



**Oil -Gas**

**OH2**

**Chemical process pump**

**Model**

**FS-ZE150-5500**

**4-P02BT**

**SR.NO.FS-ZE19811008**  
**Steam turbine**

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

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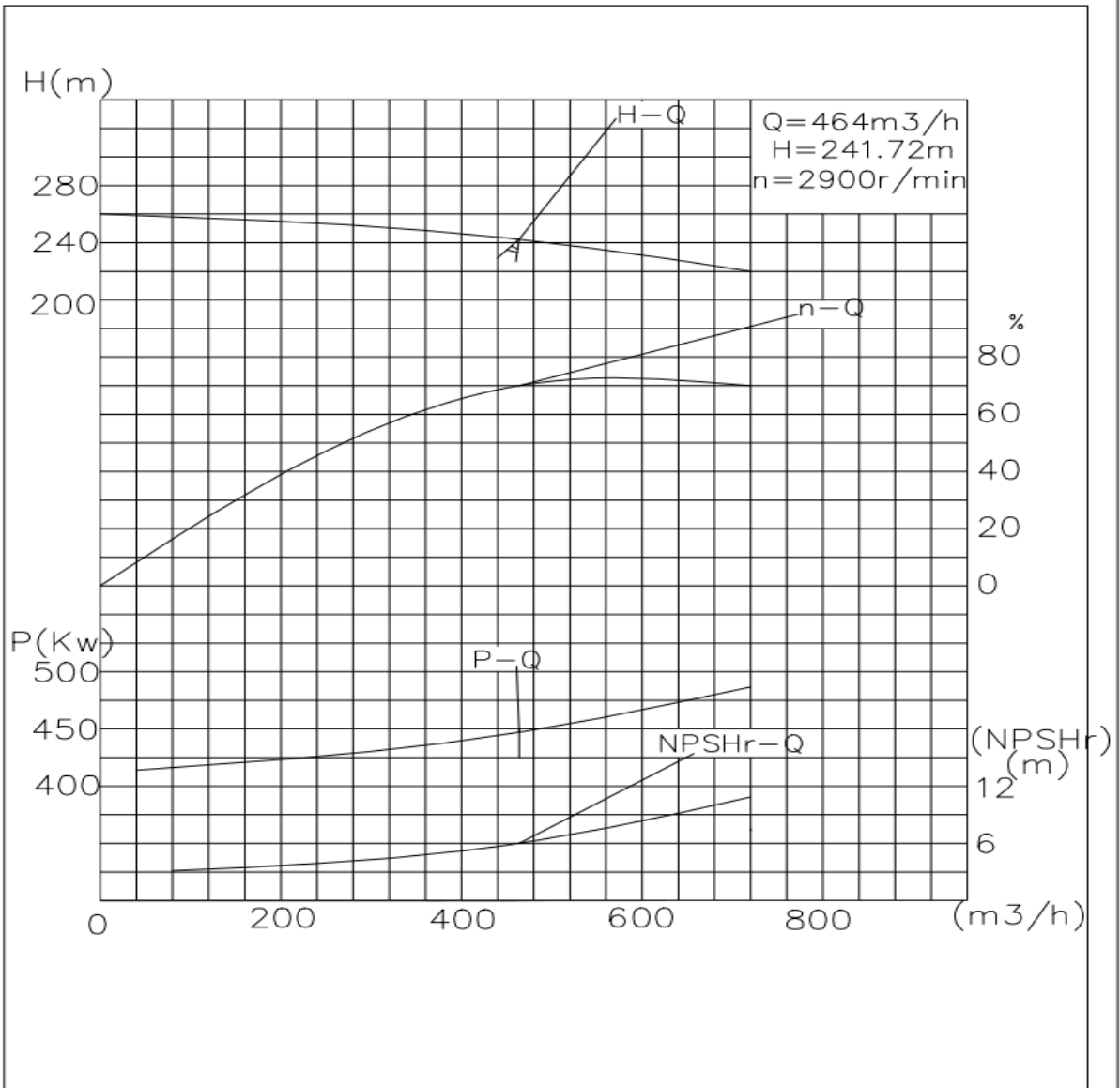
User Name :	
Device Name :	
4-P02BT	Quantity : 1
Equipment Name: Chemical Process Pumps	Pump Manufacturer : Ebara oil-Gas
Pump Model:FS-ZE150-5500	

Working Conditions		Material(s)	
Flow rate: 464	m <sup>3</sup> /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: PLAN21+52	
Lift(H,m) 241.72 m	(NPSH)a : 60.11 m	Bearing: SKF	Brand: SKF
Usage : <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> intermittent(Number of starts/per day)		Coupling: 250	
Medium			
Name: light gas oil			
Working temperature:138.5°C			
Medium density:923kg/m <sup>3</sup>			
Viscosity (CP): 5.7			
H <sub>2</sub> 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: 70 %	Shaft power: 437kW	
Impeller diameter (rated): 450mm		Impeller diameter (maximum): 500 mm	
Impeller diameter (minimum): 400 mm			

MCSF:230m <sup>3</sup> /h    NPSH: 6m							
Maximum head at rated diameter: 255m							
From rated head to shutoff head: 93%					Head ratio (rated/maximum): 97%		
Flow rate (Best Efficiency Point, BEP): 545m <sup>3</sup> /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"/>	N0.500-0.3	
Suction port	150	5MPa	PF	Horizontal	steam turbine		
Discharge port	150	5MPa	PF	Vertical	Rated power: 500kW	Maximum power:	
Drain port	/	/	/	/			
Pump casing design pressure: 5 MPa		Pump Casing Hydrostatic Test: 7.5 MPa					
Maximum working pressure: 2.8MP		Maximum permissible suction pressure:3.2MPa  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							



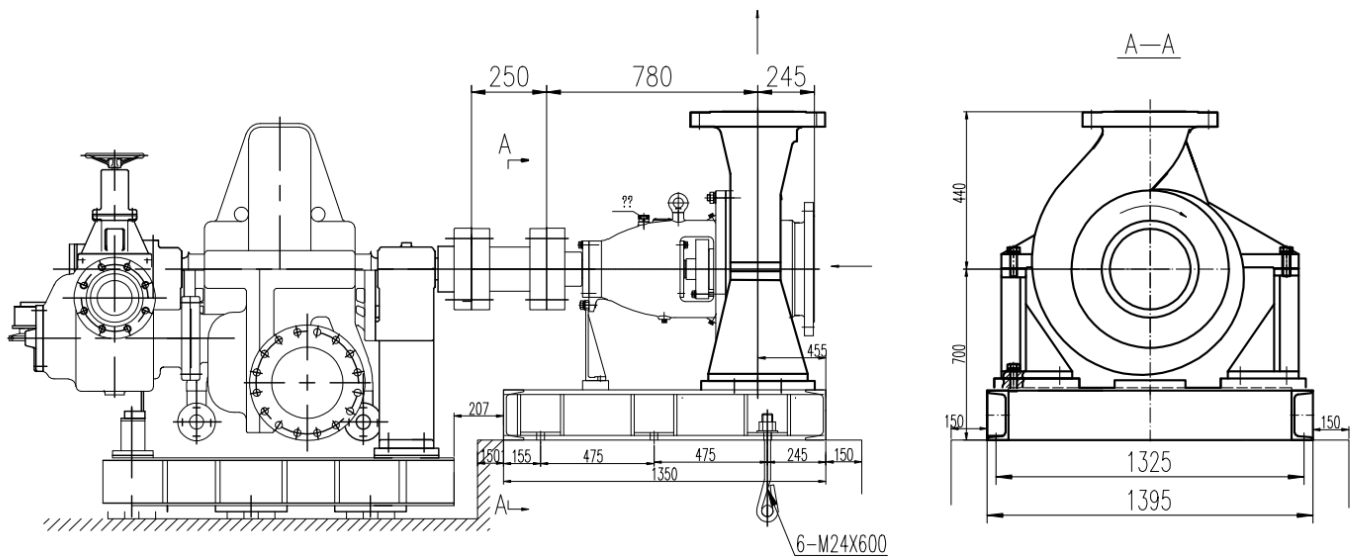
# Oil - Gas



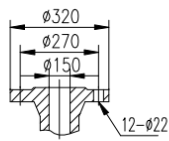
Line Item	name	model	flow: Q (m <sup>3</sup> /h)	Lift (H, m)	Quantity	Remark
4-P02 BT	(OH <sub>2</sub> ) Chemical Process Pump	FS-ZE150-5500-00	464	241.72	1	API610 standard production, Mechanical seal complies with API682 standard, material: cast steel, cartridge mechanical seal, mechanical seal flushing solution PLAN 21+52 SKF bearing, supply scope pump head + base + diaphragm coupling,
	Steam Turbine	N0.0.500-0.3	3000rpm	Inlet pressure 0.3MPa	1	Steam turbine body: N0.0.500-0.3 Steam turbine base, bolts, etc. are provided by the equipment factory Condenser: 140m <sup>2</sup> Control system: Siemens PLC Coupling: Shenyang Scheek Spare parts: provided by the equipment factory



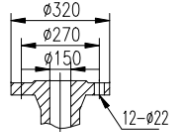
# Oil - Gas



Imported flange  
PN 5Mpa



Outlet flange  
PN 5Mpa



Line Item	name	model	flow: Q (m <sup>3</sup> /h)	Lift (H, m)	Quant ity	Remark
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## Oil –Gas

<b>Requested flow rate</b>	464 m <sup>3</sup> /h
<b>Requested developed head</b>	241.72 m
<b>Pumped medium</b>	Desalted crude
<b>Temperature</b>	138.5 °C
<b>Fluid density</b>	923 kg/m <sup>3</sup>
<b>Fluid viscosity (cP)</b>	5.7
<b>Vapors pressure</b>	7.48 kg/cm <sup>2</sup> a
<b>Suction pressure max.</b>	11.07 kg/cm <sup>2</sup> g
<b>Efficiency</b>	70.00%
<b>Power Absorbed</b>	0
<b>Pump speed of rotation</b>	2900rpm
<b>NPSH required</b>	6m
<b>Discharge press.</b>	26 kg/cm <sup>2</sup> .g
<b>Stuffing box press.</b>	VTA
<b>Shutoff head</b>	277m
<b>Shutoff pressure</b>	36kg/cm <sup>2</sup>
<b>Differential pressure</b>	14.93 kg/cm <sup>2</sup>
<b>NPSH available</b>	60.11 m
<b>Ratio Q/Qbep</b>	97.00%
<b>Max. power on curve</b>	470KW
<b>low for continuous stab</b>	VTA
<b>Suction Flange Size &amp; Rating</b>	DN150 5MPa
<b>Discharge Flange Size &amp; Rating</b>	DN150 5MPa
<b>Shaft seal</b>	As Per API 682
<b>Shaft seal manufacture</b>	EBARA
<b>Sealing plan</b>	API plan 21+52
<b>Bearing bracket size</b>	No. 5 bearing box
<b>Coupling Manufacturer</b>	EBARA
<b>Coupling type</b>	Diaphragm coupling
<b>Spacer length</b>	250mm
<b>Driver type</b>	Steam Turbine

<b>Drive standard mech.</b>	VTA
<b>Motor const. type</b>	VTA
<b>Motor speed</b>	VTA
<b>Frequency</b>	50 Hz
<b>Rated voltage</b>	Note 8
<b>Rated power P2</b>	Note 8
<b>Volute casing (102)</b>	Cast Steel
<b>Casing cover (161)</b>	Cast Steel
<b>Shaft (210)</b>	2Cr13
<b>Impeller (230)</b>	Cast Steel