

DIESEL ENGINE

KDP SERIES FOR FIRE PUMP

Model: 4KDP-75

Engine Specifications

In-Line, 4 stroke, water-cooled, Natural Aspiration

Combustion type	Direct injection
Cylinders - Bore × stroke	4 - 108 × 118 mm
Displacement	4324 cc
Firing order	1 – 3 – 4 – 2
Compression ratio	18 : 1
Dry weight	Approx. 350 kg
Dimension(LxWxH)	885 × 640 × 810 mm
Rotation	Anti-clockwise
Flywheel / Housing	SAE # 10 / # 3

Cooling System

Cooling method	Fresh water forced type
Water pump	Centrifugal, Belt driven
Max. water Temp	95 degree C.
Cooling Fan	Blade 7EA - Ø 450 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 × 65 A
Starting motor	12 V × 3.7 kW
Battery	12 Vx 120 Ah

Prime power
Standby Power

75.0KW(100HP)/3000 rpm
82.5KW(110HP)/3000 rpm

Fuel System

Injection pump	Direct Injection type
Governor	Mechanicaltype
Feed pump	Mechanicaltype
Injection nozzle	Multi-hole type/ 0.255 mm
Opening pressure	20+0.5MPa
Fuel filter	Single Stage, Paper

Fuel Consumption

Prime power at 3000rpm	20.0 liters/h
Standby Power at 3000rpm	22.0 liters/h

Lubrication System

Lub. Oil Pan Capacity	8 liters
Max. allowable Oil Temp	110 degree C.
	Min. 294 kPa
	Max. 490 kPa
Oil pressure	

Engineering Data

Combustion Air	3.10m ³ /min
Exhaust Gas	7.76m ³ /min

Conversion Table

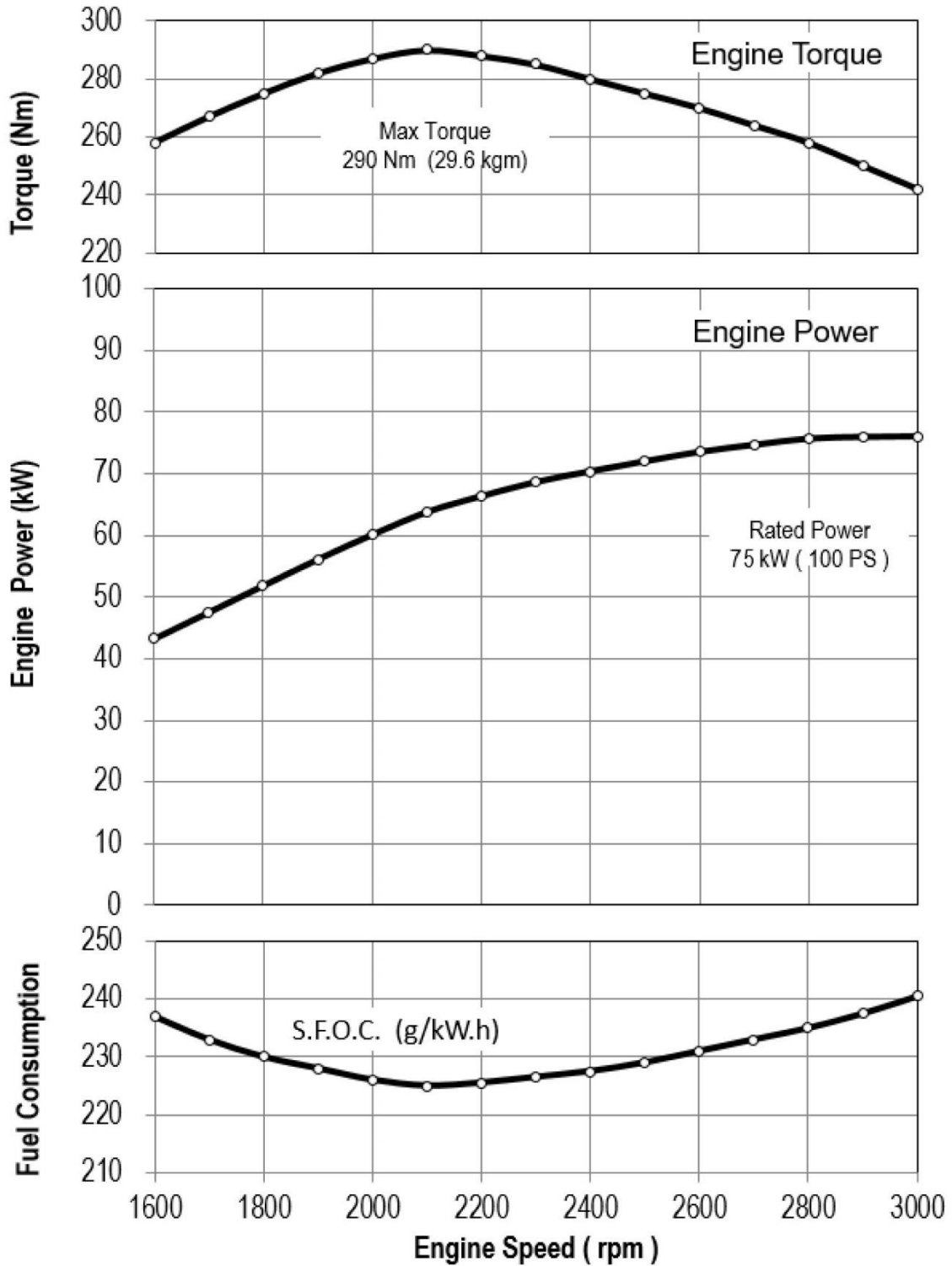
PS = kW × 1.3596	in. = mm × 0.0394
psi = kg/cm ² × 14.2233	
HP= PS x 0.98635	

PERFORMANCE CURVE

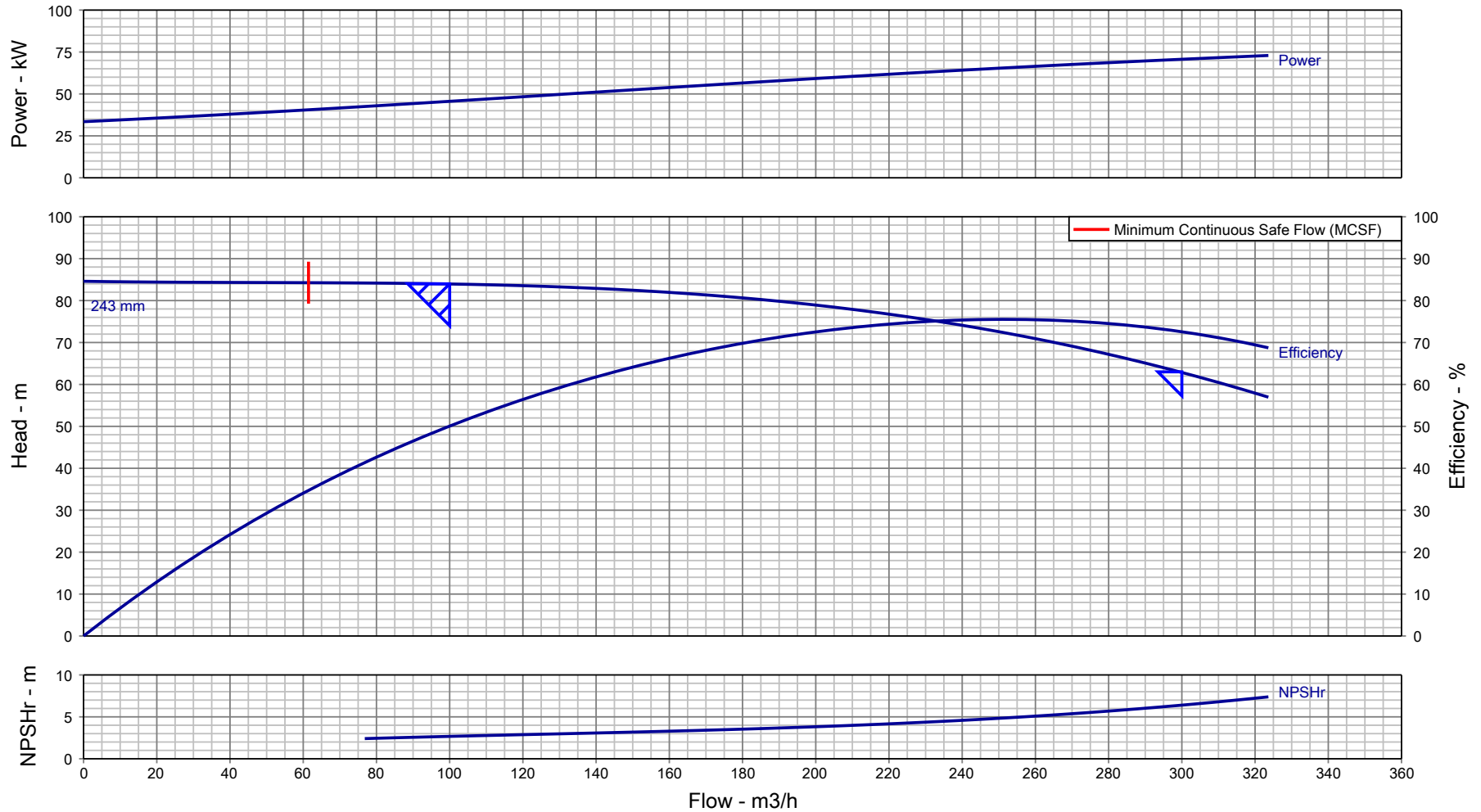
KDP SERIES FOR FIRE PUMP

Model: 4KDP-75

Prime power 75.0KW(100HP)/3000 rpm
 Standby Power 82.5KW(110HP)/3000 rpm



Pump Performance Curve



Customer :	Pump Size/ Stages : DB 100/26/ 1	Flow, rated : 100.0 m ³ /h
Customer enquiry :	Speed, rated : 2970 rpm	Differential Head : 84.00 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 : 50.07 %
Item number : 001	Cq/Ch/Ce/Cn [HI2010] : 1.00 / 1.00 / 1.00 / 1.00	Power, rated : 45.60 kW
Quantity : 1	Minimum recommended driver rating : 75.00 kW / 101 hp	NPSH required : 2.67 m
Date last saved : 09 Oct 2020 9:52 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.



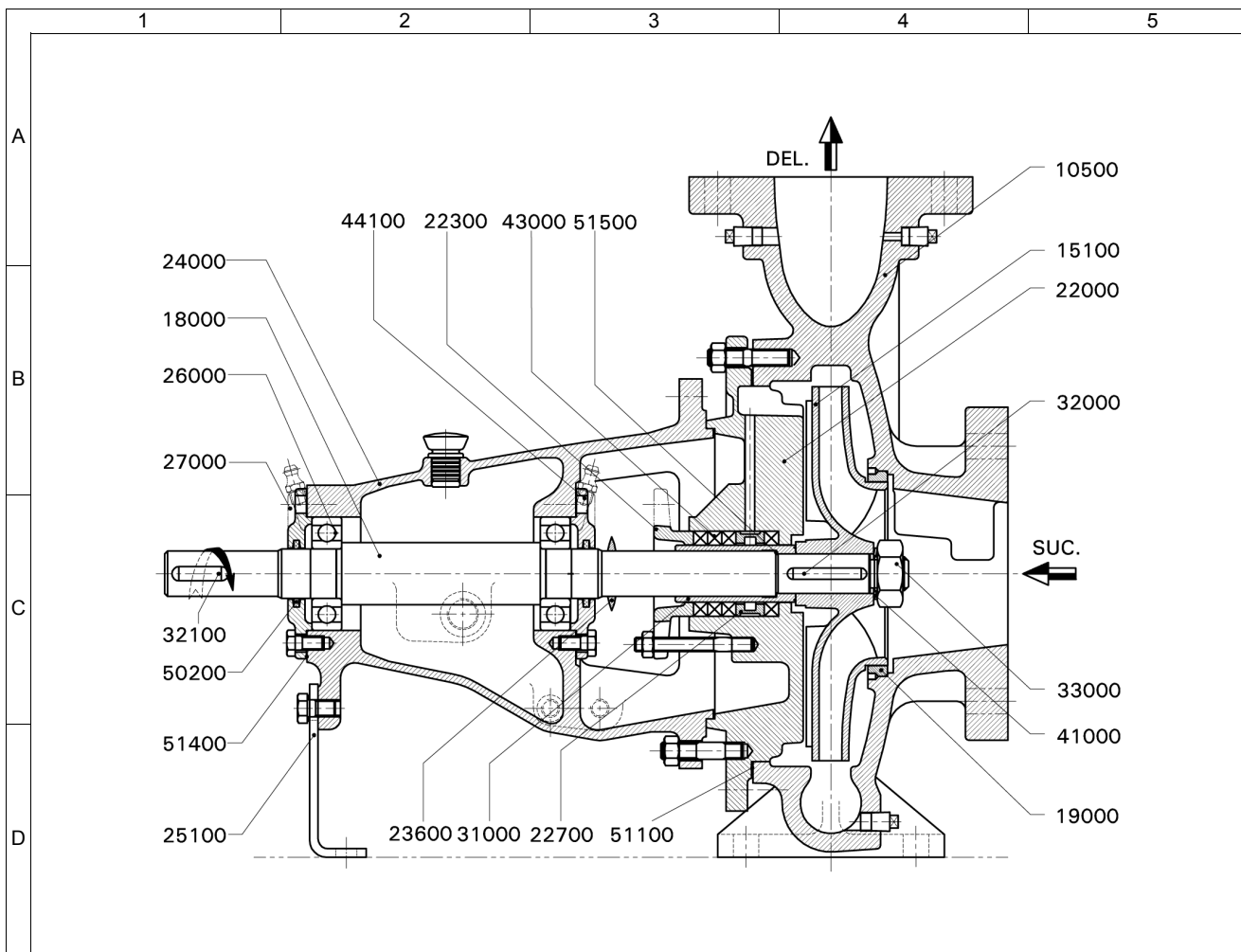
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Pump Performance Datasheet

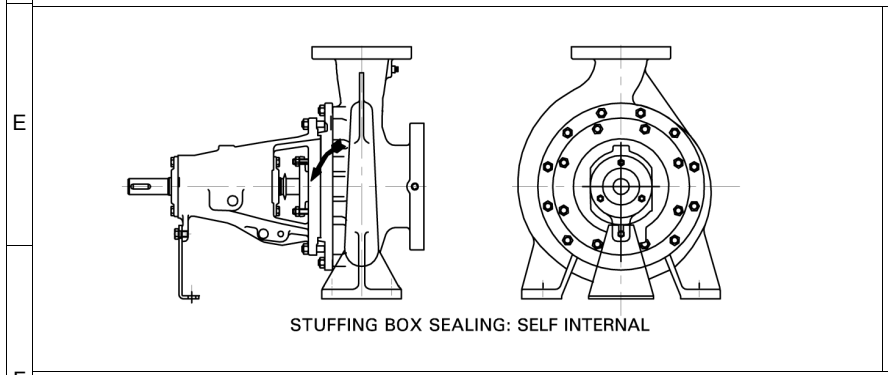
General			
Customer	:	Quote number	: 312657
Customer Enquiry No.	:	Pump model	: DB 100/26
Project	: Default	Stages	: 1
End user	: -	Based on curve number	: HD10223A0 Rev 0
Tag number	: 001	Date last updated	: 09 Oct 2020 9:52 AM
Service	: -	Quantity of pumps	: 1
Operating Conditions		Liquid	
Flow, rated	: 100.0 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	: 8.22 bar.g	Temperature, max	: 20.00 deg C
Head, rated (requested)	: 84.00 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 / -
Pump speed, rated	: 2970 rpm	Driver & Power Data	
Impeller Dia, Rated (Approx.)	: 243 mm	Driver sizing specification	: Maximum Power
Impeller diameter, maximum	: 264 mm	Margin over specification	: 0.00 %
Impeller diameter, minimum	: 205 mm	Power, rated	: 45.60 kW
Efficiency at duty point	: 50.07 %	-	: -
NPSH required / margin required	: 2.67 m / 0.50 m	-	: -
MCSF	: 61.45 m3/h	Driver Rating	: 75KW
Cq/Ch/Ce: [-]	: 1.00 / 1.00 / 1.00	Pressure Data	
Water eq. duties (Qw/Hw/Ew)	: 100.0 m3/h / 84.00 m / 50.07 %	Maximum working pressure	: 8.28 bar.g
Suction / Delivery nozzle size	: 125 mm / 100 mm	Maximum allowable working pressure	: 16.00 bar.g
Noise level	: 90 dB	Maximum allowable suction pressure	: 1.96 bar.g
Vibration level (RMS)	: 5.1 mm/s	Hydrostatic test pressure	: 18.34 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)	: 150 mm / 125 mm
Material			
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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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
22300	GLAND	012	CI IS210:FG260
22700*	LANTERN RING	364	NYLON
23600*	LIQUID DEFLECTOR	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
31000*	SHAFT SLEEVE - GLAND PACKING	565	ST ST ASTM A276-410(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 ASTM A194/194M-8M-UNS S31600 (NUT)
41000*	LOCK WASHER-IMPELLER NUT	054	SPRING ST IS:4072-80C6
43000*	GLAND PACKING	810	PTFE BRAIDED WITH GRAPHITE
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

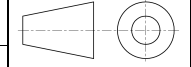


NOTES:

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

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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
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A

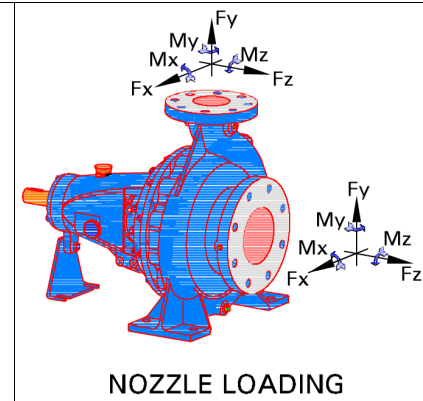
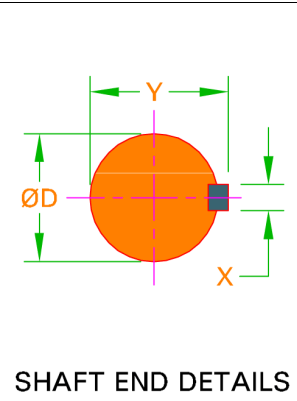
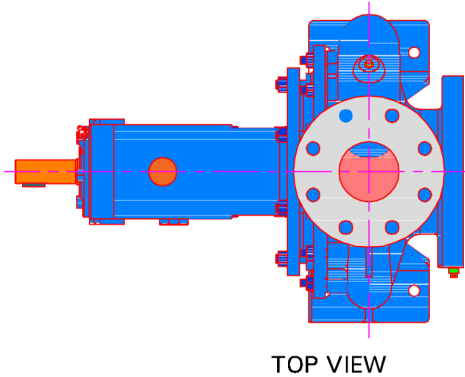
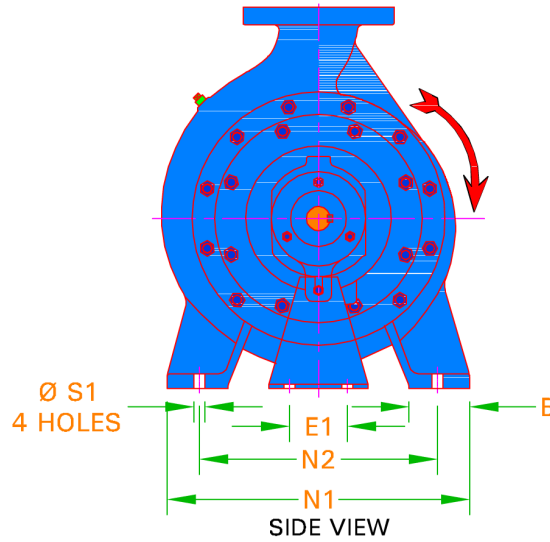
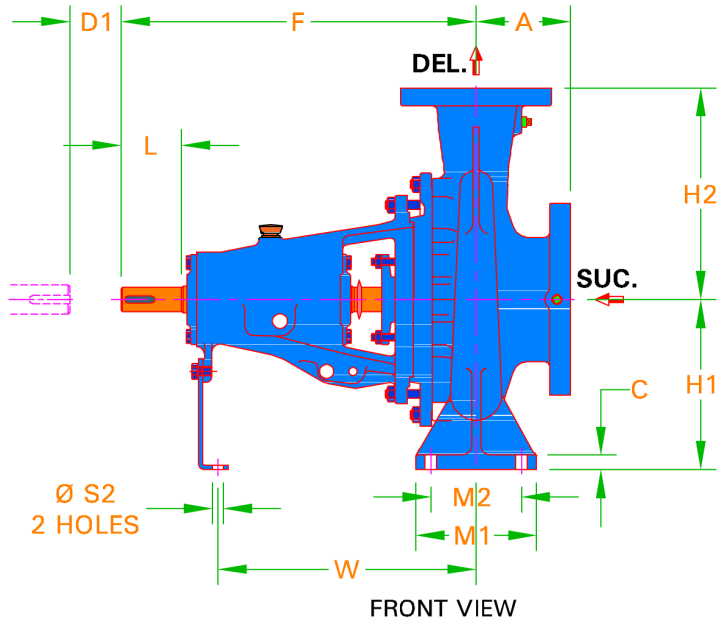
B

C

D

E

F



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

PUMP DUTIES			
CAPACITY	100.0 m ³ /h	EFFICIENCY	50.07 %
TOTAL HEAD	84.00 m	PUMP INPUT	45.60 kW
DENSITY	0.998 kg/dm ³	NPSHR	2.67 m

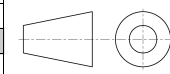
FLANGE DRILLING STANDARD AND DETAILS					
SUCTION	BS EN1092 PN16 FF		DELIVERY	BS EN1092 PN16	
	NOM. SIZE	RF DIA.		P.C.D.	NO OF HOLES
SUCTION	125 mm	N.A.		210 mm	8
DELIVERY	100 mm	N.A.		180 mm	8

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	75KW	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	-		



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PUMP OUTLINE DRAWING

DRAWING NO. TL02-1-