

DIESEL ENGINE

MODEL 6DSP-100

Performances

Ratings		3000 rpm	
		PRIME	STAND-BY
Rated Output	kWm	90	100

Note:

PRIME POWER: The prime power is the maximum power available with varying loads for an unlimited number of hours. The average power output during a 24h period of operation must not exceed 80% of the declared prime power between the prescribed maintenance intervals and at standard environmental conditions. A 10% overload is permissible for 1 hour every 12 hours of operation.

STAND-BY POWER: The stand-by power is the maximum power available for a period of 500 hours/year with a mean load factor of 90% of the declared stand-by power. No kind of overloads is permissible for this use.

Specifications

Mechanical system

Engine model	6DSP-100
Engine type	In-line, 4 stroke, water cooled
Combustion type	Direct Injection
Cylinder type	Dry liner
Air intake type	Normally Aspirated
Cylinder No.	6
Bore*Stroke(mm)	102*118
Total displacement(L)	5.785
Compression ratio	17.5:1
Firing order	1-5-3-6-2-4
Injection timing	15°±1°
Speed governor	Mechanical ≤8%
Exhaust temperature (°C)	≤550
Mean Effective Pressure (KPa)	623
Noise Level(dBA)	≤93
Exhaust gas back pressure(KPa)	9
Exhaust flow (m³/h)	1549
Cooling air flow (m³/h)	900
Air for combustion flow (m³/h)	683
Piston Speed(m/s)	11.8
Dry weight (kg)	550
Dimension(L*W*H)(mm)	1068*609*1031 (with radiator)
Rotation	Counter clockwise viewed from flywheel
Flywheel housing/flywheel	SAE3/ 11.5"

Mechanism

Type

Over head valve

Valves per cylinder

2

Valve lash(cold state)

Air intake valve 0.30-0.40mm

Exhaust valve 0.30-0.40mm

Valve timing (crankshaft rotating angel)

Air intake valve open

24.5° before top dead center

Air intake valve close

55.5° after bottom dead center

Exhaust valve open

54° before bottom dead center

Exhaust valve close

26° after top dead center

Specific fuel consumption

rpm

3000

Fuel consumption (g/kWh)

≤229

Oil consumption

Oil consumption(g/kWh)

≤1.63

Fuel system

Fuel injector pump

BQ pump

Governor model

RSV full range type

Feed pump

Mechanical type

Injection nozzle

multi holes type

Fuel filter

Spin-on type

Fuel

Diesel

Lubrication system

Type

Mixed type, pressure and splash lubrication

Oil pump Displacement/speed

Inner and outer rotor type

(L/min/r/min)

80/2000

Oil filter

Spin-on type

Lube oil total system capacity

15L including pipes, filters etc.

Cooling system

Cooling method

Water cooled, forced circulation

Coolant capacity: engine only

10L

Engine + radiator

21L

Water pump type

Centrifugal type driven by belt

Water pump capacity(L/min)

≥180

Thermostat

Opening temp.73℃

Cooling fan

Φ490mm, 7blades, PA

Electronic system

Charging alternator

14v/500w

AVR

Built-in type

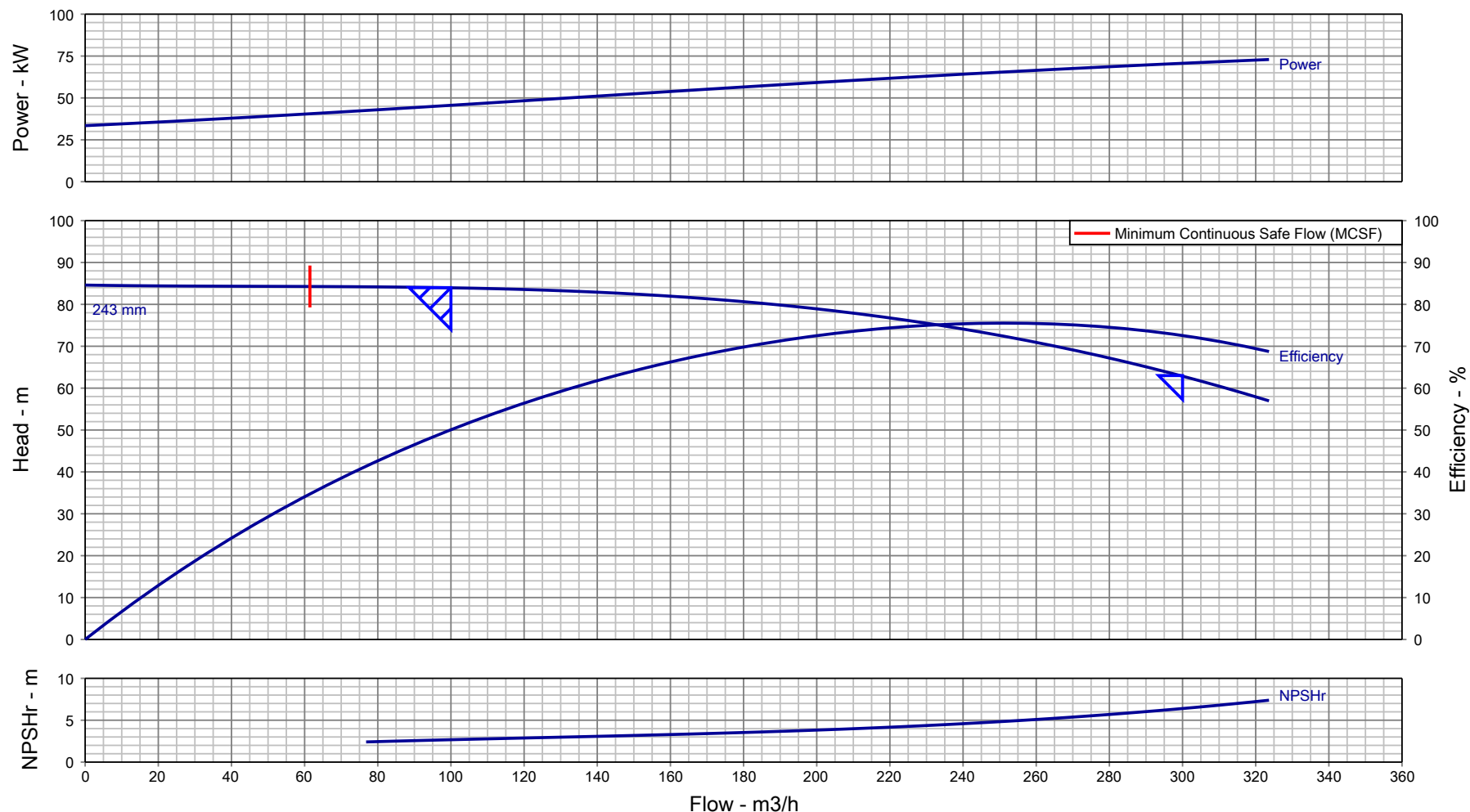
Starting motor

12v/3.7kW

Battery capacity

12v/100Ah

Pump Performance Curve



Customer :	Pump Size/ Stages :	DB 100/26/ 1	Flow, rated :	100.0 m³/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/dm³
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	:	Stages	:	1
End user	:	Based on curve number	:	HD10223A0 Rev 0
Tag number	:	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 / -

Driver & Power Data

Pump speed, rated	:	2970 rpm	Driver sizing specification	:	Maximum Power
Impeller Dia, Rated (Approx.)	:	243 mm	Margin over specification	:	0.00 %
Impeller diameter, maximum	:	264 mm	Power, rated	:	45.60 kW
Impeller diameter, minimum	:	205 mm	-	:	-
Efficiency at duty point	:	50.07 %	-	:	-
NPSH required / margin required	:	2.67 m / 0.50 m	Driver Rating	:	75KW

Pressure Data

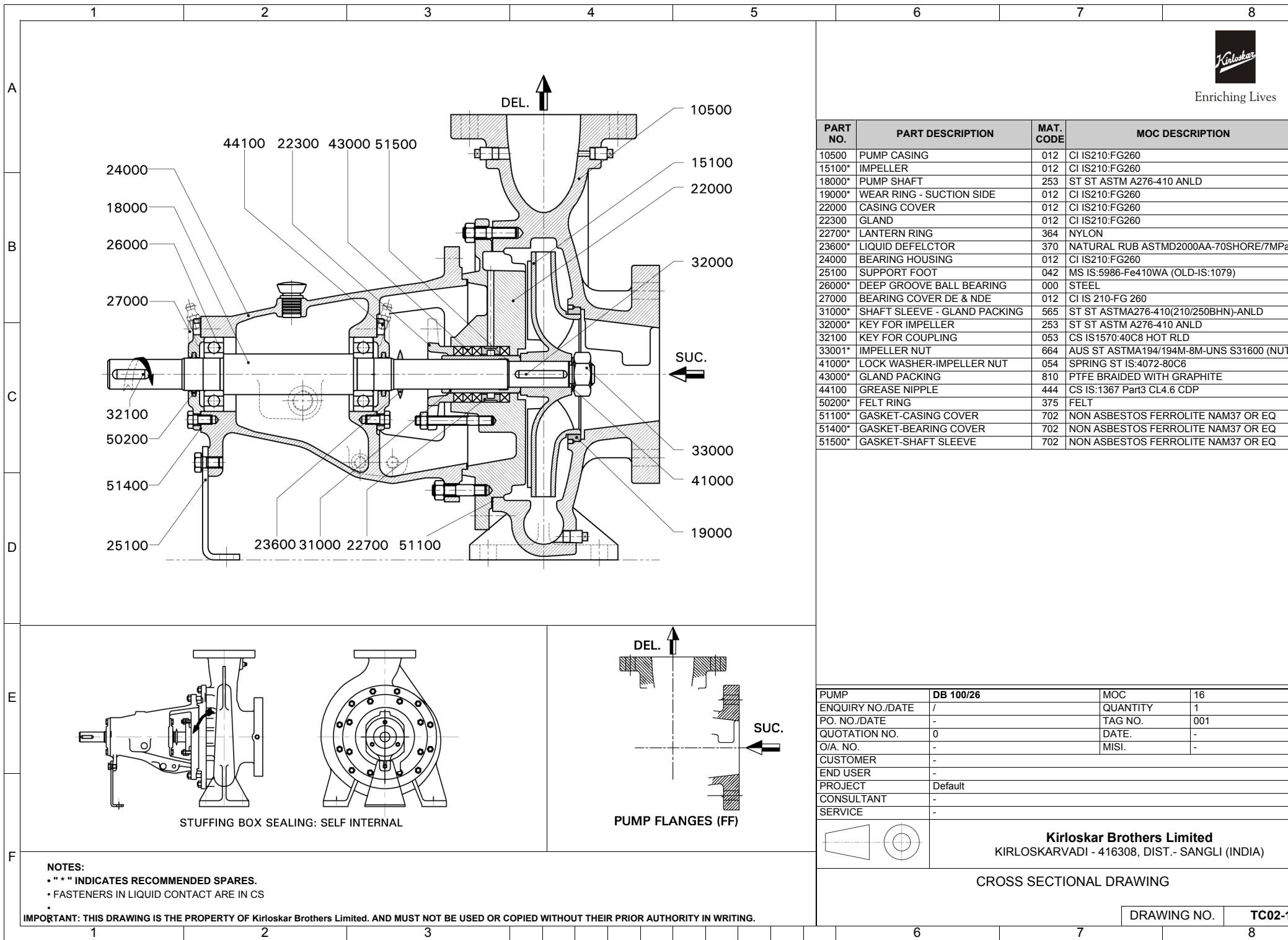
MCSF	:	61.45 m3/h	Maximum working pressure	:	8.28 bar.g
Cq/Ch/Ce: [-]	:	1.00 / 1.00 / 1.00	Maximum allowable working pressure	:	16.00 bar.g
Water eq. duties (Qw/Hw/Ew)	:	100.0 m3/h / 84.00 m / 50.07 %	Maximum allowable suction pressure	:	1.96 bar.g
Suction / Delivery nozzle size	:	125 mm / 100 mm	Hydrostatic test pressure	:	18.34 bar.g
Noise level	:	90 dB			

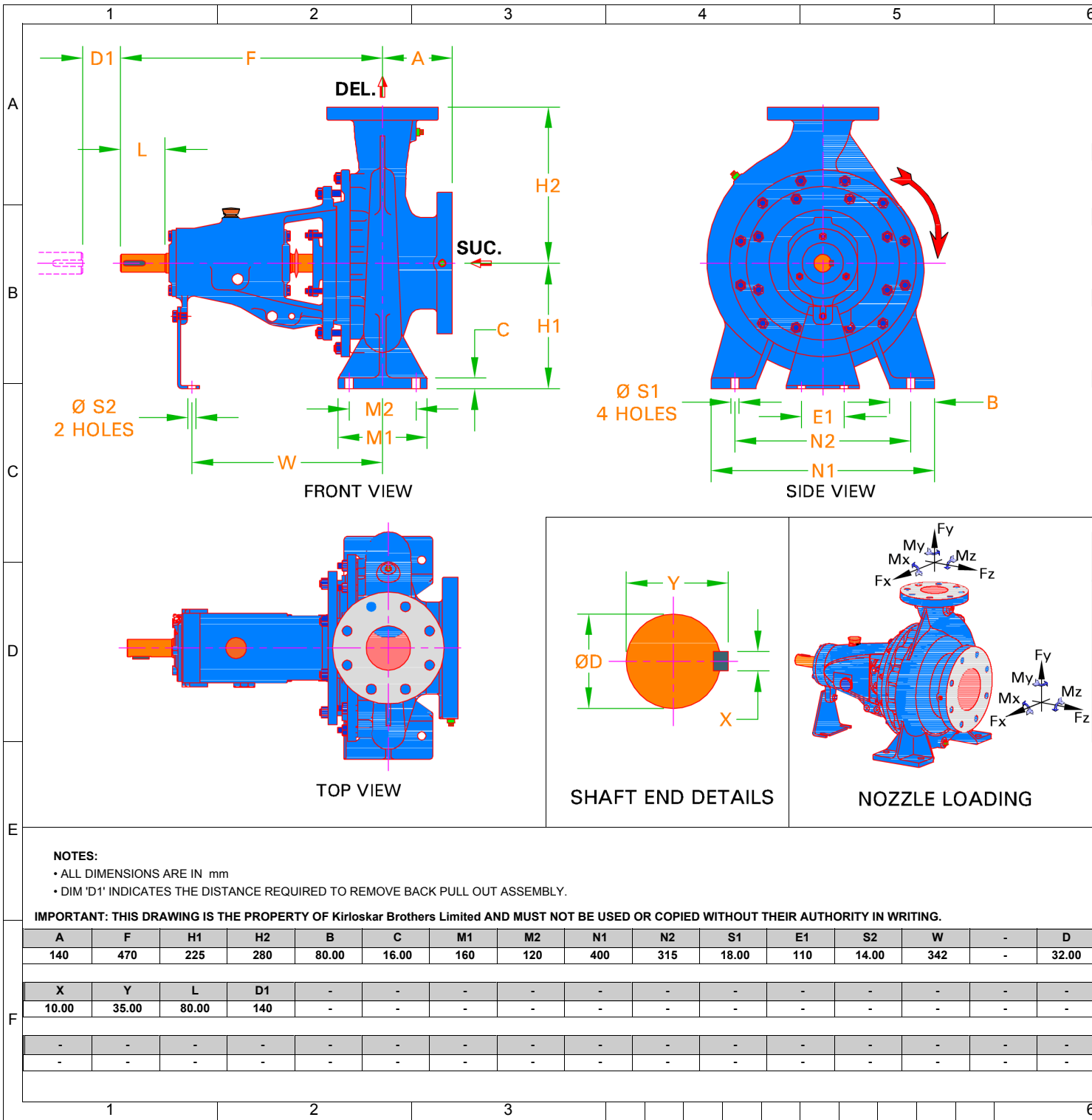
Construction

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	:	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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PUMP DUTIES

CAPACITY	100.0 m3/h	EFFICIENCY	50.07 %
TOTAL HEAD	84.00 m	PUMP INPUT	45.60 kW
DENSITY	0.998 kg/dm3	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
DELIVERY	100 mm	N.A.	180 mm

ALLOWABLE NOZZLE LOADING

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

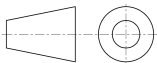
TAPPING DETAILS

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
REC. DRIVER RATING	75KW	GD*2	0.03 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	-		



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PUMP OUTLINE DRAWING

DRAWING NO.

TL02-1