



Oil -Gas

OH2

Chemical process pump

Model

FS-ZE150-315

4-P04BT

SR.NO.FS-ZE19811004

EBARA pumps Europe S.P.A
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PART. IVA IT 01234660221
R.E.A.N. 124581 TRENTO

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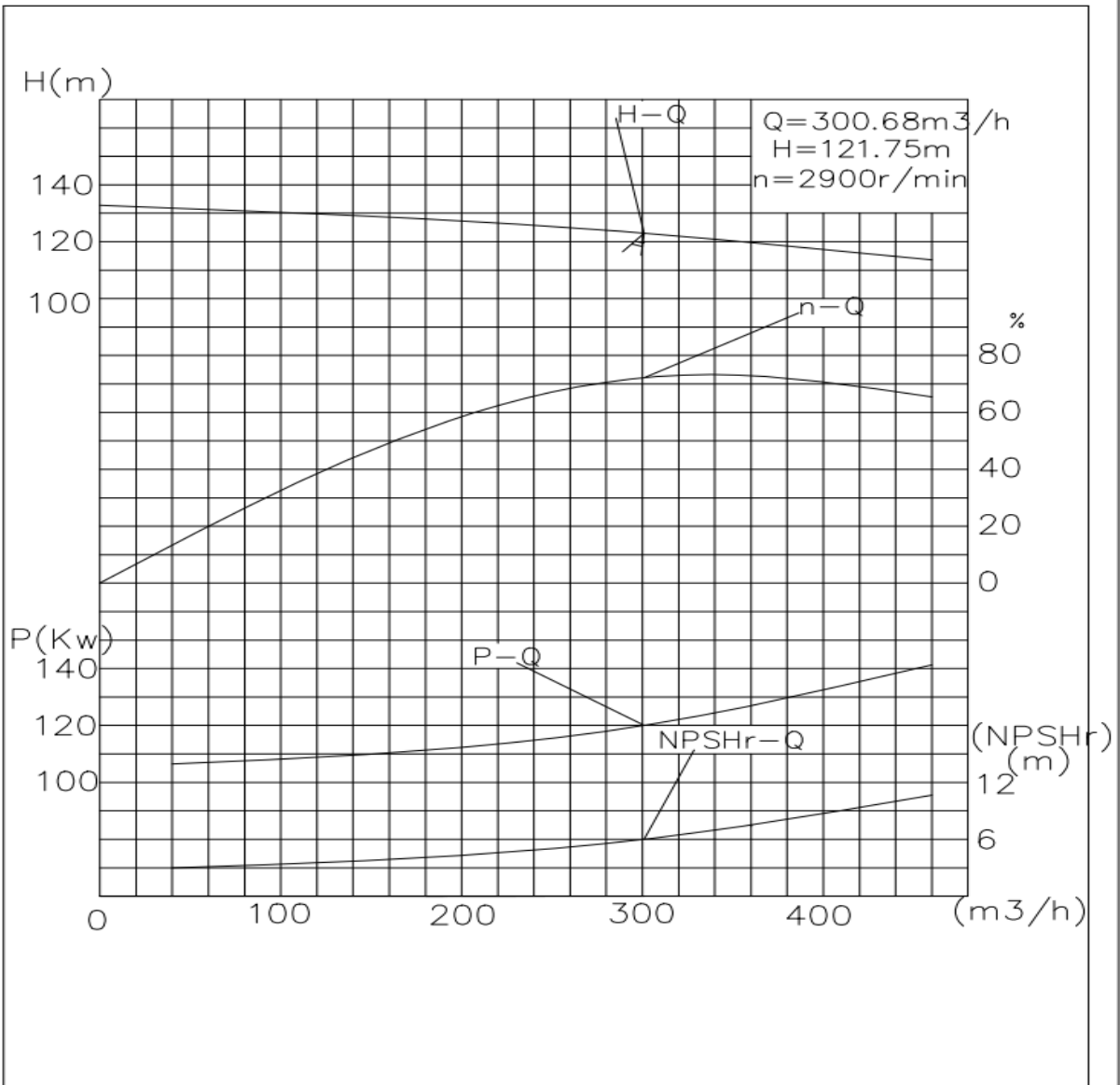
| | |
|--|--------------------------------------|
| User Name : | |
| Device Name : | |
| 4-P04BT | Quantity : 2 |
| Equipment Name: Chemical Process Pumps | Pump Manufacturer : Ebara oil-Gas |
| Pump Model:FS-ZE150-315 | |

| Working Conditions | | Material(s) | |
|--|-------------------|--|----------------------|
| Flow rate: 300.68 | m ³ /h | Pump body: Cast steel | Impeller: Cast steel |
| Inlet gauge pressure: (rated/maximum) | MPa.G | Shaft: 2Cr13 | |
| Outlet gauge pressure: | MPa.G | Mechanical seal flushing plan: PLAN23+61 | |
| Lift(H,m) 121.75 m | (NPSH)a : 29.9 m | Bearing: SKF | Brand: SKF |
| Usage : <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> intermittent(Number of starts/per day) | | Coupling: 180 | |
| Medium | | | |
| Name: light gas oil | | | |
| Working temperature:175°C | | | |
| Medium density:606.77kg/m ³ | | | |
| Viscosity (CP): 0.34 | | | |
| H ₂ S (Hydrogen Sulfide) Concentration (PPM) | | Medium Characteristics: <input type="checkbox"/> Corrosive <input type="checkbox"/> Abrasive <input type="checkbox"/> Toxic | |
| Pump performance and structure | | | |
| Pump speed of rotation:2985rpm | Efficiency: 71 % | Shaft power: 120kW | |
| Impeller diameter (rated): 300mm | | Impeller diameter (maximum): 315 mm | |
| Impeller diameter (minimum): 270 mm | | | |

| | | | | | | | |
|---|---------------|---|-------------------|---------------------------------|--|----------------|--|
| MCSF:150m ³ /h NPSH: 6m | | | | | | | |
| Maximum head at rated diameter: 129m | | | | | | | |
| From rated head to shutoff head: 93% | | | | Head ratio (rated/maximum): 97% | | | |
| Flow rate (Best Efficiency Point, BEP): 320m ³ /h | | | | Flow ratio (rated/BEP): 86 % | | | |
| Installation form: <input type="checkbox"/> Vertical <input checked="" type="checkbox"/> Horizontal | | | | | | | |
| Impeller form: <input checked="" type="checkbox"/> Closed <input type="checkbox"/> Open <input type="checkbox"/> Semi-open | | | | | | | |
| Pump Casing Split: Axial <input checked="" type="checkbox"/> Radial | | | | | | | |
| Pump casing type: <input checked="" type="checkbox"/> Single volute <input type="checkbox"/> Double volute <input type="checkbox"/> Guide casing (guide vane) | | | | | | | |
| Flange standard: GB9111.1-2000 | caliber mm | Flange pressure rating | Sealing Face Type | Orientation position | steam turbine | | |
| | | | | | Model: <input checked="" type="checkbox"/> | NO.160-0.3 | |
| Suction port | 150 | 5MPa | PF | Horizontal | steam turbine | | |
| Discharge port | 150 | 5MPa | PF | Vertical | Rated power: 160kW | Maximum power: | |
| Drain port | / | / | / | / | | | |
| Pump casing design pressure: 5 MPa | | Pump Casing Hydrostatic Test: 7.5 MPa | | | | | |
| Maximum working pressure: 1.4MPa | | Maximum permissible suction pressure:3.6MPa Maximum permissible working pressure: 5MPa | | | | | |
| Bearing type: <input type="checkbox"/> Sliding bearing <input checked="" type="checkbox"/> Radial rolling | | | | | | | |
| Bearing Lubrication: <input checked="" type="checkbox"/> Oil Bath/Grease <input checked="" type="checkbox"/> Oil Slinger | | | | | | | |



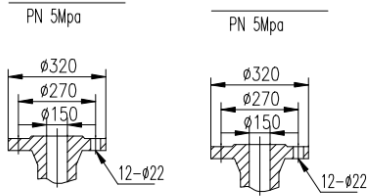
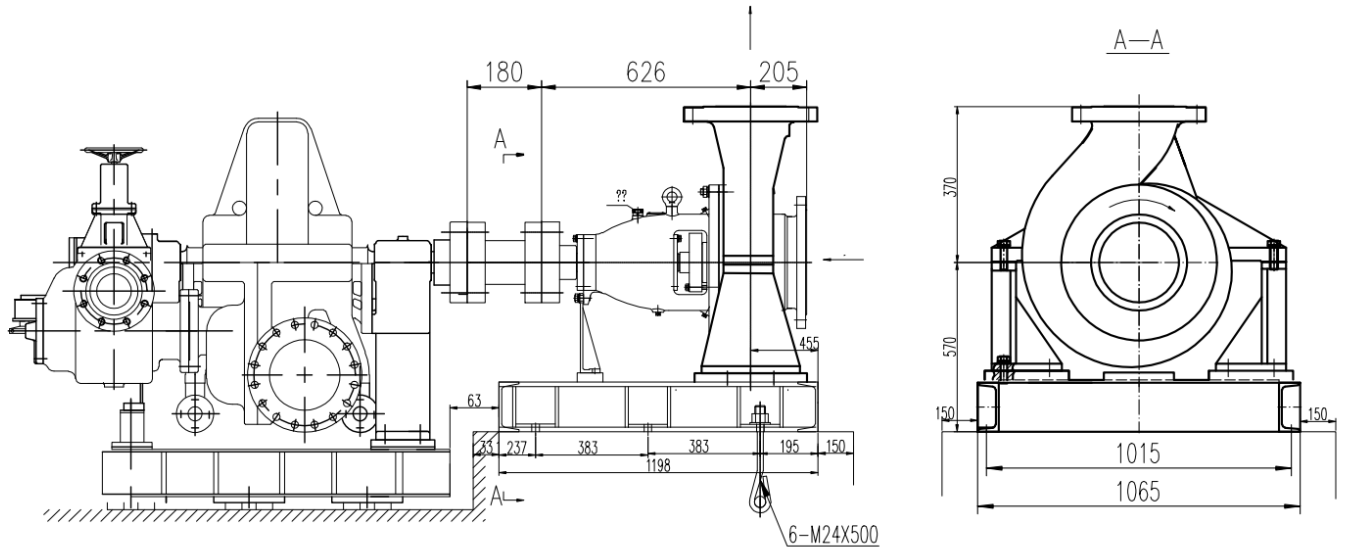
Oil - Gas



| Line Item | name | model | flow: Q (m ³ /h) | Lift (H, m) | Quantity | Remark |
|-----------|-----------------------------|--------------|-----------------------------|-----------------------|----------|--|
| 4-P04 BT | (OH2) Chemical Process Pump | FS-ZE150-315 | 300.68 | 121.75 | 2 | API610 standard production, mechanical seal meets API682 standard, material: cast steel, cartridge mechanical seal, mechanical seal flushing solution PLAN 23+61 () SKF bearings, supply scope pump head + base + diaphragm coupling. |
| | Steam Engine | N0.160-0.3 | 3000rpm | Inlet pressure 0.3MPa | 2 | Steam turbine body: N0.160-0.3 Steam turbine base, bolts, etc. are provided by the equipment factory Condenser: 80m ² Control system: Siemens PLC Coupling: Shenyang Schenk Spare parts: provided by the equipment factory |



Oil -Gas



| Line Item | name | model | flow: Q (m ³ /h) | Lift (H, m) | Quantity | Remark |
|-----------|-----------------------------|--------------|-----------------------------|-----------------------|----------|---|
| 4-P04 BT | (OH2) Chemical Process Pump | FS-2E150-315 | 300.68 | 121.75 | 2 | API610 standard production, mechanical seal meets API682 standard, material: cast steel, cartridge mechanical seal, mechanical seal flushing solution PLAN 23+61 () SKF bearings, supply scope pump head + base + diaphragm coupling, |
| | Steam Engine | N0.160-0.3 | 3000rpm | Inlet pressure 0.3MPa | 2 | Steam turbine body: N0.160-0.3 Steam turbine base, bolts, etc. are provided by the equipment factory Condenser: 80MP Control system: Siemens PLC Coupling: Sherryang Schenk Spare parts: provided by the equipment factory |



Oil -Gas

| | |
|---|---------------------------|
| Requested flow rate | 300.68 m ³ /h |
| Requested developed head | 121.75 m |
| Pumped medium | total naphtha |
| Temperature | 175 °C |
| Fluid density | 606.77 kg/m ³ |
| Fluid viscosity (cP) | 0.34 |
| Vapors pressure | 2.43 kg/cm ² a |
| Suction pressure max. | 1.41 kg/cm ² g |
| Efficiency | 71.00% |
| Power Absorbed | 0 |
| Pump speed of rotation | 2900rpm |
| NPSH required | 5m |
| Discharge press. | 7.4 kg/cm ² .g |
| Stuffing box press. | VTA |
| Shutoff head | 140m |
| Shutoff pressure | 10kg/cm ² |
| Differential pressure | 6.0 kg/cm ² |
| NPSH available | 29.9 |
| Ratio Q/Qbep | 95.00% |
| Max. power on curve | 105KW |
| low for continuous stab | VTA |
| Suction Flange Size & Rating | DN150 5MPa |
| Discharge Flange Size & Rating | DN150 5MPa |
| Shaft seal | As Per API 682 |
| Shaft seal manufacture | EBARA |
| Sealing plan | API plan 23+61 (VTC) |
| Bearing bracket size | No. 5 bearing box |
| Coupling Manufacturer | EBARA |
| Coupling type | Diaphragm coupling |
| Spacer length | 180mm |
| Driver type | Steam Turbine |
| Drive standard mech. | VTA |
| Motor const. type | VTA |
| Motor speed | VTA |
| Frequency | 50 Hz |
| Rated voltage | Note 8 |

| | |
|----------------------------|-------------------|
| Rated power P2 | Note 8 |
| Volute casing (102) | Cast Steel |
| Casing cover (161) | Cast Steel |
| Shaft (210) | 2Cr13 |
| Impeller (230) | Cast Steel |