

Generation – Specifications for LP Pre-Heater Inlet 03-MOV 108606 Replacement

General Overview

Valve continues to be difficult to operate by hand when coming off the seat and MOV is not capable of bring off seat under pressure. Rebuilding the valve was originally planned, however, after reviewing with the OM, they were unable to provide rebuild parts and specifications due to the rights of the valve being owned by another company outside of the U.S. Their recommendation was to replace the valve based on the information stated above.

The intent of this scope is to purchase a new valve and actuator as listed below.

Where will the bidder ship material?

GRDA Grand River Energy Center near Chouteau, OK, 45 miles East of Tulsa, OK.

Scope of Supply

Vendor shall provide the following:

MTR documentation shall be provided via email to the GRDA representative listed.

Valve and actuator shall be ready for installation upon arrival.

QTY 1 - 10" Velan Model B2064C02TSG Gate Valve, BW, Class 600, Full Port Gate, Vertical Bonnet, Bolted Bonnet, WCB Body, API Trim 5. FA16 Mounting. Valve and valve components shall be as stated in the material list provided on drawing number 4B-2064C-02TS-02. (page 3) Valve shall be capable of adding an equalization line. Any modification/machining of the valve for equalization should be included in the scope.

QTY 1 - Auma Model SA16.2 460 volt 3ph, 60 hertz motorized actuator. 125 VAC controls, Open-Stop-Close operation, AM02.2 Local pushbutton control station. For complete specifications see attached data sheets. Drive bushing machined to match stem. Actuator cannot exceed amperage as listed below.

Requires FA mounting adaptation flange and extended actuator drive bushing which shall be included in this scope.

Rated output torque [lbs.ft.] 740

Rated output torque [Nm] 1,003

Max. thrust 56000 lbs (250 kN)

Approximate weight (lbs.) 219

SERVICE CONDITIONS

Version Weather-proof

Operating mode OPEN - CLOSE duty

Enclosure protection NEMA type 6P

Color AUMA silver-grey (similar to RAL 7037)

Ambient temperature -40 °C to +70 °C (-40 °F to +158 °F)

Nameplates English - aluminum (US-AL)

Sealing elements NBR - Nitrile Butadiene Rubber

Corrosion protection KS

ELECTRICAL DATA

Mains voltage 460 Volts AC
Phase 3-Ph
Frequency 60 Hz
Type of duty S2 - 15 min.
Motor protection (D-1T-O140) 3 thermal switches, 1 N.C. contact
**per phase wired in series 140°C, class F
insulation, tropicalized winding**
Motor type **3 ph AC TENV motor, type AD/VD**

MOTOR DATA

Motor designation **AD00112-4-3.00**
Nominal power (HP) **4**
Nominal power (kW) **3.00**
Nominal speed (RPM) **1,680**
Nominal current In [A] **8.9**
Max. current I_{max} [A] **18.0**
Starting current I_a [A] **63.0**
COS **0.71**

ACTUATOR FEATURES

SA model **SA 16.2**
Output speed **54 RPM**
Valve attachment **FA16**
Output drive **FA16-A unmachined**
Mechanical position indicator **(11) with symbols OPEN and CLOSED, continuous**
Torque switches **(6) single switches Ag (1 NC/1 NO) for each
direction**
Limit switches **(9.4) DUO-tandem intermediate switches Ag (2 NC/2
NO), tandem switches Ag (2 NC/2 NO) for each
direction (4 gear train 16 contacts)**
Position transm. **(0) Without**
Turns per stroke **43.00**
Operating time (seconds) **48**
Reduction gearing **(10.1) Gearing with fixed reduction ratio**

Site Conditions

Are there any applicable site-specific conditions the bidder will require to provide a proposal?
N/A

Minimum Requirements

As stated in Scope of Supply.

Guarantees and/or Warranties?

Should the bidder provide any performance guarantees? Product warranties?
N/A

Start-up, Commissioning, Training

Will the bidder be required to provide any on-site services?
N/A

GRDA Technical Contact

Who will be the technical contact for the product or project?

GRDA Technical Contact – Mark Brake, mark.brake@grda.com, 918-824-7531

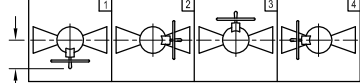
NPS	REF. NO.	ØA	BW	C	D	E	ØF	ØG	ØH	J	Cv	WEIGHT Lb			QTY	
												ACTUATOR	VALVE	TOTAL	15	16B
4	9921-001	4.00	17.00	23.14	29.14	34.00	1.12	1.75	12	3.69	1150	49	246	295	10	20
6	9930-001	6.00	22.00	30.34	39.72	45.00	1.50	2.25	12	5.00	2650	49	466	515	12	24
8	9939-000	8.00	26.00	35.77	45.15	54.00	1.62	2.37	12	6.76	4850	49	798	847	14	28
10	9948-002	10.00	31.00	40.46	53.84	63.00	1.87	2.62	24	7.76	7776	49	1255	1304	20	40
12	9957-000	12.00	33.00	48.28	61.82	75.00	2.00	2.87	18	9.38	10440	84	1700	1784	24	48
DN												WEIGHT Kg				
100	9921-001	101.6	431.8	588	740	864	28.4	44.5	305	93.7	981	22	112	134		
150	9930-001	152.4	558.8	771	1009	1143	38.1	57.2	305	127.0	2260	22	212	234		
200	9939-000	203.2	660.4	909	1147	1372	41.1	60.2	305	171.7	4137	22	362	385		
250	9948-002	254.0	787.4	1028	1368	1600	47.5	66.5	610	197.1	6633	22	570	592		
300	9957-000	304.8	836.2	1226	1570	1905	50.8	72.9	457	238.3	8905	38	772	810		

DETAIL #1: BUTTWELD END MACHINING AS PER (ASME B16.25 Fig. 2a & 2b)

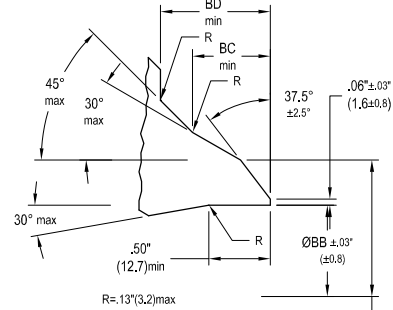
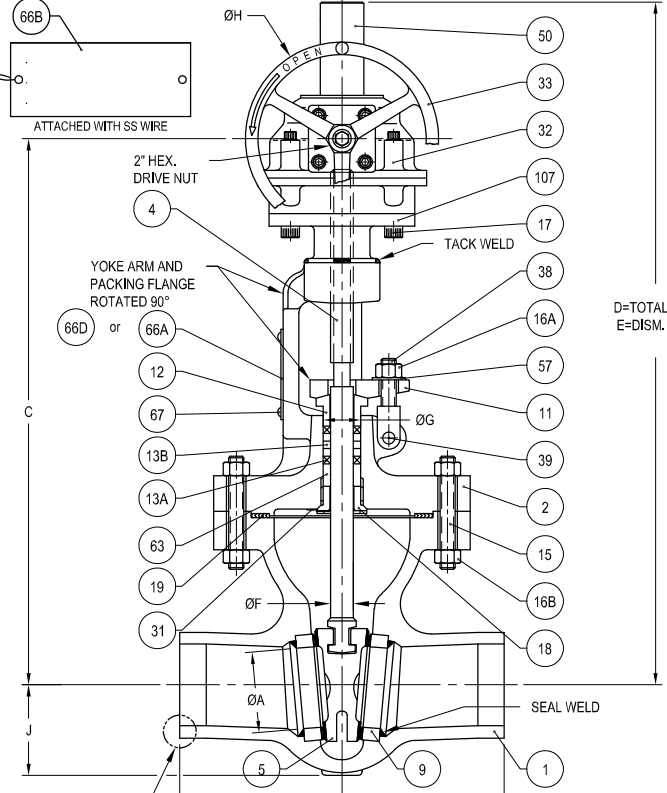
NPS	SCH	ØBA	ØBB	BC	BD
4	80	4.50	3.826	.506	.674
6	80	6.62	5.761	.648	.864
8	80	8.62	7.625	.750	1.000
10	80	10.75	9.562	.890	1.187
12	80	12.75	11.374	1.031	1.375
DN					
100	80	114.3	97.2	12.9	17.1
150	80	168.1	146.3	16.5	21.9
200	80	218.9	193.7	19.1	25.4
250	80	273.1	242.9	22.6	30.1
300	80	323.9	288.9	26.2	34.9

PART	DESCRIPTION	QTY	MATERIAL LIST			(02TS-600G) REMARKS
			MATERIAL	MATL. SPEC.		
1	BODY	1	WCB	ASTM A216		
2	BONNET	1	WCB	ASTM A216		
4	STEM	1	410	ASTM A479	HARDENED	
5	WEDGE	1	WCB	ASTM A216	CoCr FACE	
9	SEAT	2	CS / GR B	ASTM A105/A106	CoCr FACE	
11	PACKING FLANGE	1	CS	ASTM A105		
12	GLAND BUSHING	1	CS	ASTM A108		
13A	PACKING RING	2	BRAIDED GRAPHITE			
13B	PACKING RING	3	DIE-FORMED FLEXIBLE GRAPHITE			
15	BODY / BONNET STUD	TAB	GR B7	ASTM A193		
16A	GLAND STUD NUT	2	GR 2H	ASTM A194		
16B	BODY / BONNET STUD NUT	TAB	GR 2H	ASTM A194		
17	HEX SOG HEAD CAP SCREW	4	ALLOY STEEL	ASTM A574	ALT. STUD / NUT	
18	BACKSEAT	1	410	ASTM A479	HARDENED	
19	GASKET	1	316L or 347/GRAPHITE	SPIRAL WOUND		
31	BACKSEAT LOCK	1	SS/T 300 SERIES	ASTM A240 / A480	TACK WELDED	
32	BEVEL GEAR ACTUATOR	1	DUCTILE IRON	ASTM A536	NOTE 2	
33	HANDWHEEL	1	DUCTILE IRON	ASTM A536		
38	GLAND EYEBOLT	2	GR B	ASTM A307		
39	GROOVE PIN	2	CS	ASTM A108		
50	STEM COVER	1	CS	ASTM A106	PLASTIC CAP	
57	WASHER	2	CS	SAE TYPE		
63	PACKING SPACER	1	CS	ASTM A108		
66A	NAME PLATE	1	302-304	ASTM A240		
66B	TAG PLATE	1	302-304	ASTM A240	OPTIONAL	
66D	CE NAME PLATE	1	302-304	ASTM A240		
67	RIVET	2	302-304	ASTM A493	ALT. SPOTWELDED	
107	MOUNTING FLANGE	1	CS	ASTM A108	ALT. CS ASTM A36	

TOP VIEW SHOWING POSSIBLE ORIENTATION OF ACTUATOR (DEFAULT = 1)



11.87"(302) FOR NPS 4 TO 10 (DN 100-250)
15.04"(382) FOR NPS 12 (DN 300)



- NOTES:
1. VALVE DESIGNED IN ACCORDANCE WITH ASME B16.34 AND API 600.
 2. NPS 4-10 (DN 100-250) VELAN MODEL VT-20 OR VT-20E NPS 12 (DN 300) VELAN MODEL VT-30 OR VT-30E.
 3. THE "CE" MARK SHALL BE AFFIXED TO THE VALVE FOR THE COUNTRY WHERE APPLICABLE.

D=TOTAL HGT
E=DISM. HGT

FACE TO FACE=BW
±1/16 FOR NPS 4-10 (±1.5 FOR DN 100-250)
±1/8 FOR NPS 12 (±3.2 FOR DN 300)

R	UPDATED TO LATEST DESIGN & MATERIAL STANDARDS.	NSARAWANA 2022-05-31	L.NITTI 2022-05-31	M.BOUCHARD 2022-05-31
REV	REVISION DESCRIPTION	DRAWN	APVD	IR CERT
		YYYY-MM-DD		

CUST NAME	CUST ORDER NO
<p>"DISCLAIMER"</p> <p>DUO TO THE POSSIBILITY OF DESIGN MODIFICATIONS THIS DRAWING IS TO BE USED AS A GUIDELINE ONLY. VELAN WILL NOT ACCEPT ANY LIABILITY FOR MISMATCH BETWEEN THIS DRAWING AND THE PRODUCT SUPPLIED.</p>	
<p>BOLTED BONNET GATE VALVE (CAST) c/w GEAR ACTUATOR</p>	

VELAN REF	SCALE NTS	⊕	NPS 4" - 12" (DN 100 - 300)	CLASS 600 (PN 100)
<p>THIS DOCUMENT AND ALL INFORMATION HEREIN IS THE PROPERTY OF VELAN. IT IS CONFIDENTIAL, SUBJECT TO RETURN UPON REQUEST AND SHALL NOT BE REPRODUCED OR IMPARTED TO A THIRD PARTY. CE DOCUMENT ET TOUTS LES RENSEIGNEMENTS QUI LE RENFERME SONT LA PROPRIÉTÉ DE VELAN. IL S'AGIT D'UN DOCUMENT CONFIDENTIEL. A REMETTRE SUR DEMANDE. ON NE DOIT PAS ÊTRE COPIÉ OU TRANSMIS À UN TIERS.</p>				<p>DWG NUMBER 4B-2064C-02TS-02</p>
			REV R	SHT 1 OF 1

Item: 1 - SA16.2/AM02.1

AUMA product	Multi-turn electric actuator
Rated output torque [lbs.ft.]	740
Rated output torque [Nm]	1,003
Max. thrust	56000 lbs (250 kN)
Approximate weight (lbs.)	219

SERVICE CONDITIONS

Version	Weather-proof
Operating mode	OPEN - CLOSE duty
Enclosure protection	NEMA type 6P
Color	AUMA silver-grey (similar to RAL 7037)
Ambient temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Nameplates	English - aluminum (US-AL)
Sealing elements	NBR - Nitrile Butadiene Rubber
Corrosion protection	KS

ELECTRICAL DATA

Mains voltage	460 Volts AC
Phase	3-Ph
Frequency	60 Hz
Type of duty	S2 - 15 min.
Motor protection	(D-1T-O140) 3 thermal switches, 1 N.C. contact per phase wired in series 140°C, class F insulation, tropicalized winding
Motor type	3 ph AC TENV motor, type AD/VD

MOTOR DATA

Motor designation	AD00112-4-3.00
Nominal power (HP)	4
Nominal power (kW)	3.00
Nominal speed (RPM)	1,680
Nominal current I _n [A]	8.9
Max. current I _{max} [A]	18.0
Starting current I _a [A]	63.0
COS	0.71

ACTUATOR FEATURES

SA model	SA 16.2
Output speed	54 RPM
Valve attachment	FA16
Output drive	FA16-A unmachined
Mechanical position indicator	(11) with symbols OPEN and CLOSED, continuous
Torque switches	(6) single switches Ag (1 NC/1 NO) for each direction
Limit switches	(9.4) DUO-tandem intermediate switches Ag (2 NC/2 NO), tandem switches Ag (2 NC/2 NO) for each direction (4 gear train 16 contacts)
Position transm.	(0) Without
Turns per stroke	43.00
Operating time (seconds)	48
Reduction gearing	(10.1) Gearing with fixed reduction ratio

Item: 1 - SA16.2/AM02.1 (continued)

ACTUATOR FEATURES (continued)

Reduction ratio	76:1
Stem protection tube	1' (300mm) steel tubing
Heater	(22.1) 110 V-250 V AC/DC self regulating PTC element: 5-20 W
Motor heater	(23.43) 380 V - 480 V motor compartment heater: 12.5 W
Torque switching	Setting range 290-740 lbs.ft.
Set to close lbs.ft.	740
Set to open lbs.ft.	740
Handwheel	15.7" (400-1-000-A000) lockable motor engaged, with declutch push-button padlock
Stall TRQ @ 100% nom. voltage (lbs.ft.)	1,077
Break TRQ @ 100% nom. voltage (lbs.ft.)	740
5 min. run TRQ @ 100% nom. voltage (lbs.ft.)	590
10 min. run TRQ @ 100% nom. voltage (lbs.ft.)	369
15 min. run TRQ @ 100% nom. voltage (lbs.ft.)	295
Overall handwheel mech. adv.	3.3
Close direction	RH - clockwise
Limit switching	(320) 1.5-500 rev/stroke adjustable (DUO)
Lubricant	F15 Shell ALVANIA 1029
Special version TPA	(A30) special configuration XK
Electrical connection	(S0-000) actuator plug for mounting AM/SEM/AC

ACTUATOR CONTROLS

Enclosure	AM 02.1
Mounting position	Position A
Controls	(41.00) Standard interface board
Type of signal	(46.14) 110 - 125 V AC internal, or external supply
Input signals	(42.02) OPEN - STOP - CLOSE
Power supply unit	(49.2100P) Transformer, customer output: 115 V AC
Motor controls	(B00.02) Reversing contactors for power class A2
Motor protection	(54.01) Thermal switch
Selector switch	(51.02) 3 positions, 2 levels
LOCAL operation	Push buttons OPEN, STOP, CLOSE
Indication lights	OPEN-red, FAULT-yellow, CLOSE-green
Control elements	(52.19) Push buttons OPEN-STOP-CLOSE; 3 indicating lights; OPEN: Red, FAULT: Yellow, CLOSE: Green
Mounting pos. local controls	Position A, selector switch at 6 o'clock in relation to base of controls (standard for SA/SQ)
Face plate	English-Spanish-French text: Open-Stop-Close/Local-Off-Remote
Output signals	(44.03) OPEN-CLOSE/LOCAL-REMOTE
Version logic	Lights illuminated in mid travel
Seating CLOSED	Limit switch
Seating OPEN	Limit switch
Fault signal	Torque included in collective fault signal (S2 '6'=ON)
Self locking LOCAL	With
Self locking REMOTE	Without

Item: 1 - SA16.2/AM02.1 (continued)

ACTUATOR CONTROLS (continued)

Heater	(53.38) Control unit heater internally supplied, motor heater 380V-480V internal supply
2nd digit	(A) Torque switch by-pass for both directions with plug/socket
Electrical connection	(SB-080) plug/socket 100mm, 2 x 3/4" NPT; 1 x 1 1/4" NPT

OPTIONAL EXTRAS

Double sealed at customer connection XK
Padlock on selector switch

DRAWINGS

ACTUATOR DIMENSIONAL DWG	DDS100001GBLDC341
OUTPUT DRIVE/MOUNTING FLANGE DWG	SK099489
POINT-TO-POINT WIRING DWG	MSP1A10KC5--F2JC1TPA00R1AH-00D-A30

OPERATION MANUALS

ACTUATOR OPERATION MANUAL	(click here)
SUPPLEMENT_ELECTRIC_INSTALL	(click here)
WIRING DIAGRAM LEGEND	(click here)