

ECOL MOTOR
MODEL D1S 280M-2
TECHNICAL DATA SHEET

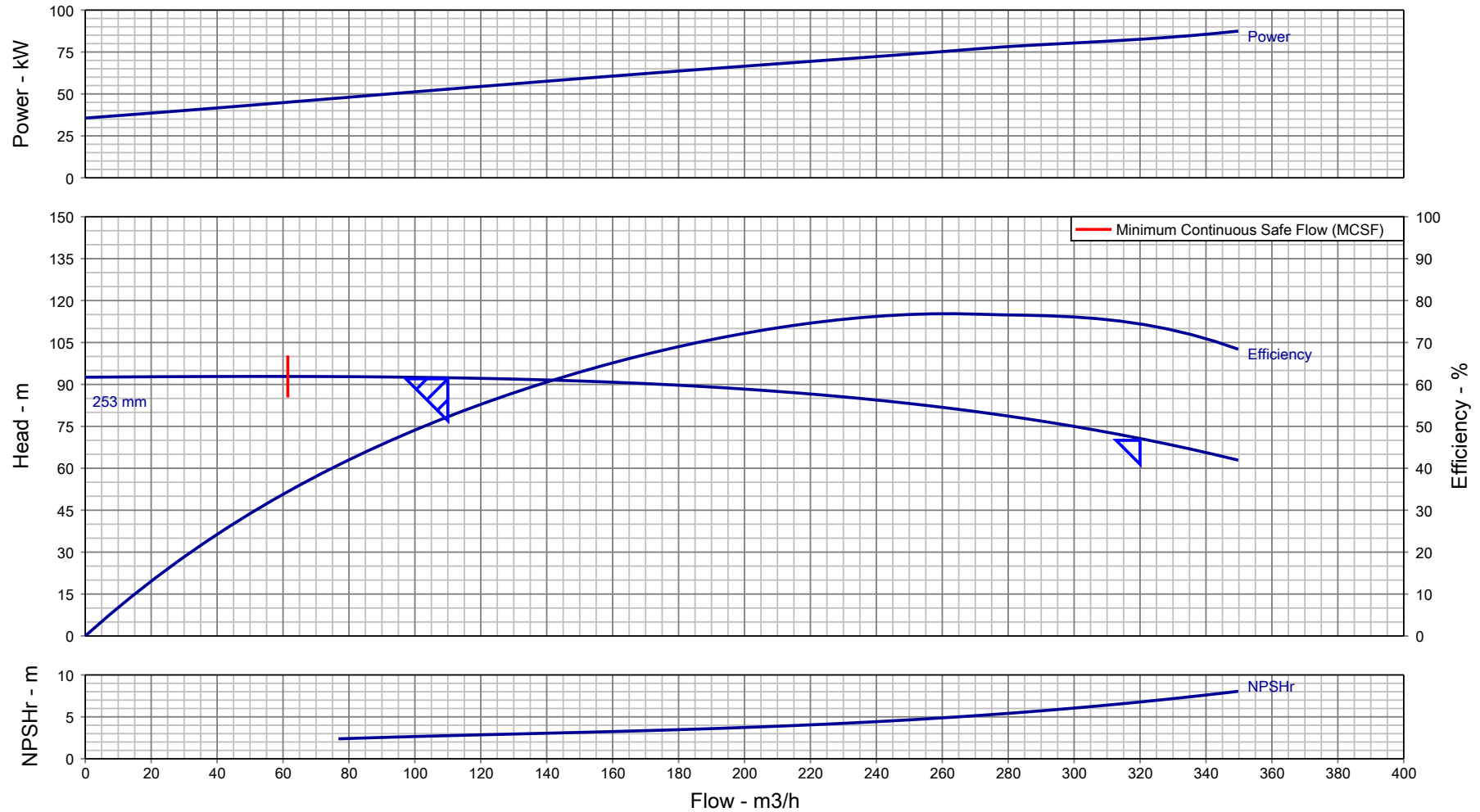
General Data	
Frame size	280
Housing material	Casting iron
Install model	According to the standard
Type of feet	Removable feet (Standard) Fixed feet (Optional)
Net weight	572 kg
Insulation class	F (Standard)
	H (Optional)
Protection degree	IP 55 (Standard)
	IP 56 (Optional)
Thermal protection	Without (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 ²
Noise level	94	dB(A)

Pump Performance Curve



Customer :	Pump Size/ Stages : DB 100/26/ 1	Flow, rated : 110.0 m ³ /h
Customer enquiry :	Speed, rated : 2970 rpm	Differential Head : 92.00 m
Project : Default	Based on curve number : HD10223A0 Rev 0	Fluid density rated : 0.998 kg/dm ³
Quote number : 312657	Viscosity : 1.00 cSt	Efficiency : 52.29 %
Item number : 001	Cq/Ch/Ce/Cn [HI2010] : 1.00 / 1.00 / 1.00 / 1.00	Power, rated : 52.85 kW
Quantity : 1	Minimum recommended driver rating : 90.00 kW / 121 hp	NPSH required : 2.76 m
Date last saved : 09 Oct 2020 11:39 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.



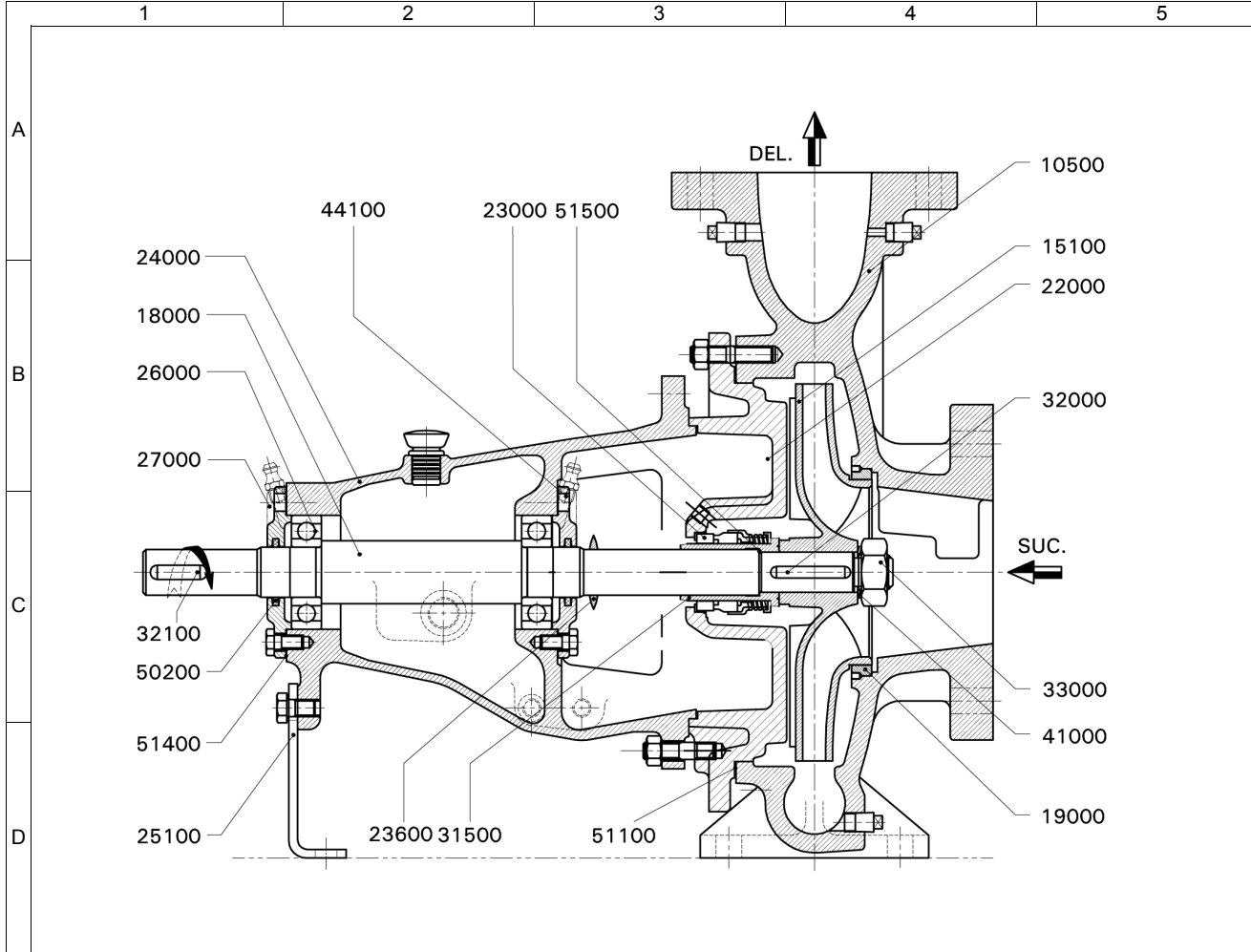
Enriching Lives

Pump Performance Datasheet

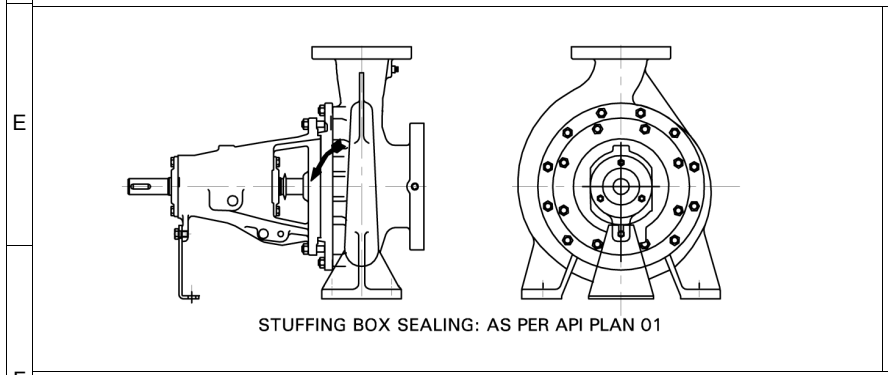
General			
Customer	:	Quote number	: 312657
Customer Enquiry No.	:	Pump model	: DB 100/26
Project	: Default	Stages	: 1
End user	: -	Based on curve number	: HD10223A0 Rev 0
Tag number	: 001	Date last updated	: 09 Oct 2020 11:39 AM
Service	: -	Quantity of pumps	: 1
Operating Conditions		Liquid	
Flow, rated	: 110.0 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	: 9.04 bar.g	Temperature, max	: 20.00 deg C
Head, rated (requested)	: 92.00 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.)	: 253 mm	Margin over specification	: 0.00 %
Impeller diameter, maximum	: 264 mm	Power, rated	: 52.85 kW
Impeller diameter, minimum	: 205 mm	-	: -
Efficiency at duty point	: 52.29 %	-	: -
NPSH required / margin required	: 2.76 m / 0.50 m	Driver Rating	: 90KW
MCSF	: 61.45 m3/h		
Cq/Ch/Ce: [-]	: 1.00 / 1.00 / 1.00		
Water eq. duties (Qw/Hw/Ew)	: 110.0 m3/h / 92.00 m / 52.29 %		
Suction / Delivery nozzle size	: 125 mm / 100 mm		
Noise level	: 90 dB		
Vibration level (RMS)	: 5.1 mm/s		
Test standard	: ISO 9906 / ANSI-HI 14.6 Gr 2B		
Starting condition	: Closed Delivery Valve		
Material		Pressure Data	
MOC Code	: 16MOC	Maximum working pressure	: 9.09 bar.g
Material (Casing / Impeller / Shaft)	: CI IS210:FG260 (012) / CI IS210:FG260 (012) / ST ST ASTM A276-410 ANLD (253)	Maximum allowable working pressure	: 16.00 bar.g
-	: -	Maximum allowable suction pressure	: 1.96 bar.g
		Hydrostatic test pressure	: 18.34 bar.g
		Construction	
		Basic construction	: End Suction Pump-OH1
		Impeller type	: Enclosed
		Selection status	: Acceptable
		Rec. Pipe Size (Suc / Del)	: 150 mm / 125 mm



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PART NO.	PART DESCRIPTION	MAT. CODE	MOC DESCRIPTION
10500	PUMP CASING	012	CI IS210:FG260
15100*	IMPELLER	012	CI IS210:FG260
18000*	PUMP SHAFT	253	ST ST ASTM A276-410 ANLD
19000*	WEAR RING - SUCTION SIDE	012	CI IS210:FG260
22000	CASING COVER	012	CI IS210:FG260
23000*	MECHANICAL SEAL	998	DIN SEAL
23600*	LIQUID DEFELCTOR	370	NATURAL RUB ASTM D2000AA-70SHORE/7MPa
24000	BEARING HOUSING	012	CI IS210:FG260
25100	SUPPORT FOOT	042	MS IS:5986-Fe410WA (OLD-IS:1079)
26000*	DEEP GROOVE BALL BEARING	000	STEEL
27000	BEARING COVER DE & NDE	012	CI IS 210-FG 260
31500*	SHAFT SLEEVE - MECHANICALSEAL	565	ST ST ASTMA276-410(210/250BHN)-ANLD
32000*	KEY FOR IMPELLER	253	ST ST ASTM A276-410 ANLD
32100	KEY FOR COUPLING	053	CS IS1570:40C8 HOT RLD
33001*	IMPELLER NUT	664	AUS ST ASTMA194/194M-8M-UNS S31600 (NUT)
41000*	LOCK WASHER-IMPELLER NUT	054	SPRING ST IS:4072-80C6
44100	GREASE NIPPLE	444	CS IS:1367 Part3 CL4.6 CDP
50200*	FELT RING	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-SHAFT SLEEVE	702	NON ASBESTOS FERROLITE NAM37 OR EQ



PUMP	DB 100/26	MOC	16
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	-		

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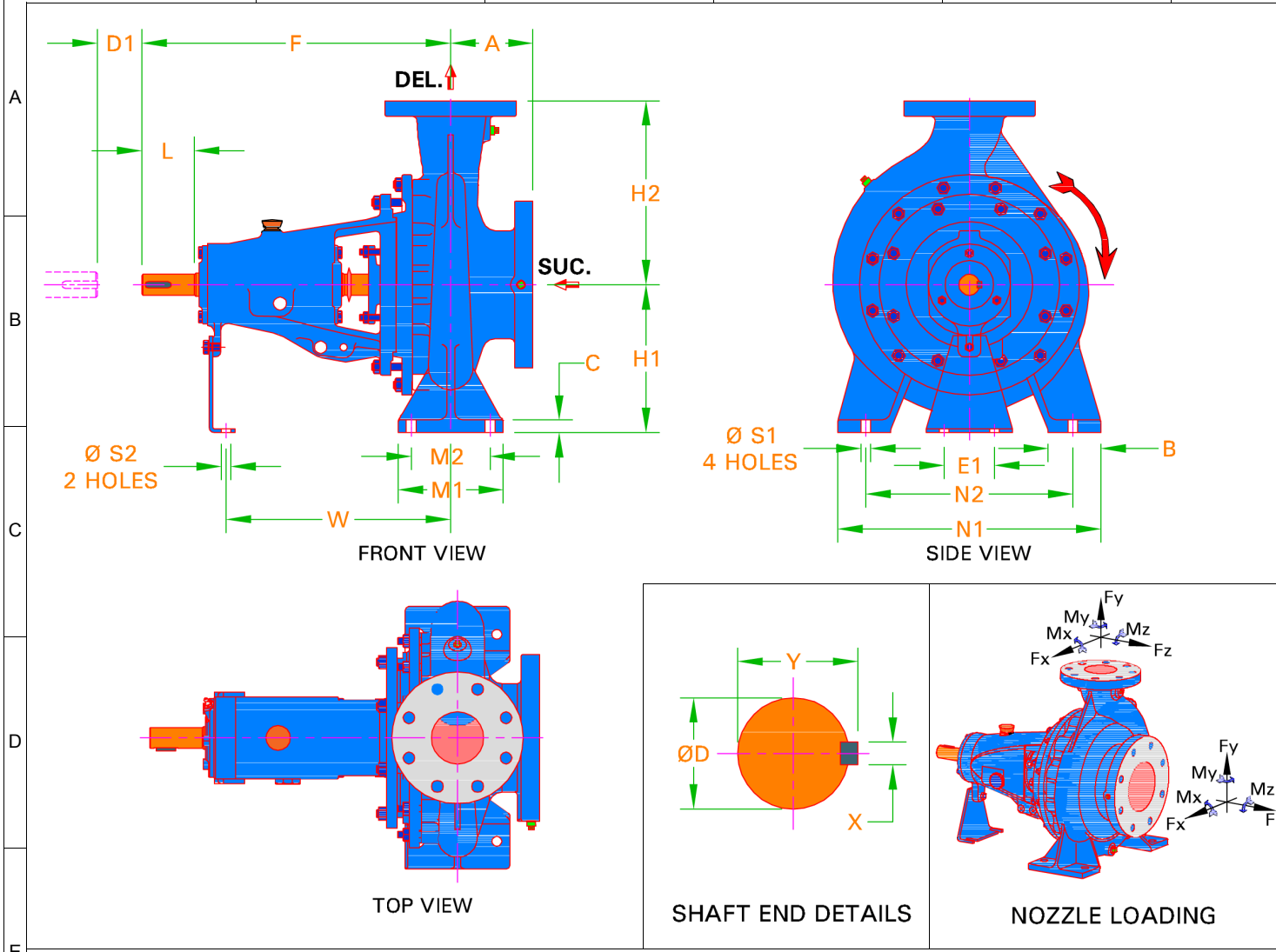
CROSS SECTIONAL DRAWING

DRAWING NO. **TC02-1**

NOTES:

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

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Enriching Lives

PUMP DUTIES			
CAPACITY	110.0 m ³ /h	EFFICIENCY	52.29 %
TOTAL HEAD	92.00 m	PUMP INPUT	52.85 kW
DENSITY	0.998 kg/dm ³	NPSHR	2.76 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	100 mm	N.A.	180 mm	8	18.0

ALLOWABLE NOZZLE LOADING					
	FORCES			MOMENTS	
	Fx	Fy	Fz	Mx	My
SUCTION	114.0 kgf	284.0 kgf	227.0 kgf	1,697 N.m	843 N.m
DELIVERY	91.00 kgf	227.0 kgf	182.0 kgf	1,353 N.m	677 N.m

TAPPING DETAILS	
DESCRIPTION	SIZE / TYPE
Suction Gauge	1/2"BSP
Delivery Gauge	1/2"BSP
Casing Drain	3/8"BSP
Casing Vent	NA
Bearing Cooling in / out	NA
Pad Cooling in / out	NA
Priming in	NA
Base Drain	NA

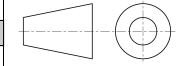
DIRECTION OF ROTATION FROM DE: CLOCKWISE

PUMP	DB 100/26	PUMP WT.	103.0
		GD*2	0.03 kg
REC. DRIVER RATING	90KW	RATED SPEED	2970R
ENQ. 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	-		

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
140	470	225	280	80.00	16.00	160	120	400	315	18.00	110	14.00	342	-	32.00
X	Y	L	D1	-	-	-	-	-	-	-	-	-	-	-	-
10.00	35.00	80.00	140	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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PUMP OUTLINE DRAWING

DRAWING NO. TL02-1-