

ECOL MOTOR
MODEL D1S 280S-2
TECHNICAL DATA SHEET

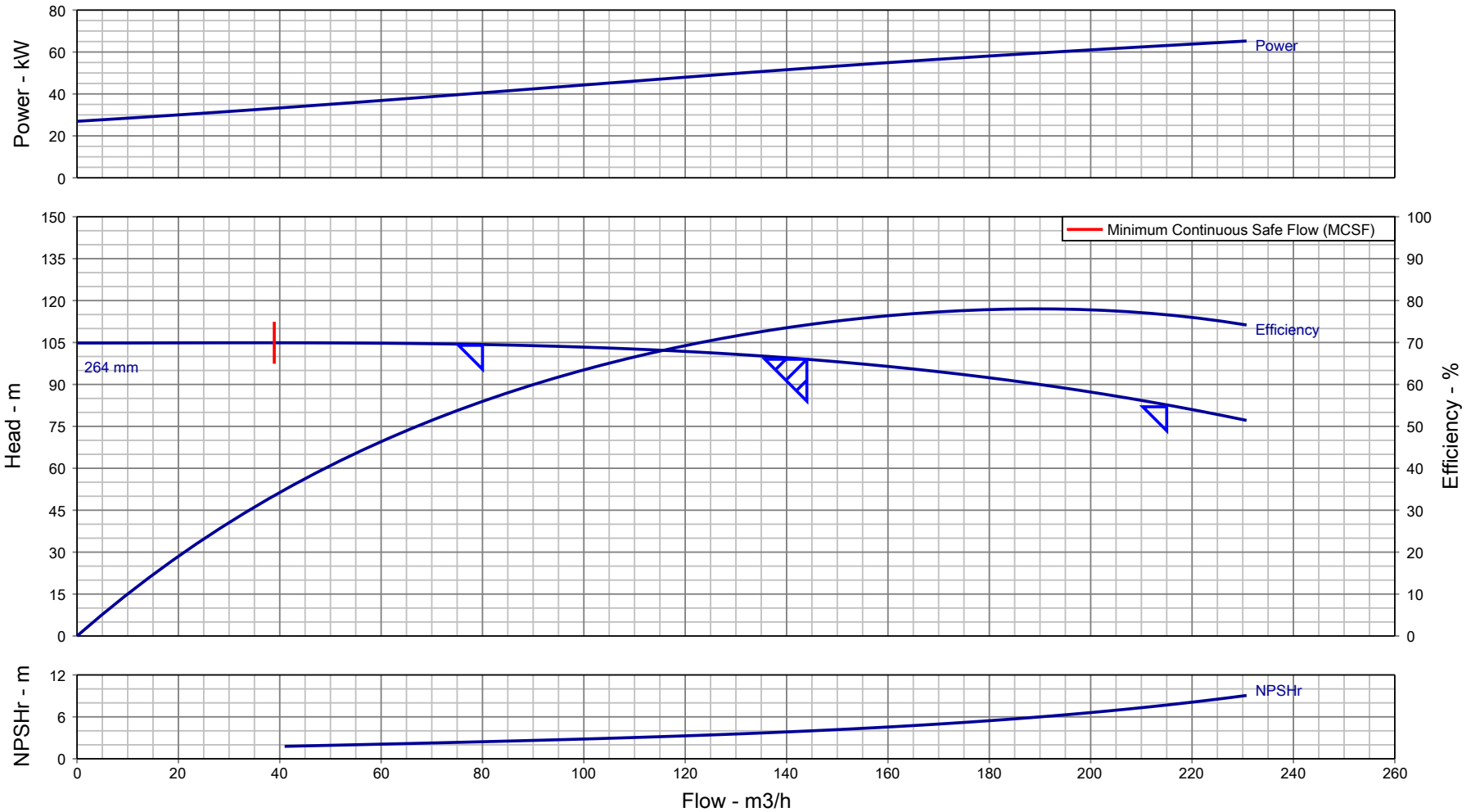
| General Data | |
|--------------------|---|
| Frame size | 280 |
| Housing material | Casting iron |
| Install model | According to the standard |
| Type of feet | Removable feet (Standard) Fixed feet (Optional) |
| Net weight | 530 kg |
| Insulation class | F (Standard) |
| | H (Optional) |
| Protection degree | IP 55 (Standard) |
| | IP 56 (Optional) |
| Thermal protection | Without (Standard) |
| | Customizable (Optional) |
| Rotation direction | Clockwise (Standard) |
| | Counter clockwise (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 | 75 | 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 | 131.21 | A (In) @ Δ 50Hz |
| | 75.75 | A (In) @ Y 50Hz |
| Starting current | 7.5 | xIn |
| Rated torque | 244.45 | Nm (Mn) |
| Starting torque | 2 | xMn |
| | 2.3 | xMn |
| Efficiency | IE1 | |
| | 92.7 | @ 100% load |
| | 92.9 | @ 75% load |
| Power factor cosφ | 91.1 | @ 50% load |
| | 0.89 | @ 100% load |

| Mechanical Data | | |
|-------------------------------------|-----------------------|-------------------|
| Bearings brand | C&U | (Standard) |
| | Customizable | (Optional) |
| Bearings type | 6316 C3 | (DE) |
| | 6316 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 | 0.698710 | Kg*m ² |
| Noise level | 94 | dB(A) |

Pump Performance Curve

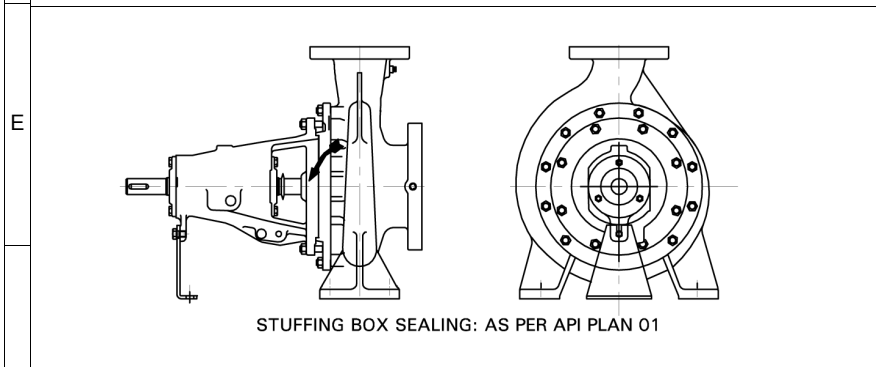
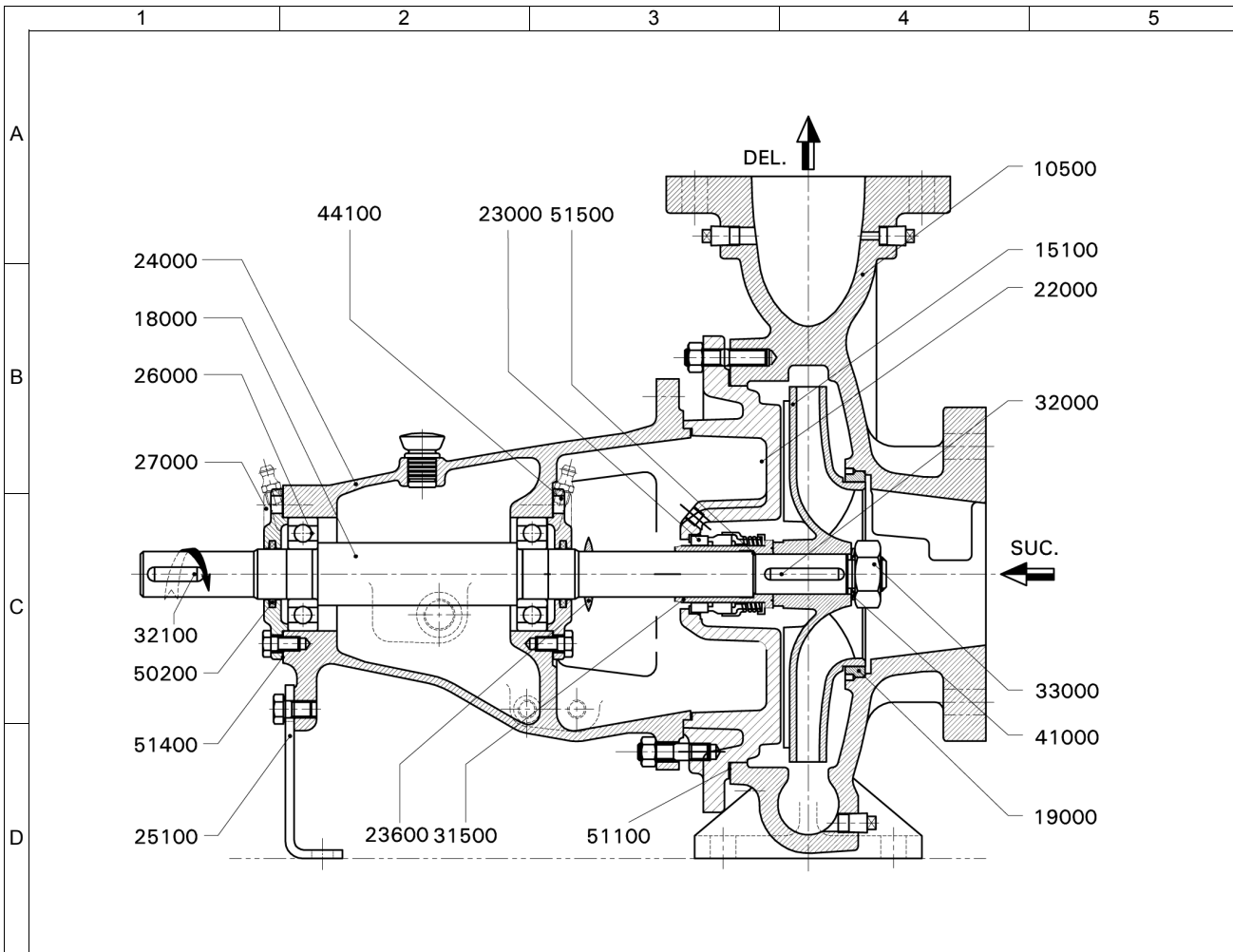


| | | |
|---------------------------------------|--|--|
| Customer : | Pump Size/ Stages : DB 80/26/ 1 | Flow, rated : 144.0 m ³ /h |
| Customer enquiry : | Speed, rated : 2970 rpm | Differential Head : 99.00 m |
| Project : Default | Based on curve number : HD10220A0 Rev 0 | Fluid density rated : 0.998 kg/dm ³ |
| Quote number : 312657 | Viscosity : 1.00 cSt | Efficiency : 74.20 % |
| Item number : 001 | Cq/Ch/Ce/Cn [HI2010] : 1.00 / 1.00 / 1.00 / 1.00 | Power, rated : 52.25 kW |
| Quantity : 1 | Minimum recommended driver rating : 75.00 kW / 101 hp | NPSH required : 3.97 m |
| Date last saved : 09 Oct 2020 9:33 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.

**Pump Performance Datasheet**

| General | | | |
|--------------------------------------|--|------------------------------------|------------------------|
| Customer | : | Quote number | : 312657 |
| Customer Enquiry No. | : | Pump model | : DB 80/26 |
| Project | : Default | Stages | : 1 |
| End user | : - | Based on curve number | : HD10220A0 Rev 0 |
| Tag number | : 001 | Date last updated | : 09 Oct 2020 9:33 AM |
| Service | : - | Quantity of pumps | : 1 |
| Operating Conditions | | Liquid | |
| Flow, rated | : 144.0 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 | : 9.69 bar.g | Temperature, max | : 20.00 deg C |
| Head, rated (requested) | : 99.00 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.) | : 264 mm | Driver sizing specification | : Maximum Power |
| Impeller diameter, maximum | : 264 mm | Margin over specification | : 0.00 % |
| Impeller diameter, minimum | : 205 mm | Power, rated | : 52.25 kW |
| Efficiency at duty point | : 74.20 % | - | : - |
| NPSH required / margin required | : 3.97 m / 0.50 m | - | : - |
| MCSF | : 38.92 m3/h | Driver Rating | : 75KW |
| Cq/Ch/Ce: [-] | : 1.00 / 1.00 / 1.00 | Pressure Data | |
| Water eq. duties (Qw/Hw/Ew) | : 144.0 m3/h / 99.00 m / 74.20 % | Maximum working pressure | : 10.27 bar.g |
| Suction / Delivery nozzle size | : 100 mm / 80.00 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 | : Acceptable |
| | | Rec. Pipe Size (Suc / Del) | : 200 mm / 150 mm |
| Material | | | |
| 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

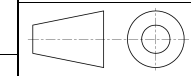
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Enriching Lives

| 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 |

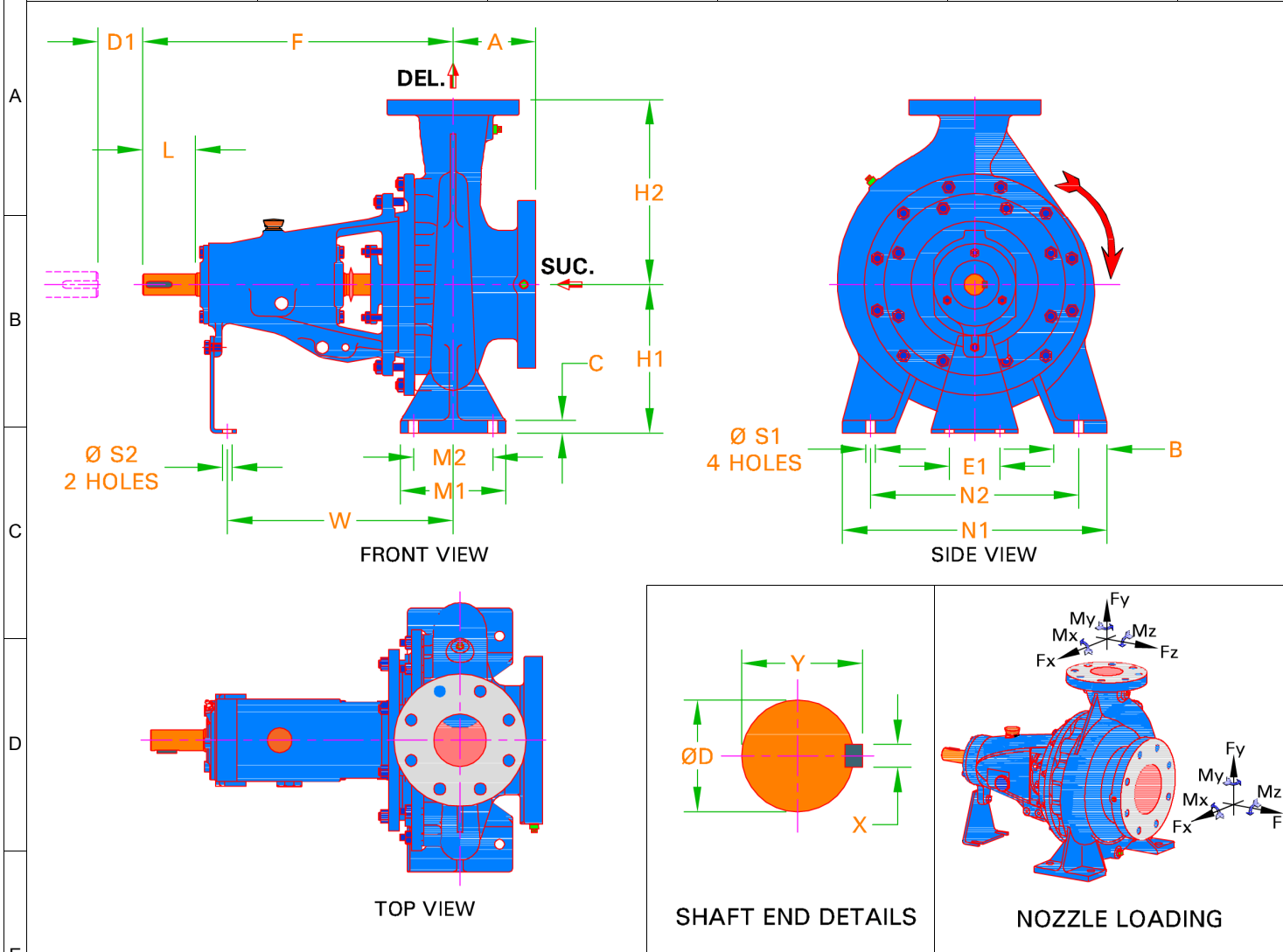
| | | | |
|------------------|----------|----------|-----|
| PUMP | DB 80/26 | MOC | 16 |
| ENQUIRY NO./DATE | / | QUANTITY | 1 |
| PO. NO./DATE | - | TAG NO. | 001 |
| QUOTATION NO. | 0 | DATE. | - |
| O/A. NO. | - | MISI. | - |
| CUSTOMER | - | | |
| END USER | - | | |
| PROJECT | Default | | |
| CONSULTANT | - | | |
| SERVICE | - | | |



Kirloskar Brothers Limited
KIRLOSKARVADI - 416308, DIST.- SANGLI (INDIA)

CROSS SECTIONAL DRAWING

DRAWING NO. **TC02-1**



Enriching Lives

| PUMP DUTIES | | | |
|-------------|--------------------------|------------|----------|
| CAPACITY | 144.0 m ³ /h | EFFICIENCY | 74.20 % |
| TOTAL HEAD | 99.00 m | PUMP INPUT | 52.25 kW |
| DENSITY | 0.998 kg/dm ³ | NPSHR | 3.97 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 | 100 mm | N.A. | 180 mm | 8 | 18.0 |
| DELIVERY | 80.00 mm | N.A. | 160 mm | 8 | 18.0 |

| ALLOWABLE NOZZLE LOADING | | | | | | |
|--------------------------|-----------|-----------|-----------|-----------|---------|---------|
| | FORCES | | | MOMENTS | | |
| | Fx | Fy | Fz | Mx | My | Mz |
| SUCTION | 91.00 kgf | 227.0 kgf | 182.0 kgf | 1,353 N.m | 677 N.m | 677 N.m |
| DELIVERY | 68.00 kgf | 170.0 kgf | 136.0 kgf | 1,020 N.m | 510 N.m | 510 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 |

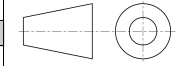
DIRECTION OF ROTATION FROM DE: CLOCKWISE

| | | | |
|--------------------|----------|-------------|---------|
| PUMP | DB 80/26 | PUMP WT. | 91.00 |
| | | 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 | - | | |

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 |
|-------|-------|-------|-----|-------|-------|-----|-----|-----|-----|-------|-----|-------|-----|---|-------|
| 125 | 470 | 200 | 280 | 80.00 | 16.00 | 160 | 120 | 400 | 315 | 18.00 | 110 | 14.00 | 267 | - | 32.00 |
| X | Y | L | D1 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10.00 | 35.00 | 80.00 | 140 | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



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PUMP OUTLINE DRAWING

DRAWING NO. TL02-1-