



**MarelliMotori**

Via Sabbionara, 1  
36071 Arzignano  
Vicenza  
Italy

**DATI TECNICI - TECHNICAL DATA**

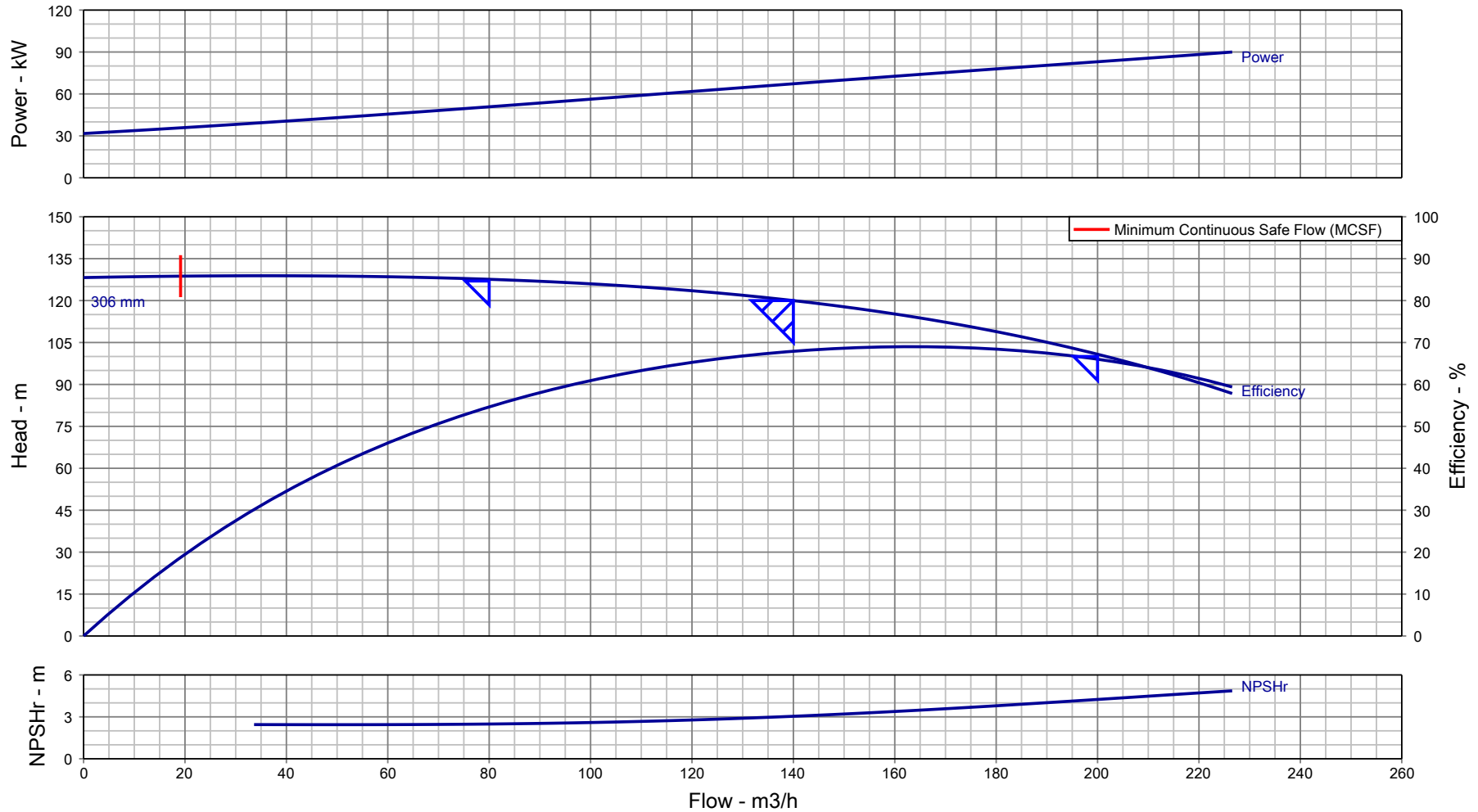
Cliente Customer		REFERENCE	PRELIMINARY
MOTORE TIPO - MOTOR TYPE			<b>BAA 280 M2</b>
POTENZA NOMINALE - RATED POWER		kW	90
SERVIZIO - DUTY			S1
TENSIONE - RATED VOLTAGE		V	400 DELTA
FREQUENZA - RATED FREQUENCY		Hz	50
CORRENTE NOMINALE - NOMINAL CURRENT		A	151,5
VELOCITA' NOMINALE - RATED SPEED		r.p.m.	2970
FORMA - SHAPE		IM	IM B3
ESECUZIONE - EXECUTION			TEFC
GRADO di PROTEZIONE - PROTECTION DEGREE		IP	55
TIPO di RAFFREDDAMENTO - COOLING SYSTEM		IC	411
MOMENTO D'INERZIA - MOMENT OF INERTIA (J = WD <sup>2</sup> /4)		Kgm <sup>2</sup>	0,675
TEMPERATURA AMBIENTE - AMBIENT TEMPERATURE		°C	40°C
REGISTRO - CLASSIFICATION			-
CLASSE di ISOLAMENTO - INSULATION CLASS			F
SOVRATEMPERATURA - TEMPERATURE RISE			B
NORME APPLICABILI - APPLICABLE STANDARDS		IEC	IEC 60034-1

		CARICO - LOAD	
			4/4
RENDIMENTO - EFFICIENCY		%	94,2
COS φ - POWER FACTOR			0,91
COPPIA - TORQUE	NOMINALE - FULL LOAD	Nm	290
	SPUNTO - LOCKED ROTOR	p.u.	2,4
	MASSIMA - PULL-OUT	p.u.	2,7
CORRENTE di C.C. - LOCKED ROTOR CURRENT		p.u.	6,7
AVVIAMENTO - STARTING METHOD			DOL
PROTEZIONI TERMICHE - AVVOLGIMENTI - WINDINGS			-
THERMAL PROTECTIONS - CUSCINETTI - BEARINGS			-
SCALDIGLIE ANTICONDENSA - SPACE HEATERS		V	-

**DATI MECCANICI - MECHANICAL DATA**

TIPO CUSCINETTI - BEARINGS TYPE	L.A. - D-end		6314-2Z
	L.O. - N-end		6314-2Z
LUBRIFICAZIONE - LUBRICATION	TIPO - TYPE		-
	INTERVALLO - INTERVAL	hr	-
DIREZIONE di ROTAZIONE - DIRECTION of ROTATION			BOTH
RUMOROSITA' A VUOTO - NO LOAD NOISE (± 3 dB(A) tolerance)		dB(A)	94
PESO - WEIGHT		Kg	516
VERNICIATURA - PAINTING		MUNSELL	RAL 5010
INTENSITA' di VIBRAZIONE - VIBRATION LEVEL		IEC 34.14	A

## 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.

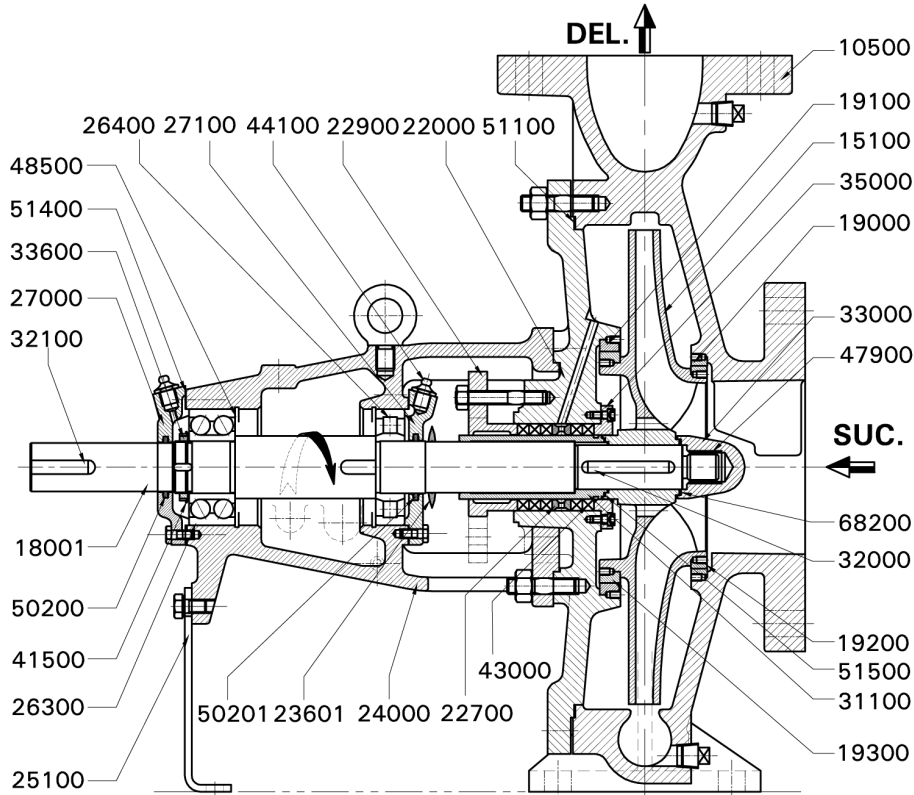


Enriching Lives

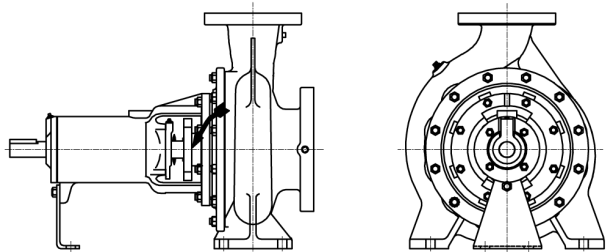
Pump Performance Datasheet			
General			
Customer	:	Quote number	: 312657
Customer Enquiry No.	:	Pump model	: CPHM 80/32
Project	: Default	Stages	: 1
End user	: -	Based on curve number	: HD13723KA0 Rev 0
Tag number	: 001	Date last updated	: 09 Oct 2020 11:56 AM
Service	: -	Quantity of pumps	: 1
Operating 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
Performance		Viscosity, Rated / Max.	: 1.00 cSt / -
Pump speed, rated	: 2970 rpm	Driver & Power Data	
Impeller Dia, Rated (Approx.)	: 306 mm	Driver sizing specification	: Maximum Power
Impeller diameter, maximum	: 329 mm	Margin over specification	: 0.00 %
Impeller diameter, minimum	: 255 mm	Power, rated	: 67.27 kW
Efficiency at duty point	: 67.92 %	-	: -
NPSH required / margin required	: 3.04 m / 0.50 m	-	: -
MCSF	: 19.13 m3/h	Driver Rating	: 90KW
Cq/Ch/Ce: [-]	: 1.00 / 1.00 / 1.00	Pressure Data	
Water eq. duties (Qw/Hw/Ew)	: 140.0 m3/h / 120.0 m / 67.92 %	Maximum working pressure	: 12.62 bar.g
Suction / Delivery nozzle size	: 125 mm / 80.00 mm	Maximum allowable working pressure	: 16.00 bar.g
Noise level	: 85 dB	Maximum allowable suction pressure	: 2.00 bar.g
Vibration level (RMS)	: 5.1 mm/s	Hydrostatic test pressure	: 20.59 bar.g
Test standard	: ISO 9906 / ANSI-HI 14.6 Gr 2B	Construction	
Starting condition	: Closed Delivery Valve	Basic construction	: End Suction Pump-OH1
		Impeller type	: Enclosed
		Selection status	: Near Miss
		Rec. Pipe Size (Suc / Del)	: 200 mm / 150 mm
Material			
MOC Code	: 01MOC		
Material (Casing / Impeller / Shaft)	: CI IS210:FG260 (012) / CI IS210:FG260 (012) / CS IS1570:40C8 HOT RLD (053)		
-	: -		



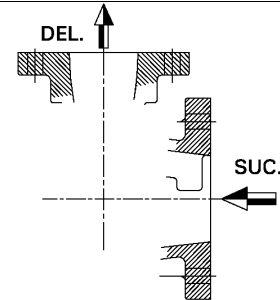
Enriching Lives



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

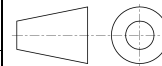


PUMP FLANGES (FF)

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

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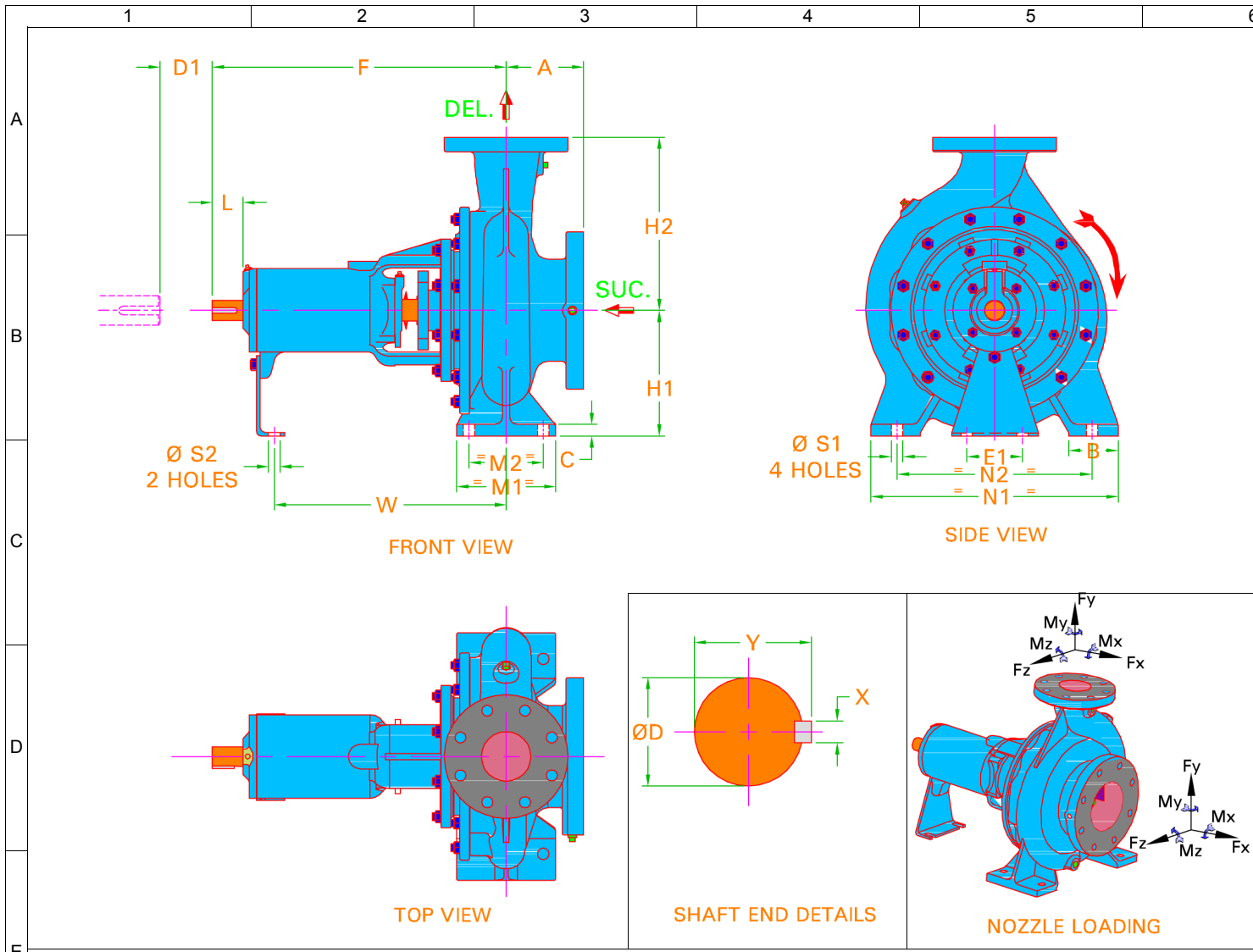
PUMP	<b>CPHM 80/32</b>	MOC	01
ENQUIRY NO./DATE	/	QUANTITY	1
PO. NO./DATE	-	TAG NO.	001
QUOTATION NO.	0	DATE.	-
O/A. NO.	-	MISI.	-
CUSTOMER	-		
END USER	-		
PROJECT	Default		
CONSULTANT	-		
SERVICE	-		



**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
SUCTION	125 mm	N.A.	210 mm
DELIVERY	80.00 mm	N.A.	160 mm

**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

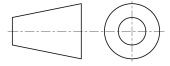
DIRECTION OF ROTATION FROM DE CLOCKWISE

PUMP	<b>CPHM 80/32</b>	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-