

DIESEL ENGINE

KDP SERIES FOR FIRE PUMP

Model: 3KDP-22

Prime power 22.0KW(30HP)/3000 rpm
Standby Power 24.2KW(33HP)/3000 rpm

Engine Specifications

In-Line, 4 stroke, water-cooled, Natural Aspiration
 Combustion type Direct injection
 Cylinders - Bore × stroke 3 - 85 × 90 mm
 Displacement 1532 cc
 Firing order 1 – 3 – 2
 Compression ratio 22 : 1
 Dry weight Approx. 190 kg
 Dimension(LxWxH) 642 × 494 × 639 mm
 Rotation Anti-clockwise
 Flywheel / Housing SAE # 7.5 / # 4

Fuel System

Injection pump Direct Injection type
 Governor Mechanicaltype
 Feed pump Mechanicaltype
 Injection nozzle Multi-hole type/ 0.23 mm
 Opening pressure 22+0.5MPa
 Fuel filter Single Stage, Paper

Fuel Consumption

Prime power at 3000rpm 6.3 liters/h
 Standby Power at 3000rpm 7.0 liters/h

Cooling System

Cooling method Fresh water forced type
 Water pump Centrifugal, Belt driven
 Max. water Temp 95 degree C.
 Cooling Fan Blade 7EA - Ø 410 mm

Lubrication System

Lub. Oil Pan Capacity 4 liters
 Max. allowable Oil Temp 110 degree C.
 Min. 294 kPa
 Max. 490 kPa
 Oil pressure

Intake & Exhaust System

Max air restriction Clean 2 kPa / Dirty 5 kPa
 Exhaust back Max 6 kPa

Engineering Data

Combustion Air 1.39m³/min
 Exhaust Gas 3.49m³/min

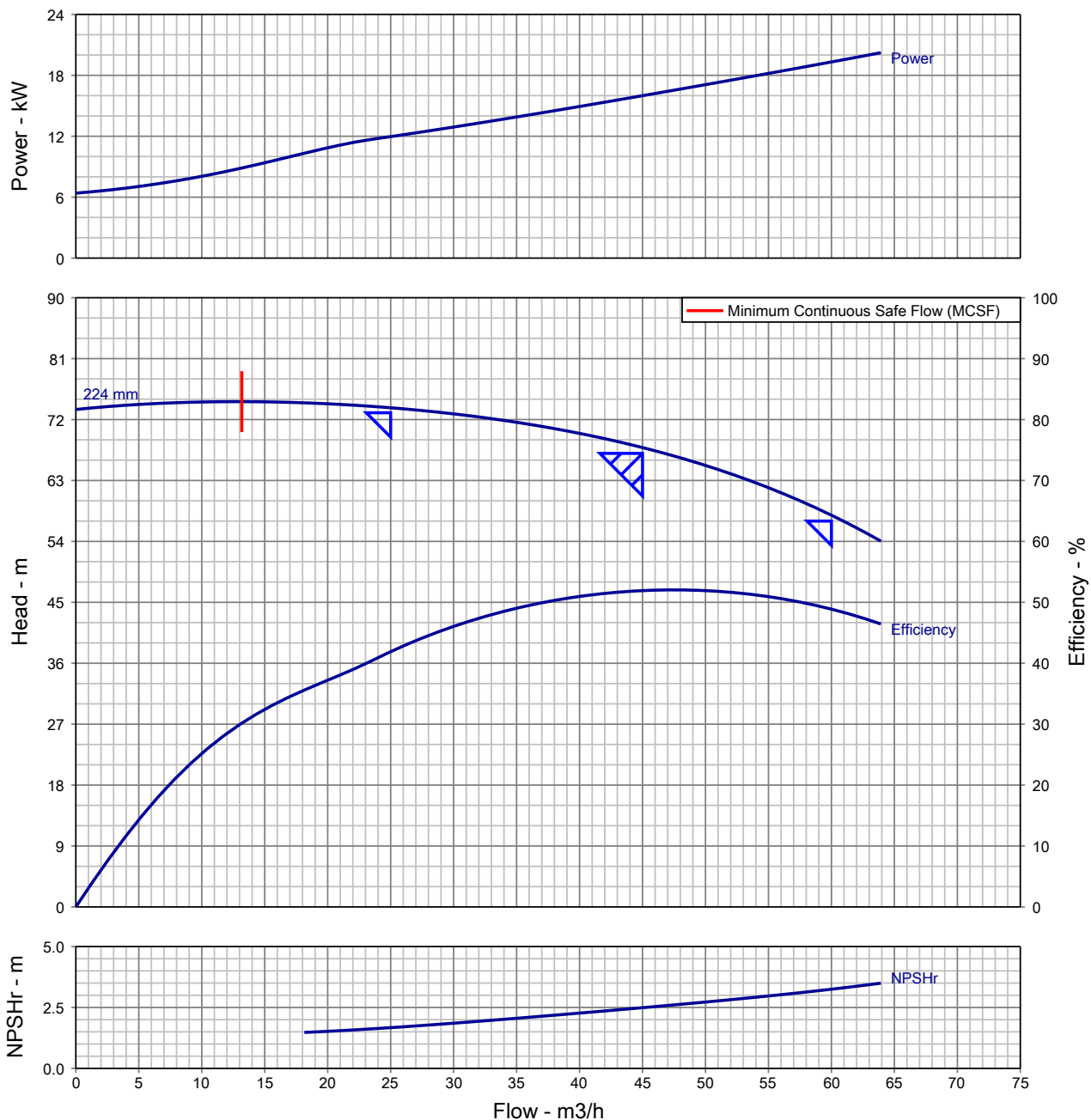
Electric System

Charging generator 13.5 V × 36 A
 Starting motor 12 V × 3.0 kW
 Battery 12 Vx 80 Ah

Conversion Table

PS = kW × 1.3596 in. = mm × 0.0394
 psi = kg/cm² × 14.2233
 HP= PS x 0.98635

Pump Performance Curve



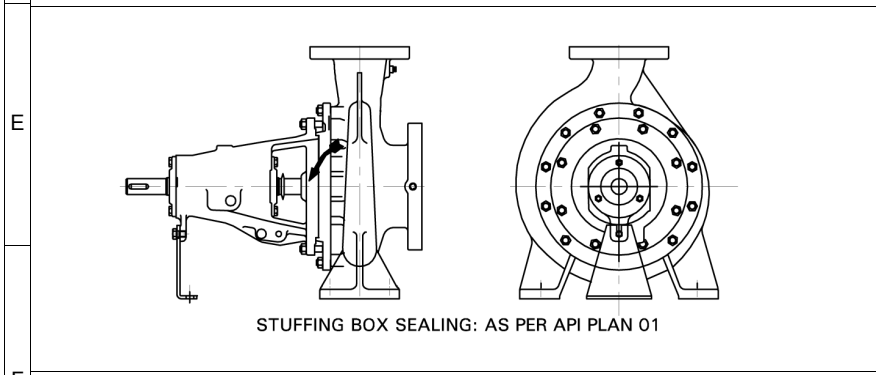
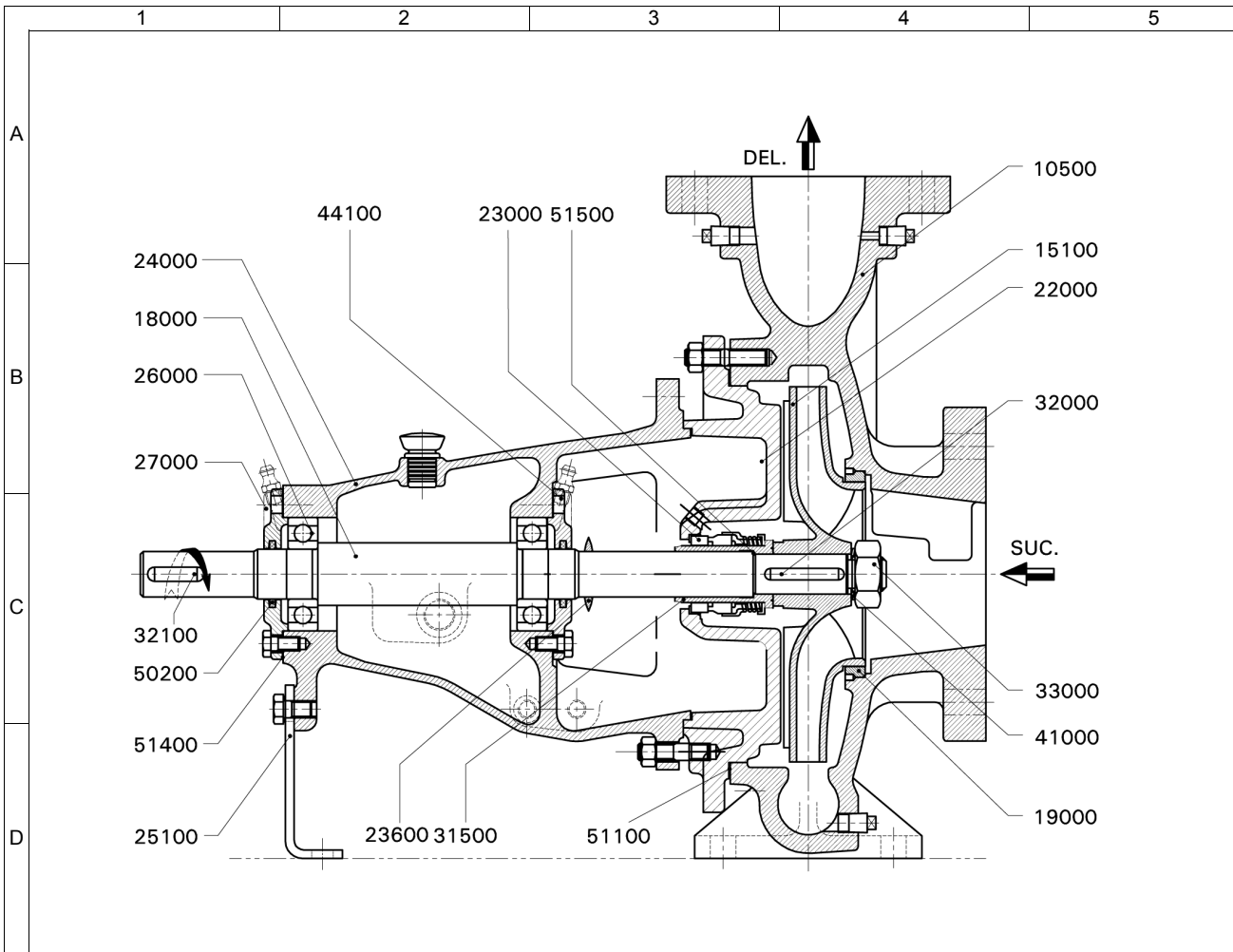
Customer :		Pump Size/ Stages :	DB 50/26/ 1
Customer enquiry :		Speed, rated :	2940 rpm
Project :	Default	Based on curve number :	HD10212A0 Rev 0
Quote number :	312657	Viscosity :	1.00 cSt
Item number :	001	Cq/Ch/Ce/Cn [HI2010] :	1.00 / 1.00 / 1.00 / 1.00
Quantity :	1	Minimum recommended driver rating :	22.00 kW / 29.50 hp
Flow, rated :	45.00 m ³ /h	Performance testing standard :	ISO 9906 / ANSI-HI 14.6 Gr 2B
Differential Head :	67.00 m	Date last saved :	08 Oct 2020 9:39 AM
Fluid density rated :	0.998 kg/dm ³	Notes:	
Efficiency :	51.92 %	1.	Performance at shut off condition is approximate.
Power, rated :	15.99 kW	2.	Rated impeller diameter is approximate.
NPSH required :	2.49 m	3.	Only duty point is guaranteed as per testing standard.
Liquid Type/ Application :	Water		



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Pump Performance Datasheet

General								
Customer	:		Quote number	: 312657				
Customer Enquiry No.	:		Pump model	: DB 50/26				
Project	:	Default	Stages	: 1				
End user	:	-	Based on curve number	: HD10212A0 Rev 0				
Tag number	:	001	Date last updated	: 08 Oct 2020 9:39 AM				
Service	:	-	Quantity of pumps	: 1				
Operating Conditions		Liquid						
Flow, rated	:	45.00 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	:	6.64 bar.g	Temperature, max	: 20.00 deg C				
Head, rated (requested)	:	67.00 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				
Performance		Viscosity, Rated / Max.		: 1.00 cSt / -				
		Driver & Power Data						
		Pump speed, rated	:	2940 rpm	Driver sizing specification	: Maximum Power		
		Impeller Dia, Rated (Approx.)	:	224 mm	Margin over specification	: 0.00 %		
		Impeller diameter, maximum	:	264 mm	Power, rated	: 15.99 kW		
		Impeller diameter, minimum	:	205 mm	-	: -		
		Efficiency at duty point	:	51.92 %	-	: -		
		NPSH required / margin required	:	2.49 m / 0.50 m	Driver Rating	: 22KW		
				Pressure Data				
				MCSF	:	13.18 m3/h	Maximum working pressure	: 7.31 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)	:			45.00 m3/h / 67.00 m / 51.92 %	Maximum allowable suction pressure	: 1.96 bar.g		
Suction / Delivery nozzle size	:	65.00 mm / 50.00 mm	Hydrostatic test pressure	: 18.34 bar.g				
Noise level	:	90 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	: Acceptable				
Material		Rec. Pipe Size (Suc / Del)		: 100 mm / 80.00 mm				
MOC Code	:	16MOC						
Material (Casing / Impeller / Shaft)	:	CI IS210:FG260 (012) / CI IS210:FG260 (012) / ST ST ASTM A276-410 ANLD (253)						
-	:	-						




NOTES:

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

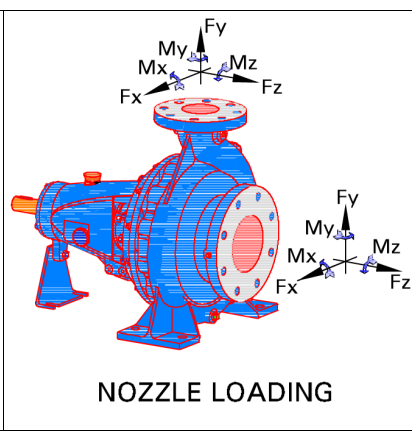
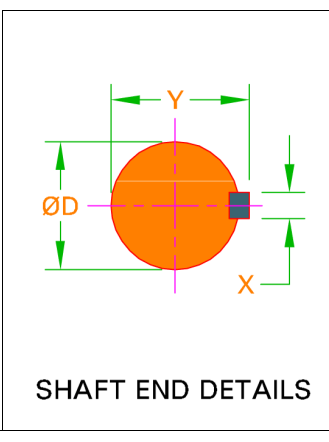
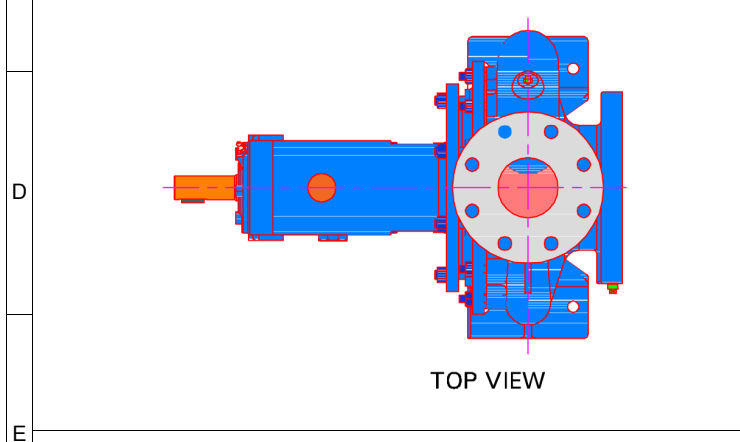
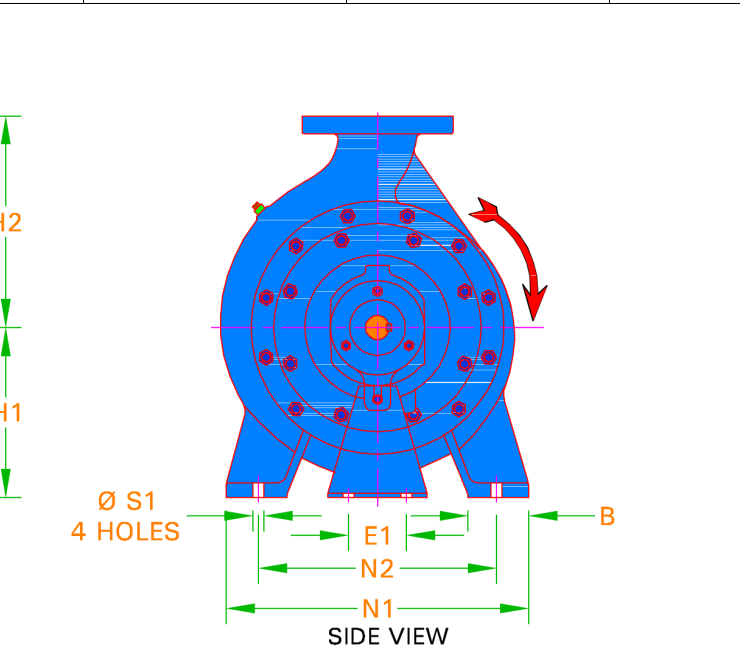
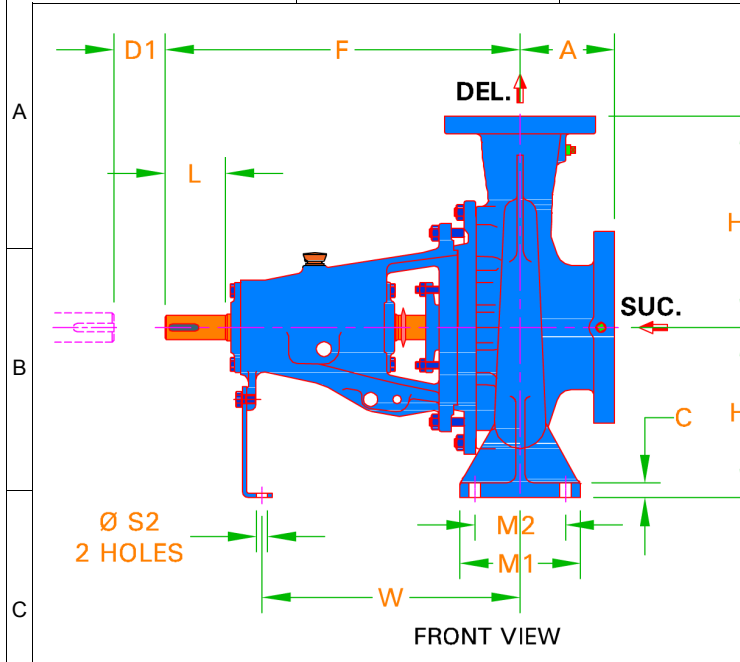
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PART NO.	PART DESCRIPTION	MAT. CODE	MOC DESCRIPTION
10500	PUMP CASING	012	CI IS210:FG260
15100*	IMPELLER	012	CI IS210:FG260
18000*	PUMP SHAFT	253	ST ST ASTM A276-410 ANLD
19000*	WEAR RING - SUCTION SIDE	012	CI IS210:FG260
22000	CASING COVER	012	CI 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 50/26	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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Kirloskar Brothers Limited
KIRLOS KARVADI - 416308, DIST.- SANGLI (INDIA)



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PUMP DUTIES					
CAPACITY	45.00 m3/h	EFFICIENCY	51.92 %		
TOTAL HEAD	67.00 m	PUMP INPUT	15.99 kW		
DENSITY	0.998 kg/dm3	NPSHR	2.49 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	65.00 mm	N.A.	145 mm	4	18.0
DELIVERY	50.00 mm	N.A.	125 mm	4	18.0

ALLOWABLE NOZZLE LOADING						
	FORCES			MOMENTS		
	Fx	Fy	Fz	Mx	My	Mz
SUCTION	57.00 kgf	142.0 kgf	114.0 kgf	843 N.m	422 N.m	422 N.m
DELIVERY	45.00 kgf	114.0 kgf	91.00 kgf	677 N.m	343 N.m	343 N.m

TAPPING DETAILS	
DESCRIPTION	SIZE / TYPE
Suction Gauge	1/4"BSP
Delivery Gauge	1/4"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	
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PUMP	DB 50/26	PUMP WT.	63.00
		GD*2	0.02 kg
REC. DRIVER RATING	22KW	RATED SPEED	2940R
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	-		

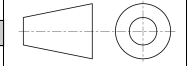
NOTES:
 • ALL DIMENSIONS ARE IN mm
 • DIM 'D1' INDICATES THE DISTANCE REQUIRED TO REMOVE BACK PULL OUT ASSEMBLY.

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A	F	H1	H2	B	C	M1	M2	N1	N2	S1	E1	S2	W	-	D
100	360	180	225	65.00	14.00	125	95.00	320	250	14.00	110	14.00	267	-	24.00

X	Y	L	D1	-	-	-	-	-	-	-	-	-	-	-	-
8.00	27.00	50.00	100	-	-	-	-	-	-	-	-	-	-	-	-

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



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PUMP OUTLINE DRAWING