

AUTHORIZED DEALER

CAE ENGINEERING PTE LTD

YOUR PUMPING SYSTEMS SOLUTION PROVIDER



**KBL fire pump compile to
AS2941, CP 52 and SS575 standards**

Kirloskar
Enriching Lives



PSB Singapore



SETSCO

TYPE CE SERIES (END SUCTION TYPE)

Delivery size	32 mm to 125 mm
Capacity up to	660 m3/hr. (Max)
Head up to	100m (Max)
Temperature	- 10°C to 90°C (standard construction) 90°C to 140°C (with stuffing box cooling)

Application:

For continuous service in pumping of clear water and turbid water upto 3000 PPM. These pumps are ideally suitable for pumping water in industries, sprinkler system, booster services, fire fighting, air conditioning, condensate water supply etc.

Constructional features:

Pumps are as per DIN:24256 and ISO:2858. Back pullout type design. Suitable for operating speed of 3500 rpm(max.).

Pump casing:

The pump casing has axial suction and top centreline delivery. Integral feet mounted with replaceable case wear ring.

Impeller:

The impellers are of enclosed type. Smooth hydraulic passages designed with the advanced computer technology to achieve higher efficiency. Hydraulic balancing of impellers is achieved either by back vanes

or by balancing holes. The impellers are dynamically balanced.

Pump shaft:

The pump shaft is designed for heavy duty conditions and is supported by two antifriction bearings to take residual axial thrust and radial load.

Stuffing box:

Stuffing box is sealed by gland packing as a standard supply. Various types of mechanical seal arrangement can be supplied optionally.

Bearings:

Bearings are grease lubricated as a standard. Oil lubrication is optional.

Direction of rotation:

Clockwise when viewed from driving end.

Drive:

Pump can be driven by electric motor or by engine.

Flanges:

Standard DIN : 2533 ND16

Optional IS : 1538 / IS:6392

Material of construction:

Casing/casing cover : Cast Iron I SG Iron I Bronze

Impeller : Cast Iron I SG Iron I Bronze

Shaft : Carbon Steel I St. Steel

TYPE KPD SERIES (END SUCTION TYPE)

Range:

Delivery size up to 200 mm

Capacity up to 750 m3/hr

Heads up to 150 metres

Working Pressures 16-25 kg/cm²

Temperatures (-) 500C to + 3500C

Applications:

Chemical Process Industries, Petro Chemical, Nuclear, Refinery, Paper and Power Plants etc. Pumps suitable for handling Corrosive Acids, Alkalies, Salt Solutions, Caustics, Hydro Carbons, Oils, Thermic Fluids, Liquefied Gases, Condensates, Viscous Liquids etc.

Constructional features:

Pumps are as per DIN 24256 and ISO 2858 and generally conform to API 610 (7th Edition) The design is of back pull out type. Large variety of models are available to operate at 1450 rpm and 2900 rpm at 50Hz and 1750 rpm and 3500 rpm at 60 Hz.

Casing:

The casing has axial suction and top centre line delivery. Smooth hydraulic passages ensure high efficiency. Normal design is for foot mounted pumps. Centre line mounting for special applications are also available.

Impeller:

The impellers are of enclosed type and semi-open impellers can also be supplied. Hydraulic balancing of impellers is achieved either by back vanes or by balancing holes. The impellers are statically and dynamically balanced. Reliable

fixing of the impeller on shaft is achieved by using helicoil insert under impeller nut. To improve NPSH performance, inducer can be supplied.

Shaft:

The shaft is supported by two antifriction bearings to take residual axial thrust and prevent axial float or radial run out. It is fully protected from the liquid handled by means of a shaft sleeve and PTFE gaskets between impeller nut, impeller hub and shaft sleeve.

Stuffing box:

The stuffing box is sealed by gland packing or by mechanical seal. Conversion from gland packing to mechanical seal is achieved by changing some standardised parts. Remachining of stuffing box is not necessary. Stuffing box cooling is provided for operating temperature 1050C for gland packed and 1400C for mechanical seal fitted pumps.

Bearings:

The bearings are oil lubricated. For high temperature (above 1800) application, bearing oil cooling arrangement is provided. All pumps are provided with reinforced bearing arrangement as standard supply.

Direction of rotation:

Clockwise viewed from driving end.

Drive:

Pumps can be driven by electric motor or engine.

Flanges:

ANSI B 16.1, CL 125 Flat Face : for CI/BR

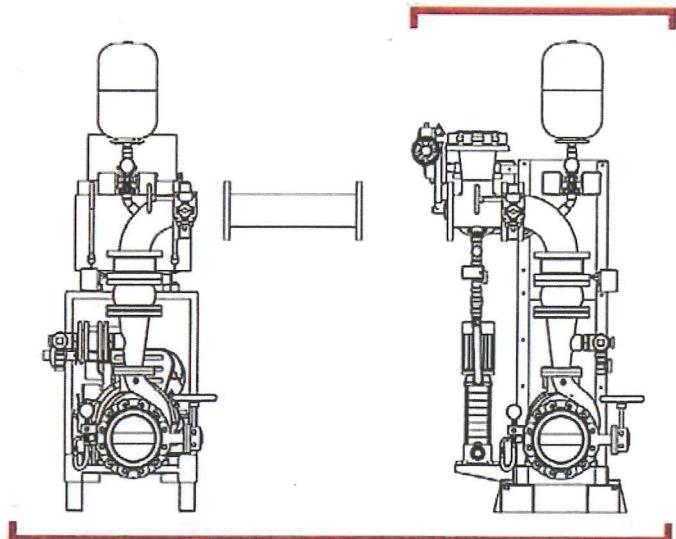
ANSI B 16.5, CL 150 Raised Face - for sp.metals viz. st.steel, cast steel etc.

Drilling as per DIN, ASA, BS ect. (Optional)

Prefabricated modular Fire Pump System

The Modular Fire Pump System are simple and reliable system, consisting of 1 / 2 Jockey Pump and 2 Main Pumps, connected in parallel and mounted on a common skid base.

Example of a single pumping unit



Example of a pumping set with two pumps

The Fire Pump Systems are supplied as complete, pre-assembled and Tested system including suction and discharge manifolds, isolating valves, non-return valves, pressure switches, gauges and dedicated Fire Pump Controller.



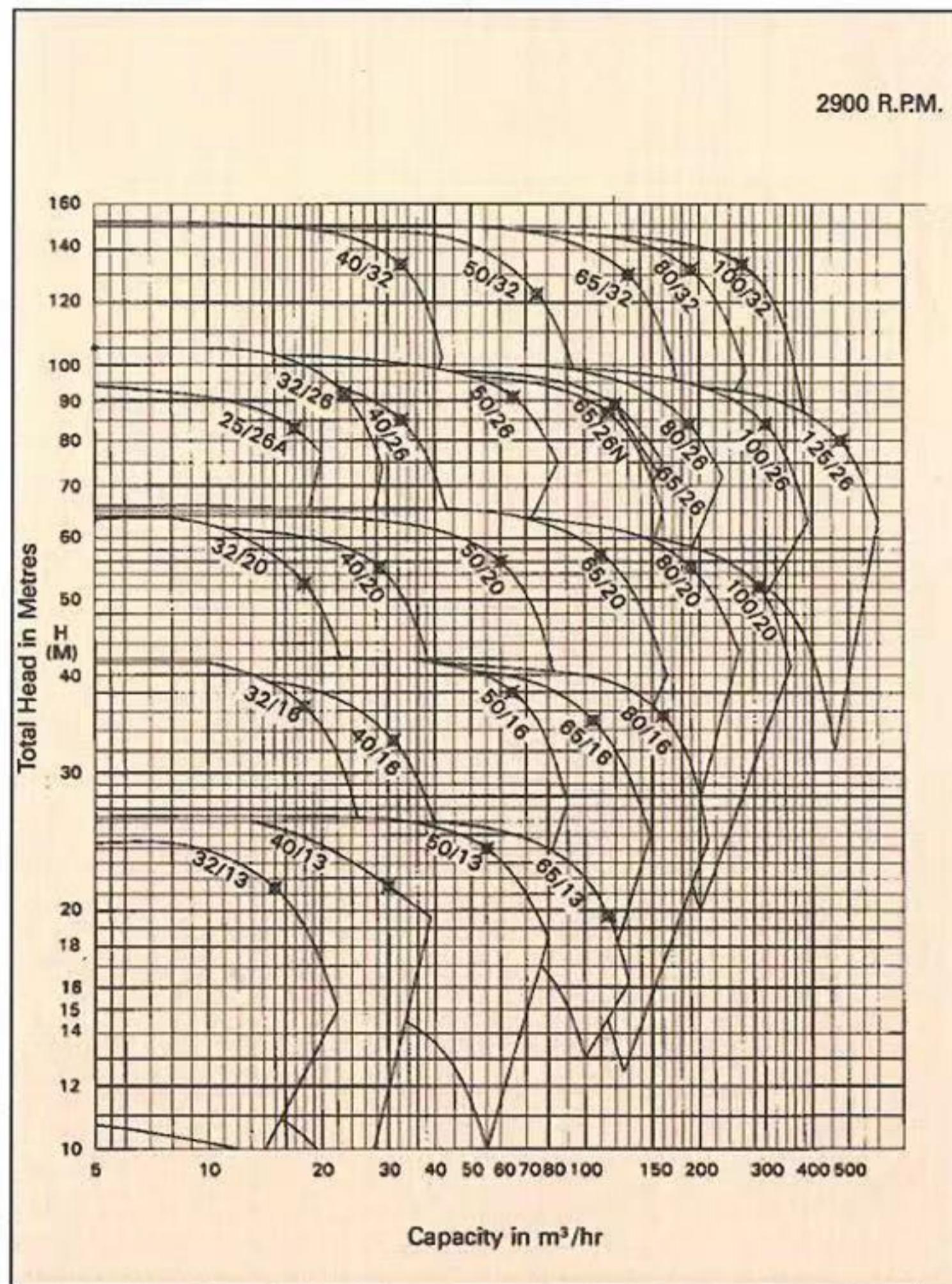
KIRLOSKAR END SUCTION PUMPS TYPE CE & KPD



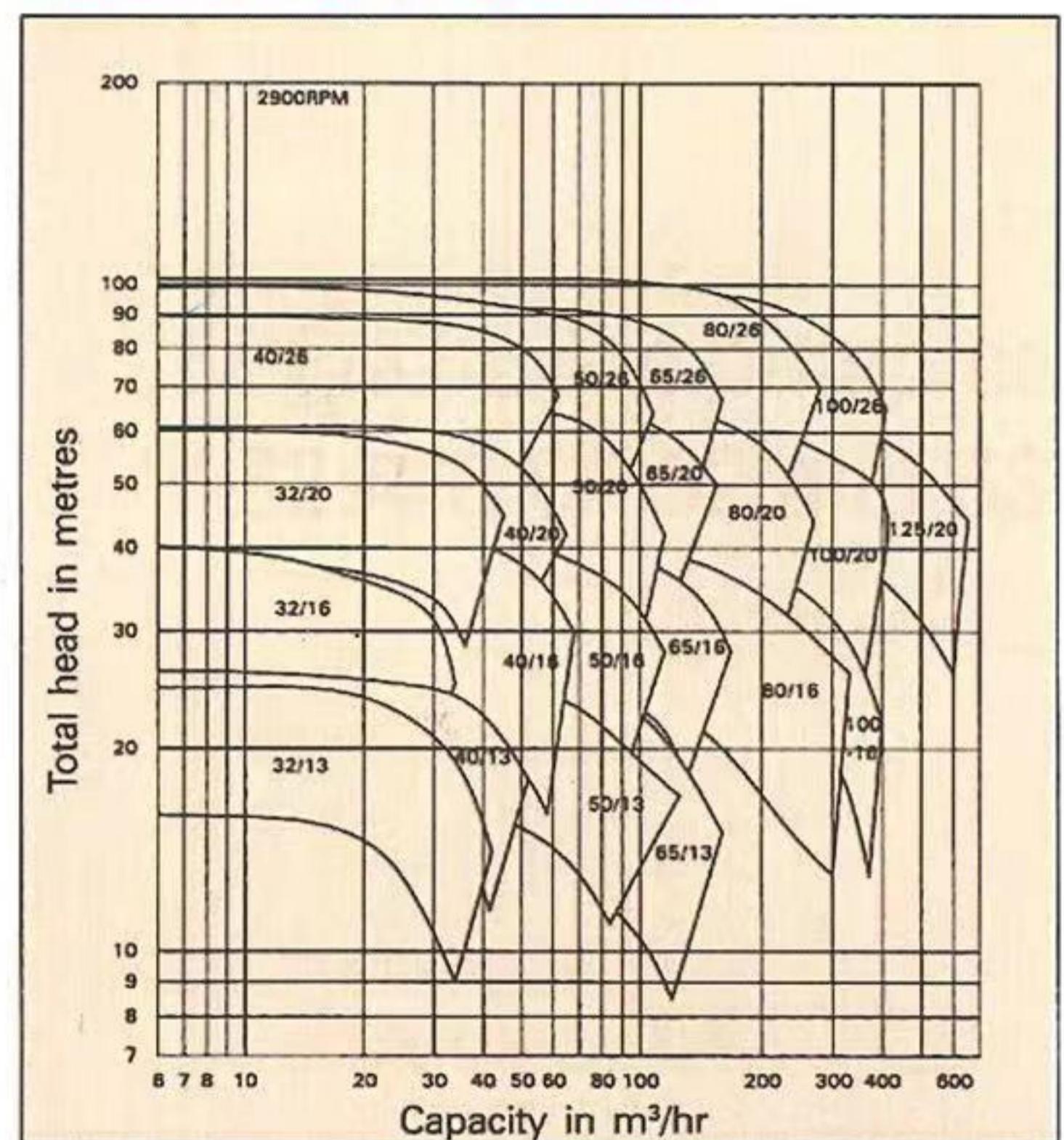
Enriching Lives



FAMILY CURVE OF KPD SERIES



FAMILY CURVE OF CE SERIES



SINGAPORE

CAE Engineering Pte Ltd
No. 2 Woodlands Sector 1
#01-04
Singapore 738068

www.caegroup.com.sg

MALAYSIA

CAE Engineering Sdn Bhd
12, Jalan Gemilang 8/2
Taman Banang Jaya,
83000 Batu Pahat, Johor

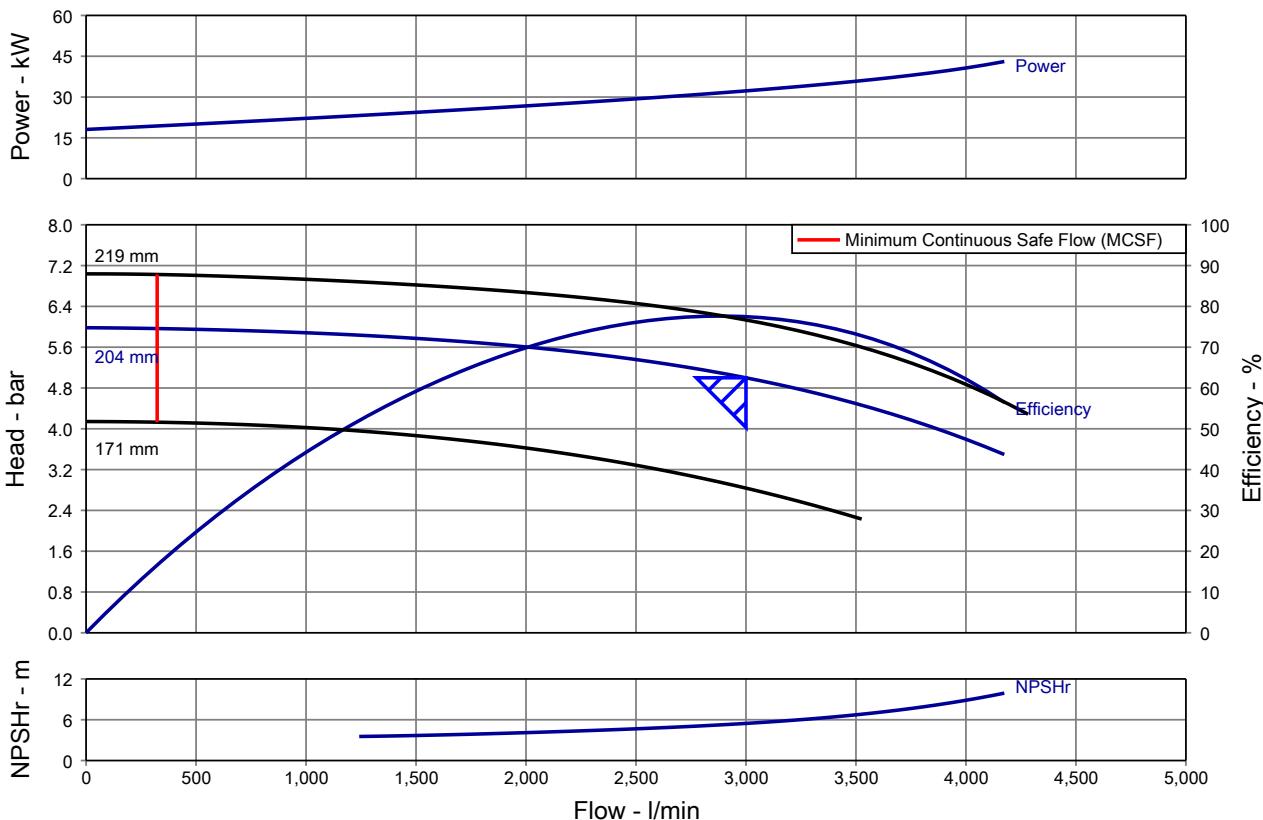
AUSTRALIA

FIS – Fire industry supplies
149 Newlands Road,
Coburg North VIC 3058,
Australia

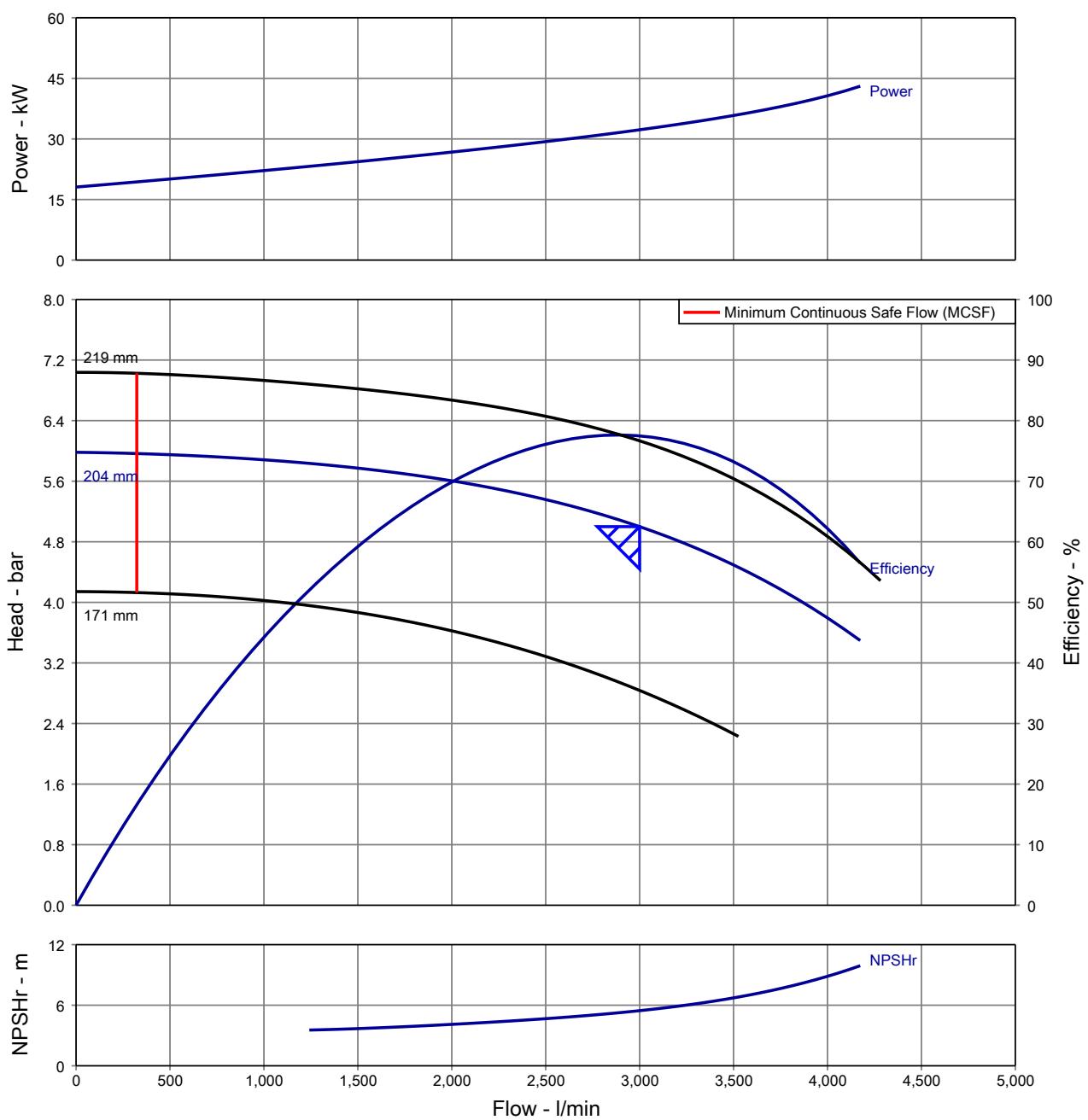
Pump Performance Datasheet

Customer	: CAE Engineering	Quote number	: 503783
Customer enquiry	: CUSTOMER	Pump Size	: CE80/20
Project	:	Stages	: 1
Item number	: 001	Based on curve number	: HD18854CA0 Rev 1
Usage - Tertiary	:	Date last saved	: 09 May 2023 11:17 AM
Quantity	: 1	Note - Only duty point is guaranteed as per testing standard.	

Operating Conditions		Liquid	
Flow, rated	: 3,000.0 l/min	Liquid Type/ Application	: Water
Differential Head (requested)	: 5.00 bar	Additional liquid description	:
Differential Head (actual)	: 5.00 bar	Solids diameter, max	: 0.00 mm
Suction pressure, rated / max	: 0.00 / 0.00 bar.g	Solids/Bagasse/Stock consistency by volume	: 0.00 %
NPSH available, rated	: Ample	Temperature, max	: 20.00 deg C
Site Supply Frequency	: 50 Hz	Fluid density rated	: 0.998 kg/dm³
Performance		Material	
Speed, rated	: 2960 rpm	Material selected	: 07 MOC-CI260(012)/BR LTB(110)/SS410(253)
Impeller diameter, rated (approx.)	: 204 mm		
Impeller diameter, maximum	: 219 mm		
Impeller diameter, minimum	: 171 mm		
Efficiency	: 77.48 %		
NPSH required / margin required	: 5.46 / 0.50 m		
nq (imp. eye flow) / S (imp. eye flow)	: 31 / 183 Metric units		
Minimum Continuous Safe Flow (MCSF)	: 323.2 l/min		
Head, maximum, rated diameter (approx.)	: 5.98 bar		
Head rise to shutoff (approx.)	: 19.63 %		
Flow, best eff. point	: 2,883.5 l/min		
Flow ratio, rated / BEP	: 104.04 %		
Diameter ratio (rated / max)	: 93.15 %		
Head ratio (rated dia / max dia)	: 81.52 %		
Cq/Ch/Ce/Cn [HI2010]	: 1.00 / 1.00 / 1.00 / 1.00		
Selection status	: Acceptable		
Performance testing standard	: ISO 9906 / ANSI-HI 14.6 Gr 2B		



Pump Performance Curve



Customer	: CAE Engineering	Pump Size/ Stages	: CE80/20/ 1
Customer enquiry	: CUSTOMER	Speed, rated	: 2960 rpm
Project	:	Based on curve number	: HD18854CA0 Rev 1
Quote number	: 503783	Viscosity	: 1.00 cSt
Item number	: 001	Cq/Ch/Ce/Cn [HI2010]	: 1.00 / 1.00 / 1.00 / 1.00
Quantity	: 1	Minimum recommended driver rating	: 45.00 kW / 60.35 hp
Flow, rated	: 3,000.0 l/min	Performance testing standard	: ISO 9906 / ANSI-HI 14.6 Gr 2B
Differential Head	: 5.00 bar	Date last saved	: 09 May 2023 11:17 AM
Fluid density rated	: 0.998 kg/dm ³	Notes:	
Efficiency	: 77.48 %		1. Performance at shut off condition is approximate.
Power, rated	: 32.27 kW		2. Rated impeller diameter is approximate.
NPSH required	: 5.46 m		3. Only duty point is guaranteed as per testing standard.
Liquid Type/ Application	: Water		

1

2

3

4

5

6

7

8

A

B

C

D

E

F

A

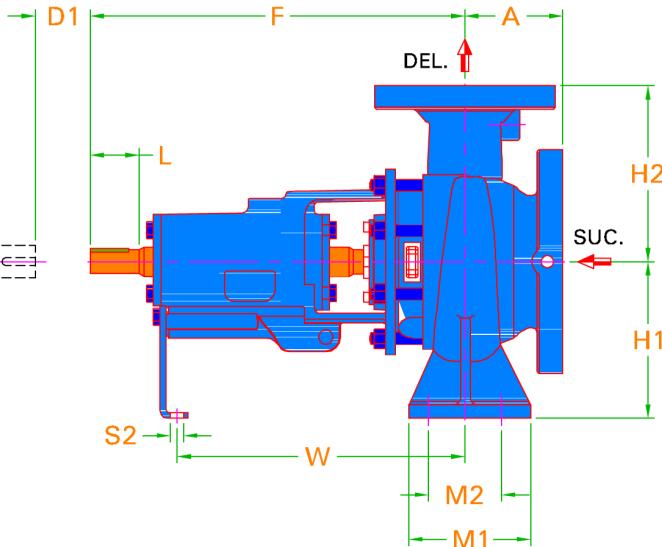
B

C

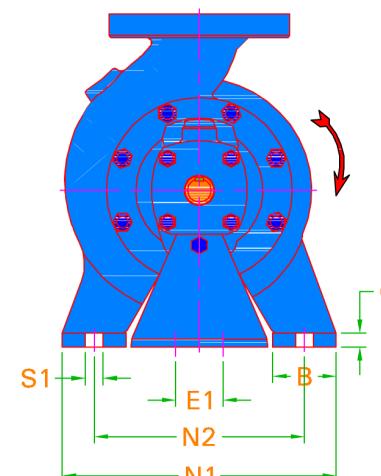
D

E

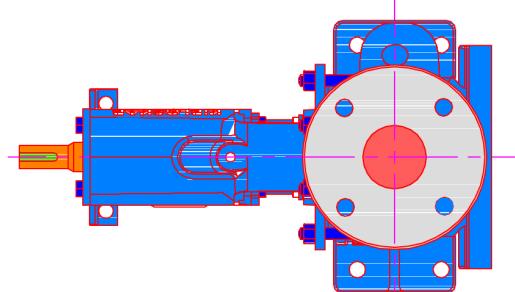
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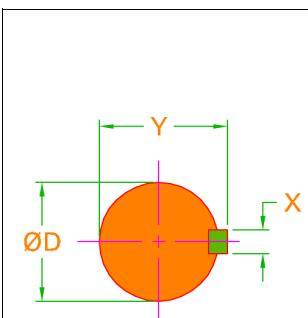
FRONT VIEW



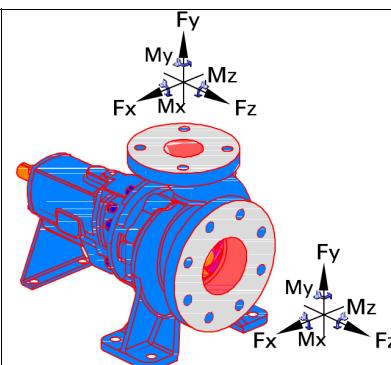
SIDE VIEW



TOP VIEW



SHAFT END DETAILS



NOZZLE LOADING

NOTES:

- ALL DIMENSIONS ARE IN mm
- DIM 'D1' INDICATES THE DISTANCE REQUIRED TO REMOVE BACK PULL OUT ASSEMBLY.

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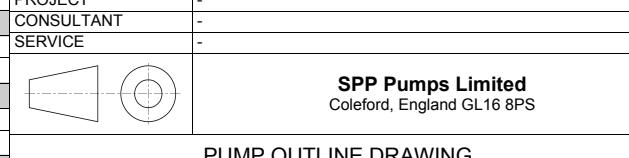
A	F	H1	H2	B	C	M1	M2	N1	N2	S1	E1	S2	W	-	D
125	500	180	250	65.00	14.00	125	95.00	345	280	14.00	110	15.00	370	-	32.00

X	Y	L	D1	-	-	-	-	-	-	-	-	-	-	-	-
10.00	35.00	80.00	140	-	-	-	-	-	-	-	-	-	-	-	-

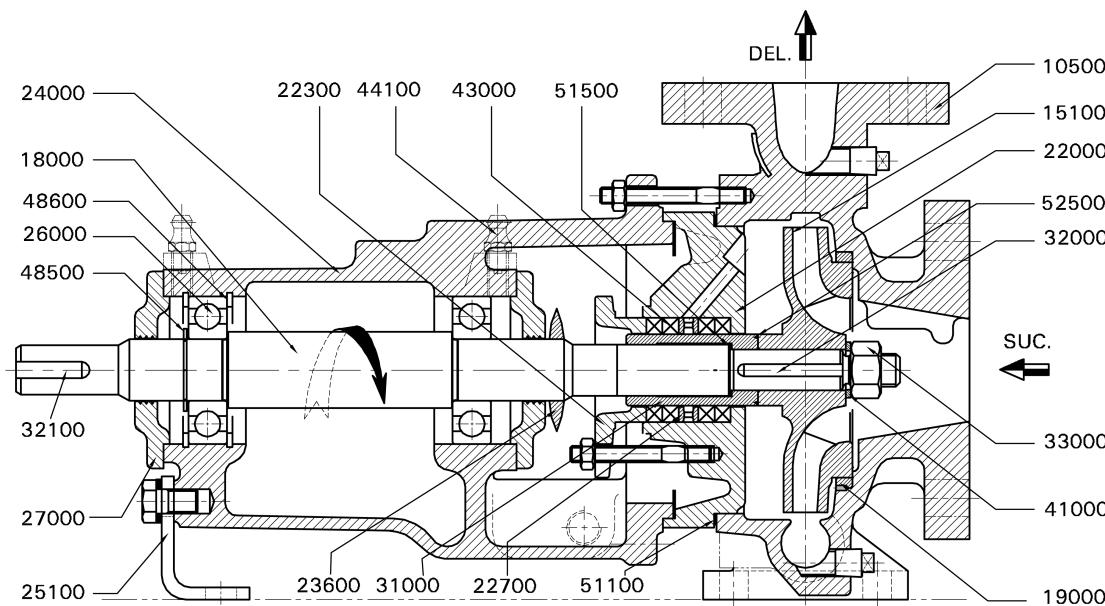
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

PUMP DUTIES									
CAPACITY		3,000.0 l/min		EFFICIENCY		77.48 %			
TOTAL HEAD		5.00 bar		PUMP INPUT		32.27 kW			
DENSITY		0.998 kg/dm ³		NPSHR		5.46 m			
FLANGE DRILLING STANDARD AND DETAILS									
SUCTION	BS EN1092 PN16 FF		DELIVERY	BS EN1092 PN16 FF		P.C.D.	NO OF HOLES	HOLE SIZE	
SUCTION	125 mm		N.A.	210 mm		8	18.00 mm		
DELIVERY	80.00 mm		N.A.	160 mm		8	18.00 mm		
ALLOWABLE NOZZLE LOADING									
FORCES				MOMENTS					
Fx	Fy	Fz		Mx	My	Mz			
SUCTION	200.0 kgf	260.0 kgf	170.0 kgf	1,079 N.m	686 N.m	490 N.m			
DELIVERY	200.0 kgf	260.0 kgf	170.0 kgf	1,079 N.m	686 N.m	490 N.m			
TAPPING DETAILS									
DESCRIPTION				SIZE / TYPE					
Suction Gauge	1/4" BSP								
Delivery Gauge	1/4" BSP								
Casing Drain	1/2" BSP								
Casing Vent	NA								
Bearing Cooling in / out	NA								
Pad Cooling in / out	NA								
Priming in	NA								

DIRECTION OF ROTATION FROM DE		CLOCKWISE	
PUMP	CE80/20	PUMP WT.	75.00 kg
REC. DRIVER RATING	45kW	GDM ²	0.13 kg.m ²
ENQ. NO./DATE	CUSTOMER /	QUANTITY	1
PO. NO./DATE	-	TAG NO.	001
QUOTATION NO.	503783	DATE	-
O/A NO.	-	MISI	-
CUSTOMER	CAE Engineering		
END USER	CAE Engineering		
PROJECT	-		
CONSULTANT	-		
SERVICE	-		

**PUMP OUTLINE DRAWING**

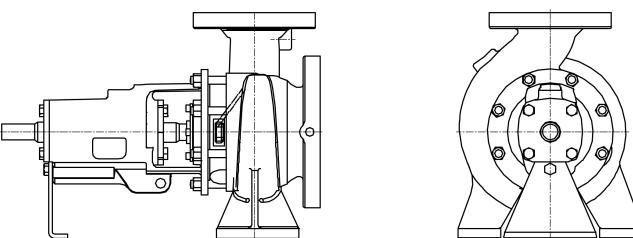
A



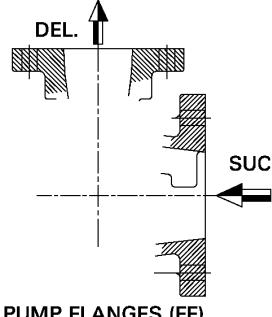
B

PART NO.	PART DESCRIPTION	MAT. CODE	MOC DESCRIPTION	QTY.
10500	PUMP CASING	012	CI IS210:FG260	1
15100*	IMPELLER	110	BR IS:318 GR-LTB2	1
18000*	PUMP SHAFT	253	ST ST ASTM A276-410 ANLD	1
19000*	CASING RING-SUC SIDE	110	BR IS:318 GR-LTB2	1
22000	CASING COVER	012	CI IS210:FG260	1
22300	NON SPLIT GLAND	012	CI IS210:FG260	1
22700*	NON SPLIT LANTERN RING	364	NYLON	1
23600*	LIQUID DEFLECTOR	370	NATURAL RUB ASTMD2000AA-70SHORE/7MPa	1
24000*	BEARING HOUSING	012	CI IS210:FG260	1
25100	SUPPORT FOOT	043	MS IS:2062-Fe410WA	1
26000*	BEARING	000	STEEL	2
27000	BEARING COVER DE&NDE	012	CI IS210:FG260	2
31000*	SHAFT SLEEVE-GLAND PACKING	556	ST ST ASTM A276-410(300BHN)-ANLD	1
32000*	KEY-IMPELLER	253	ST ST ASTM A276-410 ANLD	1
32100*	KEY-CO尤PLING	053	CS IS1570:40C8 HOT RLD	1
33000*	IMPELLER NUT	664	AUS ST ASTMA194/194M-8M-UNS S31600 (NUT)	1
41000*	WASHER-IMPELLER NUT	054	SPRING ST IS:4072-80C6	1
43000*	GLAND PACKING	810	PTFE BRAIDED WITH GRAPHITE	4
44100	GREASE NIPPLE	444	CS IS:1367 Part3 CL4.6 CDP	2
48500	INTERNAL CIRCLIP	054	SPRING ST IS:4072-80C6	2
48600	EXTERNAL CIRCLIP	054	SPRING ST IS:4072-80C6	1
51100*	GASKET-CASING COVER	702	NON ASBESTOS FERROLITE NAM37 OR EQ	1
51500*	GASKET-SHAFT SLEEVE	702	NON ASBESTOS FERROLITE NAM37 OR EQ	1
52500*	O-RING-SHAFT SLEEVE	366	PTFE	1

C



STUFFING BOX SEALING: SELF INTERNAL



PUMP FLANGES (FF)

F

NOTES:

- ** INDICATES RECOMMENDED SPARES.
- FASTENERS IN LIQUID CONTACT ARE IN CS

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PUMP	CE80/20	MOC	07
ENQUIRY NO./DATE	CUSTOMER /	QUANTITY	1
PO. NO./DATE	-	TAG NO.	001
QUOTATION NO.	503783	DATE.	-
O/A. NO.	-	MISI.	-
CUSTOMER	CAE Engineering		
END USER	CAE Engineering		
PROJECT	-		
CONSULTANT	-		
SERVICE	-		



SPP Pumps Limited
Coleford, England GL16 8PS

CROSS SECTIONAL DRAWING

DRAWING NO. TC881586436-0



PSB Singapore

CERTIFICATE OF CONFORMITY

No. CLS1A 080413 0011 Rev. 00

Initial No. CLS1A 13 01 80413 001

Certificate Holder: Kirloskar Brothers Limited
Yamuna, Survey No. 98 / 3 to 7
Plot No.3, Baner
Pune 411045
INDIA

UEN - 000670

Local Agent: SPP Pumps (Singapore) Pte Ltd
20 Maxwell Road, #09-17, Maxwell House, Singapore 069113,
SINGAPORE
UEN - 201614198E

Certification Mark:



TÜV SÜD PSB

Product: Fire Pumps
Brand Name: KIRLOSKAR
Model(s): KPD & CE
Product Details: Refer to following page(s)
Standard(s): Refer to following page(s)
Country of Origin: AS 2941:2013
India

Test Report(s): Refer to following page(s)

Valid until: 2028-01-07

Products listed under Class 1A must have TÜV SÜD PSB PLS mark as shown above affixed/printed on them. Failure to comply with this requirement may result in revocation of this certificate.

Page 1 of 4

Issued on: 2023-02-13

Vice-President (Certification Department)
TÜV SÜD PSB

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CERTIFICATE OF CONFORMITY

No. CLS1A 080413 0011 Rev. 00

Initial No. CLS1A 13 01 80413 001

Product Details:

Single stage, end suction, back pullout, horizontal shaft, electric motor driven centrifugal fire pump

Model(s):

KPD 50/32, KPD 65/32, KPD 80/32, KPD 100/32, KPD 125/26, KPD 150/52, KPD 100/40DV, KPD 80/40DV, KPD 40/32, KPD 150/40
CE 50/13, CE 100/26, CE 50/16, CE 50/26, CE 65/16, CE 65/20, CE 100/20, CE80/20, CE 80/26

Test Report(s):

54S063207/JC, S09MEC01202/JC, 7191260981-MEC21-JC
PSB Assess 7191177582-MEC18-JC, PSB Assess 7191184251-MEC19-JC
PSB Review 7191302263-MEC23/01, PSB Review 7191302263-MEC23/02

Page 2 of 4

Issued on: 2023-02-13



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PSB Singapore

CERTIFICATE OF CONFORMITY

No. CLS1A 080413 0011 Rev. 00

Initial No. CLS1A 13 01 80413 001

Product Details:

Table 1 KIRLOSKAR single stage, end suction, back pullout, horizontal shaft, electric motor driven centrifugal fire pumps

s/n	Pump Model	Impeller Diameter (mm)	Duty Point				Driver Power (kW)	Nominal Speed (rpm)	Max Working Pressure (kg/cm ²)
			Flow, Q (m ³ /h)	Head, H (m)	Power, P (kW)	Eff. (%)			
1	KPD 50/32	329	75.0	124.0	44.0	57.0	55	2900	16.0
2	KPD 50/32	255	55.0	68.0	21.8	49.5	37	2900	16.0
3	KPD 65/32	329	130.0	130.0	70.0	66.0	80	2900	16.0
4	KPD 65/32	255	80.0	77.0	30.0	56.0	37	2900	16.0
5	KPD 80/32	329	190.0	133.0	95.0	73.5	125	2950	16.0
6	KPD 80/32	255	121.0	73.0	38.0	60.0	55	2950	16.0
7	KPD 100/32	329	260.0	134.0	122.0	79.0	150	2900	16.0
8	KPD 100/32	255	160.0	75.0	50.0	66.5	75	2900	16.0
9	KPD 125/26	264	475.0	80.0	127.0	82.5	150	2900	11.6
10	KPD 125/26	215	360.0	46.0	64.0	73.0	75	2900	11.6
11	KPD 150/52	510	425.0	79.8	112.0	82.5	150	1480	11.3
12	KPD 150/52	410	350.0	52.0	67.0	73.0	90	1480	11.3
13	KPD 100/40DV	409	280.0	206.0	231.0	69.0	270	2900	23.3
14	KPD 100/40DV	320	170.0	118.0	400.0	57.5	125	2900	23.3
15	KPD 80/40DV	409	180.0	202.0	156.0	63.0	250	2900	23.2
16	KPD 80/40DV	320	125.0	122.5	82.0	50.0	125	2900	23.2
17	KPD 40/32	329	32.5	134.0	27.5	42.0	37	2900	16.0
18	KPD 150/40	402	269.3	80	84.3	69	164	1760	9.2

Refer to PSB Assess 7191177582-MEC18-JC for details

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Issued on: 2023-02-13

Vice-President (Certification Department)
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PD-2002-01



PSB Singapore

CERTIFICATE OF CONFORMITY

No. CLS1A 080413 0011 Rev. 00

Initial No. CLS1A 13 01 80413 001

Product Details:

Table 2 KIRLOSKAR single stage, end suction, back pullout, horizontal shaft, electric motor driven centrifugal fire pumps

s/n	Pump Model	Impeller Diameter (mm)	Duty Point				Driver Power (kW)	Max Working Pressure (kg/cm ²)
			Flow, Q (m ³ /h)	Head, H (m)	Power, P (kW)	Eff. (%)		
1	CE 50/13	118	54.0	15.0	3.3	67.0	5.5	11.0
2	CE 100/26	240	222.0	75.0	60.5	75.0	90	11.0
3	CE 50/16	155	69.0	30.0	7.4	76.0	11	11.0
4	CE 50/26	264	99.0	75.0	31.1	62.5	45	11.0
5	CE 65/16	165	123.0	30.0	12.6	80.0	18.5	11.0
6	CE 65/20	188	80.4	45.0	14.5	68.0	22	11.0
7	CE 100/20	214	204.0	60.0	46.3	72.0	75	11.0
8	CE 80/20	196	141.0	45.0	25.0	69.0	37	11.0
9	CE 80/26	240	174.0	75.0	48.0	74.0	75	11.0

Refer to PSB Assess 7191184251-MEC19-JC for details

Replacement History:

Predecessor Certificate (Issue Date)

CLS1A 13 01 80413 001 (2013-01-08)
 CLS1A 15 09 80413 003 (2015-09-07)
 CLS1A 18 03 80413 005 (2018-04-26)
 CLSAN 080413 0007 Rev. 00 (2019-06-26)
 CLS1A 080413 0009 Rev. 00 (2021-05-31)
 CLS1A 080413 0009 Rev. 01 (2021-07-26)

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Vice-President (Certification Department)
 TÜV SÜD PSB

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