

DIESEL ENGINE

KDP SERIES FOR FIRE PUMP

Model: 4KDP-30

Engine Specifications

In-Line, 4 stroke, water-cooled, Natural Aspiration	
Combustion type	Direct injection
Cylinders - Bore × stroke	4 - 85 × 95 mm
Displacement	2157 cc
Firing order	1 – 3 – 4 – 2
Compression ratio	22 : 1
Dry weight	Approx. 220 kg
Dimension(LxWxH)	750 × 500 × 650 mm
Rotation	Anti-clockwise
Flywheel / Housing	SAE # 7.5 / # 4

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

Intake & Exhaust System

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

Electric System

Charging generator	13.5 V × 36 A
Starting motor	12 V × 3.7 kW
Battery	12 Vx 120 Ah

Prime power
Standby Power

30.0KW(40HP)/3000 rpm
33.0KW(44HP)/3000 rpm

Fuel System

Injection pump	Direct Injection type
Governor	Mechanicaltype
Feed pump	Mechanicaltype
Injection nozzle	Multi-hole type/ 0.245 mm
Opening pressure	20+0.5MPa
Fuel filter	Single Stage, Paper

Fuel Consumption

Prime power at 3000rpm	8.0 liters/h
Standby Power at 3000rpm	8.8 liters/h

Lubrication System

Lub. Oil Pan Capacity	5.5 liters
Max. allowable Oil Temp	110 degree C.
	Min. 294 kPa
Oil pressure	Max. 490 kPa

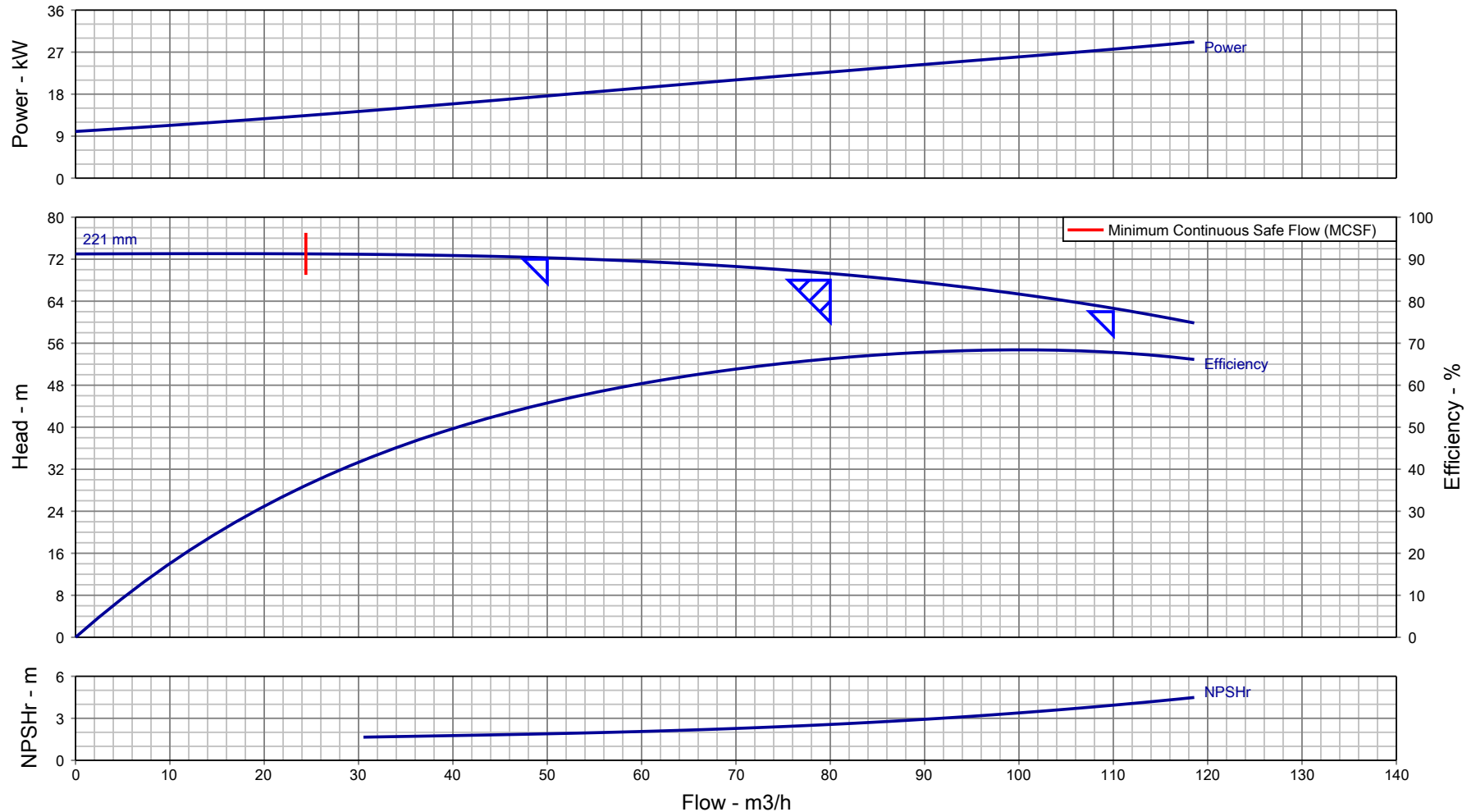
Engineering Data

Combustion Air	1.60m ³ /min
Exhaust Gas	3.90m ³ /min

Conversion Table

PS = kW × 1.3596	in. = mm × 0.0394
psi = kg/cm ² × 14.2233	
HP= PS x 0.98635	

Pump Performance Curve



Customer :	Pump Size/ Stages : DB 65/26/ 1	Flow, rated : 80.00 m ³ /h
Customer enquiry :	Speed, rated : 2950 rpm	Differential Head : 68.00 m
Project : Default	Based on curve number : HD10216A0 Rev 0	Fluid density rated : 0.998 kg/dm ³
Quote number : 312657	Viscosity : 1.00 cSt	Efficiency : 66.31 %
Item number : 001	Cq/Ch/Ce/Cn [HI2010] : 1.00 / 1.00 / 1.00 / 1.00	Power, rated : 22.73 kW
Quantity : 1	Minimum recommended driver rating : 30.00 kW / 40.23 hp	NPSH required : 2.56 m
Date last saved : 08 Oct 2020 12:12 PM	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.



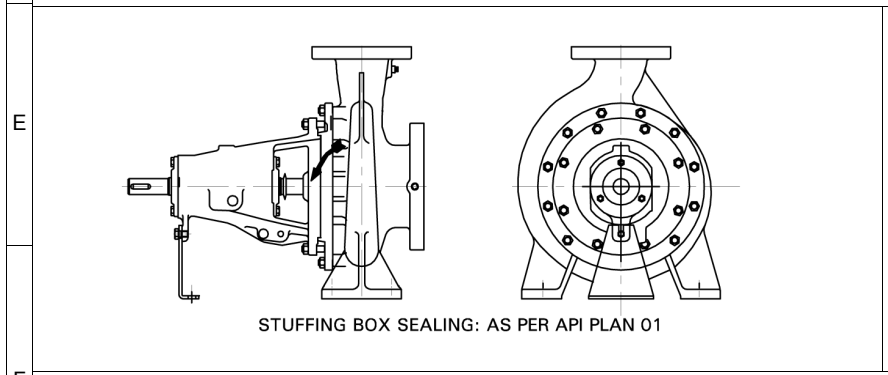
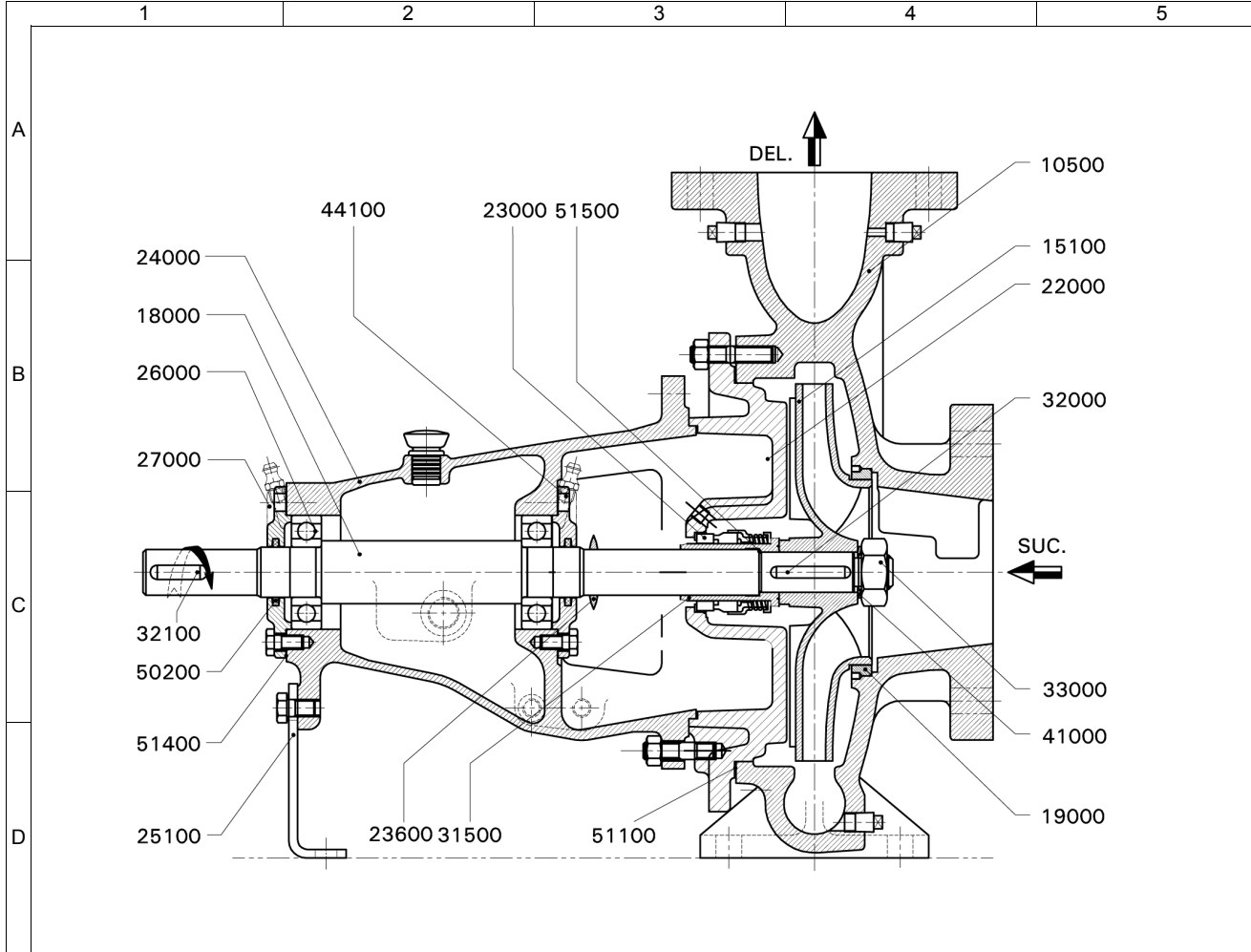
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Pump Performance Datasheet

General								
Customer	:		Quote number	: 312657				
Customer Enquiry No.	:		Pump model	: DB 65/26				
Project	:	Default	Stages	: 1				
End user	:	-	Based on curve number	: HD10216A0 Rev 0				
Tag number	:	001	Date last updated	: 08 Oct 2020 12:12 PM				
Service	:	-	Quantity of pumps	: 1				
Operating Conditions		Liquid						
Flow, rated	:	80.00 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	:	6.78 bar.g	Temperature, max	: 20.00 deg C				
Head, rated (requested)	:	68.00 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	:	2950 rpm	Driver sizing specification	: Maximum Power		
		Impeller Dia, Rated (Approx.)	:	221 mm	Margin over specification	: 0.00 %		
		Impeller diameter, maximum	:	264 mm	Power, rated	: 22.73 kW		
		Impeller diameter, minimum	:	205 mm	-	: -		
		Efficiency at duty point	:	66.31 %	-	: -		
		NPSH required / margin required	:	2.56 m / 0.50 m	Driver Rating	: 30KW		
				Pressure Data				
				MCSF	:	24.41 m3/h	Maximum working pressure	: 7.15 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)	:			80.00 m3/h / 68.00 m / 66.31 %	Maximum allowable suction pressure	: 1.96 bar.g		
Suction / Delivery nozzle size	:	80.00 mm / 65.00 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)		: 125 mm / 125 mm				
MOC Code	:	16MOC						
Material (Casing / Impeller / Shaft)	:	CI IS210:FG260 (012) / CI IS210:FG260 (012) / ST ST ASTM A276-410 ANLD (253)						
-	:	-						



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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 65/26	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	-		

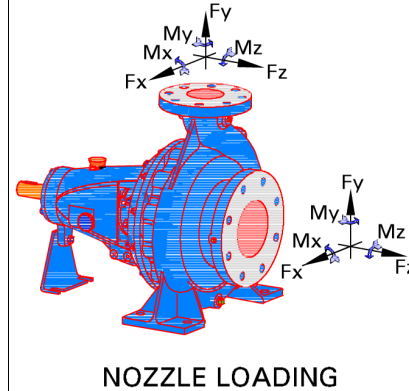
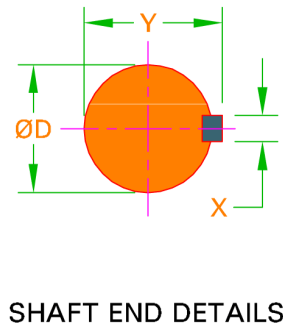
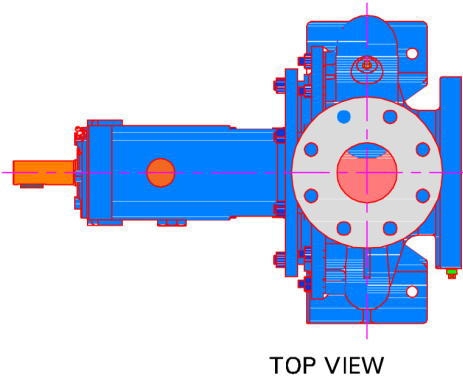
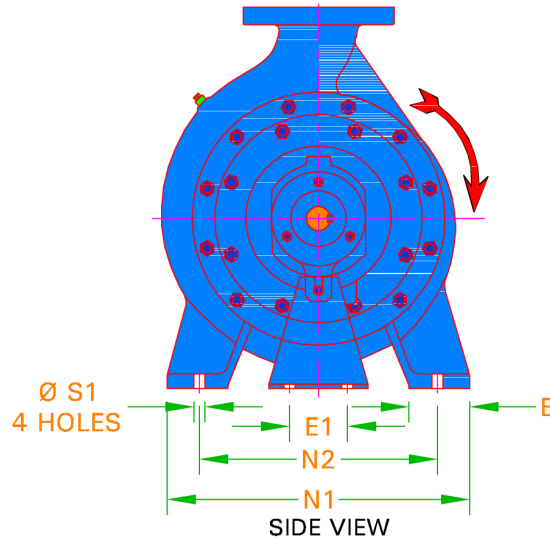
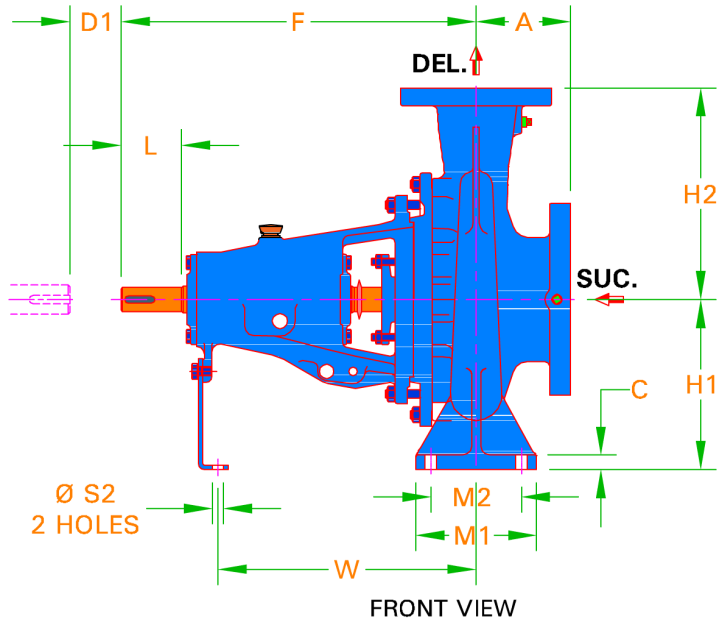
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CROSS SECTIONAL DRAWING

DRAWING NO. **TC02-1**



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- 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	470	200	250	80.00	16.00	160	120	360	280	18.00	110	14.00	342	-	32.00

X	Y	L	D1	-	-	-	-	-	-	-	-	-	-	-	-
10.00	25.00	80.00	140	-	-	-	-	-	-	-	-	-	-	-	-

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

PUMP DUTIES			
CAPACITY	80.00 m ³ /h	EFFICIENCY	66.31 %
TOTAL HEAD	68.00 m	PUMP INPUT	22.73 kW
DENSITY	0.998 kg/dm ³	NPSHR	2.56 m

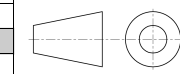
FLANGE DRILLING STANDARD AND DETAILS					
SUCTION	BS EN1092 PN16 FF		DELIVERY	BS EN1092 PN16	
	NOM. SIZE	RF DIA.	P.C.D.	NO OF HOLES	HOLE DIA.
SUCTION	80.00 mm	N.A.	160 mm	8	18.0
DELIVERY	65.00 mm	N.A.	145 mm	4	18.0

ALLOWABLE NOZZLE LOADING						
	FORCES			MOMENTS		
	Fx	Fy	Fz	Mx	My	Mz
SUCTION	68.00 kgf	170.0 kgf	136.0 kgf	1,020 N.m	510 N.m	510 N.m
DELIVERY	57.00 kgf	142.0 kgf	114.0 kgf	843 N.m	422 N.m	422 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 65/26	PUMP WT.	81.00
		GD*2	0.02 kg
REC. DRIVER RATING	30KW	RATED SPEED	2950R
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	-		



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PUMP OUTLINE DRAWING

DRAWING NO. TL02-1-