

Eligibility criteria for Supply & Commissioning of Complete PRDS valve along with Quench water valve of Ammonia-II Plant M.I. No. BIA221077

Sr. No.	Conditions	Documents Required
1.	<p>Bidders on its own or through its original equipment manufacturer (OEM) should have experience of similar work in any large Fertilizer/Petro-chemical/Oil/Gas /Refineries/ Power industries/continuous process Industry in India during last seven years ending last day of the month in which NIT has been issued.</p> <p>Similar work means "Supply & Commissioning of Pressure Reducing and De-superheating (PRDS)Valves having Body size minimum 10 Inch with Pneumatic actuator, having Minimum Inlet steam Pressure/Temperature 105kg/cm2/515degC," along with quenching valve.</p>	<p>A. In case of authorized dealer / supplier/Channel Partner- Bidder to submit authorization certificate issued from OEM with minimum 1 year authorization validity.</p> <p>B. Minimum one copy of Purchase order with technical & commercial details including P.O. value for supply & Commissioning of Similar work as per condition-1</p> <p>Completion certificate / satisfactory performance. Bidders on its own or through its OEM shall submit Completion certificate with satisfactory performance issued by organization / firm where supplied valves are installed against above submitted PO copy indicating PO number and date of completion.</p>
2	<p>The Average Annual financial turnover of the Bidder during the last financial 3-years ending 31st March 2023 should be at least Rs. 82.95 Lakhs per annum for which vendor shall submit the certified copies of Audited Balance sheet and P&L for the last three financial years ending on 31st March of 2023.</p>	<p>Bidder shall submit financial standing through Audited Balance sheet and Profit & Loss account for the last three years ending on 31st March of 2023 (i.e FY 2020-21, 2021-22, and 2022-23).</p> <p>In case the bidders do not fall under the ambit of statutory audit, and do not have audited annual reports/ audited Balance sheets and Profit & Loss Statements, the bidder shall submit a statement certified by Statutory Auditor/ Practicing Chartered Accountant having UDIN no. as documentary evidence in support thereof.</p>

Note:

- (i) In case Performance / Completion certificate from concerned organization/ end user is not available, then bidder to submit self-certification for the same on their letter head mentioning name & address of the organization/end user, contact person name & contact details including email etc. Month/year of installation with P.O. number & value, certifying the performance of valve. Decision of acceptance of Bid shall be final and binding to the vendor.
- (ii) All the required documents shall be self-attested by the bidder.

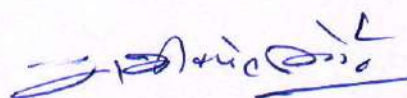
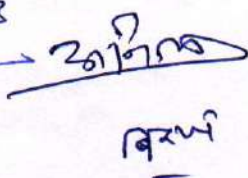
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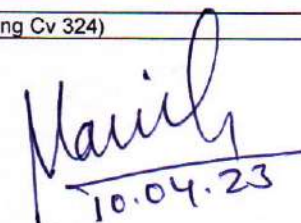
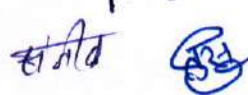
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Technical Specifications for PRDS Valve after mech.comments

S.No.	Description	
1	PRDS Valve	Qty 1 set
2	Tag No.	36-PV-01/2
3	Model & Make	party to specify, suitable for required service
4	Valve requirement	PRDS valve is required for replacement of existing PRDS valve suitable for below stated service conditions. During normal operation of the Synthesis Compressor's turbine, the PRDS valve may remain closed or in throttled condition. In case of tripping of Syn Comp. Valve should get quick open according to buffered signal.
5	Process Data	
5.1	Fluid	HP Steam (Super Heated 105kg/cm2g)
5.2	Fluid/Fluid Phase	HP Steam/Steam
5.3	Inlet Flow	0 to 256 t/h
5.4	Press.Normal/Design (Kg/cm2 g)	105/130
5.5	Temperature Normal/Max./Min. (Deg.C)	515/540/0
5.6	Density of HP Steam Normal/Max. (Kg/m3)	31.13/31.13
5.7	Molecular Weight	18.02
5.8	Viscosity (cp)	0.028
5.9	Compressibility	0.92
6	MP Steam (Superheated) Outlet	
6.1	Fluid/Fluid Phase	MP steam/ Steam at 40Kg/cm2g and 395 Deg.C.
6.2	Outlet Flow	0 to 275.558 t/h
6.3	Press.Normal/Design (Kg/cm2g)	39/46
6.4	Temperature Normal/Max./Design (Deg.C)	395/395/425
7	Quench Water Inlet For Injection	
7.1	Quench Outlet Flow	0 to 19.558 t/h
7.2	Press.Normal/Design (Kg/cm2)	60/70
7.3	Temperature Normal/Design (Deg.C.)	130/150
8	PRDS Valve Specification	
8.1	Valve Type	Pressure Reducing de-superheating Valve (Angle type)
8.2	Valve Class	ANSI Class 2500#
8.3	Valve Design	Valve should be designed to meet above stated service conditions & for minimum thermal stresses. The PRDS should have inbuilt feature of De-superheating system in valve body. Complies to ANSI B 16.34
8.4	Inlet Connection	Butt Weld 12" (Existing connected pipe Diameter & Schedule are 12" and 44 mm thick)
8.5	Outlet Connection	Butt Weld 16" (Existing connected pipe Diameter & Schedule are 16" and 55 mm thick)
8.6	Water Inlet Connection	Flanged 3" ANSI 2500# RTJ, party should include companion flange along with valve.
8.7	Valve Installation	Vertical with top mounted actuator (Inlet will be Horizontal, outlet will be downward Vertical)
8.8	Body Size	Inlet 12" butt weld end connection, Outlet 16" butt weld end connection, Coolant 3" ANSI 2500RTJ with Mating Flange.
8.9	Inlet Body material	ASTM A 182 F22
8.10	Outlet Body material	ASTM A 182 F22
8.11	Bonnet type	party to specify, suitable for required service
8.12	Bonnet material	ASTM A 182 F22
8.13	Material of Studs	ASTM A193 Grade B16
8.14	Nuts	ASTM A194 Grade 4
8.15	Material of Bonnet Gasket	party to specify, suitable for required service (Suitable for design temp.540 deg.C)
8.16	capacity	PRDS Valve Shall be designed for capacity of steam inlet 256T/h, quench water inlet 19.558 t/h & steam outlet 275.558t/h.
8.17	Min. controllable Flow	party to specify, suitable for required service (PRDS valve should be capable of handling minimum flow even at 1 to 2% opening of valve inconjunction with valve Rangeability)
8.18	Max. required Cv	party to specify, suitable for required service
8.19	Available Cv	party to specify, suitable for required service
8.20	Calculated Cv	party to specify, suitable for required service (Existing Cv 324)


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8.21	Selected Cv	party to specify, suitable for required service
8.22	Valve Rangeability	party to specify, suitable for required service (At least 1:40)
8.23	Trim type & size	party to specify, suitable for required service.
8.24	Leakage Class	FCI 70-2 Class IV or better
8.25	Trim Characteristics	Linear/Modified parabolic
8.26	Seat trim Material	420 SS Nitrided or better
8.27	Plug Stem material	party to specify, suitable for required service
8.28	Type & Material of Gland Packing	Grafoil or better/ party to specify, suitable for required service
8.29	Inlet Velocity	party to specify, suitable for required service
8.30	Outlet Velocity	party to specify, suitable for required service
8.31	Sound Pr.Level	Less than or equal to 90dBA
8.32	Valve Actuator type	Pneumatic Piston type .
8.33	Actuator Model, make & Size	party to specify, suitable for required service
8.34	Valve Action on Air failure	On air supply failure the stays put
8.35	valve stroke	party to specify, suitable for required service
8.36	Stroke time with Signal 4-20 mA	Valve 0 to 100% opening preferably in 1 second but less then 2 seconds for fast operation in case of turbine trip. Normal modulating stroke time 0 to 100%= less then 10 Seconds, Vendor to submit control schematic & functional diagram of actuator with accessories.
8.37		
8.38	Shut off Pressure	130 Kg/cm2
8.39	Locally Manual operation of Valve	Required
8.40	Inst.Air tubing	Valve tubing to be selected to meet valve stroking speed as mentioned above.
8.41	Painting on Valve & Actuator	Suitable for Service temperature
8.42	actuator accessories	Required, make & model party to specify
8.43	Valve Positioner type	Remote mounted, Electro-pneumatic smart type having advanced feature of fast operation capability. HART compatible.
8.44	Positioner Model & Make	party to specify, suitable for required service.
8.45	Positioner Input Signal	4-20 mA (active) 2 wire system (18-30 VDC)
8.46	Positioner In, Out & Supply gauge	Required
8.47	Make & Model of Air Filter Regulator (AFR) with Gauge	Required, make, model, Size and Capacity to be specified by party
8.48	Inlet Air Supply Pr. To AFR	5 to 6 Kg/cm2
8.49	Limit Switches for open & close	Required, make & model to be specified by party.
8.50	Separate Position Transmitter	Required, make & model to be specified by party, 4-20mA output for CCR
8.51	Other accessories	Party may include all other required accessories for fast & stable operation of offered valve to achieve the stroking speed as stated above.
9	Inspection and certifications	
9.1	IBR test certificate	Form IIIc as per IBR act
9.2	Body material test	Required, UT test
9.3	Body, Bonnet, Branches, flanges etc	MPI test as per ANSI B16.34
9.4	Welding joints	Welding joints in body is not acceptable, Radiographic test
9.5	Seat leakage test	Required
9.6	Body Hydrostatic test	Required as per ANSI B16.34 & API 598
9.7	Calibration of valve and operation test	Required
9.10	Inspection test	Inspection as per requirement of technical scope of supply will be done by third party (Lloyds or Beuro Veritas or TUV) inspection charges shall be included in quoted price. NFL representatives may also inspect the testing if required.

Note: Existing Valve's dimensional drawing attached for reference only.

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Technical specifications for Quench Water Valve

S.NO	Description	
1	Quench Water Valve	1 No.
2	Tag No.	36-TV-21
3	Model & Make	party to specify, suitable for required service
4	Valve requirement	Quench water valve is required for replacement of existing valve.
5	Process Data	
5.1	Fluid/Fluid Phase	Class V or better
5.2	Quench Outlet Flow	20 te/hr
5.3	Inlet Press Normal/Design	60 kg/cm ² / 70 Kg/cm ²
5.4	Critical Pressure	225.4 Kg/cm ² a
5.5	Outlet Pressure	55 Kg/cm ²
5.6	Temp. Normal/ Design	130 deg.C/ 150 deg.C
5.7	Density of water Normal/ max.	938/ Kg/m ³
5.8	Specific gravity	0.938
5.9	Vapour Pressure	2.75 Kg/cm ² a
5.1	Viscosity	1 Cp
6	Quench Water Valve's specifications	
6.1	Valve type	Globe type, unbalanced plug.
6.2	Valve Class	ANSI 600# Standard
6.3	Inlet Connection	Flanged 3 inch ANSI 600# RF
6.4	Outlet Connection	Flanged 3 inch ANSI 600# RF
6.5	Valve installation	Vertical with top mounted Actuator
6.6	Body size	party to specify, suitable for required service
6.7	Body material	ASTM A216 WCB or better
6.8	Bonnet type	party to specify, suitable for required service (Suitable for stated service & process condition)
6.9	Bonnet material	ASTM A105 or better
6.1	Material of Studs	ASTM A193 B7
6.11	Nuts	ASTM A194-2H
6.12	Face to Face dimension	Party to specify (Existing 337mm)
6.13	Material of Bonnet Gasket	party to specify, suitable for required service (Suitable for design temp.150 deg.C)
6.14	capacity	Valve shall be design for the capacity of water inlet 20 t/h.
6.15	Min. controllable Flow	party to specify, suitable for required service (quench water valve should be capable of handling minimum flow even at 1 to 2% opening of valve in conjunction with valve Rangeability)
6.16	Max. required Cv	party to specify, suitable for required service
6.17	Available Cv	party to specify, suitable for required service
6.18	Calculated Cv	party to specify, suitable for required service
6.19	Selected Cv	party to specify, suitable for required service
6.2	Valve Rangeability	party to specify, suitable for required service (At least 1:40)
6.21	Trim type & size	party to specify, suitable for required service.
6.22	Leakage Class	Class V or better
6.23	Trim Characteristics	Equal percentage
6.24	Seat trim Material	420 SS Nitrided or better
6.25	Type & Material of Gland Packing	Grafoil or better/ party to specify, suitable for required service
6.26	Inlet Velocity	party to specify, suitable for required service
6.27	Outlet Velocity	party to specify, suitable for required service
6.28	Sound Pr.Level	Less than or equal to 70 dBA
6.29	Valve Actuator type	Pneumatic Single acting Spring return, Diaphragm type
6.3	Actuator Model, make & Size	party to specify, suitable for required service
6.31	Valve Action on Air failure	On air supply failure the stay put

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6.32	Valve stroke	party to specify, suitable for required service (Existing 25mm)
6.33	Stroking time	Less than 2 Sec
6.34	dp for sizing	5 kg/cm ²
6.35	Shut off Pressure	70 Kg/cm ²
6.36	Locally Manual operation of Valve	Required
6.37	Inst. Air tubing	SS, Size Minimum 10 mm
6.38	Painting on Valve & Actuator	Suitable for Service temperature
6.39	actuator accessories	Required make proven models only
6.4	Valve Positioned type	Electro-Pneumatic Smart type Positioner.HART communication compatible.
6.41	Positioner Model & Make	party to specify, suitable for required service.Reputed make and model only
6.42	Positioner Input Signal	4-20 mA (2 wire system)
6.43	Positioner Output & Supply pressure gauge	Required
6.44	Position feedback	Required, 4-20mA, 2 wire system
6.45	Actuator Type	Air to close
6.46	Model & Make of Air Filter Regulator (AFR) with Gauge	Required make proven models only
6.47	Inlet Air Supply Pr. To AFR	5 to 6 Kg/cm ²
6.48	Lock-up Relay	Required for valve stay put on Air failure
6.49	Other accessories	Party may include all other required accessories for fast & stable operation of offered valve to achieve the stroking speed as stated above.
7	Inspection and certifications	
7.1	IBR Certification	IBR IIIc as per IBR act
7.2	Seat leakage test	As per ANSI
7.3		
Note: Existing Valve's dimensional drawing attached for reference only		

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S.No.	SCOPE OF SUPPLY	Qty.	
1	Complete Pressure Reducing Desuperheating Valve(PRDS Valve) connected with piston type pneumatic actuator, Remote mounted SMART electro-pneumatic positioner, position transmitter, hand wheel, locking devices, limit switches etc. & other necessary accessories as required for fast operation of valve. (All required piping/ tubing, fittings& other items necessary for the valve operation of piston type pneumatic actuator shall be included in Vendor's scope of supply.	1 No.	
2	Water Quench valve complete with connected pneumatic actuator, Smart electro-pneumatic positioner, position transmitter, hand wheel, locking devices, limit switches etc & other necessary accessories as required for fast operation of valve.(All required piping/ tubing, fittings& other items necessary for the valve operation of pneumatic actuator shall be included in Vendor's scope of supply	1 No.	
3	Recommended spares for 2 years operation for PRDS valve internals (Plug with Stem, seat, cage, seal rings (if any), gaskets set= 2 sets, Packing set =2 sets, Positioner, AFR, Repair kit for Actuator, Solenoid Valve, Soft items for Actuator, Position Transmitter, each accesories which is not included but required min.one no. to be included.	1 Set	
4	Recommended spares for 2 years operation for Quench water valve internals like Plug with Stem, seat, cage, gaskets set=2 sets, Packing Sets=2 sets, repair kit for Actuator, Actuator diaphragm, Valve Positioner, AFR, Soft goods for Actuator etc.)	1 Set	
5	Complete documentations	2 Sets	
6	Supervision, erection & commissioning	1 Lot	
7	Commissioning spare (If required)	1 Set	

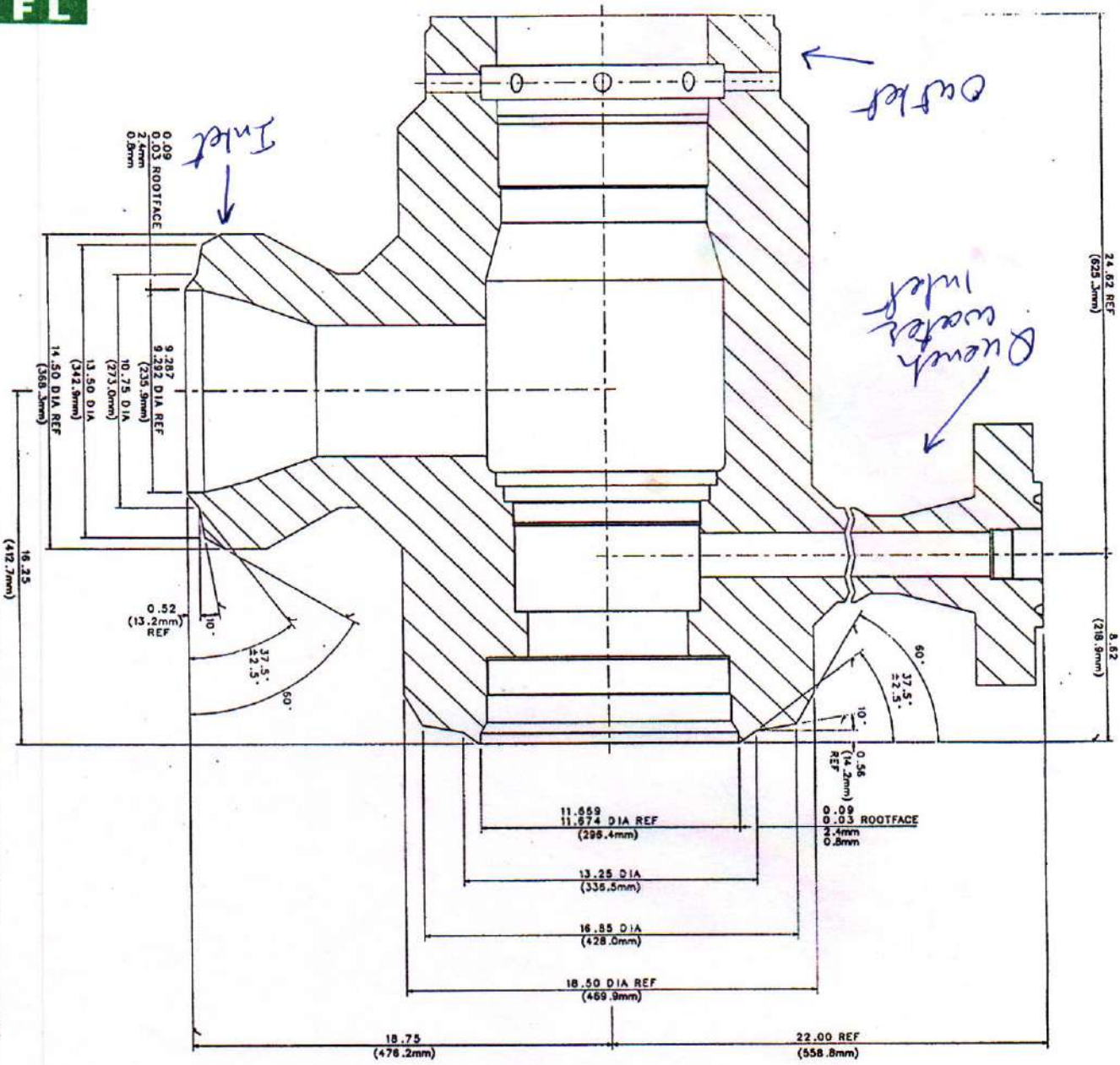
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NOTE
ALL DIMENSIONS ARE IN INCHES WITH
MIL METRES IN BRACKETS

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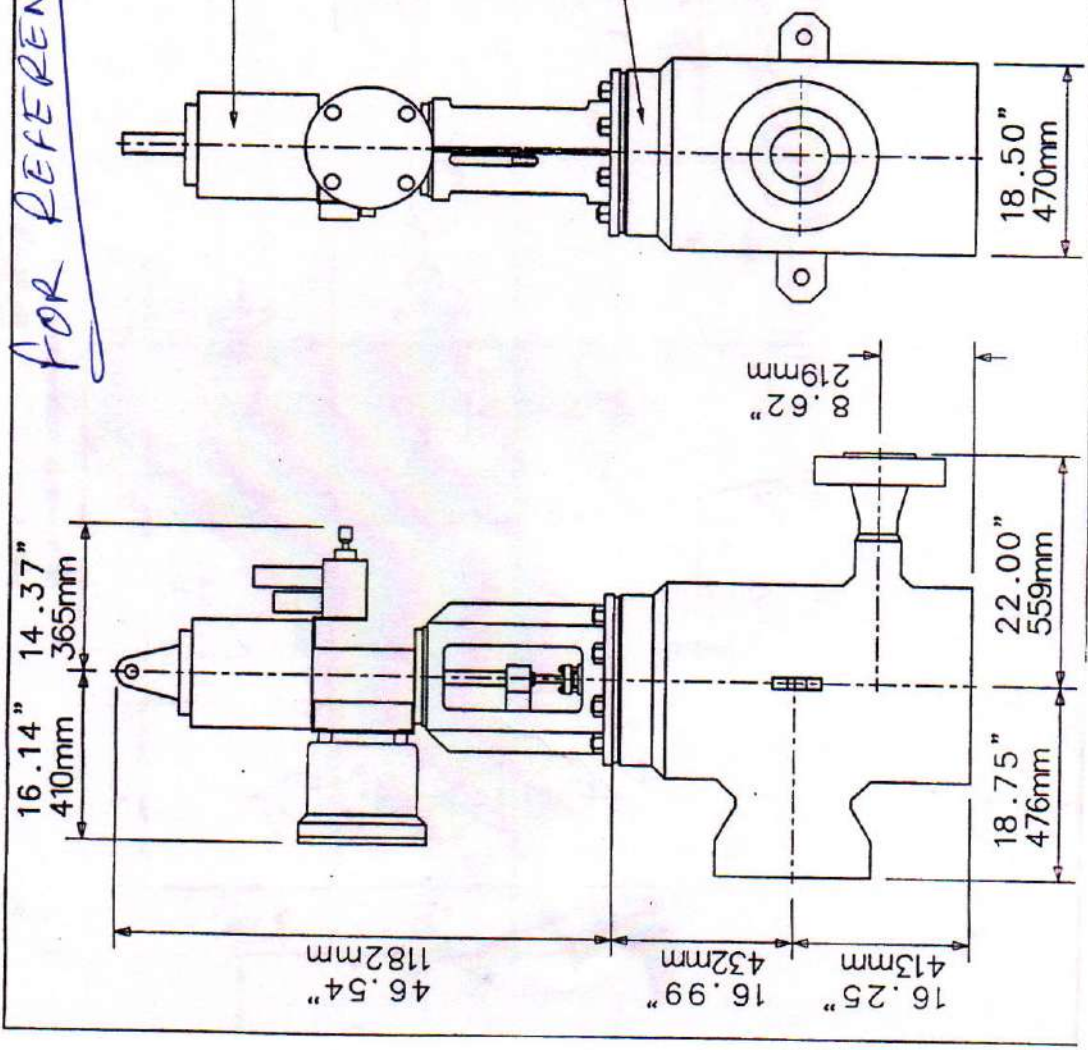
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ALLOW 12.00" (305mm) FOR ACTUATOR REMOVAL

ELRAM 100/56/56 CYLINDER ELECTRO-HYDRAULIC ACTUATOR

VALVE WEIGHT 2388 lb (1083kg) ACTUATOR WEIGHT 364 lb (165kg)

6X12 ANSI 2500 DSCV INLET 12" WELD END CONNECTION OUTLET 16" WELD END CONNECTION COOLANT 3" ANSI 2500RTJ

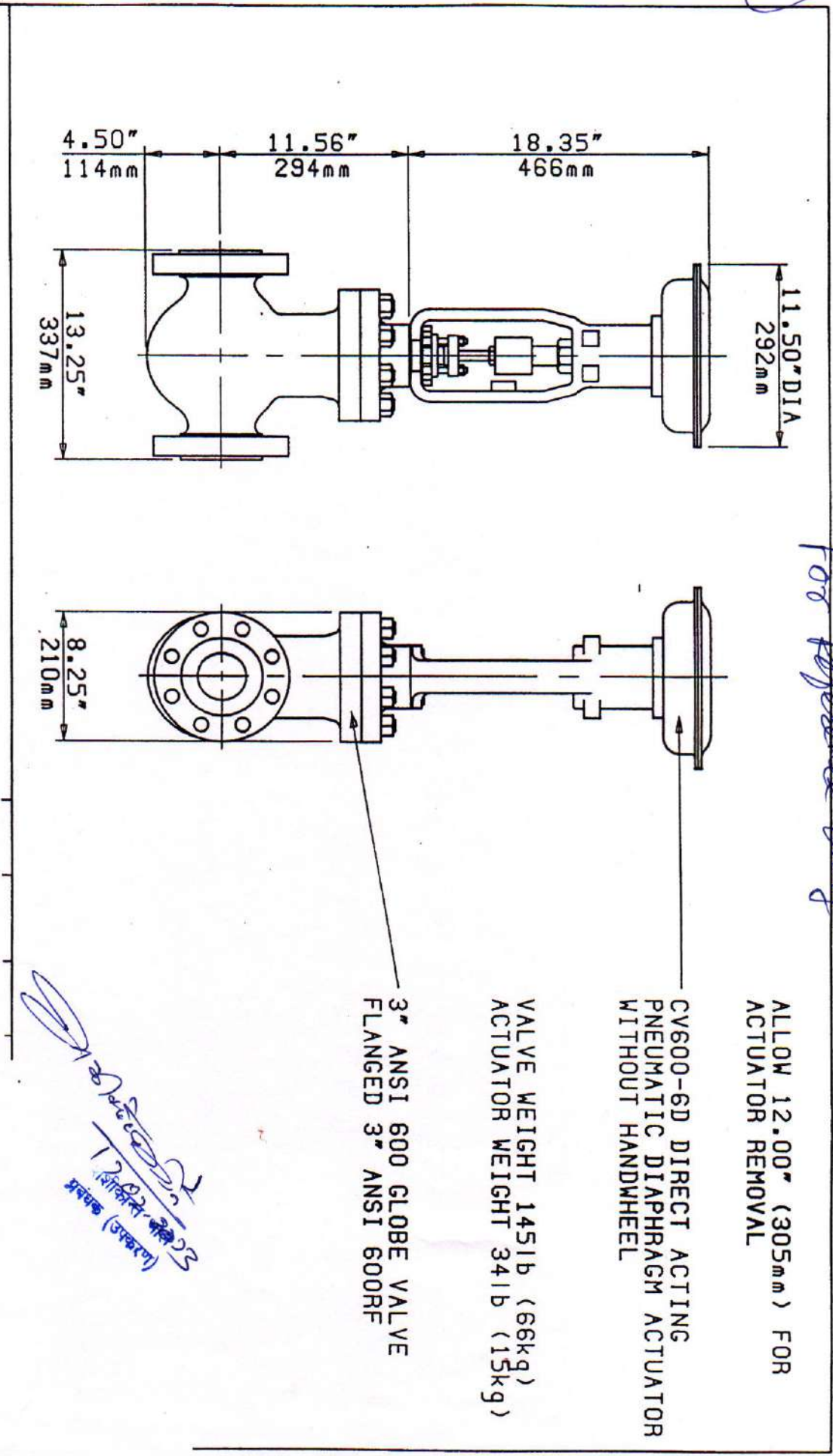


CUSTOMER NAME	NATIONAL FERTILIZERS LIMITED, NEW DELHI, INDIA
PROJECT NAME	VIAIPUR EXPANSION PROJECT
CUSTOMER PO No.	PNMM1056/MP2526CB
VENDOR NAME	COPEL-VULCAN LIMITED, WANSFORD, ENGLAND
VENDOR JOB No.	95CV1906Z
VENDOR SERIAL No.	95CV1906Z1 & 95CV1906Z2
ITEM No.	38-PV-011 & 38-PV-012
ITEM DESCRIPTION	COMBINED PRESSURE REDUCING AND DESUPERHEATING VALVE

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Temp. control valve
For Reference only.



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