				34000													
4245 DA	INPUT (HP)								14.7			10.6		8.65	9.18	7.61	7.90		6.72	1456	38
	TORQUE (IN LB)								174000			174000		174000	200000	174000	191000		200000	1140	50
	OHL (LB)								37700			37700		37700	37700	37700	33700		33700		43
4245 DB	INPUT (HP)		2.18	22.5				16.3			11.8									1516	38
	TORQUE (IN LB)		122000	172000				174000			174000									1200	50
	OHL (LB)		34700	36400				37700			37700										43
4255 DA	INPUT (HP)								16.8			12.2			11.9	10.9	10.3		8.68	2119	38
	TORQUE (IN LB)								260000			260000			260000	248000	248000		260000	1925	50
	OHL (LB)								46300			46300			46300	46300	46300		46300		43
4255 DB	INPUT (HP)		27.9	26.2				23.2			16.8									2331	38
	TORQUE (IN LB)		156000	200000				248000			248000									2040	50
	OHL (LB)		44800	45600				46300			46300										43
4265 DA	INPUT (HP)		35.7	34.0				28.4			22.6			16.7	17.4	14.6			12.7	2671	38
	TORQUE (IN LB)		200000	260000				304000			334000			334000	382000	334000			382000	2505	50
	OHL (LB)		54700	55700				56400			56400			56400	56400	56400			56400		43
4275 DA	INPUT (HP)														23.8				17.4	3456	38
	TORQUE (IN LB)														521000				521000		50
	OHL (LB)														55700				55700		43

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*With the exception of units marked, all ratio combinations are shown in the same orders as the frame size designations.

RATING TABLES

DOUBLE REDUCTION REDUCERS — INPUT SPEED 1165 RPM

FRAME SIZE *	RATIO	[43x17]	[29x29]	[87x11]	[59x17]	[35x35]	[43x29]	[87x17]	[43x35]	[59x29]	[43x43]	[59x35]	[59x43]	[87x35]	[59x59]	[87x43]	[87x59]	[87x71]	[87x87]	WT. [LB]	DIM [PAGE]
		731	841	957	1003	1225	1247	1479	1505	1711	1849	2065	2537	3045	3481	3741	5133	6177	7569		
	O/P RPM	1.59	1.39	1.22	1.16	0.95	0.93	0.79	0.77	0.68	0.63	0.56	0.46	0.38	0.33	0.31	0.23	0.19	0.15	TYPE H TYPE V TYPE HF	
4075 DA	INPUT (HP)	0.12	0.12			0.12	0.12		0.12		0.12									9	38
	TORQUE (IN LB)	217	217			217	217		217		217									12	50
	OHL (LB)	211	211			211	211		211		211									10	43
4085 DA	INPUT (HP)	0.12	0.12		0.12	0.12	0.12		0.12	0.12	0.12	0.12	0.12							10	38
	TORQUE (IN LB)	434	434		434	434	434		434	434	434	434	434							15	50
	OHL (LB)	397	397		397	397	397		397	397	397	397	397							10	43
4097 DA	INPUT (HP)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12			27	38
	TORQUE (IN LB)	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130			25	50
	OHL (LB)	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750			20	43
4105 DA	INPUT (HP)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12			33	38
	TORQUE (IN LB)	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170			31	50
	OHL (LB)	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210			26	43
4115 DB	INPUT (HP)	0.15	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	64	38
	TORQUE (IN LB)	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	61	50
	OHL (LB)	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	55	43
4135 DC	INPUT (HP)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	117	38
	TORQUE (IN LB)	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	7810	115	50
	OHL (LB)	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	3310	88	43
4145 DB	INPUT (HP)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	110	38
	TORQUE (IN LB)	9550	9550	9550	9550	9550	9550	9550	9550	9550	9550	9500	9500	9500	9500	9500	9500	9500	9500	108	50
	OHL (LB)	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	86	43
4165 DC	INPUT (HP)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	207	38
	TORQUE (IN LB)	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	15600	1560	196	50
	OHL (LB)	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	4960	181	43
4175 DC	INPUT (HP)	0.70	0.61	0.53	0.51	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			271	38
	TORQUE (IN LB)	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	274	50
	OHL (LB)	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	6630	232	43
4185 DB	INPUT (HP)	1.03	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	363	38
	TORQUE (IN LB)	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	34700	364	50
	OHL (LB)	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	9380	320	43
4190 DA	INPUT (HP)	1.45	1.26	1.10	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	530	38
	TORQUE (IN LB)	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	48600	498	50
	OHL (LB)	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	443	43
4195 DA	INPUT (HP)	1.84	1.61	1.41	1.34	1.10	1.08	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	530	38
	TORQUE (IN LB)	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	62500	498	50
	OHL (LB)	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	13250	443	43
4195 DB	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4205 DA	INPUT (HP)						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00*	2.00	2.00	565	38
	TORQUE (IN LB)						72900	68700	72900	72900	72900	72900	72900	72900	72900	72900	72900	68700	68700	537	50
	OHL (LB)						18900	18900	18900	18900	18900	18900	18900	18900	18900	18900	18900	18900	18900		43
4205 DB	INPUT (HP)	2.15	2.00	2.00	2.00															581	38
	TORQUE (IN LB)	72900	68700	68700	72900															533	50
	OHL (LB)	18900	18900	18900	18900																43

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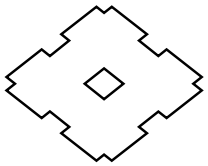


DOUBLE REDUCTION REDUCERS

INPUT SPEED 1165 RPM

FRAME SIZE *	RATIO	[43x17]	[29x29]	[87x11]	[59x17]	[35x35]	[43x29]	[87x17]	[43x35]	[59x29]	[43x43]	[59x35]	[59x43]	[87x35]	[59x59]	[87x43]	[87x59]	[87x71]	[87x87]	WT. [LB]	DIM [PAGE]
		731	841	957	1003	1225	1247	1479	1505	1711	1849	2065	2537	3045	3481	3741	5133	6177	7569		
	O/P RPM	1.59	1.39	1.22	1.16	0.95	0.93	0.79	0.77	0.68	0.63	0.56	0.46	0.38	0.33	0.31	0.23	0.19	0.15	TYPE H TYPE V TYPE HF	
4215 DA	INPUT (HP)	2.82	2.13	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00*	733	38
	TORQUE (IN LB)	95500	82500	82500	95500		95500	82500	95500	95500	95000	95500	95500	82500	95500	95500	95500	82500	82500	689	50
	OHL (LB)	23400	23400	23400	23400		23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400	23400		43
4215 DB	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4225 DA	INPUT (HP)	3.60	3.06	3.00	3.00		3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00*	3.00*	3.00	3.00	849	38
	TORQUE (IN LB)	122000	119000	109000	122000		122000	109000	122000	122000	122000	122000	122000	122000	122000	122000	122000	109000	109000	802	50
	OHL (LB)	27300	27300	27300	27300		27300	27300	27300	27300	27300	27300	27300	27300	27300	27300	27300	27300	27300		43
4225 DB	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4235 DA	INPUT (HP)	4.63	3.93	3.14	3.38		3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00*	3.00*	3.00	3.00	1239	38
	TORQUE (IN LB)	156000	153000	139000	156000		156000	139000	156000	156000	156000	156000	156000	156000	156000	156000	156000	139000	139000	1135	50
	OHL (LB)	34000	34000	34000	34000		34000	34000	34000	34000	34000	34000	34000	34000	34000	34000	34000	34000	34000		43
4235 DB	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4245 DA	INPUT (HP)	5.94	4.49	4.31	4.33		3.47	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00*	3.00*	3.00	3.00	1456	38
	TORQUE (IN LB)	200000	174000	191000	200000		200000	191000	200000	200000	200000	200000	200000	191000	200000	200000	200000	191000	191000	1140	50
	OHL (LB)	37700	37700	37700	37700		37700	37700	37700	37700	37700	37700	37700	37700	37700	37700	37700	37700	37700		43
4245 DB	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4255 DA	INPUT (HP)	7.67	6.37	5.60	5.59		5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00*	5.00*	5.00	5.00	2119	38
	TORQUE (IN LB)	260000	248000	248000	260000		260000	248000	260000	260000	260000	260000	260000	260000	260000	260000	260000	248000	248000	1925	50
	OHL (LB)	46300	46300	46300	46300		46300	46300	46300	46300	46300	46300	46300	46300	46300	46300	46300	46300	46300		43
4255 DB	INPUT (HP)																				
	TORQUE (IN LB)																				
	OHL (LB)																				
4265 DA	INPUT (HP)	11.3	8.58	7.54	8.23		7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50*	7.50*	7.50	7.50	2671	38
	TORQUE (IN LB)	382000	334000	334000	382000		382000	334000	382000	382000	382000	382000	382000	334000	382000	382000	382000	334000	334000	2505	50
	OHL (LB)	56400	56400	56400	56400		56400	56400	56400	56400	56400	56400	56400	56400	56400	56400	56400	56400	56400		43
4275 DA	INPUT (HP)	15.4			11.2		10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0*	10.0*			3456	38
	TORQUE (IN LB)	521000			521000		521000		521000	521000	521000	521000	521000		521000	521000	521000				50
	OHL (LB)	55700			55700		55700		55700	55700	55700	55700	55700		55700	55700	55700				43

NOTES: MOTOR HP shown in the darker shaded areas is to overcome breakaway torque requirements in cold temperature or high inertia applications. It is recommended that a torque limiting device be used to protect the unit or driven machine.

*With the exception of units marked, all ratio combinations are shown in the same orders as the frame size designations.

STANDARD RATIO COMBINATIONS

MULTIPLE REDUCTION UNITS

DOUBLE REDUCTION

Combination	Total Ratio	Combination	Total Ratio	Combination	Total Ratio	Combination	Total Ratio
6 x 17	102	6 x 59	354	11 x 87	957	43 x 59	2537
11 x 11	121	11 x 35	385	17 x 59	1003	51 x 51	2601
6 x 21	126	15 x 29	435	35 x 35	1225	35 x 87	3045
11 x 15	165	11 x 43	473	29 x 43	1247	59 x 59	3481
6 x 29	174	17 x 29	493	17 x 87	1479	43 x 87	3741
11 x 17	187	6 x 87	522	35 x 43	1505	59 x 87	5133
6 x 35	210	21 x 25	525	29 x 59	1711	71 x 87	6177
11 x 21	231	17 x 35	595	21 x 87	1827	87 x 87	7569
6 x 43	258	11 x 59	649	43 x 43	1849		
17 x 17	289	17 x 43	731	35 x 59	2065		
11 x 29	319	29 x 29	841	43 x 51	2193		

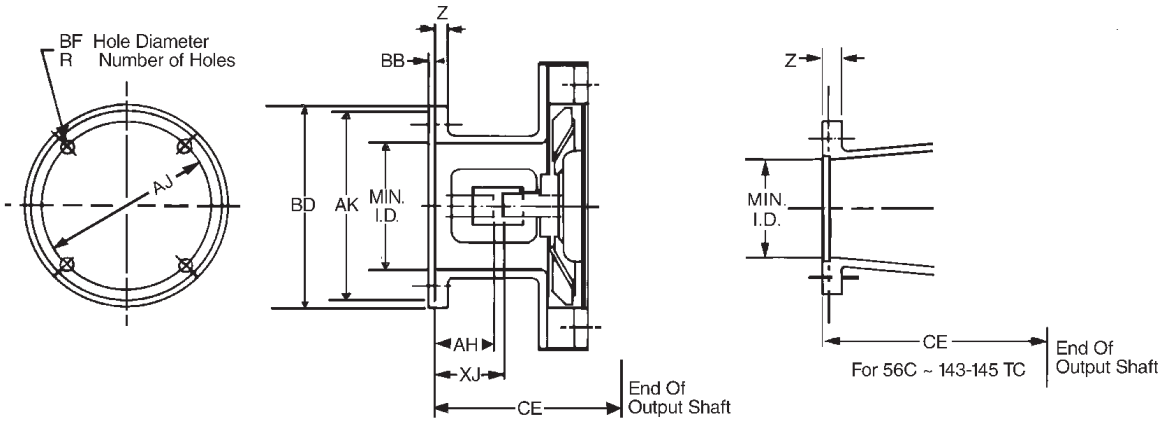
TRIPLE REDUCTION

Combination	Total Ratio	Combination	Total Ratio	Combination	Total Ratio	Combination	Total Ratio
6 x 11 x 15	990	6 x 29 x 43	7482	17 x 17 x 87	25143	17 x 59 x 87	87261
6 x 11 x 17	1122	11 x 17 x 43	8041	17 x 35 x 43	25585	29 x 35 x 87	88305
11 x 11 x 11	1331	17 x 17 x 29	8381	11 x 29 x 87	27753	35 x 43 x 59	88795
6 x 11 x 21	1386	6 x 17 x 87	8874	11 x 43 x 59	27907	29 x 59 x 59	100949
6 x 17 x 17	1734	6 x 45 x 43	9030	17 x 29 x 59	29087	35 x 35 x 87	106575
11 x 11 x 15	1815	11 x 29 x 29	9251	29 x 29 x 35	29435	29 x 43 x 87	108489
6 x 11 x 29	1914	17 x 17 x 35	10115	17 x 43 x 43	31433	43 x 43 x 59	109091
11 x 11 x 17	2057	6 x 29 x 59	10266	11 x 35 x 87	33495	35 x 59 x 59	121835
6 x 17 x 21	2142	11 x 11 x 87	10527	17 x 35 x 59	35105	17 x 87 x 87	128673
6 x 11 x 35	2310	11 x 17 x 59	11033	29 x 35 x 35	35525	35 x 43 x 87	130935
11 x 11 x 21	2541	6 x 43 x 43	11094	29 x 29 x 43	36163	29 x 59 x 87	148857
6 x 11 x 43	2838	11 x 29 x 35	11165	11 x 59 x 59	38291	43 x 59 x 59	149683
6 x 17 x 29	2958	6 x 35 x 59	12390	11 x 43 x 87	41151	43 x 43 x 87	160863
11 x 17 x 17	3179	17 x 17 x 43	12427	35 x 35 x 35	42875	35 x 59 x 87	179655
11 x 11 x 29	3509	11 x 35 x 35	13475	17 x 29 x 87	42891	59 x 59 x 59	205379
6 x 17 x 35	3570	11 x 29 x 43	13717	17 x 43 x 59	43129	29 x 87 x 87	219501
6 x 11 x 59	3894	17 x 29 x 29	14297	29 x 35 x 43	43645	43 x 59 x 87	220719
11 x 17 x 21	3927	6 x 29 x 87	15138	29 x 29 x 59	49619	35 x 87 x 87	264915
11 x 11 x 35	4235	6 x 43 x 59	15222	17 x 35 x 87	51765	59 x 59 x 87	302847
6 x 17 x 43	4386	11 x 17 x 87	16269	35 x 35 x 43	52675	43 x 87 x 87	325467
17 x 17 x 17	4913	11 x 35 x 43	16555	29 x 43 x 43	53621	59 x 87 x 87	446571
6 x 29 x 29	5046	17 x 17 x 59	17051	11 x 59 x 87	56463	87 x 87 x 87	658503
11 x 11 x 43	5203	17 x 29 x 35	17255	17 x 59 x 59	59177		
11 x 17 x 29	5423	6 x 35 x 87	18270	29 x 35 x 59	59885		
6 x 11 x 87	5742	11 x 29 x 59	18821	17 x 43 x 87	63597		
6 x 17 x 59	6018	11 x 43 x 43	20339	35 x 43 x 43	64715		
17 x 17 x 21	6069	17 x 35 x 35	20825	35 x 35 x 59	72275		
6 x 29 x 35	6090	17 x 29 x 43	21199	29 x 29 x 87	73167		
11 x 17 x 35	6545	6 x 43 x 87	22446	29 x 43 x 59	73573		
11 x 11 x 59	7139	11 x 35 x 59	22715	43 x 43 x 43	79507		
6 x 35 x 35	7350	29 x 29 x 29	24389	11 x 87 x 87	83259		

NOTE: 1) Above ratios are not available in all frame sizes, please consult factory.
2) Please consult factory for additional ratios.
3) Other double & triple ratios are available, consult factory for information.

“C” FACE ADAPTOR DIMENSIONS

TYPES HJ, HFJ, VJ, AND VFJ ADAPTORS



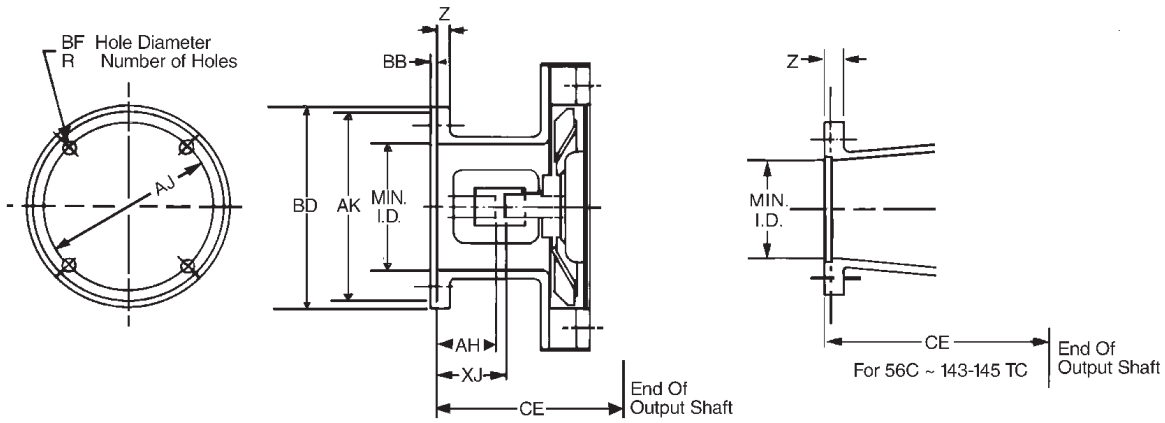
NEMA FRAME NO.	AJ	AK	BD	BB	BF	R
42C – 48C	3.75	3.000	4.33	0	0.28	4
56C-145TC	5.88	4.500	6.69	0	0.43	4
182-256TC	7.25	8.500	8.98	0.22	0.59	4
284-286TC	9.00	10.500	11.10	0.22	0.59	4
324-326TC	11.00	12.500	13.86	0.22	0.71	4
364-405TSC	11.00	12.500	13.86	0.22	0.71	8

FRAME SIZE	CE	XJ	Z	MIN. I.D.	EST. WT. LBS.			CE	XJ	Z	MIN. I.D.	EST. WT. LBS.		
					HJ	VJ	HFJ VFJ					HJ	VJ	HFJ VFJ
	MOTOR FRAME 42C							MOTOR FRAME 48C						
4075	7.49	1.78	0.47	2.44	9	11	9	7.87	2.16	0.47	2.44	9	12	9
4085	7.72	1.78	0.47	2.44	9	14	10	8.10	2.16	0.47	2.44	9	14	11
4090, 4095, 4097	9.73	1.78	0.47	2.44	30	25	22	10.11	2.16	0.47	2.44	30	25	22
4100 or 4105	—	—	—	—	—	—	—	10.35	2.16	0.47	2.44	34	30	26
4075DA	8.79	1.78	0.47	2.44	13	15	14	9.17	2.16	0.47	2.44	13	15	14
4085DA	9.02	1.78	0.47	2.44	14	18	14	9.40	2.16	0.47	2.44	14	18	14
4097DA	11.35	1.78	0.47	2.44	31	53	24	11.73	2.16	0.47	2.44	31	53	24
4105DA	11.90	1.78	0.47	2.44	37	59	30	12.28	2.16	0.47	2.44	37	59	30
4115DB	14.06	1.78	0.47	2.44	69	69	60	14.44	2.16	0.47	2.44	69	69	61
4135DC	—	—	—	—	—	—	—	16.69	2.16	0.47	2.44	122	120	94
4145DB	16.86	1.78	0.47	2.44	116	113	91	17.24	2.16	0.47	2.44	116	114	92
	MOTOR FRAME 56-145TC							MOTOR FRAME 182-184TC						
4075	8.27	2.56	0.47	3.15	11	12	11	—	—	—	—	—	—	—
4085	8.50	2.56	0.47	3.15	11	15	12	—	—	—	—	—	—	—
4090, 4095, 4097	10.57	2.62	0.47	4.21	32	27	24	—	—	—	—	—	—	—
4100 or 4105	10.81	2.62	0.47	4.21	36	32	28	11.31	3.12	0.47	5.43	*	35	32
410H	10.81	2.62	0.47	4.21	38	32	28	11.31	3.12	0.47	5.43	42	35	32
4110 or 4115	12.81	2.62	0.47	4.21	62	60	53	13.57	3.37	0.47	5.43	66	64	57
4125	12.81	2.62	0.47	4.21	65	60	53	13.57	3.37	0.47	5.43	69	64	57
4130 or 4135	15.26	2.62	0.47	4.21	107	105	92	16.01	3.37	0.47	5.43	111	108	95
4145	16.04	2.62	0.47	4.21	109	107	94	16.80	3.37	0.47	5.43	113	111	97
4155	16.04	2.62	0.47	4.21	114	107	94	16.80	3.37	0.47	5.43	118	111	97
4160 or 4165	18.88	2.62	0.47	4.21	227	216	187	19.63	3.37	0.57	5.71	231	220	192
416H	18.88	2.62	0.47	4.21	241	216	187	19.63	3.37	0.57	5.71	245	220	192
4170 or 4175	—	—	—	—	—	—	—	22.15	3.37	0.57	5.71	303	305	250
4180 or 4185	—	—	—	—	—	—	—	24.24	3.49	0.57	5.71	379	379	334

*NOTE: 1) HJ4105 - Motor 182TC combination consult factory. Center height of 4105 is less than half of “BD” dim.
2) Above dimensions are for reference purposes only, consult factory for certified dimensions.

“C” FACE ADAPTOR DIMENSIONS

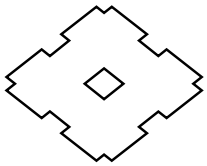
TYPES HJ, HFJ, VJ, AND VFJ ADAPTORS



NEMA FRAME NO.	AJ	AK	BD	BB	BF	R
42C – 48C	3.75	3.000	4.33	0	0.28	4
56C-145TC	5.88	4.500	6.69	0	0.43	4
182-256TC	7.25	8.500	8.98	0.22	0.59	4
284-286TC	9.00	10.500	11.10	0.22	0.59	4
324-326TC	11.00	12.500	13.86	0.22	0.71	4
364-405TSC	11.00	12.500	13.86	0.22	0.71	8

FRAME SIZE	CE	XJ	Z	MIN. I.D.	EST. WT. LBS.			CE	XJ	Z	MIN. I.D.	EST. WT. LBS.		
					HJ	VJ	HFJ VFJ					HJ	VJ	HFJ VFJ
	MOTOR FRAME 56-145TC							MOTOR FRAME 182-184TC						
4097DA	12.13	2.56	0.47	3.15	32	54	26	—	—	—	—	—	—	—
4105DA	12.68	2.56	0.47	3.15	38	60	32	—	—	—	—	—	—	—
4115DB	14.90	2.62	0.47	4.21	71	71	62	—	—	—	—	—	—	—
4135DC	17.15	2.62	0.47	4.21	124	122	95	—	—	—	—	—	—	—
4145DB	17.70	2.62	0.47	4.21	118	115	93	—	—	—	—	—	—	—
4165DC	20.81	2.62	0.47	4.21	217	208	190	21.56	3.37	0.47	5.43	221	212	194
4175DC	22.66	2.62	0.47	4.21	280	285	241	23.41	3.37	0.47	5.43	284	289	245
4185DB	25.33	2.62	0.47	4.21	376	387	332	26.09	3.37	0.47	5.43	380	391	336
4190DA or 4195DA	27.38	2.62	0.47	4.21	541	514	452	27.89	3.37	0.47	5.43	545	518	456
4195DB	28.33	2.62	0.47	4.21	552	541	464	29.08	3.37	0.47	5.43	567	545	468
4205DA	29.00	2.62	0.47	4.21	583	543		29.75	3.37	0.47	5.43	587	547	
4205DB	30.37	2.62	0.47	4.21	614	581		31.13	3.37	0.47	5.43	618	585	
4215DA	31.40	2.62	0.47	4.21	793	746		32.15	3.37	0.47	5.43	796	750	
4215DB	33.33	2.62	0.47	4.21	871	824		34.08	3.37	0.57	5.71	875	829	
4225DA	33.05	2.62	0.47	4.21	958	912		33.80	3.37	0.47	5.43	962	916	
4225DB	—	—	—	—	—	—	—	37.23	3.37	0.57	5.71	1088	1041	
4235DA	37.38	2.62	0.47	4.21	1250	1166		38.13	3.37	0.57	5.71	1254	1171	
4235DB	—	—	—	—	—	—	—	40.42	3.49	0.57	5.71	1331	1247	
4245DA	38.88	2.62	0.47	4.21	1488	1373		39.63	3.37	0.57	5.71	1493	1378	
4245DB	—	—	—	—	—	—	—	41.88	3.49	0.57	5.71	1560	1444	
4255DA	—	—	—	—	—	—	—	49.93	3.37	0.57	5.71	2165	2078	

*NOTE: HJ4105 - Motor 182TC combination consult factory. Center height of 4105 is less than half of “BD” dim.

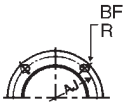


FRAME SIZE	CE	XJ	Z	MIN. I.D.	EST. WT. LBS.			CE	XJ	Z	MIN. I.D.	EST. WT. LBS.		
					HJ	VJ	HFJ VFJ					HJ	VJ	HFJ VFJ
	MOTOR FRAME 213-215TC							MOTOR FRAME 254-256TC						
4125	14.19	3.99	1.09	5.43	75	70	63	—	—	—	—	—	—	—
4130 or 4135	16.63	3.99	1.09	5.43	117	115	101	17.39	4.75	0.57	5.08	118	116	102
4145	17.42	3.99	1.09	5.43	119	117	104	18.18	4.75	0.57	5.08	120	118	105
4155	17.42	3.99	1.09	5.43	124	117	104	18.18	4.75	0.57	5.08	120	118	105
4160 or 4165	20.25	3.99	1.20	5.71	237	226	198	21.01	4.75	0.57	5.71	234	223	194
416H	20.25	3.99	1.20	5.71	251	226	198	21.01	4.75	0.57	5.71	234	223	194
4170 or 4175	22.77	3.99	1.20	5.71	3.09	311	256	23.53	4.75	0.57	5.71	305	307	252
4180 or 4185	24.74	3.99	1.07	5.71	384	384	340	25.50	4.75	0.57	5.71	392	392	348
4190 or 4195	28.53	4.12	0.57	5.71	599	566	500	29.16	4.75	0.57	5.71	592	559	493
4205	30.81	4.12	0.57	5.91	626	609		31.44	4.75	0.57	5.91	631	613	
4215	—	—	—	—	—	—	—	32.63	4.75	0.57	5.91	794	781	
4225	—	—	—	—	—	—	—	34.36	4.75	0.57	5.51	992	977	
4185DB	26.71	3.99	1.09	5.43	386	397	343	27.47	4.75	0.57	5.08	387	398	344
4195DB	29.70	3.99	1.09	5.43	573	551	474	30.46	4.75	0.57	5.08	574	552	475
4205DB	31.75	3.99	1.09	5.43	624	591		32.51	4.75	0.57	5.08	625	592	
4215DA	32.77	3.99	1.09	5.43	803	756		33.53	4.75	0.57	5.08	804	757	
4215DB	34.70	3.99	1.20	5.71	881	835		35.46	4.75	0.57	5.71	878	831	
4225DA	34.43	3.99	1.09	5.43	968	922		35.19	4.75	0.57	5.08	969	923	
4225DB	37.85	3.99	1.20	5.71	1094	1047		38.61	4.75	0.57	5.71	1090	1043	
4235DA	38.76	3.99	1.20	5.71	1261	1177		39.52	4.75	0.57	5.71	1257	1173	
4235DB	40.92	3.99	1.07	5.71	1336	1253		41.68	4.75	0.57	5.71	1345	1261	
4245DA	40.25	3.99	1.20	5.71	1499	1384		41.01	4.75	0.57	5.71	1495	1380	
4245DB	42.38	3.99	1.07	5.71	1566	1449		43.14	4.75	0.57	5.71	1574	1458	
4255DA	46.55	3.99	1.20	5.71	2271	2084		47.31	4.75	0.57	5.71	2267	2080	
4255DB	48.72	4.12	0.57	5.71	2462	2259		49.36	4.75	0.57	5.71	2455	2252	
4265DA	53.06	4.12	0.57	5.71	3025	2793		53.59	4.75	0.57	5.71	3018	2786	
4275DA	63.33	4.12	0.57	5.71	5538	5935		63.96	4.75	0.57	5.71	5531	5928	
	MOTOR FRAME 284-286TC							MOTOR FRAME 324-326TC						
416H	21.70	5.44	0.57	7.87	241	216	187	—	—	—	—	—	—	—
4170 or 4175	24.16	5.38	0.57	7.87	316	318	263	25.28	6.50	0.57	—	320	322	267
4180 or 4185	26.13	5.38	0.57	7.87	387	387	343	27.25	6.50	0.57	7.87	391	391	347
4190 or 4195	29.79	5.38	0.57	7.87	601	568	502	30.91	6.50	0.57	7.87	626	593	527
4205	32.07	5.38	0.57	6.89	635	617		33.19	6.50	0.57	8.27	659	639	
4215	33.26	5.38	0.57	6.89	798	785		34.37	6.50	0.57	8.27	820	807	
4225	34.99	5.38	0.57	6.30	997	981		36.11	6.50	0.57	8.46	1019	1003	
4245	—	—	—	—	—	—	—	41.03	6.50	0.57	CF	1535	1440	
4225DB	39.24	5.38	0.57	7.87	1101	1054		—	—	—	—	—	—	—
4235DB	42.31	5.38	0.57	7.87	1340	1256		43.43	6.50	0.57	7.87	1344	1260	
4245DB	43.77	5.38	0.57	7.87	1569	1452		44.89	6.50	0.57	7.87	1573	1456	
4255DA	47.94	5.38	0.57	7.87	2278	2091		—	—	—	—	—	—	—
4255DB	49.99	5.38	0.57	7.87	2464	2261		51.11	6.50	0.57	7.87	2489	2286	
4265DA	54.32	5.38	0.57	7.87	3026	2795		55.44	6.50	0.57	7.87	3051	2819	
4275DA	64.59	5.38	0.57	7.87	5540	5937		65.71	6.50	0.57	7.87	5565	5962	
	MOTOR FRAME 364-365TC							MOTOR FRAME 364-365TSC						
4205	33.94	7.24	0.57	8.27	664	656		31.82	5.13	0.57	CF	664	646	
4215	35.12	7.24	0.57	8.46	827	814		33.00	5.13	0.57	CF	827	814	
4225	36.85	7.24	0.57	8.46	1025	1010		34.73	5.13	0.57	CF	1025	1010	
4235	40.28	7.24	0.57	CF	1274	1211		—	—	—	—	—	—	—
4245	41.77	7.24	0.57	CF	1546	1451		—	—	—	—	—	—	—
4255	48.19	7.24	0.57	CF	2260	2128		—	—	—	—	—	—	—
4265	52.52	7.24	0.57	CF	2822	2745		—	—	—	—	—	—	—
	MOTOR FRAME 404-405 TC							MOTOR FRAME 404-405TSC						
4225	38.23	8.63	0.57	8.46	1025	1010		35.23	5.63	0.57	CF			
4235	41.66	8.63	0.57	CF	1274	1211		—	—	—	—	—	—	—
4245	43.15	8.63	0.57	CF	1546	1451		—	—	—	—	—	—	—
4255	49.57	8.63	0.57	CF	2260	2128		—	—	—	—	—	—	—
4265	53.90	8.63	0.57	CF	2822	2745		—	—	—	—	—	—	—

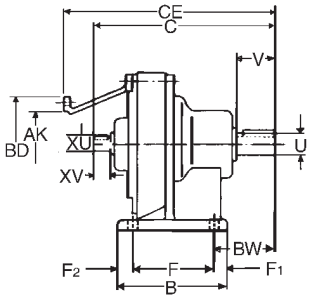
FOOT MOUNT REDUCER DIMENSIONS

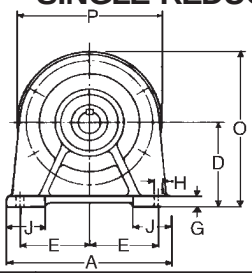
TYPES H AND HJ

SINGLE REDUCTION



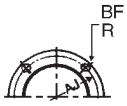
FOR ADAPTOR DIMENSIONS SEE PG. 29-31



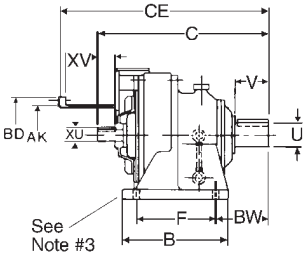


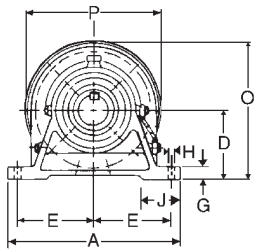
CNH, CNHJ

FRAME SIZE	A	B	C	D	E	F	F_1	F_2	G	H	J	O	P	BW	LOW SPEED SHAFT			HIGH SPEED SHAFT			NET WT. LBS.**
															U*	V	KEY	XU*	XV	KEY	
4075	5.67	3.32	5.71	3.149	2.36	2.36	0.48	0.48	.39	.35	1.38	5.31	4.33	1.61	.500	.98	1/8 x 1/8 x .79	.500	.98	1/8 x 1/8 x .71	5.5
4085	5.67	3.32	5.94	3.149	2.36	2.36	0.48	0.48	.39	.35	1.38	5.31	4.33	1.85	.750	1.18	3/16 x 3/16 x 1.06	.500	.98	1/8 x 1/8 x .71	6.6
4090 4095 4097	7.09	5.12	7.95	3.937	2.95	3.54	0.59	0.99	.47	.43	1.57	6.89	5.91	2.36	1.125	1.38	1/4 x 1/4 x 1.18	.625	.98	3/16 x 3/16 x .75	24
4100 4105	7.09	5.31	8.19	3.937	2.95	3.54	0.59	1.18	.47	.43	1.57	6.89	5.91	2.36	1.125	1.38	1/4 x 1/4 x 1.18	.625	.98	3/16 x 3/16 x .75	29
410H	7.09	5.31	8.19	4.724	2.95	3.54	0.59	1.18	.47	.43	1.77	7.68	6.30	2.36	1.125	1.38	1/4 x 1/4 x 1.18	.625	.98	3/16 x 3/16 x .75	31
4110 4115	9.06	6.10	10.20	4.724	3.74	4.53	0.79	0.79	.59	.55	2.17	8.74	8.03	3.23	1.500	2.17	3/8 x 3/8 x 1.77	.750	1.38	3/16 x 3/16 x 1.02	49
4125	9.06	6.10	10.20	5.512	3.74	4.53	0.79	0.79	.59	.55	2.36	9.53	8.03	3.23	1.500	2.17	3/8 x 3/8 x 1.77	.750	1.38	3/16 x 3/16 x 1.02	51



FOR ADAPTOR DIMENSIONS SEE PG. 29-31

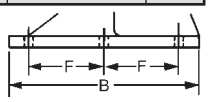




CNH, CHHJ

FRAME SIZE	A	B	C	D	E	F	G	H	J	O	P	BW	LOW SPEED SHAFT			HIGH SPEED SHAFT			NET WT. LBS.**
													U*	V	KEY	XU*	XV	KEY	
4130 4135	13.0	7.68	12.60	5.905	5.71	5.71	.87	.71	2.56	10.43	9.06	3.94	1.875	2.76	1/2 x 1/2 x 2.17	.875	1.57	3/16 x 3/16 x 1.38	95
4145	13.0	7.68	13.38	5.905	5.71	5.71	.87	.71	2.56	10.43	9.06	4.72	1.875	3.54	1/2 x 1/2 x 2.95	.875	1.57	3/16 x 3/16 x 1.38	97
4155	13.0	7.68	13.38	6.299	5.71	5.71	.87	.71	2.76	10.83	10.47	4.72	1.875	3.54	1/2 x 1/2 x 2.95	.875	1.57	3/16 x 3/16 x 1.38	101
4160 4165	16.14	9.37	16.26	6.299	7.28	5.91	.98	.71	2.95	12.56	12.52	5.47	2.250	3.54	1/2 x 1/2 x 2.95	1.125	1.77	1/4 x 1/4 x 1.77	185
416H	16.14	9.37	16.26	7.874	7.28	5.91	.98	.71	3.15	14.13	13.39	5.47	2.250	3.54	1/2 x 1/2 x 2.95	1.125	1.77	1/4 x 1/4 x 1.77	199
4170 4175	16.93	13.19	18.78	7.874	7.48	10.83	1.18	.87	3.15	15.00	14.25	4.92	2.750	3.54	5/8 x 5/8 x 3.15	1.375	2.17	5/16 x 5/16 x 2.17	264
4180 4185	18.50	14.96	20.75	8.661	8.27	12.60	1.18	.87	3.35	16.34	15.35	5.71	3.125	4.33	3/4 x 3/4 x 3.74	1.500	2.56	3/8 x 3/8 x 2.56	330
4190 4195	20.87	17.32	24.41	9.842	9.45	14.96	1.38	1.02	3.54	18.74	17.76	6.69	3.625	5.31	7/8 x 7/8 x 4.92	1.750	2.76	3/8 x 3/8 x 2.76	528
4205	20.87	17.32	26.69	9.842	8.66	14.17	1.38	1.02	3.94	19.11	18.54	8.46	3.875	6.50	1 x 1 x 6.50	1.750	3.23	3/8 x 3/8 x 3.23	553
4215	22.83	18.70	27.87	10.433	9.45	15.55	1.57	1.02	4.33	20.41	19.96	8.27	4.250	6.50	1 x 1 x 6.50	1.875	3.23	1/2 x 1/2 x 3.23	704
4225	24.41	20.47	29.61	11.024	10.63	16.54	1.57	1.30	4.53	21.83	21.61	9.06	4.625	6.50	1 1/4 x 7/8 x 6.50	2.125	3.23	1/2 x 1/2 x 3.23	887
4235	26.38	22.05	33.03	11.811	11.42	18.11	1.77	1.30	4.72	23.44	23.27	10.24	5.000	7.87	1 1/4 x 7/8 x 7.87	2.250	4.13	1/2 x 1/2 x 4.13	1107
4245	28.35	22.83	34.53	13.189	12.40	18.90	1.77	1.54	5.04	25.73	25.08	10.35	5.500	7.87	1 1/4 x 7/8 x 7.87	2.500	4.13	5/8 x 5/8 x 4.13	1344
4255	30.71	24.80	40.94	14.764	13.19	20.47	1.97	1.54	5.51	28.60	27.68	12.60	6.250	9.45	1 1/2 x 1 x 9.45	3.125	5.12	3/4 x 3/4 x 5.12	2035
4265	34.65	27.56	45.28	15.748	15.16	23.23	2.17	1.77	6.30	30.94	30.39	15.35	6.625	11.81	1 3/4 x 1 1/4 x 11.8	3.125	5.12	3/4 x 3/4 x 5.12	2552
4275	45.67	40.94	57.56	21.259	20.67	†16.54	2.36	1.77	7.87	40.67	38.82	19.09	7.000	13.0	1 3/4 x 1 1/4 x 13	3.500	5.91	7/8 x 7/8 x 5.91	5346

NOTES: 1) For adaptor dimensions and weights on type HJ units refer to pages 29-31.
2) Frame sizes 4275 not available in type HJ.
3) For models 4175-4275, foot extension may interfere with sheave or sprocket drive on input side.
4) Center height "D" for 4075, 4085 is less than half of "BD" (Frame 56C) Dimension.
5) HJ 4105 - Motor 182TC combination consult factory, center height of 4105 is less than half of "BD" Dimension.



*For tolerances refer to page 127.
**Type H approximate.
†Approximate Weight includes reducer and adaptor only.

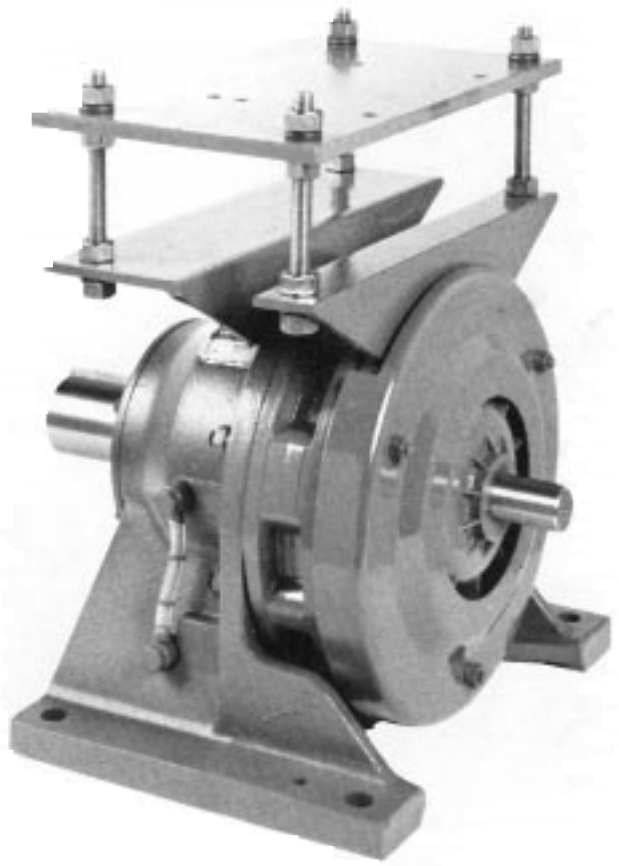
MODEL:_____CERTIFIED FOR_____

RATIO: _____OUTPUT RPM:_____HP RATING:_____S.F.: _____

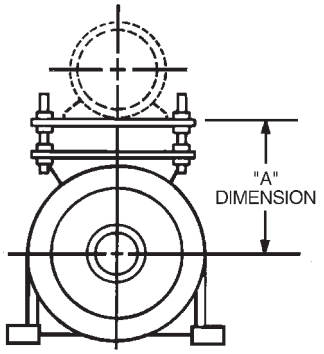
SUMITOMO ORDER NO.:_____APPROVED BY: _____DATE: _____

TOP MOUNT

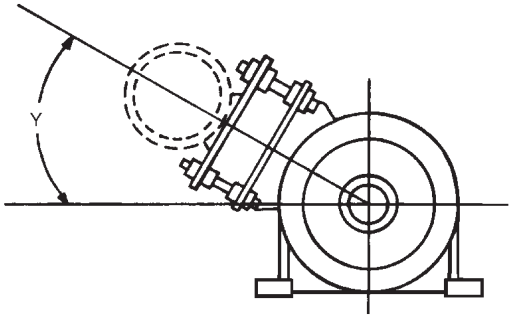
TYPE HP



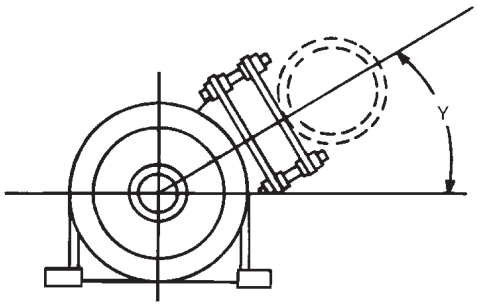
- Fabricated steel motor mount bolts directly to SM-CYCLO Reducer.
- Simple adjusting screws for belt tensioning.
- Motor mounts are furnished with pre-drilled holes for ease of motor assembly.
- Also available as side mount on type V (vertical) reducers. See page 45.



Model HP



Model HPL



Model HPR

SM-CYCLO MODEL NO.	"A" DIMENSION MODEL HPL, HP & HPR		ANGLE Y (IN DEGREES) FOR MODELS HPR OR HPL
	Minimum	Maximum*	
4110, 4115, 4125	7.50	10.00	**AVAILABLE AS HP TYPE ONLY**
4130 or 4135	7.25	10.25	
4145 or 4155	7.25	10.25	
4160, 4165, 416H	8.88	11.88	30°
4170 or 4175	10.13	13.13	45°
4180 or 4185	10.63	13.63	45°
4190 or 4195	12.00	15.00	30° or 60°
4205	13.25	16.25	**AVAILABLE AS HP TYPE ONLY**
4215	13.90	16.90	
4225	14.56	17.56	
4235	15.25	18.25	
4245	16.18	19.18	
4255	18.75	21.75	
4265	19.68	22.68	
4275	23.00	26.00	

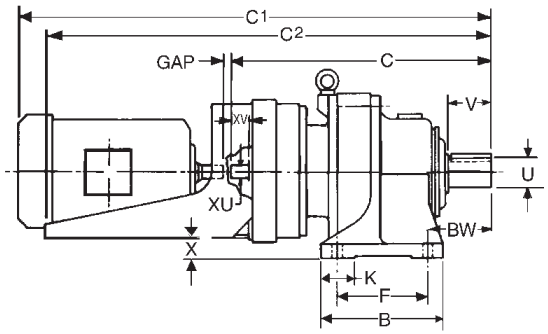
*Maximum may be increased up to 2" by use of shim blocks.
NOTE: Total V-Belt Drive Centers = 'A' Dimension listed above PLUS Motor 'D' Dimension.

ALL DRAWINGS ARE VIEWED FROM REDUCER INPUT SIDE

FOOT MOUNT REDUCERS

SHOVEL BASE

TYPES H-SB



SINGLE REDUCTION

MODEL	A	B	C	D	E	F	G	H	J	O	P	BW	OUTPUT SHAFT			INPUT SHAFT		
													U*	V	KEY	XU*	XV	KEY
4110 4115	9.06	6.10	10.20	4.724	3.74	4.53	0.59	0.55	2.17	8.74	8.03	3.23	1.500	2.17	3/8 x 3/8 x 1.77	0.750	1.38	3/16 x 3/16 x 1.02
4125	9.06	6.10	10.20	5.512	3.74	4.53	0.59	0.55	2.36	9.53	8.03	3.23	1.500	2.17	3/8 x 3/8 x 1.77	0.750	1.38	3/16 x 3/16 x 1.02
4130 4135	12.99	7.68	12.64	5.906	5.71	5.71	0.87	0.71	2.56	10.43	9.06	3.94	1.875	2.76	1/2 x 1/2 x 2.17	0.875	1.57	3/16 x 3/16 x 1.38
4145	12.99	7.68	13.43	5.906	5.71	5.71	0.87	0.71	2.56	10.43	9.06	4.72	1.875	3.54	1/2 x 1/2 x 2.95	0.875	1.57	3/16 x 3/16 x 1.38
4155	12.99	7.68	13.43	6.299	5.71	5.71	0.87	0.71	2.76	10.83	10.47	4.72	1.875	3.54	1/2 x 1/2 x 2.95	0.875	1.57	3/16 x 3/16 x 1.38
4160 4165	16.14	9.37	16.26	6.299	7.28	5.91	0.98	0.71	2.95	12.56	12.52	5.47	2.250	3.54	1/2 x 1/2 x 2.95	1.125	1.77	1/4 x 1/4 x 1.77
416H	16.14	9.37	16.26	7.874	7.28	5.91	0.98	0.71	3.15	14.13	13.39	5.47	2.250	3.54	1/2 x 1/2 x 2.95	1.125	1.77	1/4 x 1/4 x 1.77
4170 4175	16.93	13.19	18.78	7.874	7.48	10.83	1.18	0.87	3.15	15.00	14.25	4.92	2.750	3.54	5/8 x 5/8 x 3.15	1.375	2.17	5/16 x 5/16 x 2.17
4180 4185	18.50	14.96	20.75	8.661	8.27	12.60	1.18	0.87	3.35	16.34	15.35	5.71	3.125	4.33	3/4 x 3/4 x 3.74	1.500	2.56	3/8 x 3/8 x 2.56
4190 4195	20.87	17.32	24.41	9.843	9.45	14.96	1.38	1.02	3.54	18.74	17.76	6.69	3.625	5.31	7/8 x 7/8 x 4.92	1.750	2.76	3/8 x 3/8 x 2.76
4205	20.87	17.32	26.69	9.843	8.66	14.17	1.38	1.02	3.94	19.11	18.54	8.46	3.875	6.50	1 x 1 x 6.50	1.750	3.23	3/8 x 3/8 x 3.23
4215	22.83	18.70	27.87	10.433	9.45	15.55	1.57	1.02	4.33	20.41	19.96	8.27	4.250	6.50	1 x 1 x 6.50	1.875	3.23	1/2 x 1/2 x 3.23
4225	24.41	20.47	29.61	11.024	10.63	16.54	1.57	1.30	4.53	21.83	21.61	9.06	4.625	6.50	1 1/4 x 7/8 x 6.50	2.125	3.23	1/2 x 1/2 x 3.23
4235	26.38	22.05	33.03	11.811	11.42	18.11	1.77	1.30	4.72	23.44	23.27	10.24	5.000	7.87	1 1/4 x 7/8 x 7.87	2.250	4.13	1/2 x 1/2 x 4.13

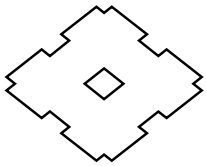
*For tolerances refer to page 127.

MODEL	DIMS.	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	324T	326T
4110 4115	C1	23.08	24.08	25.89	27.26								
	C2	24.25		24.25									
	GAP	0.50		0.50									
	X	-0.28		-0.28									
	WT. W/O MOTOR	80		80									
4125	C1	23.08	24.08	25.89	27.26	29.01							
	C2	24.25		24.25		27.51							
	GAP	0.50		0.50		0.88							
	X	0.51		0.51		-0.37							
	WT. W/O MOTOR	80		80		90							
4130 4135	C1	26.47	27.47	28.53	29.91	31.41	32.78						
	C2	26.31		26.31		30.81							
	GAP	0.50		0.75		0.88							
	X	0.88		0.88		0.31							
	WT. W/O MOTOR	125		125		135							

MODEL: _____ CERTIFIED FOR _____

RATIO: _____ OUTPUT RPM: _____ HP RATING: _____ S.F.: _____

SUMITOMO ORDER NO.: _____ APPROVED BY: _____ DATE: _____



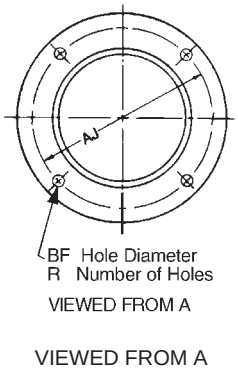
MODEL	DIMS.	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	324T	326T
4145	C1	27.25	28.25	29.31	30.69	32.19	33.56						
	C2	27.09		27.09		31.59							
	GAP	0.50		0.75		0.88							
	X	0.88		0.88		0.31							
	WT. W/O MOTOR	125		125		135							
4155	C1		28.25	29.31	30.69	32.19	33.56	36.06	37.81				
	C2		27.09	27.09		31.59		36.06					
	GAP		0.50	0.75		0.88		1.00					
	X		1.27	1.27		0.70		-0.30					
	WT. W/O MOTOR		130	130		140		155					
4160 4165	C1			32.19	33.56	35.06	36.44	38.75	40.50	42.14			
	C2			32.69		34.69		37.67					
	GAP			0.75		0.88		1.00					
	X			1.44		0.69		-0.32					
	WT. W/O MOTOR			220		235		250		270			
416H	C1			32.19	33.56	35.06	36.44	38.75	40.50	42.14	43.89		
	C2			32.69		34.69		37.69		39.32			
	GAP			0.75		0.88		1.00		1.00			
	X			3.01		2.26		0.26		0.43			
	WT. W/O MOTOR			235		250		265		285			
4170 4175	C1			34.72	36.09	37.59	38.97	41.28	43.03	44.72	46.22	48.09	
	C2			34.41		36.41		43.41		43.41		45.38	
	GAP			0.75		0.88		1.00		1.06		1.50	
	X			3.00		2.25		0.44		0.44		-0.53	
	WT. W/O MOTOR			310		325		340		360		405	
4180 4185	C1				38.19	39.56	40.94	43.25	45.00	46.69	48.19	50.06	
	C2				40.03	40.03		46.03		46.03		48.00	
	GAP				0.88	0.88		1.00		1.06		1.50	
	X				3.03	3.03		1.22		1.22		0.25	
	WT. W/O MOTOR				375	390		405		435		480	
4190 4195	C1					43.34	44.72	46.91	48.66	50.34	51.84	53.72	55.22
	C2					47.03		47.03		52.03		52.03	
	GAP					1.00		1.00		1.06		1.50	
	X					3.22		3.22		1.41		1.41	
	WT. W/O MOTOR					600		615		645		694	
4205	C1						46.88	49.19	50.94	52.63	53.38	56.00	57.50
	C2						48.69	48.69		52.82		52.82	
	GAP						0.88	1.00		1.06		1.50	
	X						3.21	3.21		1.41		1.41	
	WT. W/O MOTOR						645	655		685		740	
4215	C1							50.37	52.12	53.81	54.56	57.18	58.68
	C2							52.38		51.82		55.87	
	GAP							1.00		1.06		1.50	
	X							3.80		3.00		1.59	
	WT. W/O MOTOR							790		840		890	
4225	C1									54.92	56.30	58.91	60.41
	C2									59.01		59.01	
	GAP									1.06		1.50	
	X									2.60		2.60	
	WT. W/O MOTOR									1050		1090	
4235	C1												63.84
	C2												62.43
	GAP												1.50
													3.39
	WT. W/O MOTOR												1320

NOTE: C[1] Dimensions shown are approximate motor lengths. For exact dimension refer to specific motor vendor catalogs.
For special motors or frame sizes not listed consult factory.

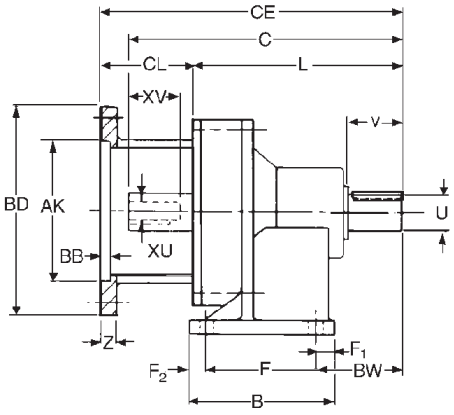
FOOT MOUNT REDUCERS
HOLLOW INPUT SHAFT

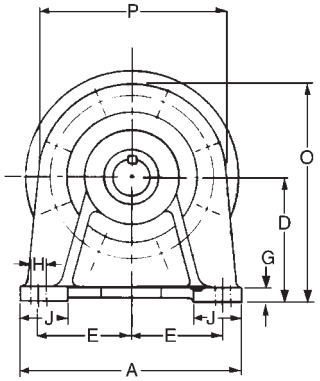
TYPE CNHX

SINGLE REDUCTION



VIEWED FROM A





FRAME SIZE	A	B	L	D	E	F	F1	F2	G	H	J	O	P	BW	LOW SPEED SHAFT		
															U*	V	KEY
4075	5.67	3.32	3.62	3.15	2.36	2.36	0.48	0.48	0.39	0.35	1.38	5.31	4.33	1.61	0.500	0.98	1/8 x 1/8 x 0.79
4085	5.67	3.32	3.86	3.15	2.36	2.36	0.48	0.48	0.39	0.35	1.38	5.31	4.33	1.85	0.750	1.18	3/16 x 3/16 x 1.06
4090 4095 4097	7.09	5.12	5.39	3.94	2.95	3.54	0.59	0.99	0.47	0.43	1.57	6.89	5.91	2.36	1.125	1.38	1/4 x 1/4 x 1.18
4100 4105	7.09	5.31	6.14	3.94	2.95	3.54	0.59	1.18	0.47	0.43	1.57	6.89	5.91	2.36	1.125	1.38	1/4 x 1/4 x 1.18
410H	7.09	5.31	6.14	4.72	2.95	3.54	0.59	1.18	0.47	0.43	1.77	7.68	6.30	2.36	1.125	1.38	1/4 x 1/4 x 1.18

FRAME SIZE	AJ	AK	BD	BB	BF	R	CE	CL	C	Z	XV	XU	KEYWAY	EST. WT.
MOTOR FRAME 56C														
4075	5.88	4.50	6.69	0.20	0.43	4	6.61	2.99	5.59	0.47	1.10	$0.625^{+0.0007}_{-0.0000}$	3/16 x 3/32	10
4085	5.88	4.50	6.69	0.20	0.43	4	6.85	2.99	5.83	0.47	1.10	$0.625^{+0.0007}_{-0.0000}$	3/16 x 3/32	10
4090 4095 4097	5.88	4.50	6.69	0.20	0.43	4	8.94	3.58	7.91	0.47	1.18	$0.625^{+0.0007}_{-0.0000}$	3/16 x 3/32	29
4100 4105	5.88	4.50	6.69	0.20	0.43	4	9.29	3.15	8.23	0.47	1.18	$0.625^{+0.0007}_{-0.0000}$	3/16 x 3/32	33
410H	5.88	4.50	6.69	0.20	0.43	4	9.29	3.15	8.23	0.47	1.18	$0.625^{+0.0007}_{-0.0000}$	3/16 x 3/32	35
MOTOR FRAME 143-145TC														
4090 4095 4097	5.88	4.50	6.69	0.20	0.43	4	8.94	3.58	8.31	0.47	1.57	$0.875^{+0.0008}_{-0.0000}$	3/16 x 3/32	29
4100 4105	5.88	4.50	6.69	0.20	0.43	4	9.29	3.15	8.70	0.47	1.65	$0.875^{+0.0008}_{-0.0000}$	3/16 x 3/32	33
410H	5.88	4.50	6.69	0.20	0.43	4	9.29	3.15	8.70	0.47	1.65	$0.875^{+0.0008}_{-0.0000}$	3/16 x 3/32	35

*For tolerances refer to page 127.
Center height “D” for 4075, 4085 is less than the radius of motor flange dia. “BD” (Frame 56C).

MODEL:_____ CERTIFIED FOR _____

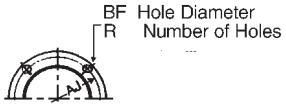
RATIO: _____ OUTPUT RPM: _____ HP RATING: _____ S.F.: _____

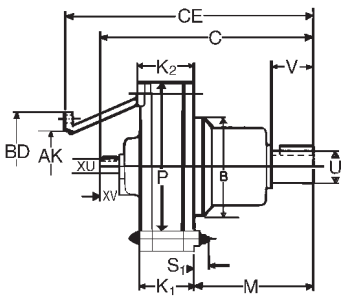
SUMITOMO ORDER NO.: _____ APPROVED BY: _____ DATE: _____

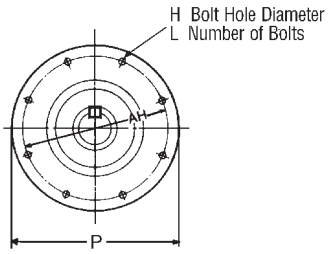
TYPES HF AND HFJ

SINGLE REDUCTION

FOR ADAPTOR DIMENSIONS SEE PG. 29-31



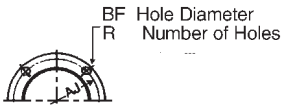


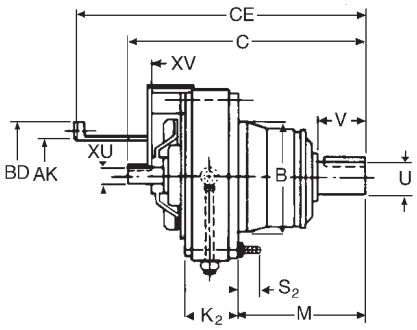


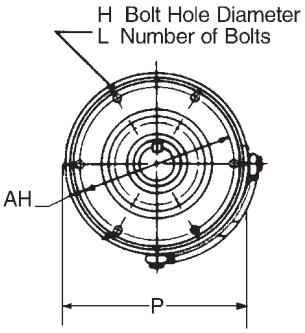
CNF, CNFJ

FRAME SIZE	B	C	H	L	M	P	AH	LOW SPEED SHAFT			HIGH SPEED SHAFT			TYPE F		TYPE FJ		EST. WT.
								U*	V	KEY	XU*	XV	KEY	K_1	S_1	K_2	S_2	
4075	2.9524 2.9516	5.71	0.26	6	2.72	4.33	3.86	0.500	0.98	1/8 x 1/8 x 0.79	0.500	0.98	1/8 x 1/8 x 0.71	1.10	1.06	1.57	0.98	5.5
4085	3.1492 3.1485	5.94	0.26	6	2.91	4.33	3.86	0.750	1.18	3/16 x 3/16 x 1.06	0.500	0.98	1/8 x 1/8 x 0.71	1.14	1.02	1.61	0.94	6.6
4090 **4095** **4097**	4.1334 4.1325	7.95	0.35	8	4.49	5.91	5.28	1.125	1.38	1/4 x 1/4 x 1.18	0.625	0.98	3/16 x 3/16 x 0.75	1.34	1.02	1.93	1.02	16.5
4100 **4105** **410H**	4.1334 4.1325	8.19	0.35	8	4.49	5.91	5.28	1.125	1.38	1/4 x 1/4 x 1.18	0.625	0.98	3/16 x 3/16 x 0.75	1.89	1.06	2.48	1.06	21
4110 **4115** **4125**	5.5113 5.5103	10.20	0.43	6	5.47	8.03	7.09	1.500	2.17	3/8 x 3/8 x 1.77	0.750	1.38	3/16 x 3/16 x 1.02	2.28	1.10	2.87	1.18	44

FOR ADAPTOR DIMENSIONS SEE PG. 29-31







CHF, CHFJ

FRAME SIZE	B	C	H	L	M	P	AH	LOW SPEED SHAFT			HIGH SPEED SHAFT			TYPE F		TYPE FJ		EST. WT.
								U*	V	KEY	XU*	XV	KEY	K_1	S_1	K_2	S_2	
4130 **4135**	6.4946 6.4955	12.60	0.43	6	6.97	9.06	8.07	1.875	2.76	1/2 x 1/2 x 2.17	0.875	1.57	3/16 x 3/16 x 1.38	2.83	1.16	3.44	1.19	80
4145 **4155**	6.4946 6.4955	13.39	0.43	6	7.76	9.06	8.07	1.875	3.54	1/2 x 1/2 x 2.95	0.875	1.57	3/16 x 3/16 x 1.38	2.83	1.16	3.44	1.19	82
4160 **4165** **416H**	7.8723 7.8734	16.26	0.55	6	8.74	12.52	10.63	2.250	3.54	1/2 x 1/2 x 2.95	1.125	1.77	1/4 x 1/4 x 1.77	3.98	1.56	4.53	1.50	146
4170 **4175**	9.8408 9.8419	18.78	0.55	8	10.31	14.29	11.81	2.750	3.54	5/8 x 5/8 x 3.15	1.375	2.17	5/16 x 5/16 x 2.17	4.13	1.41	4.69	1.75	212
4180 **4185**	11.0217 11.0230	20.75	0.55	8	11.77	15.47	12.99	3.125	4.33	3/4 x 3/4 x 3.74	1.500	2.56	3/8 x 3/8 x 2.56	4.25	1.75	4.97	1.75	287
4190 **4195**	12.5963 12.5977	24.41	0.55	12	14.37	17.91	14.96	3.625	5.31	7/8 x 7/8 x 4.92	1.750	2.76	3/8 x 3/8 x 2.76	4.72	1.84	5.44	1.75	430

NOTE: For adaptor dimensions and weights on type HFJ units refer to pages 29-31.
*For tolerances refer to page 127.
Consult factory for larger sizes than listed above.

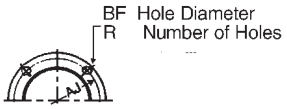
MODEL:_____ CERTIFIED FOR_____
RATIO: _____OUTPUT RPM: _____ HP RATING:_____ S.F.:_____
SUMITOMO ORDER NO.:_____APPROVED BY:_____ DATE:_____

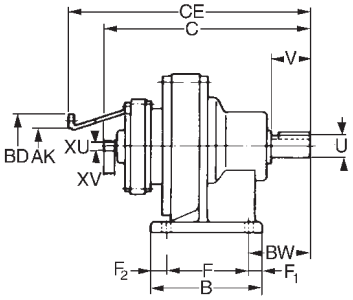
FOOT MOUNT REDUCERS

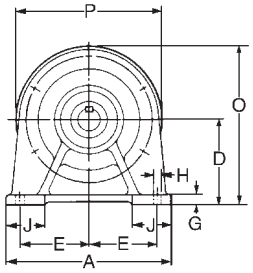
TYPES H AND HJ

DOUBLE REDUCTION

FOR ADAPTOR DIMENSIONS SEE PG. 29-31



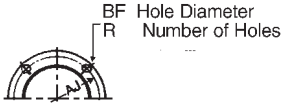


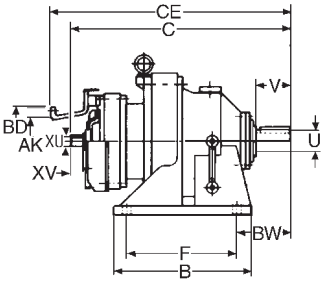


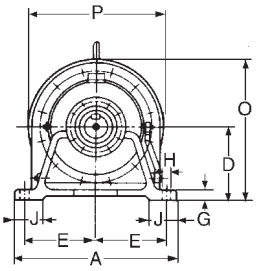
CNH, CNHJ

FRAME SIZE	A	B	C	D	E	F	F1	F2	G	H	J	O	P	BW	LOW SPEED SHAFT			HIGH SPEED SHAFT			NET WT. LBS.**
															U*	V	KEY	XU*	XV	KEY	
4075DA	5.67	3.32	7.00	3.149	2.36	2.36	0.48	0.48	.39	.35	1.38	5.31	4.33	1.61	0.500	0.98	1/8 x 1/8 x 0.79	0.500	0.98	1/8 x 1/8 x 0.71	9
4085DA	5.67	3.32	7.24	3.149	2.36	2.36	0.48	0.48	.39	.35	1.38	5.31	4.33	1.85	0.750	1.18	3/16 x 3/16 x 1.06	0.500	0.98	1/8 x 1/8 x 0.71	10
4097DA	7.09	5.12	9.57	3.937	2.95	3.54	0.59	0.99	.47	.43	1.57	6.89	5.91	2.36	1.125	1.38	1/4 x 1/4 x 1.18	0.500	0.98	1/8 x 1/8 x 0.71	27
4105DA	7.09	5.31	10.12	3.937	2.95	3.54	0.59	1.18	.47	.43	1.57	6.89	5.91	2.36	1.125	1.38	1/4 x 1/4 x 1.18	0.500	0.98	1/8 x 1/8 x 0.71	33
4115DB	9.06	6.10	12.28	4.724	3.74	4.53	0.79	0.79	.59	.55	1.57	8.74	8.03	3.23	1.500	2.17	3/8 x 3/8 x 1.77	0.625	0.98	3/16 x 3/16 x 0.75	64

FOR ADAPTOR DIMENSIONS SEE PG. 29-31







CHH, CHHJ

FRAME SIZE	A	B	C	D	E	F	G	H	J	O	P	BW	LOW SPEED SHAFT			HIGH SPEED SHAFT			NET WT. LBS.**
													U*	V	KEY	XU*	XV	KEY	
4135DC	13.00	7.68	14.53	5.905	5.71	5.71	.87	.71	2.56	10.43	9.06	3.94	1.875	2.76	1/2 x 1/2 x 2.17	0.625	0.98	3/16 x 3/16 x 0.75	117
4145DB	13.00	7.68	15.08	5.905	5.71	5.71	.87	.71	2.56	10.43	9.06	4.72	1.875	3.54	1/2 x 1/2 x 2.95	0.625	0.98	3/16 x 3/16 x 0.75	110
4165DC	16.14	9.37	18.19	6.299	7.28	5.91	.98	.71	2.95	12.20	11.81	5.47	2.250	3.54	1/2 x 1/2 x 2.95	0.750	1.38	3/16 x 3/16 x 1.02	207
4175DC	16.93	13.19	20.04	7.874	7.48	10.83	1.18	.87	3.15	14.57	13.39	4.92	2.750	3.54	5/8 x 5/8 x 3.15	0.750	1.38	3/16 x 3/16 x 1.02	271
4185DB	18.50	14.96	22.72	8.661	8.27	12.60	1.18	.87	3.35	15.95	14.57	5.71	3.125	4.33	3/4 x 3/4 x 3.74	0.875	1.57	3/16 x 3/16 x 1.38	363
4190DA 4195DA	20.87	17.32	24.76	9.842	9.45	14.96	1.38	1.02	3.54	18.31	16.93	6.69	3.625	5.31	7/8 x 7/8 x 4.92	0.750	1.38	3/16 x 3/16 x 1.02	530
4195DB	20.87	17.32	25.71	9.842	9.45	14.96	1.38	1.02	3.54	18.31	16.93	6.69	3.625	5.31	7/8 x 7/8 x 4.92	0.875	1.57	3/16 x 3/16 x 1.38	550

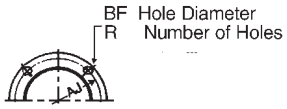
NOTES: For adaptor dimensions and weights on type HJ units refer to pages 29-31.
Center height "D" for 4075DA, 4085DA is less than the radius of motor flange dia. "BD" (Frame 56C).
* For tolerances refer to page 127.
** Type H approximate.

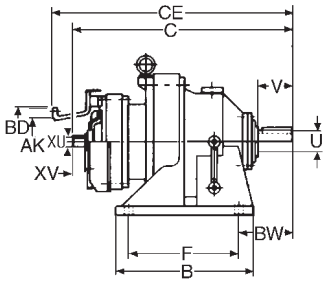
MODEL:_____ CERTIFIED FOR_____
RATIO: _____OUTPUT RPM: _____ HP RATING:_____ S.F.:_____
SUMITOMO ORDER NO.:_____APPROVED BY:_____ DATE:_____

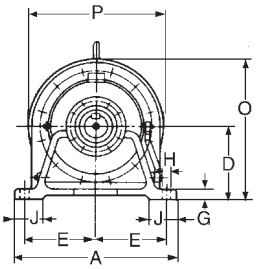
TYPES H AND HJ

DOUBLE REDUCTION

FOR ADAPTOR DIMENSIONS SEE PG. 29-31

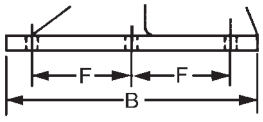






FRAME SIZE	A	B	C	D	E	F	G	H	J	O	P	BW	LOW SPEED SHAFT			HIGH SPEED SHAFT			NET WT. LBS.**
													U*	V	KEY	XU*	XV	KEY	
4205DA	20.87	17.32	26.38	9.84	8.66	14.17	1.38	1.02	3.94	18.66	17.64	8.46	3.875	6.50	1 x 1 x 6.50	0.750	1.38	3/16 x 3/16 x 1.38	565
4205DB	20.87	17.32	27.76	9.842	8.66	14.17	1.38	1.02	3.94	18.66	17.64	8.46	3.875	6.50	1 x 1 x 6.50	0.875	1.57	3/16 x 3/16 x 1.38	581
4215DA	22.83	18.70	28.78	10.433	9.45	15.55	1.57	1.02	4.33	19.98	19.09	8.27	4.250	6.50	1 x 1 x 6.50	0.875	1.57	3/16 x 3/16 x 1.38	733
4215DB	22.83	18.70	30.71	10.433	9.45	15.55	1.57	1.02	4.33	19.98	19.09	8.27	4.250	6.50	1 x 1 x 6.50	1.125	1.77	1/4 x 1/4 x 1.77	788
4225DA	24.41	20.47	30.43	11.024	10.63	16.54	1.57	1.30	4.53	21.38	20.71	9.06	4.625	6.50	1 1/4 x 7/8 x 6.50	0.875	1.57	3/16 x 3/16 x 1.38	849
4225DB	24.41	20.47	33.86	11.024	10.63	16.54	1.57	1.30	4.53	21.38	20.71	9.06	4.625	6.50	1 1/4 x 7/8 x 6.50	1.375	2.17	5/16 x 5/16 x 2.17	942
4235DA	26.38	22.05	34.76	11.811	11.42	18.11	1.77	1.30	4.72	22.88	22.13	10.24	5.000	7.87	1 1/4 x 7/8 x 7.87	1.125	1.77	1/4 x 1/4 x 1.77	1239
4235DB	26.38	22.05	36.93	11.811	11.42	18.11	1.77	1.30	4.72	22.88	22.13	10.24	5.000	7.87	1 1/4 x 7/8 x 7.87	1.500	2.56	3/8 x 3/8 x 2.56	1278
4245DA	28.35	22.83	36.26	13.189	12.40	18.90	1.77	1.54	5.04	25.28	24.17	10.35	5.500	7.87	1 1/4 x 7/8 x 7.87	1.125	1.77	1/4 x 1/4 x 1.77	1456
4245DB	28.35	22.83	38.39	13.189	12.40	18.90	1.77	1.54	5.04	25.28	24.17	10.35	5.500	7.87	1 1/4 x 7/8 x 7.87	1.500	2.56	3/8 x 3/8 x 2.56	1516
4255DA	30.71	24.80	42.56	14.764	13.19	20.47	1.97	1.54	5.51	27.95	26.38	12.60	6.250	9.45	1 1/2 x 1 x 9.45	1.375	2.17	5/16 x 5/16 x 2.17	2119
4255DB	30.71	24.80	44.61	14.764	13.19	20.47	1.97	1.54	5.51	27.95	26.38	12.60	6.250	9.45	1 1/2 x 1 x 9.45	1.750	2.76	3/8 x 3/8 x 2.76	2231
4265DA	34.65	27.56	48.94	15.748	15.16	23.23	2.17	1.77	6.30	30.24	28.98	15.35	6.625	11.81	1 3/4 x 1 1/4 x 11.8	1.750	2.76	3/8 x 3/8 x 2.76	2671
4275DA	45.67	40.94	59.21	21.259	20.67	†16.54	2.36	1.77	7.87	39.96	37.40	19.09	7.000	13.00	1 3/4 x 1 1/4 x 13	1.750	2.76	3/8 x 3/8 x 2.76	5468

NOTES: For adaptor dimensions and weights on type HJ units refer to pages 29-31.
* For tolerances refer to page 127.
** Type H approximate.
† Approximate Weight includes reducer and adaptor only.

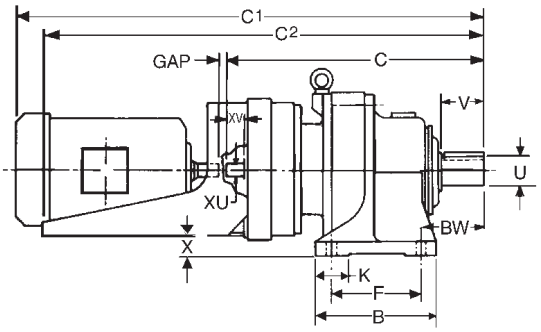


†For frame size 4275DA

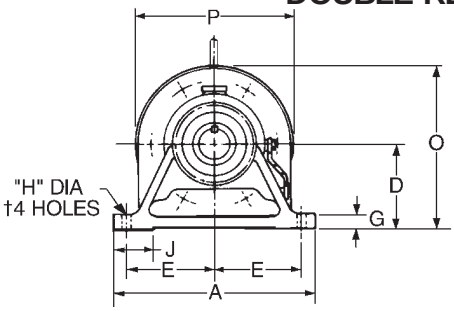
MODEL:_____ CERTIFIED FOR_____
RATIO: _____OUTPUT RPM: _____ HP RATING:_____ S.F.:_____
SUMITOMO ORDER NO.:_____APPROVED BY:_____ DATE:_____

FOOT MOUNT REDUCERS
SHOVEL BASE

TYPES H-SB



DOUBLE REDUCTION



FRAME SIZE	A	B	C	D	E	F	G	H	J	O	P	BW	OUTPUT SHAFT			INPUT SHAFT		
													U*	V	KEY	XU*	XV	KEY
4165DC	16.14	9.37	18.19	6.299	7.28	5.91	.98	.71	2.95	12.20	12.52	5.47	2.250	3.54	½ x ½ x 2.95	.750	1.38	3/16 x 3/16 x 1.02
4175DC	16.93	13.19	20.04	7.874	7.48	10.83	1.18	.87	3.15	14.57	14.25	4.92	2.750	3.54	5/8 x 5/8 x 3.15	.750	1.38	3/16 x 3/16 x 1.02
4185DB	18.50	14.96	22.72	8.661	8.27	12.60	1.18	.87	3.35	15.95	15.35	5.71	3.125	4.33	¾ x ¾ x 3.74	.875	1.57	3/16 x 3/16 x 1.38
4190DA or 4195 DA	20.87	17.32	24.76	9.842	9.45	14.96	1.38	1.02	3.54	18.31	17.76	6.69	3.625	5.31	⅞ x ⅞ x 4.92	.750	1.38	3/16 x 3/16 x 1.02
4195DB	20.87	17.32	25.71	9.842	9.45	14.96	1.38	1.02	3.54	18.31	17.76	6.69	3.625	5.31	⅞ x ⅞ x 4.92	.875	1.57	3/16 x 3/16 x 1.38
4205DA	20.87	17.32	26.38	9.842	8.66	14.17	1.38	1.02	3.94	18.66	18.54	8.46	3.875	6.50	1 x 1 x 6.50	.750	1.38	3/16 x 3/16 x 1.38
4205DB	20.87	17.32	27.76	9.842	8.66	14.17	1.38	1.02	3.94	18.66	18.54	8.46	3.875	6.50	1 x 1 x 6.50	.875	1.57	3/16 x 3/16 x 1.38
4215DA	22.83	18.70	28.78	10.433	9.45	15.55	1.57	1.02	4.33	19.98	19.96	8.27	4.250	6.50	1 x 1 x 6.50	.875	1.57	3/16 x 3/16 x 1.38
4215DB	22.83	18.70	30.71	10.433	9.45	15.55	1.57	1.02	4.33	19.98	19.96	8.27	4.250	6.50	1 x 1 x 6.50	1.125	1.77	¼ x ¼ x 1.77
4225DA	24.41	20.47	30.43	11.024	10.63	16.54	1.57	1.30	4.53	21.38	21.61	9.06	4.625	6.50	1¼ x ⅞ x 6.50	.875	1.57	3/16 x 3/16 x 1.38
4225DB	24.41	20.47	33.86	11.024	10.63	16.54	1.57	1.30	4.53	21.38	21.61	9.06	4.625	6.50	1¼ x ⅞ x 6.50	1.375	2.17	5/16 x 5/16 x 2.17
4235DA	26.38	22.05	34.76	11.811	11.42	18.11	1.77	1.30	4.72	22.88	23.27	10.24	5.000	7.87	1¼ x ⅞ x 7.87	1.125	1.77	¼ x ¼ x 1.77
4235DB	26.38	22.05	36.93	11.811	11.42	18.11	1.77	1.30	4.72	22.88	23.27	10.24	5.000	7.87	1¼ x ⅞ x 7.87	1.500	2.56	⅜ x ⅜ x 2.56
4245DA	28.35	22.83	36.26	13.189	12.40	18.90	1.77	1.54	5.04	25.28	25.08	10.35	5.500	7.87	1¼ x ⅞ x 7.87	1.125	1.77	¼ x ¼ x 1.77
4245DB	28.35	22.83	38.39	13.189	12.40	18.90	1.77	1.54	5.04	25.28	25.08	10.35	5.500	7.87	1¼ x ⅞ x 7.87	1.500	2.56	⅜ x ⅜ x 2.56
4255DA	30.71	24.80	42.56	14.764	13.19	20.47	1.97	1.54	5.51	27.95	27.68	12.60	6.250	9.45	1½ x 1 x 9.45	1.375	2.17	5/16 x 5/16 x 2.17
4255DB	30.71	24.80	44.61	14.764	13.19	20.47	1.97	1.54	5.51	27.95	27.68	12.60	6.250	9.45	1½ x 1 x 9.45	1.750	2.76	⅜ x ⅜ x 2.76
4265DA	34.65	27.56	48.94	15.748	15.16	23.23	2.17	1.77	6.30	30.24	30.39	15.35	6.625	11.81	1¾ x 1¼ x 11.8	1.750	2.76	⅜ x ⅜ x 2.76
4275DA	45.67	40.94	59.21	21.259	20.67	†16.54	2.36	1.77	7.87	39.96	39.76	19.09	7.000	13.00	1¾ x 1¼ x 13	1.750	2.76	⅜ x ⅜ x 2.76

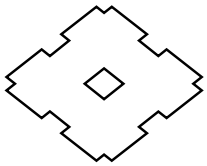
MODEL	DIMS.	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	324T	326T
4165DC	C1	31.07	32.07	33.88	35.25								
	C2	32.25		32.25									
	GAP	0.50		0.50									
	X	1.31		1.31									
	WT. W/O MOTOR	235		235									
4175DC	C1	32.91	33.91	35.72	37.09								
	C2	34.09		34.09									
	GAP	0.50		0.50									
	X	2.88		2.88									
	WT. W/O MOTOR	300		300									
4185DB	C1	35.59	36.59	38.66	40.03	41.53	42.91						
	C2	36.44		36.44		38.47							
	GAP	0.25		0.75		0.88							
	X	3.63		3.63		3.06							
	WT. W/O MOTOR	395		395		405							
4190DA 4195DA	C1	37.63	38.63	40.44	41.81								
	C2	38.81		38.81									
	GAP	0.50		0.50									
	X	4.84		4.84									
	WT. W/O MOTOR	560		560									
4195DB	C1	38.59	39.59	41.66	43.03	44.53	45.91						
	C2	39.44		39.44		43.94							
	GAP	0.50		0.75		0.88							
	X	4.81		4.81		4.25							
	WT. W/O MOTOR	580		580		590							

† Approximate Weight includes reducer and adaptor only.

MODEL:_____ CERTIFIED FOR_____

RATIO: _____OUTPUT RPM: _____ HP RATING:_____ S.F.:_____

SUMITOMO ORDER NO.:_____APPROVED BY:_____ DATE:_____

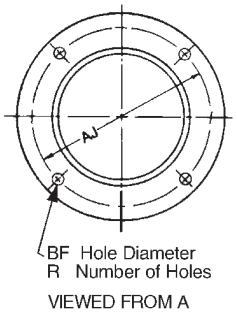


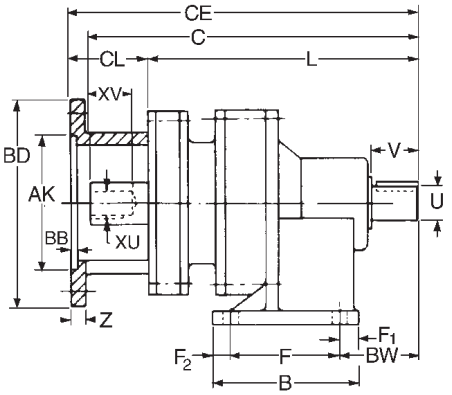
MODEL	DIMS.	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	324T	326T
4205DB	C1		41.64	43.70	45.09	47.32	47.95						
	C2		41.47	41.47		45.97							
	GAP		0.50	0.75		0.88							
	X		6.38	6.38		5.81							
	WT. W/O MOTOR		615	615		625							
4215DA	C1		42.66	44.72	46.09	48.34	48.97						
	C2		42.49	42.49		46.99							
	GAP		0.50	0.75		0.88							
	X		5.39	5.39		4.83							
	WT. W/O MOTOR		765	765		775							
4215DB	C1					50.28	50.91	53.21					
	C2					49.13		52.13					
	GAP					0.88		1.00					
	X					4.80		3.80					
	WT. W/O MOTOR					840		855					
4225DA	C1		43.31	46.37	47.74	50.00	50.62	52.93					
	C2		42.39	44.14		48.64		51.64					
	GAP		0.50	0.75		0.88		1.00					
	X		6.98	5.98		5.42		4.42					
	WT. W/O MOTOR		880	880		890		905					
4225DB	C1					53.43	54.05	56.36	58.11				
	C2					52.53		55.28					
	GAP					0.88		1.00					
	X					5.42		4.42					
	WT. W/O MOTOR					1005		1020					
4235DA	C1			50.70	52.07	54.33	54.95	57.26	59.01				
	C2			51.19		53.44		56.19					
	GAP			0.75		0.88		1.00					
	X			6.95		6.20		5.20					
	WT. W/O MOTOR			1280		1295		1310					
4235DB	C1						57.12	59.43	61.18	62.87			
	C2						56.21	62.21		62.21			
	GAP						0.88	1.00		1.06			
	X						6.18	4.37		4.37			
	WT. W/O MOTOR						1420	1435		1465			
4245DA	C1				53.57	55.83	56.45	58.76					
	C2				52.68	54.93		57.68					
	GAP				0.75	0.88		1.00					
	X				8.33	7.58		6.58					
	WT. W/O MOTOR				1505	1520		1535					
4245DB	C1						58.58	60.89	62.64	64.33	65.83		
	C2						57.67	63.67		63.67			
	GAP						0.88	1.00		1.06			
	X						7.56	5.75		5.75			
	WT. W/O MOTOR						1580	1595		1625			
4255DA	C1				59.87	62.13	62.75	65.06	66.81	68.50			
	C2				58.17	60.17		67.17		67.17			
	GAP				0.75	0.88		1.00		1.06			
	X				9.91	9.16		7.34		7.34			
	WT. W/O MOTOR				2170	2185		2200		2220			
4255DB	C1							67.11	68.86	70.55	72.05	73.92	
	C2							69.90		69.90		71.90	
	GAP							1.00		1.06		1.50	
	X							7.32		7.32		6.35	
	WT. W/O MOTOR							2320		2350		2400	
4265DA	C1					68.63	69.25	71.44	73.19	74.88	76.38	78.25	79.85
	C2					71.57		71.57		76.57		76.57	
	GAP					1.00		1.00		1.06		1.50	
	X					9.12		9.12		7.31		7.31	
	WT. W/O MOTOR					2750		2765		2795		2845	
4275DA	C1					78.90	79.52	81.71	83.46	85.15	86.65	88.52	90.12
	C2					81.84		81.84		86.84		86.84	
	GAP					1.00		1.00		1.06		1.50	
	X					14.64		14.64		12.82		12.82	
	WT. W/O MOTOR					5540		5555		5585		5635	

NOTE: C[1] Dimensions shown are approximate motor lengths. For exact dimension refer to specific motor vendor catalogs. For special motors or frame sizes not listed consult factory.

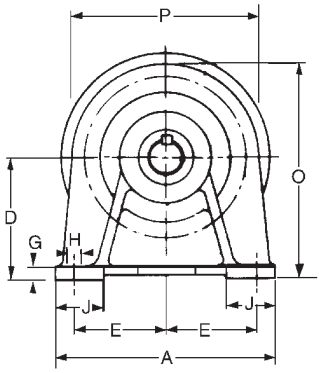
FOOT MOUNT REDUCERS
HOLLOW INPUT SHAFT

TYPE CNHX, CHHX





DOUBLE REDUCTION



FRAME SIZE	A	B	L	D	E	F	F1	F2	G	H	J	O	P	BW	LOW SPEED SHAFT		
															U*	V	KEY
4075DA	5.67	3.32	4.92	3.15	2.36	2.36	0.48	0.48	0.39	0.35	1.38	5.31	4.33	1.61	0.500	0.98	1/8 x 1/8 x 0.79
4085DA	5.67	3.32	5.16	3.15	2.36	2.36	0.48	0.48	0.39	0.35	1.38	5.31	4.33	1.85	0.750	1.18	3/16 x 3/16 x 1.06
4097DA	7.09	5.12	7.48	3.94	2.95	3.54	0.59	0.99	0.47	0.43	1.57	6.89	5.91	2.36	1.125	1.38	1/4 x 1/4 x 1.18
4105DA	7.09	5.31	8.03	3.94	2.95	3.54	0.59	1.18	0.47	0.43	1.57	6.89	5.91	2.36	1.125	1.38	1/4 x 1/4 x 1.18
4115DB	9.06	6.10	9.92	4.72	3.74	4.53	0.79	0.79	0.59	0.55	2.17	8.74	8.03	3.23	1.500	2.17	3/8 x 3/8 x 1.77
4135DC	12.99	7.68	12.48	5.91	5.71	5.71	0.99	0.99	0.87	0.71	2.56	10.43	9.06	3.94	1.875	2.76	1/2 x 1/2 x 2.17
4145DB	12.99	7.68	12.72	5.91	5.71	5.71	0.99	0.99	0.87	0.71	2.56	10.43	9.06	4.72	1.875	3.54	1/2 x 1/2 x 2.95

FRAME SIZE	AJ	AK	BD	BB	BF	R	CE	CL	C	Z	XV	XU	KEYWAY	APPROX. WT.
MOTOR FRAME 56C														
4075DA	5.88	4.50	6.69	0.20	0.43	4	7.91	2.99	6.89	0.47	1.10	0.625 +0.0007 -0.0000	3/16 x 3/32	13
4085DA	5.88	4.50	6.69	0.20	0.43	4	8.21	2.99	7.18	0.47	1.10	0.625 +0.0007 -0.0000	3/16 x 3/32	14
4097DA	5.88	4.50	6.69	0.20	0.43	4	10.47	2.99	9.45	0.47	1.10	0.625 +0.0007 -0.0000	3/16 x 3/32	32
4105DA	5.88	4.50	6.69	0.20	0.43	4	11.02	2.99	10.00	0.47	1.10	0.625 +0.0007 -0.0000	3/16 x 3/32	38
4115DB	5.88	4.50	6.69	0.20	0.43	4	13.27	3.58	12.24	0.47	1.18	0.625 +0.0007 -0.0000	3/16 x 3/32	68
4135DC	5.88	4.50	6.69	0.20	0.43	4	15.63	3.15	14.62	0.47	1.18	0.625 +0.0007 -0.0000	3/16 x 3/32	101
4145DB	5.88	4.50	6.69	0.20	0.43	4	16.30	3.58	15.28	0.47	1.18	0.625 +0.0007 -0.0000	3/16 x 3/32	104
MOTOR FRAME 143-145TC														
4115DB	5.88	4.50	6.69	0.20	0.43	4	13.27	3.58	12.64	0.47	1.57	0.875 +0.0008 -0.0000	3/16 x 3/32	68
4135DC	5.88	4.50	6.69	0.20	0.43	4	15.63	3.15	15.04	0.47	1.65	0.875 +0.0008 -0.0000	3/16 x 3/32	106
4145DB	5.88	4.50	6.69	0.20	0.43	4	16.30	3.58	15.67	0.47	1.57	0.875 +0.0008 -0.0000	3/16 x 3/32	104

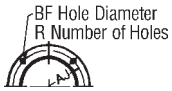
*For tolerances refer to page 127.
Center height “D” for 4075DA, 4085DA is less than the radius of motor flange dia. “BD” (Frame 56C).

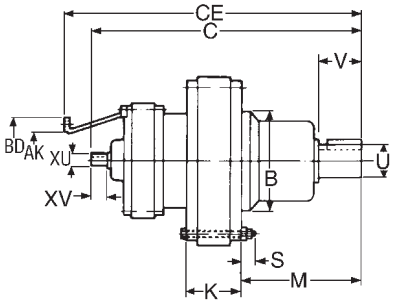
MODEL:_____ CERTIFIED FOR_____
RATIO: _____OUTPUT RPM: _____ HP RATING:_____ S.F.: _____
SUMITOMO ORDER NO.: _____APPROVED BY:_____ DATE:_____

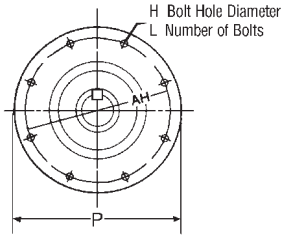
TYPES HF AND HFJ

DOUBLE REDUCTION

FOR ADAPTOR DIMENSIONS SEE PG. 30-31



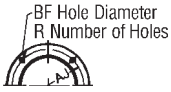


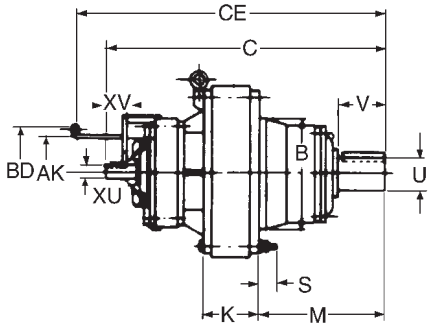


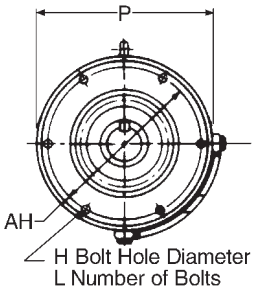
CNF, CNFJ

FRAME SIZE	B	C	H	L	M	P	AH	LOW SPEED SHAFT			HIGH SPEED SHAFT			TYPE F/FJ		EST. WT.
								U*	V	KEY	XU*	XV	KEY	K	S	
4075DA	2.9524 2.9516	7.01	0.26	6	2.72	4.33	3.86	0.500	0.98	⅛ x ⅛ x 0.79	0.500	0.98	⅛ x ⅛ x 0.71	2.40 / 2.87	1.02	10
4085DA	3.1492 3.1485	7.24	0.26	6	2.91	4.33	3.86	0.750	1.18	3/16 x 3/16 x 1.06	0.500	0.98	⅛ x ⅛ x 0.71	2.44 / 2.91	0.98	10
4097DA	4.1334 4.1325	9.57	0.35	8	4.49	5.91	5.28	1.125	1.38	¼ x ¼ x 1.18	0.500	0.98	⅛ x ⅛ x 0.71	1.34	1.02	20
4105DA	4.1334 4.1325	10.12	0.35	8	4.49	5.91	5.28	1.125	1.38	¼ x ¼ x 1.18	0.500	0.98	⅛ x ⅛ x 0.71	1.97	0.98	26
4115DB	5.5113 5.5103	12.28	0.43	6	5.47	8.03	7.09	1.500	2.17	⅜ x ⅜ x 1.77	0.625	0.98	3/16 x 3/16 x 0.75	2.36	1.18	55
4135DC	6.4955 6.4945	14.53	0.43	6	7.01	9.06	8.07	1.875	2.75	½ x ½ x 2.17	0.625	0.98	3/16 x 3/16 x 0.75	2.91	1.22	88
4145DB	6.4955 6.4945	15.08	0.43	6	7.80	9.06	8.07	1.875	3.54	½ x ½ x 2.95	0.625	0.98	3/16 x 3/16 x 0.75	2.91	1.22	86

FOR ADAPTOR DIMENSIONS SEE PG. 30-31







CHF, CHFJ

FRAME SIZE	B	C	H	L	M	P	AH	LOW SPEED SHAFT			HIGH SPEED SHAFT			TYPE HF/HFJ		EST. WT.
								U*	V	KEY	XU*	XV	KEY	K	S	
4165DC	7.8734 7.8723	18.19	0.55	6	8.74	11.81	10.63	2.250	3.54	½ x ½ x 2.95	0.750	1.38	3/16 x 3/16 x 1.02	3.98	1.38	181
4175DC	9.8419 9.8408	20.04	0.55	8	10.31	13.39	11.81	2.750	3.54	⅝ x ⅝ x 3.15	0.750	1.38	3/16 x 3/16 x 1.02	4.13	1.61	232
4185DB	11.0230 11.0217	22.72	0.55	8	11.77	14.57	12.99	3.125	4.33	¾ x ¾ x 3.74	0.875	1.57	3/16 x 3/16 x 1.38	4.25	1.50	320
4190DA **4195DA**	12.5977 17.5963	24.76	0.55	12	14.37	16.93	14.96	3.625	5.31	⅞ x ⅞ x 4.92	0.750	1.38	3/16 x 3/16 x 1.02	4.72	1.61	443
4195DB	12.5977 12.5963	25.71	0.55	12	14.37	16.93	14.96	3.625	5.31	⅞ x ⅞ x 4.92	0.875	1.57	3/16 x 3/16 x 1.38	4.72	1.61	452

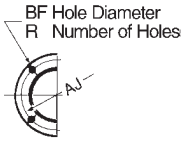
NOTES: For adaptor dimensions and weights on type HFJ units refer to pg. 30-31.
*For tolerances refer to page 123.
Consult factory for larger sizes than listed above.

MODEL:_____ CERTIFIED FOR _____
RATIO: _____ OUTPUT RPM: _____ HP RATING:_____ S.F.:_____
SUMITOMO ORDER NO.: _____ APPROVED BY:_____ DATE:_____

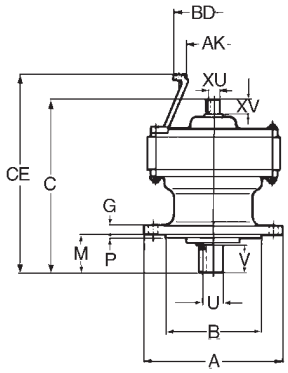
FLANGE MOUNT REDUCERS

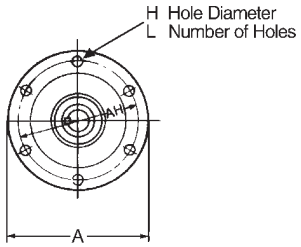
TYPES V AND VJ

SINGLE REDUCTION



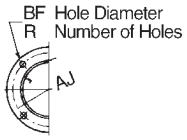
FOR ADAPTOR DIMENSIONS SEE PG. 29-31



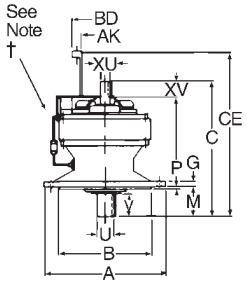


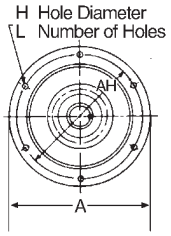
CNV, CNVJ

FRAME SIZE	A	B	C	G	H	L	M	P	AH	LOW SPEED SHAFT U*	LOW SPEED SHAFT V	LOW SPEED SHAFT KEY	HIGH SPEED SHAFT XU*	HIGH SPEED SHAFT XV	HIGH SPEED SHAFT KEY	NET WT. LBS.**
4075	4.72	3.1466 3.1484	5.71	.31	.35	6	1.34	.12	4.02	0.500	0.98	1/8 x 1/8 x 0.79	0.500	0.98	1/8 x 1/8 x 0.71	8
4085	6.30	4.3272 4.3293	5.94	.35	.43	4	1.65	.12	5.28	0.750	1.18	3/16 x 3/16 x 1.06	0.500	0.98	1/8 x 1/8 x 0.71	11
4090 4095 4097	6.30	4.3272 4.3293	7.95	.35	.43	4	1.89	.12	5.28	1.125	1.38	1/4 x 1/4 x 1.18	0.625	0.98	3/16 x 3/16 x 0.75	22
4100 4105 410H	6.30	4.3272 4.3293	8.19	.35	.43	4	1.89	.12	5.28	1.125	1.38	1/4 x 1/4 x 1.18	0.625	0.98	3/16 x 3/16 x 0.75	27
4110 4115 4125	8.27	5.5076 5.5101	10.20	.51	.43	6	2.72	.16	7.09	1.500	2.17	3/8 x 3/8 x 1.77	0.750	1.38	3/16 x 3/16 x 1.02	46



FOR ADAPTOR DIMENSIONS SEE PG. 29-31





CVV, CVVJ

FRAME SIZE	A	B	C	G	H	L	M	P	AH	LOW SPEED SHAFT U*	LOW SPEED SHAFT V	LOW SPEED SHAFT KEY	HIGH SPEED SHAFT XU*	HIGH SPEED SHAFT XV	HIGH SPEED SHAFT KEY	NET WT. LBS.**
4130 4135	10.24	7.8692 7.8720	12.60	.59	.43	6	3.00	.16	9.06	1.875	2.40	1/2 x 1/2 x 2.17	0.875	1.57	3/16 x 3/16 x 1.38	93
4145 4155	10.24	7.8692 7.8720	13.38	.59	.43	6	3.78	.16	9.06	1.875	3.19	1/2 x 1/2 x 2.95	0.875	1.57	3/16 x 3/16 x 1.38	95
4160 4165 416H	13.39	10.6245 10.6277	16.26	.79	.43	6	3.50	.16	12.20	2.250	3.15	1/2 x 1/2 x 2.95	1.125	1.77	1/4 x 1/4 x 1.77	174
4170 4175	15.75	12.4350 12.4385	18.78	.87	.55	8	3.70	.20	14.17	2.750	3.31	5/8 x 5/8 x 3.15	1.375	2.17	5/16 x 5/16 x 2.17	267
4180 4185	16.93	13.5768 13.5803	20.75	.87	.71	8	4.33	.20	15.35	3.125	3.94	3/4 x 3/4 x 3.74	1.500	2.56	3/8 x 3/8 x 2.56	331
4190 4195	19.29	15.7421 15.7456	24.41	1.18	.71	12	5.71	.24	17.72	3.625	4.92	7/8 x 7/8 x 4.92	1.750	2.76	3/8 x 3/8 x 2.76	496
4205	17.91	13.9704 13.9739	26.69	1.18	.87	8	8.03	.20	15.94	3.875	6.50	1 x 1 x 6.50	1.750	3.23	3/8 x 3/8 x 3.23	525
4215	19.29	15.3484 15.3519	27.87	1.38	.94	8	8.00	.28	17.32	4.250	6.50	1 x 1 x 6.50	1.875	3.23	1/2 x 1/2 x 3.23	660
4225	21.06	16.3321 16.3359	29.61	1.38	1.06	8	8.27	.39	18.70	4.625	6.50	1 1/4 x 7/8 x 6.50	2.125	3.23	1/2 x 1/2 x 3.23	840
4235	22.44	17.7100 17.7139	33.03	1.57	1.06	8	9.84	.39	20.08	5.000	7.87	1 1/4 x 7/8 x 7.87	2.250	4.13	1/2 x 1/2 x 4.13	1005
4245	25.00	19.0880 19.0918	34.53	1.57	1.30	8	9.84	.39	22.05	5.500	7.87	1 1/4 x 7/8 x 7.87	2.500	4.13	5/8 x 5/8 x 4.13	1030
4255	26.97	21.0600 21.0557	40.94	1.77	1.30	8	11.61	.39	24.02	6.250	9.45	1 1/2 x 1 x 9.45	3.125	5.12	3/4 x 3/4 x 5.12	1840
4265	29.53	22.4337 22.4380	45.28	1.97	1.54	8	14.17	.39	25.98	6.625	11.81	1 3/4 x 1 1/4 x 11.8	3.125	5.12	3/4 x 3/4 x 5.12	2385

NOTES:

1) For adaptor dimensions and weights on type VJ units refer to pg. 29-31.
*For tolerances refer to page 127.
**Type V approximate.

†Forced Lubrication: Certain ratios of Models 4195-4265 require dual lubrication systems. Certain ratios of Models 4255-4265 require external motor driven circulating lube system.

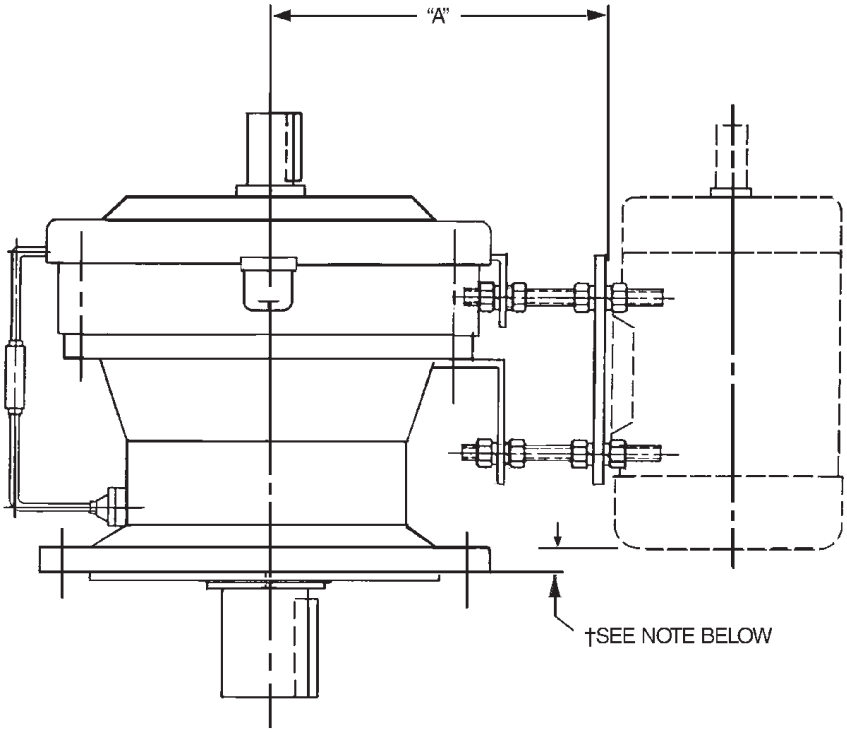
MODEL:_____ CERTIFIED FOR _____

RATIO: _____ OUTPUT RPM: _____ HP RATING:_____ S.F.:_____

SUMITOMO ORDER NO.: _____ APPROVED BY:_____ DATE:_____

SIDE MOUNT

TYPE VP



SM-CYCLO MODEL NO.	"A" DIMENSION MODEL VP	
	Minimum	Maximum
4110 or 4115 or 4125	7.50	10.00
4130 or 4135	7.25	10.25
4145 or 4155	7.25	10.25
4160 or 4165 or 416H	8.88	11.88
4170 or 4175	10.13	13.13
4180 or 4185	10.63	13.63
4190 or 4195	12.00	15.00
4205	13.25	16.25
4215	13.90	16.90
4225	14.56	17.56
4235	15.25	18.25
4245	16.18	19.18
4255	18.75	21.75
4265	19.68	22.68
4275	23.00	26.00

*Maximum may be increased up to 2˝ by use of shim blocks.
NOTE: Total V-Belt Drive Centers = 'A' Dimension listed above PLUS Motor 'D' Dimension.

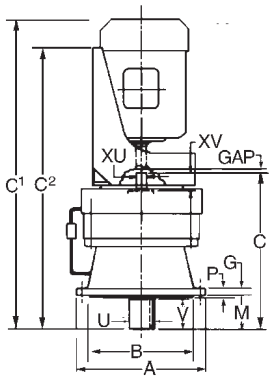
†Because the SM-CYCLO reducer is so compact, in certain frame sizes the motor may extend below the SM-CYCLO mounting flange. Please consult factory for additional information.

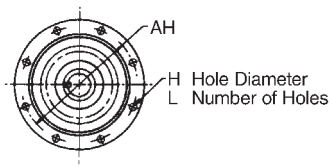
- Fabricated steel motor mount bolts directly to SM-CYCLO Reducer
- Simple adjusting screws for belt tensioning
- Motor mounts are furnished with pre-drilled holes for ease of motor assembly
- Also available as top mount on type H (horizontal) reducers. See page 33.

FLANGE MOUNT REDUCERS
SHOVEL BASE

TYPE V-SB

SINGLE REDUCTION





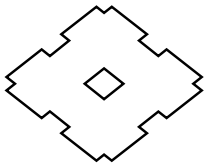
FRAME SIZE	A	B	C	G	H	L	M	P	AH	LOW SPEED SHAFT			HIGH SPEED SHAFT		
										U*	V	KEY	XU*	XV	KEY
4110 4115 4125	8.27	5.5101 5.5076	10.20	.51	.43	6	2.72	.16	7.09	1.500	2.17	3/8 x 3/8 x 1.77	.750	1.38	3/16 x 3/16 x 1.02
4130 4135	10.24	7.8692 7.8720	12.60	.59	.43	6	3.00	.16	9.06	1.875	2.40	1/2 x 1/2 x 2.17	.875	1.57	3/16 x 3/16 x 1.38
4145 4155	10.24	7.8692 7.8720	13.38	.59	.43	6	3.78	.16	9.06	1.875	3.19	1/2 x 1/2 x 2.95	.875	1.57	3/16 x 3/16 x 1.38
4160 4165 416H	13.39	10.6245 10.6277	16.26	.79	.43	6	3.50	.16	12.20	2.250	3.15	1/2 x 1/2 x 2.95	1.125	1.77	1/4 x 1/4 x 1.77
4170 4175	15.75	12.4350 16.4385	18.78	.87	.55	8	3.70	.20	14.17	2.750	3.31	5/8 x 5/8 x 3.15	1.375	2.17	5/16 x 5/16 x 2.17
4180 4185	16.93	13.5768 13.5803	20.75	.87	.71	8	4.33	.20	15.35	3.125	3.94	3/4 x 3/4 x 3.74	1.500	2.56	3/8 x 3/8 x 2.56
4190 4195	19.29	15.7421 15.7456	24.41	1.18	.71	12	5.71	.24	17.72	3.625	4.92	7/8 x 7/8 x 4.92	1.750	2.76	3/8 x 3/8 x 2.76
4205	17.91	13.9704 13.9739	26.69	1.18	.87	8	8.03	.20	15.94	3.875	6.50	1 x 1 x 6.50	1.750	3.23	3/8 x 3/8 x 3.23
4215	19.29	15.3484 15.3519	27.87	1.38	.94	8	8.00	.28	17.32	4.250	6.50	1 x 1 x 6.50	1.875	3.23	1/2 x 1/2 x 3.23
4225	21.06	16.3321 16.3359	29.61	1.38	1.06	8	8.27	.39	18.70	4.625	6.50	1 1/4 x 7/8 x 6.50	2.125	3.23	1/2 x 1/2 x 3.23
4235	22.44	17.7100 17.7139	33.03	1.57	1.06	8	9.84	.39	20.08	5.000	7.87	1 1/4 x 7/8 x 7.87	2.250	4.13	1/2 x 1/2 x 4.13

*For tolerances refer to page 127.

MODEL:_____ CERTIFIED FOR_____

RATIO: _____OUTPUT RPM: _____ HP RATING:_____ S.F.:_____

SUMITOMO ORDER NO.:_____APPROVED BY:_____ DATE:_____



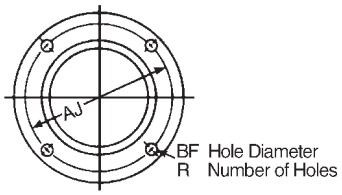
MODEL	DIMS.	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	324T	326T
4110 4115 4125	C1	23.08	24.08	25.89	27.26	29.01							
	C2	24.25		24.25		27.51							
	GAP	0.50		0.50		0.88							
	WT. W/O MOTOR	75		75		85							
4130 4135	C1	26.47	27.47	28.53	29.91	31.41	32.78						
	C2	26.31		26.31		30.81							
	GAP	0.50		0.75		0.88							
	WT. W/O MOTOR	125		125		135							
4145 4155	C1	27.25	28.25	29.31	30.69	32.19	33.56	36.06	37.81				
	C2	27.09		27.09		31.59		36.06					
	GAP	0.50		0.75		0.88		1.00					
	WT. W/O MOTOR	125		125		135		150					
4160 4165 416H	C1			32.19	33.56	35.06	36.44	38.75	40.50	42.14	43.89		
	C2			32.69		34.69		37.69		39.32			
	GAP			0.75		0.88		1.00		1.00			
	WT. W/O MOTOR			210		225		240		260			
4170 4175	C1			34.72	36.09	37.59	38.97	41.28	43.03	44.72	46.22		
	C2			34.41		36.41		43.41		43.41			
	GAP			0.75		0.88		1.00		1.06			
	WT. W/O MOTOR			310		325		340		360			
4180 4185	C1				38.19	39.56	40.94	43.25	45.00	46.69	48.19	50.06	
	C2				40.03	40.03		46.03		46.03		48.00	
	GAP				0.88	0.88		1.00		1.06		1.50	
	WT. W/O MOTOR				375	390		405		435		480	
4190 4195	C1					43.34	44.72	46.91	48.66	50.34	51.84	53.72	55.22
	C2					47.03		47.03		52.03		52.03	
	GAP					1.00		1.00		1.06		1.50	
	WT. W/O MOTOR					565		580		615		660	
4205	C1						46.88	49.19	50.94	52.63	53.38	56.00	57.50
	C2						48.69	48.69		54.69		54.69	
	GAP						0.88	1.00		1.06		1.50	
	WT. W/O MOTOR						620	630		660		715	
4215	C1							50.37	52.12	53.81	54.56	57.18	58.68
	C2							52.38		55.87		55.87	
	GAP							1.00		1.06		1.50	
	WT. W/O MOTOR							760		790		845	
4225	C1									54.92	56.30	58.91	60.41
	C2									59.01		59.01	
	GAP									1.06		1.50	
	WT. W/O MOTOR									970		1030	
4235	C1												63.84
	C2												62.43
	GAP												1.50
	WT. W/O MOTOR												1190

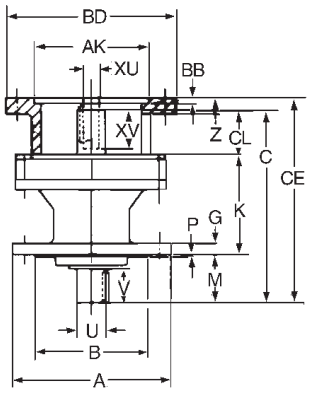
*NOTE: C^1 Dimension may vary slightly depending upon motor manufacturer.

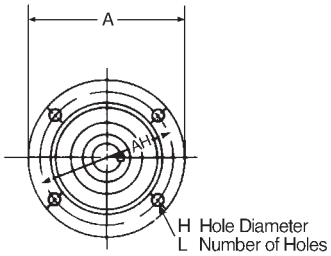
FLANGE MOUNT REDUCERS
HOLLOW INPUT SHAFT

TYPE CNVX

SINGLE REDUCTION







FRAME SIZE	A	B	G	H	K	L	M	P	AH	LOW SPEED SHAFT		
										U*	V	KEY
4075	4.72	3.1484 3.1466	0.31	0.35	2.28	6	1.34	0.12	4.02	0.500	0.98	1/8 x 1/8 x 0.79
4085	6.30	4.3293 4.3272	0.35	0.43	2.20	4	1.65	0.12	5.28	0.750	1.18	3/16 x 3/16 x 1.06
4090 4095 4097	6.30	4.3293 4.3272	0.35	0.43	3.70	4	1.89	0.12	5.28	1.125	1.38	1/4 x 1/4 x 1.18
4100 4105 410H	6.30	4.3293 4.3272	0.35	0.43	4.25	4	1.89	0.12	5.28	1.125	1.38	1/4 x 1/4 x 1.18

FRAME SIZE	AJ	AK	BD	BB	BF	R	CE	CL	C	Z	XV	XU	KEYWAY	EST. WT.
MOTOR FRAME 56C														
4075	5.88	4.50	6.69	0.20	0.43	4	6.61	2.99	5.59	0.47	1.10	0.625 +0.0007 -0.0000	3/16 x 3/32	12
4085	5.88	4.50	6.69	0.20	0.43	4	6.85	2.99	5.83	0.47	1.10	0.625 +0.0007 -0.0000	3/16 x 3/32	14
4090 4095 4097	5.88	4.50	6.69	0.20	0.43	4	8.94	3.58	7.91	0.47	1.18	0.625 +0.0007 -0.0000	3/16 x 3/32	24
4100 4105 410H	5.88	4.50	6.69	0.20	0.43	4	9.29	3.15	8.23	0.47	1.18	0.625 +0.0007 -0.0000	3/16 x 3/32	29
MOTOR FRAME 143-145TC														
4090 4095 4097	5.88	4.50	6.69	0.20	0.43	4	8.94	3.58	8.31	0.47	1.57	0.875 +0.0008 -0.0000	3/16 x 3/32	24
4100 4105 410H	5.88	4.50	6.69	0.20	0.43	4	9.29	3.15	8.70	0.47	1.65	0.875 +0.0008 -0.0000	3/16 x 3/32	29

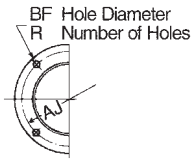
†Approximate Weight includes reducer and adaptor only.
*For tolerances refer to page 127.

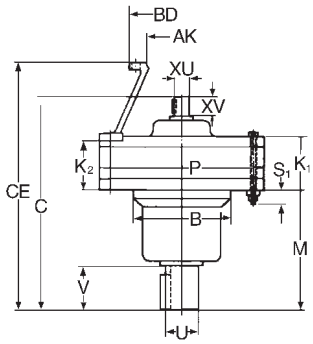
MODEL:_____ CERTIFIED FOR_____
RATIO: _____OUTPUT RPM: _____ HP RATING:_____ S.F.:_____
SUMITOMO ORDER NO.:_____APPROVED BY:_____ DATE:_____

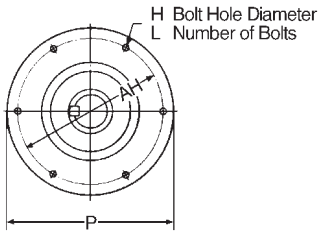
TYPES VF AND VFJ

SINGLE REDUCTION

FOR ADAPTOR DIMENSIONS SEE PG. 29-31



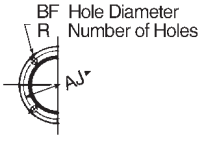


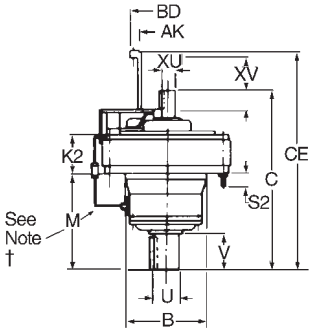


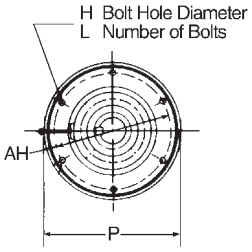
CNF, CNFJ

FRAME SIZE	B	C	H	L	M	P	AH	LOW SPEED SHAFT			HIGH SPEED SHAFT			TYPE F		TYPE FJ		EST. WT.
								U*	V	KEY	XU*	XV	KEY	K_1	S_1	K_2	S_2	
4075	2.9524 2.9516	5.71	0.26	6	2.72	4.33	3.86	0.500	0.98	1/8 x 1/8 x 0.79	0.500	0.98	1/8 x 1/8 x 0.71	1.10	1.06	1.57	0.98	5.5
4085	3.1492 3.1485	5.94	0.26	6	2.91	4.33	3.86	0.750	1.18	3/16 x 3/16 x 1.06	0.500	0.98	1/8 x 1/8 x 0.71	1.14	1.02	1.61	0.94	6.6
4090 4095 4097	4.1334 4.1325	7.95	0.35	8	4.49	5.91	5.28	1.125	1.38	1/4 x 1/4 x 1.18	0.625	0.98	3/16 x 3/16 x 0.75	1.34	1.02	1.93	1.02	16.5
4100 4105 410H	4.1334 4.1325	8.19	0.35	8	4.49	5.91	5.28	1.125	1.38	1/4 x 1/4 x 1.18	0.625	0.98	3/16 x 3/16 x 0.75	1.89	1.06	2.48	1.06	21
4110 4115 4125	5.5113 5.5103	10.20	0.43	6	5.47	8.03	7.09	1.500	2.17	3/8 x 3/8 x 1.77	0.750	1.38	3/16 x 3/16 x 1.02	2.28	1.10	2.87	1.18	44

FOR ADAPTOR DIMENSIONS SEE PG. 29-31







CVF, CVFJ

FRAME SIZE	B	C	H	L	M	P	AH	LOW SPEED SHAFT			HIGH SPEED SHAFT			TYPE VF			TYPE VFJ	
								U*	V	KEY	XU*	XV	KEY	K_1	S_1	EST. WT.	K_2	S_2
4130 4135	6.4946 6.4955	12.60	0.43	6	6.97	9.06	8.07	1.875	2.40	1/2 x 1/2 x 2.17	0.875	1.57	3/16 x 3/16 x 1.38	2.91	1.16	86	3.44	1.19
4145 4155	6.4946 6.4955	13.39	0.43	6	7.76	9.06	8.07	1.875	3.19	1/2 x 1/2 x 2.95	0.875	1.57	3/16 x 3/16 x 1.38	2.91	1.16	88	3.44	1.19
4160 4165 416H	7.8723 7.8734	16.26	0.55	6	8.74	12.52	10.63	2.250	3.15	1/2 x 1/2 x 2.95	1.125	1.77	1/4 x 1/4 x 1.77	3.98	1.56	150	4.53	1.50
4170 4175	9.8408 9.8419	18.78	0.55	8	10.31	14.29	11.81	2.750	3.31	5/8 x 5/8 x 3.15	1.375	2.17	5/16 x 5/16 x 2.17	4.13	1.41	232	4.69	1.75
4180 4185	11.0217 11.0230	20.63	0.55	8	11.77	15.47	12.99	3.125	3.94	3/4 x 3/4 x 3.74	1.500	2.56	3/8 x 3/8 x 2.56	4.25	1.75	298	4.97	1.75
4190 4195	12.5963 12.5977	24.41	0.55	12	14.37	17.91	14.96	3.625	4.92	7/8 x 7/8 x 4.92	1.750	2.76	3/8 x 3/8 x 2.76	4.72	1.84	441	5.19	1.75

NOTE: For adaptor dimensions and weights on type VFJ units refer to pg. 29-31.
*For tolerances refer to page 127.
†Forced Lubrication: Certain ratios of Model 4195 require dual lubrication systems.

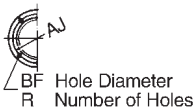
MODEL:_____ CERTIFIED FOR _____
RATIO: _____OUTPUT RPM: _____ HP RATING:_____ S.F.:_____
SUMITOMO ORDER NO.:_____APPROVED BY:_____ DATE:_____

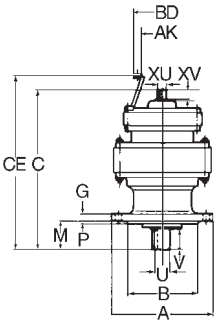
FLANGE MOUNT REDUCERS

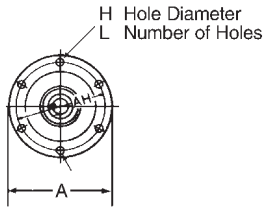
TYPES V AND VJ

DOUBLE REDUCTION

FOR ADAPTOR DIMENSIONS SEE PG. 29-31



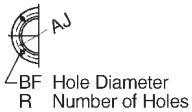


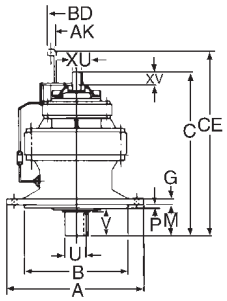


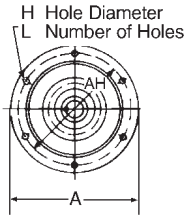
CNV, CNVJ

FRAME SIZE	A	B	C	G	H	L	M	P	AH	LOW SPEED SHAFT			HIGH SPEED SHAFT			NET WT. LBS.**
										U*	V	KEY	XU*	XV	KEY	
4075DA	4.72	3.1466 3.1484	7.00	.31	.35	6	1.34	.12	4.02	0.500	0.98	1/8 x 1/8 x 0.79	0.500	0.98	1/8 x 1/8 x 0.71	12
4085DA	6.30	4.3272 4.3293	7.24	.35	.43	4	1.65	.12	5.28	0.750	1.18	3/16 x 3/16 x 1.06	0.500	0.98	1/8 x 1/8 x 0.71	15
4097DA	6.30	4.3272 4.3293	9.57	.35	.43	4	1.89	.12	5.28	1.125	1.38	1/4 x 1/8 x 1.18	0.500	0.98	1/8 x 1/8 x 0.71	25
4105DA	6.30	4.3272 4.3293	10.12	.35	.43	4	1.89	.12	5.28	1.125	1.38	1/4 x 1/4 x 1.18	0.500	0.98	1/8 x 1/8 x 0.71	31
4115DB	8.27	5.5101 5.5076	12.28	.51	.43	6	2.72	.16	7.09	1.500	2.17	3/8 x 3/8 x 1.77	0.625	0.98	3/16 x 3/16 x 0.75	61
4135DC	10.24	7.8692 7.8720	14.53	.59	.43	6	3.00	.16	9.06	1.875	2.40	1/2 x 1/2 x 2.17	0.625	0.98	3/16 x 3/16 x 0.75	115
4145DB	10.24	7.8692 7.8720	15.08	.59	.43	6	3.78	.16	9.06	1.875	3.19	1/2 x 1/2 x 2.95	0.625	0.98	3/16 x 3/16 x 0.75	108

FOR ADAPTOR DIMENSIONS SEE PG. 29-31







CVV, CVVJ

FRAME SIZE	A	B	C	G	H	L	M	P	AH	LOW SPEED SHAFT			HIGH SPEED SHAFT			NET WT. LBS.**
										U*	V	KEY	XU*	XV	KEY	
4165DC	13.39	10.6245 10.6277	18.19	.79	.43	6	3.50	.16	12.20	2.250	3.15	1/2 x 1/2 x 2.95	0.750	1.38	3/16 x 3/16 x 1.02	196
4175DC	15.75	12.4350 12.4385	20.04	.87	.55	8	3.70	.20	14.17	2.750	3.31	5/8 x 5/8 x 3.15	0.750	1.38	3/16 x 3/16 x 1.02	274
4185DB	16.93	13.5768 13.5803	22.72	.87	.71	8	4.33	.20	15.35	3.125	3.94	3/4 x 3/4 x 3.74	0.875	1.57	3/16 x 3/16 x 1.38	364
4190DA **4195DA**	19.29	15.7421 15.7456	24.76	1.18	.71	12	5.71	.24	17.72	3.625	4.92	7/8 x 7/8 x 4.92	0.750	1.38	3/16 x 3/16 x 1.02	498
4195DB	19.29	15.7421 15.7456	25.71	1.18	.71	12	5.71	.24	17.72	3.625	4.92	7/8 x 7/8 x 4.92	0.875	1.57	3/16 x 3/16 x 1.38	518
4205DA	17.91	13.9704 13.9739	26.38	1.18	.87	8	8.03	.20	15.94	3.875	6.50	1 x 1 x 6.50	0.750	1.38	3/16 x 3/16 x 1.02	537
4205DB	17.91	13.9704 13.9739	27.76	1.18	.87	8	8.03	.20	15.94	3.875	6.50	1 x 1 x 6.50	0.875	1.57	3/16 x 3/16 x 1.38	553
4215DA	19.29	15.3484 15.3519	28.78	1.38	.94	8	8.00	.28	17.32	4.250	6.50	1 x 1 x 6.50	0.875	1.57	3/16 x 3/16 x 1.38	689
4215DB	19.29	15.3484 15.3519	30.71	1.38	.94	8	8.00	.28	17.32	4.250	6.50	1 x 1 x 6.50	1.125	1.77	1/4 x 1/4 x 1.77	744
4225DA	21.06	16.3321 16.3359	30.43	1.38	1.06	8	8.27	.39	18.70	4.625	6.50	1 1/4 x 7/8 x 6.50	0.875	1.57	3/16 x 3/16 x 1.38	802
4225DB	21.06	16.3321 16.3359	33.86	1.38	1.06	8	8.27	.39	18.70	4.625	6.50	1 1/4 x 7/8 x 6.50	1.375	2.17	3/16 x 3/16 x 2.17	895
4235DA	22.44	17.7100 17.7139	34.76	1.57	1.06	8	9.84	.39	20.08	5.000	7.87	1 1/4 x 7/8 x 7.87	1.125	1.77	1/4 x 1/4 x 1.77	1135
4235DB	22.44	17.7100 17.7139	36.93	1.57	1.06	8	9.84	.39	20.08	5.000	7.87	1 1/4 x 7/8 x 7.87	1.500	2.56	3/8 x 3/8 x 2.56	1180
4245DA	25.0	19.0880 19.0918	36.26	1.57	1.30	8	9.84	.39	22.05	5.500	7.87	1 1/4 x 7/8 x 7.87	1.125	1.77	1/4 x 1/4 x 1.77	1140
4245DB	25.0	19.0880 19.0918	38.39	1.57	1.30	8	9.84	.39	22.05	5.500	7.87	1 1/4 x 7/8 x 7.87	1.500	2.56	3/8 x 3/8 x 2.56	1200
4255DA	26.97	21.0600 21.0557	42.56	1.77	1.30	8	11.61	.39	24.02	6.250	9.45	1 1/2 x 1 x 9.45	1.375	2.17	5/16 x 5/16 x 2.17	1925
4255DB	26.97	21.0600 21.0557	44.61	1.77	1.30	8	11.61	.39	24.02	6.250	9.45	1 1/2 x 1 x 9.45	1.750	2.76	3/8 x 3/8 x 2.76	2040
4265DA	29.53	22.4337 22.4380	48.94	1.97	1.54	8	14.17	.39	25.98	6.625	11.81	1 3/4 x 1 1/4 x 11.8	1.750	2.76	3/8 x 3/8 x 2.76	2505

NOTES: For adaptor dimensions and weights on type VJ units refer to pages 29-31. *For Tolerances refer to page 65.

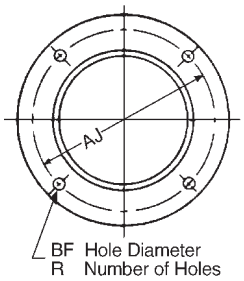
MODEL:_____ CERTIFIED FOR _____

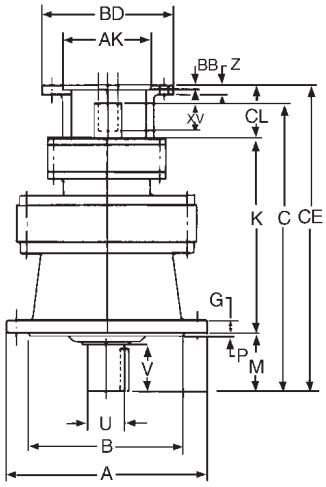
RATIO: _____ OUTPUT RPM: _____ HP RATING:_____ S.F.:_____

SUMITOMO ORDER NO.:_____ APPROVED BY:_____ DATE:_____

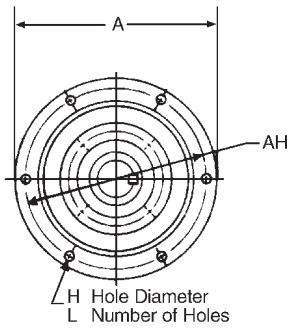
HOLLOW INPUT SHAFT

TYPE CNVX, CVVX





DOUBLE REDUCTION



FRAME SIZE	A	B	G	H	K	L	M	P	AH	LOW SPEED SHAFT		
										U*	V	KEY
4075DA	4.72	3.1484 3.1466	0.31	0.35	3.58	6	1.34	0.12	4.02	0.500	0.98	1/8 x 1/8 x 0.79
4085DA	6.30	4.3293 4.3272	0.35	0.43	3.50	4	1.65	0.12	5.28	0.750	1.18	3/16 x 3/16 x 1.06
4097DA	6.30	4.3293 4.3272	0.35	0.43	7.48	4	1.89	0.12	5.28	1.125	1.38	1/4 x 1/4 x 1.18
4105DA	6.30	4.3293 4.3272	0.35	0.43	6.14	4	1.89	0.12	5.28	1.125	1.38	1/4 x 1/4 x 1.18
4115DB	8.27	5.5101 5.5076	0.51	0.43	7.20	6	2.72	0.16	7.09	1.500	2.17	3/8 x 3/8 x 1.77
4135DC	10.24	7.8720 7.8692	0.59	0.43	9.49	6	2.99	0.16	9.06	1.875	2.40	1/2 x 1/2 x 2.17
4145DB	10.24	7.8720 7.8692	0.59	0.43	8.94	6	3.78	0.16	9.06	1.875	3.19	1/2 x 1/2 x 2.95

FRAME SIZE	AJ	AK	BD	BB	BF	R	CE	CL	C	Z	XV	XU	KEYWAY	EST. WT.
MOTOR FRAME 56C														
4075DA	5.88	4.50	6.69	0.20	0.43	4	7.91	2.99	7.28	0.47	1.50	0.625 +0.0007 -0.0000	3/16 x 3/32	15
4085DA	5.88	4.50	6.69	0.20	0.43	4	8.21	2.99	7.18	0.47	1.50	0.625 +0.0007 -0.0000	3/16 x 3/32	19
4097DA	5.88	4.50	6.69	0.20	0.43	4	10.47	2.99	9.84	0.47	1.50	0.625 +0.0007 -0.0000	3/16 x 3/32	27
4105DA	5.88	4.50	6.69	0.20	0.43	4	11.02	2.99	10.39	0.47	1.50	0.625 +0.0007 -0.0000	3/16 x 3/32	33
4115DB	5.88	4.50	6.69	0.20	0.43	4	13.27	3.58	12.24	0.47	1.50	0.625 +0.0007 -0.0000	3/16 x 3/32	68
4135DC	5.88	4.50	6.69	0.20	0.43	4	15.63	3.15	15.04	0.47	1.65	0.625 +0.0007 -0.0000	3/16 x 3/32	101
4145DB	5.88	4.50	6.69	0.20	0.43	4	16.30	3.58	15.67	0.47	1.50	0.625 +0.0007 -0.0000	3/16 x 3/32	99
MOTOR FRAME 143-145TC														
4115DB	5.88	4.50	6.69	0.20	0.43	4	13.27	3.58	12.64	0.47	1.50	0.875 +0.0008 -0.0000	3/16 x 3/32	68
4135DC	5.88	4.50	6.69	0.20	0.43	4	15.63	3.15	15.04	0.47	1.65	0.875 +0.0008 -0.0000	3/16 x 3/32	101
4145DB	5.88	4.50	6.69	0.20	0.43	4	16.30	3.58	15.67	0.47	1.50	0.875 +0.0008 -0.0000	3/16 x 3/32	99

*For tolerances refer to page 127.

MODEL:_____ CERTIFIED FOR_____

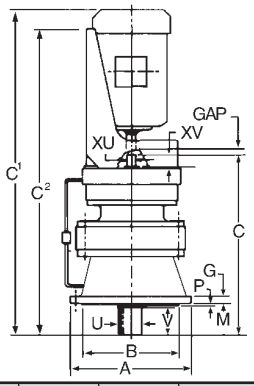
RATIO: _____OUTPUT RPM: _____ HP RATING:_____ S.F.:_____

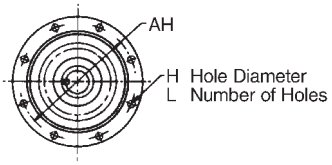
SUMITOMO ORDER NO.:_____APPROVED BY:_____ DATE:_____

FLANGE MOUNT REDUCERS
SHOVEL BASE

DOUBLE REDUCTION

TYPES V-SB





FRAME SIZE	A	B	C	G	H	L	M	P	AH	LOW SPEED SHAFT			HIGH SPEED SHAFT		
										U*	V	KEY	XU*	XV	KEY
4165DC	13.39	10.6245 10.6277	18.19	.79	.43	6	3.50	.16	12.20	2.250	3.15	½ x ½ x 2.95	.750	1.38	3/16 x 3/16 x 1.02
4175DC	15.75	12.4350 12.4385	20.04	.87	.55	8	3.70	.20	14.17	2.750	3.31	5/8 x 5/8 x 3.15	.750	1.38	3/16 x 3/16 x 1.02
4185DB	16.93	13.5768 13.5803	22.72	.87	.71	8	4.33	.20	15.35	3.125	3.94	¾ x ¾ x 3.74	.875	1.57	3/16 x 3/16 x 1.38
4190DA **4195DA**	19.29	15.7421 15.7456	24.76	1.18	.71	12	5.71	.24	17.72	3.625	4.92	7/8 x 7/8 x 4.92	.750	1.38	3/16 x 3/16 x 1.02
4195DB	19.29	15.7421 15.7456	25.71	1.18	.71	12	5.71	.24	17.72	3.625	4.92	7/8 x 7/8 x 4.92	.875	1.57	3/16 x 3/16 x 1.38
4205DA	17.91	13.9704 13.9739	26.38	1.18	.87	8	8.03	.20	15.94	3.875	6.50	1 x 1 x 6.50	.750	1.38	3/16 x 3/16 x 1.02
4205DB	17.91	13.9704 13.9739	27.76	1.18	.87	8	8.03	.20	15.94	3.875	6.50	1 x 1 x 6.50	.875	1.57	3/16 x 3/16 x 1.38
4215DA	19.29	15.3484 15.3519	28.78	1.38	.94	8	8.00	.28	17.32	4.250	6.50	1 x 1 x 6.50	.875	1.57	3/16 x 3/16 x 1.38
4215DB	19.29	15.3484 15.3519	30.71	1.38	.94	8	8.00	.28	17.32	4.250	6.50	1 x 1 x 6.50	1.125	1.77	¼ x ¼ x 1.77
4225DA	21.06	16.3321 16.3359	30.43	1.38	1.06	8	8.27	.39	18.70	4.625	6.50	¼ x 7/8 x 6.50	.875	1.57	3/16 x 3/16 x 1.38
4225DB	21.06	16.3321 16.3359	33.86	1.38	1.06	8	8.27	.39	18.70	4.625	6.50	1¼ x 7/8 x 6.50	1.375	2.17	5/16 x 5/16 x 2.17
4235DA	22.44	17.7100 17.7139	34.76	1.57	1.06	8	9.84	.39	20.08	5.000	7.87	1¼ x 7/8 x 7.87	1.125	1.77	¼ x ¼ x 1.77
4235DB	22.44	17.7100 17.7139	36.93	1.57	1.06	8	9.84	.39	20.08	5.000	7.87	1¼ x 7/8 x 7.87	1.500	2.56	3/8 x 3/8 x 2.56
4245DA	25.00	19.0880 19.0918	36.26	1.57	1.30	8	9.84	.39	22.05	5.500	7.87	1¼ x 7/8 x 7.87	1.125	1.77	¼ x ¼ x 1.77
4245DB	25.00	19.0880 19.0918	38.39	1.57	1.30	8	9.84	.39	22.05	5.500	7.87	1¼ x 7/8 x 7.87	1.500	2.56	3/8 x 3/8 x 2.56
4255DA	26.97	21.0600 21.0557	42.56	1.77	1.30	8	11.61	.39	24.02	6.250	9.45	1½ x 1 x 9.45	1.375	2.17	5/16 x 5/16 x 2.17
4255DB	26.97	21.0600 21.0557	44.61	1.77	1.30	8	11.61	.39	24.02	6.250	9.45	1½ x 1 x 9.45	1.750	2.76	3/8 x 3/8 x 2.76
4265DA	29.53	22.4337 22.4380	48.94	1.97	1.54	8	14.17	.39	25.98	6.625	11.81	1¾ x 1¼ x 11.8	1.750	2.76	3/8 x 3/8 x 2.76

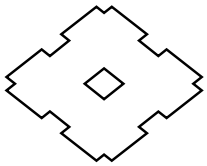
MODEL	DIMS.	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	324T	326T
4165DC	C1	31.07	32.07	33.88									
	C2	32.25		32.25									
	GAP	0.50		0.50									
	WT. W/O MOTOR	235		235									
4175DC	C1	32.91	33.91	35.72	37.09								
	C2	34.09		34.09									
	GAP	0.50		0.50									
	WT. W/O MOTOR	315		315									
4185DB	C1	35.59	36.59	38.66	40.03	41.53							
	C2	36.44		36.44		38.47							
	GAP	0.25		0.75		0.88							
	WT. W/MOTOR	395		395		405							

*NOTE: C^1 Dimension may vary slightly depending upon motor manufacturer.

MODEL:_____ CERTIFIED FOR_____

RATIO: _____OUTPUT RPM: _____ HP RATING:_____ S.F.:_____

SUMITOMO ORDER NO.:_____APPROVED BY:_____ DATE:_____



MODEL	DIMS.	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	324T	326T
4190DA 4195DA	C1	37.63	38.63	40.44	41.81								
	C2	38.81		38.81									
	GAP	0.50		0.50									
	WT. W/O MOTOR	540		540									
4195DB	C1	38.59	39.59	41.66	43.03	44.53	45.91						
	C2	39.44		39.44		43.94							
	GAP	0.50		0.75		0.88							
	WT. W/O MOTOR	580		580		590							
4205DB	C1		41.64	43.70	45.08	47.32	47.95						
	C2		41.47	41.47		45.97							
	GAP		0.50	0.75		0.88							
	WT. W/O MOTOR		625	625		635							
4215DA	C1		42.66	44.72	46.09	48.34	48.97						
	C2		42.49	42.49		46.99							
	GAP		0.50	0.75		0.88							
	WT. W/O MOTOR		720	720		730							
4215DB	C1					50.28	50.91	53.21					
	C2					49.13		52.13					
	GAP					0.88		1.00					
	WT. W/O MOTOR					795		810					
4225DA	C1		43.31	46.37	47.74	50.00	50.62	52.93					
	C2		42.39	44.14		48.64		51.64					
	GAP		0.50	0.75		0.88		1.00					
	WT. W/O MOTOR		830	830		840		855					
4225DB	C1					53.43	54.05	56.36	58.11				
	C2					52.53		55.28					
	GAP					0.88		1.00					
	WT. W/O MOTOR					955		970					
4235DA	C1			50.70	52.07	54.33	54.95	57.26	59.01				
	C2			51.19		53.44		56.19					
	GAP			0.75		0.88		1.00					
	WT. W/O MOTOR			1175		1190		1205					
4235DB	C1						57.12	59.43	61.18	62.87			
	C2						56.21	62.21		62.21			
	GAP						0.88	1.00		1.06			
	WT. W/O MOTOR						1315	1330		1360			
4245DA	C1				53.57	55.83	56.45	58.76					
	C2				52.68	54.93		57.68					
	GAP				0.75	0.88		1.00					
	WT. W/O MOTOR				1380	1395		1410					
4245DB	C1						58.58	60.89	62.64	64.33	65.83		
	C2						57.67	63.67		63.67			
	GAP						0.88	1.00		1.06			
	WT. W/O MOTOR						1455	1470		1500			
4255DA	C1				59.87	62.13	62.75	65.06	66.81	68.50			
	C2				58.17	60.17		67.17		67.17			
	GAP				0.75	0.88		1.00		1.06			
	WT. W/O MOTOR				1970	1985		2000		2020			
4255DB	C1							67.11	68.86	70.55	72.05	73.92	
	C2							69.90		69.90		71.90	
	GAP							1.00		1.06		1.50	
	WT. W/O MOTOR							2120		2150		2200	
4265DA	C1					68.63	69.25	71.44	73.19	74.88	76.38	78.25	79.85
	C2					71.57		71.57		76.57		76.57	
	GAP					1.00		1.00		1.06		1.50	
	WT. W/O MOTOR					2575		2590		2620		2670	

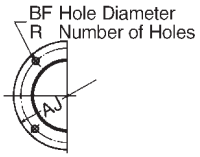
NOTE: C^1 Dimension may vary slightly depending upon motor manufacturer.

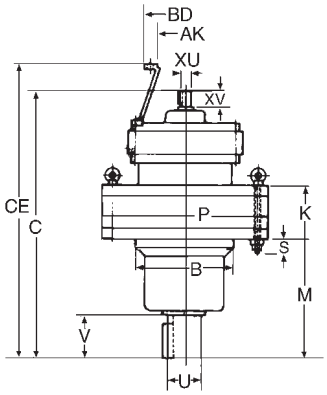
FLANGE MOUNT REDUCERS

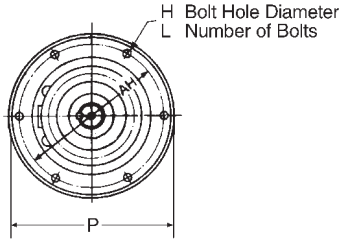
TYPES VF AND VFJ

DOUBLE REDUCTION

FOR ADAPTOR DIMENSIONS SEE PG. 29-31



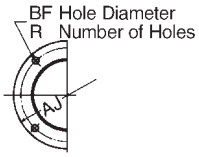


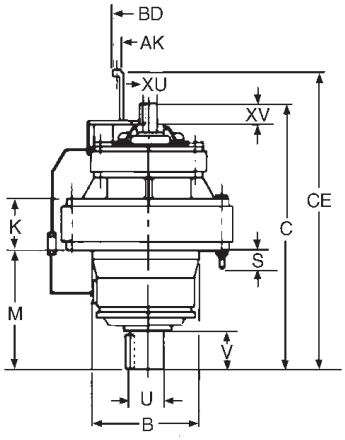


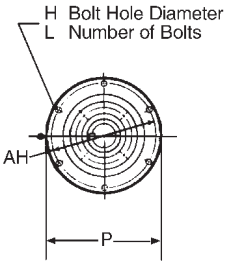
CNF, CNFJ

FRAME SIZE	B	C	H	L	M	P	AH	LOW SPEED SHAFT			HIGH SPEED SHAFT			TYPE F/FJ		EST. WT.
								U*	V	KEY	XU*	XV	KEY	K	S	
4075DA	2.9524 2.9516	7.01	0.26	6	2.72	4.33	3.86	0.500	0.98	1/8 x 1/8 x 0.79	0.500	0.98	1/8 x 1/8 x 0.71	2.40 2.87	1.02	10
4085DA	3.1492 3.1485	7.24	0.26	6	2.91	4.33	3.86	0.750	1.18	3/16 x 3/16 x 1.06	0.500	0.98	1/8 x 1/8 x 0.71	2.44 2.91	0.98	10
4097DA	4.1334 4.1325	9.57	0.35	8	4.49	5.91	5.28	1.125	1.38	1/4 x 1/4 x 1.18	0.500	0.98	1/8 x 1/8 x 0.71	1.34	1.02	20
4105DA	4.1334 4.1325	10.12	0.35	8	4.49	5.91	5.28	1.125	1.38	1/4 x 1/4 x 1.18	0.500	0.98	1/8 x 1/8 x 0.71	1.97	0.98	26
4115DB	5.5113 5.5103	12.28	0.43	6	5.47	8.03	7.09	1.500	2.17	3/8 x 3/8 x 1.77	0.625	0.98	3/16 x 3/16 x 0.75	2.36	1.18	55

FOR ADAPTOR DIMENSIONS SEE PG. 29-31







CVF, CVFJ

FRAME SIZE	B	C	H	L	M	P	AH	LOW SPEED SHAFT			HIGH SPEED SHAFT			TYPE VF/VFJ		EST. WT.
								U*	V	KEY	XU*	XV	KEY	K	S	
4135DC	6.4955 6.4945	14.53	0.43	6	7.01	9.06	8.07	1.875	2.40	1/2 x 1/2 x 2.17	0.625	0.98	3/16 x 3/16 x 0.75	2.91	1.22	88
4145DB	6.4955 6.4945	15.08	0.43	6	7.80	9.06	8.07	1.875	3.19	1/2 x 1/2 x 2.95	0.625	0.98	3/16 x 3/16 x 0.75	2.91	1.22	86
4165DC	7.8734 7.8723	18.19	0.55	6	8.74	11.81	10.63	2.250	3.15	1/2 x 1/2 x 2.95	0.750	1.38	3/16 x 3/16 x 1.02	3.98	1.38	1.81
4175DC	9.8419 9.8408	20.04	0.55	8	10.31	13.39	11.81	2.750	3.31	5/8 x 5/8 x 3.15	0.750	1.38	3/16 x 3/16 x 1.02	4.13	1.61	232
4185DB	11.0230 11.0217	22.72	0.55	8	11.77	14.57	12.99	3.125	3.94	3/4 x 3/4 x 3.74	0.875	1.57	3/16 x 3/16 x 1.38	4.25	1.50	320
4190DA **4195DA**	12.5977 12.5963	24.76	0.55	12	14.37	16.93	14.96	3.625	4.92	7/8 x 7/8 x 4.92	0.750	1.38	3/16 x 3/16 x 1.02	4.72	1.61	443
4195DB	12.5977 12.5963	25.71	0.55	12	14.37	16.93	14.96	3.625	4.92	7/8 x 7/8 x 4.92	0.875	1.57	3/16 x 3/16 x 1.38	4.72	1.61	452

NOTES: For adaptor dimensions and weights on type VFJ units refer to pages 29-31.
*For tolerances refer to page 127.

MODEL:_____ CERTIFIED FOR_____

RATIO: _____OUTPUT RPM: _____ HP RATING:_____ S.F.:_____

SUMITOMO ORDER NO.:_____APPROVED BY:_____ DATE:_____

SM-CYCLO® GEARMOTORS & BRAKEMOTORS

“F” FRAME MOTORS

- **High strength extruded aluminum alloy motor frame.**
- **50% stronger than die cast.**
- **35% smaller.**
- **35% lighter.**
- **Same power and efficiency of our “G” Frame.**
- **FB brakemotors now offer longer life, easier maintenance, higher cycling capacity and one touch release.**
- **Improved heat dissipation is excellent for inverter applications.**

New “F” Frame vs. “G” Frame Size Comparison

ELECTRIC MOTORS & BRAKEMOTORS

Sumitomo Heavy Industries Electrical Division has been manufacturing various types of motors since 1913. The motor used with the SM-CYCLO® gearmotor has been manufactured since 1969 with well over 3 million having been shipped throughout the world.

Motor and Brake Motor Design Features

- Totally enclosed fan cooled
- Squirrel cage rotor type
- NEMA Design B or A
- Designed for continuous duty
- Ambient temperatures -15° through 40°C (5°-104°F)
- Motor frames are made of Extruded Aluminum.
- Bearings are anti-friction type.
- Insulation NEMA Class B

Voltages

Standard motor and brake coil voltages are 3 phase, 208/230/460V/575V 60 Hz.

- See page 120 for single phase motor characteristics.

Optional Voltages:

- 190/380V at 50 Hz
- For other available voltages please consult factory.

Special Motor Options

- Brake Coil Voltage: 200 VDC from rectifier. Standard Input Voltage is 208, 230 and 460. Additional voltages available. Please consult factory.
- Weatherproof: While our standard motor is TEFC and may be used outdoors, when used in severe environments, weather protection may be required.
- Insulation: NEMA Class F
  NEMA Class H
- Service Factor 1.15
- Dust Proof
- Chemical Duty
- Low-Temperature Modification
- Space Heater (115 or 230V)
- High Slip Motors
- Wash-Down
- High Humidity
- Wound-Rotor Motor (crane use motor)
- Star (Wye) — Delta Starting
- Thermostat or Thermistor Protection
- 6-Pole 1200 RPM Motor
- Two-Speed Motor — Constant Torque 1800/900 RPM
- External Shoe Brakes for Large Motors
- Cast Iron Frames

HOW IT WORKS

The reducer portion has only three major moving parts

1. The high speed input shaft with integrally mounted eccentric cam and roller assembly
2. The cycloid discs
3. The slow speed shaft assembly

Operation

As the eccentric (high speed shaft) rotates, it rolls the cycloid discs around the internal circumference of the stationary ring gear.

The movement of cycloid disc is transmitted to the slow speed shaft by the projection of pins through the bores of the discs.

A two disc system is used to increase torque capacities and offer an exceptionally smooth vibrationless drive.

There is one less tooth per cycloid disc than there are pins in the fixed ring gear, which results in reduction ratios being equal to the number of teeth in each disc.

(NOTE: On some ratios, there are two less teeth per cycloid disc than there are pins in the fixed ring gear.)

The movement of cycloid disc is transmitted to the slow speed shaft by the projection of pins through the bores of the discs.

STANDARD MOTOR CHARACTERISTICS

Motor Characteristics

The SM-CYCLO® gearmotors full load ratings and amperage can be found below in table M-1. These ratings are based on the motors design values. If additional information is required please consult factory.

Table M-1 — 230/460 Volt, Synchronous Speed 1800 rpm, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Full Load Current Amperage			Starting Current Amperage		Torque % of F.L.		Effi-ciency %	Power Factor %	Code Letter*	Inertia WR² lb. ft²
		rpm	Torque in. lb.	230V	460V	208V	230V	460V	Starting	Break-down				
1/8**	F-63S	1730	4.50	0.7	0.35	0.65	2.8	1.4	326	329	64.0	59.5	K	0.0077
1/4	F-63M	1730	9.06	1.1	0.60	1.1	5.2	2.6	300	293	69.8	65.2	K	0.0119
1/3	F-63M	1710	12.3	1.3	0.65	1.3	5.2	2.6	232	232	70.8	72.0	G	0.0119
1/2	F-71M	1740	18.3	2.1	1.1	2.0	9.8	4.9	295	280	71.9	65.1	J	0.0154
3/4	F-80S	1730	27.4	2.5	1.2	2.5	12.3	6.2	266	245	76.9	73.0	H	0.0227
1	F-80	1750	36.0	3.4	1.7	3.4	17.6	8.8	269	303	77.2	72.3	H	0.0285
1.5	F-90S	1730	54.7	4.7	2.4	4.7	28.6	14.3	273	281	80.3	74.1	J	0.0451
2	F-90L	1740	72.5	6.1	3.0	6.2	36.8	18.4	263	270	82.3	75.6	J	0.0504
3	F-100L	1730	109	8.5	4.3	8.7	54.8	27.4	277	266	84.4	77.2	J	0.0789
5	F-112M	1730	183	13.1	6.6	13.7	91.5	45.8	308	279	86.3	82.4	J	0.201
7.5	F-132S	1710	277	18.1	9.0	20.1	120	60	230	223	86.9	88.1	H	0.271
10	F-132M	1740	361	23.6	11.8	26.4	147	73.5	212	214	89.6	88.9	G	0.635
15	F-160M	1740	542	34.3	17.2	38.2	231	115	248	221	90.4	89.0	G	0.891
20	G-160L	1740	725	45.8	22.9	51	272	136	222	220	91.6	89.9	F	2.13
25	G-180M	1770	891	57	28.4	63	343	171	199	235	92.6	88.2	F	5.34
30	G-180M	1760	1075	68	34.2	77	388	194	192	226	91.5	88.1	F	5.34
40	F-180L	1750	1442	93	46.3	100	704	352	310	274	92.2	88.3	H	5.93
50	F-200L	1740	1812	114	57	124	904	452	340	286	92.1	88.5	J	7.30
60	F-200L	1740	2175	138	69	150	1078	539	340	279	92.5	88.4	J	8.13
75	F-225S	1750	2703	167	83	183	1257	629	277	282	92.2	89.8	H	16.0

*Code letter shown is for 230V or 460V operation. Consult factory for other voltages. **⅛ HP is TENV

Table B Synchronous Speed 1200 rpm, 60 Hz, Continuous Duty

HP	Frame Size	Full Load		Full Load Current Amp.		Starting Current Amp.		Torque % of F.L.		Effi-ciency %	Power Factor %	Code Letter*	Inertia WR² lb. ft²
		rpm	Torque in. lb.	230V	460V	230V	460V	Starting	Break down				
20	G-180M	1160	1087	52	25.9	327	163	263	254	91.3	79.5	H	7.53
25	F-180L	1160	1359	59	29.7	412	206	261	286	90.9	86.0	H	8.60
30	F-180L	1170	1617	71	35.6	506	253	273	297	92.4	83.8	H	8.60
40	F-200L	1180	2138	95	47.6	703	352	318	305	93.1	85.0	H	11.3
50	F-200L	1170	2695	117	59	923	462	348	327	92.9	85.1	J	14.2
60	F-225S	1170	3234	140	70	963	481	290	267	92.6	86.9	H	23.7
75	F-250S	1160	4078	170	85	1141	570	289	259	93.0	87.2	G	27.9

*Code letter shown is for 230V or 460V operation. Consult factory for other voltages.

Table M-1 — 575 Volt, Synchronous Speed 1800 rpm, 60 Hz, Continuous Duty

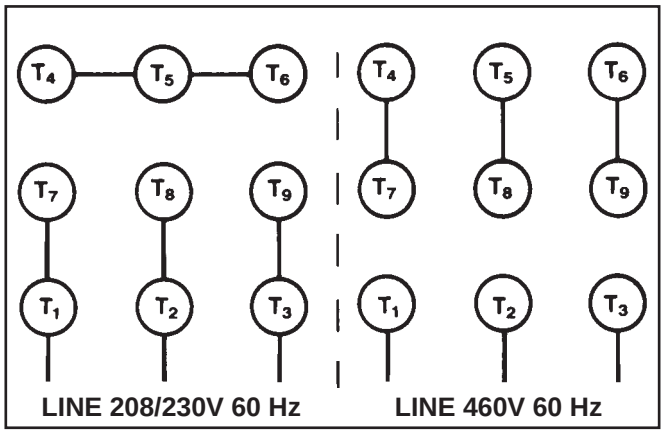
HP	Frame Size	Full Load		Full Load Current Amp.		Starting Current Amp.		Torque % of F.L.		Effi-ciency %	Power Factor %	Code Letter*	Inertia WR² lb. ft²
		rpm	Torque in. lb.	575V		575V		Starting	Break-down				
1/8	F-63S	1720	4.58	0.28		1.3		376	391	65.2	54.1	L	0.0077
1/4	F-63M	1720	9.17	0.48		2.2		316	340	69.4	60.3	K	0.0119
1/3	F-63M	1710	12.8	0.52		2.2		250	270	71.3	67.7	H	0.0119
1/2	F-71M	1700	18.6	0.79		3.7		309	300	75.8	67.4	H	0.0154
3/4	F-80S	1720	27.5	0.94		4.5		247	227	77.4	75.9	G	0.0227
1	F-80M	1680	37.5	1.3		6.6		252	256	78.1	74.9	H	0.0285
1.5	F-90S	1720	55.1	1.8		11.5		280	294	81.5	75.0	J	0.0451
2	F-90L	1720	73.3	2.3		14.3		264	268	82.5	77.8	H	0.0504
3	F-100L	1710	111	3.3		21.3		269	264	84.2	79.5	J	0.0789
5	F-112M	1730	182	5.2		39.5		268	271	86.6	82.7	J	0.201
7.5	F-132S	1720	278	7.7		62		298	263	87.1	82.6	K	0.271
10	F-132M	1740	362	9.7		74		275	266	89.9	86.4	J	0.635
15	F-160M	1750	540	14.1		113		305	275	90.4	86.6	J	0.889
20	G-160L	1770	713	18.7		147		310	304	92.6	86.9	J	2.13
25	G-180M	1780	886	23.7		190		281	332	93.2	84.2	J	5.34
30	G-180M	1780	1063	27.6		190		238	278	93.2	85.8	G	5.34
40	F-180L	1780	1417	37.1		282		311	275	92.1	88.2	H	5.93
50	F-200L	1780	1772	45.0		355		333	281	93.0	88.9	H	7.30

*Code letter shown is for 230V or 460V operation. Consult factory for other voltages.

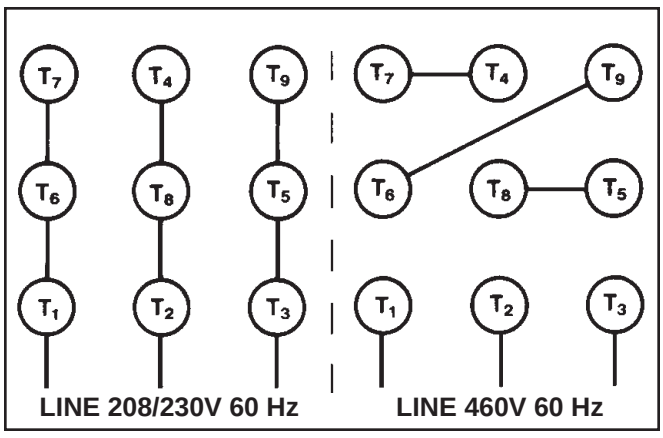
Standard Wiring Diagram — 208, 230/460

Illustrated below are the wiring diagrams for our standard motor, for additional information please refer to motor name plate. Due to changes in design features, this diagram may not always agree with that on the motor. If different, the motor diagram found inside the conduit box cover is correct.

Y-Connected (5 HP and smaller)



Delta-Connected (7.5 HP and larger)

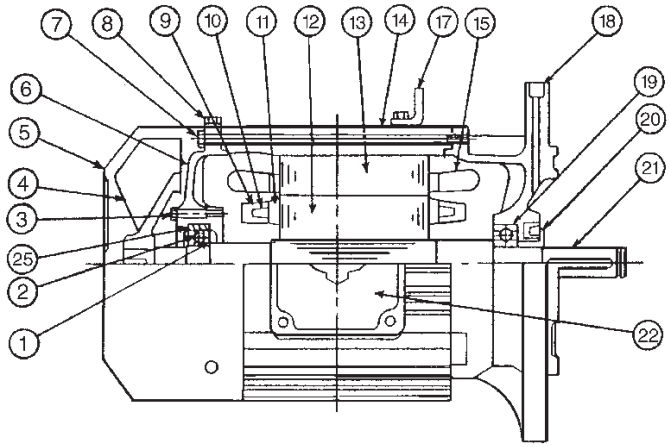


ASSEMBLY OF STANDARD MOTORS

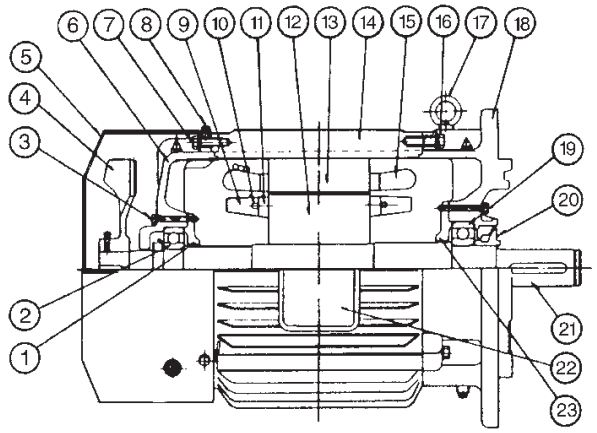
A cut-a-way drawing of the standard motor is shown in Fig. M-2.

Brakemotors are shown in Fig. M-3 on page 64.

Figure M-2 Standard Motor



Frame Size F-63M thru F-160M

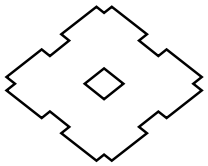


Frame Size G-160L and Larger

Part No.	Description (M-2)
1	Bearing Cover
2	Bearing
3	Bolt
4	Fan*
5	Fan Cover
6	End Bracket
7	Bolt
8	Bolt
9	Internal Fan
10	Hub
11	Short Circuit Ring
12	Rotor Core
13	Stationary Core
14	Stator Frame
15	Stator Winding
16	Bolt
17	Eye Bolt
18	Cyclo Flange Bracket
19	Bearing
20	Slinger
21	Motor Shaft
22	Conduit Box
23	Bearing Cover
24	Oil Seal
25	Bearing Sleeve

*No Fan ⅛ HP, F-63S frame.

RECTIFIER DATA



BRAKE TYPE	MOTOR (HP X P)	VOLTAGE (V)	RECTIFIER P.N. SINGLE VOLTAGE (SEE NOTE BELOW)
FB-01A	1/8 x 4	180 ~ 250	05F-2FB
		*340 ~ 460	05F-4FB
FB-02A	1/4 x 4	180 ~ 250	05F-2FB
	1/3 x 4	*340 ~ 460	05F-45FB
FB-05A	1/2 x 4	180 ~ 250	05F-2FB
		*330 ~ 460	05F-4FB
FB-1A	3/4 x 4	180 ~ 250	05F-2FB
	1 x 4	*251 ~ 460	05F-4FB
FB-2A	1.5 x 4	180 ~ 250	10F-2FB
	2 x 4	*251 ~ 460	05F-4FB
FB-3A	3 x 4	180 ~ 250	10F-2FB
		*340 ~ 460	05F-4FB
FB-5A	5 x 4	180 ~ 240	10F-2FB
		*340 ~ 460	05F-45B
FB-8A	7.5 x 4	180 ~ 460	05F-4FB
FB-10A	10 x 4	190 ~ 460	15F-4FB
FB-15A	15 x 4	190 ~ 460	15F-4FB
CMB-20	20 x 4	180 ~ 460	SB25F-3HS

*Option

NOTE: Dual Voltage Rectifier P.N. 25FW-4FB is now standard for all FB brakes.
The voltage range is 190 ~ 460 V.
Single Voltage Rectifiers must be used with proper voltage brake coil.

BRAKEMOTOR CHARACTERISTICS

The brakemotor on SM-CYCLO® gearmotors operates on a D.C. current supplied by a dual voltage rectifier mounted on the motor conduit box.

The standard brake input voltage is 208V OR 230V OR 460V at 60 Hz. (For other available voltages see page 57.)

Our standard brakemotor when used for outdoor installations must be protected with some type of covering. Such coverings are available from the factory, please inquire when ordering.

Note: While the brake torque can be field adjusted within a limited range, if you require larger or smaller brake torque than those listed, please advise the factory when ordering.

Table B-1 Required Brake Response Action

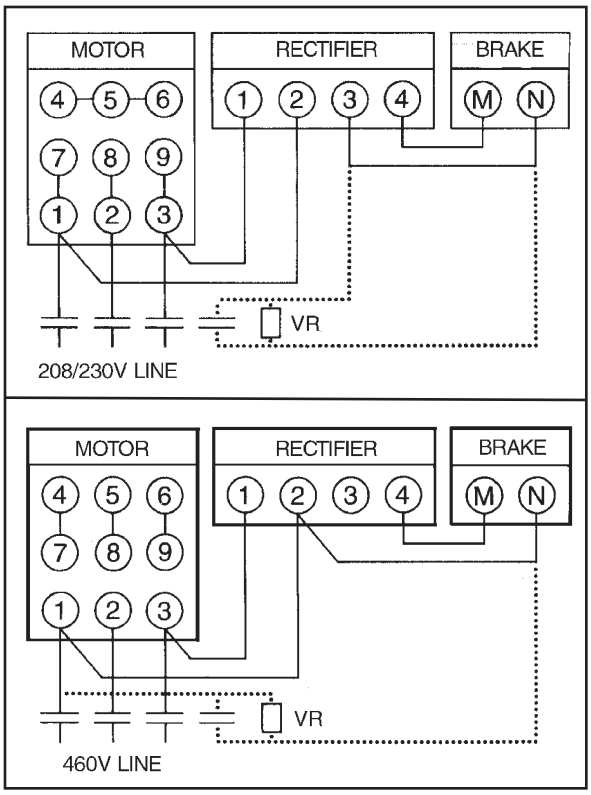
Condition	% Motor Torque Rating	Typical Application	Remarks
Rapid Brake Action	100%	Machine Tool Cutter and Table Transfer	
Frequent Start/ Stop	100%	Conveyor Drive	Fast Brake Action May Be Required
Rapid Braking and Fail Safe	Over 150%	Crane, Hoist Winch, Gate, Lifting	Wiring Connection for Fast Brake Action Required
Rapid Deceleration of High Inertia	Over 150%	Centrifuge Drive Textile	

HP	TYPE		BRAKE Torque ft. lb.		Inertia WR^2 $lb.ft^2$	Brake Delay Time (sec)		Coil Current AC Amerage		
	Motor Frame	Brake Model	Std.	Max.		Normal Braking Action	Fast Braking Action	230V	460V	208V
1/8	F-63S	FB-01A	0.7	1.0	0.0083	0.15 ~ 0.2	0.015 ~ 0.02	0.06	0.04	0.06
1/4	F-63M	FB-02A	1.4	2.9	0.0131	0.15 ~ 0.2	0.015 ~ 0.02	0.1	0.06	0.1
1/3	F-63M	FB-02A	1.4	2.9	0.0131	0.15 ~ 0.2	0.015 ~ 0.02	0.1	0.06	0.1
1/2	F-71M	FB-05A	2.9	2.9	0.016	0.1 ~ 0.15	0.01 ~ 0.015	0.1	0.06	0.1
3/4	F-80S	FB-1A	5.8	7.7	0.0267	0.2 ~ 0.3	0.01 ~ 0.02	0.1	0.1	0.1
1	F-80M	FB-1A	5.8	7.7	0.0308	0.2 ~ 0.3	0.01 ~ 0.02	0.1	0.1	0.1
1.5	F-90S	FB-2A	11	14	0.0510	0.2 ~ 0.3	0.01 ~ 0.02	0.3	0.2	0.3
2	F-90L	FB-2A	11	14	0.0564	0.2 ~ 0.3	0.01 ~ 0.02	0.3	0.2	0.3
3	F-100L	FB-3A	16	21	0.0884	0.3 ~ 0.4	0.02 ~ 0.03	0.4	0.2	0.4
5	F-112M	FB-5A	27	36	0.239	0.4 ~ 0.5	0.02 ~ 0.03	0.5	0.3	0.4
7.5	F-132S	FB-8A	40	53	0.309	0.3 ~ 0.4	0.02 ~ 0.03	0.5	0.3	0.4
10	F-132M	FB-10A	54	72	0.736	0.7 ~ 0.8	0.04 ~ 0.05	0.8	0.5	0.7
15	F-160M	FB-15A	80	80	0.991	0.5 ~ 0.6	0.04 ~ 0.05	0.8	0.5	0.7
20	G-160L	CMB-20	72	80	3.150	0.6 ~ 0.8	0.1 ~ 0.15	1.7	1.9	1.5

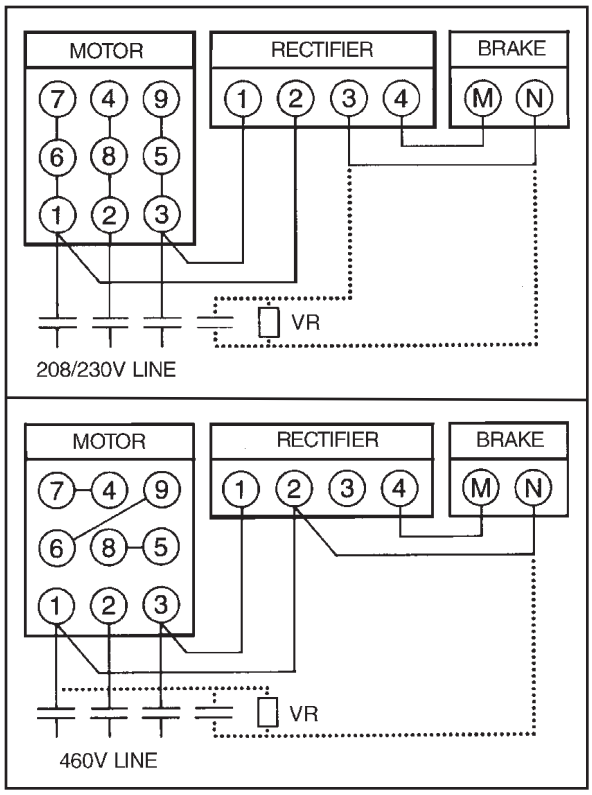
Typical Brakemotor Wiring

Illustrated below is a typical brakemotor wiring schematic. Note the rectifier shown is supplied in the motor conduit box. Due to changes in design features, this diagram may not always agree with that on the motor. If different, the motor diagram found inside the conduit box cover is correct.

Y Connected - (1½ HP and smaller)



Delta Connected - (2 HP thru 15 HP)



- New dual voltage rectifier can be wired for 230V or 460V supply.
- Solid lines show the wiring connections for standard brake action.
- For fast brake action connect terminals as indicated by dotted lines. Add an additional contactor, and varistor VR from Table BV-1 below. Do not connect terminal N on brake coil to terminal 3 on rectifier for fast brake action. For 460V fast action braking do not connect terminal N on brake coil to terminal 2 on rectifier.

Table BV-1: Varistors for Fast Braking Action

OPERATING VOLTAGE		208 V / 230 V	460 V	575
Varistor Rated Voltage		AC260 ~ 300 V	AC510 V	AC604 V
Varistor Voltage		430 ~ 470 V	820 V	.1000 V
Varistor Rated Wattage	FB-01A, 02A, 05A	Over 0.2 W	Over 0.4 W	Over 0.4 W
	FB-1A	Over 0.4 W	Over 0.6 W	Over 0.6 W
	FB-2A, 3A, 5A, 8A	Over 0.6 W	Over 1.5 W	Over 1.5 W
	FB-10A, 15A	Over 1 W	Over 1.5 W	Over 1.5 W

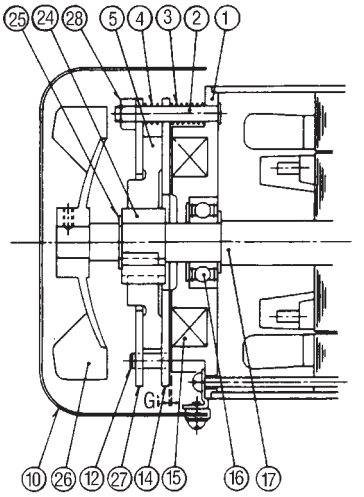
* Option

• Please refer to page 61 for rectifier data.

ASSEMBLY OF BRAKEMOTORS

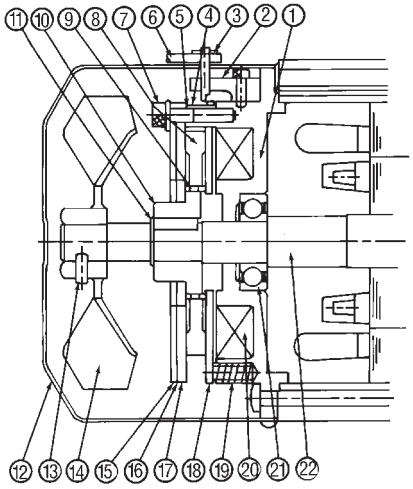
Figure M-3 Brakemotor

A



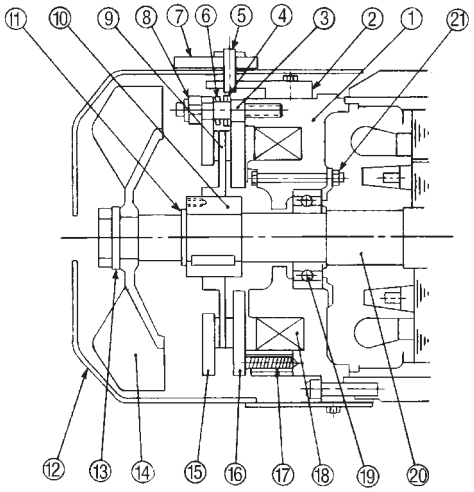
Type FB-01, 02, 05

B



Type FB-1A

C



Type FB 2A - 15A

Type FB-01, -02, -05

Part No.	Description
1	Stationary Core
2	Restraining Bolt
3	Pressure Spring
4	Auxiliary Spring
5	Brake Lining
10	Brake Cover
12	Pin
14	Armature Plate
15	Solenoid Coil
16	Bearing
17	Motor Shaft
24	Bushing
25	Retaining Ring
26	Fan (CMB-T01 is w/o Fan)
27	Plate
28	Adjusting Nut

Type FB-1A

Part No.	Description
1	Stationary Core
2	Brake Release Support
3	Shifting Pin
4	Spacer
5	GAP Adjusting Sleeve
6	Brake Release Lever
7	Restraining Bolt
8	Brake Lining
9	Leaf Spring
10	Hub
11	Retaining Ring
12	Fan Cover
13	Fan Set Screw
14	Fan
15	Fixed Plate
16	Noise Shield
17	Brake Shoe
18	Armature Plate
19	Pressure Spring
20	Solenoid Coil
21	Fan Side Motor Bearing
22	Motor Shaft

Type FB-2A thru 15A

Part No.	Description
1	Stationary Core
2	Brake Release Support
3	Stud Bolt
4	GAP Adjusting Sleeve
5	Shifting Pin
6	Brake Release Lever
7	Spring Washer
8	Nut
9	Brake Lining
10	Hub
11	Retaining Ring
12	Fan Cover
13	Fan Set Screw
14	Fan
15	Brake Shoe
16	Armature Plate
17	Pressure Spring
18	Solenoid Coil
19	Fan Side Motor Bearing
20	Motor Shaft
21	Bearing Cover

Figure M-4 Type CMB-20.

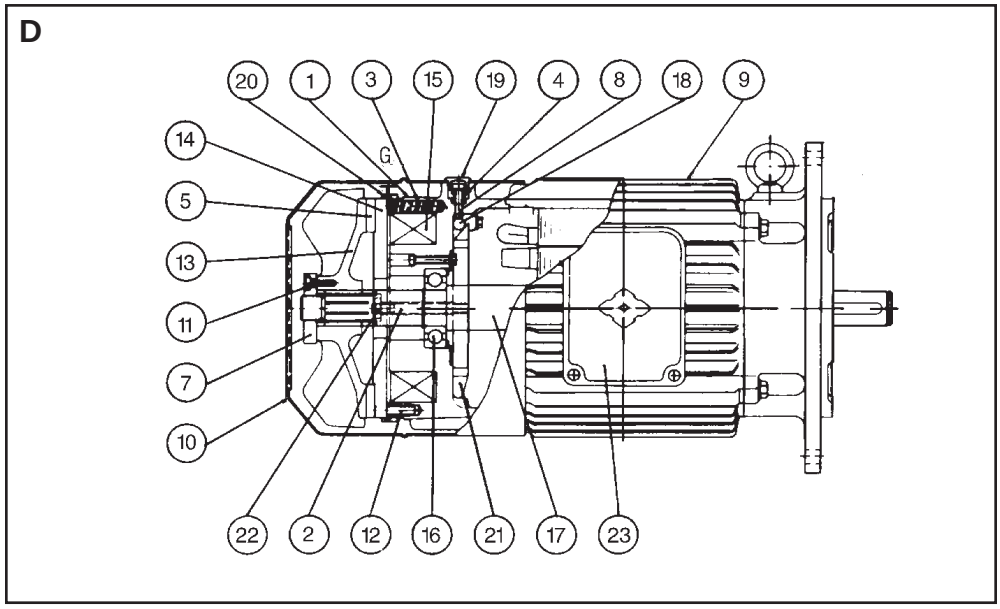
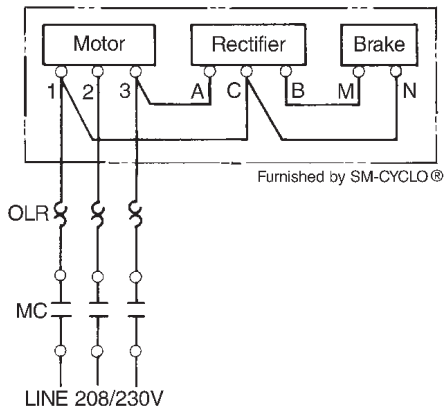


Table 6 Main Parts – C

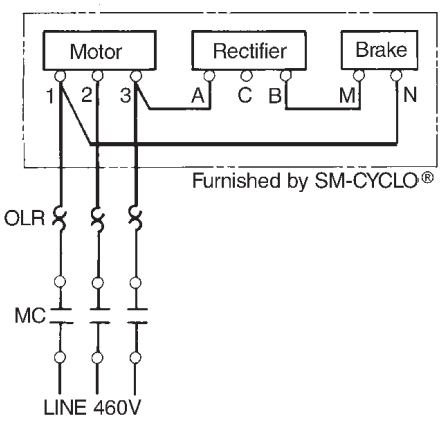
Part No.	Description
1	Stationary Core
2	Restraining Bolt
3	Pressure Spring
4	Auxiliary Spring
5	Brake Lining
7	Restraining Nut
8	Adjusting Bolt (Not Supplied)
9	Motor
10	Brake Cover
11	Bolt
12	Pin
13	Brake Wheel
14	Armature Plate
15	Solenoid Coil
16	Bearing
17	Motor Shaft
18	Roller
19	Plug
20	Dust Proof Seal
21	Shifting Plate
22	Nut
23	Conduit Box

Wiring Diagram for CMB-20

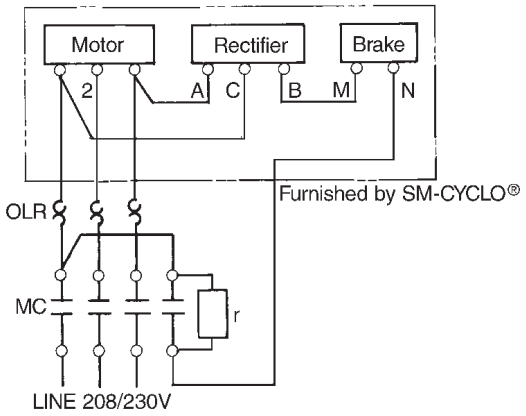
NORMAL BRAKE ACTION
(1) LOW VOLTAGE 200 ~ 230V



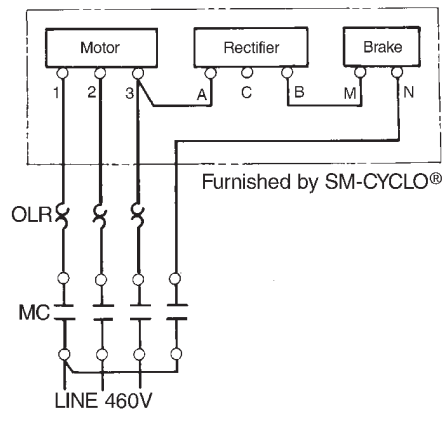
(2) HIGH VOLTAGE 400 ~ 460V



FAST BRAKE ACTION
(1) LOW VOLTAGE 200 ~ 230V



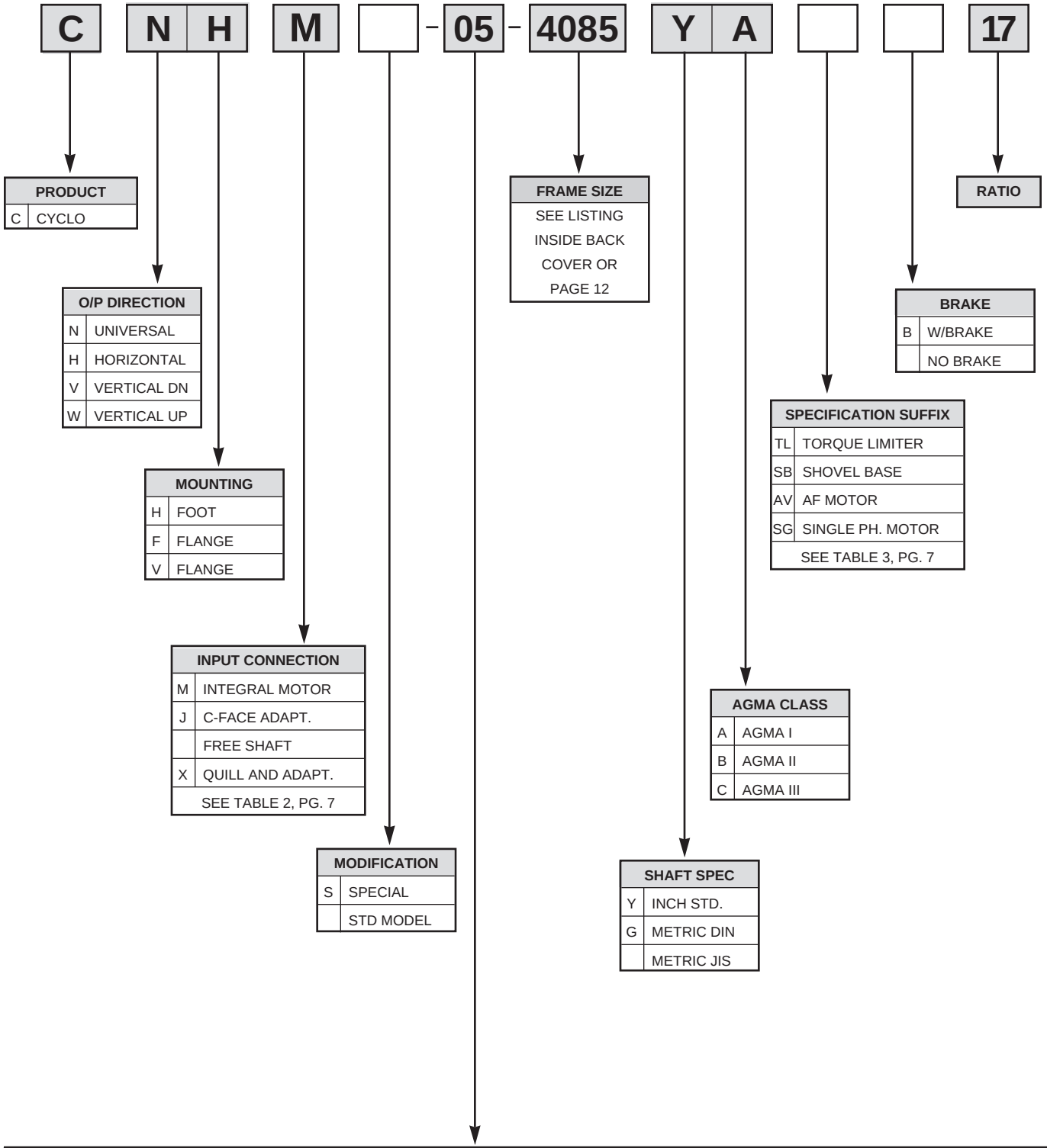
(2) HIGH VOLTAGE 400 ~ 460V



NOTE: For single voltage brakemotor 208V, 230V, 460V, 575V, or other special voltages please refer to the motor mounted connection diagram or refer to factory.

OLR: Overload Relay or Thermal Relay
MC: Electromagnetic Contactor
R: Resistor (2 watt, 200~300Ω)

NOMENCLATURE



INPUT POWER – FOR INTEGRAL MOTOR UNITS ONLY																						
4 POLE	SYMBOL HP	01 1/8	02 1/4	03 1/3	05 1/2	08 3/4	1 1	1H 1.5	2 2	3 3	5 5	8 7.5	10 10	15 15	20 20	25 25	30 30	40 40	50 50	60 60	75 75	100 100
	Kilowatt	0.1	0.2	0.25	0.4	0.55	0.75	1.1	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75
6 POLE	SYMBOL HP														206 20	256 25	306 30	406 40	506 50	606 60	756 75	1006 100

NOTE: See pages 6 through 8 for complete nomenclature information.

HOW TO SELECT FRAME SIZE & MODEL

Step 1

Refer to *Selection Procedure* at the bottom of this page.

Step 2

Determine type of gearmotor required for your particular application: with brake or without brake horizontal or vertical. Mounting position must also be determined. Refer to page 60 for *Standard Assemblies*.

Step 3

Determine the Load Classification for the Application from *AGMA Load Classifications* tables on pages 68 and 69. If the application is not listed refer to the Factory.

Step 4

Select unit size for horsepower and output RPM. Refer to *Rating* tables on pages 70 through 107 and determine frame size.

Step 5

Check overhung load when drive is not direct (i.e., coupled to the driven machine). When a chain, gear or belt driven machine is connected to a gearmotor output shaft, calculate the overhung load by using the *Allowable Overhung Load* tables, pages 124 through 126.

Step 6

Refer to pages 108 through 119 and 122 through 123 for required outline dimensions.

The following is an example of proper gearmotor selection

SELECT EXAMPLE

Conditions:

1. Driven Machine — Belt Conveyor Drive
2. Duty Cycle — 24 hours a day with uniform loading
3. Input HP — 5 HP
4. Motor Specs — 3 phase, 60 Hertz 230/460 volts, totally enclosed
5. Output speed — 20 RPM
6. Mounting Position — Horizontal base-mounted reducer. 9˝ pitch diameter sprocket mounted on the output shaft. Center line of the load is 1.50˝ from the collar surface.

Selection:

1. Load Classification is established as Class II from AGMA Load Classification Table on pages 64 and 65.
2. Class II Selection Table is cataloged on page 89. In the 5 HP column opposite 20 RPM output speed, Frame Size M4175-B is listed.
3. To check the overhung load capacity, refer to the rating table on pages 124 and 125. For Frame Size 4175 at 20 RPM output speed, the overhung load capacity is 5920 pounds.

Next, following the example on page 124 use the formula to determine the actual overhung load.

$$\text{Overhung Load} = \frac{126{,}000 \times HP \times Cf \times Lf \times Sf}{D \times N}$$

$$\frac{126{,}000 \times 5 \times 1.0 \times 0.96 \times 1.3}{9.0 \times 20} = 4368 \text{ lbs.}$$

Since the overhung load capacity of 5920 pounds is greater than the actual overhung load of 4368 pounds, this application is satisfactory.

4. Correct nomenclature for this unit would then be CHM5-4175YB @ 20 RPM output (refer to page 66).

Selection Procedure

The following data are required to permit proper selection of the SM-CYCLO® gearmotor. Selection procedure steps are covered in detail above and on page 12 together with selection examples:

1. Application
2. Determination of Load Classification
3. Output RPM
4. Required HP
5. Mounting position and special modifications, if any.

AGMA Load Classifications

In order to facilitate selection, SM-CYCLO® gearmotors are rated by AGMA load classifications. Values for most applications are listed on pages 68 and 69. For unlisted applications or for load conditions heavier than classified (such as 24-hour heavy shock loads) refer to the Factory.

Service Factors

Time of operation and frequency and severity of shock must be determined in order to select the proper SM-CYCLO® gearmotor for a specific application. To assist in the selection process, AGMA has defined three standard Service Factors. However, the Service Factors to be used for the selection of the SM-CYCLO® gearmotors differ from the standard Service Factors of AGMA as shown in the table at right.

The SM-CYCLO® gearmotor Service Factors are smaller than those of the AGMA because AGMA Service Factors are determined on the basis of the strength of gears in the conventional helical or worm gear speed reducers.

The reducer portion of the SM-CYCLO® gearmotor has higher overload capacity than conventional helical or worm gear speed reducers as a result of the tooth shape, the greater number of teeth in contact, and the high material quality of the components.

GEARMOTOR CLASSIFICATION TABLE

	GEARMOTOR CLASS		
DURATION OF SERVICE	UNIFORM LOAD	MODERATE SHOCK LOAD	HEAVY SHOCK LOAD
Intermittent 3 Hr. per day	Class I	Class I	Class II
Up to 10 Hr. per day	Class I	Class II	Class III
24 Hr. per day	Class II	Class III	—

Class I — SM-CYCLO® Drive S.F. 1.0 (AGMA Equiv. S.F. 1.0)

Class II — SM-CYCLO® Drive S.F. 1.3 (AGMA Equiv. S.F. 1.4)

Class III — SM-CYCLO® Drive S.F. 1.6 (AGMA Equiv. S.F. 2.0)

AGMA LOAD CLASSIFICATIONS

Class I For steady loads not exceeding normal motor rating, 8 to 10 hours a day. Moderate shock loads where service is intermittent (SM-CYCLO Service Factor: 1.0; AGMA equivalent Service Factor: 1.0).

Class II For steady loads not exceeding normal motor rating and 24 hours a day service. Moderate shock loads for 8 hours a day (SM-CYCLO Service Factor: 1.3; AGMA equivalent Service Factor: 1.4).

Class III For moderate shock loads for 24 hours a day. Heavy shock loads for 8 hours a day (SM-CYCLO Service Factor: 1.6; AGMA equivalent Service Factor: 2.0).

LOAD CLASSIFICATION LISTED BY INDUSTRY

Application	Class	
	Up to 10 Hr. per day	24 Hr. per day
Brewing & Distilling		
Bottling Machinery	I	II
Brew Kettles, Cont. Duty	–	II
Can Filling Machines	I	II
Cookers–Cont. Duty	–	II
Mash Tubs–Cont. Duty	–	II
Scale Hoppers–Frequent Starts	II	II
Clay Working Industry		
Brick Press	III	III
Briquette Machines	III	III
Clay Working Machinery	II	II
Pug Mills	II	II
Distilling (See Brewing)		
Dredges		
Cable Reels	II	–
Conveyors	II	II
Cutter Head Drives	III	III
Jig Drives	III	III
Maneuvering Winches	II	–
Pumps	II	II
Screen Drives	III	III
Stackers	II	II
Utility Winches	II	–
Food Industry		
Beet Slicers	II	II
Bottlings, Can Filling Mach.	I	II
Cereal Cookers	I	II
Dough Mixers	II	II
Meat Grinders	II	II

Application	Class	
	Up to 10 Hr. per day	24 Hr. per day
Lumber Industry		
Barkers–Spindle Feed	II	III
Barkers–Main Drive	III	III
Carriage Drive	Refer to Factory	
Conveyors		
Burner	II	III
Main or Heavy Duty	II	III
Main Log	III	III
Re-Saw		
Merry-Go-Round	II	III
Slab	III	III
Transfer	II	III
Chains–Floor	II	III
Chains–Green	II	III
Cut-Off Saws–Chain	II	III
Cut-Off Saws–Drag	II	III
Debarking Drums	III	III
Feeds–Edger	II	III
Feeds–Gang	III	III
Feeds–Trimmer	II	III
Log Deck	III	III
Log Hauls–Incline, Well Type	III	III
Log Turning Devices	III	III
Planer Feed	II	III
Planer Tilting Hoists	II	III
Rolls–Live–Off Bearing–Roll Cases	III	III
Sorting Table	II	III
Tipple Hoist	II	III
Transfers–Chain	II	III
Transfers–Craneway	II	III
Tray Drives	II	III
Oil Industry		
Chillers	II	II

Application	Class	
	Up to 10 Hr. per day	24 Hr. per day
Oil Well Pumping	Refer to Factory	
Paraffin Filter Press	II	II
Rotary Kilns	II	II
Paper Mills		
Agitators (Mixers)	II	II
Barker–Auxiliaries–Hyd.	–	III
Barker, Mechanical	–	III
Barking Drum	–	III
Beater & Pulper	–	II
Bleacher	–	II
Calenders	–	II
Calenders–Super	–	II
Converting Mach.–Except Cutters–Platers	–	II
Conveyors	–	II
Couch	–	II
Cutters, Platers	–	III
Cylinders	–	II
Dryers	–	II
Felt Stretchers	–	II
Felt Whippers	–	III
Jordans	–	II
Log Haul	–	III
Presses	–	II
Pulp Machine Reels	–	II
Stock Chests	–	II
Suction Rolls	–	II
Washers & Thickeners	–	II
Winders	–	II
Rubber Industry		
Mixer	III	III
Rubber Calender	II	II
Rubber Mill (2 or more)	II	II
Sheeter	II	II

Application	Class	
	Up to 10 Hr. per day	24 Hr. per day
Tire Building Machines	Refer to Factory	
Tire, Tube Press Openers	Refer to Factory	
Tubers & Stainers	II	II
Sewage Disposal		
Aerators	Refer to Factory	
Bar Screens	I	II
Chemical Feeders	I	II
Collectors	I	II
Dewatering Screens	II	II
Grit Collectors	I	II
Scum Breakers	II	II
Slow or Rapid Mixers	II	II
Sludge Collectors	I	II
Thickeners	II	II
Vacuum Filters	II	II
Textile Industry		
Batchers	II	II
Calenders	II	II
Card Machines	II	II
Cloth Finishing Machines Calenders, Dryers, Pads, Tenters, Washers)	II	II
Dry Cans	II	II
Dyeing Machinery	II	II
Knitting Machinery	Refer to Factory	
Looms, Mangles, Nappers	II	II
Range Drives	Refer to Factory	
Soapers, Spinners	II	II
Tenter Frames	II	II
Winders	II	II
Yarn Preparatory Machinery (Cards, Spinners, Slashers)	II	II

LOAD CLASSIFICATION LISTED BY APPLICATION

Application	Class	
	Up to 10 Hr. per day	24 Hr. per day
Agitators		
Pure Liquids	I	II
Liquids and Solids	II	II
Liquids – Variable Density	II	II
Semi-liquids – Variable Density	II	II
Blowers		
Centrifugal	I	II
Lobe	II	II
Vane	I	II
Brewing and Distilling		
Bottling Machinery	I	II
Brew Kettles – Continuous Duty	–	II
Cookers – Continuous Duty	–	II

Application	Class	
	Up to 10 Hr. per day	24 Hr. per day
Mash Tubs – Continuous Duty	–	II
Scale Hopper Frequent Starts	II	II
Can Filling Machines	I	II
Cane Knives	II	II
Car Dumpers	III	–
Car Pullers – Intermittent Duty	I	–
Clarifiers	I	II

Application	Class	
	Up to 10 Hr. per day	24 Hr. per day
Classifiers	II	II
Clay Working Machinery		
Brick Press	III	III
Briquette Machine	III	III
Clay Working Machinery	II	II
Pug Mill	II	II
Compressors		
Centrifugal	I	II
Lobe	II	II
Reciprocating Multi-Cylinder	II	II
Reciprocating Single Cylinder	III	III
Conveyors – Uniformly Loaded or Fed		
Apron	I	II

Application	Class	
	Up to 10 Hr. per day	24 Hr. per day
Assembly	I	II
Belt	I	II
Bucket	I	II
Chain	I	II
Flight	I	II
Oven	I	II
Screw	I	II
Conveyors – Heavy Duty Not Uniformly Fed		
Apron	II	II
Assembly	II	II
Belt	II	II
Bucket	II	II
Chain	II	II
Flight	II	II
Live Roll (Package)	I	II
Oven	II	II
Reciprocating	III	III

LOAD CLASSIFICATION LISTED BY APPLICATION

Application	Class: Up to 10 Hr. per day	Class: 24 Hr. per day
Screw	II	II
Shaker	III	III
Cranes and Hoists		
Main Hoists	III	III
Heavy Duty	III	III
Medium Duty	II	II
Reversing	II	II
Skip Hoists	II	II
Trolley Drive	II	II
Bridge Drive	II	II
Crushers		
Ore	III	III
Stone	III	III
Dredges		
Cable Reels	II	–
Conveyors	II	II
Cutter Head Drives	III	III
Jig Drives	III	III
Maneuvering Winches	II	–
Pumps	II	II
Screen Drive	III	III
Stackers	II	II
Utility Winches	II	–
Elevators		
Bucket – Uniform Load	I	II
Bucket – Heavy Load	II	II
Bucket – Continous	I	II
Centrifugal Discharge	I	II
Escalators	I	II
Freight	I	II
Gravity Discharge	I	II
Man Lifts	Refer to Factory	
Passenger Service – Hand Lift	III	–
Fans		
Centrifugal	II	II
Cooling Towers Induced Draft	II	II
Forced Draft	Refer to Factory	
Induced Draft	II	II
Large (Mine, etc.)	II	II
Large Industrial	II	II
Light (Small Diameter)	I	II
Feeders		
Apron	II	II
Belt	II	II
Disc	I	II
Reciprocating	III	III
Screw	II	II
Food Industry		
Beet Slicer	II	II
Cereal Cooker	I	II
Dough Mixer	II	II
Meat Grinders	II	II
Generators – (Not Welding)	I	II
Hammer Mills	III	III
Laundry Washers		
Reversing	II	II
Laundry Tumblers	II	II

Application	Class: Up to 10 Hr. per day	Class: 24 Hr. per day
Line Shafts		
Heavy Shock Load	III	III
Moderate Shock Load	II	II
Uniform Load	I	II
Lumber Industry		
Barkers – Spindle Feed	Refer to Factory	
Barkers – Main Drive	Refer to Factory	
Carriage Drive	Refer to Factory	
Conveyors – Burner	II	III
Conveyors – Main or Heavy Duty	II	III
Conveyors – Main Log	III	III
Conveyors – Merry-Go-Round	II	III
Conveyors – Slab	III	III
Conveyors – Transfer	II	III
Conveyors – Waste	II	II
Chains – Floor	II	III
Chains – Green	II	III
Cut-Off Saws – Chain	II	III
Cut-Off Saws – Drag	II	III
Debarking Drums	III	III
Feeds – Edger	II	III
Feeds – Gang	III	III
Feeds – Trimmer	II	III
Log Deck	III	III
Log Hauls – Incline Well Type	III	III
Log Turning Devices	III	III
Planer Feed	II	III
Planer Tilting Hoists	II	III
Rolls – Live – Off Brg. – Roll Cases	III	III
Sorting Table	II	III
Tipple Hoist	II	III
Transfers – Chain	II	III
Transfers – Craneway	II	III
Tray Drives	II	III
Veneer Lathe Drives	Refer to Factory	
Machine Tools		
Bending Roll	II	II
Notching Press – Belt Driven	Refer to Factory	
Plate Planer	III	III
Punch Press – Gear Driven	III	III
Tapping Machines	III	III
Other Machine Tools		
Main Drives	II	II
Auxiliary Drives	I	II
Metal Mills		
Bridle Roll Drives	III	III
Draw Bench – Carriage	III	III
Draw Bench – Main Drive	III	III
Forming Machines	III	III
Pinch Dryer & Scrubber Rolls, Reversing	Refer to Factory	
Slitters	II	II
Table Conveyors		
Non-Reversing	II	III
Reversing	–	III
Winding Reels – Strip	–	III
Wire Drawing & Flattening Machine	II	III
Wire Winding Machine	II	II

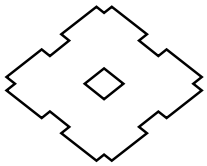
Application	Class: Up to 10 Hr. per day	Class: 24 Hr. per day
Mills, Rotary Type		
Ball	III	III
Cement Kilns		
Dryers & Coolers	II	II
Kilns	II	II
Pebble	III	III
Rod	III	III
Tumbling Barrels	III	III
Mixers		
Concrete Mixers, Continuous	II	II
Concrete Mixers, Intermittent	I	–
Constant Density	I	II
Variable Density	II	II
Oil Industry		
Chillers	II	II
Oil Well Pumping	Refer to Factory	
Paraffin Filter Press	II	II
Rotary Kilns	II	II
Paper Mills		
Aerators	Refer to Factory	
Agitators (Mixers)	II	II
Barker Auxiliaries, Hydraulic	–	III
Barker, Mechanical	–	III
Barking Drum	–	III
Beater & Pulper	–	II
Bleacher	–	II
Calenders	–	II
Calenders – Super	–	II
Converting Machines, except Cutters, Platers	–	II
Conveyors	–	II
Conveyors, Log	–	III
Couch	–	II
Cutters, Platers	–	III
Cylinders	–	II
Dryers	–	II
Felt Stretcher	–	II
Felt Whipper	–	III
Jordans	–	II
Presses	–	II
Pulp Machines, Reel	–	II
Stock Chests	–	II
Suction Roll	–	II
Washers and Thickeners	–	II
Winders	–	II
Printing Presses	I	II
Pullers		
Barge Haul	III	III
Pumps		
Centrifugal	I	II
Proportioning	II	II
Reciprocating		
Single Acting 3 or more Cylinders	II	II
Double Acting 2 or more Cylinders	II	II
Single Acting 1 or 2 Cylinders	Refer to Factory	
Double Acting Single Cylinder	Refer to Factory	

Application	Class: Up to 10 Hr. per day	Class: 24 Hr. per day
Rotary – Gear Type	I	II
– Lobe, Vane	I	II
Rubber Industry		
Mixer	III	III
Rubber Calender	II	II
Rubber Mill (2 or more)	II	II
Sheeter	II	II
Tire Building Machines	Refer to Factory	
Tire & Tube Press Openers	Refer to Factory	
Tubers and Strainers	II	II
Sewage Disposal Equipment		
Aerators	Refer to Factory	
Bar Screens	I	II
Chemical Feeders	I	II
Collectors, Circuline or Straightline	I	II
Dewatering Screens	II	II
Grit Collectors	I	II
Scum Breakers	II	II
Slow or Rapid Mixers	II	II
Sludge Collectors	I	II
Thickeners	II	II
Vacuum Filters	II	II
Screens		
Air Washing	I	II
Rotary – Stone or Gravel	II	II
Traveling Water Intake	I	II
Slab Pushers	II	II
Steering Gear	II	II
Stokers	I	II
Textile Industry		
Batchers	II	II
Calenders	II	II
Card Machines	II	II
Cloth Finishing Machines (Washers, Pads, Tenters) (Dryers, Calenders, etc.)	II	II
Dry Cans	II	II
Dryers	II	II
Dyeing Machinery	II	II
Knitting Machines (Looms, etc.)	Refer to Factory	
Looms	II	II
Mangles	II	II
Nappers	II	II
Pads	II	II
Range Drives	Refer to Factory	
Slashers	II	II
Soapers	II	II
Spinners	II	II
Teneter Frames	II	II
Washers	II	II
Winders (Other than Batchers)	II	II
Yarn Preparatory Machines (Cards, Spinners, Slashers, etc.)	II	II
Windlass	II	II

RATING TABLE

1/8 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	25	280	4085-YA	17	21	108	112
219.00	8	33	311	4085-YA				
159.00	11	46	207	4075-YA	16	18	108	112
135.00	13	54	207	4075-YA				
117.00	15	62	211	4075-YA				
103.00	17	71	211	4075-YA				
83.30	21	87	211	4075-YA				
70.00	25	104	211	4075-YA				
60.30	29	121	211	4075-YA				
50.00	35	146	211	4075-YA				
40.70	43	179	211	4075-YA				
34.30	51	212	397	4085-YA	17	21	108	112
29.70	59	246	397	4085-YA				
24.60	71	296	750	4090-YA	33	31	108	112
20.10	87	362	750	4090-YA				
17.20	102	390	750	4097-DA-YA	40	38	110	114
14.50	119	463	750	4090-YA	33	31	108	112
10.60	165	631	750	4097-DA-YA	40	38	110	114
10.10	174	666	750	4097-DA-YA				
9.36	187	716	750	4097-DA-YA				
8.33	210	804	750	4097-DA-YA				
7.58	231	884	750	4097-DA-YA				
6.78	258	987	750	4097-DA-YA				
6.06	289	1110	750	4097-DA-YA				
5.49	319	1220	1210	4105-DA-YA	44	40	110	114
4.55	385	1470	1210	4105-DA-YA				
4.02	435	1660	1210	4105-DA-YA				
3.55	493	1890	1210	4105-DA-YA				
2.94	595	2280	1940	4115-DB-YA	74	72	110	114
2.39	731	2800	1940	4115-DB-YA				
2.08	841	3220	1940	4115-DB-YA				



1/8 HORSEPOWER

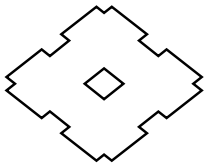
CLASS II						SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4	CLASS III					SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V				H	V	H	V
280	4085-YB	17	21	108	112		280	4085-YC	17	21	108	112
311	4085-YB						311	4085-YC				
207	4075-YB	16	18	108	112		207	4075-YC	16	18	108	112
207	4075-YB						207	4075-YC				
211	4075-YB						211	4075-YC				
211	4075-YB						211	4075-YC				
211	4075-YB						211	4075-YC				
211	4075-YB						211	4075-YC				
211	4075-YB						211	4075-YC				
211	4075-YB						397	4085-YC	17	21	108	112
397	4085-YB	17	21	108	112		397	4085-YC				
397	4085-YB						750	4090-YC	33	31	108	112
397	4085-YB						750	4090-YC				
750	4095-YB	33	31	108	112		750	4095-YC				
750	4095-YB						750	4095-YC				
750	4097-DA-YB	40	38	110	114		750	4097-DA-YC	40	38	110	114
750	4097-YB	33	31	108	112		750	4097-YA	33	31	108	112
750	4097-DA-YB	40	38	110	114		750	4097-DA-YC	40	38	110	114
750	4097-DA-YB						750	4097-DA-YC				
750	4097-DA-YB						1210	4105-DA-YC	44	40	110	114
750	4097-DA-YB						1210	4105-DA-YC				
1210	4105-DA-YB	44	40	110	114		1210	4105-DA-YC				
1210	4105-DA-YB						1210	4105-DA-YC				
1210	4105-DA-YB						1210	4105-DA-YC				
1210	4105-DA-YB						1210	4105-DA-YC				
1210	4105-DA-YB						1940	4115-DB-YC	74	72	110	114
1940	4115-DB-YB	74	72	110	114		1940	4115-DB-YC				
1940	4115-DB-YB						1940	4115-DB-YC				
1940	4115-DB-YB						1940	4115-DB-YC				
1940	4115-DB-YB						1940	4115-DB-YC				
1940	4115-DB-YB						1940	4115-DB-YC				

RATING TABLE

1/4 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	50	280	4085-YA	20	25	108	112
219.00	8	67	311	4085-YA				
159.00	11	92	207	4075-YA	19	21	108	112
135.00	13	108	207	4075-YA				
117.00	15	125	211	4075-YA				
103.00	17	142	211	4075-YA				
83.30	21	175	211	4075-YA				
70.00	25	208	397	4085-YA	20	25	108	112
60.30	29	242	397	4085-YA				
50.00	35	291	397	4085-YA				
40.70	43	358	397	4085-YA				
34.30	51	425	750	4090-YA	36	33	108	112
29.70	59	491	750	4090-YA				
24.60	71	591	750	4095-YA				
20.10	87	725	750	4095-YA				
17.20	102*	781	750	4097-DA-YA	42	40	110	114
14.50	119	926	1210	4100-YA	43	38	108	112
10.60	165	1260	1210	4105-DA-YA	47	42	110	114
10.10	174	1330	1210	4105-DA-YA				
9.36	187	1430	1210	4105-DA-YA				
8.33	210	1610	1210	4105-DA-YA				
7.58	231	1770	1210	4105-DA-YA				
6.78	258	1970	1210	4105-DA-YA				
6.06	289	2210	1210	4105-DA-YA				
5.49	319	2440	1940	4115-DB-YA	77	75	110	114
4.55	385	2950	1940	4115-DB-YA				
4.02	435	3330	1940	4115-DB-YA				
3.55	493	3770	1940	4115-DB-YA				
2.94	595	4550	1940	4115-DB-YA				
2.39	731	5590	3310	4135-DC-YA	115	110	110	114
2.08	841	6440	3310	4135-DC-YA				

*These units supplied with 121:1 actual ratio.



1/4 HORSEPOWER

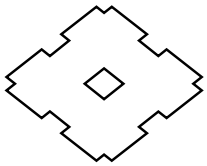
CLASS II						SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4	CLASS III						SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		
		H	V	H	V				H	V	H	V	
280	4085-YB	20	25	108	112		280	4085-YC	20	25	108	112	
311	4085-YB						311	4085-YC					
207	4075-YB	19	21	108	112		353	4085-YC					
207	4075-YB						341	4085-YC					
211	4075-YB						375	4085-YC					
211	4075-YB						397	4085-YC					
397	4085-YB	20	25	108	112		397	4085-YC					
397	4985-YB						750	4090-YC	36	33	108	112	
397	4085-YB						750	4090-YC					
397	4085-YB						750	4090-YC					
750	4090-YB	36	33	108	112		750	4095-YC					
750	4095-YB						750	4095-YC					
750	4095-YB						750	4095-YC					
750	4097-YB						750	4097-YC					
750	4097-YB						750	4097-YC					
750	4097-DA-YB	42	40	110	114		1210	4105-DA-YC	47	42	110	114	
1210	4105-YB	42	38	108	112		1210	4105-DA-YC					
1210	4105-DA-YB	47	42	110	114		1210	4105-DA-YC					
1210	4105-DA-YB						1210	4105-DA-YC					
1210	4105-DA-YB						1940	4115-DB-YC	77	75	110	114	
1210	4105-DA-YB						1940	4115-DB-YC					
1940	4115-DB-YB	77	75	110	114		1940	4115-DB-YC					
1940	4115-DB-YB						1940	4115-DB-YC					
1940	4115-DB-YB						1940	4115-DB-YC					
1940	4115-DB-YB						1940	4115-DB-YC					
1940	4115-DB-YB						1940	4115-DB-YC					
1940	4115-DB-YB						3310	4135-DC-YC	115	110	110	114	
1940	4115-DB-YB						3310	4135-DC-YC					
3310	4135-DC-YB	115	110	110	114		3310	4135-DC-YC					
3310	4135-DC-YB						3600	4145-DB-YC	110	108	110	114	
3310	4145-DB-YB	110	108	110	114								

RATING TABLE

1/3 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	67	280	4085-YA	20	25	108	112
219.00	8	89	311	4085-YA				
159.00	11	122	207	4075-YA	19	21	108	112
135.00	13	144	207	4075-YA				
117.00	15	167	211	4075-YA				
103.00	17	189	211	4075-YA				
83.30	21	233	397	4085-YA	20	25	108	112
70.00	25	278	397	4085-YA				
60.30	29	322	397	4085-YA				
50.00	35	389	397	4085-YA				
40.70	43	478	750	4090-YA	36	33	108	112
34.30	51	567	750	4095-YA				
29.70	59	655	750	4095-YA				
24.60	71	789	750	4097-YA				
20.10	87	966	750	4097-YA				
17.20	102*	1040	750	4097-DA-YA	42	40	110	114
14.50	119	1230	1210	4105-YA	42	38	108	112
10.60	165	1680	1210	4105-DA-YA	47	42	110	114
10.10	174	1780	1210	4105-DA-YA				
9.36	187	1910	1210	4105-DA-YA				
8.33	210	2140	1210	4105-DA-YA				
7.58	231	2360	1940	4115-DB-YA	77	75	110	114
6.78	258	2630	1940	4115-DB-YA				
6.06	289	2950	1940	4115-DB-YA				
5.49	319	3260	1940	4115-DB-YA				
4.55	385	3930	1940	4115-DB-YA				
4.02	435	4440	1940	4115-DB-YA				
3.55	493	5030	1940	4115-DB-YA				
2.94	595	6070	3310	4135-DC-YA	115	110	110	114
2.39	731	7460	3310	4135-DC-YA				
2.08	841	8580	3600	4145-DB-YA	110	108	110	114

*These units supplied with 121:1 actual ratio.



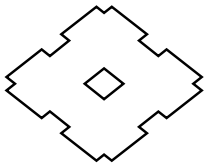
1/3 HORSEPOWER

CLASS II						SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4	CLASS III						SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		
		H	V	H	V				H	V	H	V	
280	4085-YB	20	25	108	112		280	4085-YC	20	25	108	112	
311	4085-YB						311	4085-YC					
353	4085-YB						353	4085-YC					
341	4085-YB						341	4085-YC					
375	4085-YB						375	4085-YC					
397	4085-YB						397	4085-YC					
397	4085-YB						397	4085-YC					
750	4090-YB	36	33	108	112		750	4090-YC	36	33	108	112	
750	4090-YB						750	4090-YC					
750	4090-YB						750	4090-YC					
750	4095-YB						750	4095-YC					
750	4095-YB						750	4097-YC					
750	4097-YB						1210	4100-YC	42	38	108	112	
1210	4100-YB	42	38	109	112		1210	4105-YC					
1210	4100-YB						1210	4105-YC					
1210	4105-DA-YB	47	42	110	114		1210	4105-DA-YC	47	42	110	114	
1210	4105-DA-YB						1210	4105-DA-YC					
1210	4105-DA-YB						1940	4115-DB-YC	77	75	110	114	
1940	4115-DB-YB	77	75	110	114		1940	4115-DB-YC					
1940	4115-DB-YB						1940	4115-DB-YC					
1940	4115-DB-YB						1940	4115-DB-YC					
1940	4115-DB-YB						1940	4115-DB-YC					
1940	4115-DB-YB						1940	4115-DB-YC					
1940	4115-DB-YB						1940	4115-DB-YC					
1940	4115-DB-YB						1940	4115-DB-YC					
3310	4135-DC-YB	115	110	110	114		3310	4135-DC-YC	115	110	110	114	
3310	4135-DC-YB						3310	4135-DC-YC					
3310	4135-DC-YB						3600	4145-DB-YC	110	108	110	114	
3600	4145-DB-YB	110	108	110	114		4960	4165-DC-YC	222	213	110	114	
4960	4165-DC-YB	222	213	110	114		4960	4165-DC-YC					

RATING TABLE

1/2 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	100	280	4085-YA	24	29	108	112
219.00	8	133	311	4085-YA				
159.00	11	183	353	4085-YA				
135.00	13	217	341	4085-YA				
117.00	15	250	375	4085-YA				
103.00	17	283	397	4085-YA				
83.30	21	350	397	4085-YA				
70.00	25	416	750	4090-YA	39	36	108	112
60.30	29	483	750	4090-YA				
50.00	35	583	750	4090-YA				
40.70	43	716	750	4095-YA				
34.30	51	849	750	4097-YA				
29.70	59	983	750	4097-YA				
24.60	71	1180	1210	4105-YA	46	40	108	112
20.10	87	1450	1210	4105-YA				
17.20	102	1560	1210	4105-DA-YA	51	47	110	114
14.50	121	1850	1210	4105-DA-YA				
10.60	165	2530	1940	4115-DB-YA	81	79	110	114
10.10	174	2660	1940	4115-DB-YA				
9.36	187	2860	1940	4115-DB-YA				
8.33	210	3210	1940	4115-DB-YA				
7.58	231	3540	1940	4115-DB-YA				
6.78	258	3950	1940	4115-DB-YA				
6.06	289	4420	1940	4115-DB-YA				
5.49	319	4880	1940	4115-DB-YA				
4.55	385	5890	3310	4135-DC-YA	118	114	110	114
4.02	435	6660	3310	4135-DC-YA				
3.55	493	7550	3310	4135-DC-YA				
2.94	595	9110	3600	4145-DB-YA	114	112	110	114
2.39	731	11200	4960	4165-DC-YA	226	217	110	114
2.08	841	12900	4960	4165-DC-YA				



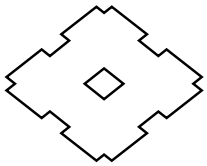
1/2 HORSEPOWER

CLASS II						SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4	CLASS III					SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V				H	V	H	V
592	4090-YB	39	36	108	112		592	4090-YC	39	36	108	112
657	4090-YB						657	4090-YC				
744	4090-YB						744	4090-YC				
744	4090-YB						744	4090-YC				
744	4090-YB						744	4090-YC				
750	4090-YB						750	4090-YC				
750	4090-YB						750	4095-YC				
750	4095-YB						750	4095-YC				
750	4095-YB						750	4095-YC				
750	4095-YB						750	4097-YC				
750	4097-YB						750	4097-YC				
1210	4100-YB	46	40	108	112		1210	4105-YC	46	40	108	112
1210	4105-YB						1210	4105-YC				
1210	4105-YB						1940	4110-YC	69	66	108	112
1210	4105-YB						1940	4110-YC				
1940	4115-DB-YB	81	79	110	114		1940	4115-DB-YC	81	79	110	114
1940	4115-DB-YB						1940	4115-DB-YC				
1940	4115-DB-YB						1940	4115-DB-YC				
1940	4115-DB-YB						1940	4115-DB-YC				
1940	4115-DB-YB						1940	4115-DB-YC				
1940	4115-DB-YB						1940	4115-DB-YC				
1940	4115-DB-YB						3310	4135-DC-YC	118	114	110	114
1940	4115-DB-YB						3310	4135-DC-YC				
3310	4135-DC-YB	118	114	110	114		3310	4135-DC-YC				
3310	4135-DC-YB						3310	4135-DC-YC				
3310	4135-DC-YB						3600	4145-DB-YC	114	112	110	114
3600	4145-DB-YB	114	112	110	114		4960	4165-DC-YC	226	217	110	114
4960	4165-DC-YB	226	217	110	114		4960	4165-DC-YC				
4960	4165-DC-YB						4960	4165-DC-YC				
4960	4165-DC-YB						6630	4175-DC-YC	300	294	110	114
6630	4175-DC-YB	300	294	110	114		6630	4175-DC-YC				

RATING TABLE

3/4 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	150	592	4090-YA	42	40	108	112
219.00	8	200	657	4090-YA				
159.00	11	275	744	4090-YA				
135.00	13	325	744	4090-YA				
117.00	15	375	744	4090-YA				
103.00	17	425	750	4090-YA				
83.30	21	525	750	4095-YA				
70.00	25	625	750	4095-YA				
60.30	29	725	750	4095-YA				
50.00	35	875	750	4097-YA				
40.70	43	1070	750	4097-YA				
34.30	51	1270	1210	4105-YA	49	44	108	112
29.70	59	1470	1210	4105-YA				
24.60	71	1770	1210	410H-YA	51	44	108	112
20.10	87	2170	1210	410H-YA				
17.20	102	2340	1940	4115-DB-YA	84	81	110	114
14.50	121	2780	1940	4115-DB-YA				
10.60	165	3790	1940	4115-DB-YA				
10.10	174	3990	1940	4115-DB-YA				
9.36	187	4290	1940	4115-DB-YA				
8.33	210	4820	1940	4115-DB-YA				
7.58	231	5300	3310	4135-DC-YA	121	117	110	114
6.78	258	5920	3310	4135-DC-YA				
6.06	289	6640	3310	4135-DC-YA				
5.49	319	7320	3310	4135-DC-YA				
4.55	385	8840	3600	4145-DB-YA	117	114	110	114
4.02	435	9990	4960	4165-DC-YA	224	216	110	114
3.55	493	11300	4960	4165-DC-YA				
2.94	595	13700	4960	4165-DC-YA				
2.39	731	16800	6630	4175-DC-YA	299	293	110	114
2.08	841	19300	6630	4175-DC-YA				



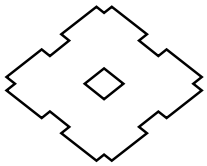
3/4 HORSEPOWER

CLASS II						CLASS III					
SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4						SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0					
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V			H	V	H	V
592	4095-YB	42	40	108	112	592	4095-YC	42	40	108	112
657	4095-YB					657	4095-YC				
744	4095-YB					744	4095-YC				
744	4095-YB					744	4095-YC				
744	4095-YB					744	4095-YC				
750	4095-YB					750	4095-YC				
750	4097-YB					750	4097-YC				
750	4097-YB					1210	4100-YC	49	44	108	112
750	4097-YB					1210	4100-YC				
1210	4100-YB	49	44	108	112	1210	4105-YC				
1210	4105-YB					1210	4105-YC				
1210	410H-YB	51	44	108	112	1940	4110-YC	68	66	108	112
1940	4100-YB	68	66	108	112	1940	4100-YC				
1940	4110-YB					1940	4115-YC				
1940	4110-YB					1940	4115-YC				
1940	4115-DB-YB	84	81	110	114	1940	4115-DB-YC	84	81	110	114
1940	4115-DB-YB					1940	4115-DB-YC				
1940	4115-DB-YB					3310	4135-DC-YC	121	117	110	114
1940	4115-DB-YB					3310	4135-DC-YC				
3310	4135-DC-YB	121	117	110	114	3310	4135-DC-YC				
3310	4135-DC-YB					3310	4135-DC-YC				
3310	4135-DC-YB					3600	4145-DB-YC	117	114	110	114
3310	4135-DC-YB					3600	4145-DB-YC				
3600	4145-DB-YB	117	114	110	114	4960	4165-DC-YC	224	216	110	114
3600	4145-DB-YB					4960	4165-DC-YC				
4960	4165-DC-YB	224	216	110	114	4960	4165-DC-YC				
4960	4165-DC-YB					6630	4175-DC-YC	299	293	110	114
4960	4165-DC-YB					6630	4175-DC-YC				
6630	4175-DC-YB	299	293	110	114	6630	4175-DC-YC				
6630	4175-DC-YB					9380	4185-DB-YC	416	385	110	114
9380	4185-DB-YB	416	385	110	114	9380	4185-DB-YC				

RATING TABLE

1 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	200	592	4095-YA	42	40	108	112
219.00	8	267	657	4095-YA				
159.00	11	366	744	4095-YA				
135.00	13	433	744	4095-YA				
117.00	15	500	744	4095-YA				
103.00	17	566	750	4095-YA				
83.30	21	700	750	4097-YA				
70.00	25	833	750	4097-YA				
60.30	29	966	750	4097-YA				
50.00	35	1170	1210	4105-YA	49	44	108	112
40.70	43	1430	1210	4105-YA				
34.30	51	1700	1210	410H-YA	51	44	108	112
29.70	59	1970	1940	4110-YA	68	66	108	112
24.60	71	2370	1940	4115-YA				
20.10	87	2900	1940	4115-YA				
17.20	102	3120	1940	4115-DB-YA	84	81	110	114
14.50	121	3700	1940	4115-DB-YA				
10.60	165	5050	1940	4115-DB-YA				
10.10	174	5330	3310	4135-DC-YA	121	117	110	114
9.36	187	5720	3310	4135-DC-YA				
8.33	210	6430	3310	4135-DC-YA				
7.58	231	7070	3310	4135-DC-YA				
6.78	258	7900	3600	4145-DB-YA	117	114	110	114
6.06	289	8850	3600	4145-DB-YA				
5.49	319	9770	4960	4165-DC-YA	224	216	110	114
4.55	385	11800	4960	4165-DC-YA				
4.02	435	13300	4960	4165-DC-YA				
3.55	493	15100	4960	4165-DC-YA				
2.94	595	18200	6630	4175-DC-YA	299	293	110	114
2.39	731	22400	6630	4175-DC-YA				
2.08	841	25700	9380	4185-DB-YA	416	385	110	114



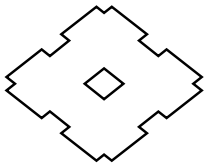
1 HORSEPOWER

CLASS II						SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4	CLASS III					SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V				H	V	H	V
592	4095-YB	42	40	108	112		592	4097-YC	42	40	108	112
657	4095-YB						675	4097-YC				
744	4095-YB						744	4097-YC				
744	4095-YB						744	4097-YC				
744	4095-YB						744	4097-YC				
750	4095-YB						750	4097-YC				
750	4097-YB						1210	4100-YC	49	44	108	112
1210	4100-YB	49	44	108	112		1210	4100-YC				
1210	4100-YB						1210	4105-YC				
1210	4105-YB						1940	4100-YC	68	66	108	112
1210	410H-YB	51	44	108	112		1940	4100-YC				
1940	4110-YB	68	66	108	112		1940	4155-YC				
1940	4110-YB						1940	4115-YC				
1940	4115-YB						2870	4130-YC	110	110	108	112
1940	4115-YB						3090	4135-YC				
1940	4115-DB-YB	84	81	110	114		1940	4115-DB-YC	84	81	110	114
1940	4115-DB-YB						3310	4135-DC-YC	121	117	110	114
3310	4135-DC-YB	121	117	110	114		3600	4145-DB-YC	117	114	110	114
3310	4135-DC-YB						3600	4145-DB-YC				
3310	4135-DC-YB						3600	4145-DB-YC				
3600	4145-DB-YB	117	114	110	114		4960	4165-DC-YC	224	216	110	114
3600	4145-DB-YB						4960	4165-DC-YC				
4960	4165-DC-YB	224	216	110	114		4960	4165-DC-YC				
4960	4165-DC-YB						4960	4165-DC-YC				
4960	4165-DC-YB						4960	4165-DC-YC				
4960	4165-DC-YB						6630	4175-DC-YC	299	293	110	114
6630	4175-DC-YB	299	293	110	114		6630	4175-DC-YC				
6630	4175-DC-YB						9380	4185-DC-YC	416	385	110	114
9380	4185-DB-YB	416	385	110	114		9380	4185-DB-YC				
9380	4185-DB-YB						13250	4190-DA-YC	548	521	110	114
9380	4185-DB-YB						13250	4190-DA-YC				

RATING TABLE

1.5 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	300	592	4097-YA	56	48	108	112
219.00	8	400	657	4097-YA				
159.00	11	550	744	4097-YA				
135.00	13	650	744	4097-YA				
117.00	15	750	744	4097-YA				
103.00	17	850	750	4097-YA				
83.30	21	1050	750	4097-YA				
70.00	25	1250	1210	4100-YA	57	53	108	112
60.30	29	1450	1210	4105-YA				
50.00	35	1750	1210	410H-YA	59	53	108	112
40.70	43	2150	1940	4110-YA	77	75	108	112
34.30	51	2550	1940	4115-YA				
29.70	59	2950	1940	4115-YA				
24.60	71	3550	1940	4115-YA				
20.10	87	4350	3090	4130-YA	119	119	108	112
17.20	102	4680	1940	4115-DB-YA	92	90	110	114
14.50	121	5560	3310	4135-DC-YA	130	125	110	114
10.60	165	7580	3310	4135-DC-YA				
10.10	174	7990	3600	4145-DB-YA	125	123	110	114
9.36	187	8590	3600	4145-DB-YA				
8.33	210	9640	4960	4165-DC-YA	233	224	110	114
7.58	231	10600	4960	4165-DC-YA				
6.78	258	11800	4960	4165-DC-YA				
6.06	289	13300	4960	4165-DC-YA				
5.49	319	14600	4960	4165-DC-YA				
4.55	385	17700	6630	4175-DC-YA	308	301	110	114
4.02	435	20000	6630	4175-DC-YA				
3.55	493	22600	6630	4175-DC-YA				
2.94	595	27300	9380	4185-DB-YA	425	394	110	114
2.39	731	33600	9380	4185-DB-YA				
2.08	841	38600	13250	4190-DA-YA	557	530	110	114



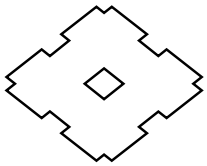
1.5 HORSEPOWER

CLASS II						CLASS III					
SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4						SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0					
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V			H	V	H	V
592	4097-YB	57	48	108	112	858	4100-YC	57	53	108	112
657	4097-YB					954	4100-YC				
1080	4100-YB	57	53	108	112	1080	4105-YC				
1120	4100-YB					1120	4105-YC				
1180	4100-YB					1180	4105-YC				
1210	4100-YB					1210	4105-YC				
1210	4100-YB					1210	4105-YC				
1210	4105-YB					1760	4110-YC	77	75	108	112
1210	410H-YB	59	53	108	112	1840	4110-YC				
1940	4110-YB	77	75	108	112	1940	4110-YC				
1940	4110-YB					1940	4115-YC				
1940	4115-YB					1940	4115-YC				
1940	4115-YB					2700	4130-YC	119	119	108	112
2870	4130-YB	119	119	108	112	2870	4135-YC				
3090	4135-YB					3310	4145-YC	121	121	108	112
3250	4135-DC-YB	130	125	110	114	3250	4135-DC-YC	130	125	110	114
3310	4135-DC-YB					4830	4165-DC-YC	233	224	110	114
4960	4165-DC-YB	233	224	110	114	4960	4165-DC-YC				
4960	4165-DC-YB					4960	4165-DC-YC				
4960	4165-DC-YB					4960	4165-DC-YC				
4960	4165-DC-YB					4960	4165-DC-YC				
4960	4165-DC-YB					6630	4175-DC-YC	308	301	110	114
4960	4165-DC-YB					6630	4175-DC-YC				
6630	4175-DC-YB	308	301	110	114	6630	4175-DC-YC				
6630	4175-DC-YB					6630	4175-DC-YC				
6630	4175-DC-YB					9380	4185-DB-YC	425	394	110	114
9380	4185-DB-YB	425	394	110	114	9380	4185-DB-YC				
9380	4185-DB-YB					13250	4190-DA-YC	557	530	110	114
13250	4190-DA-YB	557	530	110	114	13250	4190-DA-YC				
13250	4190-DA-YB					13250	4195-DA-YC				
13250	4195-DA-YB					13250	4195-DA-YC				

RATING TABLE

2 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	400	592	4100-YA	57	48	108	112
219.00	8	533	657	4100-YA				
159.00	11	733	1080	4105-YA	57	53	108	112
135.00	13	866	1120	4105-YA				
117.00	15	999	1180	4105-YA				
103.00	17	1130	1210	4105-YA				
83.30	21	1400	1210	4105-YA				
70.00	25	1670	1210	4105-YA				
60.30	29	1930	1210	410H-YA	59	53	108	112
50.00	35	2330	1940	4110-YA	77	75	108	112
40.70	43	2860	1940	4115-YA				
34.30	51	3400	1940	4115-YA				
29.70	59	3930	1940	4115-YA				
24.60	71	4730	2870	4135-YA	119	119	108	112
20.10	87	5800	3090	4135-YA				
17.20	102	6240	3250	4135-DC-YA	130	125	110	114
14.50	121	7410	3310	4135-DC-YA				
10.60	165	10100	4960	4165-DC-YA	233	224	110	114
10.10	174	10700	4960	4165-DC-YA				
9.36	187	11400	4960	4165-DC-YA				
8.33	210	12900	4960	4165-DC-YA				
7.58	231	14100	4960	4165-DC-YA				
6.78	258	15800	6630	4175-DC-YA	308	301	110	114
6.06	289	17700	6630	4175-DC-YA				
5.49	319	19500	6630	4175-DC-YA				
4.55	385	23600	9380	4185-DB-YA	425	394	110	114
4.02	435	26600	9380	4185-DB-YA				
3.55	493	30200	9380	4185-DB-YA				
2.94	595	36400	13250	4190-DA-YA	557	530	110	114
2.39	731	44800	13250	4190-DA-YA				
2.08	841	51500	13250	4195-DA-YA				



2 HORSEPOWER

CLASS II

SM-CYCLO S.F. = 1.3
AGMA S.F. = 1.4

OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V
858	4105-YB	57	53	108	112
954	4105-YB				
1080	4105-YB				
1120	4105-YB				
1180	4105-YB				
1210	4105-YB				
1210	4105-YB				
1760	4110-YB	77	75	108	112
1840	4110-YB				
1940	4115-YB				
1940	4115-YB				
1940	4115-YB				
2700	4130-YB	119	119	108	112
2870	4135-YB				
3310	4145-YB	121	121	108	112
4610	4165-DC-YB	233	224	110	114
4830	4165-DC-YB				
4960	4165-DC-YB				
4960	4165-DC-YB				
4960	4165-DC-YB				
6630	4175-DC-YB	308	301	110	114
6630	4175-DC-YB				
6630	4175-DC-YB				
6630	4175-DC-YB				
9380	4185-DB-YB	425	394	110	114
9380	4185-DB-YB				
9380	4185-DB-YB				
13250	4190-DA-YB	557	530	110	114
13250	4190-DA-YB				
13250	4195-DA-YB				
18900	4205-DB-YB	627	594	110	114

CLASS III

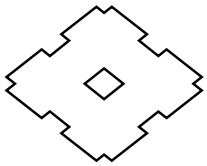
SM-CYCLO S.F. = 1.6
AGMA S.F. = 2.0

OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V
858	410H-YC	59	53	108	112
954	410H-YC				
1080	410H-YC				
1120	410H-YC				
1180	410H-YC				
1210	410H-YC				
1670	4110-YC	77	75	108	112
1760	4115-YC				
1840	4115-YC				
1940	4115-YC				
2450	4130-YC	119	119	108	112
2560	4135-YC				
2700	4135-YC				
3310	4145-YC	121	121	108	112
3600	4155-YC	125	121	108	112
4610	4165-DC-YC	233	224	110	114
4830	4165-DC-YC				
6630	4175-DC-YC	308	301	110	114
6630	4175-DC-YC				
6630	4175-DC-YC				
6630	4175-DC-YC				
6630	4175-DC-YC				
9380	4185-DC-YC	425	394	110	114
9380	4185-DB-YC				
13250	4190-DA-YC	557	530	110	114
13250	4190-DA-YC				
13250	4190-DA-YC				
13250	4195-DB-YC	574	548	110	114
18900	4205-DB-YC	627	594	110	114
27300	4225-DA-YC	968	922	110	114

RATING TABLE

3 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	600	858	4105-YA	66	62	108	112
219.00	8	800	954	4105-YA				
159.00	11	1100	1080	4105-YA				
135.00	13	1300	1120	4105-YA				
117.00	15	1500	1180	4105-YA				
103.00	17	1700	1210	410H-YA	68	62	108	112
83.30	21	2100	1210	410H-YA				
70.00	25	2500	1760	4115-YA	86	84	108	112
60.30	29	2900	1840	4115-YA				
50.00	35	3500	1940	4115-YA				
40.70	43	4300	1940	4115-YA				
34.30	51	5100	2560	4135-YA	125	125	108	112
29.70	59	5900	2700	4135-YA				
24.60	71	7100	3310	4145-YA	128	128	108	112
20.10	87	8700	3310	4145-YA				
17.20	102	9370	4610	4165-DC-YA	242	233	110	114
14.50	121	11100	4830	4165-DC-YA				
10.60	165	15200	4960	4165-DC-YA				
10.10	174	16000	6630	4175-DC-YA	317	310	110	114
9.36	187	17200	6630	4175-DC-YA				
8.33	210	19300	6630	4175-DC-YA				
7.58	231	21200	6630	4175-DC-YA				
6.78	258	23700	9380	4185-DB-YA	431	400	110	114
6.06	289	26500	9380	4185-DB-YA				
5.49	319	29300	9380	4185-DB-YA				
4.55	385	35400	13250	4190-DA-YA	565	539	110	114
4.02	435	39900	13250	4190-DA-YA				
3.55	493	45300	13250	4190-DA-YA				
2.94	595	54600	13250	4195-DB-YA	581	554	110	114
2.39	731	67100	18900	4205-DB-YA	634	601	110	114
2.08	841	77200	23400	4215-DA-YA	812	733	110	114



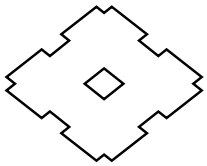
3 HORSEPOWER

CLASS II						CLASS III					
		SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4						SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0			
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V			H	V	H	V
858	410H-YB	68	62	108	112	1080	4110-YC	86	84	108	112
954	410H-YB					1190	4110-YC				
1080	410H-YB					1350	4110-YC				
1120	410H-YB					1400	4110-YC				
1180	410H-YB					1500	4110-YC				
1550	4110-YB	86	84	107	112	1550	4110-YC				
1670	4110-YB					1670	4115-YC				
1760	4115-YB					1760	4115-YC				
1840	4115-YB					2140	4130-YC	125	125	108	112
1940	4115-YB					2270	4135-YC				
2450	4135-YB	125	125	108	112	3090	4145-YC	128	128	108	112
3220	4145-YB	128	128	108	112	3600	4155-YC	132	128	108	112
3310	4145-YB					3600	4155-YC				
3600	4155-YB	132	128	108	112	4410	4165-YC	211	200	108	112
4410	4165-YB	211	200	108	112	4880	416H-YC	224	200	108	112
4610	4165-DC-YB	242	233	110	114	4610	4165-DC-YC	242	233	110	114
4830	4165-DC-YB					6510	4175-DC-YC	317	310	110	114
6630	4175-DC-YB	317	310	110	114	9380	4185-DB-YC	431	400	110	114
6630	4175-DC-YB					9380	4185-DB-YC				
6630	4175-DC-YB					9380	4185-DB-YC				
9380	4185-DB-YB	431	400	110	114	9380	4185-DB-YC				
9380	4185-DB-YB					9380	4185-DB-YC				
9380	4185-DB-YB					13250	4195-DB-YC	581	554	110	114
9380	4185-DB-YB					13250	4195-DB-YC				
13250	4190-DA-YB	565	539	110	114	13250	4190-DA-YC	565	539	110	114
13250	4190-DA-YB					13250	4195-DB-YC	581	554	110	114
13250	4195-DB-YB	581	554	110	114	18900	4205-DB-YC	634	601	110	14
13250	4195-DB-YB					23400	4215-DA-YC	812	733	110	114
23400	4215-DA-YB	812	733	110	114	27300	4225-DA-YC	975	928	110	114
27300	4225-DA-YB	975	928	110	114	34000	4235-DA-YC	1232	1148	110	114

RATING TABLE

5 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	1000	1080	4115-YA	108	106	108	112
219.00	8	1330	1190	4115-YA				
159.00	11	1830	1350	4115-YA				
135.00	13	2170	1400	4115-YA				
117.00	15	2500	1500	4115-YA				
103.00	17	2830	1560	4115-YA				
83.30	21	3500	1670	4115-YA				
70.00	25	4160	1760	4115-YA				
60.30	29	4830	2140	4135-YA	147	147	108	112
50.00	35	5830	2270	4135-YA				
40.70	43	7160	3530	4155-YA	154	150	108	112
34.30	51	8490	3600	4155-YA				
29.70	59	9830	4370	4160-YA	231	220	108	112
24.60	71	11800	4410	4165-YA				
20.10	87	14500	4880	416H-YA	245	220	108	112
17.20	102	15600	4610	4165-DC-YA	264	255	110	114
14.50	121	18500	6510	4175-DC-YA	339	332	110	114
10.60	165	25300	9380	4185-DB-YA	453	422	110	114
10.10	174	26600	9380	4185-DB-YA				
9.36	187	28600	9380	4185-DB-YA				
8.33	210	32100	9380	4185-DB-YA				
7.58	231	35400	13250	4195-DB-YA	603	576	110	114
6.78	258	39500	13250	4195-DB-YA				
6.06	289	44200	13250	4195-DB-YA				
5.49	319	48800	13250	4195-DB-YA				
4.55	385	58900	13250	4195-DB-YA				
4.02	435	66600	18900	4205-DB-YA	656	623	110	114
3.55	493	75500	23400	4215-DA-YA	834	755	110	114
2.39	731	112000	27300	4225-DA-YA	997	950	110	114
2.08	841	129000	34000	4235-DA-YA	1252	1168	110	114



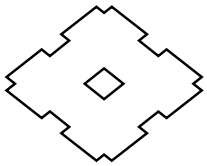
5 HORSEPOWER

CLASS II						SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4	CLASS III					SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V				H	V	H	V
1080	4115-YB	108	106	108	112		1080	4125-YC	110	106	108	112
1190	4115-YB						1290	4125-YC				
1350	4115-YB						1580	4130-YC	147	147	108	112
1400	4115-YB						1640	4130-YC				
1500	4115-YB						1680	4130-YC				
1560	4115-YB						1810	4130-YC				
1940	4130-YB	147	147	108	112		1940	4135-YC				
2030	4135-YB						2620	4145-YC	150	150	108	112
2140	4135-YB						2730	4155-YC	154	150	108	112
2890	4145-YB	150	150	108	112		3370	4155-YC				
3970	4160-YB	231	220	108	112		3970	4160-YC	231	220	108	112
4140	4160-YB						4370	416H-YC	245	220	108	112
4370	4165-YB						5170	4170-YC	321	315	108	112
5490	4170-YB	321	315	108	112		5490	4175-YC				
5920	4175-YB						7950	4180-YC	403	372	108	112
6230	4175-DC-YB	339	332	110	114		8360	4185-DB-YC	453	422	110	114
8750	4185-DB-YB	453	422	110	114		12200	4195-DB-YC	603	576	110	114
9380	4185-DB-YB						13250	4195-DB-YC				
9380	4185-DB-YB						13260	4195-DB-YC				
13250	4195-DB-YB	603	576	110	114		13250	4195-DB-YC				
13250	4195-DB-YB						13250	4195-DB-YC				
13250	4195-DB-YB						13250	4195-DB-YC				
13250	4195-DB-YB						18900	4205-DB-YC	656	623	110	114
13250	4195-DB-YB											
18900	4205-DB-YB	656	623	110	114		23400	4215-DA-YC	834	755	110	114
27300	4225-DA-YB	997	950	110	114		27300	4225-DA-YC	997	960	110	114
27300	4225-DA-YB						34000	4235-DA-YC	1252	1168	110	114
34000	4235-DA-YB	1252	1168	110	114		37700	4245-DA-YC	1492	1375	110	114
37700	4245-DA-YB	1492	1375	110	114		46300	4255-DA-YC	2273	2081	110	114

RATING TABLE

7.5 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	1500	1080	4125-YA	125	121	108	112
219.00	8	2000	1290	4125-YA				
159.00	11	2750	1370	4125-YA				
135.00	13	3250	1410	4125-YA				
117.00	15	3750	1510	4125-YA				
103.00	17	4250	1550	4125-YA				
83.30	21	5250	1940	4135-YA	163	163	108	112
70.00	25	6250	2030	4135-YA				
60.30	29	7250	2730	4145-YA	165	165	108	112
50.00	35	8740	3370	4155-YA	169	165	108	112
40.70	43	10700	3970	4160-YA	246	235	108	112
34.30	51	12700	4140	4165-YA				
29.70	59	14700	4880	416H-YA	260	235	108	112
24.60	71	17700	5490	4175-YA	337	330	108	112
20.10	87	21700	7950	4180-YA	420	389	108	112
17.20	102	23400	8360	4185-DB-YA	469	438	110	114
14.50	121	27800	8750	4185-DB-YA				
10.60	165	37900	13250	4195-DB-YA	618	592	110	114
10.10	174	39900	13250	4195-DB-YA				
9.36	187	42900	13250	4195-DB-YA				
8.33	210	48200	13250	4195-DB-YA				
7.58	231	53000	13250	4195-DB-YA				
6.78	258	59200	13250	4195-DB-YA				
5.49	319	73200	23400	4215-DA-YA	849	770	110	114
4.02	435	99900	27300	4225-DA-YA	1012	996	110	114
3.55	493	113000	27300	4225-DA-YA				
2.39	731	168000	37700	4245-DA-YA	1507	1390	110	114
2.08	841	193000	46300	4255-DA-YA	2288	2097	110	114



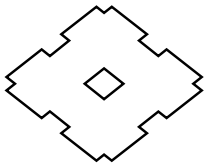
7.5 HORSEPOWER

CLASS II						SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4	CLASS III						SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		
		H	V	H	V				H	V	H	V	
1080	4125-YB	125	121	108	112		1250	4130-YC	163	163	108	112	
1290	4125-YB						1390	4130-YC					
1580	4130-YB	163	163	108	112		1580	4135-YC					
1640	4130-YB						1640	4135-YC					
1680	4130-YB						2270	4145-YC	165	165	108	112	
1810	4130-YB						2340	4145-YC					
2510	4145-YB	165	165	108	112		3150	4160-YC	246	235	108	112	
3070	4155-YB	169	165	108	112		3320	4160-YC					
3480	4160-YB	246	235	108	112		3480	4165-YC					
3700	4165-YB						3700	4165-YC					
3970	4165-YB						4700	4170-YC	337	330	108	112	
4910	4170-YB	337	330	108	112		4910	4175-YC					
5170	4175-YB						6940	4180-YC	420	389	108	112	
7380	4180-YB	420	389	108	112		7380	4185-YC					
7950	4185-YB						11100	4190-YC	583	548	108	112	
8360	4185-DB-YB	469	438	110	114		11700	4195-DB-YC	618	592	110	114	
12200	4195-DB-YB	618	592	110	114		12200	4195-DB-YC					
13250	4195-DB-YB						18900	4205-DB-YC	671	638	110	114	
13250	4195-DB-YB						18900	4205-DB-YC					
13250	4195-DB-YB												
23400	4215-DB-YB	891	843	110	114		26600	4225-DB-YC	1111	1067	110	114	
23400	4215-DB-YB						23400	4215-DB-YC	891	843	110	114	
26600	4225-DB-YB	1111	1067	110	114		26600	4225-DB-YC	1111	1067	110	114	
34000	4235-DA-YB	1267	1184	110	114		37700	4245-DA-YC	1507	1390	110	114	
34000	4235-DA-YB						46300	4255-DA-YC	2288	2097	110	114	
46300	4255-DA-YB	2288	2097	110	114		56400	4265-DA-YC	3005	2849	110	114	
56400	4265-DA-YB	3005	2849	110	114		56400	4265-DA-YC					

RATING TABLE

10 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	2000	1080	4130-YA	233	233	108	112
219.00	8	2670	1290	4130-YA				
159.00	11	3660	1580	4135-YA				
135.00	13	4330	1640	4135-YA				
117.00	15	5000	1680	4135-YA				
103.00	17	5660	1810	4135-YA				
83.30	21	7000	2510	4145-YA	235	235	108	112
70.00	25	8330	3070	4155-YA	240	235	108	112
60.30	29	9660	3480	4165-YA	317	306	108	112
50.00	35	11700	3700	4165-YA				
40.70	43	14300	3970	4165-YA				
34.30	51	17000	4910	4175-YA	409	403	108	112
29.70	59	19700	5170	4175-YA				
24.60	71	23700	7380	4185-YA	493	462	108	112
20.10	87	29000	7950	4185-YA				
17.20	102	31200	8360	4185-DB-YA	539	508	110	114
14.50	121	37000	12200	4195-DB-YA	689	662	110	114
10.60	165	50500	13250	4195-DB-YA				
10.10	174	53300	13250	4195-DB-YA				
7.58	231	70700	23400	4215-DB-YA	961	913	110	114
6.78	258	79000	23400	4215-DB-YA				
5.49	319	97700	26600	4225-DB-YA	1184	1140	110	114
4.02	435	133000	34000	4235-DA-YA	1338	1254	110	114
3.55	493	151000	34000	4235-DA-YA				
2.39	731	224000	46300	4255-DA-YA	2354	2156	110	114
2.08	841	257000	56400	4265-DA-YA	3069	2915	110	114



10 HORSEPOWER

CLASS II

SM-CYCLO S.F. = 1.3
AGMA S.F. = 1.4

OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V
1250	4135-YB	233	233	108	112
1390	4135-YB				
1580	4135-YB				
1640	4135-YB				
2270	4145-YB	235	235	108	112
2340	4145-YB				
3150	4160-YB	317	306	108	112
3320	4160-YB				
3480	4165-YB				
3700	4165-YB				
4700	4175-YB	409	403	108	112
6600	4180-YB	493	462	108	112
6940	4185-YB				
7380	4185-YB				
11100	4190-YB	649	614	108	112
11700	4195-DB-YB	689	662	110	114
12200	4195-DB-YB				
23400	4215-DB-YB	961	913	110	114
18900	4205-DB-YB	741	708	110	114
26600	4225-DB-YB	1184	1140	110	114
26600	4225-DB-YB				
33100	4235-DA-YB	1338	1254	110	114
37700	4245-DA-YB	1577	1461	110	114
46300	4255-DA-YB	2354	2156	110	114
56400	4265-DA-YB	3069	2915	110	114
56400	4265-DA-YB				

CLASS III

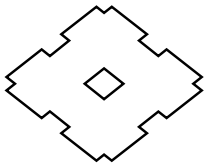
SM-CYCLO S.F. = 1.6
AGMA S.F. = 2.0

OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V
1960	4155-YC	240	235	108	112
2170	4155-YC				
2430	4155-YC				
2640	4160-YC	317	306	108	112
2650	4160-YC				
2930	4160-YC				
3150	4165-YC				
3320	4165-YC				
4100	4170-YC	409	403	108	112
4360	4175-YC				
6310	4180-YC	493	462	108	112
6600	4185-YC				
9710	4190-YC	649	614	108	112
10300	4195-YC				
11100	4195-YC				
22200	4215-DB-YC	961	913	110	114
25900	4225-DB-YC	1184	1140	110	114
26400	4225-DB-YC				
26600	4225-DB-YC				
33100	4235-DA-YC	1338	1254	110	114
35900	4245-DB-YC	1615	1525	110	114
46300	4255-DA-YC	2354	2156	110	114
46300	4255-DA-YC				
56400	4265-DA-YC	3069	2915	110	114

RATING TABLE

15 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	3000	1960	4155-YA	306	301	108	112
219.00	8	4000	2170	4155-YA				
159.00	11	5500	2430	4155-YA				
135.00	13	6480	2500	4155-YA				
117.00	15	7480	2610	4155-YA				
103.00	17	8500	2930	4160-YA	387	376	108	112
83.30	21	10500	3150	4160-YA				
70.00	25	12500	3320	4165-YA				
60.30	29	14500	3650	416H-YA	400	376	108	112
50.00	35	17500	4360	4175-YA	477	471	108	112
40.70	43	21500	6310	4180-YA	561	530	108	112
34.30	51	25500	6600	4185-YA				
29.70	59	29400	9710	4190-YA	717	682	108	112
24.60	71	35500	10300	4190-YA				
20.10	87	43500	11100	4195-YA				
14.50	121	55400	22200	4215-DB-YA	1032	983	110	114
10.60	165	75800	23400	4215-DB-YA				
10.10	174	79600	23400	4215-DB-YA				
7.58	231	106000	26600	4225-DB-YA	1252	1208	110	114
6.78	258	119000	26600	4225-DB-YA				
5.49	319	146000	33100	4235-DA-YA	1408	1324	110	114
4.94	354	163000	34500	4245-DA-YA	1648	1531	110	114
4.02	435	200000	45000	4255-DA-YA	2431	2244	110	114
3.70	473	217000	45000	4255-DA-YA				
3.55	493	226000	45000	4255-DA-YA				
3.35	522	240000	45000	4255-DA-YA				
2.70	649	298000	54900	4265-DA-YA	3146	2992	110	114
2.39	731	336000	54900	4265-DA-YA				



15 HORSEPOWER

CLASS II						CLASS III					
SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4						SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0					
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V			H	V	H	V
1960	4155-YB	306	301	108	112	2030	4165-YC	387	376	108	112
2170	4155-YB					2250	4165-YC				
2430	4155-YB					2560	4165-YC				
2640	4165-YB	387	376	108	112	2640	4165-YC				
2650	4165-YB					2650	4165-YC				
2930	4165-YB					3460	4170-YC	477	471	108	112
3150	4165-YB					3730	4175-YC				
3890	4170-YB	477	471	108	112	3890	4175-YC				
4100	4175-YB					5510	4185-YC	561	530	108	112
5860	4180-YB	561	530	108	112	5860	4185-YC				
6310	4185-YB					8830	4190-YC	717	682	108	112
9230	4190-YB	717	682	108	112	9230	4195-YC				
9710	4195-YB					17800	4205-YC	766	733	108	112
10300	4195-YB										
18900	4205-YB	766	733	108	112	18900	4215-YC	948	906	108	112
23330	4225-DB-YB	1252	1208	110	114	29100	4235-DB-YC	1481	1397	110	114
25900	4225-DB-YB					32300	4235-DB-YC				
26400	4225-DB-YB										
33100	4235-DB-YB	1481	1397	110	114	34500	4245-DB-YC	1703	1593	110	114
33100	4235-DA-YB	1408	1324	110	114	34500	4245-DA-YC	1648	1531	110	114
45000	4255-DB-YB	2576	2396	110	114	45000	4255-DB-YC	2576	2396	110	114
45000	4255-DA-YB	2431	2244	110	114	46300	4255-DA-YC	2431	2244	110	114
54900	4265-DA-YB	3146	2992	110	114	54900	4265-DA-YC	3146	2992	110	114
54900	4265-DA-YB					54900	4265-DA-YC				
54900	4265-DA-YB										
55700	4275-DA-YB	5643	6039	110	114	55700	4275-DA-YC	5643	6039	110	114
55700	4275-DA-YB	5643	6039	110	114						

RATING TABLE

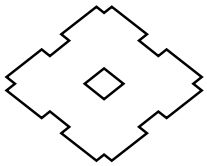
20 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	4000	1960	4155-YA	348	343	108	112
219.00	8	5330	2170	4155-YA				
159.00	11	7330	2430	4155-YA				
135.00	13	8660	2640	4165-YA	429	418	108	112
117.00	15	9900	2650	4165-YA				
103.00	17	11300	2930	4165-YA				
83.30	21	14000	3150	4165-YA				
70.00	25	16700	3890	4175-YA	519	513	108	112
60.30	29	19300	4100	4175-YA				
50.00	35	23300	5860	4180-YA	616	585	108	112
40.70	43	28600	6310	4185-YA				
34.30	51	34000	9230	4195-YA	759	724	108	112
29.70	59	39300	9710	4195-YA				
24.60	71	47300	10300	4195-YA				
20.10	87	58000	18900	4205-YA	807	774	108	122
14.50	121	87100	24100	4225-YA(9)	1320	1294	108	112
10.60	165	101000	25900	4225-DB-YA	1294	1250	110	114
10.10	174	107000	26400	4225-DB-YA				
7.58	231	141000	34500	4245-DB-YA	1758	1648	110	114
6.78	258	158000	34500	4245-DA-YA	1690	1573	110	114
5.49	319	195000	45000	4255-DB-YA	2618	2442	110	114
4.94	354	217000	45000	4255-DA-YA	2464	2288	110	114
4.02	435	266000	54900	4265-DA-YA	3179	3025	110	114
3.70	473	290000	54900	4265-DA-YA				
3.55	493	302000	54900	4265-DA-YA				
2.70	649	397000	55700	4275-DA-YA	5676	6072	110	114
2.39	731	448000	55700	4275-DA-YA				

	NOMINAL O.P. RPM	EXACT RATIO
(1)	106.0	11
(2)	77.6	15
(3)	55.5	21
(4)	40.2	29
(5)	27.1	43
(6)	22.8	51
(7)	19.7	59
(8)	16.4	71
(9)	13.4	87
(10)	14.7	119

(1) THRU (9) THESE UNITS ARE SUPPLIED WITH A 6 POLE NOMINAL 1165 RPM MOTOR.

OUTPUT SPEEDS WILL BE SHOWN IN FOOTNOTES.



20 HORSEPOWER

CLASS II						SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4	CLASS III					SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V				H	V	H	V
2030	4165-YB	429	418	108	112		2400	4170-YC	519	513	108	112
2250	4165-YB											
2560	4165-YB						3020	4175-YC				
2640	4165-YB						3130	4175-YC	519	513	108	112
2970	416H-YB	442	418	108	112		3280	4175-YC				
3460	4175-YB	519	513	108	112		4650	4180-YC	616	585	108	112
3730	4175-YB						5010	4185-YC				
5230	4180-YB	616	585	108	112		5230	4185-YC				
5510	4185-YB						7710	4190-YC	759	724	108	112
5860	4185-YB						8190	4195-YC				
8830	4195-YB	759	724	108	112		8830	4195-YC				
9230	4195-YB											
17800	4205-YB	807	774	108	112		18000	4215-YC	990	948	108	112
20300	4215-YB	990	948	108	112		21400	4215-YC(7)	1133	1091	108	112
30100	4235-YB(9)	1496	1426	108	112		33500	4245-DB-YC	1758	1648	110	114
32300	4235-DB-YB	1536	1452	110	114		34500	4245-DB-YC				
32900	4235-DA-YB	1450	1366	110	114							
45000	4255-DB-YB	2618	2442	110	114		45000	4255-DB-YC	2618	2442	110	114
45000	4255-DA-YB	2464	2288	110	114		45000	4255-DA-YC	2464	2288	110	114
54900	4265-DA-YB	3179	3025	110	114		54900	4265-DA-YC	3179	3025	110	114
54900	4265-DA-YB	3179	3025	110	114		55700	4275-DA-YC	5676	6072	110	114
55700	4275-DA-YB	5676	6072	110	114							

RATING TABLE

25 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I — OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS) H	UNIT WEIGHT TYPE (LBS) V	DIMENSION TYPE (PAGE) H	DIMENSION TYPE (PAGE) V
					SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
292.00	6	5000	2030	416H-YA	579	568	108	112
219.00	8	6660	2250	416H-YA				
159.00	11	9160	2560	416H-YA				
135.00	13	10800	2640	416H-YA				
117.00	15	12500	2650	416H-YA				
103.00	17	14200	3460	4175-YA	669	662	108	112
83.30	21	17500	3730	4175-YA				
70.00	25	20800	5230	4180-YA	752	722	108	112
60.30	29	24200	5510	4185-YA				
50.00	35	29100	5860	4185-YA				
40.70	43	35800	8830	4190-YA	917	882	108	112
34.30	51	42500	9230	4195-YA				
29.70	59	49100	17800	4205-YA	964	931	108	112
20.10	87	72500	20300	4215-YA	1133	1091	108	112
14.50	121	92600	29100	4235-DB-YA	1672	1588	110	114
10.60	165	126000	32300	4235-DB-YA				
7.58	231	177000	45000	4255-DB-YA	2783	2596	110	114
6.78	258	197000	34500	4245-DA-YA	1839	1723	110	114
5.49	319	244000	45000	4255-DB-YA	2783	2596	110	114
4.02	435	333000	54900	4265-DA-YA	3344	3190	110	114

	NOMINAL O.P. RPM	EXACT RATIO
(1)	106.0	11
(2)	77.6	15
(3)	55.5	21
(4)	40.2	29
(5)	27.1	43
(6)	22.8	51
(7)	19.7	59
(8)	16.4	71
(9)	13.4	87
(10)	14.7	119

(1) THRU (9) THESE UNITS ARE SUPPLIED WITH A 6 POLE NOMINAL 1165 RPM MOTOR.

OUTPUT SPEEDS WILL BE SHOWN IN FOOTNOTES.

25 HORSEPOWER

CLASS II						CLASS III					
		SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4						SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0			
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V			H	V	H	V
2400	4170-YB	669	662	108	112						
3020	4175-YB	669	662	108	112	4060	4185-YC	752	722	108	112
3130	4175-YB					4210	4185-YC				
3280	4175-YB					4420	4185-YC				
4650	4180-YB	752	722	108	112	4650	4185-YC				
5010	4185-YB					5010	4185-YC				
5230	4185-YB					7320	4195-YC	917	882	108	112
5510	4190-YB	917	882	108	112	7710	4195-YC				
8190	4195-YB										
16300	4205-YB	964	931	108	112	16300	4205-YC	964	931	108	112
18000	4215-YB	1133	1091	108	112	18000	4215-YC	1133	1091	108	112
21400	4225-YB	1320	1294	108	112	26700	4235-YC(7)	1536	1465	108	112
32400	4245-DB-YB	1894	1784	110	114	33500	4245-YC(9)	1802	1698	108	112
34500	4245-DB-YB					54600	4265-DA-YC	3344	3190	110	114
45000	4255-DB-YB	2783	2596	110	114	54900	4265-DA-YC				
45000	4255-DA-YB	2618	2431	110	114						
54900	4265-DA-YB	3344	3190	110	114						

RATING TABLE

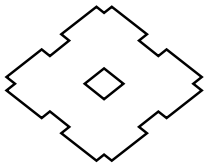
30 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
292.00	6	6000	2130	416H-YA	592	568	108	112
219.00	8	8000	2370	416H-YA				
159.00	11	11000	2670	416H-YA				
135.00	13	13000	3130	4175-YA	669	662	108	112
117.00	15	15000	3280	4175-YA				
103.00	17	17000	4650	4180-YA	752	722	108	112
83.30	21	21000	5010	4180-YA				
70.00	25	25000	5230	4185-YA				
60.30	29	29000	7710	4190-YA	917	882	108	112
50.00	35	35000	8190	4195-YA				
40.70	43	43000	8830	4195-YA				
29.70	59	59000	18000	4215-YA	1133	1091	108	112
20.10	87	86900	20300	4215-YA(7)	1162	1120	108	112
14.50	121	121000	30100	4235-YA(9)	1536	1465	108	112
10.60	165	165000	34500	4245-DB-YA	1894	1784	110	114
7.58	231	231000	45000	4255-DB-YA	2783	2596	110	114
6.78	258	258000	45000	4255-DA-YA	2618	2431	110	114
5.49	319	319000	54900	4265-DA-YA	3344	3190	110	114
3.70	473	434000	55700	4275-DA-YA	5841	6237	110	114

	NOMINAL O.P. RPM	EXACT RATIO
(1)	106.0	11
(2)	77.6	15
(3)	55.5	21
(4)	40.2	29
(5)	27.1	43
(6)	22.8	51
(7)	19.7	59
(8)	16.4	71
(9)	13.4	87
(10)	14.7	119

(1) THRU (9) THESE UNITS ARE SUPPLIED WITH A 6 POLE NOMINAL 1165 RPM MOTOR.

OUTPUT SPEEDS WILL BE SHOWN IN FOOTNOTES.



30 HORSEPOWER

CLASS II — SM-CYCLO S.F. = 1.3, AGMA S.F. = 1.4						CLASS III — SM-CYCLO S.F. = 1.6, AGMA S.F. = 2.0					
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V			H	V	H	V
4060	4180-YB	752	722	108	112	5680	4190-YC	917	882	108	112
4210	4180-YB					5890	4190-YC				
4420	4180-YB					6170	4190-YC				
4650	4185-YB					6500	4190-YC				
5010	4185-YB					7000	4195-YC				
7320	4195-YB	917	882	108	112	7320	4195-YC				
7710	4195-YB					14400	4205-YC	964	931	108	112
16300	4205-7B	964	931	108	112	16500	4215-YC	1133	1091	108	112
18000	4215-YB	1133	1091	108	112	19000	4225-YC	1320	1294	108	112
26700	4235-YB(7)	1536	1465	108	112	29700	4245-YC(7)	1802	1698	108	112
33500	4245-YB(9)	1802	1698	108	112	41000	4255-YC(9)	2530	2332	108	112
44700	4255-DB-YB	2783	2596	110	114	54600	4265-DA-YC	3344	3190	110	114
54900	4264-DA-YB	3344	3190	110	114						

RATING TABLE

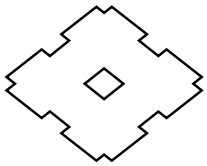
40 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I						SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
159.00	11	14700	4060	4185-YA	790	760	108	112
135.00	13	17300	4210	4185-YA				
117.00	15	20000	4420	4185-YA				
103.00	17	22700	4650	4185-YA				
83.30	21	28000	5010	4185-YA				
70.00	25	33300	7320	4195-YA	950	915	108	112
60.30	29	38600	7710	4195-YA				
40.70	43	57300	16300	4205-YA	992	959	108	112
29.70	59	78600	18000	4215-YA	1162	1120	108	112
20.10	87	116000	26700	4235-YA(7)	1701	1630	108	112
14.50	121	161000	33500	4245-YA(9)	1967	1863	108	112
10.60	165	220000	54600	4265-DA-YA	3377	3223	110	112
7.58	231	308000	54900	4265-DA-YA				

	NOMINAL O.P. RPM	EXACT RATIO
(1)	106.0	11
(2)	77.6	15
(3)	55.5	21
(4)	40.2	29
(5)	27.1	43
(6)	22.8	51
(7)	19.7	59
(8)	16.4	71
(9)	13.4	87
(10)	14.7	119

(1) THRU (9) THESE UNITS ARE SUPPLIED WITH A 6 POLE NOMINAL 1165 RPM MOTOR.

OUTPUT SPEEDS WILL BE SHOWN IN FOOTNOTES.



40 HORSEPOWER

CLASS II						SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4					
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V			H	V	H	V
5680	4195-YB	950	915	108	112	11000	4205-YC	992	959	108	112
5890	4195-YB										
6170	4195-YB					11800	4205-YC	992	959	108	112
6500	4195-YB					12400	4205-YC(1)	1111	1078	108	112
7000	4195-YB					13200	4205-YC	992	959	108	112
7320	4195-YB										
14400	4205-YB	992	959	108	112	14600	4215-YC	1162	1120	108	112
16500	4215-YB	1162	1120	108	112	17400	4225-YC	1349	1322	108	112
19600	4225-YB(5)	1467	1441	108	112	24300	4235-YC(5)	1701	1630	108	112
29700	4245-YB(7)	1967	1863	108	112	36300	4255-YC(7)	2695	2508	108	112
41000	4255-YB(9)	2695	2508	108	112	50000	4265-YC(9)	3212	3058	108	112

RATING TABLE

50 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
159.00	11	18300	5680	4195-YA	1034	999	108	112
135.00	13	21700	5890	4195-YA				
117.00	15	25000	6170	4195-YA				
103.00	17	28300	6500	4195-YA				
83.30	21	35000	7000	4195-YA				
70.00	25	41600	7320	4195-YA				
60.30	29	48300	14400	4205-YA	1111	1078	108	112
40.70	43	71600	16500	4215-YA	1283	1241	108	112
29.70	59	98300	19000	4225-YA	1467	1441	108	112
20.10	87	145000	29700	4245-YA(7)	1967	1863	108	112
14.50	121	202000	41000	4255-YA(9)	2695	2508	108	112
10.60	165	275000	54600	4265-DA-YA	3454	3300	110	114

SM-CYCLO S.F. = 1.0
AGMA S.F. = 1.0

60 HORSEPOWER

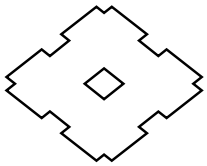
OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
159.00	11	22000	11000	4205-YA	1111	1078	108	112
117.00	15	30000	11800	4205-YA				
83.30	21	42000	13200	4205-YA				
60.30	29	48000	14400	4205-YA				
40.70	43	86000	17400	4225-YA	1467	1441	108	112
29.70	59	118000	24300	4235-YA(5)	1833	1762	108	112
20.10	87	174000	29700	4245-YA(7)	2103	2000	108	112
14.50	121	242000	50000	4265-YA(9)	3377	3223	108	112

SM-CYCLO S.F. = 1.0
AGMA S.F. = 1.0

	NOMINAL O.P. RPM	EXACT RATIO
(1)	106.0	11
(2)	77.6	15
(3)	55.5	21
(4)	40.2	29
(5)	27.1	43
(6)	22.8	51
(7)	19.7	59
(8)	16.4	71
(9)	13.4	87
(10)	14.7	119

(1) THRU (9) THESE UNITS ARE SUPPLIED WITH A 6 POLE NOMINAL 1165 RPM MOTOR.

OUTPUT SPEEDS WILL BE SHOWN IN FOOTNOTES.



50 HORSEPOWER

CLASS II — SM-CYCLO S.F. = 1.3, AGMA S.F. = 1.4						CLASS III — SM-CYCLO S.F. = 1.6, AGMA S.F. = 2.0					
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V			H	V	H	V
11000	4205-YB	1111	1078	108	112	11100	4215-YC	1283	1241	108	112
11800	4205-YB	1111	1078	108	112	11900	4215-YC	1283	1241	108	112
12400	4205-YB(1)	1111	1078	108	112	12600	4215-YC(1)	1283	1241	108	112
13200	4205-YB	1111	1078	108	112	13400	4215-YC	1283	1241	108	112
14600	4215-YB	1283	1241	108	112	15400	4225-YC	1467	1441	108	112
17400	4225-YB	1467	1441	108	112	21700	4235-YC(4)	1701	1630	108	112
24300	4235-YB(5)	1701	1630	108	112	27100	4245-YC(5)	1967	1863	108	112
36300	4255-YB(7)	2695	2508	108	112	36300	4255-YC(7)	2695	2508	108	112
50000	4265-YB(9)	3212	3058	108	112						

60 HORSEPOWER

CLASS II — SM-CYCLO S.F. = 1.3, AGMA S.F. = 1.4						CLASS III — SM-CYCLO S.F. = 1.6, AGMA S.F. = 2.0					
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V			H	V	H	V
11000	4205-YB	1111	1078	108	112	11100	4215-YC	1283	1241	108	112
11800	4205-YB					11900	4215-YC				
13400	4215-YB	1283	1241	108	112	14100	4225-YC	1467	1441	108	112
15400	4225-YB	1467	1441	108	112	15800	4225-YC(3)	1650	1624	108	112
21700	4235-YB(4)	1833	1762	108	112	24100	4245-YC(4)	2103	2000	108	112
27100	4245-YB(5)	2103	2000	108	112	33200	4255-YC(5)	2805	2618	108	112
36300	4255-YB(7)	2803	2618	108	112	44300	4265-YC(7)	3377	3223	108	112

RATING TABLE

75 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
159.00	11	27500	11000	4205-BP-YA			108	112
117.00	15	37500	11800	4205-BP-YA				
83.30	21	52500	13400	4215-YA	1487	1445	108	112
60.30	29	72500	15400	4225-YA	1650	1624	108	112
40.70	43	107000	21700	4235-YA(4)	1951	1881	108	112
29.70	59	147000	27100	4245-YA(5)	2211	2105	108	112
20.10	87	217000	36300	4255-YA(7)	2926	2728	108	112

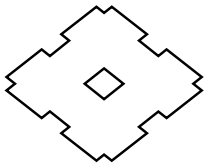
100 HORSEPOWER

OUTPUT RPM	RATIO	OUTPUT TORQUE (IN. LB.)	CLASS I		SM-CYCLO S.F. = 1.0 AGMA S.F. = 1.0			
			OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
					H	V	H	V
159.00	11	36600	11700	4225-BP-YA	CF	CF	108	112
117.00	15	50000	12600	4225-BP-YA				
83.30	21	70000	14100	4225-BP-YA				
60.30	29	96600	19800	4235-BP-YA(3)				
40.70	43	143000	24100	4245-BP-YA(4)				
29.70	59	197000	33200	4255-BP-YA(5)				
20.10	87	290000	44300	4265-BP-YA(7)				

	NOMINAL O.P. RPM	EXACT RATIO
(1)	106.0	11
(2)	77.6	15
(3)	55.5	21
(4)	40.2	29
(5)	27.1	43
(6)	22.8	51
(7)	19.7	59
(8)	16.4	71
(9)	13.4	87
(10)	14.7	119

(1) THRU (9) THESE UNITS ARE SUPPLIED WITH A 6 POLE NOMINAL 1165 RPM MOTOR.

OUTPUT SPEEDS WILL BE SHOWN IN FOOTNOTES.



75 HORSEPOWER

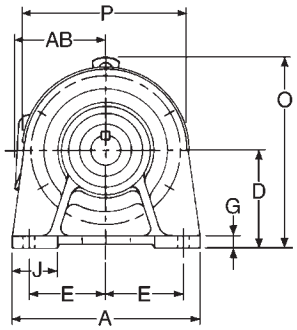
CLASS II						CLASS III					
SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4						SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0					
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V			H	V	H	V
11700	4225-YB	1650	1624	108	112	11700	4225-YC	1650	1624	108	112
12600	4225-YB					12600	4225-YC				
14100	4225-YB					17600	4235-YC(2)	1951	1881	108	112
19800	4235-YB(3)	1951	1881	108	112	19800	4235-YC(3)				
24100	4245-YB(4)	2211	2105	108	112	29500	4255-YC(4)	2926	2728	108	112
33200	4255-YB(5)	2926	2728	108	112	40500	4265-BP-YC(5)	CF	CF	108	112
44300	4265-BP-YB(7)	CF	CF	108	112	55700	4275-BP-YC(7)				

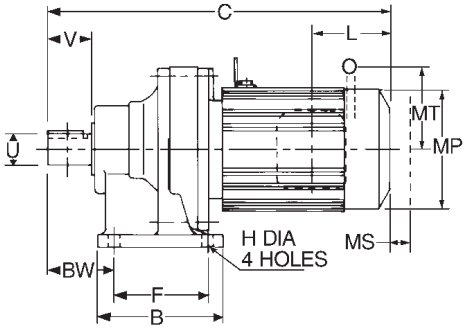
100 HORSEPOWER

CLASS II						CLASS III					
SM-CYCLO S.F. = 1.3 AGMA S.F. = 1.4						SM-CYCLO S.F. = 1.6 AGMA S.F. = 2.0					
OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)		OVERHUNG LOAD (LB)	MODEL	UNIT WEIGHT TYPE (LBS)		DIMENSION TYPE (PAGE)	
		H	V	H	V			H	V	H	V
11700	4225-BP-YB	CF	CF	108	112			CF	CF	108	112
12600	4225-BP-YB					18300	4245-BP-YC(1)				
17600	4235-BP-YB(2)					19600	4245-BP-YC(2)				
21900	4245-BP-YB(3)					26700	4255-BP-YC(3)				
29500	4255-BP-YB(4)					36000	4265-BP-YC(4)				
40500	4265-BP-YB(5)					57400	4275-BP-YC(5)				
55700	4275-BP-YB(7)										

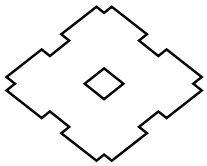
INTEGRAL FOOT MOUNT TYPE HM DIMENSIONS

SINGLE REDUCTION





MODEL	MOTOR HP	A	B	C	C_2	D	E	F	G	H	J	P	O	BW	MP	AB	L	L_2	MS	WEIGHT (LB)			OUTPUT SHAFT		
																				MT	WT	WT_2	U	V	KEY
4075	1/8	5.67	3.31	10.43	11.77	3.149	2.36	2.36	0.39	0.35	1.38	4.33	7.36	1.61	4.88	4.72	3.07	4.41	1.54	—	16	19	0.500	0.98	1/8 x 1/8 x 0.79
	1/4			11.34	12.32								7.36		5.20	4.72	3.98	4.96	1.54	—	19	22			
4085	1/8	5.67	3.31	10.67	12.01	3.149	2.36	2.36	0.39	0.35	1.38	4.33	7.36	1.85	4.88	4.72	3.07	4.41	1.54	—	17	20	0.750	1.18	3/16 x 3/16 x 1.06
	1/4, 1/3			11.58	12.56								7.36		5.20	4.72	3.98	4.96	1.54	—	20	22			
	1/2			12.36	13.35								7.36		5.20	4.72	4.37	5.35	1.54	—	24	26			
4090	1/8	7.09	5.12	12.40	13.34	3.937	2.95	3.54	0.47	0.43	1.57	5.91	8.15	2.36	4.88	4.72	3.07	4.41	1.54	—	33	35	1.125	1.38	1/4 x 1/4 x 1.18
4095	1/4, 1/3			13.31	14.29								8.15		5.20	4.72	3.98	4.96	1.54	—	36	37			
4097	1/2			14.10	15.08								8.15		5.20	4.72	4.37	5.36	1.54	—	39	41			
	3/4,1			14.92	16.61								8.39		5.83	4.49	3.82	5.51	3.67	4.86	42	48			
	1.5, 2			16.22	18.66								8.66		6.30	4.69	3.94	6.38	4.53	5.12	57	68			
4100	1/4, 1/3	7.09	5.31	13.86	14.84	3.937	2.95	3.54	0.47	0.43	1.57	5.91	8.15	2.36	5.20	4.72	3.98	4.96	1.54	—	42	44	1.125	1.38	1/4 x 1/4 x 1.18
4105	1/2			14.65	15.63								8.15		5.20	4.72	4.37	5.36	1.54	—	46	48			
	3/4, 1			15.47	17.17								8.39		5.83	4.49	3.82	5.51	3.67	4.88	49	55			
	1.5, 2			16.77	19.21								8.66		6.30	4.69	3.94	6.38	4.53	5.12	57	68			
	3			17.56	20.04								8.90		6.81	4.96	4.13	6.61	4.77	5.37	66	79			
410H	3/4, 1	7.09	5.31	15.47	17.17	4.724	2.95	3.54	0.47	0.43	1.77	6.30	8.39	2.36	5.83	4.49	3.82	5.51	3.67	4.88	51	57	1.125	1.38	1/4 x 1/4 x 1.18
	1.5, 2			16.77	19.21								8.66		6.30	4.69	3.94	6.38	4.53	5.12	59	70			
	3			17.56	20.04								8.90		6.81	4.96	4.13	6.61	4.77	5.37	68	81			
4110	1/2	9.06	6.10	15.94	16.93	4.724	3.74	4.53	0.59	0.55	2.17	8.03	8.94	3.23	5.20	4.72	4.37	5.35	1.54	—	69	71	1.500	2.17	3/8 x 3/8 x 1.77
4115	3/4, 1			16.65	18.35								9.17		5.83	4.49	3.82	5.51	3.67	4.88	68	75			
	1.5, 2			17.95	20.39								9.45		6.30	4.69	3.94	6.38	4.53	5.12	77	88			
	3			18.74	21.22								9.69		6.81	4.96	4.13	6.61	4.77	5.37	86	99			
	5			19.65	22.48								9.80		8.35	5.79	5.00	7.83	5.20	—	108	130			
4125	5	9.06	6.10	19.65	22.48	5.512	3.74	4.53	0.59	0.55	2.36	8.03	10.67	3.23	8.35	5.79	5.00	7.83	5.20	—	110	132	1.500	2.17	3/8 x 3/8 x 1.77
	7.5			21.38	24.21								10.67		8.35	5.79	5.00	7.83	5.20	—	125	147			
4130	1	13.00	7.68	18.78	20.47	5.905	5.71	5.71	0.87	0.71	2.56	9.06	10.35	3.94	5.83	4.49	3.82	5.51	3.67	4.88	110	117	1.875	2.76	1/2 x 1/2 x 2.17
4135	1.5, 2			20.08	22.52								10.63		6.30	4.69	3.94	6.38	4.53	5.12	119	130			
	3			20.87	23.35								10.87		6.81	4.96	4.13	6.61	4.77	5.37	125	141			
	5			21.77	24.61								10.98		8.35	5.79	5.00	7.83	5.20	—	147	169			
	7.5			23.50	26.34								10.98		8.35	5.79	5.00	7.83	5.20	—	163	185			
	10			25.98	30.12								12.01		10.16	7.76	8.96	13.09	8.86	—	233	288			
4145	1.5, 2	13.00	7.68	20.87	23.31	5.905	5.71	5.71	0.87	0.71	2.56	9.06	10.47	4.72	6.30	4.69	3.94	6.38	4.53	5.12	121	132	1.875	3.54	1/2 x 1/2 x 2.95
	3			21.65	24.13								10.71		6.81	4.96	4.13	6.61	4.77	5.37	128	143			
	5			22.56	25.39								10.98		8.35	5.79	5.00	7.83	5.20	—	150	172			
	7.5			24.29	27.13								10.98		8.35	5.79	5.00	7.83	5.20	—	165	187			
	10			26.77	30.91								12.01		10.16	7.76	8.96	13.09	8.86	—	235	290			
4155	2	13.00	7.68	20.87	23.31	6.299	5.71	5.71	0.87	0.71	2.76	10.47	10.87	4.72	6.30	4.69	3.94	6.38	4.53	5.12	125	136	1.875	3.54	1/2 x 1/2 x 2.95
	3			21.65	24.13								11.10		6.81	4.96	4.13	6.61	4.77	5.37	132	147			
	5			22.56	25.39								11.38		8.35	5.79	5.00	7.83	5.20	—	154	176			
	7.5			24.29	27.13								11.38		8.35	5.79	5.00	7.83	5.20	—	169	191			
	10			26.77	30.91								12.40		10.16	7.76	8.96	13.09	8.86	—	240	295			
	15			29.37	32.91								13.03		12.76	9.13	10.75	14.29	9.72	—	306	378			
	20			31.10	34.65								14.49		12.76	9.13	11.61	15.16	9.72	—	348	420			
4160	3	16.14	9.37	23.54	26.02	6.299	7.28	5.91	0.98	0.71	2.95	12.52	12.20	5.47	6.81	4.96	4.13	6.61	4.77	5.37	211	224	2.250	3.54	1/2 x 1/2 x 2.95
4165	5			24.45	27.28								12.20		8.35	5.79	5.00	7.83	5.20	—	231	253			
	7.5			26.18	29.02								12.20		8.35	5.79	5.00	7.83	5.20	—	246	268			
	10			28.66	32.80								12.60		10.16	7.76	8.96	13.09	8.86	—	317	372			
	15			31.26	34.80								14.49		12.76	9.13	10.75	14.29	9.72	—	387	460			
	20			32.99	36.54								14.49		12.76	9.13	11.61	15.16	9.72	—	429	502			
416H	3	16.14	9.37	23.54	26.02	7.874	7.28	5.91	0.98	0.71	3.15	13.39	13.78	5.47	6.81	4.96	4.13	6.61	4.77	5.37	224	238	2.250	3.54	1/2 x 1/2 x 2.95
	5			24.45	27.28								13.78		8.35	5.79	5.00	7.83	5.20	—	245	267			
	7.5			26.18	29.02								13.78		8.35	5.79	5.00	7.83	5.20	—	260	282			
	15			31.26	34.80								16.06		12.76	9.13	10.75	14.29	9.72	—	400	475			
	20			32.99	36.54								16.06		12.76	9.13	11.61	15.16	9.72	—	442	515			
	25, 30			36.73	—								16.85		15.51	11.69	13.39	—	—	—	592	—			



MODEL	MOTOR HP	A	B	C	C_2	D	E	F	G	H	J	P	O	BW	MP	AB	L	L_2	MS	MT	WEIGHT (LB)		OUTPUT SHAFT		
																					WT	WT_2	U	V	KEY
4170	5	16.93	13.19	26.77	29.61	7.874	7.48	10.83	1.18	0.87	3.15	14.25	14.57	4.92	8.35	5.79	5.00	7.83	5.20	—	321	343	2.750	3.54	⅝ x ⅝ x 3.15
4175	7.5			28.50	31.34								14.57		8.35	5.79	5.00	7.83	5.20	—	337	359			
	10			30.39	34.53								14.76		10.16	7.76	8.96	13.09	8.86	—	409	462			
	15			32.99	36.54								16.42		12.76	9.13	10.75	14.29	9.72	—	477	552			
	20			34.72	38.27								16.42		12.76	9.13	11.61	15.16	9.72	—	519	592			
	25, 30			38.46	—								16.85		15.51	11.69	13.39	—	—	—	669	—			
4180	5	18.50	14.95	28.23	31.06	8.661	8.27	12.60	1.18	0.87	3.35	15.35	15.94	5.71	8.35	5.79	5.00	7.83	5.20	—	403	425	3.125	4.33	¾ x ¾ x 3.74
4185	7.5			29.96	32.80								15.94		8.35	5.79	5.00	7.83	5.20	—	420	442			
	10			31.85	35.98								15.94		10.16	7.76	8.96	13.09	8.86	—	493	546			
	15			34.45	37.99								17.20		12.76	9.13	10.75	14.29	9.72	—	561	636			
	20			36.18	39.72								17.20		12.76	9.13	11.61	15.16	9.72	—	616	678			
	25, 30			39.92	—								17.64		15.51	11.69	13.39	—	—	—	752	—			
4190	7.5	20.87	17.32	33.74	36.57	9.842	9.45	14.96	1.38	1.02	3.54	17.76	18.31	6.69	8.35	5.79	5.00	7.83	5.20	—	583	605	3.625	5.31	⅞ x ⅞ x4.92
4195	10			34.84	38.98								18.31		10.16	7.76	8.96	13.09	8.86	—	649	704			
	15			37.44	40.98								18.39		12.76	9.13	10.75	14.29	9.72	—	717	792			
	20			39.17	42.72								18.39		12.76	9.13	11.61	15.16	9.72		759	834			
	25, 30			42.91	—								20.12		15.51	11.69	13.39	—	—	—	917	—			
	40			42.91	—								20.12		15.51	11.69	13.39	—	—	—	950	—			
	50			47.44	—								20.12		15.51	11.69	16.93	—	—	—	1034	—			
4205	15	20.87	17.32	39.29	42.83	9.843	8.66	14.17	1.38	1.02	3.94	18.54	20.87	8.46	12.76	9.13	10.75	14.29	9.72	—	766	843	3.875	6.50	1.0 x 1.0 x 6.50
	20			41.02	44.57								20.87		12.76	9.13	11.61	15.16	9.72	—	807	884			
	25, 30			44.37	—								20.87		15.51	11.69	13.39	—	—	—	964	—			
	40			44.37	—								20.87		15.51	11.69	13.39	—	—	—	992	—			
	406, 506			49.90	—								20.87		15.51	11.69	16.93	—	—	—	1111	—			
	50, 60			48.90	—								20.87		15.51	11.69	16.93	—	—	—	1111	—			
4215	15	22.83	18.70	40.24	43.78	10.433	9.45	15.55	1.57	1.02	4.33	19.96	22.64	8.27	12.76	9.13	10.75	14.29	9.72	—	948	1025	4.250	6.50	1.0 x 1.0 x 6.50
	20			41.97	45.51								22.64		12.76	9.13	11.61	15.16	9.72	—	990	1065			
	206, 25, 30			45.31	—								22.64		15.51	11.69	13.39	—	—	—	1133	—			
	306, 40			45.31	—								22.64		15.51	11.69	13.39	—	—	—	1162	—			
	506, 50, 60			49.84	—								22.64		15.51	11.69	16.93	—	—	—	1283	—			
	75			52.01	—								22.64		19.06	16.22	18.31	—	—	—	1487	—			
4225	206, 25, 30	24.41	24.07	46.89	—	11.024	10.63	16.54	1.57	1.30	4.53	21.61	24.02	9.06	15.51	11.69	13.39	—			1320	—	4.625	6.50	1.25 x ⅞ x 6.50
	256, 40			46.89	—								24.02		15.51	11.69	13.39	—			1349	—			
	406, 50, 60			51.42	—								24.02		15.11	11.69	16.93	—			1467	—			
	606, 75			53.58	—								24.02		19.06	16.22	18.31	—			1650	—			
4235	206	26.38	22.05	49.33	—	11.811	11.42	18.11	1.77	1.30	4.72	23.27	26.26	10.24	15.51	11.69	13.39	—			1496	—	5.000	7.87	1.25 x ⅞ x 7.87
	256, 306			49.33	—								26.26		15.51	11.69	13.39	—			1536	—			
	406, 506			53.86	—								26.26		15.51	11.69	16.93	—			1701	—			
	606			56.02	—								26.26		19.06	16.22	18.31	—			1833	—			
	756			59.17	—								26.26		19.09	16.22	19.88	—			1951	—			
4245	256, 306	28.35	22.83	50.47	—	13.189	12.40	18.90	1.77	1.54	5.04	25.08	28.70	10.35	15.51	11.69	13.39	—	—	—	1802	—	5.500	7.87	1.25 x ⅞ x 7.87
	406, 506			55.00	—								28.70		15.51	11.69	16.93	—	—	—	1967	—			
	606			57.17	—								28.70		19.06	16.22	18.31	—	—	—	2103	—			
	756			60.31	—								28.70		19.06	16.22	19.88	—	—	—	2211	—			
4255	306	30.71	24.80	55.12	—	14.764	13.19	20.47	1.97	1.54	5.51	27.68	32.09	12.60	15.51	11.69	13.39	—			2530	—	6.250	9.45	1.50 x 1.0 x 9.45
	406, 506			59.65	—								32.09		15.51	11.69	16.93	—			2695	—			
	606			61.81	—								32.09		19.06	16.22	18.31	—			2805	—			
	756			64.96	—								32.09		19.09	16.22	19.88	—			2926	—			
4265	406, 506	34.65	27.56	64.25	—	15.748	15.16	23.23	2.17	1.77	6.30	30.39	34.41	15.35	15.51	11.69	16.93	—			3312	—	6.625	11.81	1.75 x 1.25 x 11.80
	606			64.42	—										19.06	16.22	18.31	—			3377				

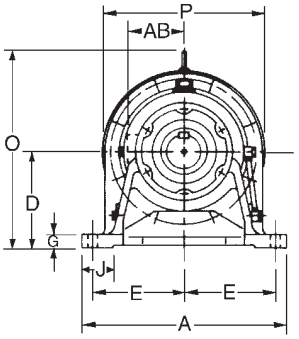
SINGLE REDUCTION (6 Pole Motor without Brake)

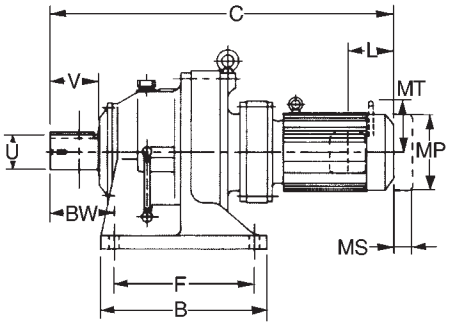
MODEL	MOTOR HP X P	A	B	C	D	E	F	G	H	J	O	P	BW	MP	AB	L	T	OUTPUT SHAFT		
																		U_1	V	KEY
4205	15 x 6P	20.87	17.32	41.1	9.842	8.66	14.17	1.38	1.02	3.94	20.87	18.54	8.46	12.64	9.14	11.70	8.55	3.875	6.50	1 x 1 x 6.50
4215	15 x 6P	22.83	18.70	42.0	10.433	9.45	15.55	1.57	1.02	4.33	22.64	19.96	8.27	12.64	9.14	11.70	8.55	4.625	6.50	1 x 1 x 6.50
4225	15 x 6P	24.41	20.47	4.36	11.024	10.63	16.54	1.57	1.30	4.53	24.02	21.61	9.06	12.64	9.14	11.70	8.55	4.625	6.50	1¼ x ⅞ x 6.50

NOTES: 1) [1] For tolerances refer to page 127.
2) [2] Dimensions "C_2, L_2, WT_2" are for BRAKEMOTORS.
3) MS dimension is clearance required for brake adjustment.
4) MT dimension is brake release lever.
5) If a 3-digit number is shown for horsepower, the last digit indicates the number of poles.

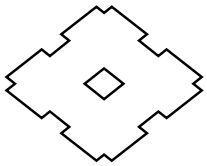
INTEGRAL FOOT MOUNT TYPE HM DIMENSIONS

DOUBLE REDUCTION





MODEL	MOTOR HP	A	B	C	C_2	D	E	F	G	H	J	P	O	BW	MP	AB	L	L_2	MS	MT	WEIGHT (LB)		OUTPUT SHAFT		
																					WT	WT_2	U	V	KEY
4097-DA	1/8	7.09	5.12	14.29	15.63	3.937	2.95	3.54	0.47	0.43	1.57	5.91	8.56	2.36	4.88	4.72	3.07	4.41	1.54	—	40	41	1.125	1.38	1/4 x 1/4 x 1.18
	1/4, 1/3			15.20	16.18								8.15		5.20	4.72	3.98	4.96	1.54	—	42	44			
4105-DA	1/8	7.09	5.31	14.84	16.18	3.937	2.95	3.54	0.47	0.43	1.57	5.91	8.15	2.36	4.88	4.72	3.07	4.41	1.54	—	44	46	1.125	1.38	1/4 x 1/4 x 1.18
	1/4, 1/3			15.75	16.73								8.15		5.20	4.72	3.98	4.96	1.54	—	47	48			
	1/2			16.54	17.52								8.15		5.20	4.72	4.37	5.36	1.54	—	51	53			
4115-DB	1/8	9.06	6.10	16.73	18.07	4.724	3.74	4.53	0.60	0.55	2.17	8.03	10.12	3.23	4.88	4.72	3.07	4.41	1.54	—	74	77	1.500	2.17	3/8 x 3/8 x 1.77
	1/4, 1/3			17.64	18.62								10.12		5.20	4.72	3.98	4.96	1.54	—	77	79			
	1/2			18.43	19.41								10.12		5.20	4.72	4.37	5.36	1.54	—	81	83			
	3/4, 1			19.25	20.94								9.17		5.83	4.49	3.82	5.51	3.67	4.88	84	90			
	1.5												9.45		6.30	4.69	3.94	6.38	4.53	5.12	92	103			
4135-DC	1/4, 1/3	13.00	7.68	20.20	21.18	5.905	5.71	5.71	0.87	0.71	2.56	9.06	10.43	3.94	5.20	4.72	3.98	4.96	1.54	—	115	117	1.875	3.54	1/2 x 1/2 x 2.17
	1/2			20.98	21.97								10.43		5.20	4.72	4.37	5.36	1.54	—	118	120			
	3/4, 1			21.81	23.50								10.43		5.83	4.49	3.82	5.51	3.67	4.88	121	130			
	1.5, 2			23.11	25.55								10.63		6.30	4.69	3.94	6.38	4.53	5.12	130	141			
4145-DB	1/4, 1/3	13.00	7.68	20.43	21.42	5.905	5.71	5.71	0.87	0.71	2.56	9.06	11.81	4.72	5.20	4.72	3.98	4.96	1.54	—	110	112	1.875	3.54	1/2 x 1/2 x 2.95
	1/2			21.22	22.20								11.81		5.20	4.72	4.37	5.36	1.54	—	114	116			
	3/4, 1			22.05	23.74								10.43		5.83	4.49	3.82	5.51	3.67	4.88	117	123			
	1.5			23.35	25.79								10.63		6.30	4.69	3.94	6.38	4.53	5.12	125	136			
4165-DC	1/3	16.14	9.37	23.15	24.13	6.299	7.28	5.91	0.98	0.71	2.95	11.81	13.74	5.47	5.20	4.72	3.98	4.96	1.54	—	222	223	2.250	3.54	1/2 x 1/2 x 2.95
	1/2			23.94	24.92								13.74		5.20	4.72	4.37	5.36	1.54	—	226	227			
	3/4, 1			24.65	26.34								13.74		5.83	4.49	3.82	5.51	3.67	4.88	224	231			
	1.5, 2			25.94	28.39								13.74		6.30	4.69	3.94	6.38	4.53	5.12	233	244			
	3			26.73	29.21								13.74		6.81	4.96	4.13	6.61	4.77	5.37	242	257			
	5			27.64	30.47								13.74		8.35	5.79	5.00	7.83	5.20	—	264	286			
4175-DC	1/2	16.93	13.19	25.79	26.77	7.874	7.48	10.83	1.18	0.87	3.15	13.39	16.38	4.92	5.20	4.72	4.37	5.36	1.54	—	300	302	2.750	3.54	5/8 x 5/8 x 3.15
	3/4, 1			26.50	28.19								16.38		5.83	4.49	3.82	5.51	3.67	4.88	299	306			
	1.5, 2			27.80	30.24								16.38		6.30	4.69	3.94	6.38	4.53	5.12	308	319			
	3			28.58	31.06								16.38		6.81	4.96	4.13	6.61	4.77	5.37	317	332			
	5			29.49	32.32								16.38		8.35	5.79	5.00	7.83	5.20	—	339	361			
4185-DB	3/4, 1	18.50	14.96	28.86	30.55	8.661	8.27	12.60	1.18	0.87	3.35	14.57	17.76	5.71	5.83	4.49	3.82	5.51	3.67	4.88	416	422	3.125	4.33	3/4 x 3/4 x 3.74
	1.5, 2			30.16	32.60								17.76		6.30	4.69	3.94	6.38	4.53	5.12	425	436			
	3			30.94	33.43								17.76		6.81	4.96	4.13	6.61	4.77	5.37	431	447			
	5			31.85	34.69								17.76		8.35	5.79	5.00	7.83	5.20	—	453	475			
	7.5			33.58	36.42								17.76		8.35	5.79	5.00	7.83	5.20	—	469	491			
	10			36.06	40.20								17.76		10.16	7.76	8.96	13.09	8.86	—	539	594			
4190-DA	1	20.87	17.32	31.22	32.91	9.843	9.45	14.96	1.38	1.02	3.54	16.93	20.91	6.69	5.83	4.49	3.82	5.51	3.67	4.88	548	554	3.625	5.31	7/8 x 7/8 x 4.92
4195-DA	1.5, 2			32.52	34.96								20.91		6.30	4.69	3.94	6.38	4.53	5.12	557	568			
	3			33.31	35.79								20.91		6.81	4.96	4.13	6.61	4.77	5.37	565	581			
4195-DB	2	20.87	17.32	33.15	35.59	9.843	9.45	14.96	1.38	1.02	3.54	16.93	20.91	6.69	6.30	4.69	3.94	6.38	4.53	5.12	574	585	3.625	5.31	7/8 x 7/8 x 4.92
	3			33.94	36.42								20.91		6.81	4.96	4.13	6.61	4.77	5.37	581	596			
	5			34.84	37.68								20.91		8.35	5.79	5.00	7.83	5.20	—	603	625			
	7.5			36.57	39.41								20.91		8.35	5.79	5.00	7.83	5.20	—	618	640			
	10			39.06	43.19								20.91		10.16	7.76	8.96	13.09	8.86	—	689	744			
4205-DB	2	20.87	17.32	35.20	37.64	9.843	8.66	14.17	1.38	1.02	3.94	17.64	20.87	8.46	6.30	4.69	3.94	6.38	4.53	5.12	627	638	3.875	6.50	1.0 x 1.0 x 6.50
	3			35.98	38.46								20.87		6.81	4.96	4.13	6.61	4.77	5.37	634	649			
	5			36.89	39.72								20.87		8.35	5.79	5.00	7.83	5.20	—	656	678			
	7.5			38.62	41.46								20.87		8.35	5.79	5.00	7.83	5.20	—	671	693			
	10			41.10	45.24								20.87		10.16	7.76	8.96	13.09	8.86	—	741	796			
4215-DA	3	22.83	18.70	37.01	39.49	10.433	9.45	15.55	1.57	1.02	4.33	19.09	22.64	8.27	6.81	4.96	4.13	6.61	4.77	5.37	812	827	4.250	6.50	1.0 x 1.0 x 6.50
	5			37.91	40.75								22.64		8.35	5.79	5.00	7.83	5.20	—	834	856			
	7.5			39.65	42.48								22.64		8.35	5.79	5.00	7.83	5.20	—	849	871			

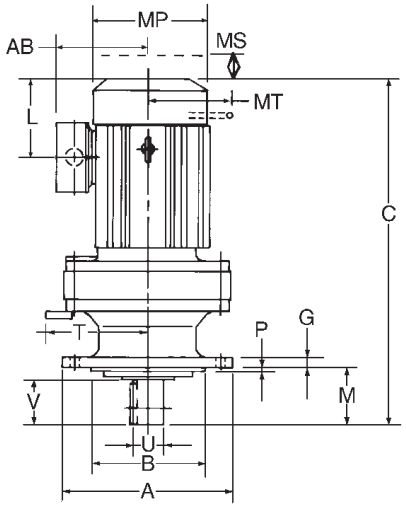


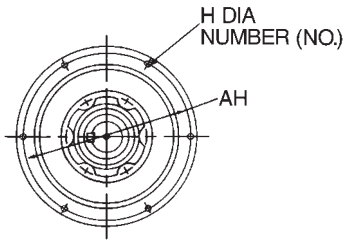
MODEL	MOTOR HP	A	B	C	C_2	D	E	F	G	H	J	P	O	BW	MP	AB	L	L_2	MS	MT	WEIGHT (LB)		OUTPUT SHAFT		
																					WT	WT_2	U	V	KEY
4215-DB	7.5	22.83	18.70	40.63	43.46	10.433	9.45	15.55	1.57	1.02	4.33	19.09	22.64	8.27	8.35	5.79	5.00	7.83	5.20	—	891	913	4.250	6.50	1.0 x 1.0 x 6.50
	10			43.11	47.24								22.64		10.16	7.76	8.96	13.09	8.86	—	961	1016			
	15			45.71	49.25								22.64		12.76	9.13	10.75	14.29	9.72	—	1032	1104			
4226-DA	2	24.41	20.47	37.87	40.31	11.024	10.63	16.54	1.57	1.30	4.53	20.71	24.02	9.06	6.30	4.69	3.94	6.38	4.53	5.12	968	979	4.625	6.50	1.25 x 7/8 x 6.50
	3			38.66	41.14								24.02		6.81	4.96	4.13	6.61	4.77	5.37	975	990			
	5			39.57	42.40								24.02		8.35	5.79	5.00	7.83	5.20	—	997	1019			
	7.5			41.30	44.13								24.02		8.35	5.79	5.00	7.83	5.20	—	1012	1034			
4225-DB	7.5	24.41	20.47	43.58	46.42	11.024	10.63	16.54	1.57	1.30	4.53	20.71	24.02	9.06	8.35	5.79	5.00	7.83	5.20	—	1111	1133	4.625	6.50	1.25 x 7/8 x 6.50
	10			45.47	49.61								24.02		10.16	7.76	8.96	13.09	8.86	—	1184	1236			
	15			48.07	51.61								24.02		12.75	9.13	10.75	14.29	9.72	—	1252	1324			
	20			49.80	53.35								24.02		12.76	9.13	11.61	15.16	9.72	—	1294	1366			
4235-DA	3	26.38	22.05	42.05	44.53	11.811	11.42	18.11	1.77	1.30	4.72	22.13	26.26	10.24	6.81	4.96	4.13	6.61	4.77	5.37	1232	1245	5.000	7.87	1.25 x 7/8 x 7.87
	5			42.95	45.79								26.26		8.35	5.79	5.00	7.83	5.20	—	1252	1274			
	7.5			44.69	47.52								26.26		8.35	5.79	5.00	7.83	5.20	—	1267	1289			
	10			47.17	51.30								26.26		10.16	7.76	8.96	13.09	8.86	—	1338	1393			
	15			49.76	53.31								26.26		12.76	11.61	10.75	14.29	9.72	—	1408	1481			
	20			51.50	55.04								26.26		12.76	9.13	22.05	15.16	9.72	—	1450	1522			
4235-DB	15	26.38	22.05	50.63	54.17	11.811	11.42	8.11	1.77	1.30	4.72	22.13	26.26	10.24	12.76	9.13	10.75	14.29	9.72	—	1481	1555	5.000	7.87	1.25 x 7/8 x 7.87
	20			52.36	55.91								26.26		12.76	9.13	11.61	15.16	9.72	—	1536	1597			
	25			56.10	—								26.26		15.51	11.69	13.39	—	—	—	1672	—			
4245-DA	5	28.35	22.83	44.45	47.28	13.189	12.40	18.90	1.77	1.54	5.04	24.17	28.70	10.35	8.35	5.79	5.00	7.83	5.20	—	1492	1514	5.500	7.87	1.25 x 7/8 x 7.87
	7.5			46.18	49.02								28.70		8.35	5.79	5.00	7.83	5.20	—	1507	1529			
	10			48.66	52.80								28.70		10.16	7.76	8.96	13.09	8.86	—	1577	1632			
	15			51.26	54.80								28.79		12.76	9.13	10.75	14.29	9.72	—	1648	1720			
	20			52.99	56.54								28.79		12.76	9.13	11.61	15.16	9.72	—	1690	1762			
	25			56.73	—								28.70		15.51	11.69	13.99	—	—	—	1839	—			
4245-DB	10	28.35	22.83	49.49	53.62	13.189	12.40	18.90	1.77	1.54	5.04	24.17	28.70	10.35	10.16	7.76	8.96	13.09	8.86		1615	1670	5.500	7.87	1.25 x 7/8 x 7.87
	15			52.09	55.63								28.70		12.76	9.13	10.75	14.29	9.72	—	1703	1778			
	20			53.82	57.36								28.70		12.76	9.13	11.61	15.16	9.72	—	1758	1819			
	25, 30			57.56	—								28.70		15.51	11.69	13.39	—	—	—	1894	—			
4255-DA	5	30.71	24.80	50.55	53.39	14.764	13.19	20.47	1.97	1.54	5.51	26.38	32.09	12.60	8.35	5.79	5.00	7.83	5.20	—	2273	2295	6.250	9.45	1.50 x 1.0 x 9.45
	7.5			52.28	55.12								32.09		8.35	5.79	5.00	7.83	5.20	—	2288	2310			
	10			54.17	58.31								32.09		10.16	7.76	8.96	13.09	8.86	—	2354	2407			
	15			56.77	60.31								32.09		12.76	9.13	10.75	14.29	9.72	—	2431	2497			
	20			58.50	62.05								32.09		12.76	9.13	11.61	15.16	9.72	—	2464	2541			
	25, 30			62.24	—								32.09		15.51	11.69	13.39	—	—	—	2618	—			
4255-DB	15	30.71	24.80	57.64	61.18	14.764	13.19	20.47	1.97	1.54	5.51	26.38	32.09	12.60	12.76	9.13	10.75	14.29	9.72	—	2576	2649	6.250	9.45	1.50 x 1.0 x 9.45
	20			59.37	62.91								32.09		12.76	9.13	11.61	15.16	9.72	—	2618	2695			
	25, 30			63.11	—								32.09		15.51	11.69	13.39	—	—	—	2783	—			
4265-DA	7.5	34.65	27.56	58.27	61.10	15.748	15.16	23.23	2.17	1.77	6.30	28.98	34.41	15.35	8.35	5.79	5.00	7.83	5.20	—	3005	3027	6.625	11.81	1.75 x 1.25 x 11.80
	10			59.37	63.50								34.41		10.16	7.76	8.96	13.09	8.86	—	3069	3124			
	15			61.97	65.51								34.41		12.76	9.13	10.75	14.29	9.72	—	3146	3212			
	20			63.70	67.24								34.41		12.76	9.13	11.61	15.16	9.72	—	3179	3256			
	25, 30			67.44	—								34.41		15.51	11.69	13.39	—	—	—	3344	—			
	40			67.44	—								34.41		15.51	11.69	13.39	—	—	—	3377	—			
	50			71.97	—								34.41		15.51	11.69	16.93	—	—	—	3454	—			
4275-DA	15	45.67	40.94	72.24	75.79	21.260	20.67	16.54	2.36	1.77	7.87	37.40	45.71	19.09	12.76	9.13	10.75	14.29	9.72	—	5643	5709	7.00	12.99	1.75 x 1.25 x 13.00
	20			73.98	77.52								45.71		12.76	9.13	11.61	15.16	9.72	—	5676	5753			
	25			77.72	—								45.71		15.51	11.69	13.39	—	—	—	5841	—			

NOTES: 1) [1] For tolerances refer to page 127.
2) [2] Dimensions "C_2, L_2, WT_2" are for BRAKEMOTORS.
3) MS dimension is clearance required for brake adjustment.
4) MT dimension is brake release lever.
5) If a 3 digit number is shown for horsepower, the last digit indicates the number of poles.

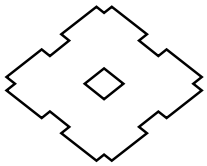
INTEGRAL FLANGE MOUNT TYPE VM DIMENSIONS

SINGLE REDUCTION





MODEL	MOTOR HP	A	Bmin	Bmax	C	C_2	G	H	NO.	M	P	AH	Tmax	MP	AB	L	L_2	MS	MT	WEIGHT (LB)		OUTPUT SHAFT		
																				WT	WT_2	U_1	V	KEY
4075	1/8	4.72	3.1466	3.1484	10.43	11.77	0.31	0.35	6	1.34	0.12	4.02	—	4.88	4.80	3.07	4.41	1.54	—	18	20	0.500	0.98	1/8 x 1/8 x 0.79
	1/4, 1/3				11.34	12.32								5.20	4.80	3.98	4.96	1.54	—	21	23			
4085	1/8	6.30	4.3272	4.3293	10.67	12.01	0.35	0.43	4	1.65	0.12	5.28	—	4.88	4.80	3.07	4.41	1.54	—	21	24	0.750	1.18	3/16 x 3/16 x 1.06
	1/4, 1/3				11.57	12.56								5.20	4.80	3.98	4.96	1.54	—	25	26			
	1/2				12.36	13.35								5.20	4.80	4.37	5.36	1.54	—	29	31			
4090	1/8	6.30	4.3272	4.3293	12.40	13.74	0.35	0.43	4	1.89	0.12	5.28	—	4.88	4.80	3.07	4.41	1.54	—	31	33	1.125	1.38	1/4 x 1/4 x 1.18
4095	1/4, 1/3				13.31	14.29								5.20	4.80	3.98	4.96	1.54	—	33	35			
4097	1/2				14.09	15.08								5.20	4.80	4.37	5.36	1.54	—	36	38			
	3/4, 1				14.92	16.62								5.83	4.49	3.82	5.51	3.67	—	40	46			
	1.5, 2				16.22	18.66								6.30	4.69	3.94	6.38	4.53	5.12	48	59			
4100	1/4, 1/3	6.30	4.3272	4.3293	13.86	14.84	0.35	0.43	4	1.89	0.12	5.28	—	5.20	4.80	3.98	4.96	1.54	—	38	40	1.125	1.38	1/4 x 1/4 x 1.18
4105	1/2				14.65	15.63								5.20	4.80	4.37	5.36	1.54	—	40	42			
410H	3/4, 1				15.47	17.17								5.83	4.49	3.82	5.51	3.67	4.88	44	51			
	1.5, 2				16.77	19.21								6.30	4.69	3.94	6.38	4.53	5.12	53	64			
	3				17.56	20.04								6.81	4.96	4.13	6.61	4.77	5.37	62	77			
4110	1/2	8.27	5.5076	5.5101	15.94	16.93	0.51	0.43	6	2.72	0.16	7.09	—	5.20	4.80	4.37	5.36	1.54	—	66	68	1.500	2.17	3/8 x 3/8 x 1.77
4115	3/4, 1				16.65	18.35								5.83	4.49	3.82	5.51	3.67	4.88	66	73			
4125	1.5, 2				17.95	20.39								6.30	4.69	3.94	6.38	4.53	5.12	75	86			
	3				18.74	21.22								6.81	4.96	4.13	6.61	4.77	5.37	84	99			
	5				19.65	22.48								8.35	5.79	5.00	7.83	5.20	—	106	128			
	7.5				21.38	24.21								8.35	5.79	5.00	7.83	5.20	—	121	143			
4130	1	10.24	7.8692	7.8720	18.78	20.47	0.59	0.43	6	2.99	0.16	9.06	8.23	5.83	4.49	3.82	5.51	3.67	4.88	110	117	1.875	2.40	1/2 x 1/2 x 2.17
4135	1.5, 2				20.08	22.52								6.30	4.69	3.94	6.38	4.53	5.12	119	130			
	3				20.87	23.35								6.81	4.96	4.13	6.61	4.77	5.37	125	141			
	5				21.77	24.61								8.35	5.79	5.00	7.83	5.20	—	147	169			
	7.5				23.50	26.34								8.35	5.79	5.00	7.83	5.20	—	163	185			
	10				25.98	30.12								10.16	7.76	8.96	13.09	8.86	—	233	288			
4145	1.5, 2	10.24	7.8692	7.8720	20.87	23.31	0.59	0.43	6	3.78	0.16	9.06	8.23	6.30	4.69	3.94	6.38	4.53	5.12	121	132	1.875	3.19	1/2 x 1/2 x 2.95
4155	3				21.65	24.13								6.81	4.96	4.13	6.61	4.77	5.37	128	143			
	5				22.56	25.39								8.35	5.79	5.00	7.83	5.20	—	150	172			
	7.5				24.29	27.13								8.35	5.79	5.00	7.83	5.20	—	165	187			
	10				26.77	30.91								10.16	7.76	8.96	13.09	8.86	—	235	290			
	15				29.37	32.91								12.76	9.13	10.75	14.29	9.72	—	301	374			
	20				31.10	34.65								12.76	9.13	11.61	15.16	9.72	—	343	416			
4160	3	13.39	10.6245	10.6277	23.54	26.02	0.79	0.43	6	3.50	0.16	12.20	8.54	6.81	4.96	4.13	6.61	4.77	5.37	200	213	2.250	3.15	1/2 x 1/2 x 2.95
4165	5				24.45	27.28								8.35	5.79	5.00	7.83	5.20	—	220	242			
416H	7.5				26.18	29.02								8.35	5.79	5.00	7.83	5.20	—	235	257			
	10				28.66	32.80								10.16	7.76	8.96	13.09	8.86	—	306	361			
	15				31.26	34.80								12.76	9.13	10.75	14.29	9.72	—	376	449			
	20				32.99	36.54								12.76	9.13	11.61	15.16	9.72	—	418	491			
	25, 30				36.73	—								15.51	11.69	13.39	—	—	—	568	—			
4170	5	15.75	12.4350	12.4385	26.77	29.61	0.87	0.55	8	3.70	0.20	14.17	8.86	8.35	5.79	5.00	7.83	5.20	—	315	337	2.750	3.31	5/8 x 5/8 x 3.15
4175	7.5				28.50	31.34								8.35	5.79	5.00	7.83	5.20	—	330	352			
	10				30.39	34.53								10.16	7.76	8.96	13.09	8.86	—	403	455			
	15				32.99	36.54								12.76	9.13	10.75	14.29	9.72	—	471	543			
	20				34.72	38.27								12.76	9.13	11.61	15.16	9.72	—	513	585			
	25, 30				38.46	—								15.51	11.69	13.39	—	—	—	662	—			



MODEL	MOTOR HP	A	Bmin	Bmax	C	C_2	G	H	NO.	M	P	AH	Tmax	MP	AB	L	L_2	MS	MT	WEIGHT (LB)		OUTPUT SHAFT		
																				WT	WT_2	U_1	V	KEY
4180	5	16.93	13.5768	13.5803	28.23	31.06	0.87	0.71	8	4.33	0.20	15.35	9.45	8.35	5.79	5.00	7.83	5.20	—	372	394	3.125	3.94	¾ x ¾ x 3.74
4185	7.5				29.96	32.80								8.35	5.79	5.00	7.83	5.20	—	389	411			
	10				31.85	35.98								10.16	7.76	8.96	13.09	8.86	—	462	515			
	15				34.45	37.99								12.76	9.13	10.75	14.29	9.72	—	530	605			
	20				36.18	39.72								12.76	9.13	11.61	15.16	9.72	—	585	647			
	25, 30				39.92	—								15.51	11.69	13.39	—	—	—	722	—			
4190	7.5	19.29	15.7421	15.7456	33.74	36.57	1.18	0.71	12	5.71	0.24	17.72	10.63	8.35	5.79	5.00	7.83	5.20	—	458	570	3.625	4.92	⅞ x ⅞ x 4.92
4195	10				34.84	38.98								10.16	7.76	8.96	13.09	8.86	—	614	669			
	15				37.44	40.98								12.76	9.13	10.75	14.29	9.72	—	682	755			
	20				39.17	42.72								12.76	9.13	11.61	15.16	9.72	—	724	796			
	25, 30				42.91	—								15.51	11.69	13.39	—	—	—	882	—			
	40				42.91	—								15.51	11.69	13.39	—	—	—	915	—			
	50				47.44	—								15.51	11.69	16.93	—	—	—	999	—			
4205	15	17.91	13.9704	13.9739	39.29	42.83	1.18	0.87	8	8.03	0.20	15.94	13.43	12.76	9.13	10.75	14.29	9.72	—	733	805	3.875	6.50	1.0 x 1.0 x 6.50
	20				41.02	44.57								12.76	9.13	11.61	15.16	9.72	—	774	847			
	25, 30				44.37	—								15.51	11.69	13.39	—	—	—	931	—			
	40				44.37	—								15.51	11.69	13.39	—	—	—	959	—			
	406, 506				48.90	—								15.51	11.69	16.93	—	—	—	1078	—			
	50, 60				48.90	—								15.51	11.69	16.93	—	—	—	1078	—			
4215	15	19.29	15.3484	15.3519	40.24	43.78	1.38	0.94	8	7.99	0.28	17.32	13.70	12.76	9.13	10.75	14.29	9.72	—	906	979	4.250	6.50	1.0 x 1.0 x 6.50
	20				41.97	45.51								12.76	9.13	11.61	15.16	9.72	—	948	1021			
	206, 25, 30				45.31	—								15.51	11.69	13.39	—	—	—	1091	—			
	306, 40				45.31	—								15.51	11.69	13.99	—	—	—	1120	—			
	506, 50, 60				49.84	—								15.51	11.69	16.93	—	—	—	1241	—			
	75				52.01	—								19.06	16.22	18.31	—	—	—	1445	—			
4225	206, 25, 30	21.06	16.3321	16.3359	46.89	—	1.38	1.06	8	8.27	0.39	18.70	13.86	15.51	11.69	13.39	—			1294	—	4.625	6.50	1.25 x ⅞ x 6.50
	256, 40				46.89	—								15.51	11.69	13.39	—			1322	—			
	406, 50, 60				51.42	—								15.51	11.69	16.93	—			1441	—			
	606, 75				53.58	—								19.06	16.22	18.31	—			1624	—			
4235	206	24.44	17.7100	17.7139	49.33	—	1.57	1.06	8	9.84	0.39	20.08	14.13	15.51	11.69	13.39	—			1426	—	5.00	7.87	1.25 x ⅞ x 7.87
	256, 306				49.33	—								15.51	11.69	13.39	—			1465	—			
	406, 506				53.86	—								15.51	11.69	16.93	—			1630	—			
	606				56.02	—								19.06	16.22	18.31	—			1762	—			
	756				59.17	—								19.09	16.22	19.88	—			1881	—			
4245	256, 306	25.00	19.0880	19.0918	50.47	—	1.57	1.30	8	9.84	0.39	22.05	14.61	15.51	11.69	13.39	—			1698	—	5.500	7.87	1.25 x ⅞ x 7.87
	406, 506				55.00	—								15.51	11.69	16.93				1863	—			
	606				57.17	—								19.06	16.22	18.31	—			2000	—			
	756				60.31	—								19.09	16.22	19.88				2105	—			
4255	306	26.97	21.0557	21.0600	55.12	—	1.77	1.30	8	11.61	0.39	24.02	16.77	15.51	11.69	13.39	—			2332		6.250	9.45	1.50 x 1.0 x 9.45
	406, 506				59.65	—								15.51	11.69	16.93	—			2508				
	606				61.81	—								19.06	16.22	18.31	—			2618				
	756				64.96	—								19.09	16.22	19.88	—			2728				
4265	406, 506	29.53	22.4337	22.4380	64.25	—	1.97	1.54	8	14.17	0.39	25.98	18.11	15.51	11.69	16.93	—			3058		6.625	11.81	1.75 x 1.25 x 11.80
	606				66.42	—								19.06	16.22	18.31	—			3223				

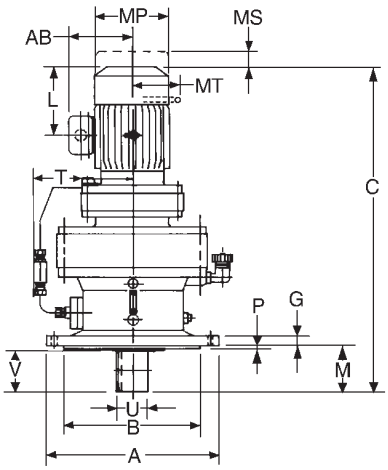
SINGLE REDUCTION (6 Pole Motor without Brake)

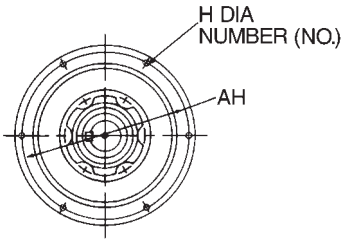
MODEL	MOTOR HP X P	A	Bmin	Bmax	C	G	H	NO.	M	P	AH	MP	AB	L	T	OUTPUT SHAFT		
																U_1	V	KEY
4205	15 x 6P	17.91	13.9704	13.9739	41.1	1.18	0.87	8	8.03	0.20	15.94	12.64	9.14	11.70	8.55	3.875	6.50	1 x 1 x 6.50
4215	15 x 6P	19.29	15.3484	15.3519	42.0	1.38	0.94	8	8.00	0.28	17.32	12.64	9.14	11.70	8.55	4.250	6.50	1 x 1 x 6.50
4225	15 x 6P	21.06	16.3321	16.3359	43.6	1.38	1.06	8	8.27	0.39	18.70	12.64	9.14	11.70	8.55	4.625	6.50	1¼ x ⅞ x 6.50

NOTES: 1) [1] For tolerances refer to page 127.
2) [2] Dimensions "C_2, L_2, WT_2" are for BRAKEMOTORS.
3) MS dimension is clearance required for brake adjustment.
4) MT dimension is brake release lever.
5) If a 3-digit number is shown for horsepower, the last digit indicates the number of poles.

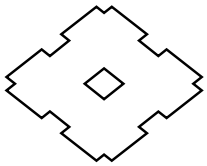
INTEGRAL FLANGE MOUNT TYPE VM DIMENSIONS

DOUBLE REDUCTION





MODEL	MOTOR HP	A	Bmin	Bmax	C	C_2	G	H	NO.	M	P	AH	Tmax	MP	AB	L	L_2	MS	MT	WEIGHT (LB)		OUTPUT SHAFT		
																				WT	WT_2	U_1	V	KEY
4097-DA	1/8	6.30	4.3272	4.3293	14.29	15.63	0.35	0.43	4	1.89	0.12	5.28	—	4.88	4.80	3.07	4.41	1.54	—	38	40	1.125	1.38	¼ x ¼ x 1.18
	1/4, 1/3				15.20	16.18								5.20	4.80	3.98	4.96	1.54	—	40	42			
4105-DA	1/8	6.30	4.3272	4.3293	14.84	16.18	0.35	0.43	4	1.89	0.12	5.28	—	4.88	4.80	3.07	4.41	1.54	—	40	42	1.125	1.38	¼ x ¼ x 1.18
	1/4, 1/3				15.75	16.73								5.20	4.80	3.98	4.96	1.54	—	42	44			
	1/2				16.54	17.52								5.20	4.80	4.37	5.36	1.54	—	47	49			
4115-DB	1/8	8.27	5.5076	5.5101	16.73	18.07	0.51	0.43	6	2.72	0.16	7.09	—	4.88	4.80	3.07	4.41	1.54	—	72	75	1.500	2.17	⅜ x ⅜ x 1.77
	1/4, 1/3				17.64	18.62								5.20	4.80	3.98	4.96	1.54	—	75	77			
	1/2				18.43	19.41								5.20	4.80	4.37	5.36	1.54	—	79	81			
	3/4, 1				19.25	20.94								5.83	4.49	3.82	5.51	3.67	4.88	81	88			
	1.5				20.55	22.99								6.30	4.69	3.94	6.38	4.53	5.12	90	101			
4135-DC	1/4, 1/3	10.24	7.8692	7.8720	20.20	21.18	0.59	0.43	6	2.99	0.16	9.06	—	5.20	4.80	3.98	4.96	1.54	—	110	112	1.875	2.40	½ x ½ x 2.17
	1/2				20.98	21.97								5.20	4.80	4.37	5.36	1.54	—	114	116			
	3/4, 1				21.81	23.50								5.83	4.49	3.82	5.51	3.67	4.88	117	123			
	1.5, 2				23.11	25.55								6.30	4.69	3.94	6.38	4.53	5.12	125	136			
4145-DB	1/4, 1/3	10.24	7.8692	7.8720	20.43	21.42	0.59	0.43	6	3.78	0.16	9.06	—	5.20	4.80	3.98	4.96	1.54	—	108	110	1.875	3.19	½ x ½ x 2.95
	1/2				21.22	22.20								5.20	4.80	4.37	5.36	1.54	—	112	114			
	3/4, 1				22.05	23.74								5.83	4.49	3.82	5.51	3.67	4.88	114	121			
	1.5				23.35	25.79								6.30	4.69	3.94	6.38	4.53	5.12	123	134			
4165-DC	1/3	13.39	10.6245	10.6277	23.15	24.13	0.79	0.43	6	3.50	0.16	12.20	7.87	5.20	4.80	3.98	4.96	1.54	—	213	215	2.250	3.15	½ x ½ x 2.95
	1/2				23.94	24.92								5.20	4.80	4.37	5.36	1.54	—	217	219			
	3/4, 1				24.65	26.34								5.83	4.49	3.82	5.51	3.67	4.88	216	222			
	1.5, 2				25.94	28.39								6.30	4.69	3.94	6.38	4.53	5.12	224	235			
	3				26.73	29.21								6.81	4.96	4.13	6.61	4.77	5.37	233	249			
	5				27.64	30.47								8.35	5.79	5.00	7.83	5.20	—	255	277			
4175-DC	1/2	15.75	12.4350	12.4385	25.79	26.77	0.87	0.55	8	3.70	0.20	14.17	8.86	5.20	4.80	4.37	5.36	1.54	—	294	296	2.750	3.31	⅝ x ⅝ x 3.15
	3/4, 1				26.50	28.19								5.83	4.49	3.82	5.51	3.67	4.88	293	299			
	1.5, 2				27.80	30.24								6.30	4.69	3.94	6.38	4.53	5.12	301	312			
	3				28.58	31.06								6.81	4.96	4.13	6.61	4.77	5.37	310	326			
	5				29.49	32.32								8.35	5.79	5.00	7.83	5.20	—	332	354			
4185-DB	3/4, 1	16.93	13.5768	13.5803	28.86	30.55	0.87	0.71	8	4.33	0.20	15.35	9.45	5.83	4.49	3.82	5.51	3.67	4.88	385	392	3.125	3.94	¾ x ¾ x 3.74
	1.5, 2				30.16	32.60								6.30	4.69	3.94	6.38	4.53	5.12	394	405			
	3				30.94	33.43								6.81	4.96	4.13	6.61	4.77	5.37	400	416			
	5				31.85	34.69								8.35	5.79	5.00	7.83	5.20	—	422	444			
	7.5				33.58	36.42								8.35	5.79	5.00	7.83	5.20	—	438	460			
	10				36.06	40.20								10.16	7.76	8.96	13.09	8.86	—	508	563			
4190-DA	1	19.29	15.7421	15.7456	31.22	32.91	1.18	0.71	12	5.71	0.24	17.72	10.63	5.83	4.49	3.82	5.51	3.67	4.88	521	528	3.625	4.92	⅞ x ⅞ x 4.92
4195-DA	1.5, 2				32.52	34.96								6.30	4.69	3.94	6.38	4.53	5.12	530	541			
	3				33.31	35.79								6.81	4.96	4.13	6.61	4.77	5.37	539	554			
4195-DB	2	19.29	15.7421	15.7456	33.15	35.59	1.18	0.71	12	5.71	0.24	17.72	10.63	6.30	4.69	3.94	6.38	4.53	5.12	548	559	3.625	4.92	⅞ x ⅞ x 4.92
	3				33.94	36.42								6.81	4.96	4.13	6.61	4.77	5.37	554	570			
	5				34.84	37.68								8.35	5.79	5.00	7.83	5.20	—	576	598			
	7.5				36.57	39.41								8.35	5.79	5.00	7.83	5.20	—	592	614			
	10				39.06	43.19								10.16	7.76	8.96	13.09	8.86	—	662	717			
4205-DB	2	17.91	13.9704	13.9739	35.20	37.64	1.18	0.87	8	8.03	0.20	15.94	13.43	6.30	4.69	3.94	6.38	4.53	5.12	594	605	3.875	6.50	1.0 x 1.0 x 6.50
	3				35.98	38.46								6.81	4.96	4.13	6.61	4.77	5.37	601	616			
	5				36.89	39.72								8.35	5.79	5.00	7.83	5.20	—	623	645			
	7.5				38.62	41.46								8.35	5.79	5.00	7.83	5.20	—	638	660			
	10				41.10	45.24								10.16	7.76	8.96	13.09	8.86	—	708	763			
4215-DA	3	19.29	15.3484	15.3519	37.01	39.49	1.38	0.94	8	7.99	0.28	17.32	13.70	6.81	4.96	4.13	6.61	4.77	5.37	733	748	4.250	6.50	1.0 x 1.0 x 6.50
	5				37.91	40.75								8.35	5.79	5.00	7.83	5.20	—	755	777			
	7.5				39.65	42.48								8.35	5.79	5.00	7.83	5.20	—	770	792			

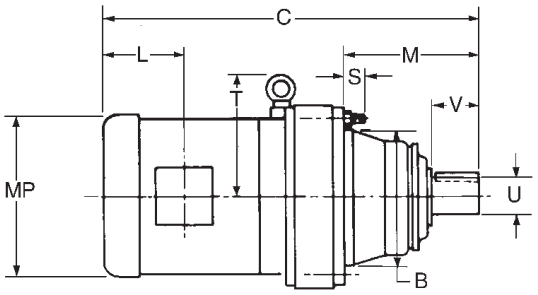


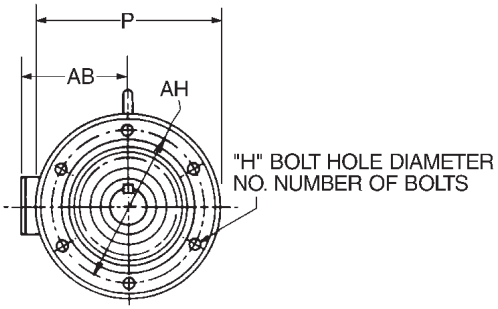
MODEL	MOTOR HP	A	Bmin	Bmax	C	C_2	G	H	NO.	M	P	AH	Tmax	MP	AB	L	L_2	MS	MT	WEIGHT (LB)		OUTPUT SHAFT		
																				WT	WT_2	U_1	V	KEY
4215-DB	7.5	19.29	15.3484	15.3519	40.63	43.46	1.38	0.94	8	7.99	0.28	17.32	13.70	8.35	5.79	5.00	7.83	5.20	—	843	865	4.250	6.50	1.0 x 1.0 x 6.50
	10				43.11	47.24								10.16	7.76	8.96	13.09	8.86	—	913	968			
	15				45.71	49.25								12.76	9.13	10.75	14.29	9.72	—	983	1056			
4225-DA	2	21.06	16.3321	16.3359	37.87	40.31	1.38	1.06	8	8.27	0.39	18.70	13.86	6.30	4.69	3.94	6.38	4.53	5.12	922	933	4.625	6.50	1.25 x 7/8 x 6.50
	3				38.66	41.14								6.81	4.96	4.13	6.61	4.77	5.37	928	944			
	5				39.57	42.40								8.35	5.79	5.00	7.83	5.20	—	950	972			
	7.5				41.30	44.13								8.35	5.79	5.00	7.83	5.20	—	966	988			
4225-DB	7.5	21.06	16.3321	16.3359	43.58	46.42	1.38	1.06	8	8.27	0.39	18.70	13.86	8.35	5.79	5.00	7.83	5.20	—	1067	1089	4.625	6.50	1.25 x 7/8 x 6.50
	10				45.47	49.61								10.16	7.76	8.96	13.09	8.86	—	1140	1192			
	15				48.07	51.61								12.76	9.13	10.75	14.29	9.72	—	1208	1280			
	20				49.80	53.35								12.76	9.13	11.61	15.16	9.72	—	1250	1322			
4235-DA	3	22.44	17.7100	17.7139	42.09	44.57	1.57	1.06	8	9.84	0.39	20.08	14.13	6.81	4.96	4.13	6.61	4.77	5.37	1148	1162	5.000	7.87	1.25 x 7/8 x 7.87
	5				42.99	45.83								8.35	5.79	5.00	7.83	5.20	—	1168	1190			
	7.5				44.72	47.56								8.35	5.79	5.00	7.83	5.20	—	1184	1206			
	10				47.17	51.30								10.16	7.76	8.96	13.09	8.86	—	1254	1309			
	15				49.76	53.30								12.76	9.13	10.75	14.29	9.72	—	1324	1397			
	20				51.54	55.04								12.76	9.13	11.61	15.16	9.72	—	1366	1439			
4235-DB	15	22.44	17.7100	17.7139	50.63	54.17	1.57	1.06	8	9.84	0.39	20.08	14.13	12.76	9.13	10.75	14.29	9.72	—	1397	1472	5.000	7.87	1.25 x 7/8 x 7.87
	20				52.36	55.91								12.76	9.13	11.61	15.16	9.72	—	1452	1514			
	25				56.10	—								15.51	11.69	13.39	—	—	—	1588	—			
4245-DA	5	25.00	19.0880	19.0918	44.45	47.28	1.57	1.30	8	9.84	0.39	22.05	14.61	8.35	5.79	5.00	7.83	5.20	—	1375	1397	5.500	7.87	1.25 x 7/8 x 7.87
	7.5				46.18	49.02								8.35	5.79	5.00	7.83	5.20		1390	1412			
	10				48.66	52.80								10.16	7.76	8.96	13.09	8.81	—	1461	1516			
	15				51.26	54.80								12.76	9.13	10.75	14.29	9.72	—	1531	1604			
	20				52.99	56.54								12.76	9.13	11.61	15.16	9.72	—	1573	1646			
	25				56.73	—								15.51	11.69	13.39	—	—	—	1723	—			
4245-DB	10	25.00	19.0880	19.0918	49.49	53.62	1.57	1.30	8	9.84	0.39	22.05	14.61	10.16	7.76	8.96	13.09	8.86	—	1525	1577	5.500	7.87	1.25 x 7/8 x 7.87
	15				52.09	55.63								12.76	9.13	10.75	14.29	9.72	—	1593	1668			
	20				53.82	57.36								12.76	9.13	11.61	15.16	9.72	—	1658	1709			
	25, 30				57.56	—								15.51	11.69	13.39	—	—	—	1784	—			
4255-DA	5	26.97	21.0557	21.0600	50.55	53.39	1.77	1.30	8	11.61	0.39	24.02	15.71	8.35	5.79	5.00	7.83	5.20	—	2081	2103	6.250	9.45	1.50 x 1.0 x 9.45
	7.5				52.28	55.12								8.35	5.79	5.00	7.83	5.20	—	2097	2119			
	10				54.17	58.31								10.16	7.76	8.96	13.09	8.86	—	2156	2222			
	15				56.77	60.31								12.76	9.13	10.75	14.29	9.72	—	2244	2310			
	20				58.50	62.05								12.76	9.13	11.61	15.16	9.72	—	2288	2352			
	25, 30				62.24	—								15.51	11.69	13.39	—	—	—	2431	—			
4255-DB	15	26.97	21.0557	21.0600	57.64	61.18	1.77	1.30	8	11.61	0.39	24.02	15.71	12.76	9.13	10.75	14.29	9.72	—	2396	2468	6.250	9.45	1.50 x 1.0 x 9.45
	20				59.37	62.91								12.76	9.13	11.61	15.16	9.72	—	2442	2510			
	25, 30				63.11	—								15.51	11.69	13.39	—	—	—	2596	—			
4265-DA	7.5	29.53	22.4337	22.4380	58.27	61.10	1.97	1.54	8	14.17	0.39	25.98	16.97	8.35	5.79	5.00	7.83	5.20	—	2849	2871	6.625	11.81	1.75 x 1.25 x 11.80
	10				59.37	63.50								10.16	7.76	8.96	13.09	8.86	—	2915	2970			
	15				61.97	65.51								12.76	9.13	10.75	14.29	9.72	—	2992	3056			
	20				63.70	67.24								12.76	9.13	11.61	15.16	9.72	—	3025	3098			
	25, 30				67.44	—								15.51	11.69	13.39	—	—	—	3190	—			
	40				67.44	—								15.51	11.69	13.39	—	—	—	3223	—			
	50				71.97	—								15.51	11.69	16.93	—	—	—	3300	—			
4275-DA	15	45.67	35.4258	35.4301	72.24	75.79	2.36	1.54	8	13.98	0.39	40.16	24.13	12.76	9.13	10.75	14.29	9.72	—	6039	6103	7.000	12.60	1.75 x 1.25 x 12.60
	20				73.98	77.52								12.76	9.13	11.61	15.16	9.72	—	6072	6145			
	25				77.72	—								15.51	11.69	13.39	—	—	—	6237	—			

NOTES: 1) [1] For tolerances refer to page 127.
2) [2] Dimensions "C_2, L_2, WT_2," are for BRAKEMOTORS.
3) MS dimension is clearance required for brake adjustment.
4) MT dimension is brake release lever.
5) If a 3-digit number is shown for horsepower, the last digit indicates the number of poles.

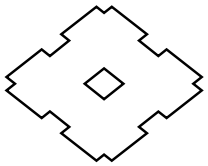
INTEGRAL FLANGE TYPE HFM DIMENSIONS

SINGLE REDUCTION





MODEL	MOTOR HP	Bmin	Bmax	C	C_2	P	H	NO.	M	S	AH	Tmax	MP	AB	L	L_2	MS	MT	WEIGHT (LB)		OUTPUT SHAFT		
																			WT	WT_2	U_1	V	KEY
4075	1/8	2.9516	2.9524	10.43	11.77	4.33	.26	6	2.72	1.06	3.86	—	4.88	4.80	3.07	4.41	1.54	—	18	20	0.500	0.98	1/8 x 1/8 x 0.79
	1/4			11.34	12.32								5.20	4.80	3.98	4.96	1.54	—	21	23			
4085	1/8	3.1485	3.1492	10.67	12.01	4.33	.26	6	2.91	1.02	3.86	—	4.88	4.80	3.07	4.41	1.54	—	21	24	0.750	1.18	3/16 x 3/16 x 1.06
	1/4, 1/3			11.57	12.56								5.20	4.80	3.98	4.96	1.54	—	25	26			
	1/2			12.36	13.35								5.20	4.80	4.37	5.36	1.54	—	29	31			
4090	1/8	4.1325	4.1334	12.40	13.74	5.91	.35	8	4.49	1.02	5.28	—	4.88	4.80	3.07	4.41	1.54	—	31	33	1.125	1.38	1/4 x 1/4 x 1.18
4095	1/4, 1/3			13.31	14.29								5.20	4.80	3.98	4.96	1.54	—	33	35			
4097	1/2			14.09	15.08								5.20	4.80	4.37	5.36	1.54	—	36	38			
	3/4, 1			14.92	16.61								5.83	4.49	3.82	5.51	3.67	4.88	40	46			
	1.5, 2			16.22	18.66								6.30	4.69	3.94	6.38	4.53	5.12	48	59			
4100	1/4, 1/3	4.1325	4.1334	13.86	14.84	5.91	.35	8	4.49	1.06	5.28	—	5.20	4.80	3.98	4.96	1.54	—	38	40	1.125	1.38	1/4 x 1/4 x 1.18
4105	1/2			14.65	15.63								5.20	4.80	4.37	5.36	1.54	—	40	42			
410H	3/4, 1			15.47	17.17								5.83	4.49	3.82	5.51	3.67	4.88	44	51			
	1.5, 2			16.77	19.21								6.30	4.69	3.94	6.38	4.53	5.12	53	64			
	3			17.56	20.04								6.81	4.96	4.13	6.61	4.77	5.37	62	77			
4110	1/2	5.5103	5.5113	15.94	16.93	8.03	.43	6	5.47	1.10	7.09	—	5.20	4.80	4.37	5.36	1.54	—	66	68	1.500	2.17	3/8 x 3/8 x 1.77
4115	3/4, 1			16.65	18.35								5.83	4.49	3.82	5.51	3.67	4.88	66	73			
4125	1.5, 2			17.95	20.39								6.30	4.69	3.94	6.38	4.53	5.12	75	86			
	3			18.74	21.22								6.81	4.96	4.13	6.61	4.77	5.37	84	99			
	5			19.65	22.48								8.35	5.79	5.00	7.83	5.20	—	106	128			
	7.5			21.38	24.21								8.35	5.79	5.00	7.83	5.20	—	121	143			
4130	1	6.4946	6.4955	18.78	20.47	9.06	.43	6	6.97	1.16	8.07	8.23	5.83	4.49	3.82	5.51	3.67	4.88	110	117	1.875	2.76	1/2 x 1/2 x 2.17
4135	1.5, 2			20.08	22.52								6.30	4.69	3.94	6.38	4.53	5.12	119	130			
	3			20.87	23.35								6.81	4.96	4.13	6.61	4.77	5.37	125	141			
	5			21.77	24.61								8.35	5.79	5.00	7.83	5.20	—	147	169			
	7.5			23.50	26.34								8.35	5.79	5.00	7.83	5.20	—	163	185			
	10			25.98	30.12								10.16	7.76	8.96	13.09	8.86	—	233	288			
4145	1.5, 2	6.4946	6.4955	20.87	23.31	9.06	.43	6	7.76	1.16	8.07	8.23	6.30	4.69	3.94	6.38	4.53	5.12	121	132	1.875	3.54	1/2 x 1/2 x 2.95
4155	3			21.65	24.13								6.81	4.96	4.13	6.61	4.77	5.37	128	143			
	5			22.56	25.39								8.35	5.79	5.00	7.83	5.20	—	150	172			
	7.5			24.29	27.13								8.35	5.79	5.00	7.83	5.20	—	165	187			
	10			26.77	30.91								10.16	7.76	8.96	13.09	8.86	—	235	290			
	15			29.37	32.91								12.76	9.13	10.75	14.29	9.72	—	301	374			
	20			31.10	34.65								12.76	9.13	11.61	15.16	9.72	—	343	416			
4160	3	7.8723	7.8734	23.54	26.02	12.52	.55	6	8.74	1.56	10.63	8.54	6.81	4.96	4.13	6.61	4.77	5.37	200	213	2.250	3.54	1/2 x 1/2 x 2.95
4165	5			24.45	27.28								8.35	5.79	5.00	7.83	5.20	—	220	242			
416H	7.5			26.18	29.02								8.35	5.79	5.00	7.83	5.20	—	235	257			
	10			28.66	32.80								10.16	7.76	8.96	13.09	8.86	—	306	361			
	15			31.26	34.80								12.76	9.13	10.75	14.29	9.72	—	376	449			
	20			32.99	36.54								12.76	9.13	11.61	15.16	9.72	—	418	491			
	25, 30			36.73	—								15.51	11.69	13.39	—	—	—	568	—			
4170	5	9.8408	9.8419	26.77	29.61	14.29	.55	8	10.31	1.41	11.81	8.86	8.35	5.79	5.00	7.83	5.20	—	315	337	2.750	3.54	5/8 x 5/8 x 3.15
4175	7.5			28.50	31.34								8.35	5.79	5.00	7.83	5.20	—	330	352			
	10			30.39	34.53								10.16	7.76	8.96	13.09	8.86	—	403	455			
	15			32.99	36.54								12.76	9.13	10.75	14.29	9.72	—	471	543			
	20			34.72	38.27								12.76	9.13	11.61	15.16	9.72	—	513	585			
	25, 30			38.46	—								15.51	11.69	13.39	—	—	—	662	—			

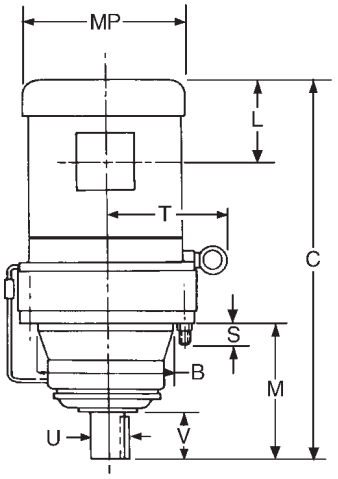


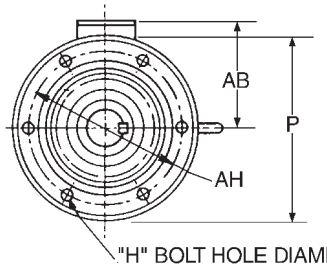
MODEL	MOTOR HP	Bmin	Bmax	C	C_2	P	H	NO.	M	S	AH	Tmax	MP	AB	L	L_2	MS	MT	WEIGHT (LB)		OUTPUT SHAFT		
																			WT	WT_2	U_1	V	KEY
4180	5	11.0217	11.0230	28.23	31.06	14.57	.55	8	11.77	1.75	12.99	9.45	8.35	5.79	5.00	7.83	5.20	—	372	394	3.125	4.33	¾ x ¾ x 3.74
4185	7.5			29.96	32.80								8.35	5.79	5.00	7.83	5.20	—	389	411			
	10			31.85	35.98								10.16	7.76	8.96	13.09	8.86	—	462	515			
	15			34.45	37.99								12.76	9.13	10.75	14.29	9.72	—	530	605			
	20			36.18	39.72								12.76	9.13	11.61	15.16	9.72	—	585	647			
	25, 30			39.92	—								15.51	11.69	13.39	—	—	—	722	—			
4190	7.5	12.5963	12.5977	33.74	36.57	17.91	.55	12	14.37	1.84	14.96	10.63	8.35	5.79	5.00	7.83	5.20	—	548	570	3.625	5.31	⅞ x ⅞ x 4.92
4195	10			34.84	38.98								10.16	7.76	8.96	13.09	8.86	—	614	669			
	15			37.44	40.98								12.76	9.13	10.75	14.29	9.72	—	682	755			
	20			39.17	42.72								12.76	9.13	11.61	15.16	9.72	—	724	796			
	25, 30			42.91	—								15.51	11.69	13.39	—	—	—	882	—			
	40			42.91	—								15.51	11.69	13.39	—	—	—	915	—			
	50			47.44	—								15.51	11.69	16.93	—	—	—	999	—			

NOTES: 1) [1] For tolerances refer to page 127.
2) [2] Dimensions "C_2, L_2, WT_2" are for BRAKEMOTORS.
3) MS dimension is clearance required for brake adjustment.
4) MT dimension is brake release lever.
5) If a 3-digit number is shown for horsepower, the last digit indicates the number of poles.

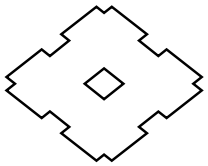
INTEGRAL FLANGE TYPE VFM DIMENSIONS

SINGLE REDUCTION





MODEL	MOTOR HP	Bmin	Bmax	C	C_2	P	H	NO.	M	S	AH	Tmax	MP	AB	L	L_2	MS	MT	WEIGHT (LB)		OUTPUT SHAFT		
																			WT	WT_2	U_1	V	KEY
4075	1/8	2.9516	2.9524	10.43	11.77	4.33	.26	6	2.72	1.06	3.86	—	4.88	4.80	3.07	4.41	1.54	—	18	20	0.500	0.98	1/8 x 1/8 x 0.79
	1/4			11.34	12.32								5.20	4.80	3.98	4.96	1.54	—	21	23			
4085	1/8	3.1485	3.1492	10.67	12.01	4.33	.26	6	2.91	1.02	3.86	—	4.88	4.80	3.07	4.41	1.54	—	21	24	0.750	1.18	3/16 x 3/16 x 1.06
	1/4, 1/3			11.57	12.56								5.20	4.80	3.98	4.96	1.54	—	25	26			
	1/2			12.36	13.35								5.20	4.80	4.37	5.36	1.54	—	29	31			
4090	1/8	4.1325	4.1334	12.40	13.74	5.91	.35	8	4.49	1.02	5.28	—	4.88	4.80	3.07	4.41	1.54	—	31	33	1.125	1.38	1/4 x 1/4 x 1.18
4095	1/4, 1/3			13.31	14.29								5.20	4.80	3.98	4.96	1.54	—	33	35			
4097	1/2			14.09	15.08								5.20	4.80	4.37	5.36	1.54	—	36	38			
	3/4, 1			14.92	16.61								5.83	4.49	3.82	5.51	3.67	4.88	40	46			
	1.5, 2			16.22	18.66								6.30	4.69	3.94	6.38	4.53	5.12	48	59			
4100	1/4, 1/3	4.1325	4.1334	13.86	14.84	5.91	.35	8	4.49	1.06	5.28	—	5.20	4.80	3.98	4.96	1.54	—	38	40	1.125	1.38	1/4 x 1/4 x 1.18
4105	1/2			14.65	15.63								5.20	4.80	4.37	5.36	1.54	—	40	42			
410H	3/4, 1			15.47	17.17								5.83	4.49	3.82	5.51	3.67	4.88	44	51			
	1.5, 2			16.77	19.21								6.30	4.69	3.94	6.38	4.53	5.12	53	64			
	3			17.56	20.04								6.81	4.96	4.13	6.61	4.77	5.37	62	77			
4110	1/2	5.5103	5.5113	15.94	16.93	8.03	.43	6	5.47	1.10	7.09	—	5.20	4.80	4.37	5.36	1.54	—	66	68	1.500	2.17	3/8 x 3/8 x 1.77
4115	3/4, 1			16.65	18.35								5.83	4.49	3.82	5.51	3.67	4.88	66	73			
4125	1.5, 2			17.95	20.39								6.30	4.69	3.94	6.38	4.53	5.12	75	86			
	3			18.74	21.22								6.81	4.96	4.13	6.61	4.77	5.37	84	99			
	5			19.65	22.48								8.35	5.79	5.00	7.83	5.20	—	106	128			
	7.5			21.38	24.21								8.35	5.79	5.00	7.83	5.20	—	121	143			
4130	1	6.4946	6.4955	18.78	20.47	9.06	.43	6	6.97	1.16	8.07	8.23	5.83	4.49	3.82	5.51	3.67	4.88	110	117	1.875	2.76	1/2 x 1/2 x 2.17
4135	1.5, 2			20.08	22.52								6.30	4.69	3.94	6.38	4.53	5.12	119	130			
	3			20.87	23.35								6.81	4.96	4.13	6.61	4.77	5.37	125	141			
	5			21.77	24.61								8.35	5.79	5.00	7.83	5.20	—	147	169			
	7.5			23.50	26.34								8.35	5.79	5.00	7.83	5.20	—	163	185			
	10			25.98	30.12								10.16	7.76	8.96	13.09	8.86	—	233	288			
4145	1.5, 2	6.4946	6.4955	20.87	23.31	9.06	.43	6	7.76	1.16	8.07	8.23	6.30	4.69	3.94	6.38	4.53	5.12	121	132	1.875	3.54	1/2 x 1/2 x 2.95
4155	3			21.65	24.13								6.81	4.96	4.13	6.61	4.77	5.37	128	143			
	5			22.56	25.39								8.35	5.79	5.00	7.83	5.20	—	150	172			
	7.5			24.29	27.13								8.35	5.79	5.00	7.83	5.20	—	165	187			
	10			26.77	30.91								10.16	7.76	8.96	13.09	8.86	—	235	290			
	15			29.37	32.91								12.76	9.13	10.75	14.29	9.72	—	301	374			
	20			31.10	34.65								12.76	9.13	11.61	15.16	9.72	—	343	416			
4160	3	7.8723	7.8734	23.54	26.02	12.52	.55	6	8.74	1.56	10.63	8.54	6.81	4.96	4.13	6.61	4.77	5.37	200	213	2.250	3.15	1/2 x 1/2 x 2.95
4165	5			24.45	27.28								8.35	5.79	5.00	7.83	5.20	—	220	242			
416H	7.5			26.18	29.02								8.35	5.79	5.00	7.83	5.20	—	235	257			
	10			28.66	32.80								10.16	7.76	8.96	13.09	8.86	—	306	361			
	15			31.26	34.80								12.76	9.13	10.75	14.29	9.72	—	376	449			
	20			32.99	36.54								12.76	9.13	11.61	15.16	9.72	—	418	491			
	25, 30			36.73	—								15.51	11.69	13.39	—	—	—	568	—			
4170	5	9.8408	9.8419	26.77	29.61	14.29	.55	8	10.31	1.41	11.81	8.86	8.35	5.79	5.00	7.83	5.20	—	315	337	2.750	3.31	5/8 x 5/8 x 3.15
4175	7.5			28.50	31.34								8.35	5.79	5.00	7.83	5.20	—	330	352			
	10			30.39	34.53								10.16	7.76	8.96	13.09	8.86	—	403	455			
	15			32.99	36.54								12.76	9.13	10.75	14.29	9.72	—	471	543			
	20			34.72	38.27								12.76	9.13	11.61	15.16	9.72	—	513	585			
	25, 30			38.46	—								15.51	11.69	13.39	—	—	—	662	—			



MODEL	MOTOR HP	Bmin	Bmax	C	C_2	P	H	NO.	M	S	AH	Tmax	MP	AB	L	L_2	MS	MT	WEIGHT (LB)		OUTPUT SHAFT		
																			WT	WT_2	U_1	V	KEY
4180	5	11.0217	11.0230	28.23	31.06	15.47	.55	8	11.77	1.75	12.99	9.45	8.35	5.79	5.00	7.83	5.20	—	372	394	3.125	3.94	¾ x ¾ x 3.74
4185	7.5			29.96	32.80								8.35	5.79	5.00	7.83	5.20	—	389	411			
	10			31.85	35.98								10.16	7.76	8.96	13.09	8.86	—	462	515			
	15			34.45	37.99								12.76	9.13	10.75	14.29	9.72	—	530	605			
	20			36.18	39.72								12.76	9.13	11.61	15.16	9.72	—	585	647			
	25, 30			39.92	—								15.51	11.69	13.39	—	—	—	722	—			
4190	7.5	12.5963	12.5977	33.74	36.57	17.91	.55	12	14.37	1.84	14.96	10.63	8.35	5.79	5.00	7.83	5.20	—	548	570	3.625	4.92	⅞ x ⅞ x 4.92
4195	10			34.84	38.98								10.16	7.76	8.96	13.09	8.86	—	614	669			
	15			37.44	40.98								12.76	9.13	10.75	14.29	9.72	—	682	755			
	20			39.17	42.72								12.76	9.13	11.61	15.16	9.72	—	724	796			
	25, 30			42.91	—								15.51	11.69	13.39	—	—	—	882	—			
	40			42.91	—								15.51	11.69	13.39	—	—	—	915	—			
	50			47.44	—								15.51	11.69	16.93	—	—	—	999	—			

NOTES: 1) [1] For tolerances refer to page 127.
2) [2] Dimensions "C_2, L_2, WT_2" are for BRAKEMOTORS.
3) MS dimension is clearance required for brake adjustment.
4) MT dimension is brake release lever.
5) If a 3-digit number is shown for horsepower, the last digit indicates the number of poles.

SINGLE PHASE
ELECTRIC MOTOR CHARACTERISTICS

Specifications:

- Capacitor start
- Totally enclosed, fan cooled
- 4 pole, 60 cycle, 115/230 volts
- U.L. listed

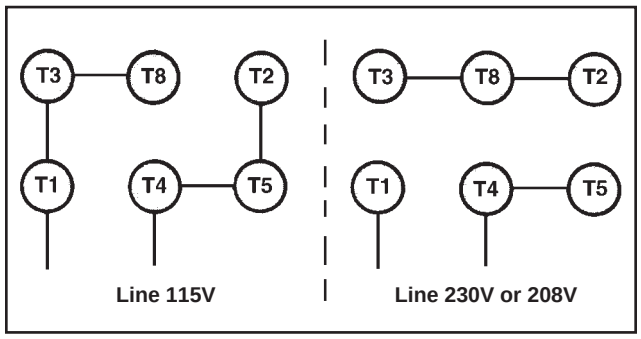
Motor Characteristics

The SM-CYCLO gearmotor's full load ratings and amperage can be found below. These ratings are based on the motor's design value. If additional information is required please consult factory.

Motor		Frame	Full Load Amp.		Motor WR^2
HP	RPM		115 V	230 V	$lb\text{-}ft^2$
1/8	1750	S-71S	3.4	1.7	0.0356
1/4		S-71S	4.2	2.1	0.0356
1/3		S-71	6.5	3.2	0.0534
1/2		S-71	7.1	3.5	0.0534
3/4		S-90	10.8	5.4	0.1424
1		S-90	12.8	6.4	0.1424

STANDARD WIRING DIAGRAM

Illustrated below are the wiring diagrams for our standard single phase motor. For additional information please refer to motor nameplate.

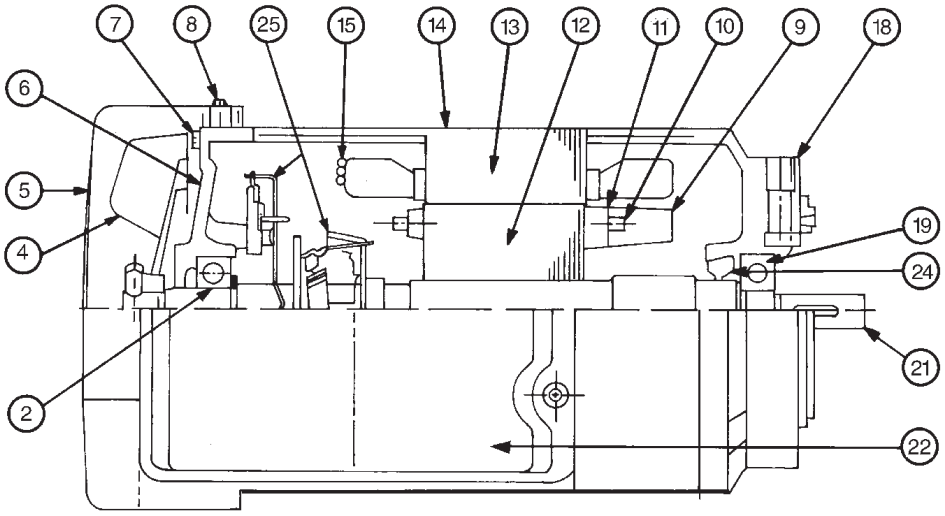


Option:

- Brakemotor
- C.S.A. certified
- 6 pole motor

If these motors are required, please consult factory.

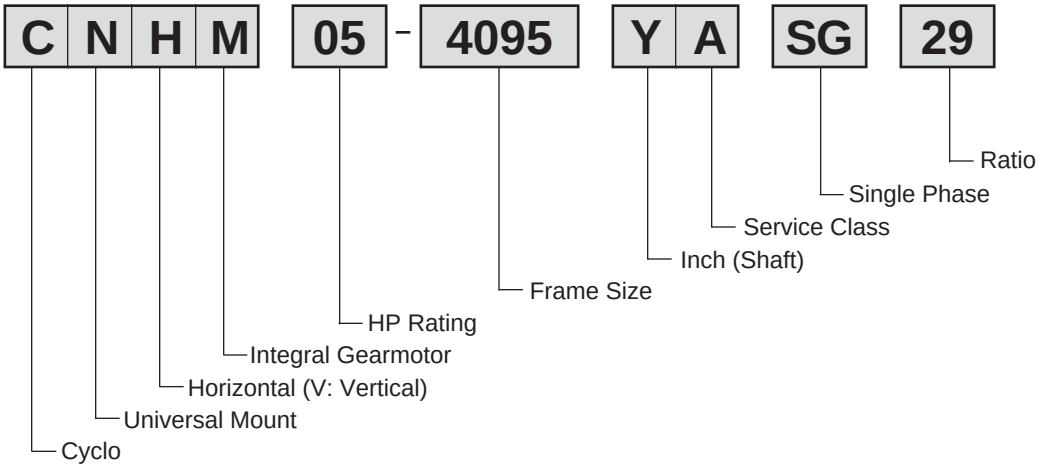
MOTOR CONSTRUCTION



Part No.	Description
2	Bearing
4	Fan
5	Fan Cover
6	End Bracket
7	Bolt
8	Screw
9	Internal Fan
10	Balance Weight Boss
11	Short Circuit Ring
12	Rotor Core
13	Stationary Core
14	Stator Frame
15	Stator Winding
18	Cyclo Flange Bracket
19	Bearing
21	Shaft
22	Conduit Box
24	Oil Seal
25	Centrifugal Switch

NOMENCLATURE

The model number of the SM-CYCLO® Gearmotor is a combination of letters and numbers as shown below:



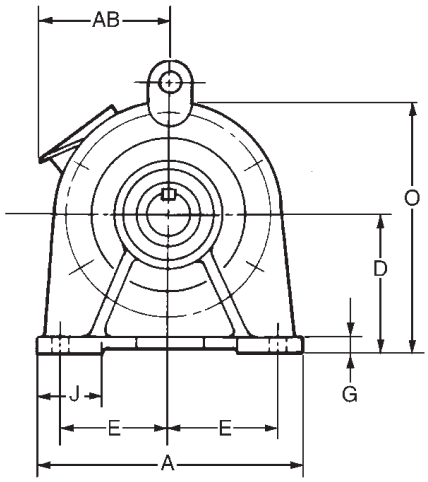
CLASS I SELECTION TABLE

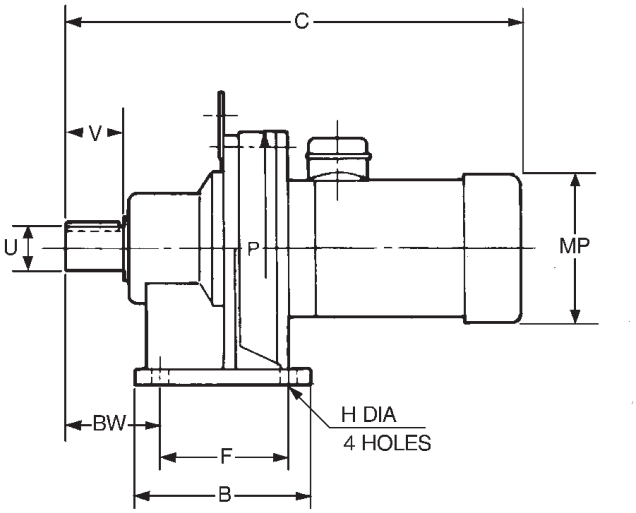
Nominal Output RPM	Ratio	HORSEPOWER ⅛	¼	⅓	½	¾	1
292	6	4085 YA	4085 YA	4085 YA	4085 YA	4090 YA	4095 YA
219	8	4085 YA	4085 YA	4085 YA	4085 YA	4090 YA	4095 YA
159	11	4075 YA	4075 YA	4085 YA	4085 YA	4090 YA	4095 YA
135	13	4075 YA	4075 YA	4085 YA	4085 YA	4090 YA	4095 YA
117	15	4075 YA	4075 YA	4085 YA	4085 YA	4090 YA	4095 YA
103	17	4075 YA	4075 YA	4085 YA	4085 YA	4090 YA	4095 YA
83.3	21	4075 YA	4075 YA	4085 YA	4085 YA	4095 YA	4097 YA
70.0	25	4075 YA	4085 YA	4085 YA	4090 YA	4095 YA	4097 YA
60.3	29	4075 YA	4085 YA	4085 YA	4090 YA	4095 YA	4097 YA
50.0	35	4075 YA	4085 YA	4085 YA	4090 YA	4097 YA	4105 YA
40.7	43	4075 YA	4085 YA	4090 YA	4095 YA	4097 YA	4105 YA
34.3	51	4085 YA	4090 YA	4095 YA	4097 YA	4105 YA	4110 YA
29.7	59	4085 YA	4090 YA	4095 YA	4097 YA	4105 YA	4110 YA
24.6	71	4090 YA	4095 YA	4097 YA	4105 YA	4110 YA	4115 YA
20.1	87	4090 YA	4095 YA	4097 YA	4105 YA	4110 YA	4115 YA

*For output speed below 20.1 RPM, refer to selection table for three phase motor. Note maximum first stage cyclo size is 4115.
**For Class II & III Selection Tables, refer to those of three phase motor. Note maximum first stage cyclo size is 4115.

SINGLE PHASE
INTEGRAL HORIZONTAL TYPE HM DIMENSIONS

SINGLE REDUCTION





MODEL	A	B	D	E	F	G	H	J	P	BW	U*	V	KEY
4075	5.67	3.31	3.15	2.36	2.36	0.39	0.35	1.38	4.33	1.61	0.500	0.98	1/8 x 1/8
4085	5.67	3.31	3.15	2.36	2.36	0.39	0.35	1.38	4.33	1.85	0.750	1.18	3/16 x 3/16
4090/4095/4097	7.09	5.12	3.94	2.95	3.54	0.47	0.43	1.57	5.91	2.36	1.125	1.38	1/4 x 1/4
4100/4105	7.09	5.31	3.94	2.95	3.54	0.47	0.43	1.57	5.91	2.36	1.125	1.38	1/4 x 1/4
4110/4115	9.06	6.10	4.72	3.74	4.53	0.59	0.55	2.17	8.03	3.23	1.500	2.17	3/8 x 3/8

* Shaft Tolerance $^{+.000}_{-.001}$

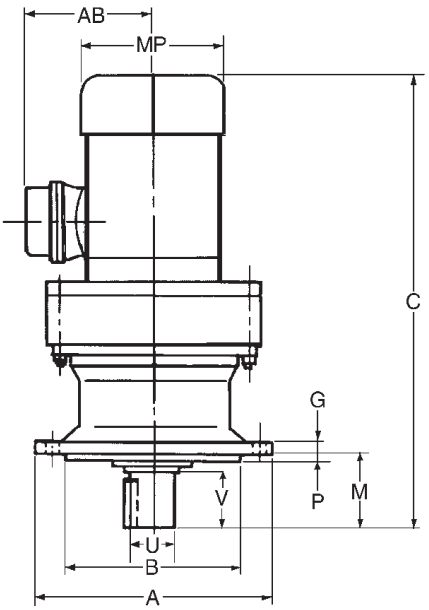
Single Reduction/Horizontal

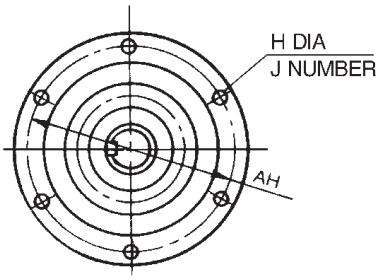
MODEL	MOTOR HP	SINGLE-PHASE MOTOR			
		C	MP	AB	WT LBS.
4075YA-SG	1/8	13.50	5.79	5.79	30
	1/4	13.50	5.79	5.79	30
4085YA-SG	1/8	13.74	5.79	5.79	32
	1/4	13.74	5.79	5.79	32
	1/3	15.08	5.79	5.79	36
	1/2	15.08	5.79	5.79	36
4090YA-SG 4095YA-SG 4097YA-SG	1/8	15.87	5.79	5.79	46
	1/4	15.87	5.79	5.79	46
	1/3	17.20	5.79	5.79	52
	1/2	17.20	5.79	5.79	52
	3/4	17.60	7.20	6.50	66
	1	17.60	7.20	6.50	66
4100YA-SG 4105YA-SG	1/3	17.76	5.79	5.79	52
	1/2	17.76	5.79	5.79	52
	3/4	18.15	7.20	6.50	66
	1	18.15	7.20	6.50	66
4110YA-SG 4115YA-SG	3/4	18.98	7.20	6.50	94
	1	18.98	7.20	6.50	94

NOTES:
*For tolerances refer to page 127.
For Dimensions of standard motors refer to “C, MP, AB, L, and T”, on pages 108 and 109, for brakemotors, “C_2, MP_2, AB_2, L_2, and T_2.”

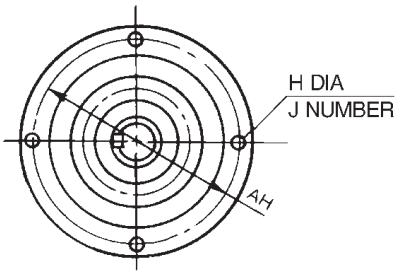
SINGLE PHASE
INTEGRAL FLANGE TYPE VM DIMENSIONS

SINGLE REDUCTION





SIX-HOLE PATTERN



FOUR-HOLE PATTERN

MODEL	A	B	G	H	J	M	P	AH	U*	V	KEY
4075	4.72	3.150	0.31	0.35	6	1.34	0.12	4.02	0.500	0.98	1/8 x 1/8
4085	6.30	4.331	0.35	0.43	4	1.65	0.12	5.28	0.750	1.18	3/16 x 3/16
4090/4095/4097	6.30	4.331	0.35	0.43	4	1.89	0.12	5.28	1.125	1.38	1/4 x 1/4
4100/4105	6.30	4.331	0.35	0.43	4	1.89	0.12	5.28	1.125	1.38	1/4 x 1/4
4110/4115	8.27	5.512	0.51	0.43	6	2.72	0.16	7.09	1.500	2.17	3/8 x 3/8

* Shaft Tolerance $^{+ .000}_{- .001}$

Single Reduction/Vertical

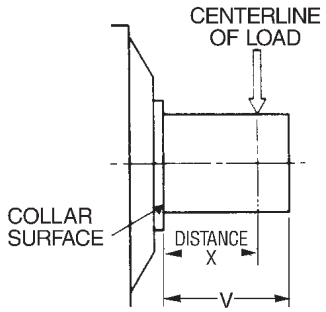
MODEL	MOTOR HP	SINGLE-PHASE MOTOR C	MP	AB	WT LBS.
4075YA-SG	1/8	13.50	5.79	5.79	27
	1/4	13.50	5.79	5.79	27
4085YA-SG	1/8	13.74	5.79	5.79	30
	1/4	13.74	5.79	5.79	31
	1/3	15.08	5.79	5.79	36
	1/2	15.08	5.79	5.79	36
4090YA-SG 4095YA-SG 4097YA-SG	1/8	15.87	5.79	5.79	41
	1/4	15.87	5.79	5.79	41
	1/3	17.20	5.79	5.79	48
	1/2	17.20	5.79	5.79	48
	3/4	17.60	7.20	6.50	67
	1	17.60	7.20	6.50	67
4100YA-SG 4105YA-SG	1/3	17.76	5.79	5.79	55
	1/2	17.76	5.79	5.79	55
	3/4	18.15	7.20	6.50	74
	1	18.15	7.20	6.50	74
4110YA-SG 4115YA-SG	3/4	18.98	7.20	6.50	94
	1	18.98	7.20	6.50	94

NOTES:
*For tolerances refer to page 127.
For Dimensions of standard motors refer to “C, MP, AB, L, and T”, on pages 108 and 109, for brakemotors, “C_2, MP_2, AB_2, L_2, and T_2.”

SM-CYCLO REDUCER/GEARMOTORS COMMON DIMENSIONS AND SPECIFICATIONS

ALLOWABLE OVERHUNG LOAD

When a sprocket, sheave, or gear is mounted on the slow speed shaft, or on the high speed shaft of a reducer, an overhung load is applied on the shaft. It is necessary to check whether the shafts of SM-CYCLO® speed reducers allow the overhung load.



OVERHUNG LOAD CALCULATION

Calculate the overhung load with the formula below:

$$\text{Overhung Load} = \frac{126{,}000 \times HP \times Cf \times Lf \times Sf}{D \times N}$$

HP: Horsepower transmitted by shaft
Cf: Load connection factor (Select Cf from Table 1)
Lf: Load location factor (Select from Table 2)
Sf: Service factor (Determine from Service Factor Table on page 4)
D: Pitch dia of sprocket, etc.
N: Shaft speed (rpm)

Table 1 — Load Connection Factor — Cf

Type of Connection	Factor
General Purpose Chain	1.0
Machined Gear, Pinion or Synchronous Belts	1.25
V-Belt	1.5
Flat Belt	2.5

Table 2 — Slow Seed Shaft — Load Location Factors Lf

FRAME SIZE / X (IN.)	4075 4075 DA	4085 4085 DA	4090 4095 4097 4097 DA	4100 4105 4105 DA 410H	4110 4115 4115 DB 4125	4130 4135 4135 DC	4145 4145 DB 4155	4160 4165 4165 DC 416H	4170 4175 4175 DC	4180 4185 4185 DB	4190 4195 4190 DA 4195 DA 4195 DB	4205 4205 DA 4205 DB	4215 4215 DA 4215 DB	4225 4225 DA 4225 DB	4235 4235 DA 4235 DB	4245 4245 DA 4245 DB	4255 4255 DA 4255 DB	4265 4265 DA	4275 4275 DA
1/4	0.83	0.82	0.86	0.86	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1/2	1.07	0.96	0.95	0.95	0.85	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3/4	1.56	1.29	1.13	1.13	0.92	0.87	0.66	0.83	0.86	—	—	—	—	—	—	—	—	—	—
1	—	1.59	1.38	1.38	0.97	0.92	0.73	0.87	0.89	0.85	—	—	—	—	—	—	—	—	—
1 1/4	—	1.88	1.64	1.64	1.08	0.96	0.80	0.90	0.92	0.87	0.85	—	—	—	—	—	—	—	—
1 1/2	—	—	—	—	1.34	1.07	0.90	0.95	0.96	0.92	0.88	—	—	—	—	—	—	—	—
1 3/4	—	—	—	—	1.59	1.25	1.00	1.00	1.00	0.95	0.91	0.74	0.73	0.88	0.84	0.84	—	—	—
2	—	—	—	—	1.76	1.38	1.10	1.11	1.11	0.98	0.93	0.77	0.77	0.90	0.85	0.86	0.83	—	—
2 1/2	—	—	—	—	—	1.75	1.40	1.42	1.42	1.17	1.00	0.87	0.87	0.94	0.89	0.90	0.86	—	—
3	—	—	—	—	—	—	1.60	1.64	1.64	1.35	1.11	0.95	0.95	0.98	0.93	0.93	0.89	0.84	—
3 1/2	—	—	—	—	—	—	1.90	1.96	1.96	1.60	1.32	1.05	1.05	1.02	0.97	0.97	0.93	0.88	0.71
4	—	—	—	—	—	—	—	—	—	1.78	1.46	1.12	1.13	1.06	1.00	1.00	0.95	0.90	0.75
4 1/2	—	—	—	—	—	—	—	—	—	—	1.70	1.23	1.24	1.11	1.05	1.05	0.99	0.93	0.80
5	—	—	—	—	—	—	—	—	—	—	—	1.32	1.33	1.17	1.11	1.11	1.04	0.97	0.88
6	—	—	—	—	—	—	—	—	—	—	—	1.47	1.49	1.18	1.15	1.14	1.08	1.01	0.94
7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.24	1.23	1.22	1.17	1.09
8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.30	1.29	1.36	1.29	1.21
9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.52	1.45	1.35
10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.69	1.61	1.50
11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.77	1.65
12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.93	1.79

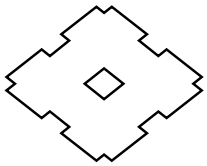


Table 3 — Slow Speed Shaft Overhung Load Capacity For Standard Units — Pounds

FRAME SIZE / SHAFT SPEED (RPM)	4075 4075 DA	4085 4085 DA	4090 4095 4097 4097 DA	4100 4105 4105 DA	410H	4110 4115 4115 DB	4125	4130 4135 4135 DC	4145 4145 DB	4155	4160 4165 4165 DC	416H	4170 4175 4175 DC	4180 4185 4185 DB	4190 4195 4190 DA 4195 DA 4195 DB	4205 4205 DA 4205 DB	4215 4215 DA 4215 DB	4225 4225 DA 4225 DB	4235 4235 DA 4235 DB	4245 4245 DA 4245 DB	4255 4255 DA 4255 DB	4265 4265 DA	4275 4275 DA
5 & below	211	397	750	1210	1210	1940	2200	3310	3600	3600	4960	4960	6630	9380	13250	18900	23400	27300	34000	37700	46300	54600	55700
10	211	397	750	1210	1210	1940	2200	3310	3600	3600	4960	4960	6630	9380	13250	18900	23400	26400	32900	34500	44700	54600	55700
15	211	397	750	1210	1210	1940	2200	3310	3500	3600	4830	4960	6510	8750	12200	18900	22200	23300	29100	32400	39600	48300	55700
20	211	397	750	1210	1210	1940	2200	3090	3310	3600	4410	4960	5920	7950	11100	18900	20300	21400	26700	29700	36300	44300	55700
25	211	397	750	1210	1210	1940	2200	2870	3310	3600	4410	4880	5490	7380	10300	18800	19000	20000	24900	27800	34000	41500	55700
30	211	397	750	1210	1210	1940	2200	2700	3310	3600	4370	4600	5170	6940	9710	17800	18000	19000	23600	26300	32200	39300	55700
35	211	397	750	1210	1210	1940	2200	2560	3220	3600	4140	4370	4910	6600	9230	17000	17200	18100	22500	25100	30700	37500	—
40	211	397	750	1210	1210	1940	2100	2450	3090	3530	3970	4180	4700	6310	8830	16300	16500	17400	21700	24100	29500	36000	—
50	211	397	750	1210	1210	1940	1950	2270	2890	3370	3700	3880	4360	5860	8190	15200	15500	16300	20300	22600	27600	33700	—
60	211	397	750	1210	1210	1840	1850	2140	2730	3200	3480	3650	4100	5510	7710	14400	14600	15400	19200	21400	26100	31900	—
80	211	397	750	1210	1210	1670	1680	1940	2510	2930	3150	3310	3730	5010	7000	13200	13400	14100	17600	19600	24000	29300	—
100	211	397	750	1210	1210	1550	1560	1810	2340	2730	2930	3080	3460	4650	6500	12400	12600	13200	16500	18300	22400	27400	—
125	211	388	744	1150	1150	1440	1450	1680	2190	2560	2710	2860	3210	4320	6040	11600	11700	12400	15400	17100	21000	25600	—
150	207	366	744	1080	1080	1350	1370	1580	2070	2430	2560	2670	3020	4060	5680	11000	11100	11700	—	—	—	—	—
200	188	333	677	981	981	1230	1240	1430	—	2230	2310	2440	2750	3690	5160	10100	10200	10700	—	—	—	—	—
250	—	309	629	913	913	1140	1150	1330	—	2070	2150	2270	2550	—	—	—	—	—	—	—	—	—	—
300	—	289	592	858	858	1080	1080	1250	—	1960	2030	2130	2400	—	—	—	—	—	—	—	—	—	—

SLOW SPEED SHAFT OVERHUNG LOAD CAPACITY FOR MODIFIED UNITS — POUNDS

Table 4 — Type "R1" unit with Cast Iron Housing and Spherical Roller Bearings

FRAME SIZE / SHAFT SPEED (RPM)	4130 4135 4135 DC	4160 4165 4165 DC	4170 4175 4175 DC	4180 4185 4185 DB	4190 4195 4190 DA 4195 DA 4195 DB
10 & below	3310	4960	6630	9380	13250
15	3310	4960	6630	9380	13250
20	3310	4960	6630	9380	13250
25	3310	4960	6630	9380	13250
30	3310	4960	6630	9380	13250
35	3310	4960	6630	9380	13250
40	3310	4960	6630	9380	13250
50	3310	4960	6630	9380	12400
60	3310	4960	6630	9380	11700
80	3170	4960	6630	9290	10600
100	2980	4850	6590	8680	9840
125	2780	4520	6150	8130	9150
150	2620	4270	5810	7690	8600
200	2410	3940	5350	7050	7800
250	2250	3670	4990	—	—
300	2130	3470	4740	—	—

Table 5 — Type "R2" unit with Ductile Iron Housing and Spherical Roller Bearings

FRAME SIZE / SHAFT SPEED (RPM)	4130 4135 4135 DC	4160 4165 4165 DC	4170 4175 4175 DC	4180 4185 4185 DB	4190 4195 4190 DA 4195 DA 4195 DB
10 & below	4420	6620	9660	12300	13250
15	4420	6620	9660	12300	13250
20	4420	6620	9660	12300	13250
25	4420	6620	9660	12300	13250
30	4240	6620	9450	12300	13250
35	4050	6620	9010	11900	13250
40	3910	6370	8650	11400	13250
50	3640	5950	8100	10700	13100
60	3440	5650	7660	10100	12400
80	3170	5180	7030	9290	11400
100	2980	4850	6590	8680	10600
125	2780	4520	6150	8130	9950
150	2620	4270	5810	7690	8420
200	2410	3940	5350	7050	8650
250	2250	3670	4990	—	—
300	2130	3470	4740	—	—

EXAMPLE

A uniformly loaded belt conveyor requiring 5 HP is to be driven 8 hrs/day by an SM-CYCLO® speed reducer, size 4135 ratio 29:1, 60 rpm output, using a 9.84″ pitch dia, sprocket on the slow speed shaft. Center line of the load is 1.50″ from the collar surface.

PROCEDURE

1) Calculate the overhung load
   With Cf = 1.0 from Table #1
   With Lf = 1.07 from Table #2
   With Sf = 1.07 from page 6

OVERHUNG LOAD

$$\frac{126{,}000 \times 5 \times 1.0 \times 1.07 \times 1.0}{9.84 \times 60} = 1142 \text{ lbs.}$$

2) Check the overhung load capacity of SM-CYCLO® speed reducer size 4135. Allow Overhung Load = 2140 lbs.

Since the allowable overhung load of the 4135 is larger than the calculated overhung load of 1142 lbs., the application is satisfactory.

HIGH SPEED SHAFT
ALLOWABLE OVERHUNG LOAD (REDUCER ONLY)

Table 6 — High Speed Shaft — Load Location Factors – Lf

FRAME SIZE / X (IN.)	4075 4075 DA 4085 DA	4085 4105 DA 4097 DA	4090 4095 4097 4115 DB 4145 DB	4100 4105 410H	4110 4115 4125 4165 DC 4175 DC 4190 DA 4195 DA 4205 DA	4130 4135 4185 DB 4195 DB 4205 DA 4215 DA 4225 DA	4155	4160 4165 416H 4215 DB 4235 DA 4245 DA	4170 4175 4225 DB 4255 DA	4180 4185 4235 DB 4245 DB	4190 4195 4255 DB 4265 DA 4275 DA	4205	4215	4225	4235	4245	4255	4265	4275
1/4	0.73	0.73	0.88	0.91															
1/2	1.06	1.06	1.08	1.09	0.87	0.84	0.84	0.94											
3/4	1.60	1.60	1.59	1.59	1.14	1.00	1.00	0.98	0.96	0.93	0.93								
1	2.00	2.00	2.00	2.00	1.41	1.23	1.23	1.05	0.99	0.96	0.95	0.93	0.93	0.94	0.84	0.91			
1 1/4			2.38	2.38	1.67	1.45	1.45	1.18	1.05	0.99	0.98	0.95	0.95	0.96	0.86	0.92			
1 1/2					2.09	1.81	1.81	1.35	1.22	1.10	1.05	0.99	0.99	0.99	0.88	0.95	0.93	0.93	
1 3/4						2.13	2.13	1.52	1.39	1.25	1.16	1.04	1.03	1.02	0.93	0.98	0.94	0.94	0.93
2								1.64	1.49	1.35	1.25	1.10	1.08	1.04	0.98	0.99	0.96	0.96	0.94
2 1/2									1.77	1.61	1.46	1.25	1.22	1.10	1.09	1.09	1.00	1.00	0.98
3									2.05	1.86	1.67	1.39	1.35	1.19	1.21	1.20	1.06	1.06	1.22
3 1/2										2.17	1.92	1.56	1.51	1.33	1.34	1.33	1.16	1.16	1.14
4											2.08	1.68	1.61	1.42	1.44	1.42	1.22	1.22	1.22
4 1/2												1.85	1.77	1.56	1.58	1.55	1.31	1.31	1.35
5																	1.40	1.40	1.48
6																	1.54	1.54	1.64
7																	1.72	1.72	1.92
8																			2.08

Table 7 — High Speed Shaft — Allowable Overhung Load Capacity-Pounds

FRAME SIZE	4075 4075 DA 4085 DA		4085 4105 DA 4097 DA		4090 4095 4097 4115 DB 4145 DB			4100 4105 410H 4135 DC		4110 4115 4125 4165 DC 4175 DC		4190 DA 4195 DA 4205 DA	4130 4135 4185 DB 4195 DB		4205 DB 4215 DA 4225 DA	4145 4155		
RATIO * / SHAFT SPEED (RPM)	11 thru 17 25 thru 35	21 43	6 thru 17 25 thru 35 51 59	21 43	6	8 thru 17	21 thru 119	6 8 25 thru 119	11 thru 21	6 thru 17	35 51 thru 87	21 thru 29 43	6 8 13 thru 21	11 25	29 thru 87	6 thru 21	25 29 35	43 thru 87
600	22	11	44	44	66	55	66	132	132	198	154	154	419	353	397	331	220	243
750	22	11	33	33	66	44	55	132	121	187	110	132	386	309	331	309	154	154
900	22	11	33	11	66	44	44	132	110	176	88	110	364	287	265	298	154	110
1000	22	11	44	11	66	44	33	121	110	176	88	110	342	287	231	287	154	99
1200	22	11	44	11	66	44	22	110	99	165	77	110	309	265	265	265	132	88
1500	22	7	44	11	55	44	22	99	77	154	77	99	287	254	132	254	132	77
1800	22	18	44	11	66	33	22	99	88	132	88	121	309	276	165	243	110	121

Table 7 (cont.)

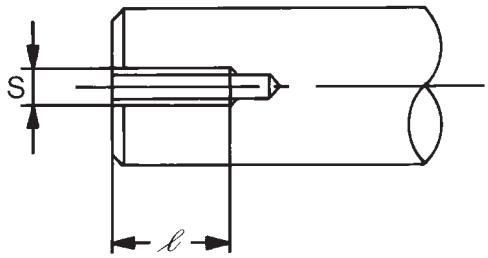
FRAME SIZE	4160 4165 416H 4215 DB 4235 DA 4245 DA			4170 4175 4225 DB 4255 DA			4180 4185 4235 DB 4245 DB	4190 4195 4255 DB 4265 DA 4275 DA		4205	4215	4225	4235	4245	4255	4265	4275
RATIO * / SHAFT SPEED (RPM)	6 thru 15 21	17 25 35 thru 51	29 59 thru 87	6	11 thru 47	21 thru 87	11 thru 87	11 thru 25	29 thru 87	11 15 21 29 43 59 87	11 15 21 29 43 59 87	11 15 21 29 43 59 87	11 15 21 29 43 59 87	11 15 21 29 43 59 87	11 15 21 29 43 59 87	11 15 21 29 43 59 87	43 59
600	485	397	375	661	595	485	772	882	816	1390	1630	1690	1960	2510	2950	2950	3310
750	463	353	309	661	551	397	750	882	750	1400	1530	1570	2020	2380	2760	2760	3310
900	419	309	265	661	529	353	683	816	705	1370	1420	1490	2060	2270	2540	2540	3310
1000	419	309	243	639	507	331	661	794	661	1320	1380	1440	2140	2270	2430	2430	3310
1200	397	287	198	595	441	309	617	728	639	1210	1220	1340	2250	2490	2650	2650	3310
1500	375	265	187	551	419	287	573	683	573	1100	1150	1300					
1800	353	243	198	529	419	309	617	683	595	1210	1290	1490					

NOTE*: For checking overhung load capacity of the high speed shaft of multiple reduction units, use the ratio of the first stage. See pages 20 thru 27 for input side ratio on these units.

SHAFT TOLERANCES

BY SHAFT SIZE:

Shaft Nominal Diameter (inches)	Tolerance (inches)
0.500 (1/2) through 0.625 (5/8)	+0.0000/-0.0004
0.75 (3/4) through 1.125 (1 1/8)	+0.0000/-0.0005
1.25 (1 1/4) through 1.875 (1 7/8)	+0.0000/-0.0006
2.000 (2) through 3.125 (3 1/8)	+0.0000/-0.0007
3.250 (3 1/4) through 4.625 (4 5/8)	+0.0000/-0.0009
4.75 (4 3/4) through 7.000 (7)	+0.000/-0.0010



BY FRAME SIZE:

SINGLE REDUCTION

Frames	Input	Output
4075	+0.0000/-0.0004	+0.0000/-0.0004
4085 to 410H	+0.0000/-0.0004	+0.0000/-0.0005
4110 or 4125	+0.0000/-0.0005	+0.0000/-0.0006
4130 to 4155	+0.0000/-0.0005	+0.0000/-0.0006
4160 or 416H	+0.0000/-0.0005	+0.0000/-0.0007
4170 to 4185	+0.0000/-0.0006	+0.0000/-0.0007
4190 to 4215	+0.0000/-0.0006	+0.0000/-0.0009
4225	+0.0000/-0.0007	+0.0000/-0.0009
4235 to 4265	+0.0000/-0.0007	+0.0000/-0.0010
4275	+0.0000/-0.0009	+0.0000/-0.0010

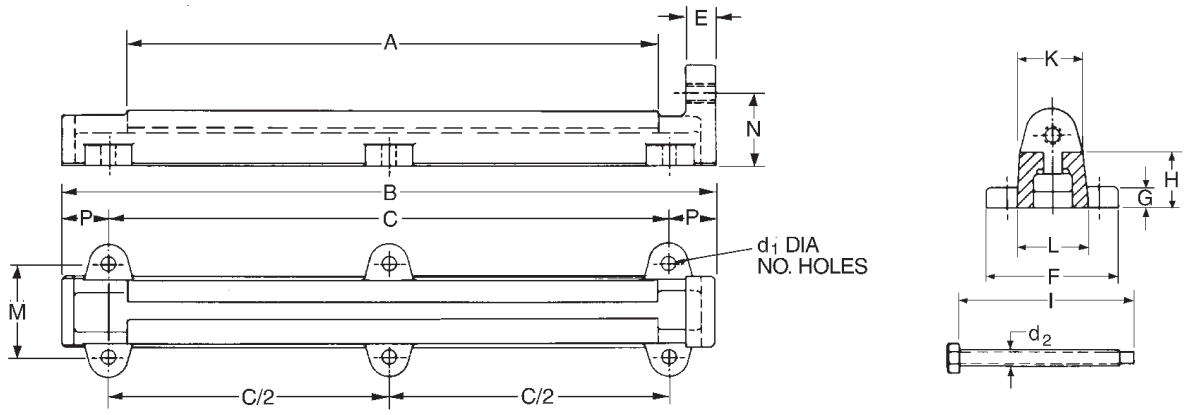
SLOW SPEED SHAFT TAPPED HOLE DIMENSIONS

Frame Size	S	\
4075 thru 4125	N.A.	N.A.
4130 4135 4145 4155 4160 4165 416H	3/8-16UNC	0.71
4170 4175 4180 4185	1/2-13UNC	0.94
4190 4195 4205 4215 4225	3/4-10UNC	1.34
4235 4245	1-8UNC	1.61
4255 4265	1 1/4-7UNC	1.93
4275	1 1/4-7UNC	2.05

DOUBLE REDUCTION

Frames	Input	Output
4075 DA	+0.0000/-0.0004	+0.0000/0.0004
4085 DA, 4097 DA, 4105 DA, 4115 DB	+0.0000/-0.0004	+0.0000/-0.0005
4135 DC, 4145 DB	+0.0000/-0.0004	+0.0000/-0.0006
4165 DC, 4175 DC	+0.0000/-0.0005	+0.0000/-0.0007
4185 DB	+0.0000/-0.0005	+0.0000/-0.0007
4190 DA, 4195 DA, 4205 DA	+0.0000/-0.0005	+0.0000/-0.0009
4195 DB, 4205 DB, 4215 DA 4215 DB, 4225 DA	+0.0000/-0.0005	+0.0000/-0.0009
4225 DB	+0.0000/-0.0006	+0.0000/-0.0009
4235 DA, 4245 DA	+0.0000/-0.0005	+0.0000/-0.0010
4235 DB, 4245 DB, 4255 DA 4255 DB, 4265 DA, 4275 DA	+0.0000/-0.0006	+0.0000/-0.0010

SLIDE RAIL DIMENSIONS

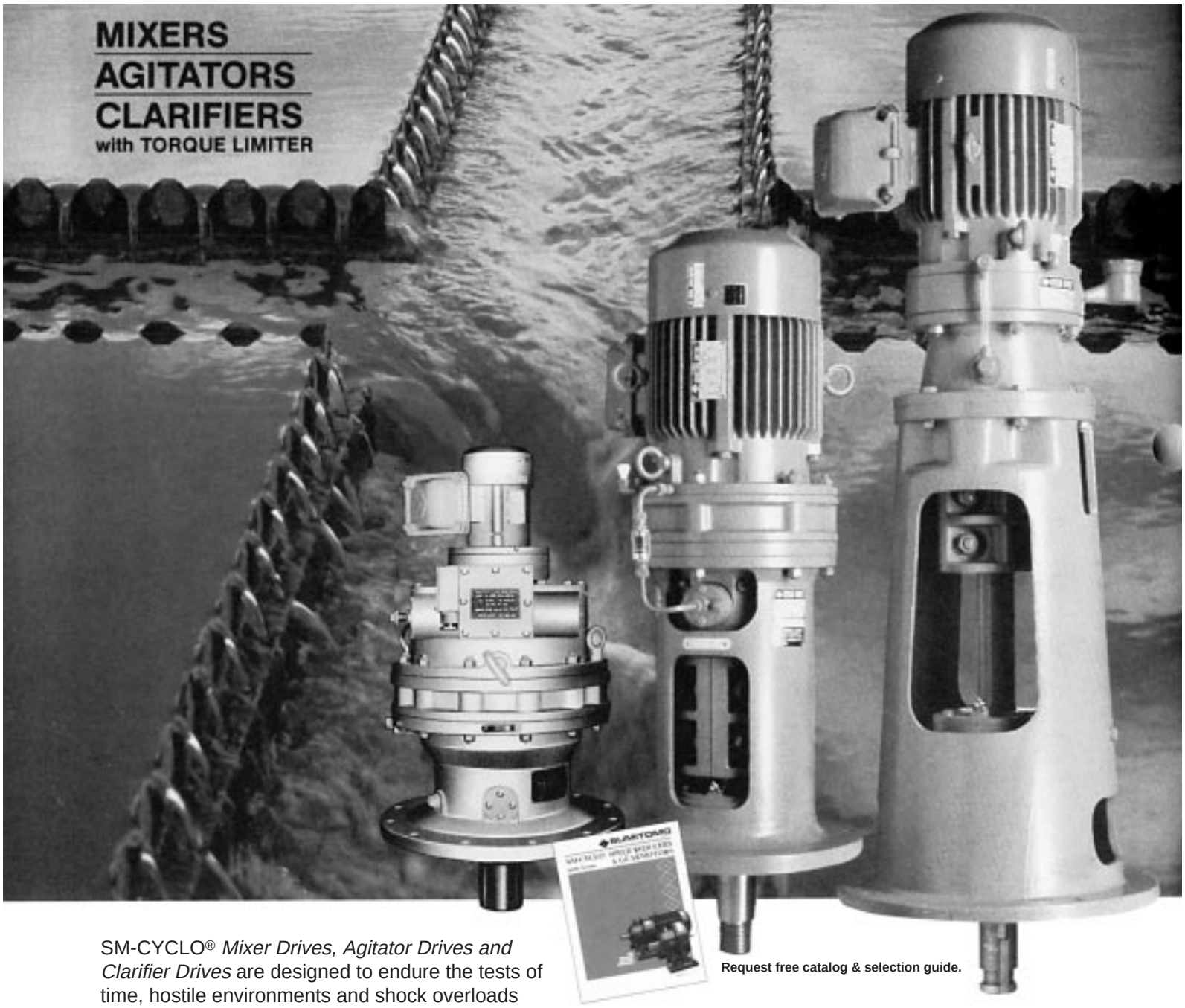


CYCLO MODEL	A	B	C	E	F	G	H	K	L	M	N	P	d_1	NO. HOLES	C/2	WT. LBS. PC.	ADJUST† BOLT (d_2 x i)	CYCLO MOUNT† BOLT (SQ.HD.)
4090, 4095 4097 4100, 4105 410H	10.62	17.31	16.16	.81	1.34	.719	1.97	1.19	.78	—	2.28	.59	.56	2	—	5	M12 x 4.75	M10 x 1.56
4110, 4115 4125	11.41	20.16	18.50	1.19	1.97	1.00	2.75	1.56	1.19	—	3.16	.78	.72	2	—	10	M16 x 5.12	M12 x 1.97
4130, 4135 4145, 4155	15.75	20.50	16.94	1.19	4.75	.75	2.00	2.00	2.37	3.37	2.43	1.78	.56	4	—	18	M16 x 6.31	M16 x 2.37
4160, 4165 416H	20.50	25.19	21.69	1.19	5.12	1.00	2.16	2.19	2.75	3.75	2.75	1.75	.56	4	—	31	M16 x 7.87	M16 x 2.56
4170, 4175	21.69	29.50	23.62	1.75	7.12	1.19	2.56	3.12	3.75	5.12	3.37	2.94	.87	4	—	40	M24 x 9.43	M20 x 3.12
4180, 4185	25.62	33.50	27.56	1.75	7.12	1.19	3.12	3.12	3.75	5.12	3.94	2.94	.87	4	—	66	M24 x 11.81	M20 x 3.12
4190, 4195	25.62	33.50	27.56	1.75	9.01	1.56	3.56	3.94	5.12	6.69	4.34	2.94	1.03	4	—	83	M24 x 11.81	M24 x 3.94
4205, 4215	31.50	39.38	33.50	1.75	9.01	1.38	3.94	4.75	5.94	7.09	4.94	2.94	1.03	6	16.75	110	M24 x 13	M24 x 3.94
4225, 4235	32.28	48.82	37.00	2.17	10.04	1.61	5.51	6.69	10.04	6.89	6.49	5.91	1.54	6	18.50	132	M36 x 16.34	M36 x 4.34
4245, 4255	44.09	60.63	48.82	2.17	10.04	1.61	6.89	6.69	10.04	6.89	7.87	5.91	1.54	6	24.41	350	M36 x 25	M36 x 4.75

Models 4090 thru 4255 require two rails.
† Metric bolts furnished by factory; lengths shown in inches.

WATER TREATMENT MIXER OPTIONS

Proven Performers



SM-CYCLO® *Mixer Drives, Agitator Drives and Clarifier Drives* are designed to endure the tests of time, hostile environments and shock overloads (500%). Rugged construction, smooth, rolling action of cycloid discs and over 5,000,000 installations worldwide have gained Sumitomo SM-CYCLO® speed reducers and gearmotors an unmatched reputation for proven performance and reliability.

We offer a *24-month* warranty, very competitive pricing and a national sales, engineering and service organization which provides comprehensive, fast and efficient service.

Request free catalog & selection guide.

TORQUE LIMITER EQUIPPED SM-CYCLO®

Torque Limiter Equipped SM-CYCLO DRIVES are offered as optional equipment for specific models of SM-CYCLO speed reducers and gearmotors. They are torque limiting devices which prevent damage to machinery from overloads and jams, thereby reducing costly downtime.

With torque limiter equipped SM-CYCLO speed reducers, when the reducer or gearmotor output torque exceeds a predetermined limit, a micro switch instantly breaks the motor circuit, protecting process equipment. These controls can be supplied for either one or two directions of rotation.

FEATURES

SAFE UNATTENDED OPERATION
Reliable Torque Limiter response to overload cuts motor power automatically, stopping the machine. This eliminates costly inspection and repair.

COST AFFECTIVE MACHINE DESIGN
The torque setting on SM-CYCLO equipped with Torque Limiter is more accurate and reliable when compared with conventional Torque Limiters. Consequently, the use of a lower safety factor on auxiliary equipment may be considered, which will decrease the cost of the entire system.

BI-DIRECTIONAL TORQUE SETTING
Normally, the Torque Limiter is set to limit torque relative to one direction of slow speed shaft rotation. However, the torque limiter can be set in both directions upon request.

EASY SET POINT ADJUSTMENT
All calibration levels are factory set. No further adjustments are required. If recalibration is desired, simply rotate the adjusting bolt which changes restraint spring load and set point. Adjustment that can be made is within ±25% of set torque.

ENCLOSED STRUCTURE
Structure of the Torque Limiter is enclosed to prevent entrance of gas, dust and other environmental contaminants.

COMBINATION WITH OTHER PROTECTIVE DEVICES
The Torque Limiter may be connected to another alarm system (i.e., buzzer and/or lamp) as an option to warn about power failure (see example wiring diagram).

HIGH PRECISION
Basic component of the Torque Limiter is a high precision coil spring. Under load, the spring deflects in proportion to torque. Repeatability of the torque set point is ±5% to ±10%.

POSITIVE MECHANICAL OPERATION
Reliable safety device at overload.

INSTANTANEOUS RESPONSE TO OVERLOAD
Less time delay compared with electrical systems. Reaction to corresponding overload is much faster.

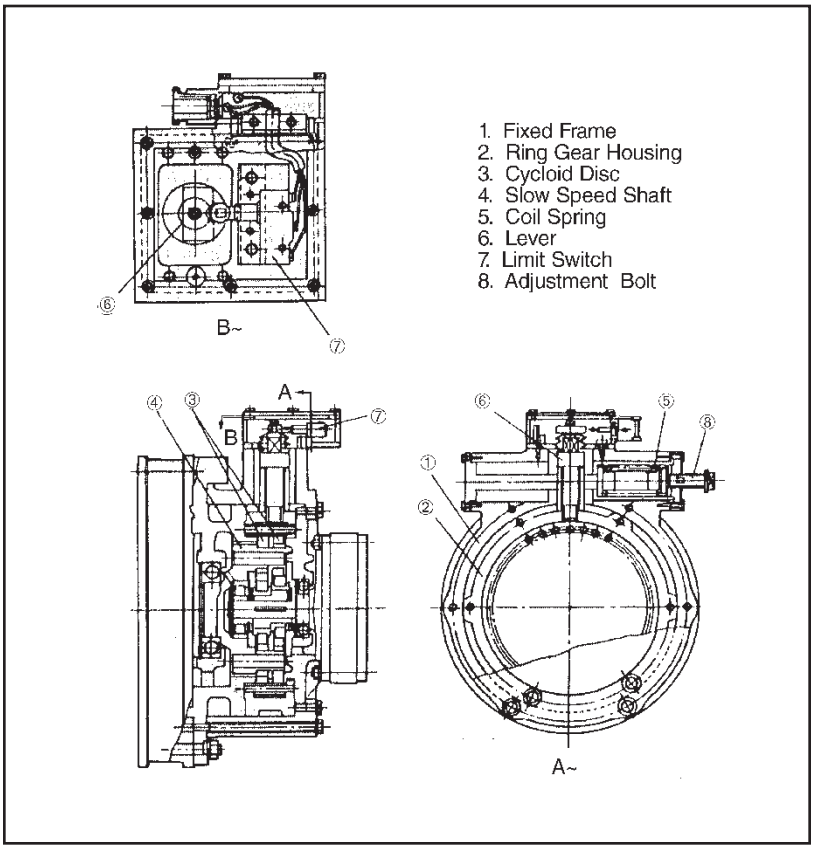
SELECTED STARTING TORQUE
Torque set point can optionally be selected to withstand start-up torque by by-passing limit switch current.

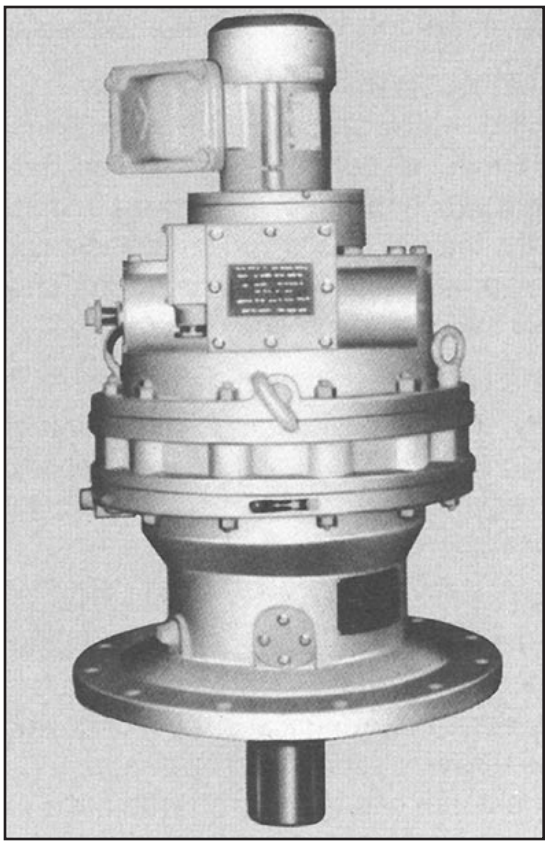
TORQUE LIMITER PRINCIPLE AND STRUCTURE

Output torque on Slow Speed Shaft (4) of Cyclo Drive is transmitted by means of a Cycloid Disc (3) to Ring Gear Housing (2), which is free to rotate in Fixed Frame (1). Under constant load, Lever (6) fitted in Ring Gear Housing (2) is held in a fixed position by preset force of Coil Spring (5). When load on Slow Speed Shaft (4) is increased, Ring Gear Housing (2) rotates in opposite direction to Slow Speed Shaft (4) causing Lever (6) to press against Coil Spring (5).

When output load exceeds preset value, Lever (6) actuates Limit Switch (7), instantaneously cutting motor power. After motor stops, and cause of overload is eliminated, force of Coil Spring (5) returns Lever (6) to its original neutral position.

Torque Limiter mounts on the first stage housing of double reduction units (example: on frame of 4130 for double reduction size 4195DB), on second stage housing of triple reduction units (example: on frame 4130 of triple reduction size 4195TD).



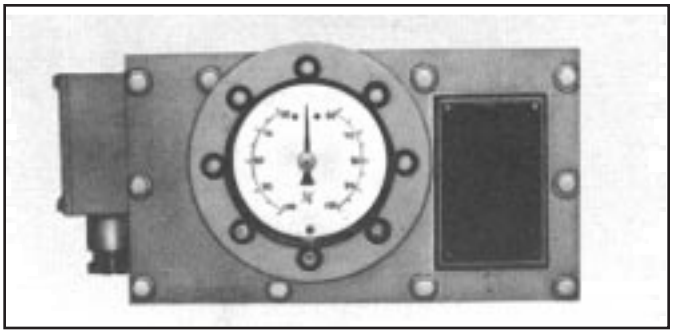


EXTENDED USE OF TORQUE LIMITER

TORQUE CAN BE CALIBRATED

A Torque Limiter with an indicator on which the load percentage is shown is also available.

1. Load percentage (% against the set torque) is shown on the indicator.
2. Range of indicator gauge is 60 to 100% of torque. Other indications available on request; consult factory.



EXTENDED USE OF TORQUE LIMITER CONT.

TORQUE CAN BE READ AT LOCATIONS AWAY FROM THE REDUCER

Load cell type Torque Limiters contain a transducer as an overload protection device. The transducer services reactive load at the SM-CYCLO ring gear housing. Reactive load is converted into an electrical signal (i.e., 4 – 20 ma d.c.) for feedback, control and torque indication.

EXAMPLE OF WIRING CONNECTION

(Consult factory for specific connections.)

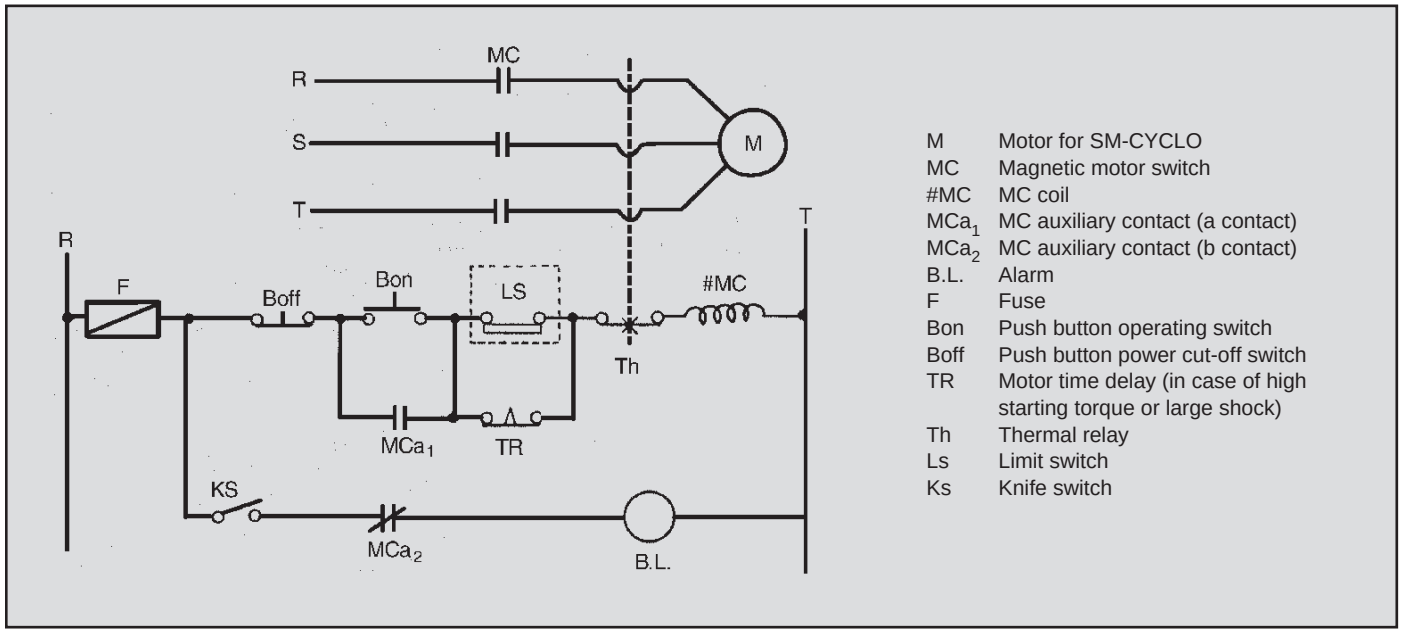
INCREASED NUMBER OF CONTACTS

Dual safety devices using two limit switches are available. One limit switch can be set to alarm at a torque less than set torque. The second switch can be set to cut the motor power source at set torque.

AVAILABLE MODELS

Explosion proof and underwater models available on request. Consult factory.

Note: Limit switches shown by dotted line in the Fig. below are standard in Torque Limiter equipped SM-CYCLO. The parts except for LS to be supplied by customer.



M	Motor for SM-CYCLO
MC	Magnetic motor switch
#MC	MC coil
MCa_1	MC auxiliary contact (a contact)
MCa_2	MC auxiliary contact (b contact)
B.L.	Alarm
F	Fuse
Bon	Push button operating switch
Boff	Push button power cut-off switch
TR	Motor time delay (in case of high starting torque or large shock)
Th	Thermal relay
Ls	Limit switch
Ks	Knife switch

Energize motor M by pressing the OPERATION push button (Bon). MCa_2 for alarm is in open position at this time. When torque is excessively increased, limit switch Ls activates, MCa_1 opens to de-energize the motor and alarm B.L. enunciates. Anticipated starting time may be extended if starting torque is higher than set torque by installing time delay TR.

APPLICATIONS

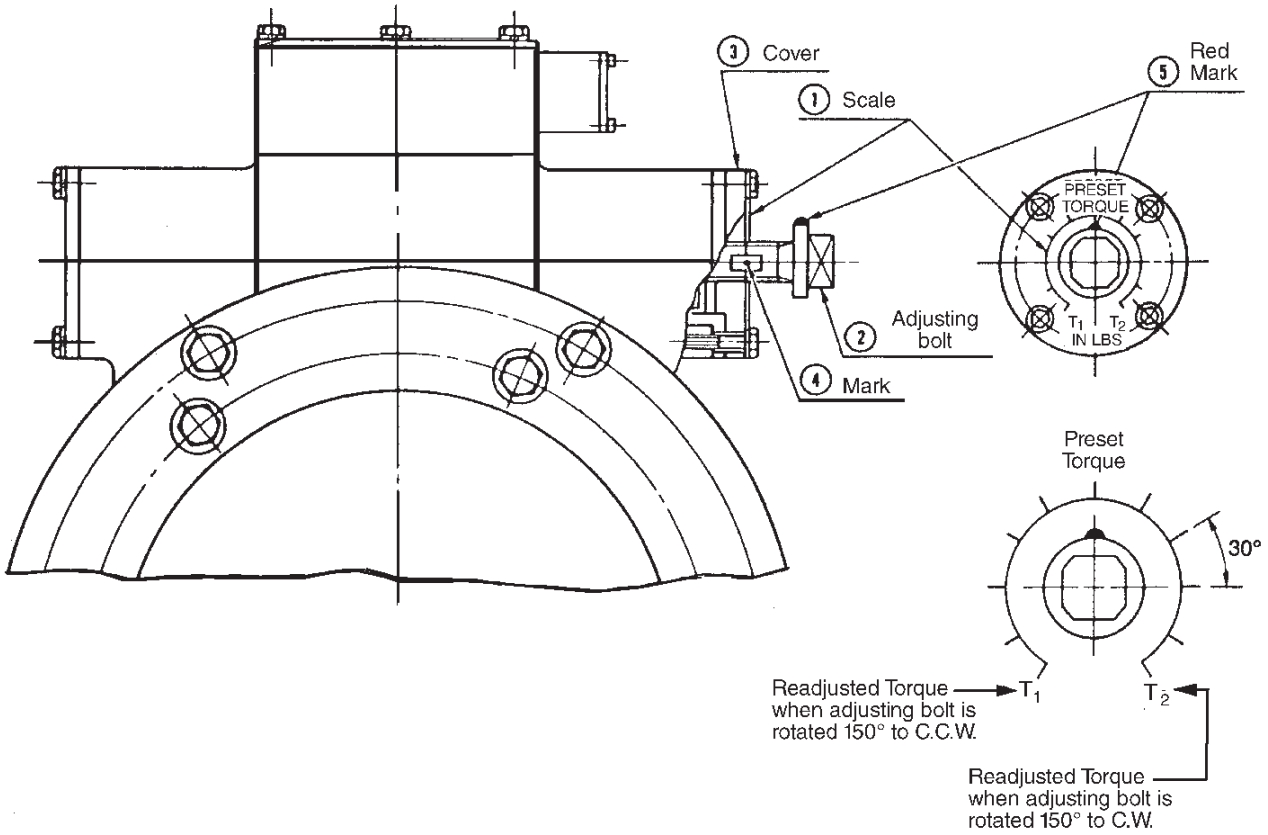
Mixer, Stoker, Conveyor, Roll and various other machines.

FOR INQUIRIES NOTE THE FOLLOWING:

1. Slow speed shaft normal torque
2. Slow speed shaft pre-set torque
3. Direction of the slow speed shaft rotation viewed from the shaft side
4. Motor input speed and power
5. Driven machine
6. Load conditions…degree of shock and operating cycles
7. SM-CYCLO model and frame size, reduction ratio
8. Whether or not dual-direction type is required
9. Place of installation: indoor or outdoor
10. Ambient condition: dust, corrosion, explosion

HOW TO READJUST PRESET TORQUE

1. All calibration levels are factory set. No further adjustments are required.
2. If recalibration is desired, simply rotate the adjusting bolt (2) per the scale (5).
   Preset torque is shown on top portion of the scale (5) .
   T_1 and T_2 show the torque when the adjusting bolt (2) is rotated 150 degrees to C.W. or C.C.W.
3. Adjustment that can be made is within ±25% of current preset torque.
   The adjusting bolt (2) can be rotated more than ±150 degrees over the scale (T_1 and T_2) as long as the torque is within ±25% of current preset torque. However the readjusted torque should be less than the rated output torque or Maximum preset torque in the selection table.



TORQUE LIMITER SELECTION

1. SM-CYCLO TORQUE LIMITER is designed for 24-hour daily service under uniform or low fluctuating loads. For selection refer to the Tables 1 to 3 (Reduction Ratio 6 through 109,091:1). When the application involves frequent start-stop, heavy shock load, consult the factory.
2. "The preset torque" must be less than the rated output torque. However, the preset torque must be less than the number in bracket for the frame size with the bracket in Tables 1 to 3.
3. The selection table is based on 1750 rpm input. Consult the factory when input speed is not 1750 rpm.

Table 1 (Single Reduction Reducers) Reduction Ratio 6:1 to 87:1 Input Speed 1750 rpm.

RATED Output Torque (In-Lbs)	Reduction Ratio	6	11	17	29	35	43	59	87
	Output Speed (rpm)	292	159	103	60.3	50.0	40.7	29.7	20.1
1130	Frame Size Motor HP Maximum Preset Torque	4105 2 378	4105 2 693	4105 2 1070	4105 1 914	4105 1 1100	4105 1	4105 1/2 [955]	4100 1/4 [521]
1480	Frame Size Motor HP Maximum Preset Torque	4115 3, 5 567, 945	4110 3 1040	4110 2 1070	4110 2	4115 2	4115 2	4115 1	4110 1/2 [1300]
3730	Frame Size Motor HP Maximum Preset Torque	4135 7½, 10 1420, 1890	4135 5, 7½, 10 1730, 2600, 3470	4130 3, 5 1610, 2680	4130 2, 3 1830, 2740	4135 3 3310	4135 3	4135 2	4130 1 [2740]
7640	Frame Size Motor HP Maximum Preset Torque	4165 15, 20 2840, 3780	4165 10, 15 3470, 5200	4160 7½, 10 4020, 5360	4160 5, 7½ 4570, 6850	4160 5 5510	4165 5 6770	4160 3 5580	4165 3
11700	Frame Size Motor HP Maximum Preset Torque	4175 30 5670	4170 20 6930	4175 15, 20 8030, 10700	4170 10 9140	4170 7½, 10 8270, 11000	4170 7½ 10200	4170 5 9290	—
14800	Frame Size Motor HP Maximum Preset Torque	—	4180 30 10400	4180 20 10700	4180 15 13700	4180 10 11000	4180 10 13500	4180 7½ 13900	4185 7½
39100	Frame Size Motor HP Maximum Preset Torque	—	4195 40 13900	4195 30, 40 16100, 21400	4195 20, 30 18300, 27400	4190 15, 20 16500, 22100	4195 15, 20 20300, 27100	4195 10, 15 18600, 27900	4195 10 [27500]

NOTE:

1. Designation of figures indicated in each frame.
Example

4135 →	Frame size of SM-CYCLO
5, 7½, 10 →	Standard input HP (input speed 1750 rpm)
1730, 2600, 3470 →	Each value shows the maximum output torque when the above motor is fully loaded. When there is no number, the preset torque is allowed up to the rated output torque shown in the left frame. The value in the bracket is the torque allowable on the output shaft especially for the reduction ratio and the frame size.

2. Selection Example

Given Ratio 59:1, Input Speed 1750 rpm, Preset Torque 5200 IN. LBS.

Procedure

1) Locate the model which satisfies the preset torque 5200 IN. LBS and the ratios 59:1 in the Table. At the cross of ratio 59:1 and Rated Output Torque 7640 IN. LBS, following data is found.
   Frame Size 4160
   Motor HP 3
   Maximum Preset Torque 5580 IN. LBS
2) 5200 IN. LBS is less than the Maximum Preset Torque, therefore 3 HP is enough for required torque.

TORQUE LIMITER SELECTION TABLE

Table 2 (Double Reduction Reducers) Reduction Ratio 66:1 to 7569:1 Input Speed 1750 rpm

Rated Output Torque (in-lbs)	Reduction Ratio	66 [11x6]	90 [15x6]	102 [17x6]	121 [11x11]	165 [15x11]	187 [17x11]	231 [21x11]	289 [17x17]	319 [29x11]	385 [35x11]	473 [43x11]	493 [29x17]	595 [35x17]	649 [59x11]	731 [43x17]
	Output Speed (rpm)	26.5	19.4	17.2	14.5	10.6	9.36	7.58	6.06	5.49	4.55	3.70	3.55	2.94	2.70	2.39
6,250	Frame Size Motor HP Maximum Preset Torque			4135DC 2 5710	4135DC 1, 2 3390, 6250		4135DC 1, 2 5240, 6250		4135DC 1	4135DC 1	4135DC 1	4135DC 1	4135DC 1	4135DC 1/2	4135DC 1/2	4135DC 1/2
7,810	Frame Size Motor HP Maximum Preset Torque			4160DB 2 5710						4145DC 1	4145DC 1	4145DC 1	4145DC 1	4145DC 1	4145DC 1	4145DC 1/2
12,500	Frame Size Motor HP Maximum Preset Torque			4165DC 3, 5 8570, 12500	4165DC 3, 5 10200, 12500		4165DC 3		4165DB 2	4165DB 2	4165DB 1 10780	4165DB 1	4165DB 1	4165DB 1	4165DB 1	4165DB 1
21,700	Frame Size Motor HP Maximum Preset Torque						4175DC 3, 5 15700, [19100]		4175DC 3 [2000]	4175DC 2, 3 17900, 21700	4175DB 2	4175DB 2	4175DB 2	4175DB 2	4175DB 2	4175DB 1 20500
31,200	Frame Size Motor HP Maximum Preset Torque	4185DB 7.5, 10 13900, 18500		4185DB 7.5, 10 21400, 26000	4185DB 7.5 25400		4185DB 5, 7.5 26200, 31200		4185DB 3, 5 24300, 31200	4185DB 3, 5 26800, 31200	4185DB 3	4185DB 2, 3 26500, 31200	4185DB 2, 3 27600, 31200	4185DA 2	4185DA 2	4185DA 2
48,600	Frame Size Motor HP Maximum Preset Torque		4205DB 10 [42500]	4190DB 10 [46000]	4190DB 7.5, 10 25400, [32100]		4190DB 7.5, 10 39300, 48600		4190DB 5, 7.5 40500, 48600	4190DB 5, 7.5 44700, 48600	4190DB 3, 5 32300, 48600	4190DB 3, 5 39700, 48600	4190DB 3, 5 41400, 48600	4190DB 3, 5 33300, 48600	4190DA 2, 3 36300, 48600	4190DA 2, 3 40900, 48600
55,600	Frame Size Motor HP Maximum Preset Torque	4215DB 15, 20 27700, 37000				4205DB 10 [45600]										
62,500	Frame Size Motor HP Maximum Preset Torque		4215DB 15, 20 37800, 50400		4215DB 15 50800			4205DB 7.5, 10 48500, 62500		4195DB 7.5	4195DB 5, 7.5 53900, 62500	4195DB 5	4195DB 5	4195DB 3, 5 50,000, 62500	4195DA 3, 5 54500, 62500	4195DB 3 61400
72,900	Frame Size Motor HP Maximum Preset Torque	4225DB 30 55400				4215DB 15 69300						4205DB 7.5			4205DB 5	4205DB 5
82,500	Frame Size Motor HP Maximum Preset Torque		4225DB 30 75600		4225DB 20 67900			4215DB 10, 15 64700, 82500		4215DA 7.5, 10 67000, 82500			4215DA 5, 7.5 69000, 82500			
95,500	Frame Size Motor HP Maximum Preset Torque				4235DB 30	4225DB 15, 20 69300, 92400						4215DA 7.5			4215DA 5 90900	4215DA 5
108,000	Frame Size Motor HP Maximum Preset Torque							4225DB 15, 20 97000, 108000		4225DB 10, 15 89300, 108000			4225DB 7.5 104000			
121,000	Frame Size Motor HP Maximum Preset Torque				4245DB 30 102000	4235DB 20, 30 92400, 121000						4225DA 7.5, 10 99300, 121000			4225DA 5, 7.5 90900, 121000	4225DA 5, 7.5 102000, 121000
139,000	Frame Size Motor HP Maximum Preset Torque							4235DB 20 129000		4235DA 15 134000			4235DA 7.5, 10 104000, 138000			
156,000	Frame Size Motor HP Maximum Preset Torque				4255DB 40 136000	4245DB 30 139000						4235DA 10, 15 132000, 156000			4235DA 7.5, 10 136000, 156000	4235DA 7.5 154000
174,000	Frame Size Motor HP Maximum Preset Torque							4245DB 20, 30 129000, 194000		4245DB 15, 20 134000, 179000			4245DA 10, 15 138000, 174000			
200,000	Frame Size Motor HP Maximum Preset Torque				4265DB 40 136000	4255DB 40 185000						4245DA 15 199000			4245DA 10, 15 182000, 200000	4245DA 7.5, 10 154000, 200000
226,000	Frame Size Motor HP Maximum Preset Torque							4255DB 30, 40 194000, 226000		4255DB 20, 30 179000, 226000			4255DA 15 207000			
260,000	Frame Size Motor HP Maximum Preset Torque					4265DA 40 185000						4255DA 15, 20 199000, 260000			4255DA 15	4255DA 10, 15 205000, 260000
304,000	Frame Size Motor HP Maximum Preset Torque							4265DA 40 259000		4265DA 30 268000			4265DA 15, 20 207000, 276000			
347,0000	Frame Size Motor HP Maximum Preset Torque											4265DA 20, 30 260000, 347000			4265DA 15 273000	4265DA 15, 20 307000, 347000
521,000	Frame Size Motor HP Maximum Preset Torque									4275DA 40 357000		4275DA 30, 40 397000, 521000	4275DA 30, 40 414000, 521000		4275DA 30	4275DA 20, 30 409000, 521000

NOTE: 1. DESIGNATION OF FIGURES INDICATED IN EACH FRAME.

EXAMPLE

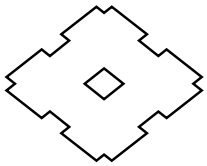
4190DB → Frame size of SM-CYCLO

7.5, 10 → Standard input HP (input speed 1750 rpm)

25,400, → Each value shows the maximum output torque when the above motor is used.

[32,100] → [Above side value for the right side motor HP, lower side value for the left side motor HP]

The value in the bracket is the torque allowable on the output shaft especially for the reduction ratio and the frame size. When there is no number, the preset torque is allowed up to the rated output torque shown in the left and right frame.



841 [29x29]	957 [87x11]	1003 [59x17]	1015 [35x29]	1225 [35x35]	1247 [43x29]	1479 [87x17]	1505 [43x35]	1711 [59x29]	1849 [43x43]	2065 [59x35]	2523 [87x29]	2537 [59x43]	3045 [87x35]	3481 [59x59]	3741 [87x43] *[43x87]	5133 [87x59] *[59x87]	7569 [87x87]	Rated Output Torque
2.08	1.83	1.74	1.72	1.43	1.40	1.18	1.16	1.02	0.95	0.85	0.69	0.69	0.57	0.50	0.47	0.34	0.23	
4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	4135DC 1/2	6,250
4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	4145DC 1/2	7,810
4165DB 1	4165DB 1	4165DB 1/2	4165DB 1/2	4165DB 1/2	4165DB 1/2	4165DB 1/2	4165DB 1/2	4165DB 1/2	4165DB 1/2	4165DB 1/2	4165DB 1/2	4165DB 1/2	4165DB 1/2	4165DB 1/2	4165DB 1/2	4165DB 1/2	4165DB 1/2	12,500
4175DB 1	4175DB 1	4175DB 1	4175DB 1	4175DB 1	4175DB 1	4175DB 1	4175DB 1	4175DB 1/2	4175DB 1/2	4175DB 1/2	4175DB 1/2	4175DB 1/2	4175DB 1/2	4175DB 1/2	4175DB 1/2	4175DB 1/2	4175DB 1/2	21,700
4185DB 2	4185DA 2	4185DA 1, 2 26800, 31200	4185DA 1, 2 28400, 31200	4185DA 1	4185DA 1	4185DA 1	4185DA 1	4185DA 1	4185DA 1	4185DA 1	4185DA 1	4185DA 1	4185DA 1/2	4185DA 1/2	4185DA 1/2	4185DA 1/2	4185DA 1/2	31,200
4190DB 2, 3 47100, 48600	4190DA 2	4190DA 2	4190DB 2	4190DB 2	4190DA 2	4190DA 2	4190DA 2	4190DA 2	4190DA 1	4190DA 1	4190DA 1	4190DA 1	4190DA 1	4190DA 1	4190DA 1	4190DA 1	4190DA 1	48,600
																		55,600
4195DB 3	4195DA 2, 3 53600, 62500	4195DA 2, 3 56200, 62500	4195DB 2, 3 56800, 62500	4195DB 2	4195DB 2	4195DA 2	4195DB 2	4195DA 2	4195DB 1 51800	4195DA 1 57800	4195DA 1	4195DA 1	4195DA 1	4195DA 1	4195DA 1	4195DA 1	4195DA 1	62,500
		4205DB 3			4205DB 2 69800		4205DB 2	4205DB 2	4205DB 2	4205DB 2		4205DB 2		4205DB 2	*4205DB 2	*4205DB 2		72,900
4215DA 3, 5 70600, 82500	4215DA 3 80400					4215DA 2					4215DA 2		4215DA 2				4215DA 2	82,500
		4215DA 3, 5 84300, 95500			4215DA 2, 3 69800, 95500		4215DA 2, 3 84300, 95500	4215DA 2	4215DA 2	4215DA 2		4215DA 2		4215DA 2	*4215DA 2	*4215DA 2		95,500
4225DB 5	4225DA 3, 5 80400, 108000					4225DA 2, 3 82800, 108000					4225DA 2		4225DA 2				4225DA 2	108,000
		4225DA 5 121000			4225DA 3, 5 105000, 121000		4225DA 3	4225DA 2, 3 95800, 121000	4225DA 2, 3 104000, 121000	4225DA 2, 3 116000, 121000		4225DA 2		4225DA 2	*4225DA 2	*4225DA 2		121,000
4235DA 5, 7.5 118000, 139000	4235DA 5, 7.5 134000, 139000					4235DA 3, 5 124000, 139000					4235DA 3		4235DA 3				4235DA 3	139,000
		4235DA 5, 7.5 140000, 156000			4235DA 5		4235DA 3, 5 126000, 156000	4235DA 3, 5 144000, 156000	4235DA 3 155000	4235DA 3		4235DA 3		4235DA 3	*4235DA 3	*4235DA 3		156,000
4245DA 7.5	4245DA 7.5					4245DA 5					4245DA 3		4245DA 3				4245DA 3	174,000
		4245DA 7.5			4245DA 5, 7.5 175000, 200000		4245DA 5	4245DA 5	4245DA 3, 5 155000, 200000	4245DA 3, 5 173000, 200000		4245DA 3		4245DA 3	*4245DA 3	*4245DA 3		200,000
4255DA 7.5, 10 177000, 226000	4255DA 7.5, 10 201000, 226000					4255DA 5, 7.5 207000, 226000					4255DA 5		4255DA 5				4255DB 7.5	226,000
		4255DA 7.5, 10 211000, 260000			4255DA 7.5		4255DA 5, 7.5 211000, 260000	4255DA 5, 7.5 240000, 260000	4255DA 5 259000	4255DA 5		4255DA 5		4255DA 5	*4255DB 7.5	*4255DB 7.5		260,000
4265DA 10, 15 235000, 304000	4265DA 10, 15 268000, 304000					4265DA 7.5					4265DA 7.5		4265DA 7.5				4265DA 7.5	304,000
		4265DA 10, 15 281000, 347000			4265DA 7.5, 10 262000, 347000		4265DA 7.5, 10 316000, 347000	4265DA 7.5	4265DA 7.5	4265DA 7.5		4265DA 7.5		4265DA 7.5	*4265DA 7.5	*4265DA 7.5		347,000
4275DA 20, 30 471000, 521000	4275DA 20	4275DA 20			4275DA 15	4275DA 15	4275DA 10, 15 421000, 521000	4275DA 10, 15 479000, 521000	4275DA 10	4275DA 10	4275DA 10	4275DA 10	4275DA 10	4275DA 10	*4275DA 10	*4275DA 10		521,000

TORQUE LIMITER SELECTION TABLE

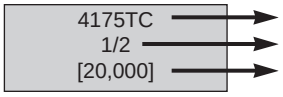
Table 3 (Triple Reduction Reducers) Reduction Ratio 3179 to 109091:1 Input Speed 1750 rpm

Rated Output Torque (in-lbs)	Reduction Ratio	3179 [17x17x11]	4913 [17x17x17]	5423 [29x17x11]	6545 [35x17x11]	8041 [43x17x11]	8381 [29x17x17]	10115 [35x17x17]	11033 [59x17x11]	12427 [43x17x17]	14297 [29x29x11]
	Output Speed (rpm)	0.55	0.36	0.32	0.27	0.22	0.21	0.17	0.16	0.14	0.12
6,250	Frame Size Motor HP	4135TC 1/4	4135TC 1/4	4135TC 1/4	4135TC 1/4	4135TC 1/4	4135TC 1/4	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8
7,810	Frame Size Motor HP			4145TC 1/4	4145TC 1/4	4145TC 1/4	4145TC 1/4	4145TC 1/4	4145TC 1/4	4145TC 1/4	4145TC 1/4
12,500	Frame Size Motor HP	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4
21,700	Frame Size Motor HP Maximum Preset Torque	4175TC 1/2 [20,000]	4175TC 1/2 [20,000]	4175TB 1/2	4175TB 1/2	4175TB 1/2	4175TB 1/2	4175TB 1/2	4175TB 1/2	4175TB 1/2	4175TC 1/2
31,200	Frame Size Motor HP	4185TC 1/2	4185TC 1/2	4185TC 1/2	4185TA 1/2	4185TA 1/2	4185TC 1/2	4185TA 1/2	4185TA 1/2	4185TA 1/2	4185TC 1/2
48,600	Frame Size Motor HP	4190TD 1	4190TD 1	4190TD 1	4190TD 1	4190TD 1	4190TD 1	4190TD 1	4190TD 1	4190TD 1	4190TD 1
62,500	Frame Size Motor HP			4195TD 1	4195TD 1	4195TD 1	4195TD 1	4195TD 1	4195TD 1	4195TD 1	4195TD 1
72,900	Frame Size Motor HP					4205TD 1			4205TD 1	4205TD 1	
82,500	Frame Size Motor HP			4215TC 2			4215TB 1				4215TB 1
95,500	Frame Size Motor HP					4215TC 2			4215TC 2	4215TC 2	
108,000	Frame Size Motor HP			4225TE 2			4225TE 2				4225TD 1
121,000	Frame Size Motor HP					4225TC 2			4225TC 2	4225TC 2	
139,000	Frame Size Motor HP			4235TB 2			4235TB 2				4235TA 1
156,000	Frame Size Motor HP					4235TB 2			4235TB 2	4235TB 2	
174,000	Frame Size Motor HP			4245TC 3			4245TB 2				4245TB 2
200,000	Frame Size Motor HP					4245TC 3			4245TB 2	4245TB 2	
226,000	Frame Size Motor HP			4255TC 3			4255TC 3				4255TB 2
260,000	Frame Size Motor HP					4255TC 5			4255TC 3	4255TB 2	
304,000	Frame Size Motor HP			4265TA 5			4265TA 5				4265TA 2
347,000	Frame Size Motor HP					4265TA 5			4265TA 3	4265TA 3	
521,000	Frame Size Motor HP			4275TB 10		4275TB 7½	4275TB 7½		4275TB 5	4275TB 5	4275TA 3

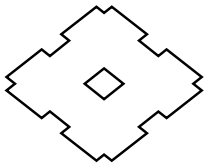
NOTE:

1. **DESIGNATION OF FIGURES INDICATED IN EACH FRAME.**

EXAMPLE



Frame size of SM-CYCLO
Standard input HP (input speed 1750 rpm)
The value in the bracket is the torque allowable on the output shaft especially for the reduction ratio and the frame size. When there is no number, the preset torque is allowed up to the rated output torque shown in the left and right frame.



16269 [87x17x11]	17051 [59x17x17]	21199 [43x29x17]	25143 [87x17x17]	27907 [59x43x11]	31433 [43x43x17]	38291 [59x59x11]	43129 [59x43x17]	51765 [87x35x17]	63597 [87x43x17] *[43x87x17]	79507 [43x43x43]	87261 [87x59x17] [59x87x17]	109091 [59x43x43]
0.11	**0.10**	**0.083**	**0.070**	**0.063**	**0.056**	**0.046**	**0.041**	**0.034**	**0.028**	**0.022**	**0.020**	**0.016**
4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8
4145TC 1/4	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8
4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/8	4165TB 1/8	4165TB 1/8	4165TB 1/8	4165TB 1/8	4165TB 1/8	4165TB 1/8
4175TB 1/2	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4
4185TA 1/2	4185TA 1/2	4185TA 1/2	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4
4190TD 1	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/4	4190TA 1/4	4190TA 1/4
4195TD 1	4195TA 1/2	4195TC 1/2	4195TA 1/2	4195TA 1/2	4195TD 1/2	4195TA 1/2	4195TA 1/2	4195TA 1/2	4195TA 1/2	4195TD 1/4	4195TA 1/4	4195TA 1/4
	4205TD 1	4205TD 1/2		4205TD 1/2	4205TD 1/2	4205TD 1/2	4205TD 1/2		*4205TD 1/2	4205TD 1/2	*4205TD 1/2	4205TD 1/2
4215TB 1			4215TB 1/2					4215TB 1/2				
	4215TB 1	4215TB 1		4215TB 1/2	4215TB 1/2	4215TB 1/2	4215TB 1/2		*4215TB 1/2	4215TB 1/2	*4215TB 1/2	4215TB 1/2
4225TB 1			4225TB 1					4225TB 1/2				
	4225TB 1	4225TB 1		4225TB 1	4225TB 1	4225TB 1/2	4225TB 1/2		*4225TB 1/2	4225TB 1/2	*4225TB 1/2	4225TB 1/2
4235TA 1			4235TA 1					4235TA 1/2				
	4235TA 1	4235TA 1		4235TA 1	4235TA 1	4235TA 1	4235TA 1/2		*4235TA 1/2	4235TA 1/2	*4235TA 1/2	4235TA 1/2
4245TB 2			4245TA 1					4245TA 1/2				
	4245TB 2	4245TB 2		4245TB 2	4245TA 1	4245TA 1	4245TA 1		*4245TA 1/2	4245TA 1/2	*4245TA 1/2	4245TA 1/2
4255TB 2			4255TB 2					4255TA 1				
	4255TB 2	4255TB 2		4255TB 2	4255TA 2	4255TA 1	4255TA 1		*4255TD 1	4255TA 1/2	*4255TD 1	4255TA 1/2
4265TA 2			4265TA 2					4265TA 1				
	4265TA 2	4265TA 2		4265TA 2	4265TA 2	4265TA 2	4265TA 2		*4265TA 1	4265TA 1	*4265TA 1	4265TA 1
	4275TA 3	4275TA 3	4275TA 3	4275TA 3	4275TA 2	4275TA 2	4275TA 2	4275TA 2	4275TA 2	4275TA 1	4275TA 1	4275TA 1

2. SELECTION EXAMPLE

Given Ratio 12427:1, Input Speed 1750 rpm, Preset Torque 28,600 IN-LBS.

Procedure

*Locate the model which satisfies the preset torque 28,600 IN-LBS and the ratio 12427:1 in the table.

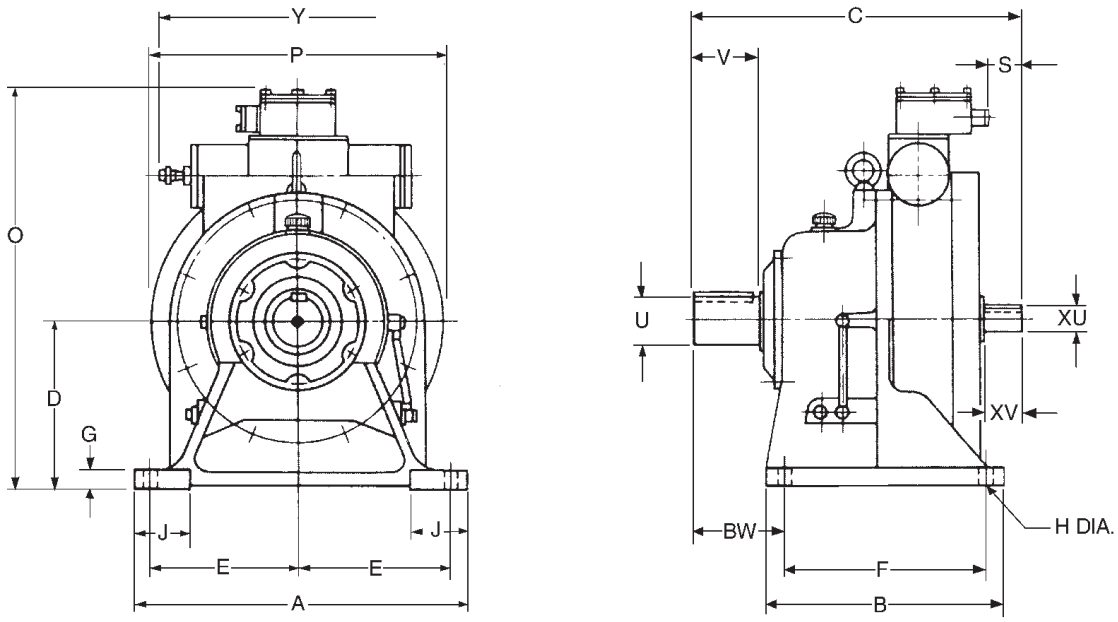
At the cross of ratio 12427:1 and Rated Output Torque 31200 IN-LBS, following data is found.

Frame Size 4185TA

Motor HP 1/2 HP

TORQUE LIMITER DIMENSIONS

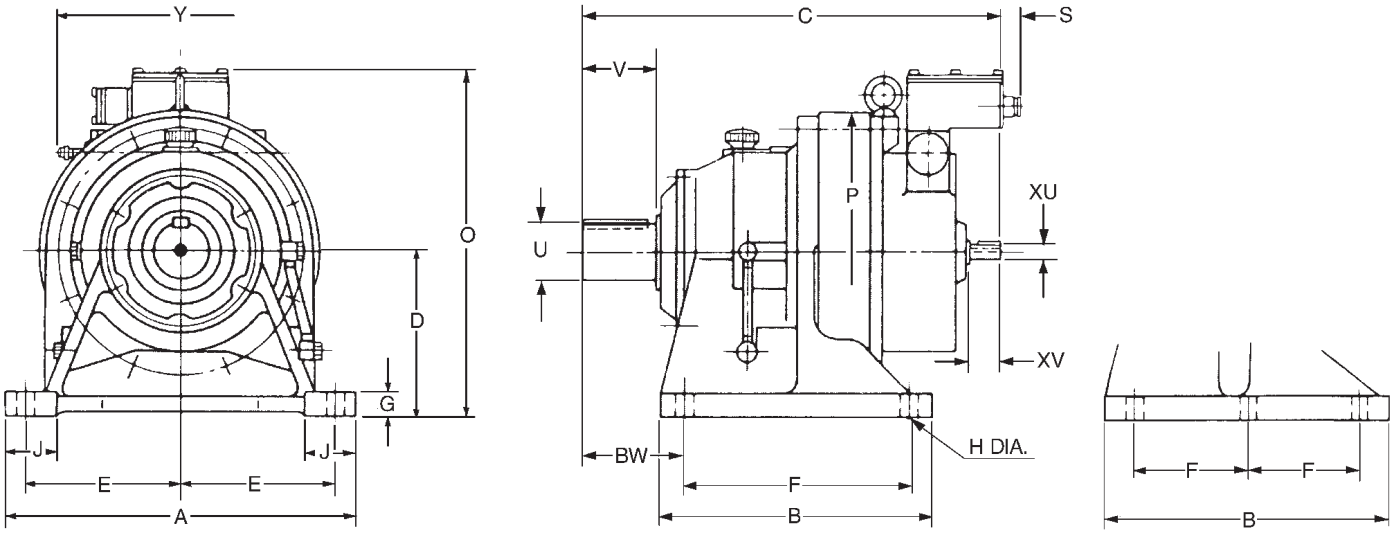
HORIZONTAL SPEED REDUCERS / TYPE H, SINGLE REDUCTION



MODEL	A	B	C	D	E	F	G	H	J	O	P	S	Y	BW	LOW SPEED SHAFT			HIGH SPEED SHAFT			APPROX. WT. LBS.
															U	V	KEY	XU	XV	KEY	
H4100-TL H4105-TL	7.87	5.31	8.19	4.409	3.35	3.54	0.47	0.43	1.77	12.28	7.17	-2.09	11.73	2.36	1.125	1.38	¼ x ¼ x 1.18	0.625	0.98	3/16 x 3/16 x 0.75	55
H4110-TL H4115-TL	11.0	7.09	10.2	5.512	4.72	5.51	0.59	0.55	2.17	14.21	9.45	-1.18	11.73	3.23	1.500	2.17	⅜ x ⅜ x 1.77	0.750	1.38	3/16 x 3/16 x 1.02	88
H4130-TL H4135-TL	14.2	8.66	12.6	6.299	6.30	6.69	0.87	0.71	2.56	16.18	10.43	-0.51	13.07	3.94	1.875	2.76	½ x ½ x 2.17	0.875	1.57	3/16 x 3/16 x 1.38	152
H4160-TL H4165-TL	17.3	11.4	16.3	7.874	7.87	8.27	0.98	0.71	2.95	19.45	14.57	0.71	15.43	5.47	2.250	3.54	½ x ½ x 2.95	1.125	1.77	¼ x ¼ x 1.77	260
H4170-TL H4175-TL	19.3	13.2	18.8	9.843	8.66	10.83	1.18	0.87	2.52	23.54	16.30	1.77	18.35	4.92	2.750	3.54	⅝ x ⅝ x 3.15	1.375	2.17	5/16 x 5/16 x 2.17	409
H4180-TL H4185-TL	20.9	15.0	20.7	10.433	9.45	12.60	1.18	0.87	3.54	24.92	18.74	2.01	18.35	5.71	3.125	4.33	¾ x ¾ x 3.74	1.500	2.56	⅜ x ⅜ x 2.56	499
H4190-TL H4195-TL	26.8	17.3	24.4	13.189	12.20	14.96	1.38	1.02	4.33	31.69	22.52	3.07	24.65	6.69	3.625	5.31	⅞ x ⅞ x 4.92	1.750	2.76	⅜ x ⅜ x 2.76	957

NOTES: 1. NEMA C Face Adaptor available
2. Gear Motor Type available
3. Vertical Type available
4. All dimensions in inches
5. Shaft Tolerance +.000
   -.001
6. Mounting dimensions are different from the ones of Standard Cyclo.

HORIZONTAL SPEED REDUCERS / TYPE H, DOUBLE REDUCTION



*For frame size 3275/19

MODEL	A	B	C	D	E	F	G	H	J	O	P	S	Y	BW	LOW SPEED SHAFT			HIGH SPEED SHAFT			APPROX. WT. LBS.
															U	V	KEY	XU	XV	KEY	
H4135DC-TL	12.99	7.68	14.53	5.906	5.71	5.71	0.87	0.71	2.56	13.78	9.06	2.09	11.73	3.94	1.875	2.76	½ x ½ x 2.17	0.625	0.98	3/16 x 3/16 x 0.75	130
H4145DC-TL	12.99	7.68	15.31	5.906	5.71	5.71	0.87	0.71	2.56	13.78	9.06	2.09	11.73	4.72	1.875	3.54	½ x ½ x 2.95	0.625	0.98	3/16 x 3/16 x 0.75	130
H4160DB-TL H4165DB-TL	16.14	9.37	17.28	6.299	7.28	5.91	0.98	0.71	2.95	14.17	11.81	2.09	11.73	5.47	2.250	3.54	½ x ½ x 2.95	0.625	0.98	3/16 x 3/16 x 0.75	220
H4165DC-TL	16.14	9.37	18.19	6.299	7.28	5.91	0.98	0.71	2.95	15.00	11.81	1.18	11.73	5.47	2.250	3.54	½ x ½ x 2.95	0.750	1.38	3/16 x 3/16 x 1.02	242
H4175DB-TL	16.93	13.19	19.06	7.874	7.48	10.83	1.18	0.87	2.52	15.75	13.39	2.09	11.73	4.92	2.750	3.54	5/8 x 5/8 x 3.15	0.750	0.98	3/16 x 3/16 x 0.75	288
H4175DC-TL	16.93	13.19	20.04	7.874	7.48	10.83	1.18	0.87	2.52	16.57	13.39	1.18	11.73	4.92	2.750	3.54	5/8 x 5/8 x 3.15	0.625	1.38	3/16 x 3/16 x 1.02	306
H4185DA-TL	18.50	14.96	20.71	8.661	8.27	12.60	1.18	0.87	2.87	16.53	14.57	2.09	11.73	5.71	3.125	4.33	¾ x ¾ x 3.74	0.625	0.98	3/16 x 3/16 x 0.75	374
H4185DB-TL	18.50	14.96	22.72	8.661	8.27	12.60	1.18	0.87	2.87	18.54	14.57	0.51	12.68	5.71	3.125	4.33	¾ x ¾ x 3.74	0.875	1.57	3/16 x 3/16 x 1.38	438
H4190DA-TL H4195DA-TL	20.87	17.32	24.76	9.843	9.45	14.96	1.38	1.02	3.54	18.54	16.93	1.18	13.07	6.69	3.625	5.31	⅞ x ⅞ x 4.92	0.750	1.38	3/16 x 3/16 x 1.02	565
H4190DB-TL H4195DB-TL	20.87	17.32	25.71	9.843	9.45	14.96	1.38	1.02	3.54	19.72	16.93	0.51	13.07	6.69	3.625	5.31	⅞ x ⅞ x 4.92	0.875	1.57	3/16 x 3/16 x 1.02	603
H4205DB-TL	20.87	17.32	27.76	9.843	8.66	14.17	1.38	1.02	3.94	19.72	17.64	0.51	13.07	8.46	3.875	6.50	1 x 1 x 6.50	0.875	1.57	3/16 x 3/16 x 1.38	653
H4215DA-TL	22.83	18.70	28.78	10.433	9.45	15.55	1.57	1.02	4.33	20.31	19.06	0.51	13.07	8.27	4.250	6.50	1 x 1 x 6.50	0.875	1.57	3/16 x 3/16 x 1.38	832
H4215DB-TL	22.83	18.70	30.71	10.433	9.45	15.55	1.57	1.02	4.33	22.00	19.06	-0.71	15.43	8.27	4.250	6.50	1 x 1 x 6.50	1.125	1.77	¼ x ¼ x 1.77	906
H4225DA-TL	24.41	20.47	30.43	11.024	10.63	16.54	1.57	1.30	4.53	20.91	20.71	0.51	13.07	9.06	4.625	6.50	1¼ x ⅞ x 6.50	0.875	1.57	3/16 x 3/16 x 1.38	997
H4225DB-TL	24.41	20.47	33.86	11.024	10.63	16.54	1.57	1.30	4.53	24.72	20.71	-1.77	18.35	9.06	4.625	6.50	1¼ x ⅞ x 6.50	1.375	2.17	5/16 x 5/16 x 2.17	1190
H4235DA-TL	26.38	22.05	34.76	11.811	11.42	18.11	1.77	1.30	4.72	23.39	22.13	-0.71	15.43	10.24	5.000	7.87	1¼ x ⅞ x 7.87	1.125	1.77	¼ x ¼ x 1.77	1285
H4235DB-TL	26.38	22.05	36.93	11.811	11.42	18.11	1.77	1.30	4.72	26.30	22.13	-2.28	18.35	10.24	5.000	7.87	1¼ x ⅞ x 7.87	1.500	2.56	⅜ x ⅜ x 2.56	1434
H4245DA-TL	28.35	22.83	36.26	13.189	12.40	18.90	1.77	1.54	5.04	24.76	24.17	-0.71	15.43	10.35	5.500	7.87	1¼ x ⅞ x 7.87	1.125	1.77	¼ x ¼ x 1.77	1522
H4245DB-TL	28.35	22.83	38.39	13.189	12.40	18.90	1.77	1.54	5.04	27.68	24.17	-2.28	18.35	10.35	5.500	7.87	1¼ x ⅞ x 7.87	1.500	2.56	⅜ x ⅜ x 2.56	1663
H4255DA-TL	30.71	24.80	42.56	14.764	13.19	20.47	1.97	1.54	5.51	28.46	26.38	-1.77	18.35	12.60	6.250	9.45	1½ x 1 x 9.45	1.375	2.17	5/16 x 5/16 x 2.17	2365
H4255DB-TL	30.71	24.80	44.61	14.764	13.19	20.47	1.97	1.54	5.51	33.27	26.38	-3.07	24.65	12.60	6.250	9.45	1½ x 1 x 9.45	1.750	2.76	⅜ x ⅜ x 2.76	2794
H4265DA-TL	34.65	27.56	48.94	15.748	15.16	23.23	2.17	1.77	6.30	34.25	28.98	-3.07	24.65	15.35	6.625	11.81	1¾ x 1¼ x 11.8	1.750	2.76	⅜ x ⅜ x 2.76	3355
H4275DA-TL	45.67	40.94	59.21	21.260	20.67	*16.54	2.36	1.77	7.87	39.76	37.40	-3.07	24.65	19.09	7.000	13.00	1¾ x 1¼ x 13	1.750	2.76	⅜ x ⅜ x 2.76	5863

NOTES: 1. NEMA C Face Adaptor available
2. Gear Motor Type available
3. Vertical Type available
4. All dimensions in inches
5. Shaft Tolerance +.000
-.001

CLARIFIER DRIVE SELECTION TABLE

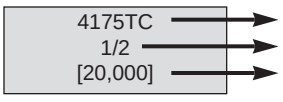
Triple Reduction Ratio 3179 to 109091:1 Input Speed 1750 rpm

Rated Output Torque (in-lbs)	Reduction Ratio	3179 [17x17x11]	4913 [17x17x17]	5423 [29x17x11]	6545 [35x17x11]	8041 [43x17x11]	8381 [29x17x17]	10115 [35x17x17]	11033 [59x17x11]	12427 [43x17x17]	14297 [29x29x11]
	Output Speed (rpm)	0.55	0.36	0.32	0.27	0.22	0.21	0.17	0.16	0.14	0.12
6,250	Frame Size Motor HP	4135TC 1/4	4135TC 1/4	4135TC 1/4	4135TC 1/4	4135TC 1/4	4135TC 1/4	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8
7,810	Frame Size Motor HP			4145TC 1/4	4145TC 1/4	4145TC 1/4	4145TC 1/4	4145TC 1/4	4145TC 1/4	4145TC 1/4	4145TC 1/4
12,500	Frame Size Motor HP	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4
21,700	Frame Size Motor HP Maximum Preset Torque	4175TC 1/2 [20,000]	4175TC 1/2 [20,000]	4175TB 1/2	4175TB 1/2	4175TB 1/2	4175TB 1/2	4175TB 1/2	4175TB 1/2	4175TB 1/2	4175TC 1/2
31,200	Frame Size Motor HP	4185TC 1/2	4185TC 1/2	4185TC 1/2	4185TA 1/2	4185TA 1/2	4185TC 1/2	4185TA 1/2	4185TA 1/2	4185TA 1/2	4185TC 1/2
48,600	Frame Size Motor HP	4190TD 1	4190TD 1	4190TD 1	4190TD 1	4190TD 1	4190TD 1	4190TD 1	4190TD 1	4190TD 1	4190TD 1
62,500	Frame Size Motor HP			4195TD 1	4195TD 1	4195TD 1	4195TD 1	4195TD 1	4195TD 1	4195TD 1	4195TD 1
72,900	Frame Size Motor HP					4205TD 1			4205TD 1	4205TD 1	
82,500	Frame Size Motor HP			4215TC 2			4215TB 1				4215TB 1
95,500	Frame Size Motor HP					4215TC 2			4215TC 2	4215TC 2	
108,000	Frame Size Motor HP			4225TE 2			4225TE 2				4225TD 1
121,000	Frame Size Motor HP					4225TC 2			4225TC 2	4225TC 2	
139,000	Frame Size Motor HP			4235TB 2			4235TB 2				4235TA 1
156,000	Frame Size Motor HP					4235TB 2			4235TB 2	4235TB 2	
174,000	Frame Size Motor HP			4245TC 3			4245TB 2				4245TB 2
200,000	Frame Size Motor HP					4245TC 3			4245TB 2	4245TB 2	
226,000	Frame Size Motor HP			4255TC 3			4255TC 3				4255TB 2
260,000	Frame Size Motor HP					4255TC 5			4255TC 3	4255TB 2	
304,000	Frame Size Motor HP			4265TA 5			4265TA 5				4265TA 2
347,000	Frame Size Motor HP					4265TA 5			4265TA 3	4265TA 3	
521,000	Frame Size Motor HP			4275TB 10		4275TB 7½	4275TB 7½		4275TB 5	4275TB 5	4275TA 3

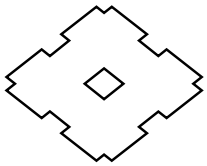
NOTE:

1. **DESIGNATION OF FIGURES INDICATED IN EACH FRAME.**

EXAMPLE



Frame size of SM-CYCLO
Standard input HP (input speed 1750 rpm)
The value in the bracket is the torque allowable on the output shaft especially for the reduction ratio and the frame size. When there is no number, the preset torque is allowed up to the rated output torque shown in the left and right frame.



16269 [87x17x11]	17051 [59x17x17]	21199 [43x29x17]	25143 [87x17x17]	27907 [59x43x11]	31433 [43x43x17]	38291 [59x59x11]	43129 [59x43x17]	51765 [87x35x17]	63597 [87x43x17] *[43x87x17]	79507 [43x43x43]	87261 [87x59x17] [59x87x17]	109091 [59x43x43]
0.11	**0.10**	**0.083**	**0.070**	**0.063**	**0.056**	**0.046**	**0.041**	**0.034**	**0.028**	**0.022**	**0.020**	**0.016**
4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8	4135TC 1/8
4145TC 1/4	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8	4145TC 1/8
4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/4	4165TB 1/8	4165TB 1/8	4165TB 1/8	4165TB 1/8	4165TB 1/8	4165TB 1/8	4165TB 1/8
4175TB 1/2	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4	4175TB 1/4
4185TA 1/2	4185TA 1/2	4185TA 1/2	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4	4185TA 1/4
4190TD 1	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/2	4190TA 1/4	4190TA 1/4	4190TA 1/4
4195TD 1	4195TA 1/2	4195TC 1/2	4195TA 1/2	4195TA 1/2	4195TD 1/2	4195TA 1/2	4195TA 1/2	4195TA 1/2	4195TA 1/2	4195TD 1/4	4195TA 1/4	4195TA 1/4
	4205TD 1	4205TD 1/2		4205TD 1/2	4205TD 1/2	4205TD 1/2	4205TD 1/2		*4205TD 1/2	4205TD 1/2	*4205TD 1/2	4205TD 1/2
4215TB 1			4215TB 1/2					4215TB 1/2				
	4215TB 1	4215TB 1		4215TB 1/2	4215TB 1/2	4215TB 1/2	4215TB 1/2		*4215TB 1/2	4215TB 1/2	*4215TB 1/2	4215TB 1/2
4225TB 1			4225TB 1					4225TB 1/2				
	4225TB 1	4225TB 1		4225TB 1	4225TB 1	4225TB 1/2	4225TB 1/2		*4225TB 1/2	4225TB 1/2	*4225TB 1/2	4225TB 1/2
4235TA 1			4235TA 1					4235TA 1/2				
	4235TA 1	4235TA 1		4235TA 1	4235TA 1	4235TA 1	4235TA 1/2		*4235TA 1/2	4235TA 1/2	*4235TA 1/2	*4235TA 1/2
4245TB 2			4245TA 1					4245TA 1/2				
	4245TB 2	4245TB 2		4245TB 2	4245TA 1	4245TA 1	4245TA 1		*4245TA 1/2	4245TA 1/2	*4245TA 1/2	4245TA 1/2
4255TB 2			4255TB 2					4255TA 1				
	4255TB 2	4255TB 2		4255TB 2	4255TA 2	4255TA 1	4255TA 1		*4255TD 1	4255TA 1/2	*4255TD 1	4255TA 1/2
4265TA 2			4265TA 2					4265TA 1				
	4265TA 2	4265TA 2		4265TA 2	4265TA 2	4265TA 2	4265TA 2		*4265TA 1	4265TA 1	*4265TA 1	4265TA 1
	4275TA 3	4275TA 3	4275TA 3	4275TA 3	4275TA 2	4275TA 2	4275TA 2	4275TA 2	4275TA 2	4275TA 1	4275TA 1	4275TA 1

2. SELECTION EXAMPLE

Given Ratio 12427:1, Input Speed 1750 rpm, Preset Torque 28,600 IN-LBS.

Procedure

*Locate the model which satisfies the preset torque 28,600 IN-LBS and the ratio 12427:1 in the table.

At the cross of ratio 12427:1 and Rated Output Torque 31200 IN-LBS, following data is found.

Frame Size 4185TA

Motor HP 1/2 HP

CLARIFIER DRIVE DIMENSIONS

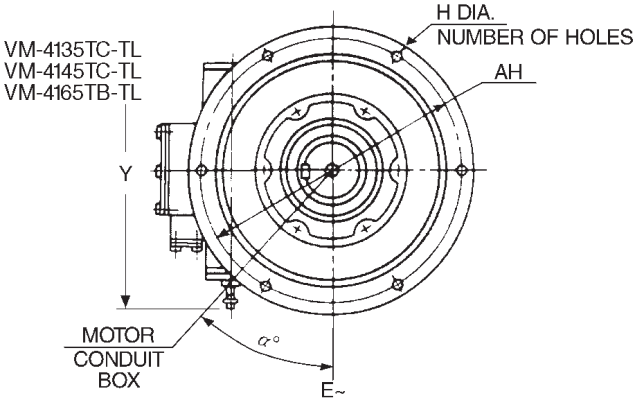
Vertical Gearmotor/Type VM, Triple Reduction

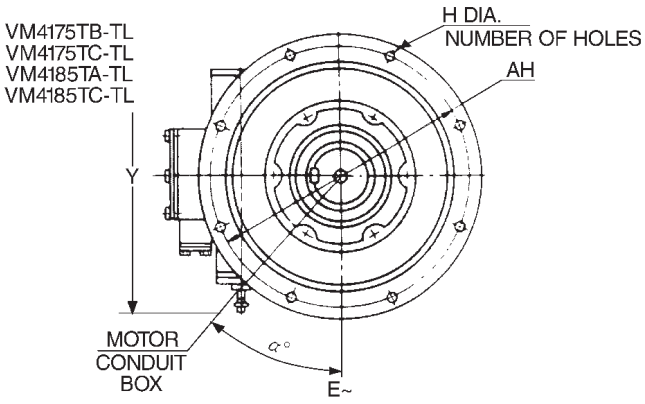
MODEL	A	B	G	H	NO. OF HOLES	M	P	X	AH	Y	LOW SPEED SHAFT			MOTOR (1750 RPM)						APPROX. WT. (LBS.)
											U	V	KEY	HORSE POWER	C	MP	AB	L	α	
VM4135TC-TL	10.24	7.8692 7.8720	0.59	0.43	6	3.00	0.16	7.87	9.06	11.73	1.875	2.40	½ x ½ x 2.17	⅛	21.06	4.69	6.46	3.07	45°	145
														¼	22.13	5.20	6.46	3.98		147
VM4145TC-TL						3.78						3.19	½ x ½ x 2.95	⅛	21.85	4.69	6.46	3.07		145
														¼	22.91	5.20	6.46	3.98		147
VM4165TB-TL	13.39	10.6245 10.6277	0.79	0.43	6	3.50	0.16	7.87	12.20	11.73	2.250	3.15	½ x ½ x 2.95	⅛	23.82	4.69	6.46	3.07	45°	227
														¼	24.88	5.20	6.46	3.98		229
VM4175TB-TL	15.75	12.4350 12.4385	0.87	0.55	8	3.70	0.20	7.87	14.17	11.73	2.750	3.31	⅝ x ⅝ x 3.15	¼	26.65	5.20	6.46	3.98	45°	308
														½	27.44	5.20	6.46	4.37		310
VM4175TC-TL								8.70		11.73				¼	27.80	5.20	6.46	3.98		334
VM4185TA-TL	16.93	13.5768 13.5803	0.87	0.71	8	4.33	0.20	7.87	15.35	11.73	3.125	3.94	¾ x ¾ x 3.74	¼	28.31	5.20	6.46	3.98	45°	376
														½	29.09	5.20	6.46	4.37		378
VM4185TC-TL								9.88		13.07				½	30.55	5.20	6.46	4.37		449
VM4190TA-TL	19.29	15.7421 15.7456	1.18	0.71	12	5.71	0.24	8.70	17.72	11.73	3.625	4.92	⅞ x ⅞ x 4.92	¼	31.73	5.20	6.46	3.98	45°	561
														½	32.52	5.20	6.46	4.37		563
VM4190TD-TL								9.88		13.07				1	34.76	5.94	6.57	5.36	0°	614
VM4195TA-TL								8.70		11.73				¼	31.73	5.20	6.46	3.98	45°	561
														½	32.52	5.20	6.46	4.37		563
														¼	32.76	5.20	6.46	3.98		598
VM4195TD-TL								9.88		13.07				½	33.54	5.20	6.46	4.37		603
														1	34.76	5.94	6.57	5.36	0°	614
VM4205TD-TL	17.91	13.9704 13.9739	1.18	0.87	8	8.03	0.20	9.88	15.94	13.07	3.875	6.50	1 x 1 x 6.50	½	35.55	5.20	6.46	4.37	45°	649
														1	36.77	5.94	6.57	5.36	0°	660
VM4215TB-TL	19.29	15.3884 15.3519	1.38	0.94	8	8.00	0.28	9.88	17.32	13.07	4.250	6.50	1 x 1 x 6.50	½	36.61	5.20	6.46	4.37	45°	781
														1	37.83	5.94	6.57	5.36	0°	792
														2	39.09	6.85	7.05	5.71		807
VM4225TB-TL	21.06	16.3321 16.3359	1.38	1.06	8	8.27	0.39	9.88	18.70	13.07	4.625	6.50	1¼ x ⅞ x 6.50	½	38.27	5.20	6.46	4.37	45°	977
														1	39.49	5.94	6.57	5.36	0°	988
VM4225TC-TL														2	40.75	6.85	7.05	5.71		1003
VM4225TD-TL								13.66		18.35				1	41.26	5.94	6.57	5.36		1177
VM4225TD-TL														2	42.52	6.85	7.05	5.71		1192
VM4235TA-TL	22.44	17.7100 17.7139	1.57	1.06	8	9.84	0.39	11.57	20.08	15.43	5.000	7.87	1¼ x ⅞ x 6.50	½	41.73	5.20	6.46	4.37	45°	1223
														1	42.95	5.94	6.57	5.36	0°	1234
VM4235TB-TL														2	44.21	6.85	7.05	5.71		1250
VM4245TA-TL	25.00	19.0880 19.0918	1.57	1.30	8	9.84	0.39	11.57	22.05	15.43	5.500	7.87	1¼ x ⅞ x 7.87	½	43.19	5.20	6.46	4.37	45°	1430
														1	44.41	5.94	6.57	5.36	0°	1441
VM4245TB-TL														2	45.71	6.85	7.05	5.71		1456
VM4245TC-TL														3	47.44	6.85	7.05	6.50		1485
VM4255TA-TL	26.97	21.0557 21.0600	1.77	1.30	8	11.61	0.39	13.66	24.02	18.35	6.250	9.45	1½ x 1 x 9.45	½	48.70	5.20	6.46	4.37	45°	2196
														1	49.92	5.94	6.57	5.36		2211
VM4255TB-TL														2	51.22	6.85	7.05	5.71		2222
VM4255TC-TL														3	53.07	6.85	7.05	6.50		2255
														5	53.86	8.39	7.76	6.99		2277
VM4255TD-TL								18.50		24.65				1	51.93	5.94	6.57	5.36	0°	2640
VM4265TA-TL	29.43	22.4337 22.4380	1.97	1.54	8	14.17	0.39	18.50	25.98	24.65	6.625	11.81	1¾ x 1¼ x 11.80	1	56.26	5.94	6.57	5.36		3234
														2	57.01	6.85	7.05	5.71		3245
														3	58.58	6.85	7.05	6.50		3256
														5	59.33	8.39	7.76	6.99		3278

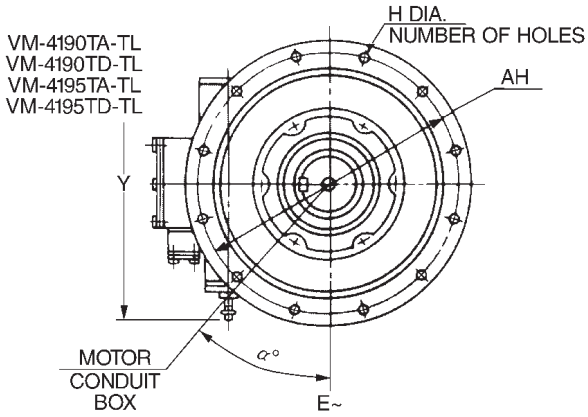
NOTES:

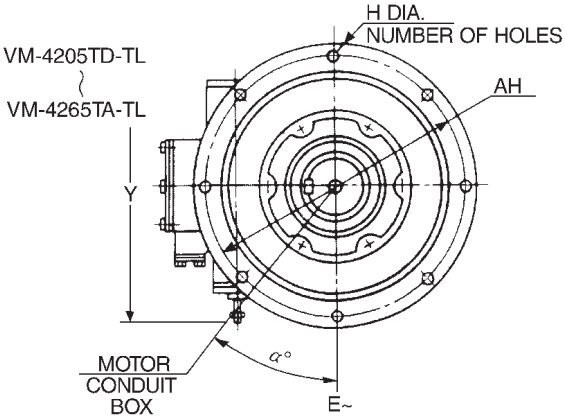
1. Conduit box dimension (AB) is for weatherproof motors. Conduit box dimension (AB) of the standard motor is slightly less.
2. NEMA C Face Adaptor available
3. Horizontal Type available
4. All dimensions in inches
5. Shaft tolerance $^{+\ 0.000}_{-\ 0.001}$

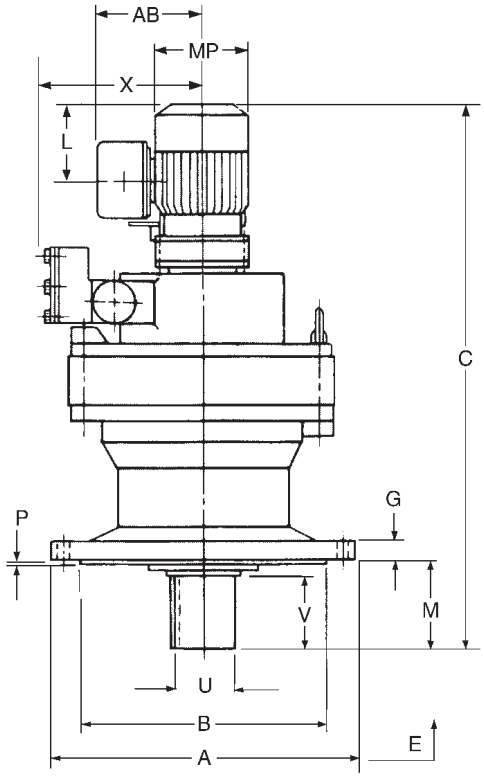
VERTICAL GEAR MOTOR/TYPE VM, TRIPLE REDUCTION











SPECIFICATION

1. MOTOR - Totally enclosed fan cooled, 3 phase induction motor, NEMA CLASS B design.

   AVAILABLE VOLTAGE
   Standard voltage 230/460V, 60 Hz
   Optional voltage 575V, 60 Hz
   220/380V, 50 Hz
2. Lubrication: Grease

CLARIFIER DRIVE LUBRICATION

For Triple Reduction Cyclo Reducer (Grease Lubricated Unit)

Lubrication for triple reduction Cyclo Reducer:

1. Lubrication method.....grease lubricated
2. Standard grease.....Shell Alvania #2
   (-5°F - 122°F)

Maintenance

1. Grease replenishment and change interval

Replenishment	Less than 10 hrs. per day	Every 3 - 6 months
	10 - 24 hrs. per day	Every 500 - 1000 hours
Change	Speed reduction mechanism	Every 2 - 3 years
	Slow speed shaft bearings	Every 3 - 5 years

2. Grease replenishment and change procedure
   a. Replenishment
      - Remove the grease purge at the vertical case, and then replenish the grease through the grease fitting at the high speed end shield or flange of motor by using the grease gun.
      - Replenish the grease while running in order for grease to be distributed well.
      - Replenish grease to the reduction mechanism 1/3 to 1/2 of quantities for the first reduction stage (see Table 1).

   b. Change
      - When the unit is disassembled for overhauling, refill grease in quantities indicated in Table 1 or, alternatively, 80% of the space around reduction mechanism and slow speed shaft bearings of single reduction units and 50% around reduction mechanism of first, second and third stage of triple reduction units.
        Apply grease liberally to the central part (i.e., around the eccentric bearings) of the mechanism. Apply grease to both the slow speed and high speed shaft bearings as you would do to ordinary bearings at time of re-assembly.

NOTE:
If excessive grease is added, agitation heating of the grease will raise the operating temperature of the unit. Avoid excessive greasing; however, as the reverse case, when the grease is insufficient it will raise the operating temperature due to the breakdown of the lubrication films on the eccentric bearing.

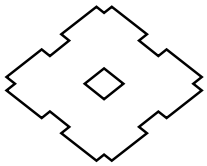


Table 1 - Quantities of Grease (Ounces)

FRAME SIZE	SPEED REDUCTION MECHANISM (FIRST STAGE)	SPEED REDUCTION MECHANISM (SECOND STAGE)	SPEED REDUCTION MECHANISM (THIRD STAGE)	SLOW SPEED SHAFT BEARING (THIRD STAGE)
4135TC	0.7	3.5	15.9	10.6
4145TC				
4165TB			26.5	
4175TB			35.3	17.6
4175TC		8.5		
4185TA		3.5	38.8	21.2
4185TC	1.4	15.9		
4190TA	0.7	8.5	52.9	24.7
4190TD	1.4	15.9		
4195TA	0.7	8.5		
4195TD	1.4	15.9		
4205TD				
4215TB			70.5	28.2
4215TC	2.3			
4225TB	1.4		88.2	31.7
4225TC	2.3			
4225TD	1.4	35.3		
4225TE	2.3			
4235TA	1.4	26.5	141.0	35.3
4235TB	2.3			
4245TA	1.4		158.7	38.8
4245TB	2.3			
4245TC	5.3			
4255TA	1.4	35.3	211.6	42.3
4255TB	2.3			
4255TC	5.3			
4255TD		5.29		
4265TA			282.2	45.9

SPECIAL BASE MOUNT SM-CYCLO DRIVE®

The 14V and 17V Series SM-CYCLO DRIVES are designed especially for applications such as agitator, mixer and reaction vessel drives in water treatment, chemical, pharmaceutical and food industries. The 17V Series is particularly suited for the drives of aerators. This series has a design that can be readily installed on tanks and/or vessels prepared by the users.

FEATURES: BENEFITS

1. EASY INSTALLATION
In the basic design of this series the SM-CYCLO DRIVE slow speed side is directly connected with the special lantern (vertical base) for the mixer shaft.

All the SM-CYCLO DRIVE advantages of high efficiency, compact size, robust and long life, and low noise level are included in this series.

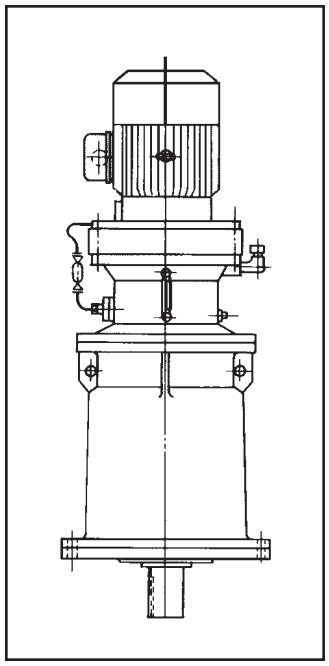
2. SIMPLE DESIGN
The electric motor, SM-CYCLO DRIVE, and the vertical base are coaxially arranged, making a total configuration that is simple and easily accessible.

3. SIMPLE SHAFT CONNECTION
The mixing operation can be started by simply connecting to the mixer shaft.

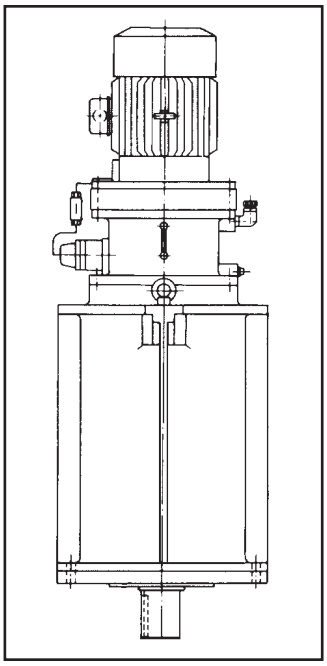
4. LOW MAINTENANCE
Radial and thrust bearings are grease lubricated for ease of maintenance.

STANDARD SERIES

SM-CYCLO DRIVES with special base mount designed for mixer/agitator work are available in the two standard series as illustrated below:



14V
This series has a shorter vertical base than the 17V making it more suitable for applications where the distance to the mixer blade is relatively short or for thinner liquid mixing.



17V
The extension shaft and SM-CYCLO DRIVE slow speed shaft are rigidly connected. The extension shaft is supported by two bearings at the vertical base (lantern).

CYCLO DRIVE® BENDING MOMENTS AND THRUST CAPACITIES

14V Specifications

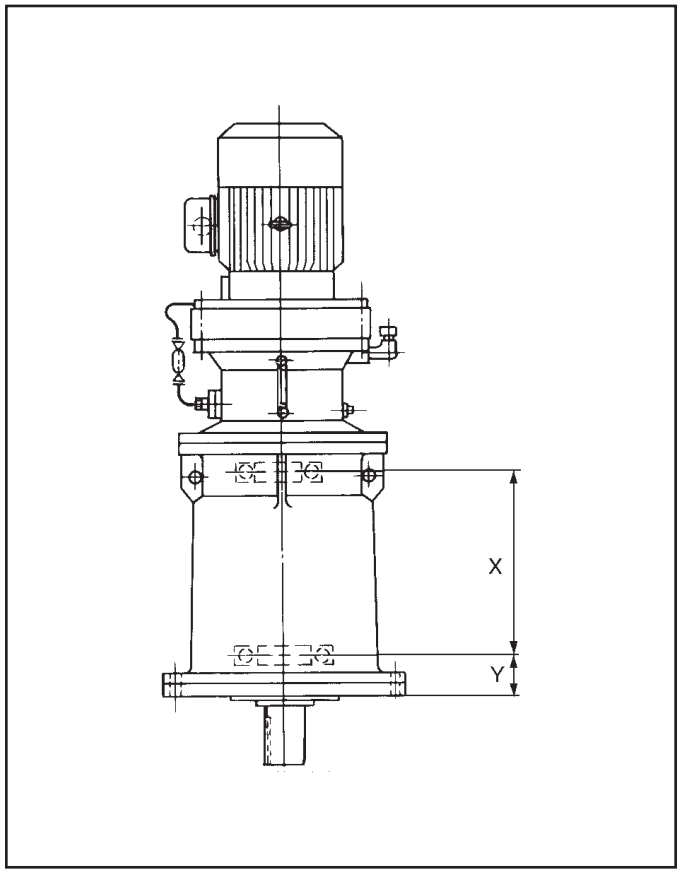
MODEL	BENDING MOMENT (LB. FT.)$_1$	THRUST LOAD CAPACITY (LBS.)$_2$	BEARING SPAN (IN INCHES)	
			X	Y
4090/5/7 4100/5/H	255	220	7.48	.85
4110/5 4125	470	375	9.45	.89
4130/5 4145 4155	800	600	11.81	1.06
4160/5	1160	840	13.78	1.18
4170/5	1670	1100	15.75	1.14
4180/5	2170	1400	17.72	1.28
4190/5	2820	1720	19.69	1.36

NOTE:

1. Bending Moment is at the mounting surface.
2. Both upward or downward thrust loads can be supported.

   Consult factory for greater thrust capacities.

   In double reduction models these loads are applicable only to the output portion of the speed reducer.



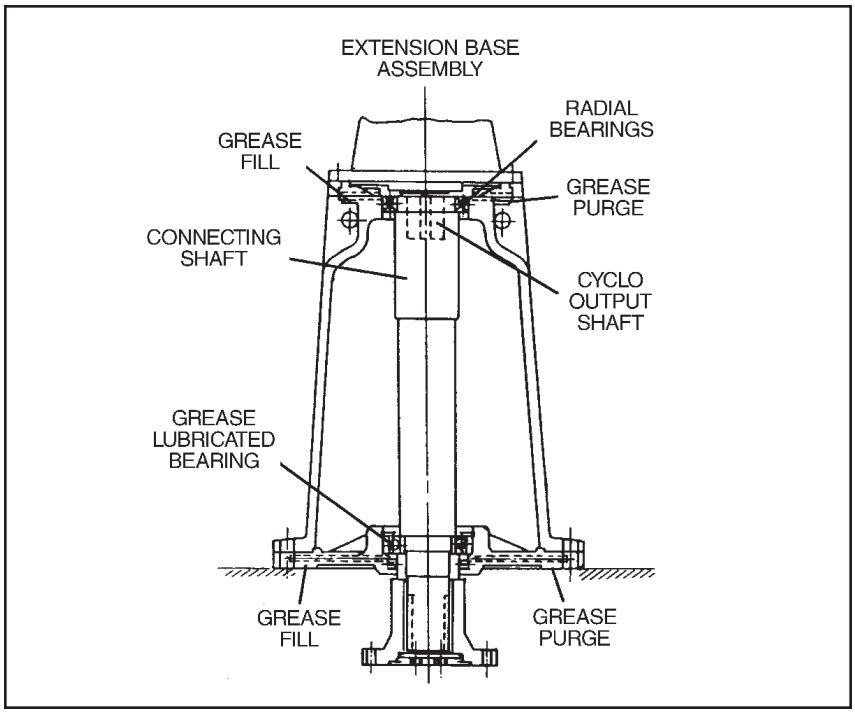
17V Specifications

MODEL	BENDING MOMENT (LB. FT.)$_1$	THRUST LOAD CAPACITY (LBS.)$_2$	BEARING SPAN (IN INCHES)	
			X	Y
4090/5/7 4100/5/H	506	220	10.63	.89
4110/5 4125	904	374	13.78	1.04
4130/5 4145 4155	1590	594	17.32	1.16
4160/5	2314	836	19.68	1.36
4170/5	3254	1100	22.83	1.50
4180/5	4338	1386	25.59	1.61
4190/5	5567	1716	27.95	1.73
4205	7953	2200	31.50	1.97
4215	10,122	2640	35.43	2.17
4225	11,568	3080	37.40	2.17
4235	13,737	3520	39.37	2.32
4245	18,075	4620	45.28	2.76
4255	23,136	5500	49.21	2.91
4265	27,474	6600	53.15	3.54

CYCLO DRIVE®
TYPICAL ARRANGEMENTS AND ASSEMBLY

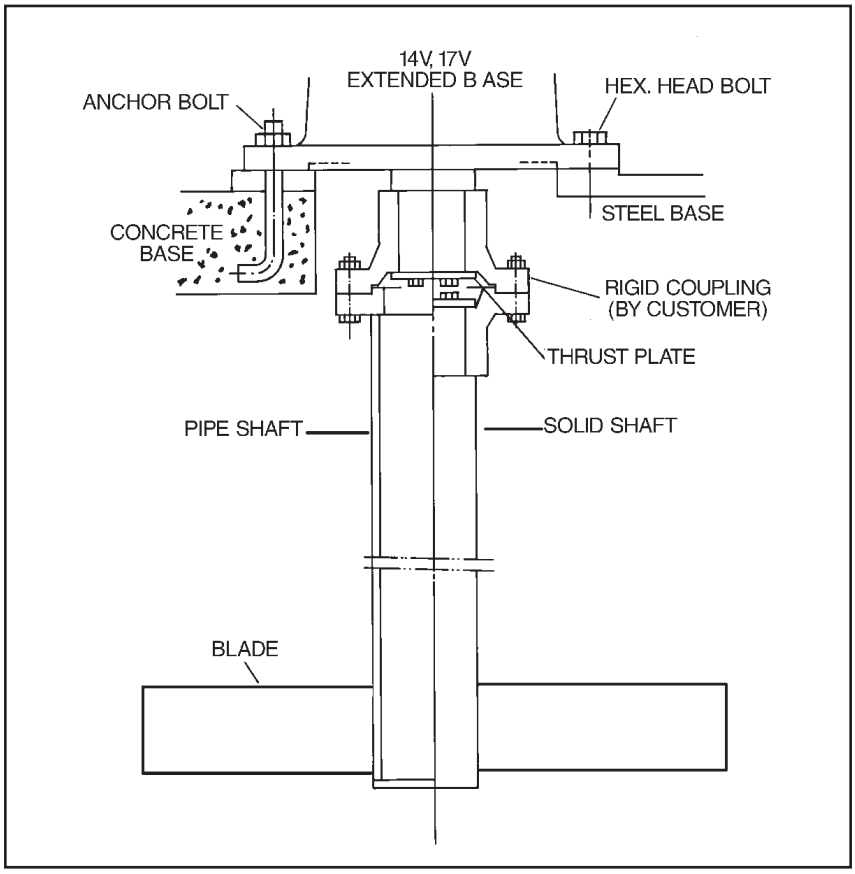
EXTENDED BASE ASSEMBLY

BEARING ARRANGEMENT

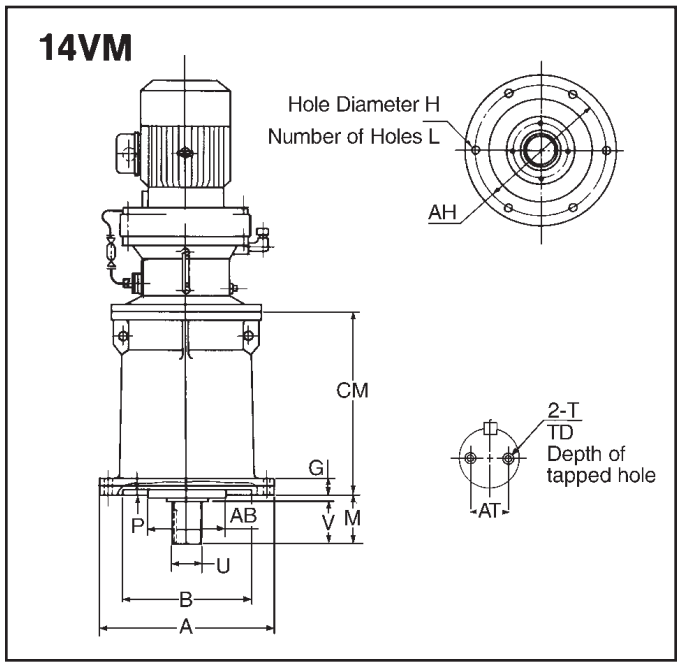


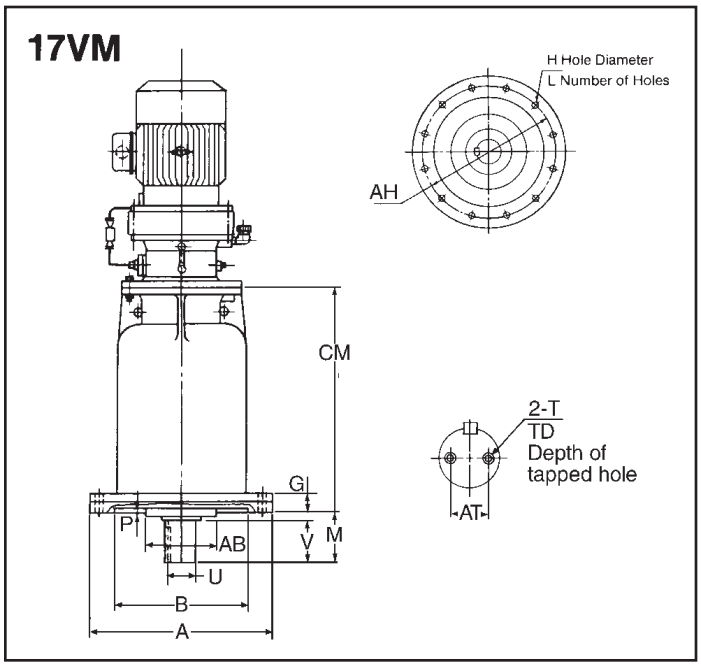
TYPICAL ASSEMBLY WITH MIXER SHAFT/BLADE

SHAFT ARRANGEMENT



BASE DIMENSIONS





14V Base Dimensions

MODEL	A	B	G	H	L	M	P	AB	AH	CM	U	V	T	AT	TD	KEY
4090/5/7	9.06	6.302 6.299	1.260	0.43	6	2.60	0.197	4.13	7.874	9.25	1.250	2.17	12-28 UNF	0.630	0.630	¼ x ¼ x 1.77
4100/5/H	9.06	6.302 6.299	1.260	0.43	6	2.60	0.197	4.13	7.874	9.25	1.250	2.17	12-28 UNF	0.630	0.630	¼ x ¼ x 1.77
4110/5/H	10.24	7.089 7.087	1.378	0.55	6	3.07	0.197	4.33	9.055	11.38	1.625	2.56	12-28 UNF	0.984	0.630	⅜ x ⅜ x 1.77
4130/5	12.60	8.271 8.268	1.457	0.71	6	3.82	0.197	5.51	11.024	14.09	2.000	3.23	5/16-18 UNC	1.240	0.787	½ x ½ x 2.17
4145/H	12.60	8.271 8.268	1.457	0.71	6	3.82	0.197	5.51	11.024	14.09	2.000	3.23	5/16-18 UNC	1.240	0.787	½ x ½ x 2.17
4160/5/H	14.57	10.630 10.63	1.575	0.71	6	4.45	0.236	6.30	12.992	16.18	2.375	3.74	3/8-16 UNC	1.575	0.984	⅝ x ⅝ x 3.15
4170/5	17.32	12.799 12.795	1.693	0.71	8	4.84	0.236	8.27	15.748	18.15	2.750	4.13	3/8-16 UNC	1.575	0.984	⅝ x ⅝ x 3.15
4180/5	19.69	14.374 14.370	1.850	0.87	6	5.51	0.236	9.06	17.717	18.90	3.125	4.72	1/2-13 UNC	1.969	1.181	¾ x ¾ x 3.74
4190/5	22.84	17.3264 17.323	1.969	0.87	8	5.91	0.236	10.24	20.472	22.76	3.625	5.12	1/2-13 UNC	1.969	1.181	⅞ x ⅞ x 4.92

17V Base Dimensions

MODEL	A	B	G	H	L	M	P	AB	AH	CM	U	V	T	AT	TD	KEY
4090/5/7	10.24	7.089 7.087	1.378	0.55	8	3.07	0.197	4.33	9.055	12.44	1.625	2.56	12-28 UNF	0.984	0.630	⅜ x ⅜ x 1.77
4100/5/H	10.24	7.089 7.087	1.378	0.55	8	3.07	0.197	4.33	9.055	12.44	1.625	2.56	12-28 UNF	0.984	0.630	⅜ x ⅜ x 1.77
4110/5/H	13.39	9.452 9.449	1.457	0.55	8	3.82	0.197	5.51	11.811	15.87	2.000	3.23	5/16-18 UNC	1.240	0.787	½ x ½ x 2.17
4130/5	16.14	11.814 11.811	1.575	0.71	8	4.45	0.236	7.09	14.567	19.69	2.375	3.74	3/8-16 UNC	1.575	0.984	⅝ x ⅝ x 3.15
4145/H	16.14	11.814 11.811	1.575	0.71	8	4.45	0.236	7.09	14.567	19.69	2.375	3.74	3/8-16 UNC	1.575	0.984	⅝ x ⅝ x 3.15
4160/5/H	19.69	14.177 14.173	1.693	0.87	8	4.84	0.236	8.27	17.323	22.24	2.750	413	3/8-16 UNC	1.575	0.984	⅝ x ⅝ x 3.15
4170/5	19.69	14.964 14.961	1.850	0.87	8	5.51	0.236	8.66	17.323	25.59	3.125	4.72	1/2-13 UNC	1.969	1.181	¾ x ¾ x 3.74
4180/5	23.62	17.327 17.323	1.969	1.02	8	5.91	0.236	9.84	20.472	28.50	3.625	5.12	1/2-13 UNC	1.969	1.181	⅞ x ⅞ x 4.92
4190/5	23.62	17.327 17.323	2.047	1.02	8	6.69	0.236	11.02	20.472	31.42	4.000	5.91	5/8-11 UNC	2.480	1.575	1 x 1 x 5.12
4205	25.59	17.720 17.717	2.283	1.02	12	6.73	0.236	12.60	22.835	35.83	4.375	5.91	5/8-11 UNC	2.480	1.575	1 x 1 x 5.12
4215	27.56	20.477 20.472	2.362	1.02	12	7.68	0.276	13.78	24.803	40.04	4.875	6.69	3/4-10 UNC	3.150	1.969	1¼ x ⅞ x 5.91
4225	28.74	22.839 22.835	2.480	1.30	12	8.47	0.276	14.57	25.984	42.32	5.000	7.48	3/4-10 UNC	3.150	1.969	1¼ x ⅞ x 6.50
4235	31.50	24.807 24.803	2.598	1.30	12	9.25	0.276	15.35	28.346	44.69	5.500	8.27	3/4-10 UNC	3.150	1.969	1¼ x ⅞ x 6.50
4245	33.47	25.989 25.984	2.480	1.54	12	9.65	0.276	15.75	29.921	51.38	6.250	9.06	1-8 UNC	3.937	2.559	1½ x 1 x 7.87
4255	35.43	27.958 27.953	2.638	1.54	12	10.43	0.276	17.72	31.890	55.71	6.625	9.84	1-8 UNC	3.937	2.559	1¾ x 1¼ x 9.06
4265	38.58	29.926 29.921	2.835	1.77	12	11.22	0.276	18.11	34.646	60.63	7.375	10.63	1¼-7 UNC	4.921	3.150	1¾ x 1¼ x 9.06

OPERATING PRINCIPLES

The SM-CYCLO® speed reducer is fundamentally different in principle and mechanism from the conventional helical or worm gear speed reducers.

This unique speed reducer is an ingenious combination of the following two mechanisms:

(1) A combination of a planet gear and a fixed internal sun gear. In the SM-CYCLO® speed reducer, the planet gear has cycloidal-shaped teeth and the sun gear has circular pin teeth. The number of teeth in the planet gear is one or two less than that of the sun gear.

(2) A constant speed internal gearing mechanism.

See **Figure 1.**

In equation 1, below, P identifies the number of the planet gear teeth, S that of the sun gear, ω_1 the angular velocity of the crankshaft around the axis of the sun gear, and ω_2 the angular velocity of the planet gear around its own axis. The velocity ratio of ω_2 to ω_1 is then shown as follows:

$$\frac{\omega_2}{\omega_1} = 1 - \frac{S}{P} = -\frac{S-P}{P} \quad \text{..... Equation 1}$$

With S greater by one or two than P in this equation, the highest velocity ratio is obtainable.

That is, if S-P=1 is applied to Equation 1, the velocity ratio may be calculated from the following equation:

$$\frac{\omega_2}{\omega_1} = -\frac{1}{P} \quad \text{.....Equation 2}$$

or if S-P=2 is applied to Equation 1, the velocity ratio may be calculated from the following equation:

$$\frac{\omega_2}{\omega_1} = -\frac{2}{P} \quad \text{.....Equation 3}$$

As the crank shaft rotates at the angular velocity ω_1 around the axis of the sun gear, the planet gear rotates at the angular velocity — $\frac{1\omega_1}{P}$ or $-\frac{2\omega_1}{P}$

where P indicates the number of the teeth of the planet gear and the symbol '—' indicates that the rotation of the planet gear is in a reverse direction to that of the crank shaft.

In the SM-CYCLO® speed reducer, illustrated in **Figure 2**, circular teeth (pins) are adapted for the sun gear and epitrochoid curve teeth for the plant gear, thereby avoiding the tooth top interference.

The rotation of the planet gear around its own axis is taken out through a constant speed internal gearing mechanism as shown in **Figure 3**.

In this mechanism shown in **Figure 4**, the pins of the slow speed shaft are evenly spaced on a circle which is concentric to the axis of the sun gear. The pins transmit the rotation of the planet gear by rolling internally on the circumference of the bores of each planet gear or cycloid disc. The diameter of the bores minus the diameter of the slow speed shaft pins is equal to twice the eccentricity value of the crank shaft (eccentric). This mechanism smoothly transmits only the rotation of the planet gear around its own axis to the slow speed shaft.

Figure 1. Principle of Internal Planetary Gearing

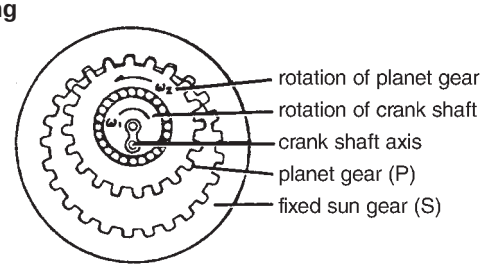


Figure 2. Epitrochoid Planet Gear – Circular (PIN) Tooth Sun Gear Combination

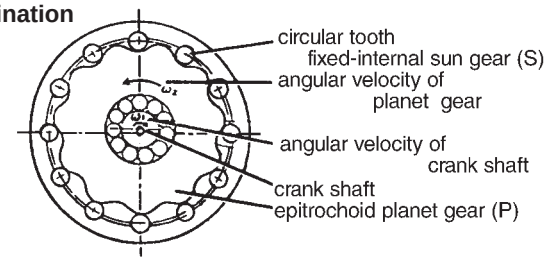


Figure 3. Constant Speed Internal Gearing

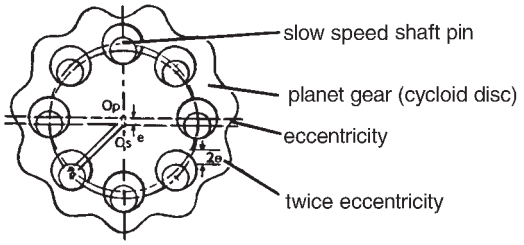
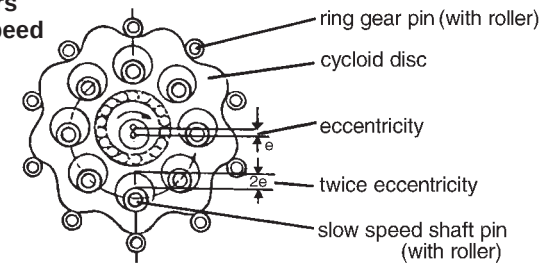


Figure 4. Combination of Plant – Sun Gears and Constant Speed Internal Gear



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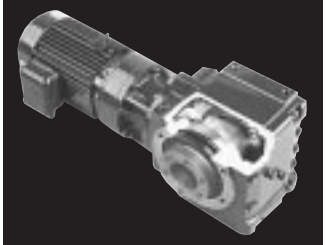

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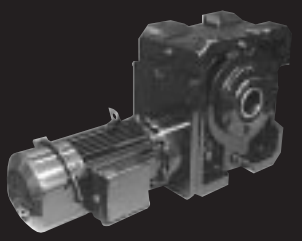

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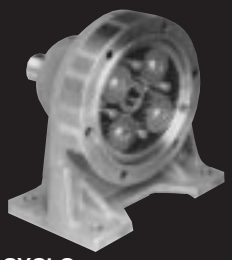

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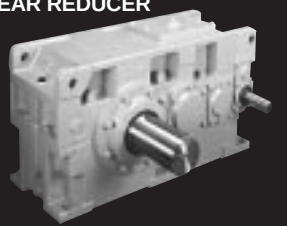

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Parallel Offset &
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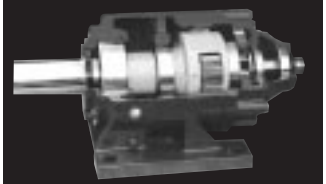

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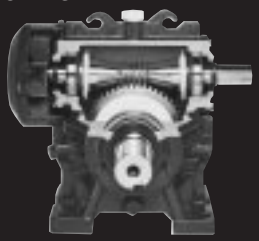

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