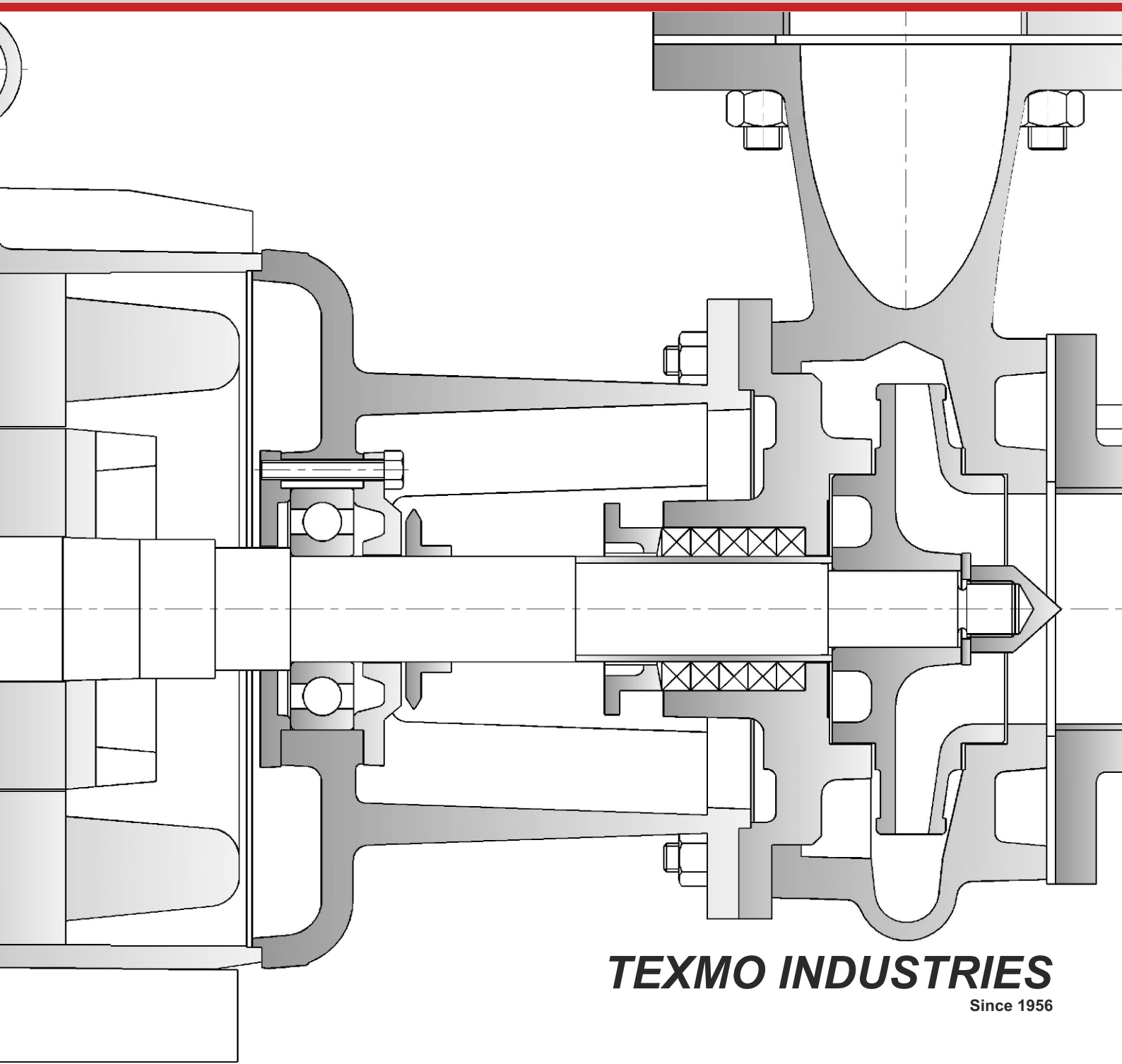
Taro

125, 175 & 200 mm BOREWELL SUBMERSIBLE PUMPSET PERFORMANCE CHART



TEXMO INDUSTRIES

Since 1956

GENERAL INFORMATION

PERFORMANCE RELATED SPECIFICATIONS

- Recommended voltage range (At motor terminal) :

Single Phase	Three Phase
180 - 240 V	350 - 440 V
150 - 200 V (L-Series)	250 - 380 V (L-Series)

- Electric power supply : 415 / 220 V, 50 Hz, AC power supply

- Connection :

Group	DOL	SD
BWS	Up to 7.5 HP	7.5 HP & above

- Suitable overload relay for three phase and MCB for single phase products are to be provided as an electrical safety measure for the machine.
- Advisable to operate in the pump set in the recommended range for trouble free operation and to ensure a long life.
- Time interval between subsequent starts : 5 minutes (minimum)
- Pump sets are suitable for pumping clear, cold, non-aggressive water without any abrasive solid particles with the following characteristics

Temperature	:	33^{o}C Maximum
Allowable sand content	:	50 mg / lit Maximum
Total Dissolved Solids	:	3000 mg / lit Maximum
Hardness	:	300 Maximum
pH value	:	6.5 - 8.5
Direction of rotation	:	Anti clockwise when viewed from the delivery side of the pump

Others

- Performance values given are subject to change in accordance with prevailing voltage and frequency conditions.
- Head values given in the performance charts are exclusive of pipe friction and fitting losses. These losses need to be taken into account while calculating the actual total head before selecting a suitable pump set.
- In view of continuous improvements on existing products, information and performance values given in the catalogue are subject to change without notice.

Note : Shaded figures in the chart indicate the recommended operating range.

PUMP SELECTION

Irrigation wells and pumps are costly installations, which require efficient utilization. A major part of the energy used in agriculture is in pumping water. Hence efficient utilization of the limited energy resources calls for the selection of the most suitable pump, keeping in view the requirements of irrigation, characteristics of the well / water source, kind of power available, economic conditions of the farmer and other factors. It is a process of matching of well and pump characteristics for optimum water output.

CRITERIA FOR SELECTION

The main factors influencing the selection of pumping sets are :

i. Peak water requirement
ii. Yield of well or water source
iii. Availability of energy

WATER REQUIREMENT, V IN L/D

It is the maximum quantity of water required in litres / day to meet out the daily crop water requirement and pumping rate in l/s is calculated by V / (T x 3600) where, T – Average pumping hours.

Relevant Details

1. Daily crop water requirement in litres or cm for different stages
2. Cropped area in m^2 (m^2 x cm x 10 will give water requirement in litres)

YIELD OF WELL OR WATER SOURCE, Y IN L/S

It is the recuperation rate at which water recharges into the well and it is the maximum rate at which water can be pumped out under steady draw down conditions. This can be assessed directly from pump testing results or converted from inch to lit./s referring to discharge table.

Relevant Details

1. Type of water source (Open well / Borewell / River / Sump)
2. Size of Borewell
3. Static water level below ground level (Water level when pump is switched off)
4. Dynamic water level below ground level (Expected level when pump is switched on)
5. Expected maximum low water level during summer
6. Proposed pump set erection depth
7. Existing / proposed pipe details (Sizes and lengths)
8. Vertical elevation from water source to discharge point
9. Number of fittings like (Tee, Bends, Valves etc.,)

ENERGY AVAILABLE, HP

It is the quantitative and qualitative data on the power available for pumping out the water from the water source. This includes phase, sanctioned HP, frequency, voltage fluctuation and three and two phase power supply and time of which power in available.

Relevant Details

1. Main line to starter distance
2. Starter to pump set distance

Selection Procedure

Step 1 - Discharge calculation, Q

V – Maximum crop water requirement in litres, D in case of irrigation depth in cm for peak demand of water for the selected cropping pattern

A – Cropped area in m2

T – Allowed water filling time or pumping time in sec (considering power availability hrs)

Required pumping rate, Q = V / T or (D x A x 10) / T

[In case of trying out maximum possible discharge, Q is to be assumed]

Step 2 – Comparison of discharge, Q with yield, Y

As indicated earlier, discharge rate has to be limited to 80% of the safe yield for trouble free performance and better pump life avoiding any dry running

Step 3 – Selection of pump size or series

Based on the calculated discharge rate, Q the suitable pump size is to be selected. In case of borewell submersibles, suitable pump series is to be selected considering borewell size also.

Step 4 – Total head calculation, H

Suction head, Hs

Ds – Size of suction pipe in mm

Ls – Length of suction pipe in m including equivalent length of pipe for the fittings

Vs – Vertical distance of pump set from working water level in m

Refer to pipe friction loss chart or table and read friction value, Fs% in m / 100 m length of suction pipe against discharge, Q and existing or selected pipe size, Ds.

Pipe friction in suction pipe, Fs = (Ls x Fs%) / 100

Suction head, Hs = Vs + Fs

Note: For Submersible pump sets the suction head value is zero

Delivery head, Hd

Dd – Size of delivery pipe in mm

Ld – Length of delivery pipe in m including equivalent length of pipe for the fittings

Vd – Vertical distance of discharge point from pump set level in m including ground elevation

Refer to pipe friction loss chart or table and read friction value, Fd% in m per 100 m length of delivery pipe, against discharge, Q and existing or selected pipe size, Dd.

Pipe friction in delivery pipe, Fd = (Ld x Fd%) / 100

Delivery head, Hd = Vd + Fd

Step 5 – Total head

Total head, H = Hs + Hd + Hf + He

Hf – Fitting loss in the entire pipeline system (Refer to fitting loss table)

He – Exit pressure head at discharge point as required

Step 6 – Energy requirement

Approx. energy requirement, HP = (Q x H) / (75 x Ep)

Ep – Pump efficiency value in fraction, which varies with product HP and pipe size

Select an appropriate pump model or stage for the given total head, H and discharge, Q referring to the product performance chart. Best efficiency point (declared duty point) is always preferred. If the HP of the selected pump model is less than the sanctioned HP, then we may proceed with the same. If not, assumed or calculated Q has to be reduced and above steps are to be repeated.

In case of borewell submersible pump sets, correct product series is to be decided based on the required pumping rate Q before selecting a suitable pump model and number of stages.

SELECTION OF PUMPS FOR PARALLEL CONNECTIONS

Requirement of parallel connections arises when the required discharge rate is not met with the available pump models. In this case two or more pumps with almost matching pressure head should be selected. Following factors are to be considered for parallel operations.

a. Pumps of similar head characteristics are to be selected

b. No pump should operate at its shut off head or above maximum permissible head

c. No pump should operate below recommended head range as this leads to cavitation

SELECTION OF PUMPS FOR SERIES CONNECTIONS

Requirement of series connections arises when the required total head is not met with the available pump models. In this case two or more pumps with almost matching discharge rate should be selected. Series installations of pumps are to be spaced in such a way that neither the pump gets overloaded or ends up with discharge cavitation.

OTHER FACTORS AFFECTING THE PUMP PERFORMANCE (after installation)

1. Suction head variation
2. Dynamic water level i.e., draw down variation
3. Condition of existing pipe line including inner roughness / amount of sedimentation and the life
4. Recharge rate of water source
5. Frequency and voltage conditions

Cable selection

Va – Actual voltage available in the field (Volts)
Vr – Rated voltage of the motor (Volts)
La – Actual cable length from starter to motor terminal (metre)
HP – Power of the selected motor
I – Full load current of the selected motor [For SD motors, it is I /√3 times the FL current] (Amperes)
Lc – Calculated equivalent cable length (Vr x La) / Va (metre)

Refer to cable selection chart and select appropriate cable size for the given I and Lc values.

Follow the same procedure for selecting suitable wire / cable size for mail line to starter.

125 mm & 175 mm Borewell Submersibles (TMVS)

PRODUCT FEATURES

- Available in mixed flow impeller designs.
- High quality dynamically balanced LTB impellers.
- Special LTB and nitrile rubber bearing bushes for high wear resistance and longer life.
- Bowls are high grade cast iron to ensure long life.
- Easily rewindable Squirrel cage motor of water-cooled,designed for 350 - 440 V, 50 Hz, AC power supply.
- Built in NRV with minimum friction.
- Stainless steel stator shell to prevent rust formation.
- Specially designed carbon thrust bearing.
- High quality seal rings and sand guards to protect motor from sand entry.
- High quality water-resistant polymer insulated wires for longer life even under adverse voltage conditions.
- Pressure diaphragm to compensate excess pressure due to heating up of filled water.

MATERIAL OF CONSTRUCTION

Part Name	Material	Part Name	Material
Impeller	LTB-2	Motor body	AISI 304
Bowl	CI FG 200	Bearing housing	CI FG 200
Pump shaft	AISI 410	Motor shaft	AISI 410
Sleeve	AISI 410	Journal bush	LTB-4 / Carbon
Bearing bush	NBR	Thrust bearing	AISI 420 / Carbon
Non return valve	Gunmetal	Winding wire	Polywrapped copper

APPLICATIONS

Domestic and community water supply | Water supply to high rise buildings, housing complexes, bungalows and industries | Cattle and poultry farms | Irrigation of farms | Dairies | Cooling water circulating systems | Fire fighting systems | Fountains

PERFORMANCE CHART

TARO "TMIF 60 SERIES" - THREE PHASE MIXED FLOW SUBMERSIBLE PUMPSETS FOR 125 mm (5") BOREWELLS

Approximate performance values of TMIF 60 series at 415 V (-15% to +6%), 2850 rpm, 50 Hz AC power supply

Model Name		Connection	Motor Rating		Stages	Pipe Size (mm)	CAPACITY									FL Current (A)
							Gpm	0.0	66.0	79.2	92.4	106	119	139	158	178	
							l/m	0.0	240	241	242	243	244	245	246	247	
Pump	Motor		kW	HP			M^3/hr	0.0	18.0	21.6	25.2	28.8	32.4	37.8	43.2	48.6	
							l/s	0.0	5.0	6.0	7.0	8.0	9.0	10.5	12.0	13.5	
TMIF 6004	TF 037	DOL	3.7	5	4	65	HEAD VALUES IN METRES	32.7	28.3	26.9	25.5	24.0	22.4	19.9	17.0	13.9	10

Maximum outer diameter : 123 mm

TARO "TMVS 100 / 100 D SERIES" - THREE PHASE MIXED FLOW SUBMERSIBLE PUMPSETS FOR 175 mm (7") BOREWELLS

Approximate performance values of TMVS 100 series at 415 V (-15% to +6%), 2880 rpm, 50 Hz AC power supply

Model Name		Connection	Motor Rating		Stages	Pipe Size (mm)	CAPACITY											FL Current (A)
							Gpm	0.0	132	158	191	224	257	277	297	330	356	396	
							l/m	0.0	600	720	870	1020	1170	1260	1350	1500	1620	1800	
Pump	Motor		kW	HP			M^3/hr	0.0	36.0	43.2	52.2	61.2	70.2	75.6	81	90.0	97.2	108.0	
							l/s	0.0	10.0	12.0	14.5	17.0	19.5	21.0	23	25.0	27.0	30.0	
TMVS 10003	TS 056	DOL	5.5	7.5	3	100	HEAD VALUES IN METRES	44.0	35.7	33.7	30.9	27.7	24.0	21.5	18.8	13.6			14.5
TMVS 10005 SI	TS 093	SD	9.3	12.5	5			73.3	59.5	56.1	51.5	46.1	40.0	35.9	31.4	22.6			25
TMVS 10008 SI ✉	TS 150	SD	15.0	20.0	8			117	95.1	89.8	82.3	73.8	64.0	57.4	50.2	36.2			39
TMVS 10002 D ⧋	TS 037	SD	3.7	5.0	2			30.0		24.2	22.8	21.3	19.5	18.3	17.0	14.5	12.1	8.2	12
TMVS 10004 D SI	TS 112	SD	11.0	15.0	4			60.0		48.5	45.7	42.5	39.0	36.6	34.0	29.0	24.3	16.3	29
TMVS 10006 D SI ⧋	TS 112	SD	11.0	15.0	6			90.0		72.7	68.5	63.8	58.5	54.9	51.0	43.4	36.4	24.5	34
TMVS 10006 D	TS 130	SD	13.0	17.5	6			90.0		72.7	68.5	63.8	58.5	54.9	51.0	43.4	36.4	24.5	34
TMVS 10007 D SI	TS 150	SD	15.0	20.0	7			105		84.9	79.9	74.4	68.3	64.1	59.5	50.7	42.5	28.6	39

Performance confirming to IS : 8034 and 9283

DOL - Direct On Line

SD - Star Delta

Maximum outer diameter : 167 mm

⧋ - Pumps combined with 1 step lower motor rating

✉ - Against batch order

SI - Stainless steel impeller

Note : All 6" motors are ISI marked

PRODUCT TYPE KEY

TMIF 60 04 - Taro Mixed flow five inch pump (F - Four inch motor) 60 series 04 Stages

TMVS 100 03 - Taro Mixed flow SeVen inch pump (S - Six inch motor) 100 series 03 Stages

TF 037 - Three phase, Four inch motor (037 - Power code)

TS 056 - Three phase, Six inch motor (056 - Power code)

PERFORMANCE CHART

TARO "TMVS 100 R / 100D R SERIES" - THREE PHASE MIXED FLOW SUBMERSIBLE PUMPSETS FOR 175 mm (7") BOREWELLS

Approximate performance values of TMVS 100 R / 100D R series at 380 V (-15% to +6%), 2880 rpm, 50 Hz AC power supply

Model Name		Connection	Motor Rating		Stages	Pipe Size (mm)	CAPACITY											FL Current (A)
							Gpm	0.0	132	158	191	224	257	277	297	330	356	396	
							l/m	0.0	600	720	870	1020	1170	1260	1350	1500	1620	1800	
Pump	Motor		kW	HP			M^3/hr	0.0	36.0	43.2	52.2	61.2	70.2	75.6	81	90.0	97.2	108.0	
							l/s	0.0	10.0	12.0	14.5	17.0	19.5	21.0	23	25.0	27.0	30.0	
TMVS 10004 SI	TS 075	SD	7.5	10.0	4	100	HEAD VALUES IN METRES	58.7	47.6	44.9	41.2	36.9	32.0	28.7	25.1	18.1			19.5
TMVS 10004 D SI	TS 093	SD	9.3	12.5	4			60.0		48.5	45.7	42.5	39.0	36.6	34.0	29.0	24.3	16.3	25
TMVS 10005 D SI	TS 112	SD	11.0	15.0	5			75.0		60.6	57.1	53.2	48.8	45.8	42.5	36.2	30.4	20.4	29
TMVS 10006 D SI ✉	TS 130	SD	13.0	17.5	6			90.0		72.7	68.5	63.8	58.5	54.9	51.0	43.4	36.4	24.5	34

TARO "TMVS 100 L / 100D L SERIES" - THREE PHASE MIXED FLOW SUBMERSIBLE PUMPSETS FOR 175 mm (7") BOREWELLS

Approximate performance values of TMVS 100 L / 100D L series at 350 V (-15% to +6%), 2880 rpm, 50 Hz AC power supply

Model Name		Connection	Motor Rating		Stages	Pipe Size (mm)	CAPACITY											FL Current (A)
							Gpm	0.0	132	158	191	224	257	277	297	330	356	396	
							l/m	0.0	600	720	870	1020	1170	1260	1350	1500	1620	1800	
Pump	Motor		kW	HP			M^3/hr	0.0	36.0	43.2	52.2	61.2	70.2	75.6	81	90.0	97.2	108.0	
							l/s	0.0	10.0	12.0	14.5	17.0	19.5	21.0	23	25.0	27.0	30.0	
TMVS 10003 D SI	TS 075	SD	7.5	10.0	3	100	HEAD VALUES IN METRES	45.0		36.4	34.3	31.9	29.3	27.5	25.5	21.7	18.2	12.3	19.5
TMVS 10004 D SI ✉	TS 093	SD	9.3	12.5	4			60.0		48.5	45.7	42.5	39.0	36.6	34.0	29.0	24.3	16.3	25
TMVS 10002 SI AT ✉	TS030	SD	3	4.0	2			26.0	18.7	17.3	15.5	13.2	10.5	8.8					8.5

Performance confirming to IS : 8034 and 9283

Note : All 6" motors are ISI marked

D O L - Direct On Line

✉ - Against batch order

S D - Star Delta

Maximum outer diameter : 167 mm

SI - Stainless steel impeller

PRODUCT TYPE KEY

T M V S 100 03 - Taro Mixed flow SeVen inch pump (S - Six inch motor) 100 series 03 Stages

T S 075 - Three phase, Six inch motor (075 - Power code)

PERFORMANCE CHART

TARO "TMVS 105/105 AT/105 BT SERIES" - THREE PHASE MIXED FLOW SUBMERSIBLE PUMPSETS FOR 175 mm (7") BOREWELLS

Approximate performance values of TMVS 105 / 105 AT/ 105 BT series at 415 V (-15% to +6%), 2880 rpm, 50 Hz AC power supply

Model Name		Connection	Motor Rating		Stages	Pipe Size (mm)	CAPACITY												FL Current (A)
							Gpm	0.0	165	198	231	264	297	310	330	363	396	429	462	
							l/m	0.0	750	900	1050	1200	1350	1410	1500	1650	1800	1950	2100	
Pump	Motor		kW	HP			M^3/hr	0.0	45.0	54.0	63.0	72.0	81	85	90	99.0	108.0	117.0	126.0	
							l/s	0.0	12.5	15.0	17.5	20.0	23	24	25	27.5	30.0	32.5	35.0	
TMVS 10502	TS 075	SD	7.5	10.0	2	100	HEAD VALUES IN METRES	33.1	28.3	27.1	25.6	23.9	22.4	21.6	21.0	19.4	17.6	15.6	12.8	19.5
TMVS 10502 AT ₩	TS 056	DOL	5.5	7.5	2			30.0	25.2	24.1	22.7	21.2	19.6	19.0	18.0	16.2	14.0	11.6	9.1	14.5
TMVS 10503SI AT ₩	TS 093	SD	9.3	12.5	3			45.0	37.8	36.2	34.0	31.7	29.4	28.5	27.0	24.2	21.0	17.4	13.6	25
TMVS 10502 BT ₩	TS 045	DOL	4.5	6.0	2			28.6	23.8	22.6	21.1	19.6	18.0	17.3	16.3	14.3	12.0	9.5	7.0	12
TMVS 10503SI BT ₩	TS 075	SD	7.5	10.0	3			42.9	35.7	33.9	31.6	29.3	27.0	26.0	24.4	21.4	18.0	14.3	10.5	19.5

TARO "TMVS 100 T SERIES" - THREE PHASE MIXED FLOW SUBMERSIBLE PUMPSETS FOR 175 mm (7") BOREWELLS

Approximate performance values of TMVS 100 T series at 415 V (-15% to +6%), 2880 rpm, 50 Hz AC power supply

Model Name		Connection	Motor Rating		Stages	Pipe Size (mm)	CAPACITY													FL Current (A)
							Gpm	0.0	79.2	106	132	158	191	224	257	277	297	330	356	396	
							l/m	0.0	360	480	600	720	870	1020	1170	1260	1350	1500	1620	1800	
Pump	Motor		kW	HP			M^3/hr	0.0	21.6	28.8	36.0	43.2	52.2	61.2	70.2	75.6	81	90.0	97.2	108.0	
							l/s	0.0	6	8	10.0	12.0	14.5	17.0	19.5	21.0	23	25.0	27.0	30.0	
TMVS 10004 T	TS056	DOL	5.5	7.5	4	100	HEAD VALUES IN METRES	51.2		42.9	40.2	37.6	34.5	30.2	25.0	21.7	16.6	11.0			14.5

Performance confirming to IS : 8034 and 9283

D O L - Direct On Line

S D - Star Delta

Maximum outer diameter : 167 mm

Note : All 6" motors are ISI marked

₩ - R series only available

PRODUCT TYPE KEY

T M V S 105 02 - Taro Mixed flow SeVen inch (S - Six inch motor) 105 series 02 Stages

T M V S 100 04 T - Taro Mixed flow SeVen inch (S - Six inch motor) 100 series 04 Stages, Trim

T S 075 - Three phase, Six inch motor (075 - Power code)

T S 056 - Three phase, Six inch motor (056 - Power code)

200 mm Borewell Submersibles (TRE / TRE-R)

PRODUCT FEATURES

- Available in radial flow impeller designs.
- Dynamically balanced LTB / Cast iron impellers.
- Special LTB and nitrile rubber bearing bushes for high wear resistance and longer life.
- Diffusers of gunmetal and housings of high grade cast iron to ensure long life.
- Easily rewindable Squirrel cage motor of water-cooled,designed for 350 - 440 V, (TRE) 280-380V (TRE-R) 50 Hz, AC power supply.
- Built in NRV with minimum friction.
- Stainless steel stator shell to prevent rust formation.
- Specially designed carbon thrust bearing.
- High quality seal rings and sand guards to protect motor from sand entry.
- High quality water-resistant polymer insulated wires for longer life even under adverse voltage conditions.
- Pressure diaphragm to compensate excess pressure due to heating up of filled water.

MATERIAL OF CONSTRUCTION

Part Name	Material	Part Name	Material
Impeller	LTB - 2 / CI FG 200	Motor body	AISI 304
Diffuser	Gunmetal	Bearing housing	CI FG 200
Pump shaft	AISI 410	Motor shaft	55C8
Sleeve	AISI 410	Journal bush	LTB-4 / Carbon
Bearing bush	NBR	Thrust bearing	AISI 420 / Carbon
Non return valve	Gunmetal / AISI 304	Winding wire	PVC insulated copper

APPLICATIONS

Domestic and community water supply | Water supply to high rise buildings, housing complexes, bungalows and industries | Cattle and poultry farms | Irrigation of farms | Dairies | Cooling water circulating systems | Fire fighting systems | Fountains

PERFORMANCE CHART

TARO "TRE 70 SERIES" - THREE PHASE RADIAL FLOW SUBMERSIBLE PUMPSETS FOR 200 mm (8") BOREWELLS

Approximate performance values of TRE 70 series at 415 V (-15% to +6%), 2880 rpm, 50 Hz AC power supply

Model Name		Connection	Motor Rating		Stages	Pipe Size (mm)	CAPACITY																FL Current (A)
							Gpm	0.0	59.4	72.6	85.8	99.0	112	119	132	145	165	185	198	211	224	244	264	
							l/m	0.0	270	330	390	450	510	540	600	660	750	840	900	960	1020	1110	1200	
Pump	Motor		kW	HP			M^3/hr	0.0	16.2	19.8	23.4	27.0	30.6	32.4	36.0	39.6	45.0	50.4	54.0	57.6	61.2	66.6	72.0	
							l/s	0.0	4.5	5.5	6.5	7.5	8.5	9.0	10.0	11.0	12.5	14.0	15.0	16.0	17.0	18.5	20.0	
TRE 7008 S	TE 150	SD	15	20	8	75	HEAD VALUES IN METRES	155		144	141	136	131	128	122	114	97.6	72.8						39
TRE 7008	TE 187	SD	18.7	25	8			155		144	141	136	131	128	122	114	97.6	72.8						43
TRE 7010	TE 225	SD	22.5	30	10			193		180	176	170	164	160	152	142	122	91.0						52
TRE 7012	TE 260	SD	26	35	12			232		216	211	204	196	192	183	171	146	109						60
TRE 7014	TE 300	SD	30	40	14			271		252	246	238	229	224	213	199	171	127						65

TARO "TRE 72 SERIES" - THREE PHASE RADIAL FLOW SUBMERSIBLE PUMPSETS FOR 200 mm (8") BOREWELLS

Approximate performance values of TRE 72 series at 415 V (-15% to +6%), 2880 rpm, 50 Hz AC power supply

Model Name		Connection	Motor Rating		Stages	Pipe Size (mm)	CAPACITY																FL Current (A)
							Gpm	0.0	59.4	72.6	85.8	99.0	112	119	132	139	145	165	185	198	211	244	264	
							l/m	0.0	270	330	390	450	510	540	600	630	660	750	840	900	960	1110	1200	
Pump	Motor		kW	HP			M^3/hr	0.0	16.2	19.8	23.4	27.0	30.6	32.4	36.0	37.8	39.6	45.0	50.4	54.0	57.6	66.6	72.0	
							l/s	0.0	4.5	5.5	6.5	7.5	8.5	9.0	10.0	10.5	11.0	12.5	14.0	15.0	16.0	18.5	20.0	
TRE 7206 ✉	TE 150	SD	15	20	6	75	HEAD VALUES IN METRES	124			111	108	105	103	98.7	96.0	92.7	84.0	74.7	63.3				39
TRE 7207	TE 187	SD	18.7	25	7			145			129	126	123	121	115	112	108	98.0	87.1	73.9				43
TRE 7209	TE 225	SD	22.5	30	9			186			166	162	158	155	148	144	139	126	112	95.0				52
TRE 7211	TE 260	SD	26	35	11			227			203	198	193	189	181	176	170	154	137	116				60
TRE 7213 ✉	TE 300	SD	30	40	13			269			240	234	228	224	214	208	201	182	162	137				65

TARO "TRE 75 SERIES" - THREE PHASE RADIAL FLOW SUBMERSIBLE PUMPSETS FOR 200 mm BOREWELLS

Approximate performance values of TRE 75 series at 415 V (-15% to +6%), 2880 rpm, 50 Hz AC power supply

Model Name		Connection	Motor Rating		Stages	Pipe Size (mm)	CAPACITY																FL Current (A)
							Gpm	0.0	59.4	72.6	85.8	99.0	112	119	132	145	165	185	198	211	224	244	264	
							l/m	0.0	270	330	390	450	510	540	600	660	750	840	900	960	1020	1110	1200	
Pump	Motor		kW	HP			M^3/hr	0.0	16.2	19.8	23.4	27.0	30.6	32.4	36.0	39.6	45.0	50.4	54.0	57.6	61.2	66.6	72.0	
							l/s	0.0	4.5	5.5	6.5	7.5	8.5	9.0	10.0	11.0	12.5	14.0	15.0	16.0	17.0	18.5	20.0	
TRE 7507 T ₩	TE 225	SD	22.5	30	7	75	HEAD VALUES IN METRES	138			126	124	121	120	116	112	104	92.9	83.3	70.9				52
TRE 7508 TS ✉	TE 225	SD	22.5	30	8			157			144	141	138	137	133	128	119	106	95.2	81.1				52
TRE 7510 T ₩✉	TE 300	SD	30	40	10			197			180	177	173	171	166	160	148	133	119	101				65

Performance confirming to IS : 8034 and 9283

S D - Star Delta
₩ - R series only available

Maximum outer diameter : 188 mm
✉ - Against batch order

PRODUCT TYPE KEY

T R E 70 10 - Taro Radial flow Eight inch 70 series 10 Stages
T R E 75 08 TS - Taro Radial flow Eight inch 75 series 08 Stages, (Trimmed, S - one step lower horse power)
T R E 72 09 - Taro Radial flow Eight inch 72 series 09 Stages
T R E 75 05 T - Taro Radial flow Eight inch 75 series 05 Stages, (Trimmed)

T E 225 - Three phase, Eight inch motor (225 - Power code)
T E 225 - Three phase, Eight inch motor (225 - Power code)
T E 150 - Three phase, Eight inch motor (150 - Power code)
T E 225 - Three phase, Eight inch motor (225 - Power code)

200 mm Mixed Flow Borewell Submersibles (TME / TMES)

PRODUCT FEATURES

- Available in mixed flow impeller designs.
- High quality dynamically balanced LTB impellers.
- Special LTB and nitrile rubber bearing bushes for high wear resistance and longer life.
- Bowls of high-grade cast iron to ensure longer life.
- Easily rewindable Squirrel cage motor of water-cooled,designed for 350 - 440 V, 50 Hz, AC power supply.
- Built in NRV with minimum friction.
- Stainless steel stator shell to prevent rust formation.
- Specially designed carbon thrust bearing.
- High quality seal rings and sand guards to protect motor from sand entry.
- High quality water-resistant polymer insulated wires for longer life even under adverse voltage conditions.
- Pressure diaphragm to compensate excess pressure due to heating up of filled water.

MATERIAL OF CONSTRUCTION

Part Name	Material	Part Name	Material
Impeller	LTB-2	Motor body	AISI 304
Bowl	CI FG 200 A	Bearing housing	CI FG 200
Pump shaft	AISI 410	Motor shaft	55C8
Sleeve	AISI 410	Journal bush	LTB-4 / Carbon
Bearing bush	LTB - 4 / NBR	Thrust bearing	AISI 420 - Carbon
Non return valve	Gunmetal	Winding wire	PVC insulated copper

APPLICATIONS

Domestic and community water supply | Water supply to high rise buildings, housing complexes, bungalows and industries | Cattle and poultry farms | Irrigation of farms | Dairies | Cooling water circulating systems | Fire fighting systems | Fountains

PERFORMANCE CHART

TARO" TME 100 / 100 T SERIES-THREE PHASE MIXED FLOW SUBMERSIBLE PUMPSETS FOR 200 mm (8") BOREWELLS

Approximate performance values of TME 100 / 100 T Series at 415 V (-15 % to + 6 %),2880 rpm,50 Hz, AC power supply

Model Name		Connection	Motor Rating		Stages	Pipe Size (mm)	CAPACITY															FL Current (A)
							Gpm	0.0	99.0	119	139	158	178	198	218	244	257	277	304	330	370	409	
							l/m	0.0	450	540	630	720	810	900	990	1110	1170	1260	1380	1500	1680	1860	
Pump	Motor		kW	HP			M^3/hr	0.0	27.0	32.4	37.8	43.2	48.6	54	59.4	66.6	70.2	76	83	90.0	101	112	
							l/s	0.0	7.5	9.0	10.5	12.0	13.5	15	16.5	18.5	19.5	21	23	25.0	28	31	
TME 10002 SIT ✉	TE 075	SD	7.5	10	2	100	HEAD VALUES IN METRES	38.5			34.3	33.6	32.9	32.1	31.2	30.0	29.3	28.2	26.6	24.8	21.4		19.5
TMES 10002 SIT	TE 075	SD	7.5	10	2			38.5			34.3	33.6	32.9	32.1	31.2	30.0	29.3	28.2	26.6	24.8	21.4		19.5
TME 10003 T $	TE 112	SD	11	15	3			57.8			51.5	50.4	49.3	48.1	46.9	45.0	44.0	42.4	39.9	37.2	32.1		29
TMES 10003 SI TSP	TSE 093	SD	9.3	12.5	3			57.8			51.5	50.4	49.3	48.1	46.9	45.0	44.0	42.4	39.9	37.2	32.1		29
TME 10004 T	TE 150	SD	15	20	4			77.0			68.7	67.3	65.8	64.2	62.5	60.0	58.6	56.5	53.2	49.6	42.9		39
TME 10005 T	TE 187	SD	18.7	25	5			96.3			85.8	84.1	82.2	80.2	78.1	75.0	73.3	70.6	66.6	62.0	53.6		43
TME 10006 T	TE 225	SD	22.5	30	6			116			103	101	98.7	96.3	93.7	90.0	88.0	84.7	79.9	74.4	64.3		52
TME 10002 SI	TE 093	SD	9.3	12.5	2			40.0			36.0	35.4	34.7	34.0	33.2	31.9	31.2	30.0	28.1	25.6	20.8		25
TME 10003 £	TE 150	SD	15	20	3			60.0			54.0	53.1	52.1	51.0	49.8	47.9	46.8	45.0	42.2	38.4	31.2		39
TME 10003 SI $	TE 150	SD	15	20	3			60.0			54.0	53.1	52.1	51.0	49.8	47.9	46.8	45.0	42.2	38.4	31.2		39
TME 10005 SI	TE 225	SD	22.5	30	5			100			90.0	88.5	86.8	85.0	83.0	79.8	78.0	75.0	70.3	64.0	52.0		52
TME 10006 SI	TE 260	SD	26	35	6			120			108	106	104	102	99.6	95.7	93.6	90.0	84.3	76.8	62.4		60
TME 10008 ✉	TE 370 QA	DOL	37	50	8			160			144	142	139	136	133	128	125	120	112	102	83.2		80
TME 10002 KT ✉	TE 093	SD	9.3	12.5	2			47.0				42.6	41.8	41.0	40.1	38.8	38.0	36.8	35.0	33.0	29.4	24.6	25

Performance confirming to IS : 8034 and 9283

D O L - Direct On Line

S D - Star Delta

Maximum outer diameter : 188 mm

$ - R series also available

£ - L series only available

✉ - Against batch order

PRODUCT TYPE KEY

T M E 100 04 T - Taro Mixed flow Eight inch 100 series 04 Stages (T - Trimmed impeller)

T M E 100 02 KT - Taro Mixed flow Eight inch 100 series 03 Stages (Kutch, T - Trimmed impeller)

T E 187 - Three phase, Eight inch motor (187 - Power code)

T E 093 - Three phase, Eight inch motor (093 - Power code)

PERFORMANCE CHART

TARO" TMES 125/BT/CT/DT SERIES-THREE PHASE MIXED FLOW SUBMERSIBLE PUMPSETS FOR 200 mm (8") BOREWELLS

Approximate performance values of TMES 125 / BT / CT / DT Series at 415 V (-15 % to + 6 %), 2880 rpm,50 Hz, AC power supply

Model Name		Connection	Motor Rating		Stages	Pipe Size (mm)		CAPACITY														FL Current (A)
							Gpm	0.0	158	178	198	218	244	257	277	304	330	370	409	449	488	
							l/m	0.0	720	810	900	990	1110	1170	1260	1380	1500	1680	1860	2040	2220	
Pump	Motor		kW	HP			M^3/hr	0.0	43.2	48.6	54.0	59.4	66.6	70.2	75.6	82.8	90.0	101	112	122	133	
							l/s	0.0	12.0	13.5	15.0	16.5	18.5	19.5	21.0	23.0	25.0	28	31	34	37	
TMES 12502 SI S DTF £	TSE 056	SD	5.5	7.5	2	100	HEAD VALUES IN METRES	41.9	36.0	35.2	34.3	33.3	31.8	31.0	29.8	28.0	26.1	23.0	20.0	15.2		19.5
TMES 12502 SI DTF £	TSE 075	SD	7.5	10	2			41.9	36.0	35.2	34.3	33.3	31.8	31.0	29.8	28.0	26.1	23.0	20.0	15.2		19.5
TMES 12503 SI DTF	TSE 112	SD	11	15	3			62.8	54.0	52.8	51.4	49.9	47.7	46.5	44.7	42.0	39.2	34.6	30.0	22.8		29
TMES 12504 SI DTF £	TSE 150	SD	15	20	4			83.7	72.0	70.4	68.6	66.6	63.6	62.1	59.6	56.0	52.2	46.1	40.0	30.4		39
TMES 12502 SI CTF SJ	TSE 093	SD	9.3	12.5	2			44.0	39.0	38.3	37.5	36.6	35.4	34.7	33.6	31.9	30.0	26.9	23.5	18.8		25
TMES 12503 SI CTF # ✉	TSE 130	SD	13	17.5	3			66.0	58.6	57.4	56.2	54.9	53.1	52.0	50.3	47.8	45.0	40.3	35.2	28.3		34
TMES 12503 SI CTF	TSE 130	SD	13	17.5	3			66.0	58.6	57.4	56.2	54.9	53.1	52.0	50.3	47.8	45.0	40.3	35.2	28.3		34
TMES 12503 SI CTF £ ✉	TE 150	SD	15	20	3			66.0	58.6	57.4	56.2	54.9	53.1	52.0	50.3	47.8	45.0	40.3	35.2	28.3		39
TMES 12503 SI CTF $	TE 150	SD	15	20	3			66.0	58.6	57.4	56.2	54.9	53.1	52.0	50.3	47.8	45.0	40.3	35.2	28.3		39
TMES 12502 SI BT £ SJ	TSE 112	SD	11	15	2	125		48.0	43.2	42.5	41.6	40.8	39.5	38.8	37.6	35.9	34.0	30.9	27.2	22.2		29
TMES 12503 SI BT	TSE 187	SD	18.7	25	3			72.0	64.8	63.7	62.5	61.1	59.2	58.1	56.4	53.8	51.0	46.4	40.8	33.3		43
TMES 12502 SI £ ✉	TE 150	SD	15	20	2			50.0		46.8	46.0	45.2	44.2	43.6	42.6	41.2	39.6	37.0	34.0	30.0	23.8	39

TARO" TMES 130 DT SERIES-THREE PHASE MIXED FLOW SUBMERSIBLE PUMPSETS FOR 200 mm (8") BOREWELLS

Approximate performance values of TMES 130 DT Series at 415 V (-15 % to + 6 %),2880 rpm,50 Hz, AC power supply

Model Name		Connection	Motor Rating		Stages	Pipe Size (mm)	CAPACITY														FL Current (A)
							Gpm	0.0	241	233	222	208	191	170	154	145	137	128	109	89	68	
							l/m	0.0	1096	1057	1009	945	870	772	699	660	621	580	494	407	311	
Pump	Motor		kW	HP			M^3/hr	0.0	65.8	63.4	60.5	56.7	52.2	46	42	40	37	35	30	24	19	
							l/s	0.0	15.0	18.0	21.0	24.0	27.0	30	32	33	34	35	37	39	41	
TMES 13003 SI DTF ✉	TSE112	SD	11.2	15	3	100	HEAD VALUES IN METRES	56.6	47.0	44.9	42.4	39.1	34.8	30.0	27.0	25.3	23.4	21.4	17.2	12.5		29

Performance confirming to IS : 8034 and 9283

S D - Star Delta

Maximum outer diameter : 188 mm

- 'L' series also available

$ - R series also available

£ - 'L' series only available

SJ - SS Clad

✉ - Against batch order

PRODUCT TYPE KEY

T M E S 125 03 CT F - Taro Mixed flow Eight inch pump with Six inch motor 125 series 03 Stages (CT - Trimmed, F-Flange)

T S E 130 - Three phase, Six inch motor for Eight inch pump (130 - Power code)

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