

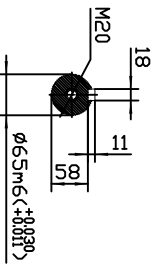
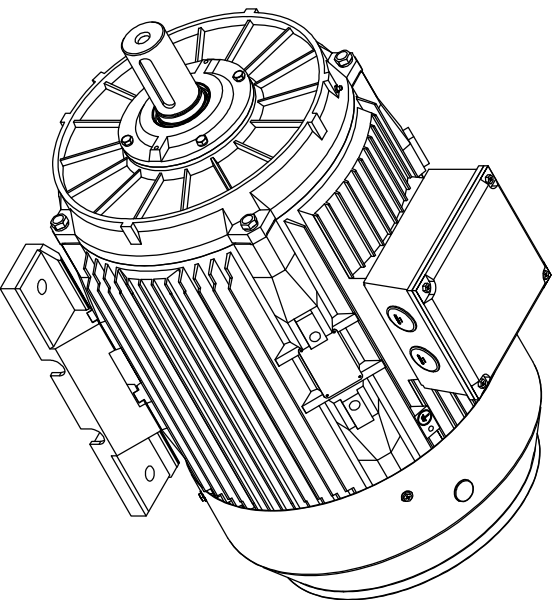
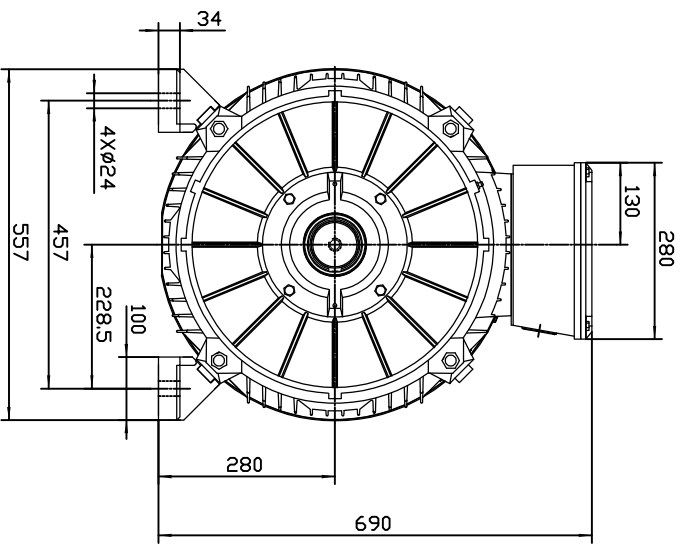
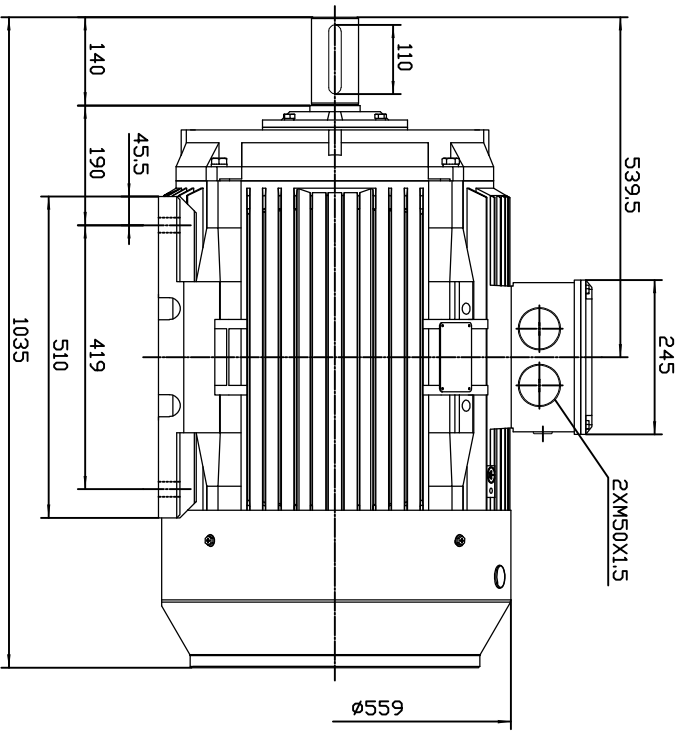
**ECOL MOTOR**
**MODEL D1S 280M-2**
**TECHNICAL DATA SHEET**

General Data	
Frame size	280
Housing material	Casting iron
Install model	According to the standard
Type of feet	Removable feet (Standard) Fixed feet (Optional)
Net weight	572 kg
Insulation class	F (Standard)
	H (Optional)
Protection degree	IP 55 (Standard)
	IP 56 (Optional)
Thermal protection	Without (Standard)
	Customizable (Optional)
Service duty	S1
Vibration level	A
Balance	Half-key balanced
Cable glands	2 - M50x 1.5
Cooling	IC 411
Painting color	RAL 7024 (Standard)
	Customizable (Optional)
Regulations	IEC / DIN / ISO / VDE / EN
Standard	IEC 60034

Environmental conditions	
Ambient temperature	From -20°C to +40°C
Maximum altitude	1000 m above sea level

Electrical Data		
Output	90	kW
Frequency	50	Hz
Voltage (±5%)	400	V Δ @ 50Hz
	690	V Y @ 50Hz
	480	V Δ @ 60Hz
	828	V Y @ 60Hz
Rotation speed	2930	RPM @ 50Hz
	3516	RPM @ 60Hz
Rated current	155.2	A (In) @ Δ 50Hz
	89.6	A (In) @ Y 50Hz
Starting current	7.5	xIn
Rated torque	293.34	Nm (Mn)
Starting torque	2	xMn
Breakdown torque	2.3	xMn
		IE1
Efficiency	93	@ 100% load
	92.8	@ 75% load
	90.9	@ 50% load
Power factor cosφ	0.9	@ 100% load

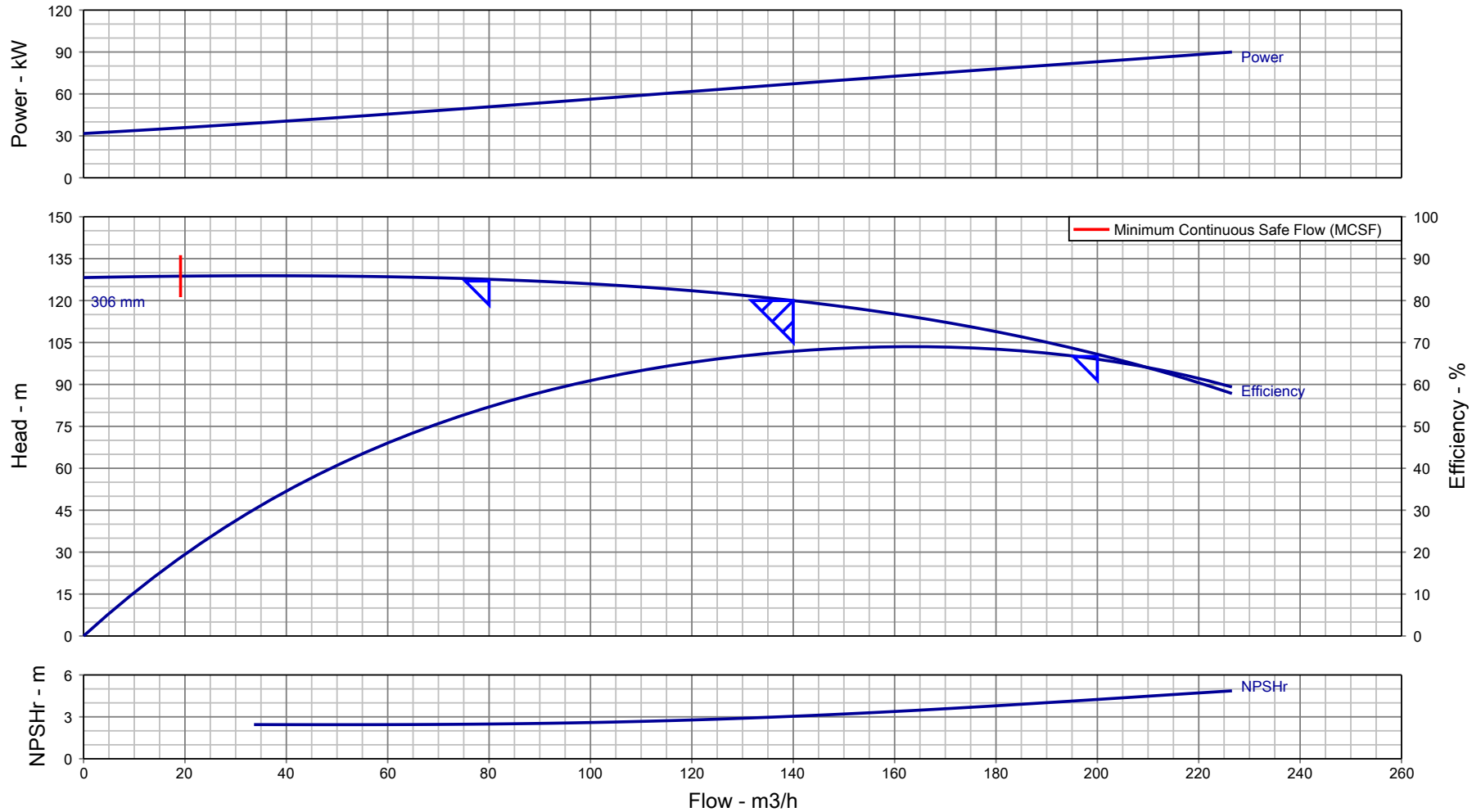
Mechanical Data		
Bearings brand	C&U	(Standard)
	Customizable	(Optional)
Bearings type	6319 C3	(DE)
	6319 C3	(NDE)
Lifetime of bearings		- hours
Allowed radial load		6750 N
Allowed axial load		57700 N
Grease type	polyurea-based grease	
Lubrication interval of NDE bearing		3500 h
Lubrication interval of DE bearing		3500 h
Moment of inertia	0.795390	Kg*m <sup>2</sup>
Noise level	94	dB(A)



DS 280M-2P B3

DS 280M-2P B3 MOUNT		1HMV.010.1095B	
DESSUN MOTOR DIS SERIES		RATE 1:6	
REVISION			

## Pump Performance Curve



Customer :	Pump Size/ Stages : CPHM 80/32/ 1	Flow, rated : 140.0 m <sup>3</sup> /h
Customer enquiry :	Speed, rated : 2970 rpm	Differential Head : 120.0 m
Project : Default	Based on curve number : HD13723KA0 Rev 0	Fluid density rated : 0.998 kg/dm <sup>3</sup>
Quote number : 312657	Viscosity : 1.00 cSt	Efficiency : 67.92 %
Item number : 001	Cq/Ch/Ce/Cn [HI2010] : 1.00 / 1.00 / 1.00 / 1.00	Power, rated : 67.27 kW
Quantity : 1	Minimum recommended driver rating : 90.00 kW / 121 hp	NPSH required : 3.04 m
Date last saved : 09 Oct 2020 11:56 AM	Performance testing standard : ISO 9906 / ANSI-HI 14.6 Gr 2B	Liquid Type/ Application : Water

Notes: 1. Performance at shut off condition is approximate. 2. Rated impeller diameter is approximate. 3. Only duty point is guaranteed as per testing standard.



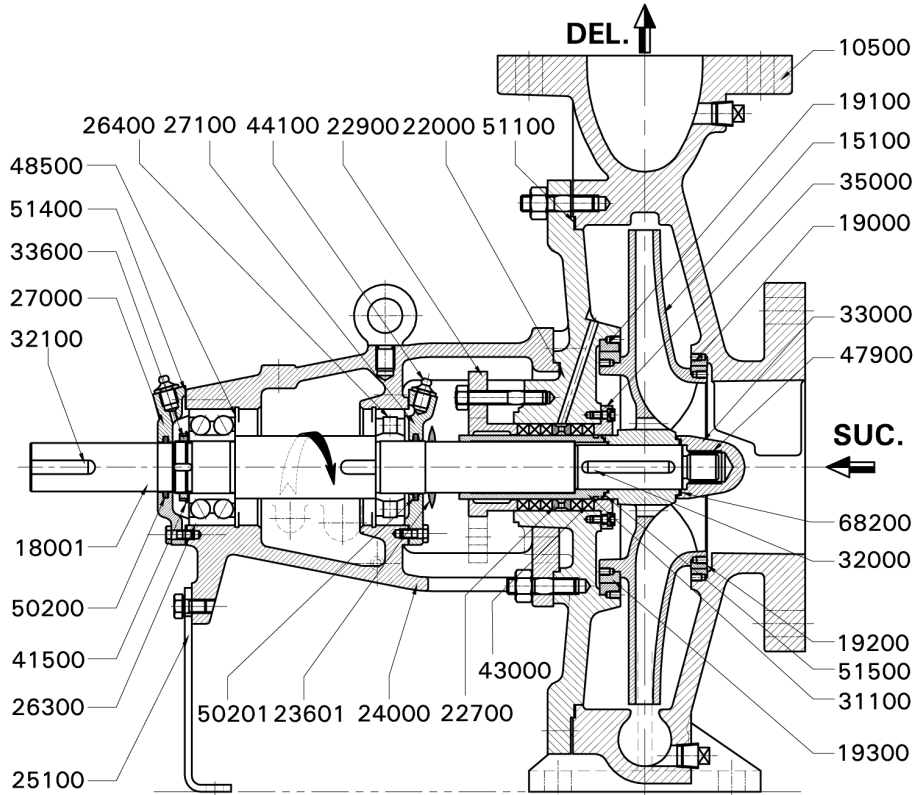
Enriching Lives

## Pump Performance Datasheet

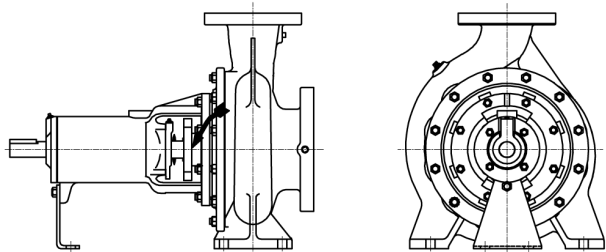
General			
Customer	:	Quote number	: 312657
Customer Enquiry No.	:	Pump model	: CPHM 80/32
Project	: Default	Stages	: 1
End user	: -	Based on curve number	: HD13723KA0 Rev 0
Tag number	: 001	Date last updated	: 09 Oct 2020 11:56 AM
Service	: -	Quantity of pumps	: 1
Operating Conditions		Liquid	
Flow, rated	: 140.0 m3/h	Liquid handled	: Water
Suction pressure, rated / max	: 0.00 bar.g / 0.00 bar.g	Additional liquid description	: Fresh Water
Discharge pressure, rated	: 11.75 bar.g	Temperature, max	: 20.00 deg C
Head, rated (requested)	: 120.0 m	Solids diameter, max	: 0.00 mm
NPSH available, rated	: Value not specified	Solids in suspension by volume	: 0.00 %
Frequency	: 50 Hz	Specific gravity, rated / max	: 0.998 / 0.998 kg/dm3
		Viscosity, Rated / Max.	: 1.00 cSt / -
Performance		Driver & Power Data	
Pump speed, rated	: 2970 rpm	Driver sizing specification	: Maximum Power
Impeller Dia, Rated (Approx.)	: 306 mm	Margin over specification	: 0.00 %
Impeller diameter, maximum	: 329 mm	Power, rated	: 67.27 kW
Impeller diameter, minimum	: 255 mm	-	: -
Efficiency at duty point	: 67.92 %	-	: -
NPSH required / margin required	: 3.04 m / 0.50 m	Driver Rating	: 90KW
		Pressure Data	
MCSF	: 19.13 m3/h	Maximum working pressure	: 12.62 bar.g
Cq/Ch/Ce: [-]	: 1.00 / 1.00 / 1.00	Maximum allowable working pressure	: 16.00 bar.g
Water eq. duties (Qw/Hw/Ew)	: 140.0 m3/h / 120.0 m / 67.92 %	Maximum allowable suction pressure	: 2.00 bar.g
Suction / Delivery nozzle size	: 125 mm / 80.00 mm	Hydrostatic test pressure	: 20.59 bar.g
Noise level	: 85 dB		
		Construction	
Vibration level (RMS)	: 5.1 mm/s	Basic construction	: End Suction Pump-OH1
Test standard	: ISO 9906 / ANSI-HI 14.6 Gr 2B	Impeller type	: Enclosed
Starting condition	: Closed Delivery Valve	Selection status	: Near Miss
Material		Rec. Pipe Size (Suc / Del)	: 200 mm / 150 mm
MOC Code	: 01MOC		
Material (Casing / Impeller / Shaft)	: CI IS210:FG260 (012) / CI IS210:FG260 (012) / CS IS1570:40C8 HOT RLD (053)		
-	: -		



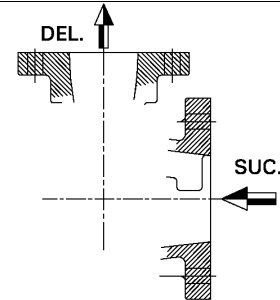
Enriching Lives



PART NO.	PART DESCRIPTION	MAT. CODE	MOC DESCRIPTION
10500	PUMP CASING	012	CI IS210:FG260
15100*	ENCLOSED IMPELLER	012	CI IS210:FG260
18001*	PUMP SHAFT	053	CS IS1570:40C8 HOT RLD
19000*	CSG. WEAR RING - SUC. SIDE	012	CI IS210:FG260
19100*	CSG. WEAR RING - DEL. SIDE	012	CI IS210:FG260
19200*	IMP. WEAR RING - SUC. SIDE	012	CI IS210:FG260
19300*	IMP. WEAR RING - DEL. SIDE	012	CI IS210:FG260
22000	CASING COVER	012	CI IS210:FG260
22700*	LANTERN RING	364	NYLON
22900	SPLIT GLAND	012	CI IS210:FG260
23601	LIQUID DEFLECTOR	370	NATURAL RUB ASTM2000AA-70SHORE/7MPa
24000	BEARING HOUSING	012	CI IS 210-FG 260
25100	SUPPORT FOOT	042	MS IS:5986-Fe410WA (OLD-IS:1079)
26300*	ANGULAR CONTACT BEARING	000	STEEL
26400*	CYLINDRICAL ROLLER BEARING	000	STEEL
27000	BEARING COVER DE	012	CI IS 210-FG 260
27100	BEARING COVER NDE	012	CI IS 210-FG 260
31100*	SHAFT SLEEVE	556	ST ST ASTM A276-410(300BHN)-ANLD
32000*	KEY FOR IMPELLER	053	CS IS1570:40C8 HOT RLD
32100	KEY FOR COUPLING	053	CS IS1570:40C8 HOT RLD
33000	IMPELLER NUT	253	ST ST ASTM A276-410 ANLD
33600*	BEARING LOCK NUT	052	CS IS1570:20C8 HOT RLD
35000*	STUFFING BOX BUSH	012	CI IS 210-FG 260
41500*	LOCK WASHER -BRG.LOCK NUT	050	CS IS1570:10C4 HOT RLD
43000*	GLAND PACKING	810	PTFE BRAIDED WITH GRAPHITE (PTFE-NONAS)
44100	GREASE NIPPLE	444	CS IS:1367 Part3 CL4.6 CDP
47900*	HELICOIL SCREW LOCK INSERT	250	ST ST ASTM A276-304 ANLD
48500*	INTERNAL CIRCLIP	054	SPRING ST IS:4072-80C6
50200*	FELT RING -DE SIDE	375	FELT
50201*	FELT RING -NDE SIDE	375	FELT
51100*	GASKET : CASING COVER	702	NON ASBESTOS FERROLITE NAM37 OR EQ
51400*	GASKET : BEARING COVER	702	NON ASBESTOS FERROLITE NAM37 OR EQ
51500*	GASKET : SH. SLEEVE & IMP.	702	NON ASBESTOS FERROLITE NAM37 OR EQ
68200*	GASKET : IMP. & IMP. NUT	702	NON ASBESTOS FERROLITE NAM37 OR EQ



STUFFING BOX SEALING: SELF INTERNAL

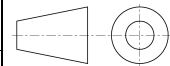


PUMP FLANGES (FF)

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

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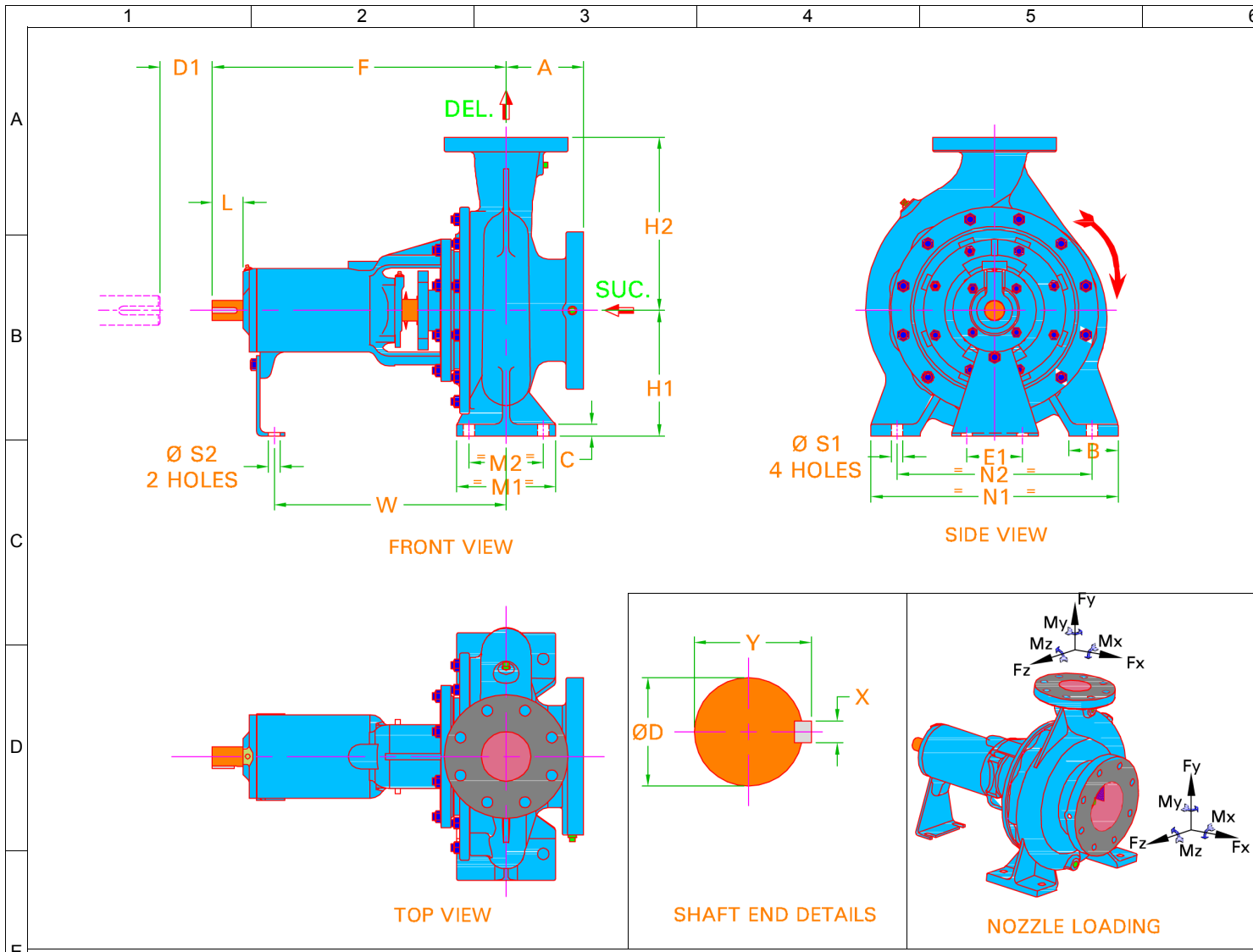
PUMP	<b>CPHM 80/32</b>	MOC	01
ENQUIRY NO./DATE	/	QUANTITY	1
PO. NO./DATE	-	TAG NO.	001
QUOTATION NO.	0	DATE.	-
O/A. NO.	-	MISI.	-
CUSTOMER	-		
END USER	-		
PROJECT	Default		
CONSULTANT	-		
SERVICE	-		



**Kirloskar Brothers Limited**  
KIRLOSKARVADI - 416308, DIST.- SANGLI (INDIA)

CROSS SECTIONAL DRAWING

DRAWING NO. **TC78-1**



Enriching Lives

PUMP DUTIES			
CAPACITY	140.0 m3/h	EFFICIENCY	67.92 %
TOTAL HEAD	120.0 m	PUMP INPUT	67.27 kW
DENSITY	0.998 kg/dm3	NPSHR	3.04 m

FLANGE DRILLING STANDARD AND DETAILS					
SUCTION	BS EN1092 PN16 FF		DELIVERY	BS EN1092 PN16	
	NOM. SIZE	RF DIA.	P.C.D.	NO OF HOLES	HOLE DIA.
SUCTION	125 mm	N.A.	210 mm	8	18.0
DELIVERY	80.00 mm	N.A.	160 mm	8	18.0

ALLOWABLE NOZZLE LOADING					
	FORCES			MOMENTS	
	Fx	Fy	Fz	Mx	My
SUCTION	200.0 kgf	260.0 kgf	170.0 kgf	1,079 N.m	686 N.m
DELIVERY	200.0 kgf	260.0 kgf	170.0 kgf	1,079 N.m	686 N.m

TAPPING DETAILS	
DESCRIPTION	SIZE / TYPE
Suction Gauge	1/2"BSP
Delivery Gauge	1/2"BSP
Casing Drain	1/2"BSP
Casing Vent	NA
Bearing Cooling in / out	NA
Pad Cooling in / out	NA
Priming in	NA
Base Drain	1 BSP

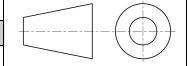


DIRECTION OF ROTATION FROM DE	CLOCKWISE		
PUMP	CPHM 80/32	PUMP WT.	120.0
REC. DRIVER RATING	90KW	GD*2	0.49 kg
ENQ. NO./DATE	/	RATED SPEED	2970R
PO. NO./DATE	-	QUANTITY	1
QUOTATION NO.	0	TAG NO.	001
O/A NO.	-	DATE	-
CUSTOMER	-	MISI	-
END USER	-		
PROJECT	Default		
CONSULTANT	-		
SERVICE	-		

**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	530	250	315	80.00	16.00	160	120	400	315	18.00	110	15.00	370	-	42.00
X	Y	L	D1	-	-	-	-	-	-	-	-	-	-	-	-
12.00	45.00	110	140	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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PUMP OUTLINE DRAWING

DRAWING NO. TL78-1-