

Submittal item detail

#40 05 62-001-A-0: Dezurik Motorized Plug Valve



Status	Created on	Ball in court due date
Closed	Sep 5, 2024	
ID	2	
Ball in court	Luis Franco (Barge Design Solutions)	
Manager	Luis Franco (Barge Design Solutions)	
Responsible contractor	Luis Franco (Barge Design Solutions)	
Watchers	Barge Design Solutions	
Spec section	40 05 62 Plug Valves	
Spec sub section		
Description		
Final Response	Reviewed / Exceptions Noted	
Final Response Attachments	DEZURIK MOTORIZED PLUG VALVE SUBMITTAL WITH COMMENTS _8_23_24.PDF , Sep 12, 2024, 1:41 PM UTC	
Final Response Comments	Please see attached.	
Package		

Ball in court	Sent	Due	Returned	Response/Action	Attachments
Submitted					
Luis Franco (Barge Design Solutions) Submitted by Luis Franco	Sep 5, 2024	Sep 13, 2024	Sep 5, 2024	Submitted	Barge_Submittal Review Form.docx DeZurik Motorized Plug Valve Submittal.pdf
Comments	-				
Sent for review					
Luis Franco (Barge Design Solutions) Sent by Luis Franco	Sep 5, 2024	-	Sep 5, 2024	Sent for review	Barge_Submittal Review Form.docx DeZurik Motorized Plug Valve Submittal.pdf
Comments	-				
Review Step 1					
Mike Alexander (Barge Design Solutions) Reviewed By Luis Franco	Sep 5, 2024	Sep 19, 2024	Sep 12, 2024	Reviewed / Exceptions Noted	DeZurik Motorized Plug Valve Submittal with comments _8_23_24.pdf
Comments	See attached.				

**BARGE DESIGN SOLUTIONS
6525 THE CORNERS PKWY NW
NORCROSS, GA 30092 (678) 515-9411**

**COMMENTS TO SUBMITTAL DATA
LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
BARGE: 36181-21**

SUBMITTAL NAME: DeZurik Motorized Plug Valve Submittal

REVIEWED / NO EXCEPTIONS TAKEN _____	☐	
REJECTED _____	☐	
REVIEWED / EXCEPTIONS NOTED _____	☒	
REVISE AND RESUBMIT _____	☐	
NOT SUBJECT TO REVIEW _____	☐	
Review of this submittal is expressly limited as provided in the Contract Documents and are only to determine general conformance with information given in the Contract Documents and compatibility with the design concept for the completed project as a functioning whole as indicated in the Contract Documents. Corrections or comments made for this review do not relieve the Contractor from compliance with the Contract Documents. Contractor is, and Engineer is NOT, responsible for all matters relating to confirmation/correlation of dimensions at the jobsite, fabrication, shipping, handling, storage, assembly, installation, construction (including all safety aspects of performing the work), and for coordinating the Work.		
<u>Mike A.</u>	<u>8/22/2024</u>	
BARGE DESIGN SOLUTIONS, INC.	DATE	

Comments

Mounting positions indicated.

END OF COMMENTS

DEZURIK MOTORIZED PLUG VALVE SUBMITTAL

LOWER POPLAR WRF – INFLUENT PS IMP. MACON, GEORGIA

ENGINEER

Barge Design Solutions
6525 The Corners Parkway, Suite 450
Peachtree Corners, GA 30092

OWNER

Macon Water Authority
537 Hemlock Street
Macon, GA 31201

VENDOR

Eco-Tech, Inc.
156 Hickory Springs Industrial Drive
Canton, Georgia 30115

August 15, 2024

LOWER POPLAR WRF – INFLUENT PS IMP. MACON, GEORGIA

Description: DeZurik Motorized Valves

Supplier: Eco-Tech, Inc.
156 Hickory Springs Industrial Drive
Canton, GA 30115
Ph: 678.880.1223
Contact: Heather Bame
Email: hbame@eco-tech.net

Manufacturers: DeZurik/APCO/Hilton
250 Riverside Avenue North
Sartell, MN 56377
Ph: 320.259.2000
Website: www.dezurik.com
DeZurik Field Service: 320.259.2365

Service Center: Eco-Tech, Inc.
156 Hickory Springs Industrial Drive
Canton, GA 30115
Ph: 770.345.2118
Contact: DeWitt Sosbee
Email: dsosbee@eco-tech.net



August 15, 2024

TO: Bidding Contractor
ATTN: Estimator
QUOTE #: 24051GA
PROJECT: Lower Poplar WRF Influent PS Improvements
LOCATION: Macon, GA
ENGINEER: Barge
QUOTATION BY: Chip Ruth
PAGE: 1 of 2

PV 12 Deleted by Addendum 2

The following Valves have been quoted per specification, up to and including Addendum #2. Valve boxes, Extension stems, stem guides and tee wrenches are not included unless otherwise noted. MJ accessories and flange joint material are not included. Permanent name plates are by others.

Tag #	Quantity	Description
-------	----------	-------------

09 - Influent Pump Station

PV-1	1	24" Flanged DeZURIK Plug valve w/ Limitorque Open/Close EMO
PV-2	1	24" Flanged DeZURIK Plug valve w/ Limitorque Open/Close EMO
PV-3	1	16" Flanged DeZURIK Plug valve w/ Limitorque Open/Close EMO
PV-4	1	24" Flanged DeZURIK Plug valve w/ Limitorque Open/Close EMO
PV-5	1	24" Flanged DeZURIK Plug valve w/ Limitorque Open/Close EMO
PV-6	1	16" Flanged DeZURIK Plug valve w/ Limitorque Open/Close EMO

02 - Site

PV-7	1	36" MJ DeZURIK Plug valve w/ 8 ft Ext. Bonnet & Limitorque Open/Close EMO 8'-4" from Centerline of valve to actuator
PV-8	1	36" MJ DeZURIK Plug valve w/ 8 ft Ext. Bonnet & Limitorque Open/Close EMO 8'-4" from Centerline of valve to actuator
PV-9	1	30" MJ DeZURIK Plug valve w/ 8 ft Ext. Bonnet & Limitorque Open/Close EMO 8'-4" from Centerline of valve to actuator



<u>Tag #</u>	<u>Quantity</u>	<u>Description</u>
PV-10	1	30" MJ DeZURIK Plug valve w/ 10 ft Ext Bonnet & Limitorque Open/Close EMO ↖ 8'-4" from Centerline of valve to actuator
PV-11	1	36" MJ DeZURIK Plug valve w/ 10 ft Ext. Bonnet & Limitorque Open/Close EMO ↖ 8'-4" from Centerline of valve to actuator
PV-12	1	24" MJ DeZURIK Plug valve w/ 24 ft Ext. Bonnet & Limitorque Open/Close EMO

PV 12 Deleted by Addendum 2



Submittal Data Sheet
Date: August 15, 2024

ECO TECH INC
PO BOX 956
HOLLY SPRINGS GA 30142
United States

P.O. 24051GA-16
FACTORY ORDER SO116840
PROJ. NAME 24051GA - Lower Poplar WRF Influent PS

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
1		1	9741836	PEC,24,F1,CI,NBR,NBR,DTR-S30SC0*X,SB16*A36115

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	24	24 Inch (600mm); SST Bearings; Welded-in Nickel Seat
End Connection	F1	Flanged Drilling; ASME Class 125/150
Body Material	CI	Cast Iron
Packing	NBR	.5" - 3" Acrylonitrile-Butadiene Reinforced filler in a PTFE U-ring, -20 to 180° F. (-29 to 83° C.); 4" & Larger Acrylonitrile-Butadiene Reinforced V-type, -20 to 250° F. (-29 to 121° C.)
Plug Facing	NBR	Acrylonitrile-Butadiene; -20 to 180° F. (-29 to 83° C.)
Options	DTR	DeZURIK Standard Certified Production Hydrostatic Shell and Seat Test Report
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10) surface prep
Actuator	X	Specify Actuator in Special Construction
Stainless Steel Bolting & Tubing	SB16	316 Stainless Steel Bolting

Temperature Range	-20 to 180 Degrees
Valve Pressure	F. to 150 psig

RELATED DOCUMENTS

Z21271: DWG INST PEC F1 LIM MX-10/WG-05-1SD GR1 20.5-36"
J78590: DWG VALVE ASSY PEC F1 20.5-36 W/PLUG SUPPORT
J78828: DWG CONN PARTS 20.5-54 PEC

MODIFIER

LIMITORQUE - MXb-10/WG-05-1SD-D - PN:1464168

FEATURES

TAG: PV-1



Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

Phone: 434-528-4400
Fax:

Customer Data Sheet

SALES ORDER NO. 205928 REV 0	ORDER LINE 001	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225334.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

ACTUATOR INFORMATION

Electric Actuator Type **MX-10** **Series B**
Enclosure Type WP&SUBM NEMA 3,4,4X,6,IP68
Electric Output RPM 100
Valve Torque 3083 Ft Lbs 4181 Nm
MX/Gear Box Max Rated Torque 8288 Ft Lbs 11239 Nm
MX/Gear Box Stall Torque 12478 Ft Lbs 16920 Nm
Operating Time for 90 degrees 58 Sec
Handwheel **SIDE Mounted 12 Inch**
Open Direction CCW
Lube SHC-632
Gear Box Type WG-05-1SD-D
Gear Box Ratio 388:1
Gear Box SGA Ratio NA
Gear Box Position A
Gear Box Base MSS-FA30
Gear Box Output RPM 0.26
Outline Drawing 03-654-0012
Sun Shade Drawing NA
Wiring Diagram WD-MXb-040000-0101
Disconnect Diagram NA
Conduit Entries 1-1/4,1-1/2,1-1/4,NONE
2-Speed Timer N Quik Board N
Control Options Network:STD Digital:R4 Analog:NONE
Main Board BLUETOOTH/UPS Wire Controls 3 WIRE MAINT
Disconnect Switch NONE
Warranty STANDARD
MOTOR INFORMATION
Motor Size 9 FT-LBS
Motor Voltage **480**
Mtr Phase/Frequency Hz 3/60
Motor Horsepower 0.49
Motor RPM 1800
Locked Rotor Amps (LRA) 7.0
Full Load Amps (FLA) **1.7**

Instruction Manual VAION000071 on the internet www.limitorque.com
Qualifications: The MX complies with all the test
parameters identified in Limitorque MX qualification testing bulletin
AIBR000087. Installation of the MX in environments outside the
parameters identified in bulletin AIBR000087 voids the warranty.

Customer Data Sheet

Flowserve®

Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736 www.flowserve.com

Phone: 434-528-4400
Fax:

SALES ORDER NO. 205928 REV 0	ORDER LINE 001	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225334.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

TAGGING AND INFORMATION:
TAG: 1464168

VALVE SIZE	PIPE SIZE		DIMENSIONS INCHES MILLIMETERS									
	IN	MM	A	B	C	D	E	F	G	H	J	K
20.5	20	500	1.25 32	42.00 1067	18.31 465	25.00 635	1-1/8-7UNC	20	THRU	N/A	N/A	21.19 538
24	24	600	1.88 48	42.00 1067	18.31 465	29.50 749	N/A	N/A	N/A	1.38 35	20	21.19 538
24.5	24	600	1.94 49	42.00 1067	21.88 556	29.50 749	1-1/4-7UNC	20	1.50 38	N/A	N/A	25.75 654
30	30	750	2.12 54	51.00 1295	21.88 556	36.00 914	N/A	N/A	N/A	1.38 35	28	25.75 654
30.5	30	750	2.12 54	51.00 1295	24.81 630	36.00 914	1-1/4-7 UNC	28	2.00 51	N/A	N/A	29.44 748
36	36	900	2.38 60	60.00 1524	24.81 630	42.75 1086	N/A	N/A	N/A	1.62 41	32	29.44 748

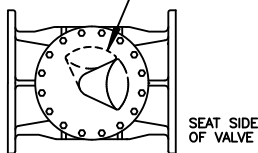
A	VALVE
C	MOTOR W/GEARBOX
P	CONNECTING PARTS

NOTES:

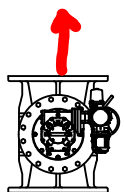
1. FLANGES ARE FLAT FACED WITH DIAMETER AND DRILLING TO CLASS 125 ANSI STANDARD B16.1, EXCEPT FOR TAPPED HOLES AS INDICATED. SEE A-16368 FOR NON-ANSI FLANGE DATA.
2. FOR MANUAL OPERATION PUSH LEVER IN DIRECTION OF ARROW ONLY. UNIT REMAINS IN HAND OPERATION UNTIL MOTOR IS ENERGIZED.
3. INSTALLATION NOTE:

- FOR LIQUIDS & GASES:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST END OPPOSITE SEAT.
- FOR SUSPENDED SOLIDS, SLURRIES, ETC:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST SEAT END. IN HORIZONTAL PIPELINES, VALVE SHOULD BE INSTALLED ON IT'S SIDE SO PLUG ROTATES TO THE TOP OF THE PIPELINE WHEN OPEN. (SEE DIAGRAM BELOW).

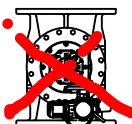
PLUG IN OPEN POSITION.
SEE INSTALLATION NOTE.



ACTUATOR MOUNTING POSITIONS AS VIEWED FROM TOP OF VALVE. DOTTED LINES SHOW OPTIONAL MOUNTING POSITIONS.



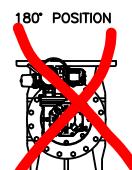
SEAT END OF VALVE
STANDARD POSITION
SHOWN ON THIS DRAWING



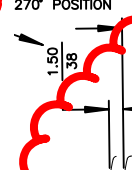
SEAT END OF VALVE



SEAT END OF VALVE

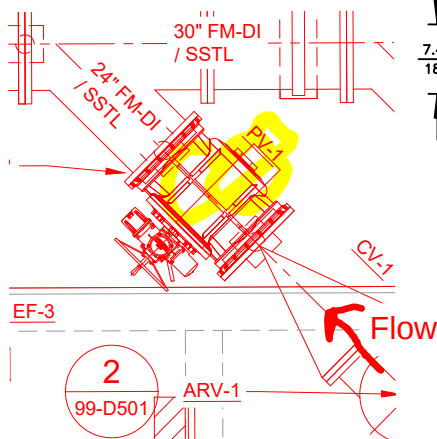


SEAT END OF VALVE



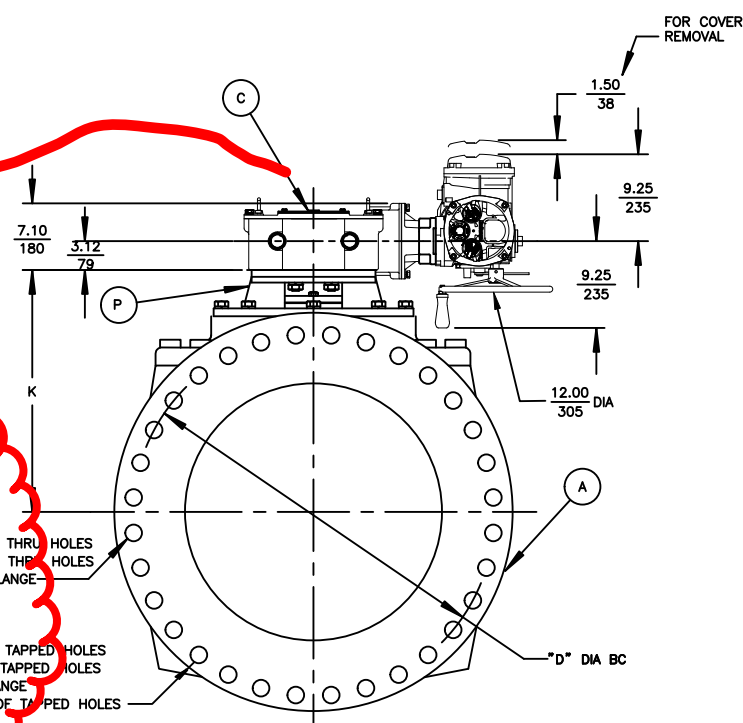
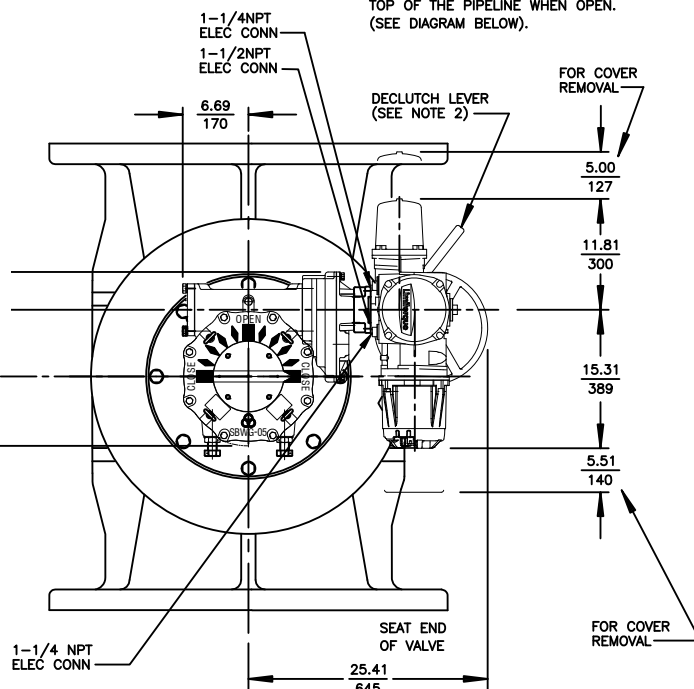
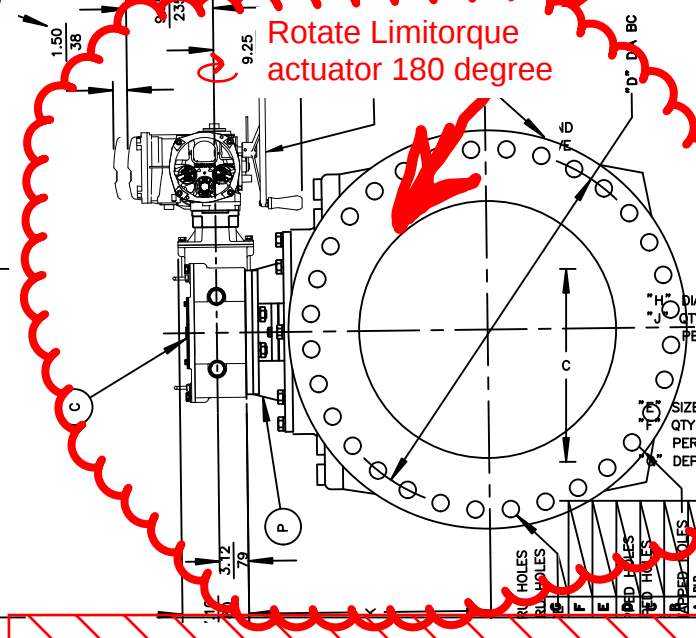
SEAT END OF VALVE

PV-1 INSTALLED w SHAFT IN HORIZ
Main gear mounted in standard position.



PLAN VIEW SHEET 09-D103
Shaft horizontal
Handwheel away from pipe

Rotate Limitorque
actuator 180 degree

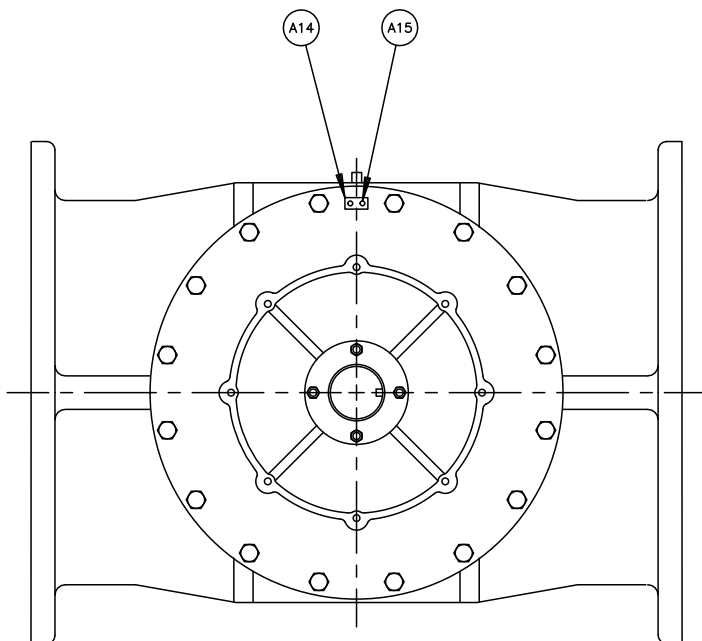


DeZURIK.com

PEC ECCENTRIC VALVES SIZE 20.5-36 FLANGED, MATERIAL GROUP 1
LIMITORQUE MX-10/WG-05-1SD MOTOR ACTUATOR

DOCT. CODE	DRAWN	JE	APPROVED	JWM
C1	CHECKED	JWM	DATE	08/08/24

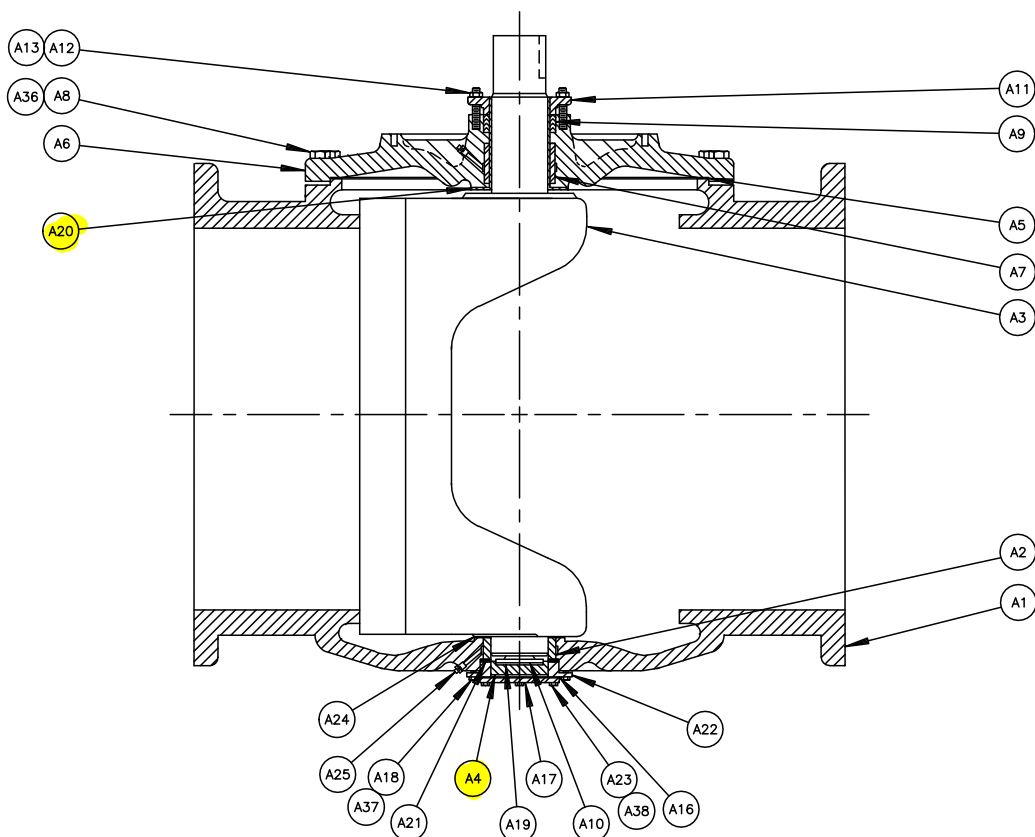
Z21271



NO	PART NAME	QTY
A1	BODY	1
A2	BEARING	1
A3	PLUG	1
A4	RETAINER NUT	1
A5	GASKET (BODY)	1
A6	BONNET	1
A7	BEARING	1
A8	SCREW	16
A9	PACKING	—
A10	THRUST PLATE	1
A11	GLAND	1
A12	STUD	4
A13	NUT	4
A14	CAUTION TAG	1
A15	DRIVE SCREW	2
A16	GASKET	1
A17	COVER	1
A18	SCREW	6
A19	BEARING	1
A20	GRIT EXCLUDER	1
A21	GASKET (JOURNAL COVER)	1
A22	JOURNAL COVER	1
A23	SCREW	6
A24	GRIT EXCLUDER	—
A25	PIPE PLUG	2
A36	WASHER (FUSION COATING)	16
A37	WASHER (FUSION COATING)	6
A38	WASHER (FUSION COATING)	6

NOTE:

1. RECOMMENDED SPARE PARTS ARE ITEMS A3, PLUG (IF RUBBER FACED) A5, A9, A16 & A21.
2. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE, ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
3. CLOCKWISE ROTATION ON PLUG STEM CLOSSES VALVE.



70943	03/24/20
63446	08/07/17
50312	11/04/08
50312	03/28/08



PEC ECCENTRIC VALVE ASSEMBLY 20.50-36 FLANGED VALVES WITH PLUG SUPPORT

DOCT. CODE	DRAWN	JTD	APPROVED	JDM
C1	CHECKED	JDM	DATE	04/30/99

J78590



Materials Of Construction

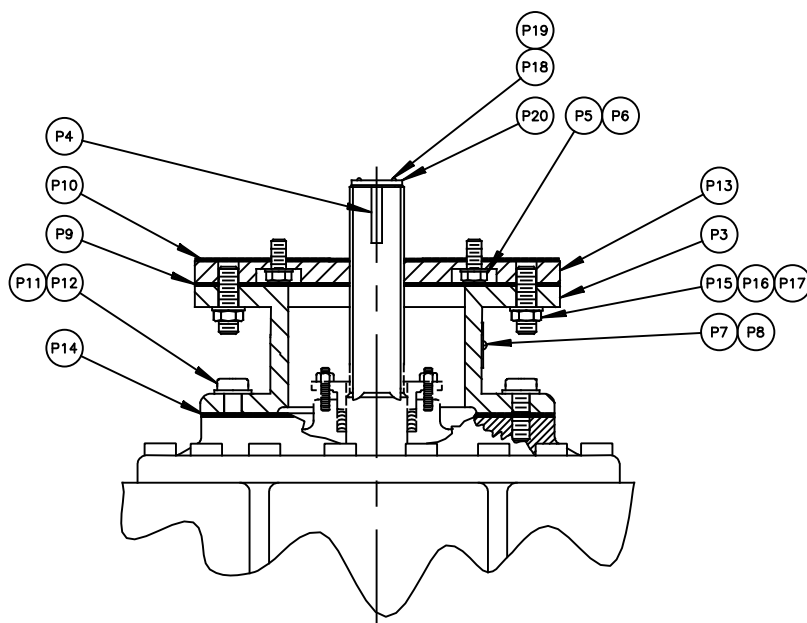
DRAWING(S): J78590(A00)

SALES ORDER: SO116840

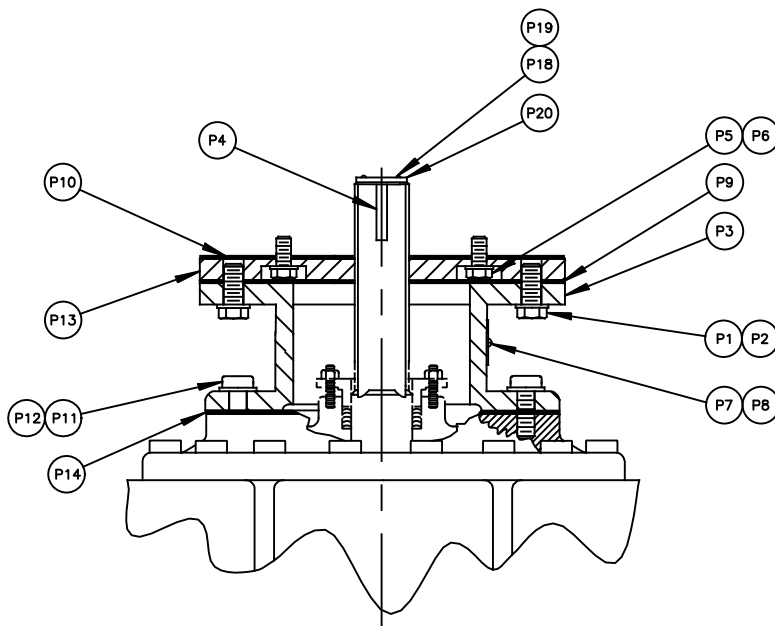
DESCRIPTION: PEC,24,F1,CI,NBR,NBR,DTR-S30SC0*X,SB16*A36115

ITEM	MATERIAL
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A03	IRON, ASTM A126, CLASS B
A03	ACRYLONITRILE-BUTADIENE (NBR)
A04	CARBON STEEL, ASTM A108, GRADE 12L14
A05	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A06	IRON, ASTM A126, CLASS B
A07	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A08	STAINLESS STEEL, TYPE 316
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A10	STAINLESS STEEL, TYPE 316, ASTM A276, CONDITION A
A11	IRON, ASTM A126, CLASS B
A12	STAINLESS STEEL, TYPE 316
A13	STAINLESS STEEL, TYPE 316
A14	STAINLESS STEEL, TYPE 302
A15	STAINLESS STEEL, TYPE 18-8
A16	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A17	STEEL, ASTM A36
A18	STAINLESS STEEL, TYPE 316

A19	TETRAFLUOROETHYLENE (TEFLON), SELF LUBRICATING, WITH 304 STAINLESS STEEL BACKING
A20	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A21	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A22	IRON, ASTM A126, CLASS B
A23	STAINLESS STEEL, TYPE 316
A24	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A25	STEEL



ALTERNATE MOUNTING



NO	PART NAME	QTY
P1	SCREW	—
P2	LOCKWASHER	—
P3	ADAPTOR FAB	1
P4	KEY	1
P5	SCREW	—
P6	WASHER	—
P7	DATA PLATE	1
P8	DRIVE SCREW	2
P9	GASKET (BURIED SERVICE ONLY)	1
P10	GASKET (BURIED SERVICE ONLY)	1
P11	SCREW	—
P12	WASHER	—
P13	ADAPTOR PLATE (WHEN REQUIRED)	1
P14	GASKET (BURIED SERVICE ONLY)	1
P15	STUD	—
P16	LOCKWASHER	—
P17	NUT	—
P18	SCREW (WHEN REQUIRED)	1
P19	LOCKWASHER (WHEN REQUIRED)	1
P20	PLATE (WHEN REQUIRED)	1

NOTES:

1. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE. ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
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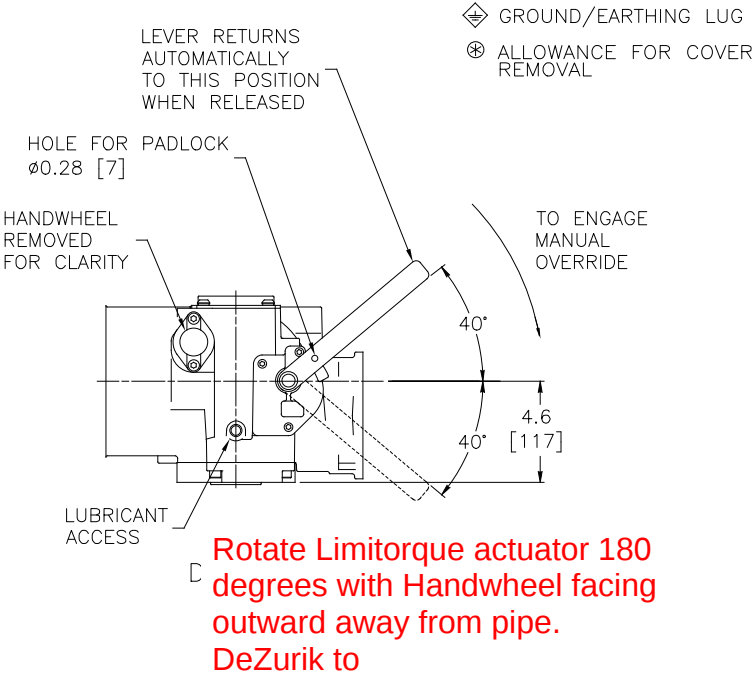
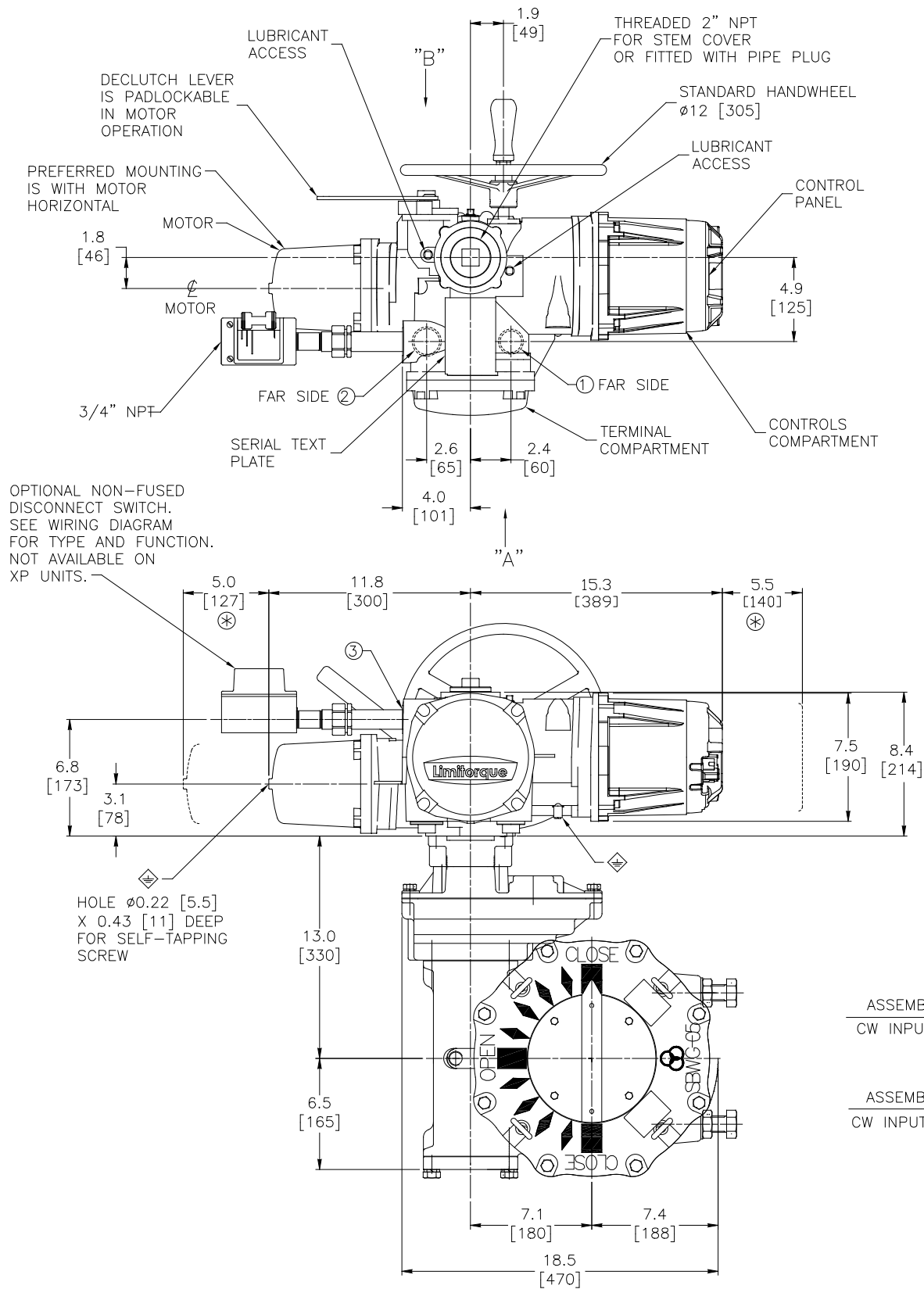


www.dezurik.com

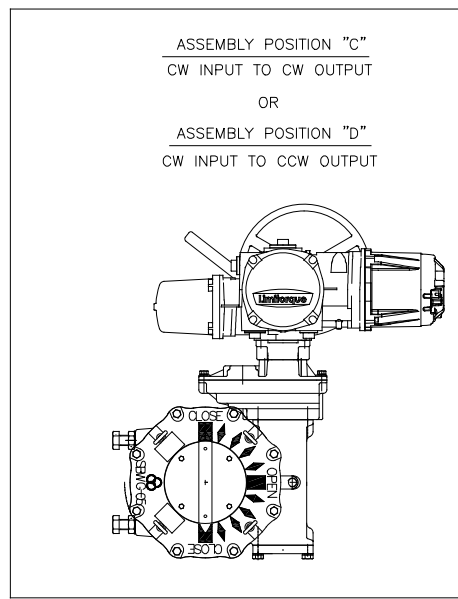
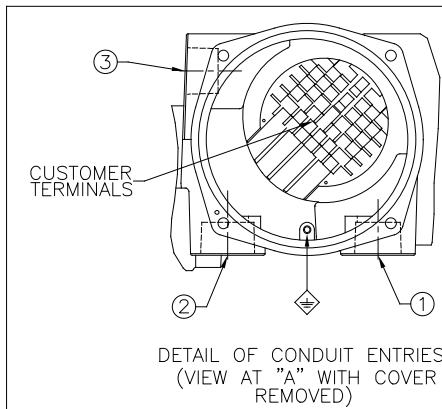
CONNECTING PARTS NON-STANDARD ACTUATOR
FUW 20.5 - 54 PEC ECCENTRIC VALVE

DOCT. CODE	DRAWN	APPROVED
C1	CHECKED	JDM
	JDM	DATE
		08/20/99

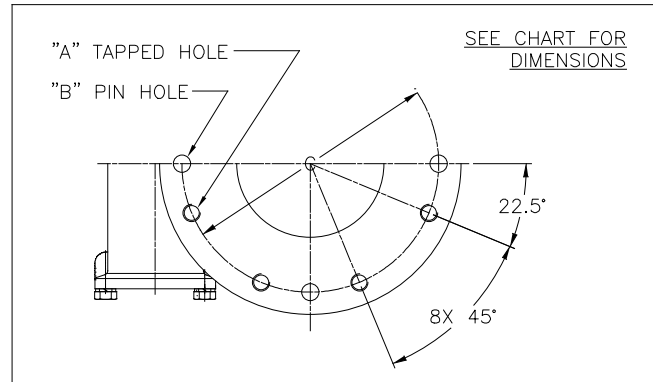
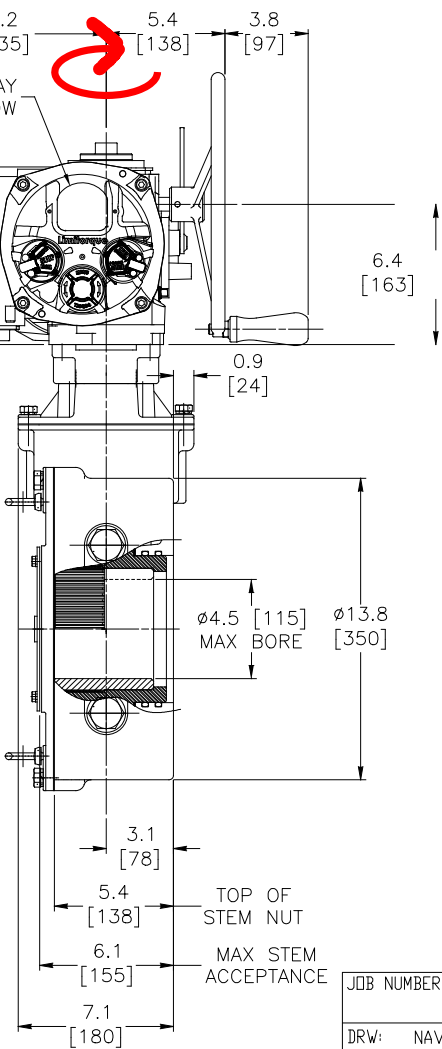
J78828



CONDUIT ENTRIES			
POSITION	①	②	③
STANDARD	1 1/4" NPT	1 1/2" NPT	1 1/4" NPT
OPTIONS	M32	M40 M32	M32
	PG21	PG29	PG21



ASSEMBLY POSITION "A"
CW INPUT TO CW OUTPUT
OR
ASSEMBLY POSITION "B"
CW INPUT TO CCW OUTPUT



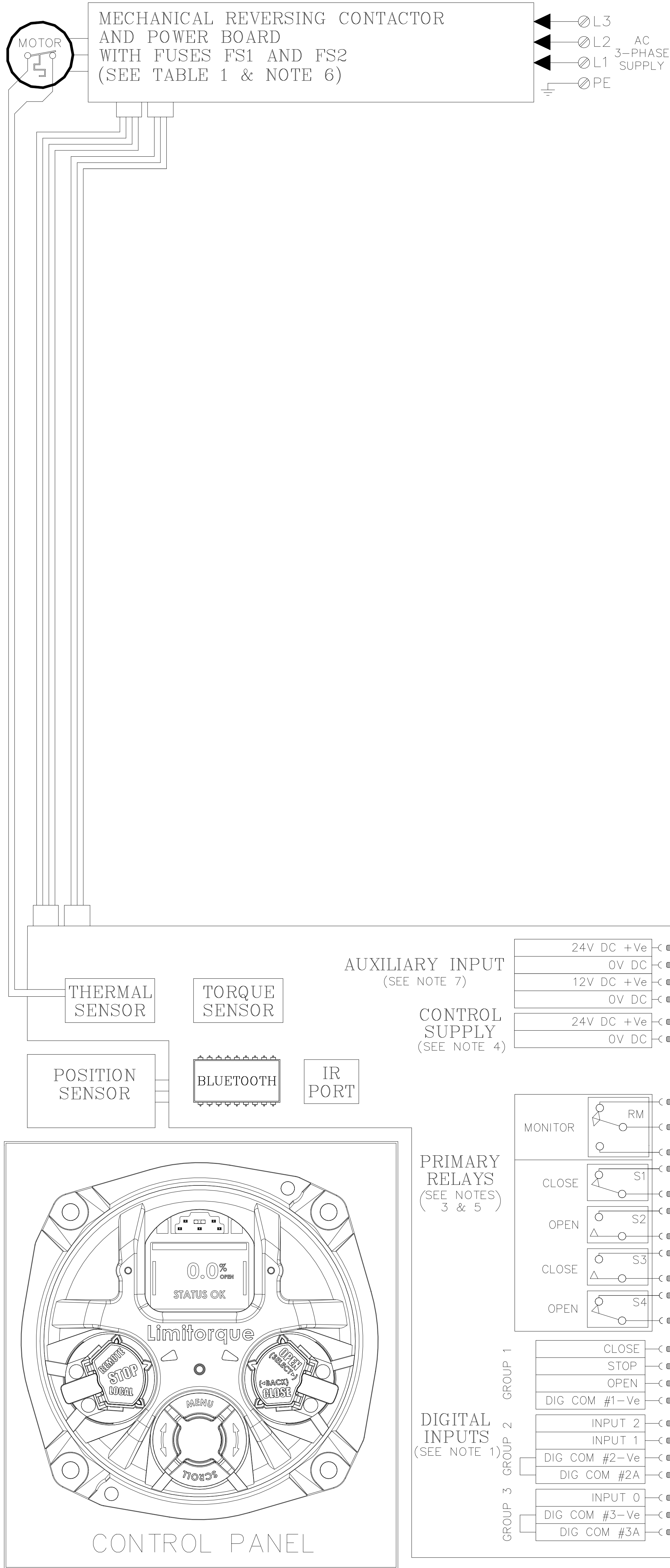
NOTE:
1. SEE CERTIFICATION SHEET TO DETERMINE BASE SUPPLIED.
2. SEE CUSTOMER DATA SHEET TO DETERMINE BASE AND ASSEMBLY POSITION SUPPLIED.

MOUNTING BASE		A	B	C
MSS (INCH)	FA25	(8) 5/8-11 UNC TAP X 24 DP	(4) Ø.63 PIN X .63 DP	Ø10.0
	FA30	(8) 3/4-10 UNC TAP X 30 DP	(4) Ø.79 PIN X .79 DP	Ø11.7
ISO (METRIC)	F25	(8) M16 TAP X 24 DP	(4) Ø16 PIN X 16 DP	Ø254
	F30	(8) M20 TAP X 30 DP	(4) Ø20 PIN X 20 DP	Ø298

JOB NUMBER		5114 WOODALL ROAD, LYNCHBURG, VA. USA 24506-1318	
DRW: NAV	DATE: 3-3-20	DRAWING TITLE	
CKD: RHD	DATE: 3-3-20	MX-10 STANDARD UNIT WITH: A) SIDE MOUNTED HANDWHEEL B) OPTIONAL DISCONNECT SWITCH C) WG-05-1SD WORM GEAR OPERATOR	
APV: MWR	DATE: 3-12-20	DRAWING NUMBER	
ALL DIMENSIONS ARE REFERENCE UNLESS OTHERWISE SPECIFIED		SIZE C	REV.
3rd ANGLE		SCALE NONE	SHEET 1 OF 1

REV	CHG NO	DATE	REVD	CHKD	APVD

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NOTES: (SEE INSTALLATION & OPERATION MANUAL VAIOM000071 FOR DETAILS)

1. REMOTE INPUTS

SIGNAL THRESHOLD – MINIMUM "ON" 19.2V AC/DC
MAXIMUM "OFF" 5.0V AC/DC
MAX LOAD – 10 mA / 110V AC

REQUIRED CONTROL SIGNAL DURATION = 350ms MIN.
INPUTS 0, 1, & 2 ARE FIELD CONFIGURABLE FOR
CLOSE/OPEN/BOTH INHIBIT, USER INPUT, OR ESD.
INPUT 1 MAY ALSO BE CONFIGURED FOR
PARTIAL STROKE TEST.
INPUT 2 MAY ALSO BE CONFIGURED FOR CSE
REMOTE SELECTION INDICATION.
DEFAULT INPUT CONFIGURATION
INPUT 0 – ESD,
INPUT 1 – OPEN INHIBIT,
INPUT 2 – CLOSE INHIBIT.

2. REMOTE INPUT JUMPERS

JUMPERS CAN BE USER WIRED TO CONNECT DIG COMMONS
#1, 2 & 3 (AS NEEDED). THE 3 REMOTE WIRING GROUPS
ARE ELECTRICALLY ISOLATED, INTERNALLY. ONLY A SINGLE
POWER SOURCE MAY BE USED TO POWER ANY ONE GROUP
BUT DIFFERENT SOURCES MAY POWER DIFFERENT GROUPS.
IF DIFFERENT SOURCES ARE USED, ENSURE THAT THE
POLARITIES ARE CORRECT.

3. DEFAULT [S] SETTINGS

THE DEFAULT OPERATING CONFIGURATION FOR THE
"S" OUTPUTS ARE SHOWN IN THE TABLE BELOW.
THE CONTACT STATES SHOWN IN THE SCHEMATIC
REPRESENT A FULLY CLOSED VALVE.
SEE OPERATION MANUAL FOR ALTERNATE CONFIGURATIONS.

OUTPUT SWITCH	VALVE POSITION		FUNCTION
	FULL CLOSE	FULL OPEN	
S1	—	—	CLOSE LIMIT
S3	—	—	
S2	—	—	OPEN LIMIT
S4	—	—	

— — OPEN CONTACT
— — CLOSED CONTACT

4. MAXIMUM EXTERNAL LOAD

TERMINALS 21 AND 22 (24 VDC)
— 5W MAX. EXT. LOAD

5. CONTACT RATINGS

S1–S4 – 5 AMPS @ 250 VAC OR 30VDC (RESISTIVE)
THE TOTAL COMBINED CURRENT THROUGH ALL FOUR
STATUS CONTACTS (S1–S4) MUST NOT EXCEED 8A
MONITOR– 5 AMPS @ 250 VAC OR 30 VDC (RESISTIVE)

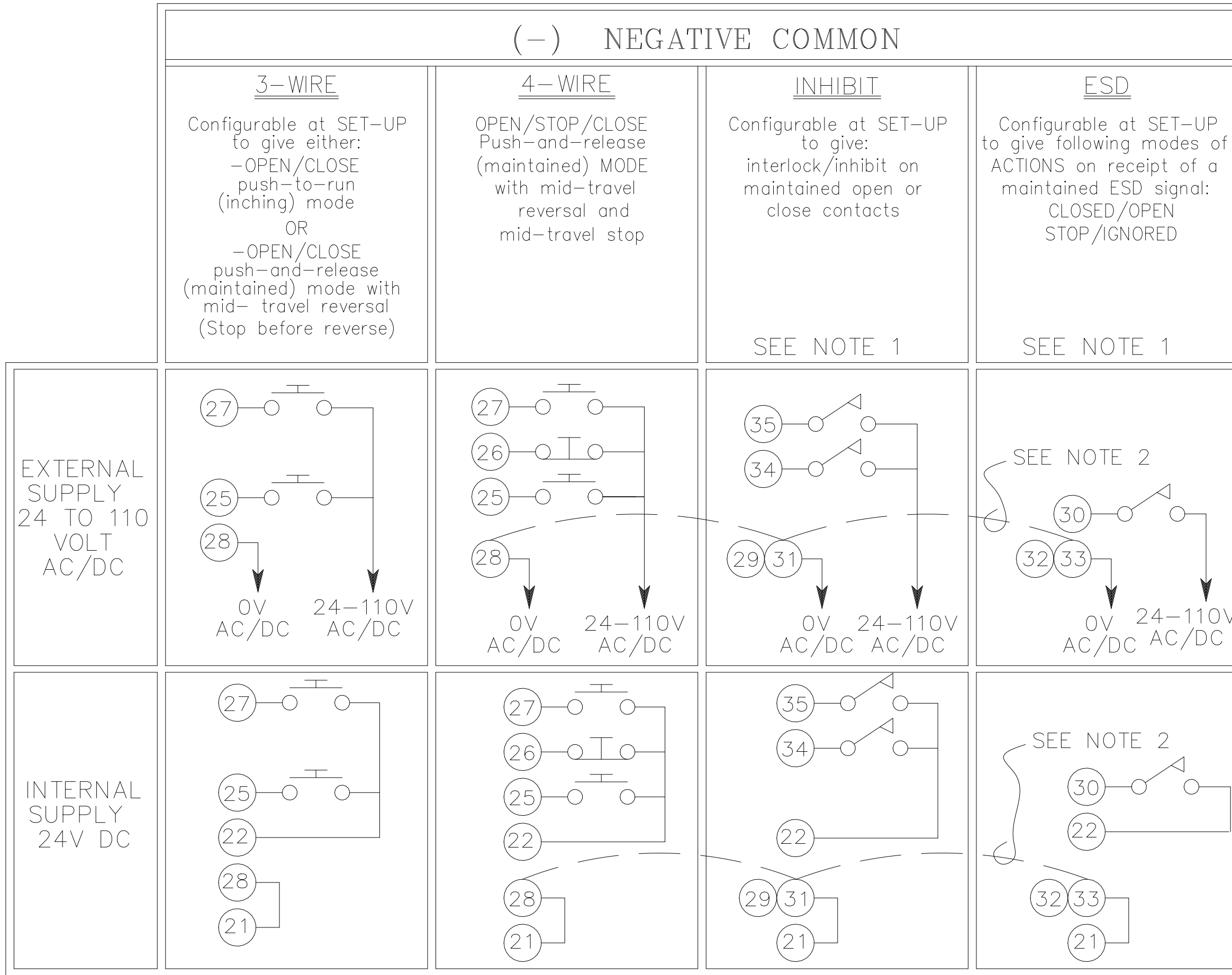
6. FUSES

FS1 (PRIMARY) — 600V AC, 1A, 100kA Int RATING,
FAST ACTING 10.3 x 38.1mm TUBE.
UL LISTED, CSA CERTIFIED
FS2 (PRIMARY) —

TABLE 1: TRANSFORMER TAPPING OPTIONS			
TYPE	TAPS	APPL. VOLTAGES	
1	106V	110V	
	115V	115V, 120V	
	200V	208V	
	212V	220V	
2	226V	226V,230V,240V	
	366V	380V	
	392V	400V,415V	
	450V	440V,460V,480V	
3	212V	220V	
	505V	525V	
	530V	550V	
	572V	575V,600V	

7. AUXILLIARY INPUTS

BACK-UP UPS POWER MAY BE CONNECTED: 24VDC TO
TERMINALS 6 & 7, MAX. CURRENT DRAW 1 AMP; 12VDC TO
TERMINALS 8 & 9, MAX. CURRENT DRAW 2 AMPS. THIS POWERS
ALL CONTROLS AND OPTION BOARDS FOR LOCAL/REMOTE
INDICATION AND CONFIGURATION. THE REVERSING CONTACTOR WILL
NOT BE POWERED. CUSTOMER MUST SUPPLY FUSES AS REQUIRED
BY LOCAL ELECTRICAL CODES.



REMOTE WIRING CONNECTIONS

TERMINAL POINT FUNCTION	CLOSE (27)	+24V DC (22)	0V DC (21)	OPEN INHIBIT (34)	DIG COM #1 (28)
	STOP (26)	+110V AC (23)	0V AC (24)	CLOSE INHIBIT (35)	DIG COM #2(A) (29/31)
	OPEN (25)	EXTERNAL SUPPLY ↓		ESD (30)	DIG COM #3(A) (32/33)

LIMIGARD CONFIG. WIRING

DRAWN	DATE	FLOWERVE Limatorque Actuation Systems 5114 WOODALL ROAD, LYNCHBURG, VIRGINIA 24506-1318	
NWN	01/16/20	TITLE MXb WIRING DIAGRAM Bluetooth	
CHECKED	DATE	Standard No Analog Mechanical Contactor	
JPS	01/17/20	R4 (4) 5A, (1) 5A monitor relay 3Wire/4Wire Negative Common	
APPROVED	DATE	UNIT TYPE	DWG NO
EMO	01/20/20	MXb	WD-MXb-040000-0101
REV	SHEET	1 of 1	



Submittal Data Sheet
Date: August 15, 2024

ECO TECH INC
PO BOX 956
HOLLY SPRINGS GA 30142
United States

P.O. 24051GA-16
FACTORY ORDER SO116840
PROJ. NAME 24051GA - Lower Poplar WRF Influent PS

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
8		1	9741836	PEC,24,F1,CI,NBR,NBR,DTR-S30SC0*X,SB16*A36115

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	24	24 Inch (600mm); SST Bearings; Welded-in Nickel Seat
End Connection	F1	Flanged Drilling; ASME Class 125/150
Body Material	CI	Cast Iron
Packing	NBR	.5" - 3" Acrylonitrile-Butadiene Reinforced filler in a PTFE U-ring, -20 to 180° F. (-29 to 83° C.); 4" & Larger Acrylonitrile-Butadiene Reinforced V-type, -20 to 250° F. (-29 to 121° C.)
Plug Facing	NBR	Acrylonitrile-Butadiene; -20 to 180° F. (-29 to 83° C.)
Options	DTR	DeZURIK Standard Certified Production Hydrostatic Shell and Seat Test Report
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10) surface prep
Actuator	X	Specify Actuator in Special Construction
Stainless Steel Bolting & Tubing	SB16	316 Stainless Steel Bolting

Temperature Range	-20 to 180 Degrees
Valve Pressure	F. to 150 psig

RELATED DOCUMENTS

Z21271: DWG INST PEC F1 LIM MX-10/WG-05-1SD GR1 20.5-36"
J78590: DWG VALVE ASSY PEC F1 20.5-36 W/PLUG SUPPORT
J78828: DWG CONN PARTS 20.5-54 PEC

MODIFIER

LIMITORQUE - MXb-10/WG-05-1SD-D - PN:1464168

FEATURES

TAG: PV-2



Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

Phone: 434-528-4400
Fax:

Customer Data Sheet

SALES ORDER NO. 205928 REV 0	ORDER LINE 001	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225334.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

ACTUATOR INFORMATION

Electric Actuator Type MX-10 Series B
Enclosure Type WP&SUBM NEMA 3,4,4X,6,IP68
Electric Output RPM 100
Valve Torque 3083 Ft Lbs 4181 Nm
MX/Gear Box Max Rated Torque 8288 Ft Lbs 11239 Nm
MX/Gear Box Stall Torque 12478 Ft Lbs 16920 Nm
Operating Time for 90 degrees 58 Sec
Handwheel SIDE Mounted 12 Inch
Open Direction CCW
Lube SHC-632
Gear Box Type WG-05-1SD-D
Gear Box Ratio 388:1
Gear Box SGA Ratio NA
Gear Box Position A
Gear Box Base MSS-FA30
Gear Box Output RPM 0.26
Outline Drawing 03-654-0012
Sun Shade Drawing NA
Wiring Diagram WD-MXb-040000-0101
Disconnect Diagram NA
Conduit Entries 1-1/4,1-1/2,1-1/4,NONE
2-Speed Timer N Quik Board N
Control Options Network:STD Digital:R4 Analog:NONE
Main Board BLUETOOTH/UPS Wire Controls 3 WIRE MAINT
Disconnect Switch NONE
Warranty STANDARD
MOTOR INFORMATION
Motor Size 9 FT-LBS
Motor Voltage 480
Mtr Phase/Frequency Hz 3/60
Motor Horsepower 0.49
Motor RPM 1800
Locked Rotor Amps (LRA) 7.0
Full Load Amps (FLA) 1.7

Instruction Manual VAION000071 on the internet www.limitorque.com
Qualifications: The MX complies with all the test parameters identified in Limitorque MX qualification testing bulletin AIBR000087. Installation of the MX in environments outside the parameters identified in bulletin AIBR000087 voids the warranty.

Customer Data Sheet

Flowserve®

Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736 www.flowserve.com

Phone: 434-528-4400
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SALES ORDER NO. 205928 REV 0	ORDER LINE 001	DATE ORDERED 08/06/24
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SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

TAGGING AND INFORMATION:
TAG: 1464168

VALVE SIZE	PIPE SIZE		DIMENSIONS INCHES MILLIMETERS									
	IN	MM	A	B	C	D	E	F	G	H	J	K
20.5	20	500	$\frac{1.25}{32}$	$\frac{42.00}{1067}$	$\frac{18.31}{465}$	$\frac{25.00}{635}$	1-1/8-7UNC	20	THRU	N/A	N/A	$\frac{21.19}{538}$
24	24	600	$\frac{1.88}{48}$	$\frac{42.00}{1067}$	$\frac{18.31}{465}$	$\frac{29.50}{749}$	N/A	N/A	N/A	$\frac{1.38}{35}$	20	$\frac{21.19}{538}$
24.5	24	600	$\frac{1.94}{49}$	$\frac{42.00}{1067}$	$\frac{21.88}{556}$	$\frac{29.50}{749}$	1-1/4-7UNC	20	$\frac{1.50}{38}$	N/A	N/A	$\frac{25.75}{654}$
30	30	750	$\frac{2.12}{54}$	$\frac{51.00}{1295}$	$\frac{21.88}{556}$	$\frac{36.00}{914}$	N/A	N/A	N/A	$\frac{1.38}{35}$	28	$\frac{25.75}{654}$
30.5	30	750	$\frac{2.12}{54}$	$\frac{51.00}{1295}$	$\frac{24.81}{630}$	$\frac{36.00}{914}$	1-1/4-7 UNC	28	$\frac{2.00}{51}$	N/A	N/A	$\frac{29.44}{748}$
36	36	900	$\frac{2.38}{60}$	$\frac{60.00}{1524}$	$\frac{24.81}{630}$	$\frac{42.75}{1086}$	N/A	N/A	N/A	$\frac{1.62}{41}$	32	$\frac{29.44}{748}$

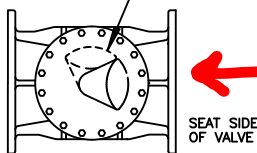
A	VALVE
C	MOTOR W/GEARBOX
P	CONNECTING PARTS

NOTES:

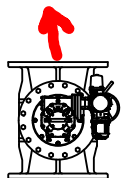
- FLANGES ARE FLAT FACED WITH DIAMETER AND DRILLING TO CLASS 125 ANSI STANDARD B16.1, EXCEPT FOR TAPPED HOLES AS INDICATED. SEE A-16368 FOR NON-ANSI FLANGE DATA.
- FOR MANUAL OPERATION PUSH LEVER IN DIRECTION OF ARROW ONLY. UNIT REMAINS IN HAND OPERATION UNTIL MOTOR IS ENERGIZED.
- INSTALLATION NOTE:

- FOR LIQUIDS & GASES:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST END OPPOSITE SEAT.
- FOR SUSPENDED SOLIDS, SLURRIES, ETC:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST SEAT END. IN HORIZONTAL PIPELINES, VALVE SHOULD BE INSTALLED ON IT'S SIDE SO PLUG ROTATES TO THE TOP OF THE PIPELINE WHEN OPEN. (SEE DIAGRAM BELOW).

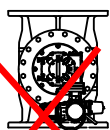
PLUG IN OPEN POSITION.
SEE INSTALLATION NOTE.



ACTUATOR MOUNTING POSITIONS AS VIEWED FROM TOP OF VALVE. DOTTED LINES SHOW OPTIONAL MOUNTING POSITIONS.



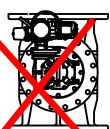
SEAT END OF VALVE
STANDARD POSITION
SHOWN ON THIS DRAWING



SEAT END OF VALVE
90° POSITION



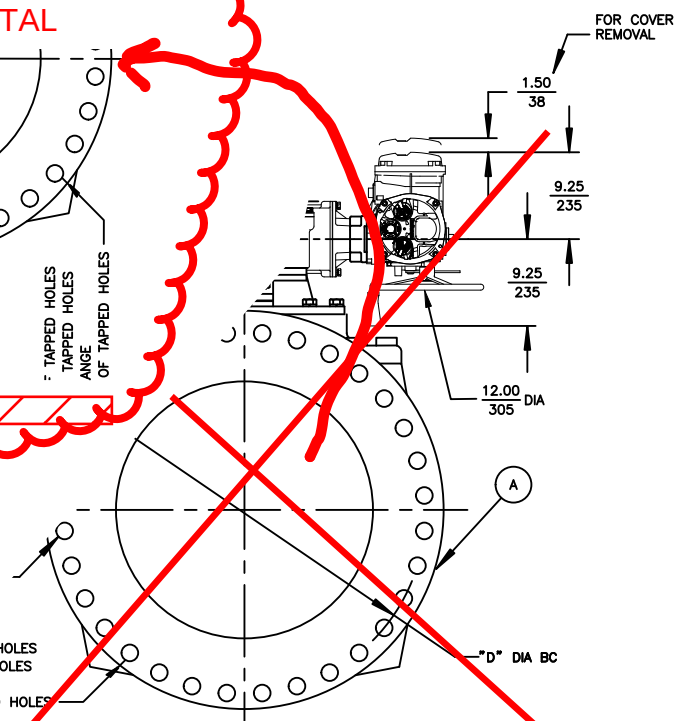
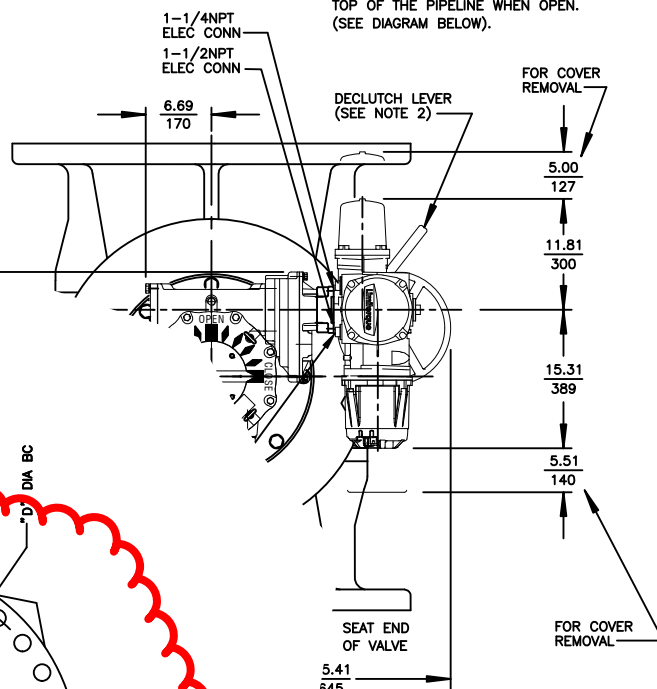
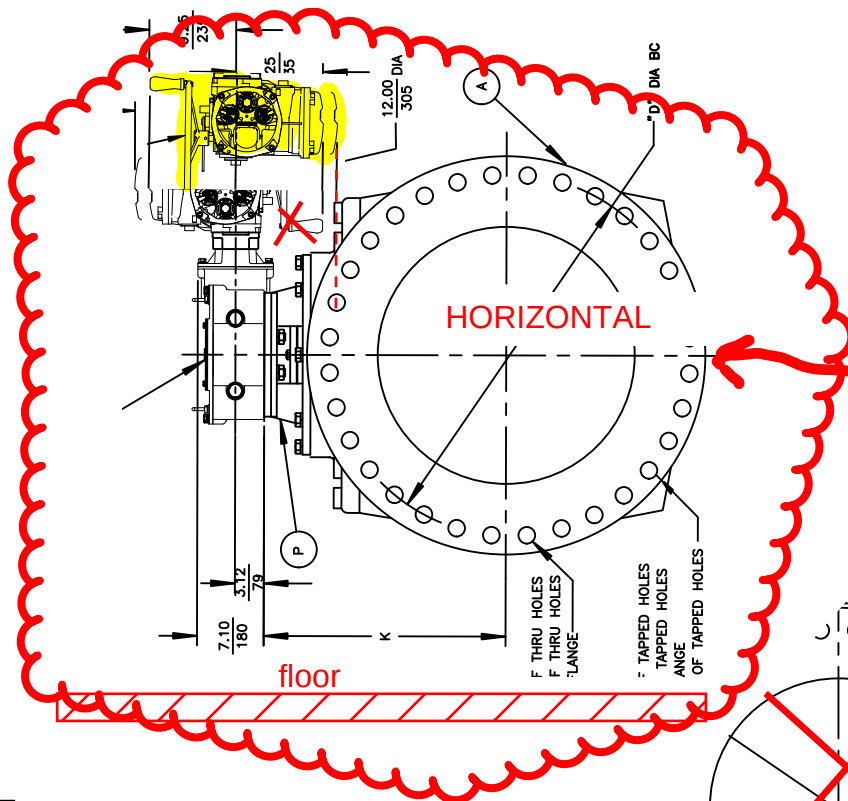
SEAT END OF VALVE
180° POSITION



SEAT END OF VALVE
270° POSITION

PV-2 INSTALLED SHAFT IN HORIZ
Main gear in Standard Position

Rotate Limitorque actuator 180 degrees with handwheel facing outward.
DeZurik to confirm room for cover on terminal box to be removed.



"E" SIZE OF TAPPED HOLES
"F" QTY OF TAPPED HOLES
PER FLANGE
"G" DEPTH OF TAPPED HOLES

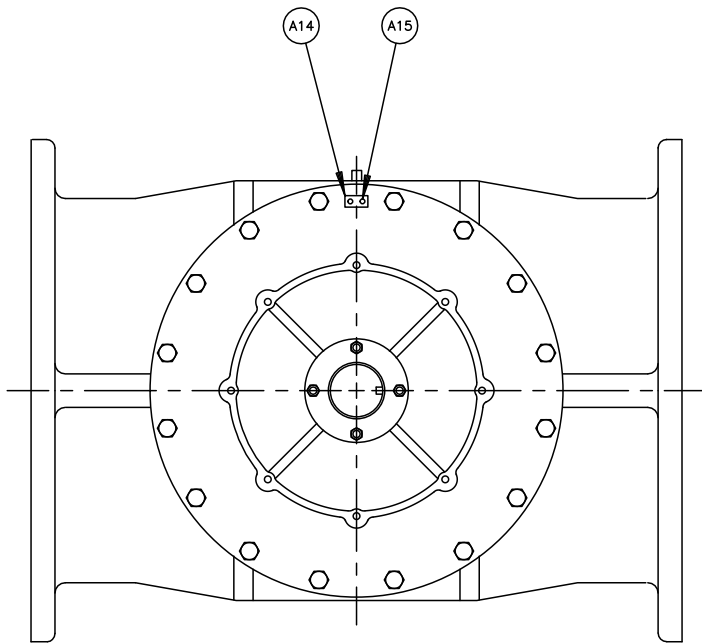


DeZURIK.com

PEC ECCENTRIC VALVES SIZE 20.5-36 FLANGED, MATERIAL GROUP 1
LIMITORQUE MX-10/WG-05-1SD MOTOR ACTUATOR

DOCT. CODE	DRAWN	JE	APPROVED	JWM
C1	CHECKED	JWM	DATE	08/08/24

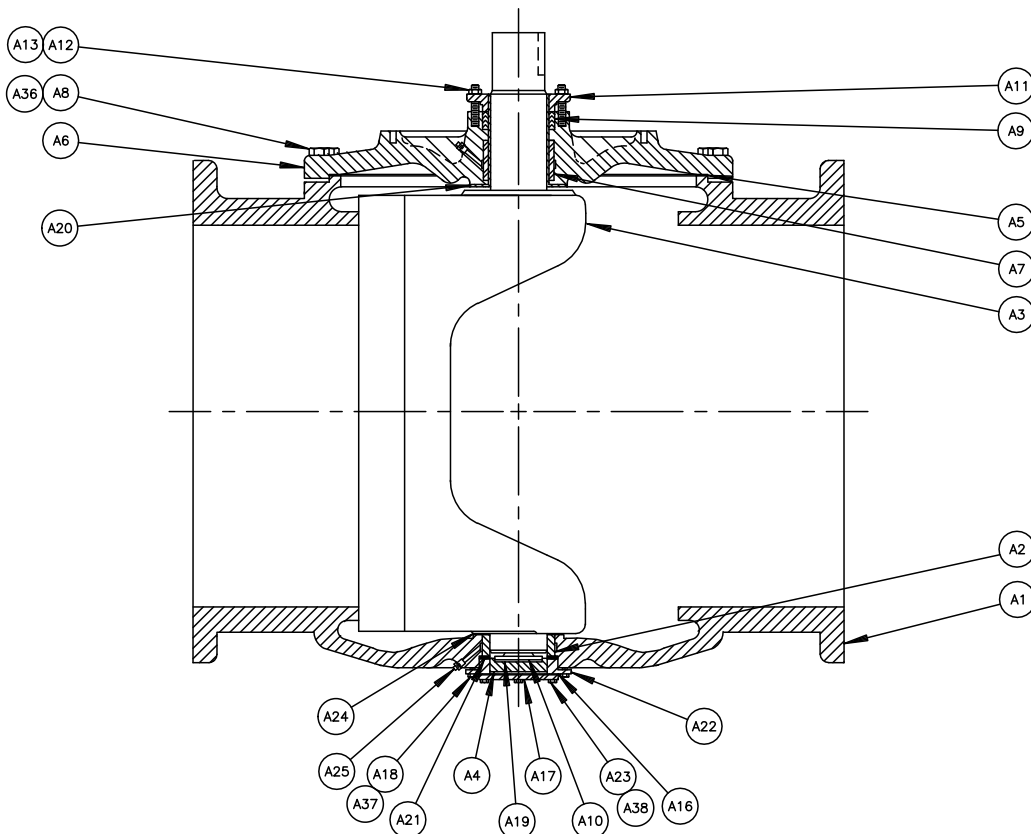
Z21271



NO	PART NAME	QTY
A1	BODY	1
A2	BEARING	1
A3	PLUG	1
A4	RETAINER NUT	1
A5	GASKET (BODY)	1
A6	BONNET	1
A7	BEARING	1
A8	SCREW	16
A9	PACKING	—
A10	THRUST PLATE	1
A11	GLAND	1
A12	STUD	4
A13	NUT	4
A14	CAUTION TAG	1
A15	DRIVE SCREW	2
A16	GASKET	1
A17	COVER	1
A18	SCREW	6
A19	BEARING	1
A20	GRIT EXCLUDER	1
A21	GASKET (JOURNAL COVER)	1
A22	JOURNAL COVER	1
A23	SCREW	6
A24	GRIT EXCLUDER	—
A25	PIPE PLUG	2
A36	WASHER (FUSION COATING)	16
A37	WASHER (FUSION COATING)	6
A38	WASHER (FUSION COATING)	6

NOTE:

1. RECOMMENDED SPARE PARTS ARE ITEMS A3, PLUG (IF RUBBER FACED) A5, A9, A16 & A21.
2. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE, ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
3. CLOCKWISE ROTATION ON PLUG STEM CLOSSES VALVE.



70943	03/24/20
63446	08/07/17
50312	11/04/08
50312	03/28/08



PEC ECCENTRIC VALVE ASSEMBLY 20.50-36 FLANGED VALVES WITH PLUG SUPPORT

DOCT. CODE	DRAWN	JTD	APPROVED	JDM
C1	CHECKED	JDM	DATE	04/30/99

J78590



Materials Of Construction

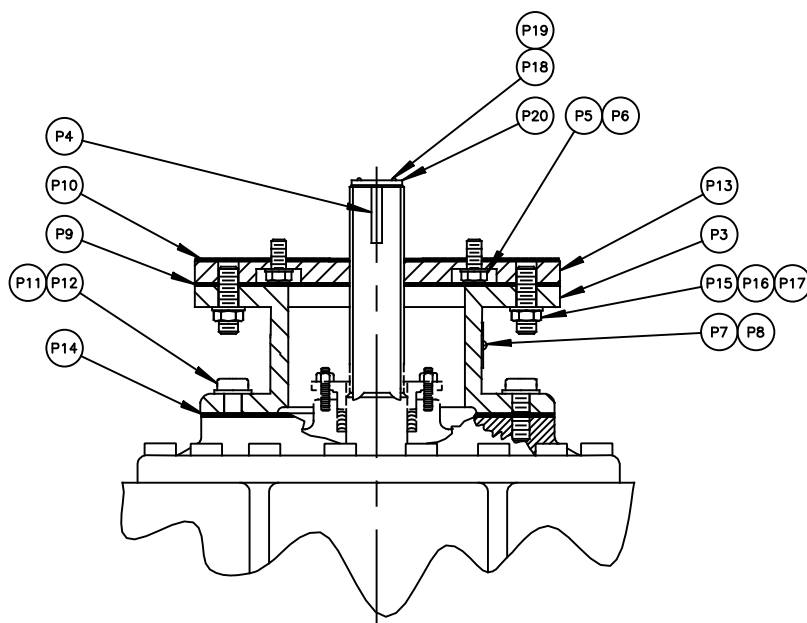
DRAWING(S): J78590(A00)

SALES ORDER: SO116840

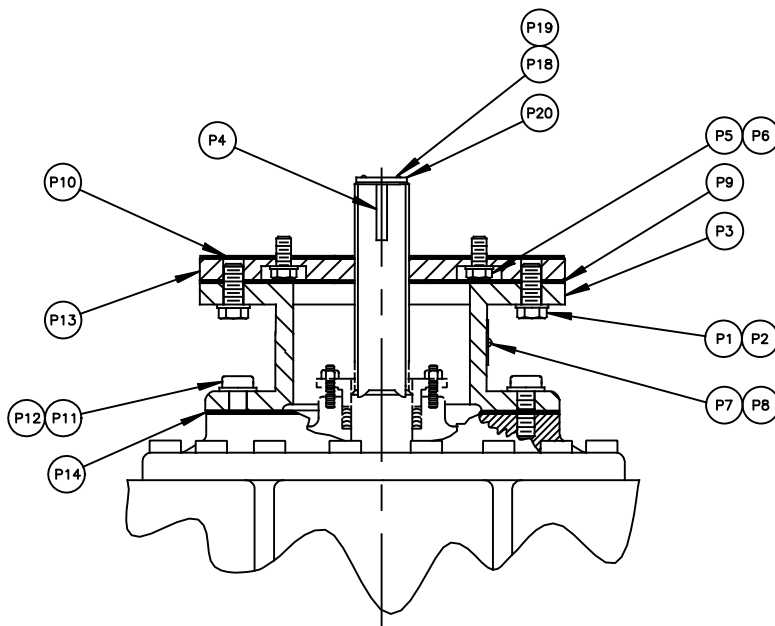
DESCRIPTION: PEC,24,F1,CI,NBR,NBR,DTR-S30SC0*X,SB16*A36115

ITEM	MATERIAL
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A03	IRON, ASTM A126, CLASS B
A03	ACRYLONITRILE-BUTADIENE (NBR)
A04	CARBON STEEL, ASTM A108, GRADE 12L14
A05	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A06	IRON, ASTM A126, CLASS B
A07	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A08	STAINLESS STEEL, TYPE 316
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A10	STAINLESS STEEL, TYPE 316, ASTM A276, CONDITION A
A11	IRON, ASTM A126, CLASS B
A12	STAINLESS STEEL, TYPE 316
A13	STAINLESS STEEL, TYPE 316
A14	STAINLESS STEEL, TYPE 302
A15	STAINLESS STEEL, TYPE 18-8
A16	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A17	STEEL, ASTM A36
A18	STAINLESS STEEL, TYPE 316

A19	TETRAFLUOROETHYLENE (TEFLON), SELF LUBRICATING, WITH 304 STAINLESS STEEL BACKING
A20	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A21	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A22	IRON, ASTM A126, CLASS B
A23	STAINLESS STEEL, TYPE 316
A24	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A25	STEEL



ALTERNATE MOUNTING



NO	PART NAME	QTY
P1	SCREW	—
P2	LOCKWASHER	—
P3	ADAPTOR FAB	1
P4	KEY	1
P5	SCREW	—
P6	WASHER	—
P7	DATA PLATE	1
P8	DRIVE SCREW	2
P9	GASKET (BURIED SERVICE ONLY)	1
P10	GASKET (BURIED SERVICE ONLY)	1
P11	SCREW	—
P12	WASHER	—
P13	ADAPTOR PLATE (WHEN REQUIRED)	1
P14	GASKET (BURIED SERVICE ONLY)	1
P15	STUD	—
P16	LOCKWASHER	—
P17	NUT	—
P18	SCREW (WHEN REQUIRED)	1
P19	LOCKWASHER (WHEN REQUIRED)	1
P20	PLATE (WHEN REQUIRED)	1

NOTES:

1. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE. ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
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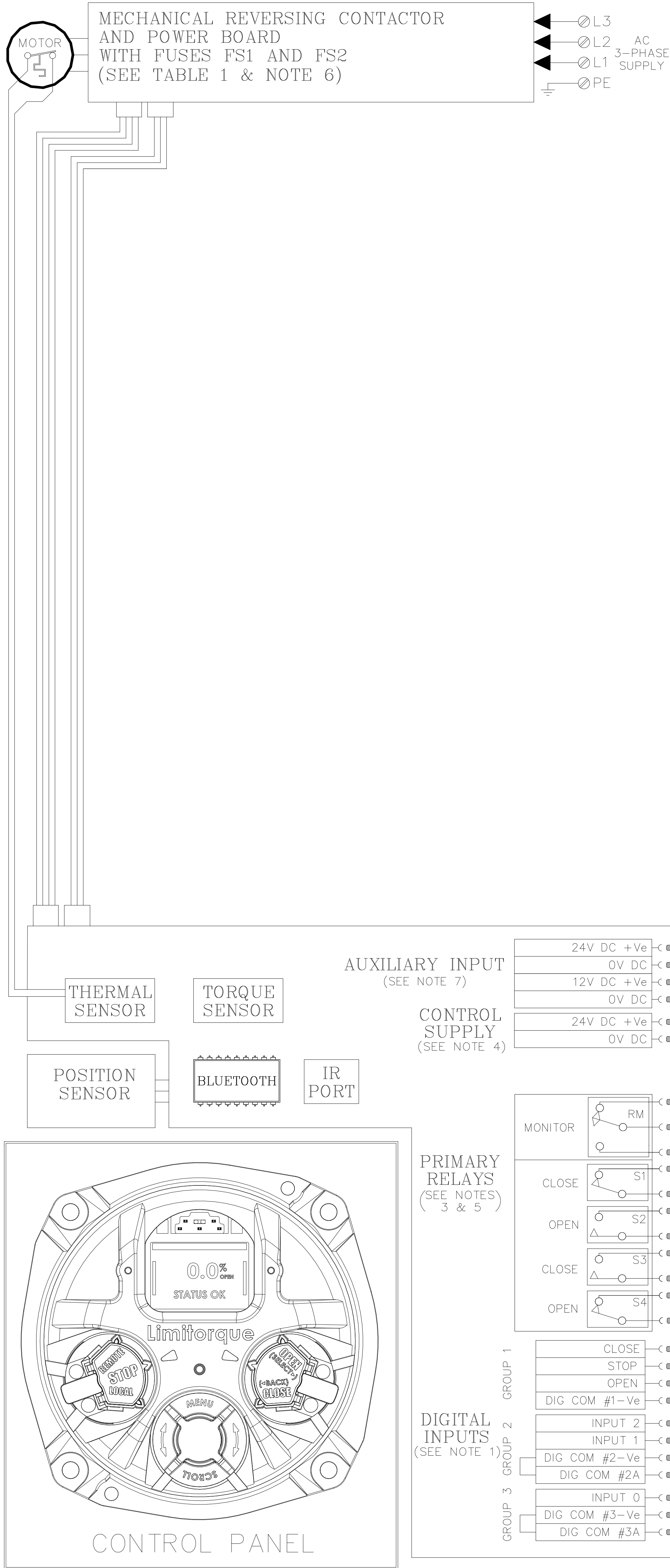


www.dezurik.com

CONNECTING PARTS NON-STANDARD ACTUATOR
FUW 20.5 - 54 PEC ECCENTRIC VALVE

DOCT. CODE	DRAWN	APPROVED
C1	CHECKED	JDM
		DATE 08/20/99

J78828



NOTES: (SEE INSTALLATION & OPERATION MANUAL VAIOM000071 FOR DETAILS)

1. REMOTE INPUTS

SIGNAL THRESHOLD – MINIMUM "ON" 19.2V AC/DC
MAXIMUM "OFF" 5.0V AC/DC
MAX LOAD – 10 mA / 110V AC

REQUIRED CONTROL SIGNAL DURATION = 350ms MIN.
INPUTS 0, 1, & 2 ARE FIELD CONFIGURABLE FOR CLOSE/OPEN/BOTH INHIBIT, USER INPUT, OR ESD.
INPUT 1 MAY ALSO BE CONFIGURED FOR PARTIAL STROKE TEST.
INPUT 2 MAY ALSO BE CONFIGURED FOR CSE
REMOTE SELECTION INDICATION.
DEFAULT INPUT CONFIGURATION
INPUT 0 – ESD,
INPUT 1 – OPEN INHIBIT,
INPUT 2 – CLOSE INHIBIT.

2. REMOTE INPUT JUMPERS

JUMPERS CAN BE USER WIRED TO CONNECT DIG COMMONS #1, 2 & 3 (AS NEEDED). THE 3 REMOTE WIRING GROUPS ARE ELECTRICALLY ISOLATED, INTERNALLY. ONLY A SINGLE POWER SOURCE MAY BE USED TO POWER ANY ONE GROUP BUT DIFFERENT SOURCES MAY POWER DIFFERENT GROUPS. IF DIFFERENT SOURCES ARE USED, ENSURE THAT THE POLARITIES ARE CORRECT.

3. DEFAULT [S] SETTINGS

THE DEFAULT OPERATING CONFIGURATION FOR THE "S" OUTPUTS ARE SHOWN IN THE TABLE BELOW. THE CONTACT STATES SHOWN IN THE SCHEMATIC REPRESENT A FULLY CLOSED VALVE. SEE OPERATION MANUAL FOR ALTERNATE CONFIGURATIONS.

OUTPUT SWITCH	VALVE POSITION		FUNCTION
	FULL CLOSE	FULL OPEN	
S1	—	—	CLOSE LIMIT
S3	—	—	
S2	—	—	OPEN LIMIT
S4	—	—	

— — OPEN CONTACT
— — CLOSED CONTACT

4. MAXIMUM EXTERNAL LOAD

TERMINALS 21 AND 22 (24 VDC)
— 5W MAX. EXT. LOAD

5. CONTACT RATINGS

S1–S4 – 5 AMPS @ 250 VAC OR 30VDC (RESISTIVE)
THE TOTAL COMBINED CURRENT THROUGH ALL FOUR STATUS CONTACTS (S1–S4) MUST NOT EXCEED 8A
MONITOR– 5 AMPS @ 250 VAC OR 30 VDC (RESISTIVE)

6. FUSES

FS1 (PRIMARY) — 600V AC, 1A, 100kA Int RATING, FAST ACTING 10.3 x 38.1mm TUBE, UL LISTED, CSA CERTIFIED
FS2 (PRIMARY) —

7. AUXILLIARY INPUTS

BACK-UP UPS POWER MAY BE CONNECTED: 24VDC TO TERMINALS 6 & 7, MAX. CURRENT DRAW 1 AMP; 12VDC TO TERMINALS 8 & 9, MAX. CURRENT DRAW 2 AMPS. THIS POWERS ALL CONTROLS AND OPTION BOARDS FOR LOCAL/REMOTE INDICATION AND CONFIGURATION. THE REVERSING CONTACTOR WILL NOT BE POWERED. CUSTOMER MUST SUPPLY FUSES AS REQUIRED BY LOCAL ELECTRICAL CODES.

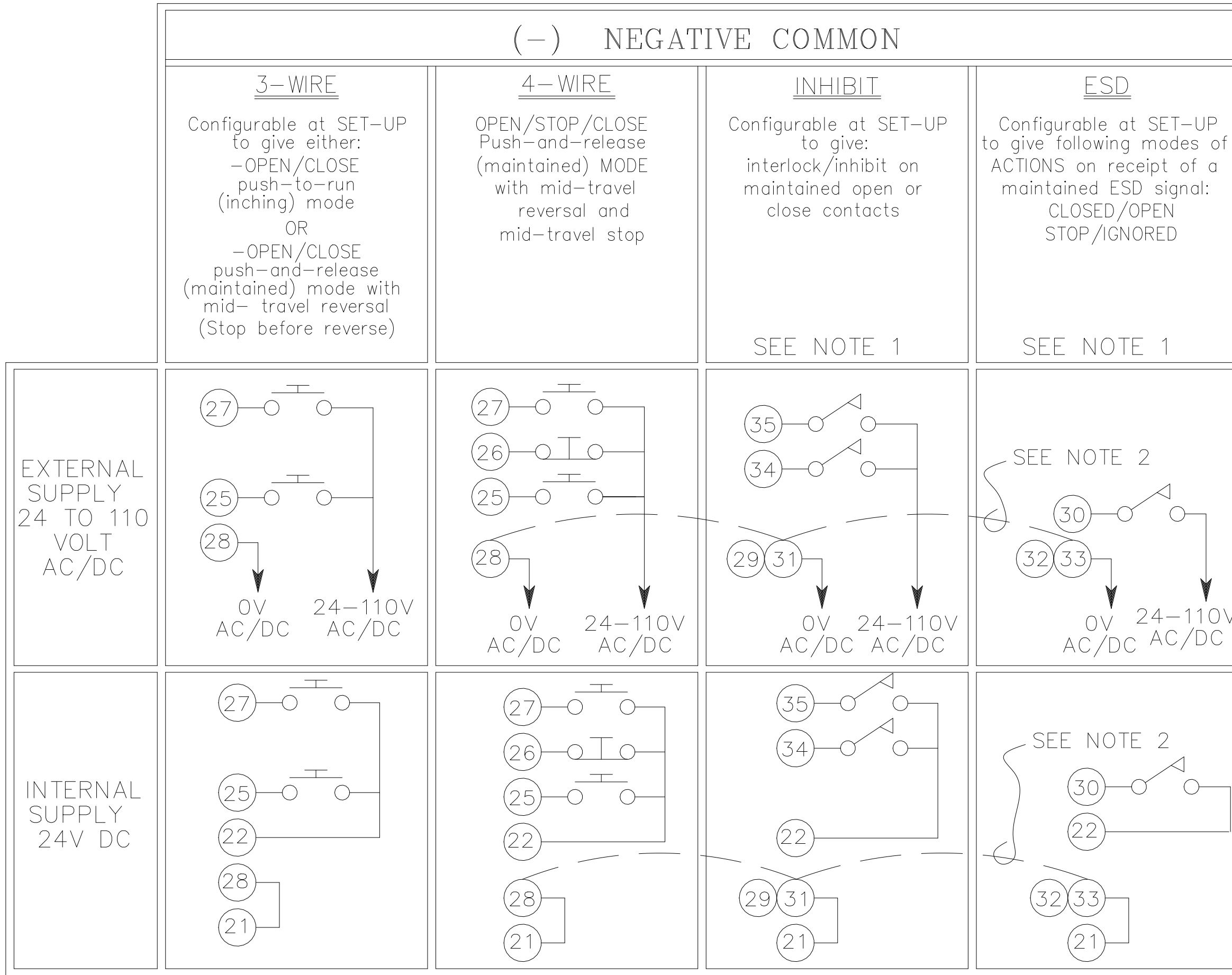
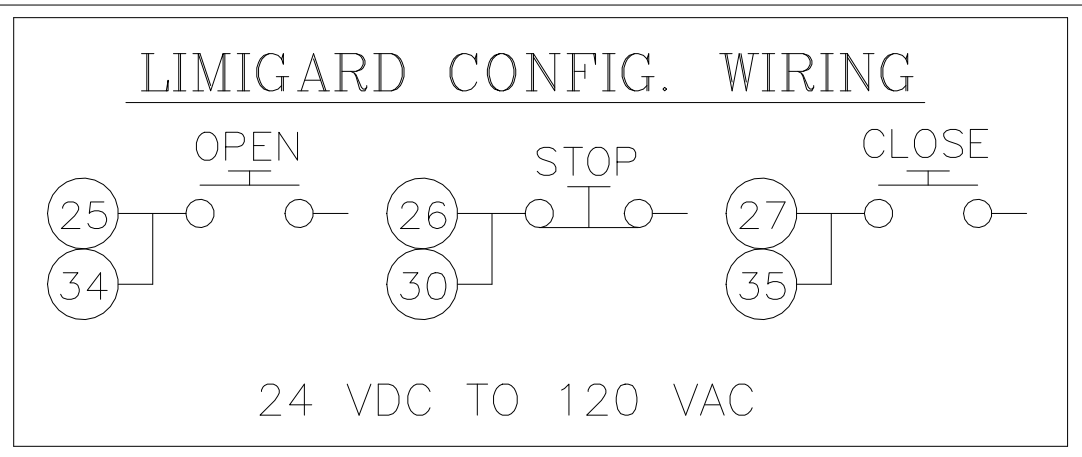


TABLE 1: TRANSFORMER TAPPING OPTIONS			
TYPE	TAPS	APPL. VOLTAGES	
1	106V	110V	
	115V	115V, 120V	
	200V	208V	
	212V	220V	
2	226V	226V,230V,240V	
	366V	380V	
	392V	400V,415V	
	450V	440V,460V,480V	
3	212V	220V	
	505V	525V	
	530V	550V	
	572V	575V,600V	

REMOTE WIRING CONNECTIONS

TERMINAL POINT FUNCTION	CLOSE (27)	+24V DC (22)	0V DC (21)	OPEN INHIBIT (34)	DIG COM #1 (28)
	STOP (26)	+110V AC (23)	0V AC (24)	CLOSE INHIBIT (35)	DIG COM #2(A) (29/31)
	OPEN (25)	EXTERNAL SUPPLY ↓		ESD (30)	DIG COM #3(A) (32/33)



DRAWN	DATE	FLOWSERVE <i>Limitorque Actuation Systems</i> 5114 WOODALL ROAD, LYNCHBURG, VIRGINIA 24506-1318			
NWN	01/16/20	TITLE MXb WIRING DIAGRAM Bluetooth			
CHECKED	DATE	Standard No Analog Mechanical Contactor R4 (4) 5A, (1) 5A monitor relay 3Wire/4Wire Negative Common			
JPS	01/17/20				
APPROVED	DATE				
EMO	01/20/20				
UNIT TYPE	MXb	DWG NO	WD-MXb-040000-0101	REV	00B
				SHEET	1 of 1



Submittal Data Sheet
Date: August 15, 2024

ECO TECH INC
PO BOX 956
HOLLY SPRINGS GA 30142
United States

P.O. 24051GA-16
FACTORY ORDER SO116840
PROJ. NAME 24051GA - Lower Poplar WRF Influent PS

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
2		1	9741837	PEC,16,F1,CI,NBR,NBR,DTR-S30SC0*X,SB16*A36116

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	16	16 Inch (400mm); SST Bearings; Welded-in Nickel Seat (Except Rubber Lined or Stainless Steel Bodies)
End Connection	F1	Flanged Drilling; ASME Class 125/150
Body Material	CI	Cast Iron
Packing	NBR	.5" - 3" Acrylonitrile-Butadiene Reinforced filler in a PTFE U-ring, -20 to 180° F. (-29 to 83° C.); 4" & Larger Acrylonitrile-Butadiene Reinforced V-type, -20 to 250° F. (-29 to 121° C.)
Plug Facing	NBR	Acrylonitrile-Butadiene; -20 to 180° F. (-29 to 83° C.)
Options	DTR	DeZURIK Standard Certified Production Hydrostatic Shell and Seat Test Report
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10) surface prep
Actuator	X	Specify Actuator in Special Construction
Stainless Steel Bolting & Tubing	SB16	316 Stainless Steel Bolting

Temperature Range	-20 to 180 Degrees F.
Valve Pressure	to 150 psig

RELATED DOCUMENTS

Z21272: DWG INST PEC F LIM MX-10/WG-35-D 14-20 GRP 1
A20730: DWG VALVE FLG 0350-20IN
J32718: DWG CONN PARTS NON-STD

MODIFIER

LIMITORQUE - MXb-10/WG-35-D - PN:1464169

FEATURES

TAG: PV-3



Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

Phone: 434-528-4400
Fax:

Customer Data Sheet

SALES ORDER NO. 205928 REV 0	ORDER LINE 002	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225335.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

ACTUATOR INFORMATION

Electric Actuator Type MX-10 Series B
Enclosure Type WP&SUBM NEMA 3,4,4X,6,IP68
Electric Output RPM 18
Valve Torque 1280 Ft Lbs 1736 Nm
MX/Gear Box Max Rated Torque 2080 Ft Lbs 2820 Nm
MX/Gear Box Stall Torque 3128 Ft Lbs 4242 Nm
Operating Time for 90 degrees 43 Sec
Handwheel SIDE Mounted 12 Inch
Open Direction CCW
Lube SHC-632
Gear Box Type WG-35-D
Gear Box Ratio 52:1
Gear Box SGA Ratio NA
Gear Box Position A
Gear Box Base MSS-FA16
Gear Box Output RPM 0.35
~Outline Drawing 03-654-0132
Sun Shade Drawing NA
Wiring Diagram WD-MXb-040000-0101
Disconnect Diagram NA
Conduit Entries 1-1/4,1-1/2,1-1/4,NONE
2-Speed Timer N Quik Board N
Control Options Network:STD Digital:R4 Analog:NONE
Main Board BLUETOOTH/UPS Wire Controls 3 WIRE MAINT
Disconnect Switch NONE
Warranty STANDARD
MOTOR INFORMATION
Motor Size 7 FT-LBS
Motor Voltage 480
Mtr Phase/Frequency Hz 3/60
Motor Horsepower 0.25
Motor RPM 1200
Locked Rotor Amps (LRA) 4.3
Full Load Amps (FLA) 1.3

Instruction Manual VAIOM000071 on the internet www.limitorque.com
Qualifications: The MX complies with all the test
parameters identified in Limitorque MX qualification testing bulletin
AIBR000087. Installation of the MX in environments outside the
parameters identified in bulletin AIBR000087 voids the warranty.



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END USER **MACON, GA**
END PROJECT

TAGGING AND INFORMATION:
TAG: 1464169

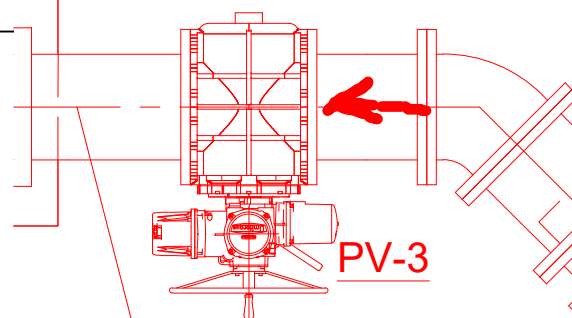
A	VALVE
C	MOTOR AND GEAR UNIT
P	CONNECTING PARTS

NOTE:

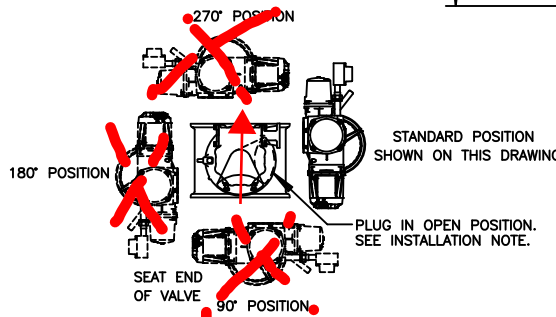
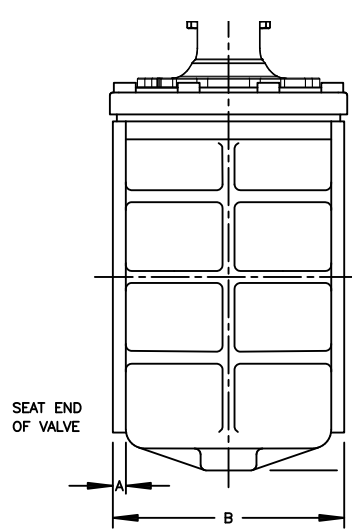
1. FLANGES ARE FLAT FACED WITH DIAMETER AND DRILLING TO CLASS 125 ANSI STANDARD B16.1, EXCEPT FOR TAPPED HOLES AS INDICATED. SEE A-16368 FOR NON-ANSI FLANGE DATA.
2. FOR MANUAL OPERATION PUSH LEVER IN DIRECTION OF ARROW ONLY. UNIT REMAINS IN HAND OPERATION UNTIL MOTOR IS ENERGIZED.
3. MOTOR CAN BE ROTATED IN 90° INCREMENTS FROM POSITION SHOWN.
4. INSTALLATION NOTE:

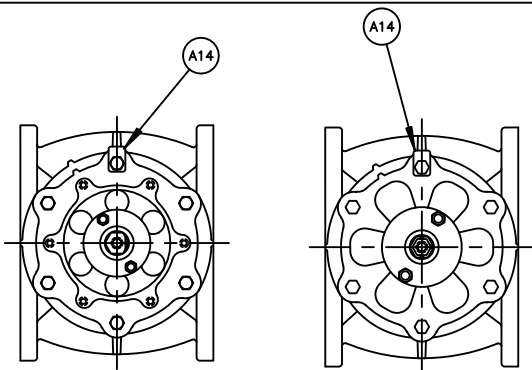
- FOR LIQUIDS & GASES:
INSTALL VALVE WITH HIGHER PRESSURE
AGAINST END OPPOSITE SEAT.

- FOR SUSPENDED SOLIDS, SLURRIES, ETC:
INSTALL VALVE WITH HIGHER PRESSURE
AGAINST SEAT END. IN HORIZONTAL
PIPELINES, VALVE SHOULD BE INSTALLED
ON IT'S SIDE SO PLUG ROTATES TO THE
TOP OF THE PIPELINE WHEN OPEN.
(SEE DIAGRAM BELOW).



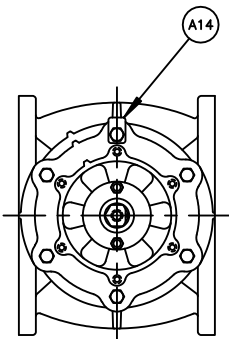
PLAN VIEW OF PV -3 INSTALLED
WITH SHAFT IN HORIZONTAL.
Main Gear in Standard Position.



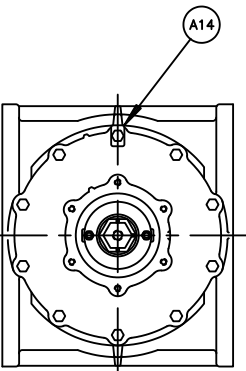


6.5 & 8 VALVES

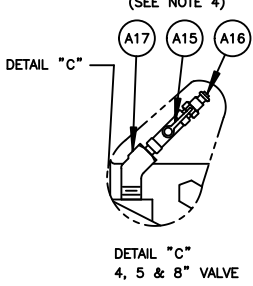
8.5 - 10 VALVES
(SEE NOTE 4)



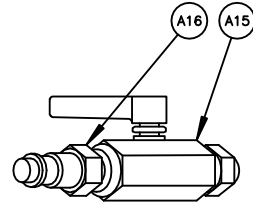
10.5 - 18 VALVES



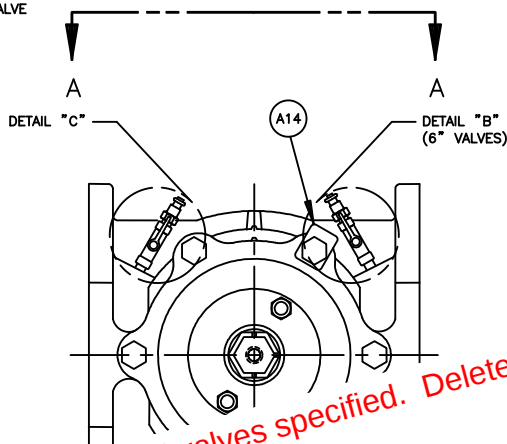
18.5 & 20 VALVES



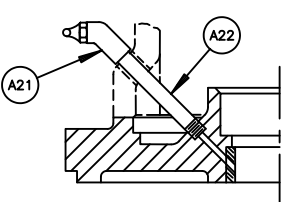
DETAIL "C"
4, 5 & 8" VALVE



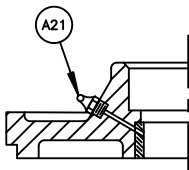
ENLARGED VIEW
DETAIL "B"



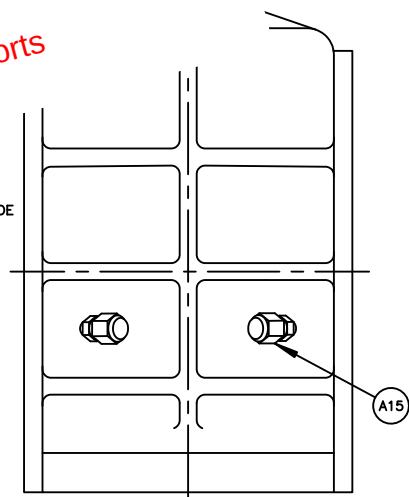
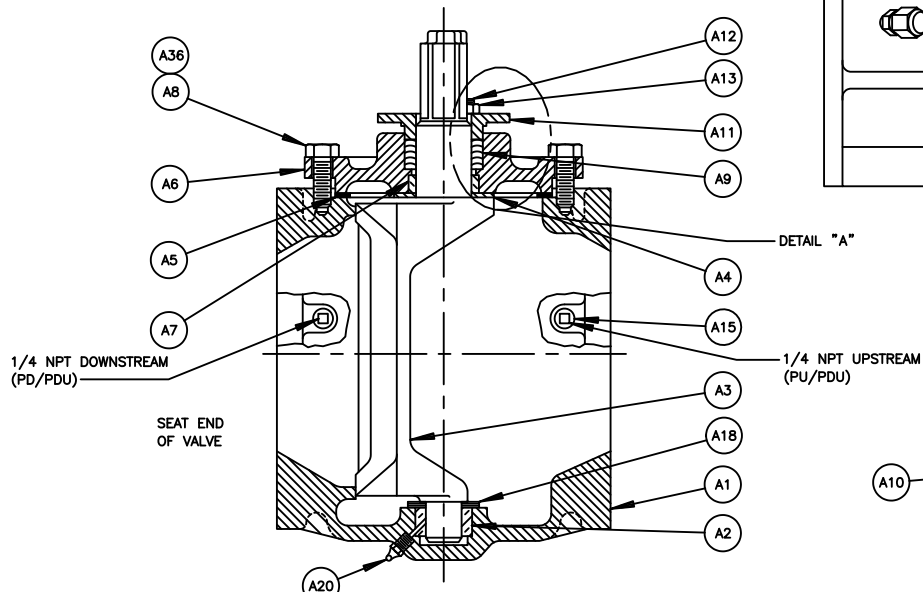
NON Lubricated valves specified. Delete lube ports



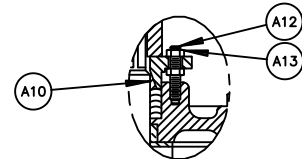
GREASE FITTING IN BONNET,
ALL ACTUATORS EXCEPT LV & NT



GREASE FITTING IN BONNET,
LV & NT ACTUATORS



VIEW A-A
TIRE FITTING



DETAIL "A"
3.5 - 8 NT CONSTRUCTION

NOTE:

1. REPLACEABLE WEAR PARTS ARE ITEMS NUMBER A3, PLUG(IF RUBBER FACED), A4, A5 AND A9.
2. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE. ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
3. CLOCKWISE ROTATION OF PLUG STEM CLOSSES VALVE.
4. ON THE SIZE 3.5, 4, 4.5, 5, 6, 8.5, & 10 VALVES BONNET SCREWS ARE USED FOR MOUNTING ACTUATOR.
5. VALVE MAY BE FURNISHED WITH EITHER THE UPPER JOURNAL GREASE FITTING, THE LOWER JOURNAL GREASE FITTING OR BOTH.

NO	PART NAME	QTY
A1	BODY	1
A2	BEARING (3.5 - 8 VALVES)	1
A2	BEARING (8.5 - 18 VALVES)	2
A2	BEARING (18.5 & 20 VALVES)	1
A3	PLUG	1
A4	GRIT EXCLUDER	1
A5	GASKET (BODY)	1
A6	BONNET	1
A7	BEARING	1
A8	SCREW (3.5 - 18 VALVES)	6
A8	SCREW (18.5 & 20 VALVES)	10
A9	PACKING	-
A10	CONE, 3.5 - 8 NT (EXCEPT LOW FRICTION CAT. CHAR. NBRL & SQ. PACKING)	1
A11	GLAND	1
A12	STUD (3.5 - 20 GS--HD_ & GS--CW_)	2
A12	STUD (3.5 - 20 GS--C_)	2
A12	STUD (8.5 - 12 MNA)	NOT REQ'D
A12	STUD (8.5 - 12 LV)	NOT REQ'D
A12	STUD (3.5 - 20 GS--ML_)	2
A12	STUD (3.5 - 8 NT)	2
A13	NUT (3.5 - 20 GS--HD_ & GS--CW_)	2
A13	NUT (3.5 - 20 GS--C_)	2
A13	NUT (8.5 - 12 MNA)	NOT REQ'D
A13	NUT (8.5 - 12 LV)	NOT REQ'D
A13	NUT (3.5 - 12 GS--ML_)	2
A13	NUT (3.5 - 8 NT)	4
A14	CAUTION TAG	1
A15	PIPE PLUG (PU, PD OR PDU)	-
A15	TIRE FITTING (BV1)	2
A15	MANUAL VALVE (BV2)	2
A16	ADAPTOR (BV2)	2
A17	STREET ELBOW 45 DEG (4.5 & 8 VALVE) (BV2)	2
A18	GRIT EXCLUDER	-
A20	GREASE FITTING (OPTION GR ONLY)	1
A21	GREASE FITTING (OPTION GR ONLY)	1
A22	NIPPLE (EXCEPT LV & NT) (OPTION GR ONLY)	1
A36	WASHER (FUSION COATING)(3.5-18 VALVES)	6
A36	WASHER (FUSION COATING)(18.5-20 VALVES)	10

V	71280	09/28/20
U	70444	02/06/20
T	70338	11/29/18
S	63460	06/04/17
R	62259	04/29/12
Q	60502	07/28/11
P	61846	11/16/09
N	61612	06/10/08
M	61602	04/02/08
L	61371	11/22/05
K	60096	10/19/03
J	54463	03/20/99
H	54620	02/11/98
G	53796	09/03/96
F	50312	03/22/93
E	50312	03/03/93
D	51112	03/09/91
C	16317	07/26/89
B	15078	11/22/88
A	14470	09/28/81



PEC ECCENTRIC VALVE ASSEMBLY 3.5 - 20, FLANGED, EXCEPT BODY MATERIAL CIS, DIS & CIH			
DOCT. CODE	DRAWN	APPROVED	A20730
C1	CHN	RJP	
CHECKED	DATE	DATE	
TNB	10-13-83		



Materials Of Construction

DRAWING(S): A20730(A00)

SALES ORDER: SO116840

DESCRIPTION: PEC,16,F1,CI,NBR,NBR,DTR-S30SC0*X,SB16*A36116

ITEM	MATERIAL
A00	STAINLESS STEEL, TYPE 18-8
A00	STAINLESS STEEL, SERIES 300
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE 316L, SINTERED
A03	IRON, ASTM A126, CLASS B
A03	ACRYLONITRILE-BUTADIENE (NBR)
A04	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A05	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A06	IRON, ASTM A126, CLASS B
A07	STAINLESS STEEL, TYPE 316L, SINTERED
A08	STAINLESS STEEL, TYPE 316
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A11	IRON, ASTM A126, CLASS B
A12	STAINLESS STEEL, TYPE 316
A13	STAINLESS STEEL, TYPE 316
A14	STAINLESS STEEL, SERIES 300
A18	STAINLESS STEEL, TYPE 316, ASTM A269 OR A511



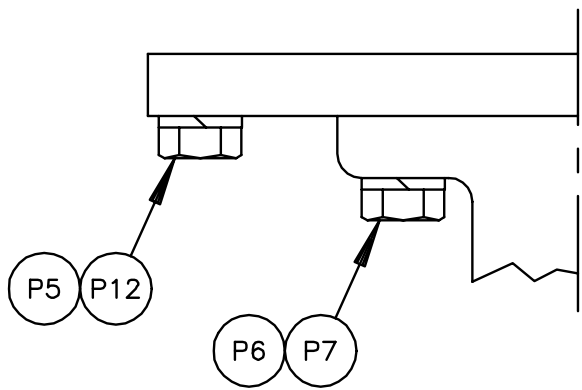
Materials Of Construction

DRAWING(S): A20730(A00)

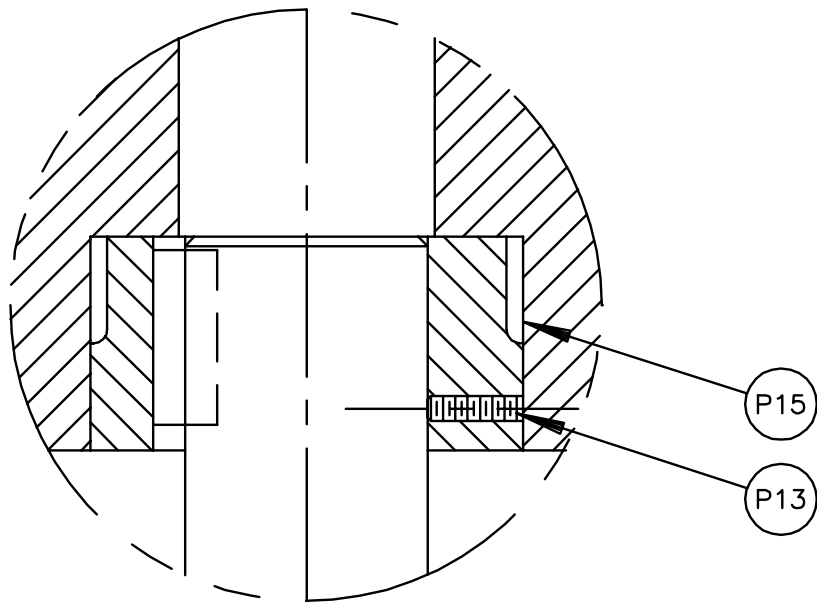
SALES ORDER: SO116840

DESCRIPTION: PEC,16,F1,CI,NBR,NBR,DTR-S30SC0*X,SB16*A36116

ITEM	MATERIAL
A00	STAINLESS STEEL, TYPE 18-8
A00	STAINLESS STEEL, SERIES 300
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE 316L, SINTERED
A03	IRON, ASTM A126, CLASS B
A03	ACRYLONITRILE-BUTADIENE (NBR)
A04	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A05	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A06	IRON, ASTM A126, CLASS B
A07	STAINLESS STEEL, TYPE 316L, SINTERED
A08	STAINLESS STEEL, TYPE 316
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A11	IRON, ASTM A126, CLASS B
A12	STAINLESS STEEL, TYPE 316
A13	STAINLESS STEEL, TYPE 316
A14	STAINLESS STEEL, SERIES 300
A18	STAINLESS STEEL, TYPE 316, ASTM A269 OR A511



ALTERNATE MOUNTING CONSTRUCTION

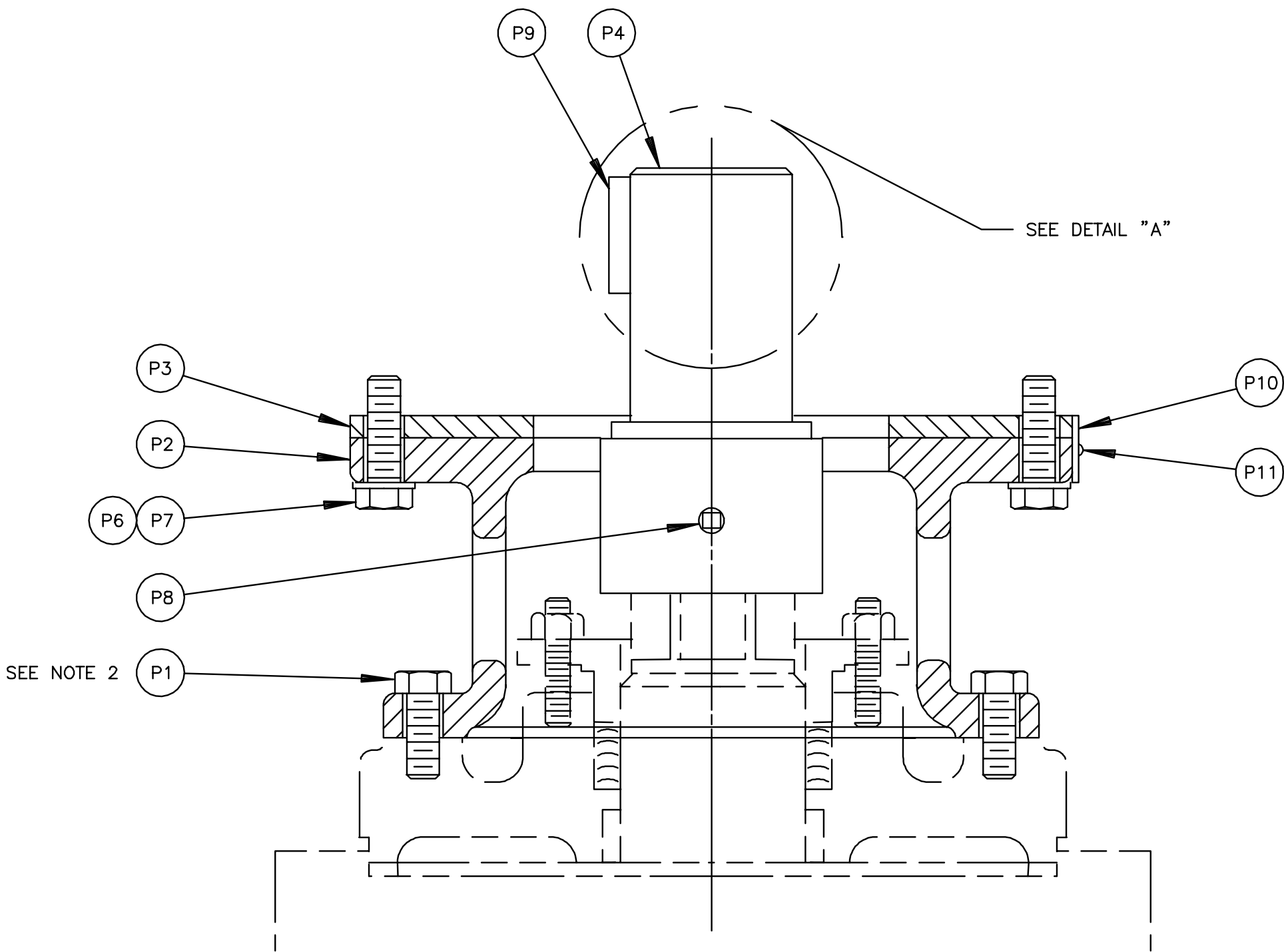


DETAIL "A"
SHOWING ACTUATOR WITH DRIVE SLEEVE

NO	PART NAME	QTY
P1	SCREW (4, 5, 6 & 10 VALVES) (SEE NOTE 2)	NOT REQD
P1	SCREW (8, 12, 14, 16, 18 & 20 VALVES)	6
P2	ADAPTOR	1
P3	ADAPTOR/SPACER PLATE (WHEN REQUIRED)	1
P4	DRIVE ADAPTOR	1
P5	SCREW (WHEN REQUIRED)	—
P6	LOCKWASHER (G6 ADAPTOR) (WHEN REQD)	4
P6	LOCKWASHER (G12 ADAPTOR) (WHEN REQD)	8
P7	SCREW (G6 ADAPTOR)	4
P7	SCREW (G12 ADAPTOR)	8
P8	SET SCREW	1
P9	KEY	1
P10	DATA PLATE	1
P11	DRIVE SCREW	2
P12	LOCKWASHER (WHEN REQUIRED)	—
P13	SET SCREW (WHEN REQUIRED)	1
P15	DRIVE BUSHING (WHEN REQUIRED)	1

NOTE:

1. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE. ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
2. ITEM NUMBER P1 IS NOT REQUIRED ON THE 4, 5, 6 & 10 VALVES. USE BONNET SCREWS ON BODY ASSEMBLY TO MOUNT ACTUATOR TO VALVE. ITEM NUMBER P1 IS ALSO NOT REQUIRED WHEN ACTUATOR IS MOUNTED ON FLOORSTAND.



G	F	E	D	C	B	A
					50312	50312
					06/25/12	06/13/08

DeZURIK
Sartell, MN USA 56377
www.dezurik.com

CONNECTING PARTS FOR NON-STANDARD ACTUATORS ON ECCENTRIC VALVES			
DOCT. CODE	DRAWN	APPROVED	
C1	RDD	RDD	
	CHECKED	DATE	
	RDD	04/02/97	

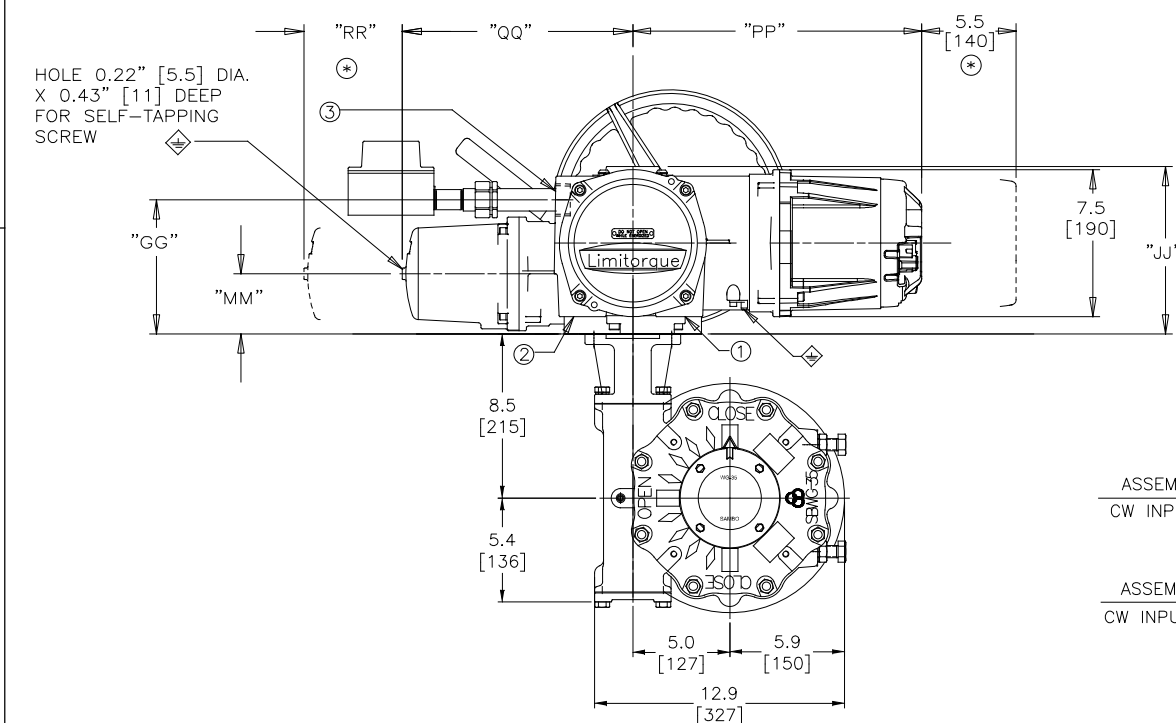
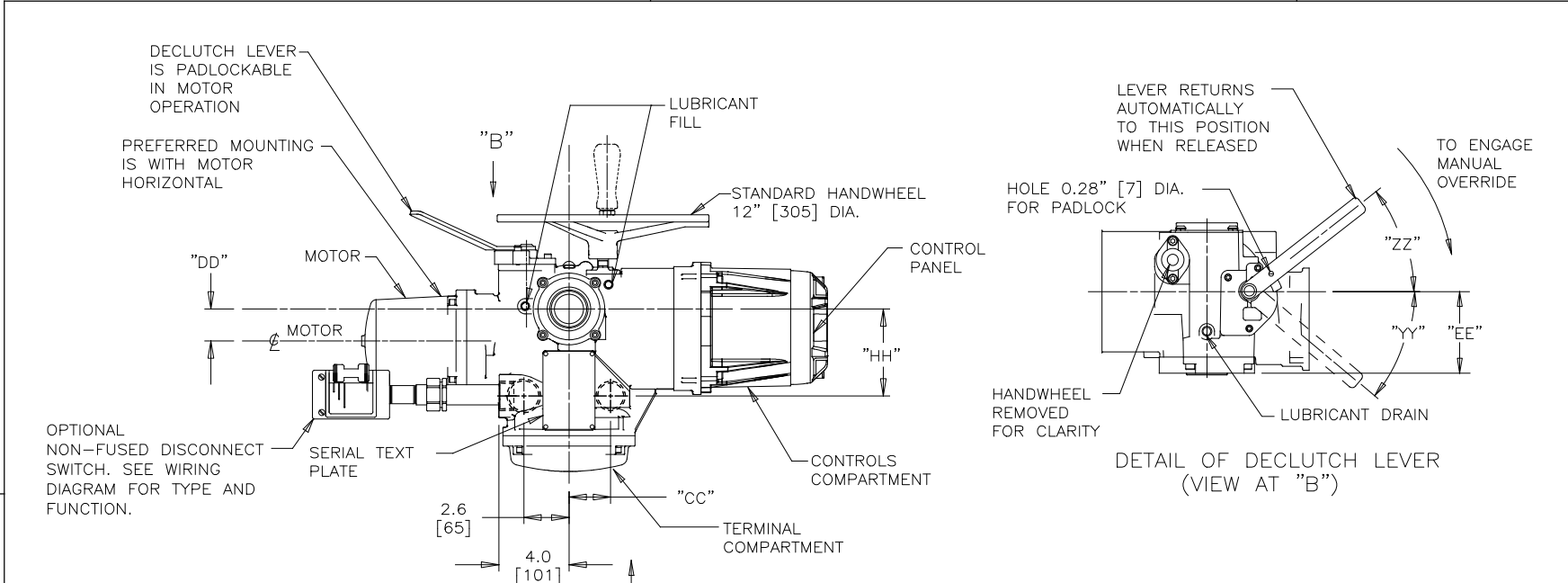
J32718

D

C

B

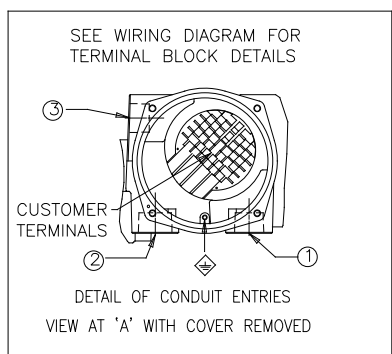
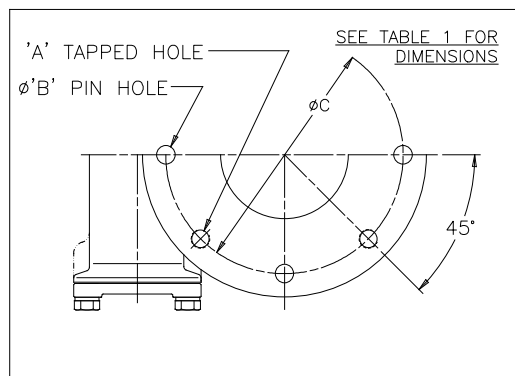
A



NOTE:
1. SEE CUSTOMER DATA SHEET TO DETERMINE BASE AND ASSEMBLY POSITION SUPPLIED.

B	2/27/23	RRB	APR	APR
DESC:	REMOVED FA14/F14 MOUNTING BASE FROM TABLE 1			
A	8/3/22	RRB	APR	SVA
DESC:	UPDATED GEARBOX DRAWING AS PER LATEST MODEL			
REV	CHG NO	DATE	REVD	CHKD
				APVD

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ACTUATOR OUTLINE DIMENSIONS (INCHES)																	
UNIT SIZE	BB	CC	DD	EE	FF	GG	HH	JJ	LL	MM	PP	QQ		RR		YY	ZZ
												1-PH	3-PH	1-PH	3-PH		
MX-10	5.3	2.4	1.8	4.6	9.2	6.8	4.9	8.4	6.4	3.1	15.3	14.7	11.7	4.0	5.0	40.0°	40.0°
MX-20	6.8	2.1	2.2	5.6	10.7	7.7	6.4	10.9	8.6	3.9	16.0	N/A	13.5	N/A		37.0°	33.5°
MX-40	8.8	2.1	2.7	5.9	11.1	7.8	6.9	11.7	9.0	4.1	16.3	N/A	13.8	N/A		37.0°	33.5°

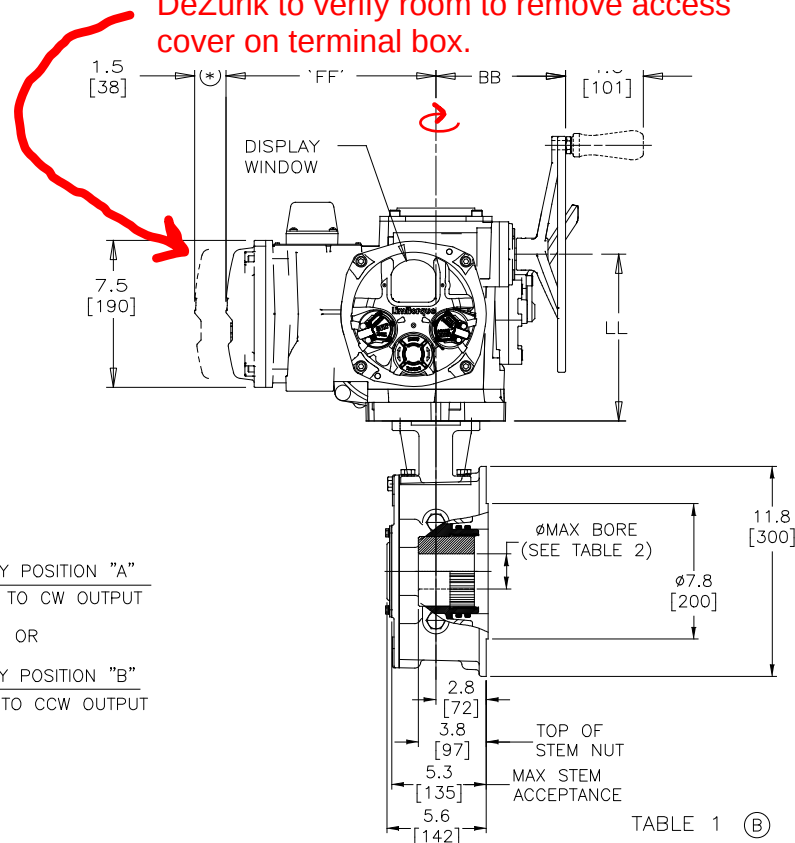
ACTUATOR OUTLINE DIMENSIONS (METRIC)																	
UNIT SIZE	BB	CC	DD	EE	FF	GG	HH	JJ	LL	MM	PP	QQ		RR		YY	ZZ
												1-PH	3-PH	1-PH	3-PH		
MX-10	135	60	46	117	233	173	125	214	163	78	389	374	297	102	127	40.0°	40.0°
MX-20	168	54	57	141	272	196	163	277	217	100	406	N/A	344	N/A		37.0°	33.5°
MX-40	224	54	68	150	283	198	174	297	229	105	414	N/A	350	N/A		37.0°	33.5°

CONDUIT ENTRIES			
POSITION	①	②	③
STANDARD	1 1/4" NPT	1 1/2" NPT	1 1/4" NPT
OPTIONS	M32, M25 M20	M40, M32, M25, M20	M32, M25 M20
	PG21	PG29, PG21	PG21

TABLE 2		
MAX BORE	MAX KEY (SQUARE)	MAX KEY (RECTANGLE)
ø2.625	5/8 X 5/8	—
ø2.813	—	3/4 X 1/2
[ø72]	—	[20 X 12]

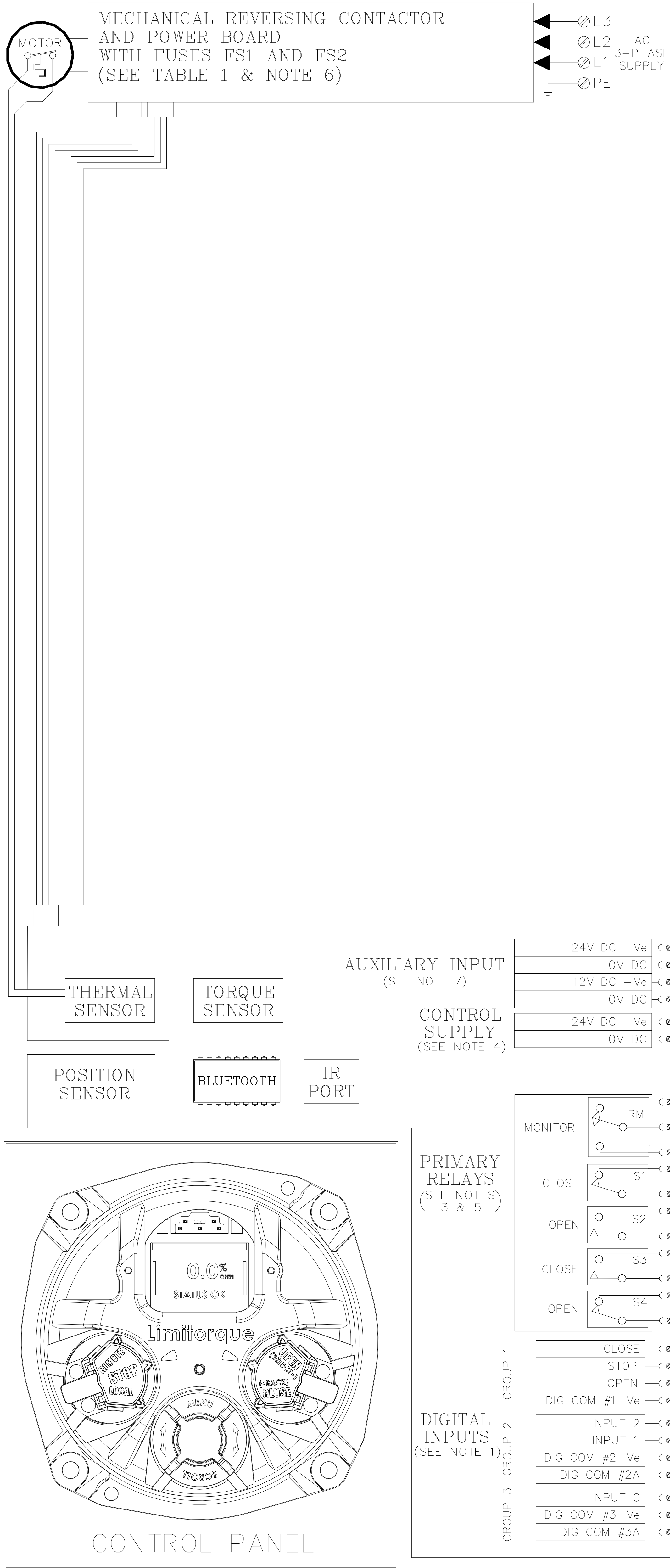
Rotate Limitorque actuator 180 degree with handwheel facing away from pipe

DeZurik to verify room to remove access cover on terminal box.



MOUNTING BASE		A	B	C
MSS (INCH)	FA16	(4) 3/4-10 UNC TAP X 1.2 DP	NA	ø6.5
ISO (METRIC)	F16	(4) M20 TAP X 30 DP	(4) ø20 PIN X 20 DP	ø165

JOB NUMBER		5114 WOODALL ROAD, LYNCHBURG, VA. USA 24506-1318	
DRW: KPR	DATE: 3-9-20	DRAWING TITLE MX-10-40 STANDARD UNITS WITH: A) SIDE MOUNTED HANDWHEEL B) OPTIONAL DISCONNECT SWITCH C) WG-35 WORM GEAR OPERATOR D) 1 & 3 PHASE MOTORS	
CKD: SVA	DATE: 3-9-20		
APV: MWR	DATE: 3-12-20		
ALL DIMENSIONS ARE REFERENCE UNLESS OTHERWISE SPECIFIED		SIZE C	DRAWING NUMBER 03-654-0132
3rd ANGLE		SCALE NONE	UNITS SHEET 1 OF 1



NOTES: (SEE INSTALLATION & OPERATION MANUAL VAIOM000071 FOR DETAILS)

1. REMOTE INPUTS

SIGNAL THRESHOLD – MINIMUM "ON" 19.2V AC/DC
MAXIMUM "OFF" 5.0V AC/DC
MAX LOAD – 10 mA / 110V AC

REQUIRED CONTROL SIGNAL DURATION = 350ms MIN.
INPUTS 0, 1, & 2 ARE FIELD CONFIGURABLE FOR CLOSE/OPEN/BOTH INHIBIT, USER INPUT, OR ESD.
INPUT 1 MAY ALSO BE CONFIGURED FOR PARTIAL STROKE TEST.
INPUT 2 MAY ALSO BE CONFIGURED FOR CSE REMOTE SELECTION INDICATION.
DEFAULT INPUT CONFIGURATION
INPUT 0 – ESD,
INPUT 1 – OPEN INHIBIT,
INPUT 2 – CLOSE INHIBIT.

2. REMOTE INPUT JUMPERS

JUMPERS CAN BE USER WIRED TO CONNECT DIG COMMONS #1, 2 & 3 (AS NEEDED). THE 3 REMOTE WIRING GROUPS ARE ELECTRICALLY ISOLATED, INTERNALLY. ONLY A SINGLE POWER SOURCE MAY BE USED TO POWER ANY ONE GROUP BUT DIFFERENT SOURCES MAY POWER DIFFERENT GROUPS. IF DIFFERENT SOURCES ARE USED, ENSURE THAT THE POLARITIES ARE CORRECT.

3. DEFAULT [S] SETTINGS

THE DEFAULT OPERATING CONFIGURATION FOR THE "S" OUTPUTS ARE SHOWN IN THE TABLE BELOW. THE CONTACT STATES SHOWN IN THE SCHEMATIC REPRESENT A FULLY CLOSED VALVE. SEE OPERATION MANUAL FOR ALTERNATE CONFIGURATIONS.

OUTPUT SWITCH	VALVE POSITION		FUNCTION
	FULL CLOSE	FULL OPEN	
S1	—	—	CLOSE LIMIT
S3	—	—	
S2	—	—	OPEN LIMIT
S4	—	—	

— OPEN CONTACT
— CLOSED CONTACT

4. MAXIMUM EXTERNAL LOAD

TERMINALS 21 AND 22 (24 VDC)
– 5W MAX. EXT. LOAD

5. CONTACT RATINGS

S1–S4 – 5 AMPS @ 250 VAC OR 30VDC (RESISTIVE)
THE TOTAL COMBINED CURRENT THROUGH ALL FOUR STATUS CONTACTS (S1–S4) MUST NOT EXCEED 8A
MONITOR– 5 AMPS @ 250 VAC OR 30 VDC (RESISTIVE)

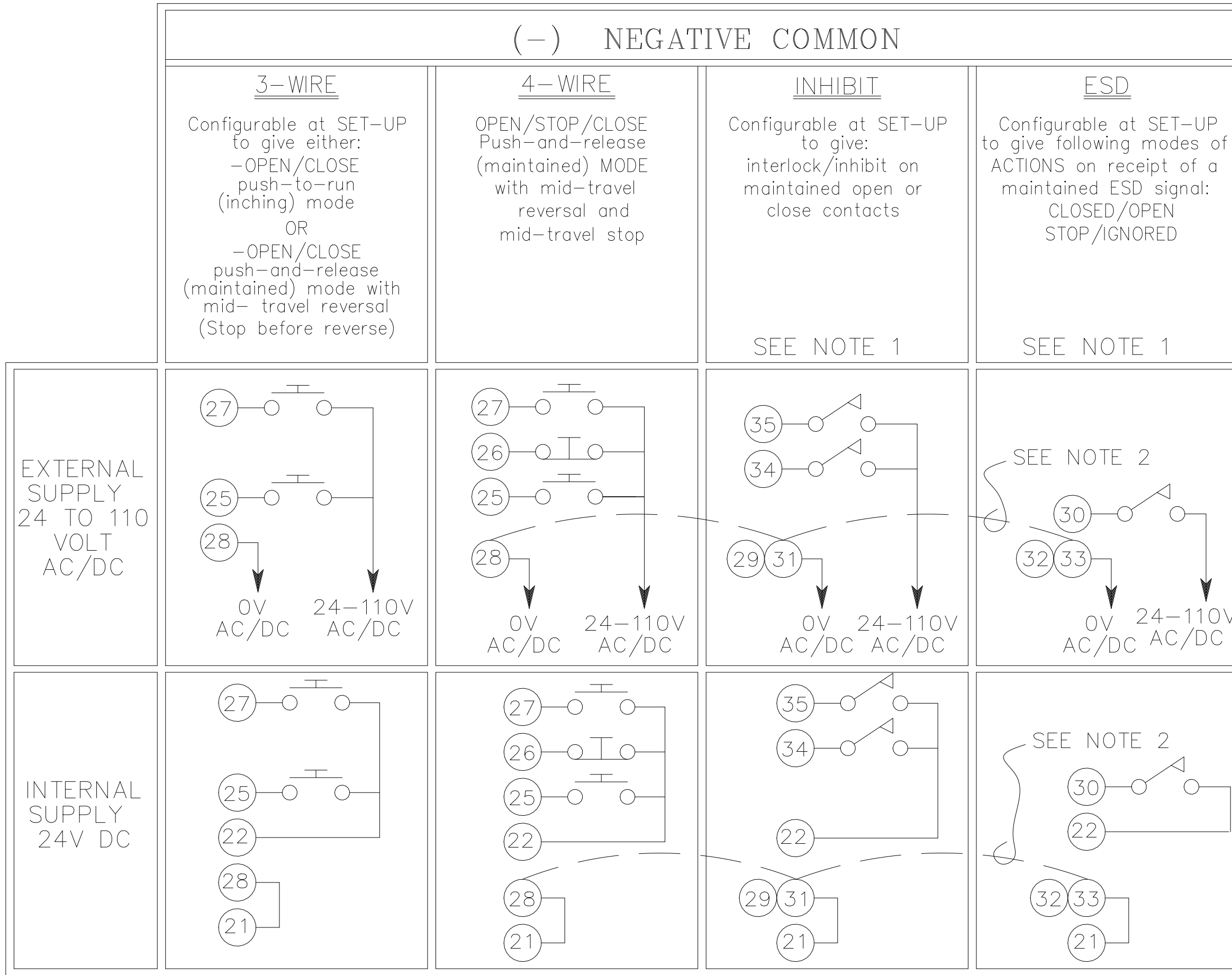
6. FUSES

FS1 (PRIMARY) } 600V AC, 1A, 100kA Int RATING,
FAST ACTING 10.3 x 38.1mm TUBE,
UL LISTED, CSA CERTIFIED
FS2 (PRIMARY) }

TABLE 1: TRANSFORMER TAPPING OPTIONS			
TYPE	TAPS	APPL. VOLTAGES	
1	106V	110V	
	115V	115V, 120V	
	200V	208V	
	212V	220V	
2	226V	226V, 230V, 240V	
	366V	380V	
	392V	400V, 415V	
	450V	440V, 460V, 480V	
3	212V	220V	
	505V	525V	
	530V	550V	
	572V	575V, 600V	

7. AUXILLIARY INPUTS

BACK-UP UPS POWER MAY BE CONNECTED: 24VDC TO TERMINALS 6 & 7, MAX. CURRENT DRAW 1 AMP; 12VDC TO TERMINALS 8 & 9, MAX. CURRENT DRAW 2 AMPS. THIS POWERS ALL CONTROLS AND OPTION BOARDS FOR LOCAL/REMOTE INDICATION AND CONFIGURATION. THE REVERSING CONTACTOR WILL NOT BE POWERED. CUSTOMER MUST SUPPLY FUSES AS REQUIRED BY LOCAL ELECTRICAL CODES.



REMOTE WIRING CONNECTIONS

TERMINAL POINT FUNCTION CLOSE (27) +24V DC (22) 0V DC (21) OPEN INHIBIT (34) DIG COM #1 (28) STOP (26) +110V AC (23) 0V AC (24) CLOSE INHIBIT (35) DIG COM #2(A) (29/31) OPEN (25) EXTERNAL SUPPLY ↓ ESD (30) DIG COM #3(A) (32/33)

LIMIGARD CONFIG. WIRING

24 VDC TO 120 VAC

DRAWN DATE NWN 01/16/20

CHECKED DATE JPS 01/17/20

APPROVED DATE EMO 01/20/20

UNIT TYPE MXb

DWG NO WD-MXb-040000-0101

REV 00B

SHEET 1 of 1

FLOWERVE Limitorque Actuation Systems 5114 WOODALL ROAD, LYNCHBURG, VIRGINIA 24506-1318

TITLE MXb WIRING DIAGRAM Bluetooth

Standard No Analog Mechanical Contactor R4 (4) 5A, (1) 5A monitor relay 3Wire/4Wire Negative Common



Submittal Data Sheet
Date: August 15, 2024

ECO TECH INC
PO BOX 956
HOLLY SPRINGS GA 30142
United States

P.O. 24051GA-16
FACTORY ORDER SO116840
PROJ. NAME 24051GA - Lower Poplar WRF Influent PS

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
9		1	9741836	PEC,24,F1,CI,NBR,NBR,DTR-S30SC0*X,SB16*A36115

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	24	24 Inch (600mm); SST Bearings; Welded-in Nickel Seat
End Connection	F1	Flanged Drilling; ASME Class 125/150
Body Material	CI	Cast Iron
Packing	NBR	.5" - 3" Acrylonitrile-Butadiene Reinforced filler in a PTFE U-ring, -20 to 180° F. (-29 to 83° C.); 4" & Larger Acrylonitrile-Butadiene Reinforced V-type, -20 to 250° F. (-29 to 121° C.)
Plug Facing	NBR	Acrylonitrile-Butadiene; -20 to 180° F. (-29 to 83° C.)
Options	DTR	DeZURIK Standard Certified Production Hydrostatic Shell and Seat Test Report
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10) surface prep
Actuator	X	Specify Actuator in Special Construction
Stainless Steel Bolting & Tubing	SB16	316 Stainless Steel Bolting

Temperature Range	-20 to 180 Degrees
Valve Pressure	F. to 150 psig

RELATED DOCUMENTS

Z21271: DWG INST PEC F1 LIM MX-10/WG-05-1SD GR1 20.5-36"
J78590: DWG VALVE ASSY PEC F1 20.5-36 W/PLUG SUPPORT
J78828: DWG CONN PARTS 20.5-54 PEC

MODIFIER

LIMITORQUE - MXb-10/WG-05-1SD-D - PN:1464168

FEATURES

TAG: PV-4



Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

Phone: 434-528-4400
Fax:

Customer Data Sheet

SALES ORDER NO. 205928 REV 0	ORDER LINE 001	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225334.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

ACTUATOR INFORMATION

Electric Actuator Type MX-10 Series B
Enclosure Type WP&SUBM NEMA 3,4,4X,6,IP68
Electric Output RPM 100
Valve Torque 3083 Ft Lbs 4181 Nm
MX/Gear Box Max Rated Torque 8288 Ft Lbs 11239 Nm
MX/Gear Box Stall Torque 12478 Ft Lbs 16920 Nm
Operating Time for 90 degrees 58 Sec
Handwheel SIDE Mounted 12 Inch
Open Direction CCW
Lube SHC-632
Gear Box Type WG-05-1SD-D
Gear Box Ratio 388:1
Gear Box SGA Ratio NA
Gear Box Position A
Gear Box Base MSS-FA30
Gear Box Output RPM 0.26
Outline Drawing 03-654-0012
Sun Shade Drawing NA
Wiring Diagram WD-MXb-040000-0101
Disconnect Diagram NA
Conduit Entries 1-1/4,1-1/2,1-1/4,NONE
2-Speed Timer N Quik Board N
Control Options Network:STD Digital:R4 Analog:NONE
Main Board BLUETOOTH/UPS Wire Controls 3 WIRE MAINT
Disconnect Switch NONE
Warranty STANDARD
MOTOR INFORMATION
Motor Size 9 FT-LBS
Motor Voltage 480
Mtr Phase/Frequency Hz 3/60
Motor Horsepower 0.49
Motor RPM 1800
Locked Rotor Amps (LRA) 7.0
Full Load Amps (FLA) 1.7

Instruction Manual VAOM000071 on the internet www.limitorque.com
Qualifications: The MX complies with all the test parameters identified in Limitorque MX qualification testing bulletin AIBR000087. Installation of the MX in environments outside the parameters identified in bulletin AIBR000087 voids the warranty.



Limitorque

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Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

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	250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

TAGGING AND INFORMATION:
TAG: 1464168

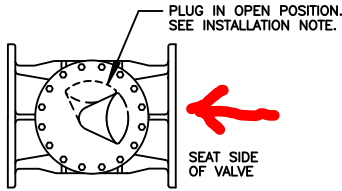
VALVE SIZE	PIPE SIZE		DIMENSIONS INCHES MILLIMETERS									
	IN	MM	A	B	C	D	E	F	G	H	J	K
20.5	20	500	$\frac{1.25}{32}$	$\frac{42.00}{1067}$	$\frac{18.31}{465}$	$\frac{25.00}{635}$	1-1/8-7UNC	20	THRU	N/A	N/A	$\frac{21.19}{538}$
24	24	600	$\frac{1.88}{48}$	$\frac{42.00}{1067}$	$\frac{18.31}{465}$	$\frac{29.50}{749}$	N/A	N/A	N/A	$\frac{1.38}{35}$	20	$\frac{21.19}{538}$
24.5	24	600	$\frac{1.94}{49}$	$\frac{42.00}{1067}$	$\frac{21.88}{556}$	$\frac{29.50}{749}$	1-1/4-7UNC	20	$\frac{1.50}{38}$	N/A	N/A	$\frac{25.75}{654}$
30	30	750	$\frac{2.12}{54}$	$\frac{51.00}{1295}$	$\frac{21.88}{556}$	$\frac{36.00}{914}$	N/A	N/A	N/A	$\frac{1.38}{35}$	28	$\frac{25.75}{654}$
30.5	30	750	$\frac{2.12}{54}$	$\frac{51.00}{1295}$	$\frac{24.81}{630}$	$\frac{36.00}{914}$	1-1/4-7 UNC	28	$\frac{2.00}{51}$	N/A	N/A	$\frac{29.44}{748}$
36	36	900	$\frac{2.38}{60}$	$\frac{60.00}{1524}$	$\frac{24.81}{630}$	$\frac{42.75}{1086}$	N/A	N/A	N/A	$\frac{1.62}{41}$	32	$\frac{29.44}{748}$

A	VALVE
C	MOTOR W/GEARBOX
P	CONNECTING PARTS

NOTES:

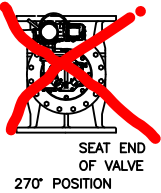
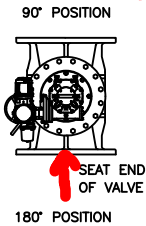
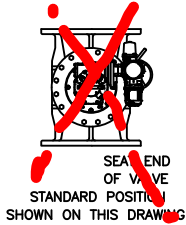
- FLANGES ARE FLAT FACED WITH DIAMETER AND DRILLING TO CLASS 125 ANSI STANDARD B16.1, EXCEPT FOR TAPPED HOLES AS INDICATED. SEE A-16368 FOR NON-ANSI FLANGE DATA.
- FOR MANUAL OPERATION PUSH LEVER IN DIRECTION OF ARROW ONLY. UNIT REMAINS IN HAND OPERATION UNTIL MOTOR IS ENERGIZED.
- INSTALLATION NOTE:

- FOR LIQUIDS & GASES:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST END OPPOSITE SEAT.
- FOR SUSPENDED SOLIDS, SLURRIES, ETC:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST SEAT END. IN HORIZONTAL PIPELINES, VALVE SHOULD BE INSTALLED ON IT'S SIDE SO PLUG ROTATES TO THE TOP OF THE PIPELINE WHEN OPEN. (SEE DIAGRAM BELOW).

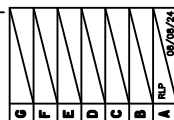
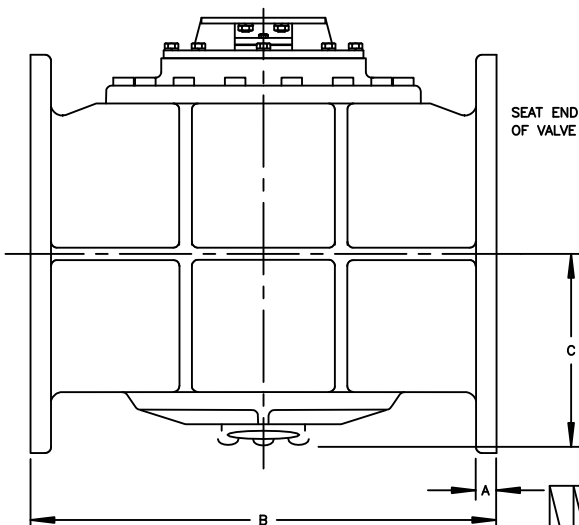
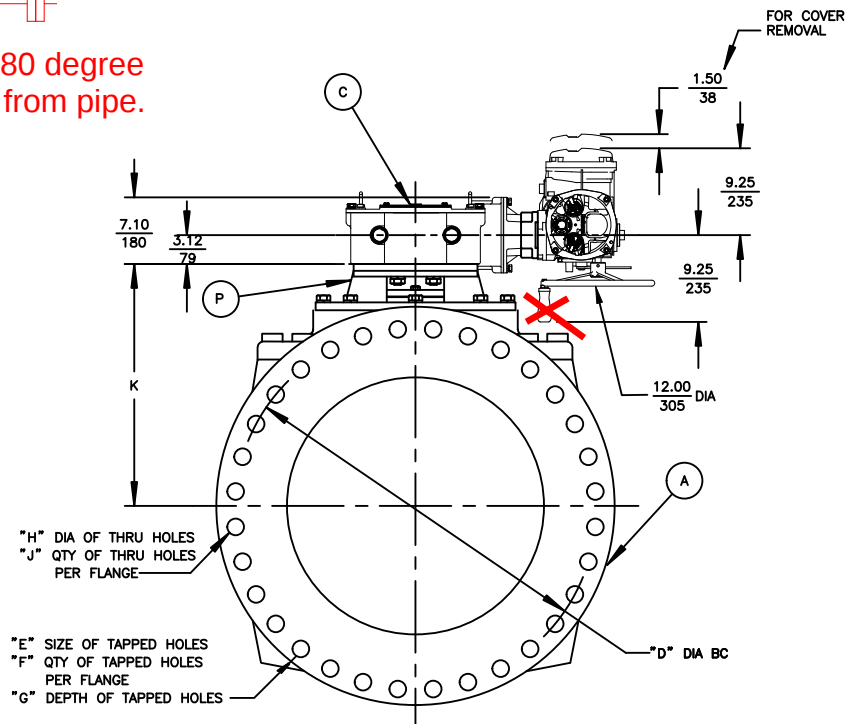
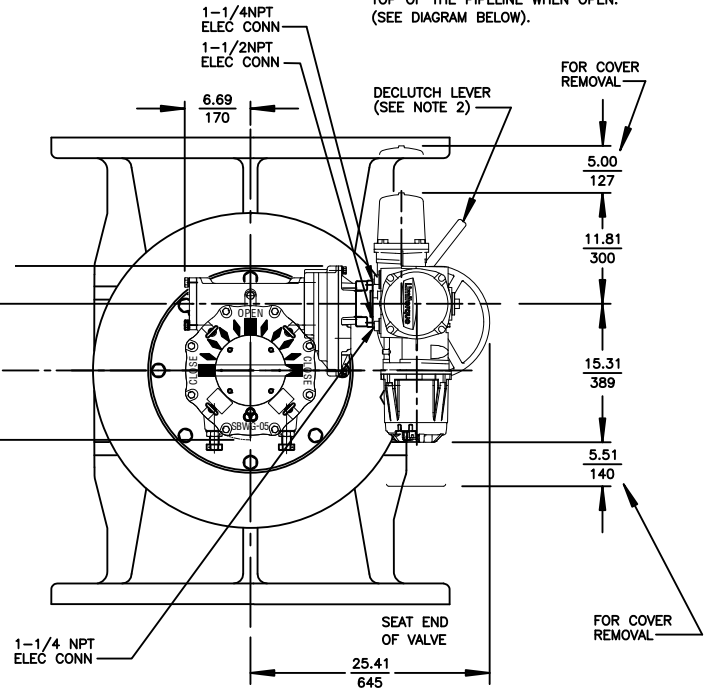
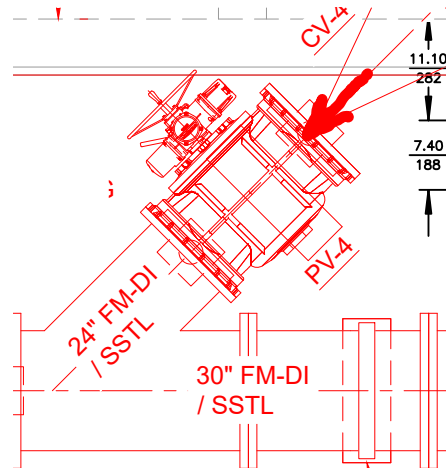


ACTUATOR MOUNTING POSITIONS AS VIEWED FROM TOP OF VALVE. DOTTED LINES SHOW OPTIONAL MOUNTING POSITIONS.

PV-4 INSTALLED w/ SHAFT IN HORIZ Main Gear in 180 degree Position



Rotate Limitorque actuator 180 degree with handwheel facing away from pipe.



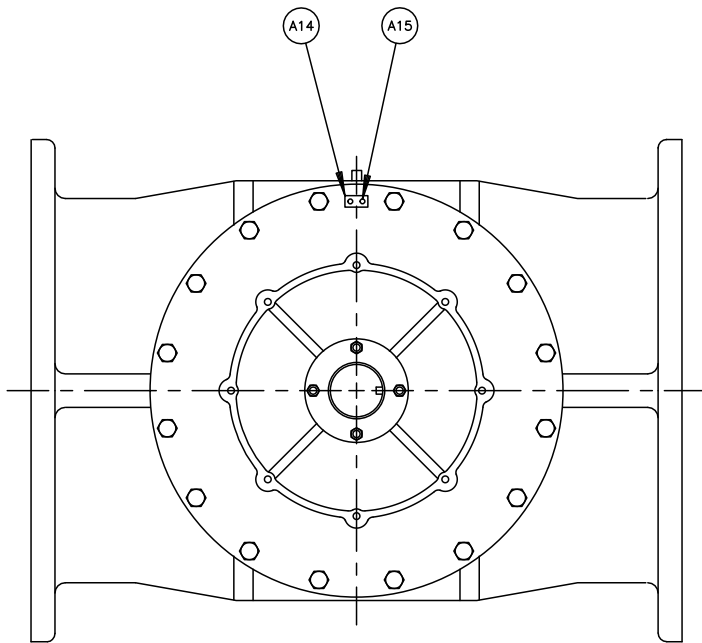
DeZURIK

DeZURIK.com

PEC ECCENTRIC VALVES SIZE 20.5-36 FLANGED, MATERIAL GROUP 1
LIMITORQUE MX-10/WG-05-1SD MOTOR ACTUATOR

DOCT. CODE	DRAWN	JE	APPROVED	JWM
C1	CHECKED	JWM	DATE	08/08/24

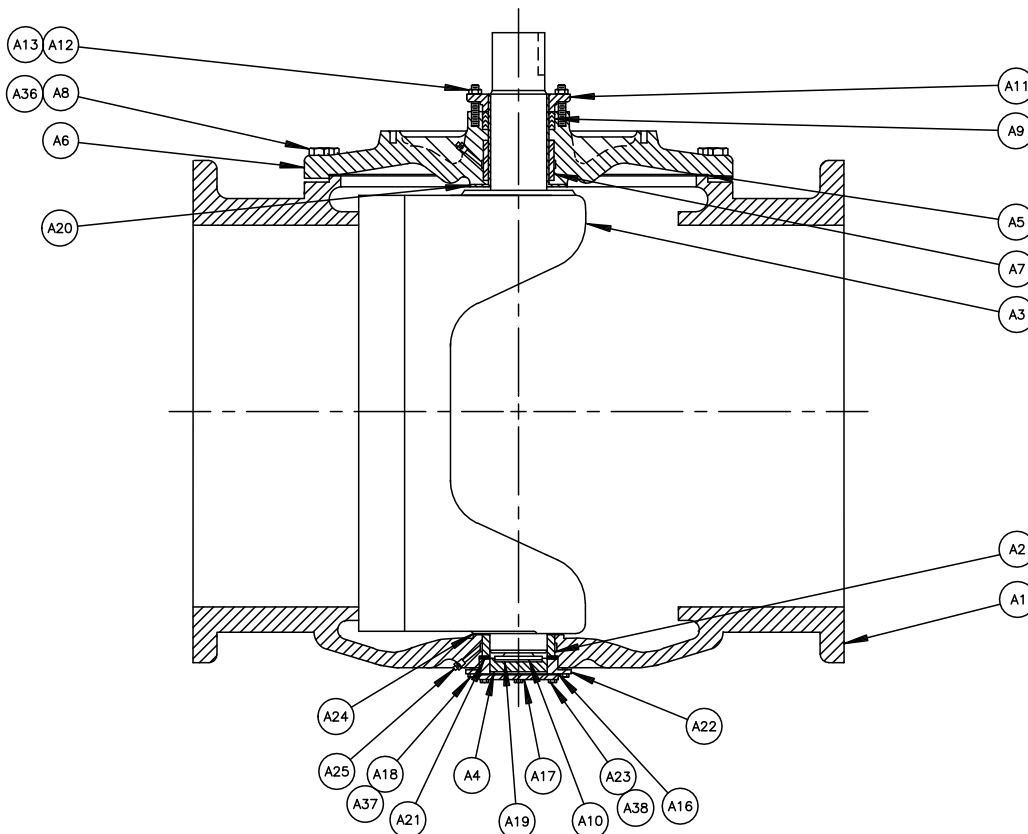
Z21271



NO	PART NAME	QTY
A1	BODY	1
A2	BEARING	1
A3	PLUG	1
A4	RETAINER NUT	1
A5	GASKET (BODY)	1
A6	BONNET	1
A7	BEARING	1
A8	SCREW	16
A9	PACKING	—
A10	THRUST PLATE	1
A11	GLAND	1
A12	STUD	4
A13	NUT	4
A14	CAUTION TAG	1
A15	DRIVE SCREW	2
A16	GASKET	1
A17	COVER	1
A18	SCREW	6
A19	BEARING	1
A20	GRIT EXCLUDER	1
A21	GASKET (JOURNAL COVER)	1
A22	JOURNAL COVER	1
A23	SCREW	6
A24	GRIT EXCLUDER	—
A25	PIPE PLUG	2
A36	WASHER (FUSION COATING)	16
A37	WASHER (FUSION COATING)	6
A38	WASHER (FUSION COATING)	6

NOTE:

1. RECOMMENDED SPARE PARTS ARE ITEMS A3, PLUG (IF RUBBER FACED) A5, A9, A16 & A21.
2. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE, ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
3. CLOCKWISE ROTATION ON PLUG STEM CLOSSES VALVE.



70943	03/24/20
63446	08/07/17
50312	11/04/08
50312	03/28/08



PEC ECCENTRIC VALVE ASSEMBLY 20.50-36 FLANGED VALVES WITH PLUG SUPPORT

DOCT. CODE	DRAWN	JTD	APPROVED	JDM
C1	CHECKED	JDM	DATE	04/30/99

J78590



Materials Of Construction

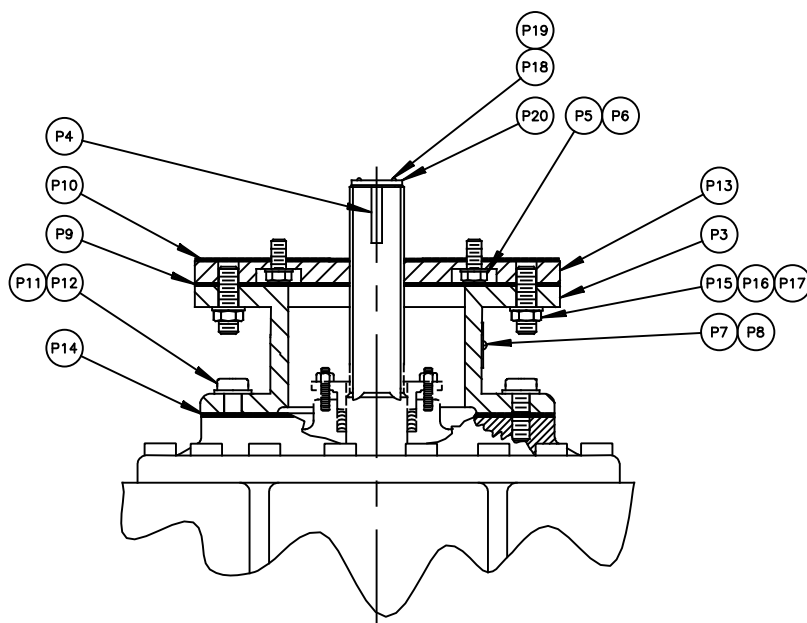
DRAWING(S): J78590(A00)

SALES ORDER: SO116840

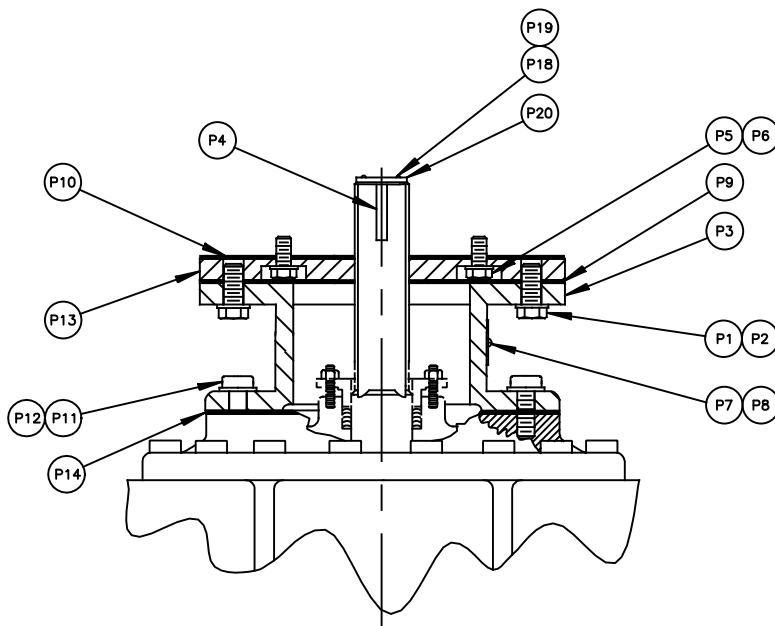
DESCRIPTION: PEC,24,F1,CI,NBR,NBR,DTR-S30SC0*X,SB16*A36115

ITEM	MATERIAL
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A03	IRON, ASTM A126, CLASS B
A03	ACRYLONITRILE-BUTADIENE (NBR)
A04	CARBON STEEL, ASTM A108, GRADE 12L14
A05	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A06	IRON, ASTM A126, CLASS B
A07	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A08	STAINLESS STEEL, TYPE 316
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A10	STAINLESS STEEL, TYPE 316, ASTM A276, CONDITION A
A11	IRON, ASTM A126, CLASS B
A12	STAINLESS STEEL, TYPE 316
A13	STAINLESS STEEL, TYPE 316
A14	STAINLESS STEEL, TYPE 302
A15	STAINLESS STEEL, TYPE 18-8
A16	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A17	STEEL, ASTM A36
A18	STAINLESS STEEL, TYPE 316

A19	TETRAFLUOROETHYLENE (TEFLON), SELF LUBRICATING, WITH 304 STAINLESS STEEL BACKING
A20	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A21	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A22	IRON, ASTM A126, CLASS B
A23	STAINLESS STEEL, TYPE 316
A24	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A25	STEEL



ALTERNATE MOUNTING



NO	PART NAME	QTY
P1	SCREW	—
P2	LOCKWASHER	—
P3	ADAPTOR FAB	1
P4	KEY	1
P5	SCREW	—
P6	WASHER	—
P7	DATA PLATE	1
P8	DRIVE SCREW	2
P9	GASKET (BURIED SERVICE ONLY)	1
P10	GASKET (BURIED SERVICE ONLY)	1
P11	SCREW	—
P12	WASHER	—
P13	ADAPTOR PLATE (WHEN REQUIRED)	1
P14	GASKET (BURIED SERVICE ONLY)	1
P15	STUD	—
P16	LOCKWASHER	—
P17	NUT	—
P18	SCREW (WHEN REQUIRED)	1
P19	LOCKWASHER (WHEN REQUIRED)	1
P20	PLATE (WHEN REQUIRED)	1

NOTES:

1. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE. ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
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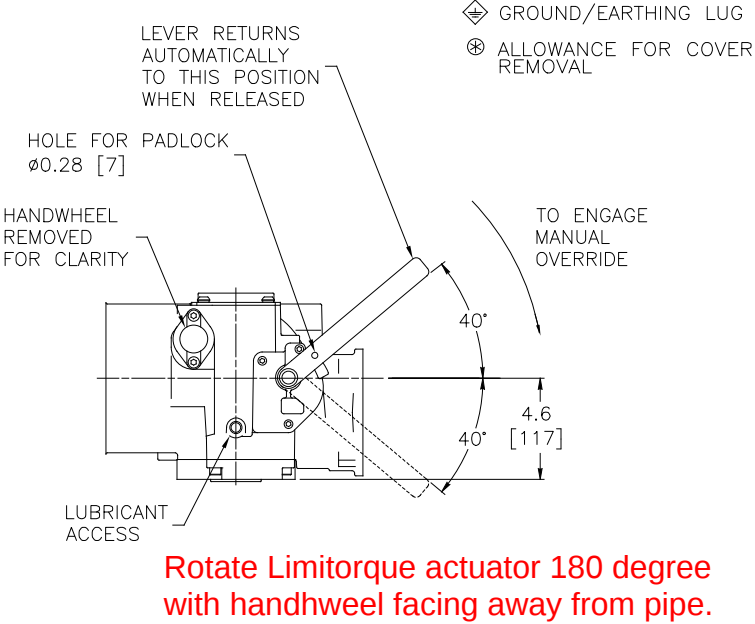
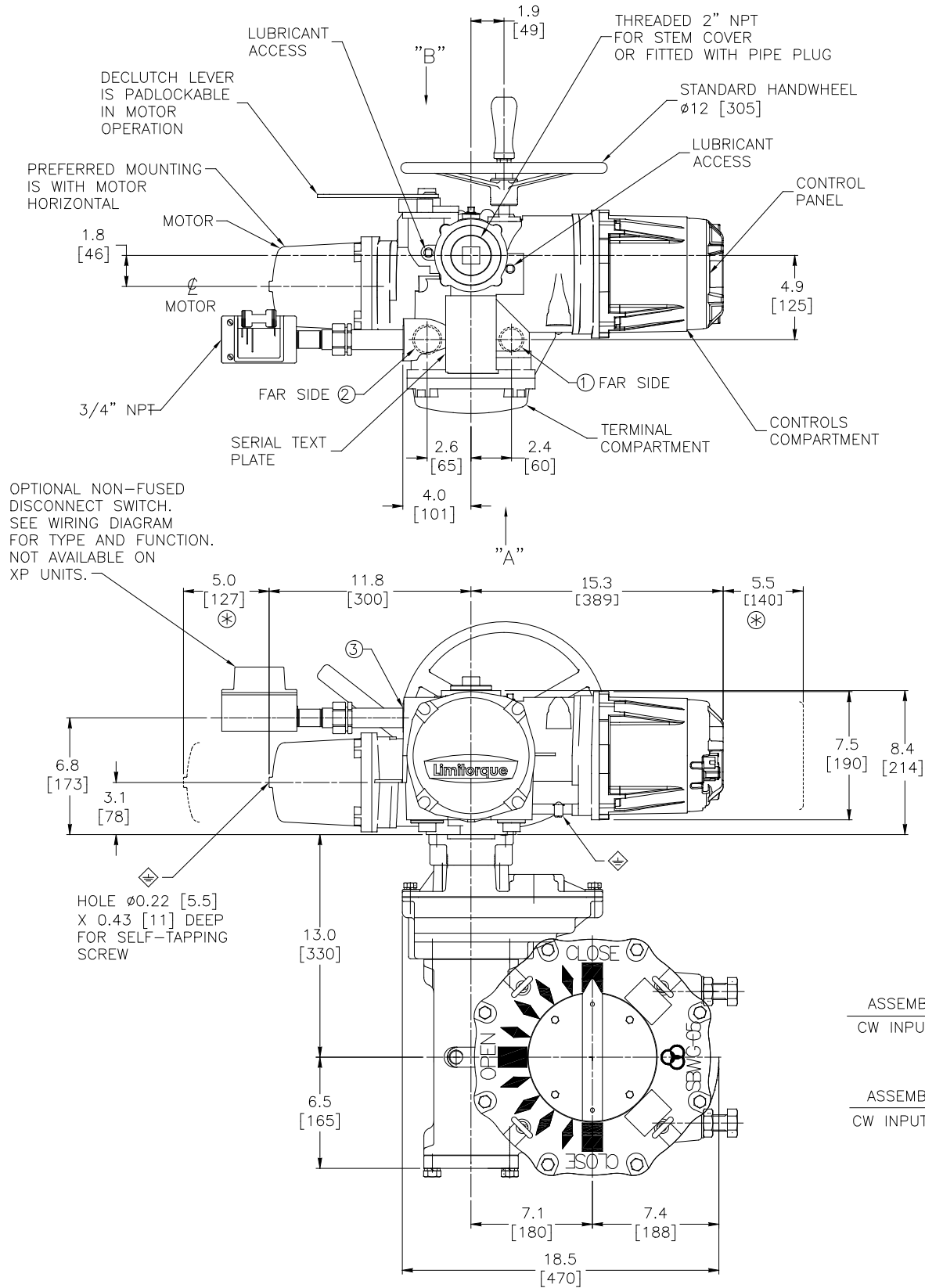


www.dezurik.com

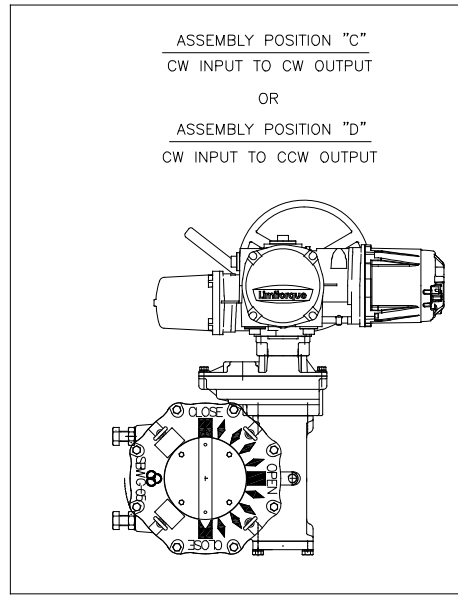
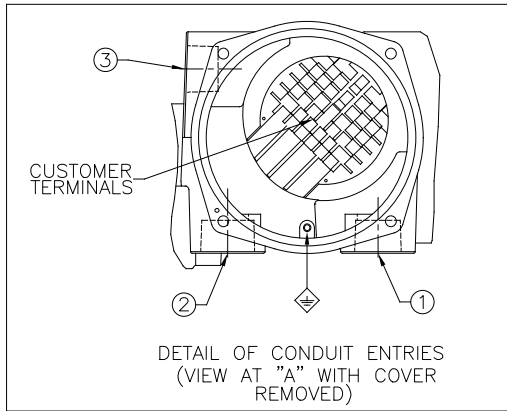
CONNECTING PARTS NON-STANDARD ACTUATOR
FUW 20.5 - 54 PEC ECCENTRIC VALVE

DOCT. CODE	DRAWN	APPROVED
C1	CHECKED	JDM
	JDM	DATE 08/20/99

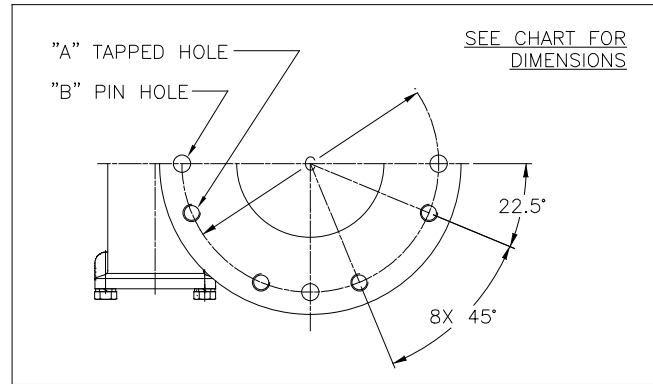
J78828



CONDUIT ENTRIES			
POSITION	①	②	③
STANDARD	1 1/4" NPT	1 1/2" NPT	1 1/4" NPT
OPTIONS	M32	M40 M32	M32
	PG21	PG29	PG21



ASSEMBLY POSITION "A"
CW INPUT TO CW OUTPUT
OR
ASSEMBLY POSITION "B"
CW INPUT TO CCW OUTPUT



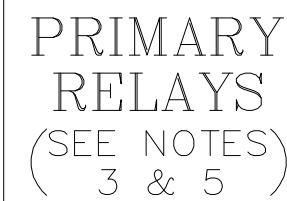
NOTE:
1. SEE CERTIFICATION SHEET TO DETERMINE BASE SUPPLIED.
2. SEE CUSTOMER DATA SHEET TO DETERMINE BASE AND ASSEMBLY POSITION SUPPLIED.

MOUNTING BASE		A	B	C
MSS (INCH)	FA25	(8) 5/8-11 UNC TAP X 24 DP	(4) Ø.63 PIN X .63 DP	Ø10.0
	FA30	(8) 3/4-10 UNC TAP X 30 DP	(4) Ø.79 PIN X .79 DP	Ø11.7
ISO (METRIC)	F25	(8) M16 TAP X 24 DP	(4) Ø16 PIN X 16 DP	Ø254
	F30	(8) M20 TAP X 30 DP	(4) Ø20 PIN X 20 DP	Ø298

REV	CHG NO	DATE	REVD	CHKD	APVD

THIS PROPRIETARY AND/OR CONFIDENTIAL MATERIAL IS THE PROPERTY OF FLOWSERVE CORP. AND IS FURNISHED ONLY FOR THE PURPOSE INDICATED. FLOWSERVE RESERVES ALL RIGHTS IN THE MATERIAL, AND DOES NOT CONVEY PERMISSION TO MANUFACTURE OR USE THE CONFIDENTIAL OR PROPRIETARY INFORMATION CONTAINED HEREIN.

JOB NUMBER		5114 WOODALL ROAD, LYNCHBURG, VA. USA 24506-1318		
DRW: NAV	DATE: 3-3-20	DRAWING TITLE		
CKD: RHD	DATE: 3-3-20	MX-10 STANDARD UNIT WITH: A) SIDE MOUNTED HANDWHEEL B) OPTIONAL DISCONNECT SWITCH C) WG-05-1SD WORM GEAR OPERATOR		
APV: MWR	DATE: 3-12-20	DRAWING NUMBER		REV.
ALL DIMENSIONS ARE REFERENCE UNLESS OTHERWISE SPECIFIED		SIZE C	03-654-0012	1
3rd ANGLE		SCALE NONE	UNITS	SHEET 1 OF 1



1. REMOTE INPUTS

SIGNAL THRESHOLD - MINIMUM "ON" 19.2V AC/DC
MAXIMUM "OFF" 5.0V AC/DC
MAX LOAD - 10 mA / 110V AC

REQUIRED CONTROL SIGNAL DURATION = 350ms MIN.
INPUTS 0, 1, & 2 ARE FIELD CONFIGURABLE FOR
CLOSE/OPEN/BOTH INHIBIT, USER INPUT, OR ESD.

INPUT 2 MAY ALSO BE CONFIGURED FOR CSE
REMOTE SELECTION INDICATION.

DEFAULT INPUT CONFIGURATION
 INPUT 0 – ESD,
 INPUT 1 – OPEN INHIBIT,
 INPUT 2 – CLOSE INHIBIT.

2. REMOTE INPUT JUMPERS

JUMPERS CAN BE USED WIRE TO CONNECT DIG COMMONS #1, 2 & 3 (AS NEEDED). THE 3 REMOTE WIRING GROUPS ARE ELECTRICALLY ISOLATED, INTERNALLY. ONLY A SINGLE POWER SOURCE MAY BE USED TO POWER ANY ONE GROUP, BUT DIFFERENT SOURCES MAY POWER DIFFERENT GROUPS. IF DIFFERENT SOURCES ARE USED, ENSURE THAT THE POLARITIES ARE CORRECT.

3. DEFAULT [S] SETTINGS

THE DEFAULT OPERATING CONFIGURATION FOR THE "S" OUTPUTS ARE SHOWN IN THE TABLE BELOW. THE CONTACT STATES SHOWN IN THE SCHEMATIC REPRESENT A FULLY CLOSED VALVE. SEE OPERATION MANUAL FOR ALTERNATE CONFIGURATIONS.

OUTPUT SWITCH CONTACT DEVELOPMENT			
OUTPUT SWITCH	VALVE POSITION		FUNCTION
	FULL CLOSE	FULL OPEN	
S1			CLOSE LIMIT
S3			
S2			OPEN LIMIT
S4			

— — OPEN CONTACT
 ■■■■ CLOSED CONTACT

4. MAXIMUM EXTERNAL LOAD

TERMINALS 21 AND 22 (24 VDC)
— 5W MAX. EXT. LOAD

5. CONTACT RATINGS

S1-S4 - 5 AMPS @ 250 VAC OR 30VDC (RESISTIVE)
THE TOTAL COMBINED CURRENT THROUGH ALL FOUR
STATUS CONTACTS (S1-S4) MUST NOT EXCEED 8A
MONITOR- 5 AMPS @ 250 VAC OR 30 VDC (RESISTIVE)

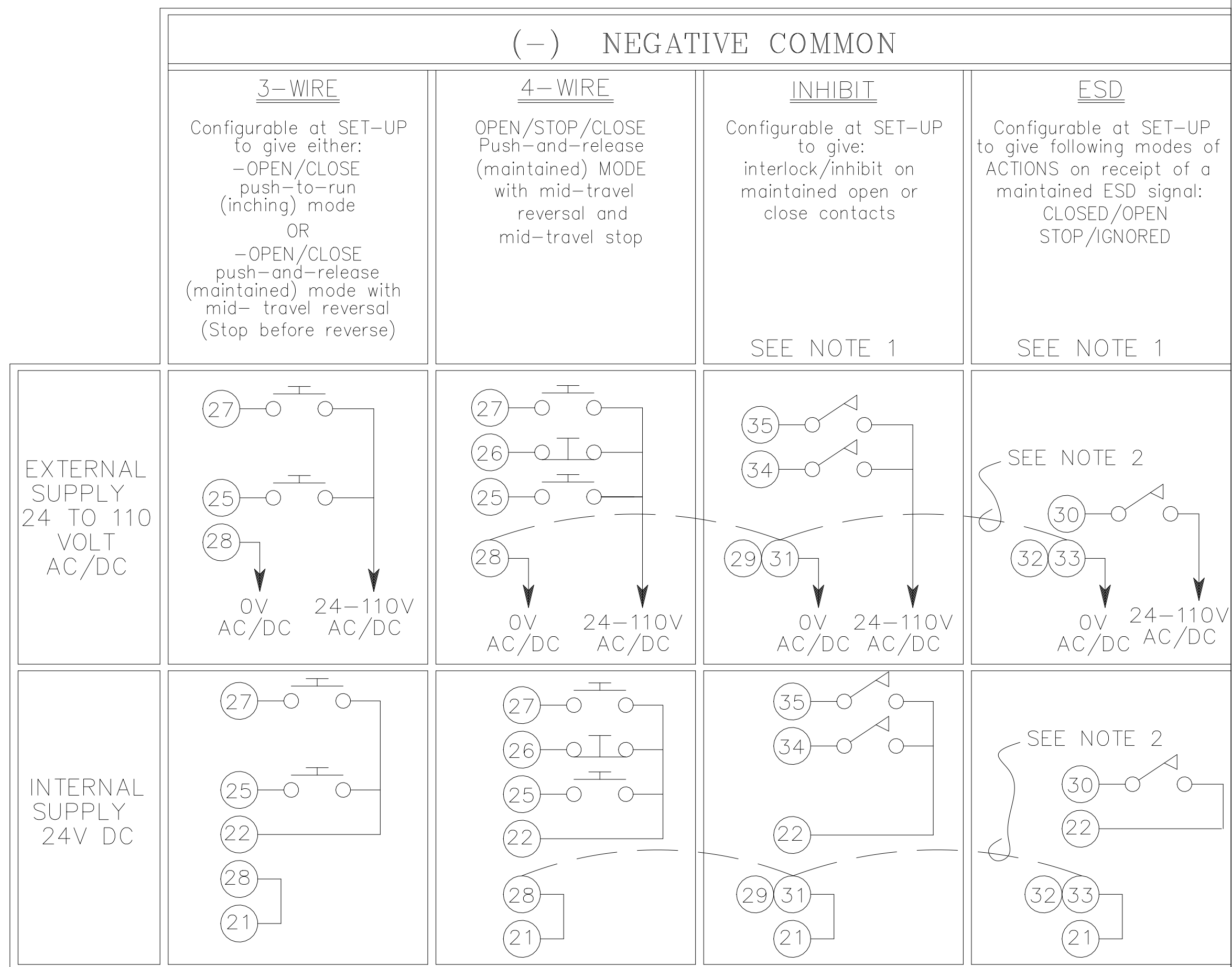
6. FUSES

FS1 (PRIMARY)	}	600V AC, 1A, 100kA Int RATING, FAST ACTING 10.3 x 38.1mm TUBE. UL LISTED, CSA CERTIFIED
FS2 (PRIMARY)		

TYPE	TAPS	APPL. VOLTAGES
1	106V	110V
	115V	115V, 120V
	200V	208V
	212V	220V
2	226V	226V, 230V, 240V
	366V	380V
	392V	400V, 415V
	450V	440V, 460V, 480V
3	212V	220V
	505V	525V
	530V	550V
	572V	575V, 600V

7. AUXILLIARY INPUTS

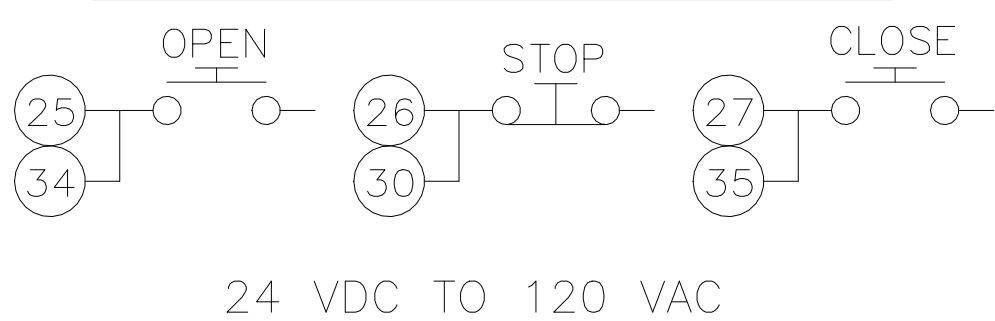
BACK-UP UPS POWER MAY BE CONNECTED: 24VDC TO TERMINALS 6 & 7, MAX. CURRENT DRAW 1 AMP; 12VDC TO TERMINALS 8 & 9, MAX. CURRENT DRAW 2 AMPS. THIS POWERS ALL CONTROLS AND OPTION BOARDS FOR LOCAL/REMOTE INDICATION AND CONFIGURATION. THE REVERSING CONTACTOR WILL NOT BE POWERED. CUSTOMER MUST SUPPLY FUSES AS REQUIRED BY LOCAL ELECTRICAL CODES.



REMOTE WIRING CONNECTIONS

TERMINAL POINT FUNCTION	CLOSE (27)	+24V DC (22)	0V DC (21)	OPEN INHIBIT (34)	DIG COM #1 (28)
STOP (26)		+110V AC (23)	0V AC (24)	CLOSE INHIBIT (35)	DIG COM #2(A) (29)(31)
OPEN (25)		EXTERNAL SUPPLY ↓		ESD (30)	DIG COM #3(A) (32)(33)

LIMIGARD CONFIG. WIRING



DRAWN	DATE	 <i>Limitorque Actuation Systems</i> 5114 WOODALL ROAD, LYNCHBURG, VIRGINIA 24506-1318				
NWN	01/16/20	TITLEMXb WIRING DIAGRAM StandardBluetooth No Analog Mechanical Contactor R4 (4) 5A, (1) 5A monitor relay 3Wire/4Wire Negative Common				
CHECKED	DATE					
JPS	01/17/20					
APPROVED	DATE					
EMO	01/20/20	UNIT TYPE	MXb	DWG NO WD-MXb-040000-0101	REV 00B	SHEET 1 OF 1



Submittal Data Sheet
Date: August 15, 2024

ECO TECH INC
PO BOX 956
HOLLY SPRINGS GA 30142
United States

P.O. 24051GA-16
FACTORY ORDER SO116840
PROJ. NAME 24051GA - Lower Poplar WRF Influent PS

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
10		1	9741836	PEC,24,F1,CI,NBR,NBR,DTR-S30SC0*X,SB16*A36115

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	24	24 Inch (600mm); SST Bearings; Welded-in Nickel Seat
End Connection	F1	Flanged Drilling; ASME Class 125/150
Body Material	CI	Cast Iron
Packing	NBR	.5" - 3" Acrylonitrile-Butadiene Reinforced filler in a PTFE U-ring, -20 to 180° F. (-29 to 83° C.); 4" & Larger Acrylonitrile-Butadiene Reinforced V-type, -20 to 250° F. (-29 to 121° C.)
Plug Facing	NBR	Acrylonitrile-Butadiene; -20 to 180° F. (-29 to 83° C.)
Options	DTR	DeZURIK Standard Certified Production Hydrostatic Shell and Seat Test Report
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10) surface prep
Actuator	X	Specify Actuator in Special Construction
Stainless Steel Bolting & Tubing	SB16	316 Stainless Steel Bolting

Temperature Range	-20 to 180 Degrees
Valve Pressure	F. to 150 psig

RELATED DOCUMENTS

Z21271: DWG INST PEC F1 LIM MX-10/WG-05-1SD GR1 20.5-36"
J78590: DWG VALVE ASSY PEC F1 20.5-36 W/PLUG SUPPORT
J78828: DWG CONN PARTS 20.5-54 PEC

MODIFIER

LIMITORQUE - MXb-10/WG-05-1SD-D - PN:1464168

FEATURES

TAG: PV-5



Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

Phone: 434-528-4400
Fax:

Customer Data Sheet

SALES ORDER NO. 205928 REV 0	ORDER LINE 001	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225334.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

ACTUATOR INFORMATION

Electric Actuator Type MX-10 Series B
Enclosure Type WP&SUBM NEMA 3,4,4X,6,IP68
Electric Output RPM 100
Valve Torque 3083 Ft Lbs 4181 Nm
MX/Gear Box Max Rated Torque 8288 Ft Lbs 11239 Nm
MX/Gear Box Stall Torque 12478 Ft Lbs 16920 Nm
Operating Time for 90 degrees 58 Sec
Handwheel SIDE Mounted 12 Inch
Open Direction CCW
Lube SHC-632
Gear Box Type WG-05-1SD-D
Gear Box Ratio 388:1
Gear Box SGA Ratio NA
Gear Box Position A
Gear Box Base MSS-FA30
Gear Box Output RPM 0.26
Outline Drawing 03-654-0012
Sun Shade Drawing NA
Wiring Diagram WD-MXb-040000-0101
Disconnect Diagram NA
Conduit Entries 1-1/4,1-1/2,1-1/4,NONE
2-Speed Timer N Quik Board N
Control Options Network:STD Digital:R4 Analog:NONE
Main Board BLUETOOTH/UPS Wire Controls 3 WIRE MAINT
Disconnect Switch NONE
Warranty STANDARD

MOTOR INFORMATION

Motor Size 9 FT-LBS
Motor Voltage 480
Mtr Phase/Frequency Hz 3/60
Motor Horsepower 0.49
Motor RPM 1800
Locked Rotor Amps (LRA) 7.0
Full Load Amps (FLA) 1.7

Instruction Manual VAIOM000071 on the internet www.limitorque.com
Qualifications: The MX complies with all the test parameters identified in Limitorque MX qualification testing bulletin AIBR000087. Installation of the MX in environments outside the parameters identified in bulletin AIBR000087 voids the warranty.



Limitorque

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END PROJECT

TAGGING AND INFORMATION:
TAG: 1464168

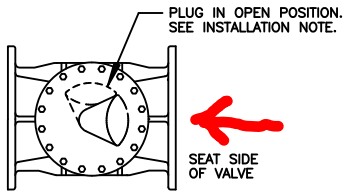
VALVE SIZE	PIPE SIZE		DIMENSIONS INCHES MILLIMETERS									
	IN	MM	A	B	C	D	E	F	G	H	J	K
20.5	20	500	$\frac{1.25}{32}$	$\frac{42.00}{1067}$	$\frac{18.31}{465}$	$\frac{25.00}{635}$	1-1/8-7UNC	20	THRU	N/A	N/A	$\frac{21.19}{538}$
24	24	600	$\frac{1.88}{48}$	$\frac{42.00}{1067}$	$\frac{18.31}{465}$	$\frac{29.50}{749}$	N/A	N/A	N/A	$\frac{1.38}{35}$	20	$\frac{21.19}{538}$
24.5	24	600	$\frac{1.94}{49}$	$\frac{42.00}{1067}$	$\frac{21.88}{556}$	$\frac{29.50}{749}$	1-1/4-7UNC	20	$\frac{1.50}{38}$	N/A	N/A	$\frac{25.75}{654}$
30	30	750	$\frac{2.12}{54}$	$\frac{51.00}{1295}$	$\frac{21.88}{556}$	$\frac{36.00}{914}$	N/A	N/A	N/A	$\frac{1.38}{35}$	28	$\frac{25.75}{654}$
30.5	30	750	$\frac{2.12}{54}$	$\frac{51.00}{1295}$	$\frac{24.81}{630}$	$\frac{36.00}{914}$	1-1/4-7 UNC	28	$\frac{2.00}{51}$	N/A	N/A	$\frac{29.44}{748}$
36	36	900	$\frac{2.38}{60}$	$\frac{60.00}{1524}$	$\frac{24.81}{630}$	$\frac{42.75}{1086}$	N/A	N/A	N/A	$\frac{1.62}{41}$	32	$\frac{29.44}{748}$

A	VALVE
C	MOTOR W/GEARBOX
P	CONNECTING PARTS

NOTES:

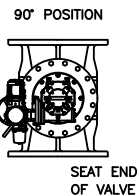
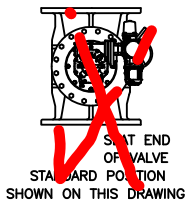
1. FLANGES ARE FLAT FACED WITH DIAMETER AND DRILLING TO CLASS 125 ANSI STANDARD B16.1, EXCEPT FOR TAPPED HOLES AS INDICATED. SEE A-16368 FOR NON-ANSI FLANGE DATA.
2. FOR MANUAL OPERATION PUSH LEVER IN DIRECTION OF ARROW ONLY. UNIT REMAINS IN HAND OPERATION UNTIL MOTOR IS ENERGIZED.
3. INSTALLATION NOTE:

- FOR LIQUIDS & GASES:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST END OPPOSITE SEAT.
- FOR SUSPENDED SOLIDS, SLURRIES, ETC:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST SEAT END. IN HORIZONTAL PIPELINES, VALVE SHOULD BE INSTALLED ON IT'S SIDE SO PLUG ROTATES TO THE TOP OF THE PIPELINE WHEN OPEN. (SEE DIAGRAM BELOW).

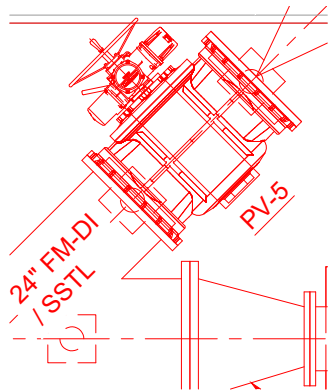
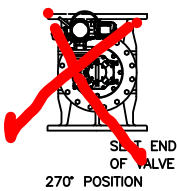


ACTUATOR MOUNTING POSITIONS AS VIEWED FROM TOP OF VALVE. DOTTED LINES SHOW OPTIONAL MOUNTING POSITIONS.

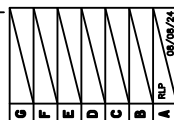
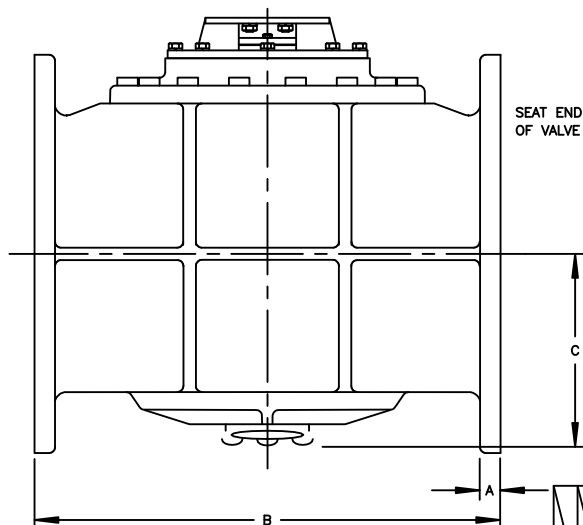
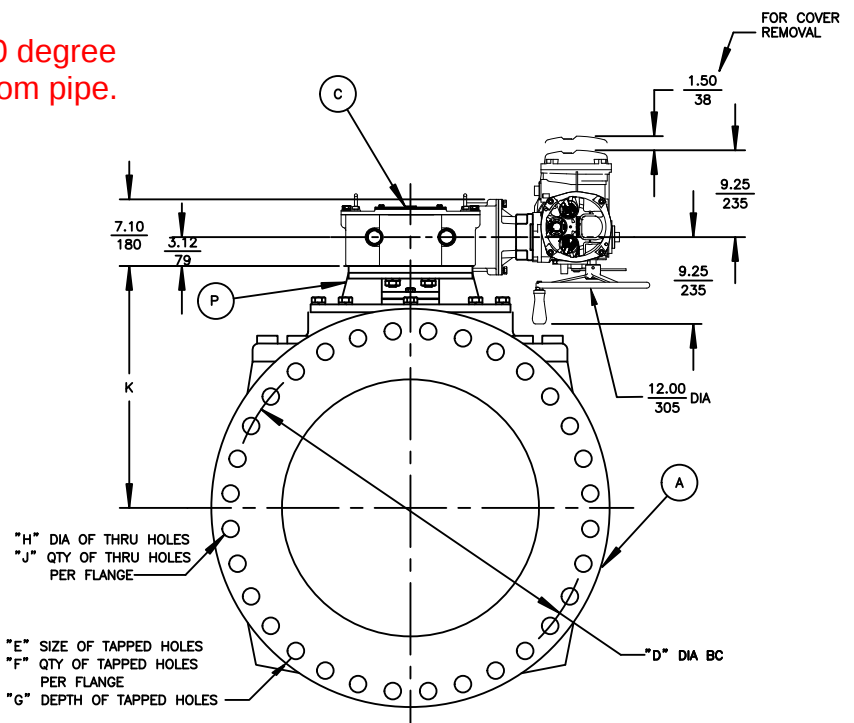
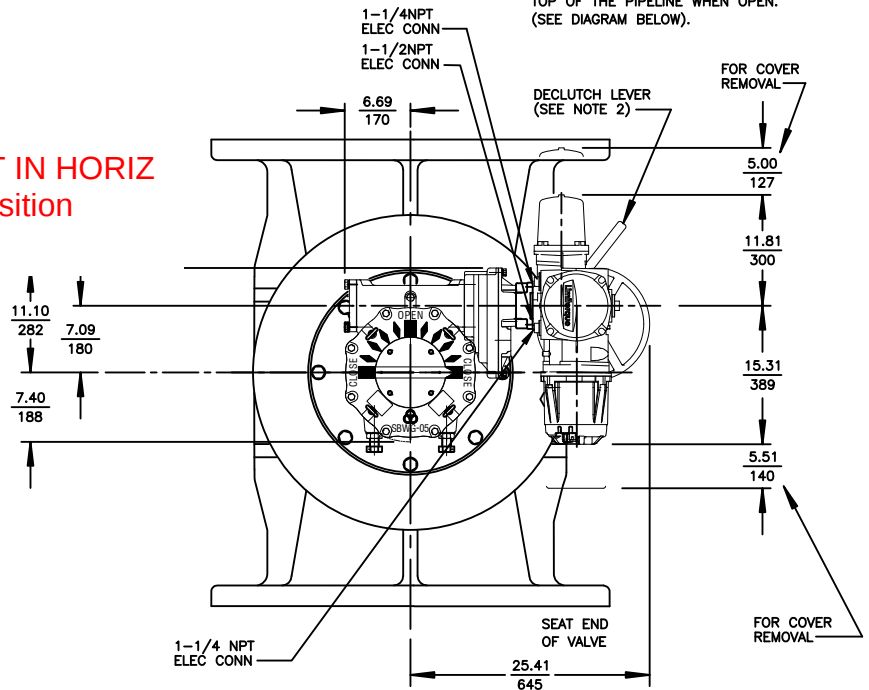
**PV-5 INSTALLED W/ SHAFT IN HORIZ
Main Gear in 180 degree Position**



180° POSITION



**Rotate Limitorque actuator 180 degree
with handwheel facing away from pipe.**

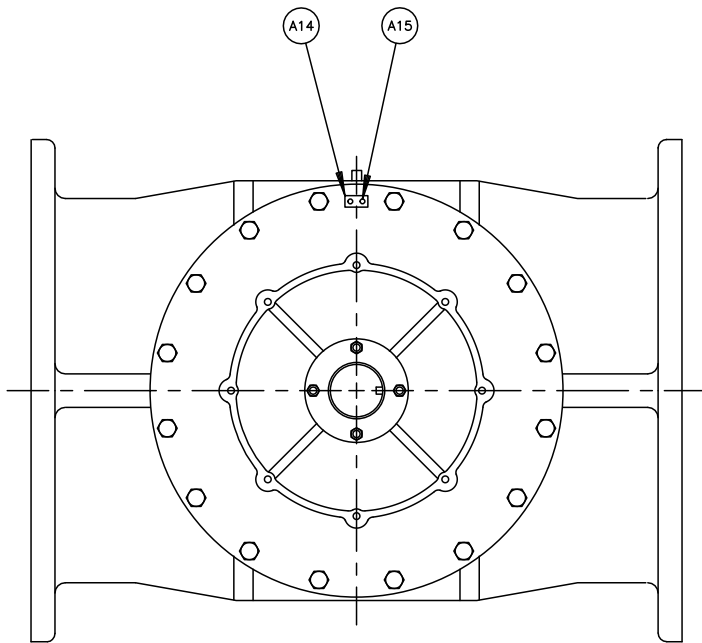


DeZURIK.com

PEC ECCENTRIC VALVES SIZE 20.5-36 FLANGED, MATERIAL GROUP 1
LIMITORQUE MX-10/WG-05-1SD MOTOR ACTUATOR

DOCT. CODE	DRAWN	JE	APPROVED	JWM
C1	CHECKED	JWM	DATE	08/08/24

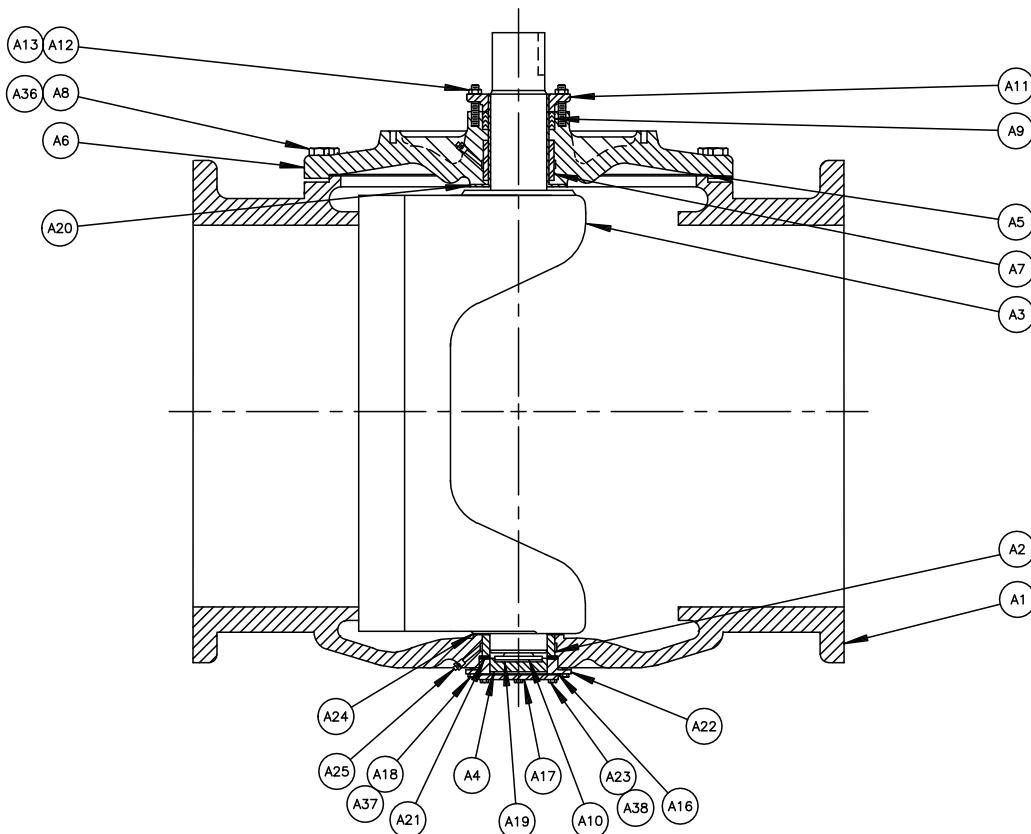
Z21271



NO	PART NAME	QTY
A1	BODY	1
A2	BEARING	1
A3	PLUG	1
A4	RETAINER NUT	1
A5	GASKET (BODY)	1
A6	BONNET	1
A7	BEARING	1
A8	SCREW	16
A9	PACKING	—
A10	THRUST PLATE	1
A11	GLAND	1
A12	STUD	4
A13	NUT	4
A14	CAUTION TAG	1
A15	DRIVE SCREW	2
A16	GASKET	1
A17	COVER	1
A18	SCREW	6
A19	BEARING	1
A20	GRIT EXCLUDER	1
A21	GASKET (JOURNAL COVER)	1
A22	JOURNAL COVER	1
A23	SCREW	6
A24	GRIT EXCLUDER	—
A25	PIPE PLUG	2
A36	WASHER (FUSION COATING)	16
A37	WASHER (FUSION COATING)	6
A38	WASHER (FUSION COATING)	6

NOTE:

1. RECOMMENDED SPARE PARTS ARE ITEMS A3, PLUG (IF RUBBER FACED) A5, A9, A16 & A21.
2. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE, ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
3. CLOCKWISE ROTATION ON PLUG STEM CLOSSES VALVE.



70943	03/24/20
63446	08/07/17
50312	11/04/08
50312	03/28/08

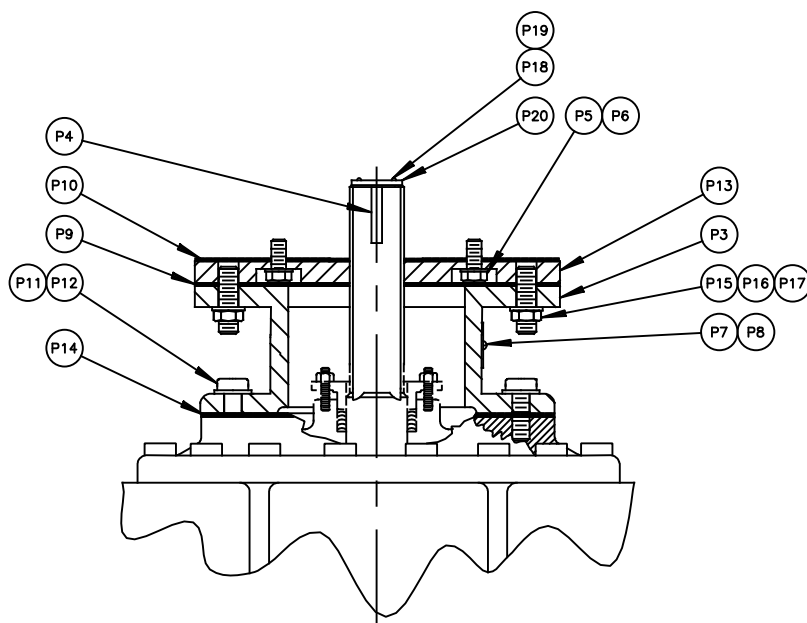


PEC ECCENTRIC VALVE ASSEMBLY 20.50-36 FLANGED VALVES WITH PLUG SUPPORT

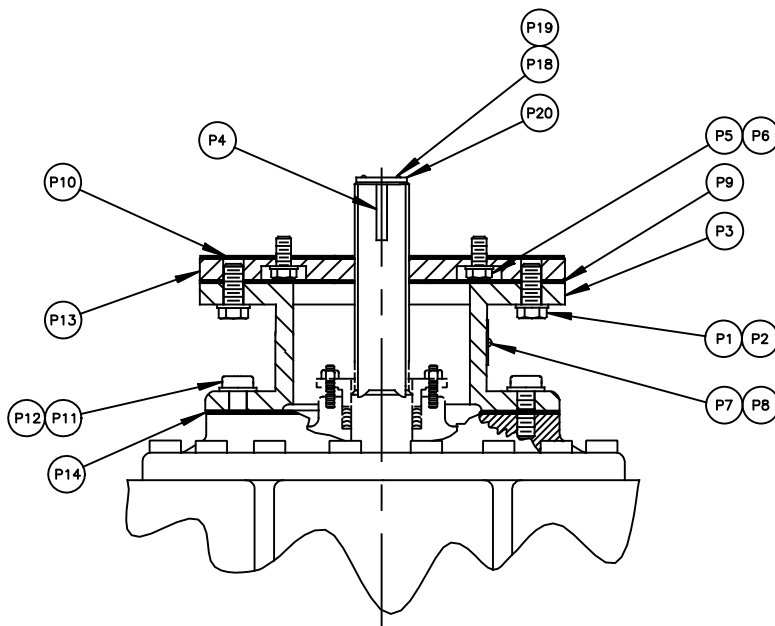
DOCT. CODE	DRAWN	JTD	APPROVED	JDM
C1	CHECKED	JDM	DATE	04/30/99

J78590

A19	TETRAFLUOROETHYLENE (TEFLON), SELF LUBRICATING, WITH 304 STAINLESS STEEL BACKING
A20	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A21	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A22	IRON, ASTM A126, CLASS B
A23	STAINLESS STEEL, TYPE 316
A24	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A25	STEEL



ALTERNATE MOUNTING



NO	PART NAME	QTY
P1	SCREW	—
P2	LOCKWASHER	—
P3	ADAPTOR FAB	1
P4	KEY	1
P5	SCREW	—
P6	WASHER	—
P7	DATA PLATE	1
P8	DRIVE SCREW	2
P9	GASKET (BURIED SERVICE ONLY)	1
P10	GASKET (BURIED SERVICE ONLY)	1
P11	SCREW	—
P12	WASHER	—
P13	ADAPTOR PLATE (WHEN REQUIRED)	1
P14	GASKET (BURIED SERVICE ONLY)	1
P15	STUD	—
P16	LOCKWASHER	—
P17	NUT	—
P18	SCREW (WHEN REQUIRED)	1
P19	LOCKWASHER (WHEN REQUIRED)	1
P20	PLATE (WHEN REQUIRED)	1

NOTES:

1. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE. ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
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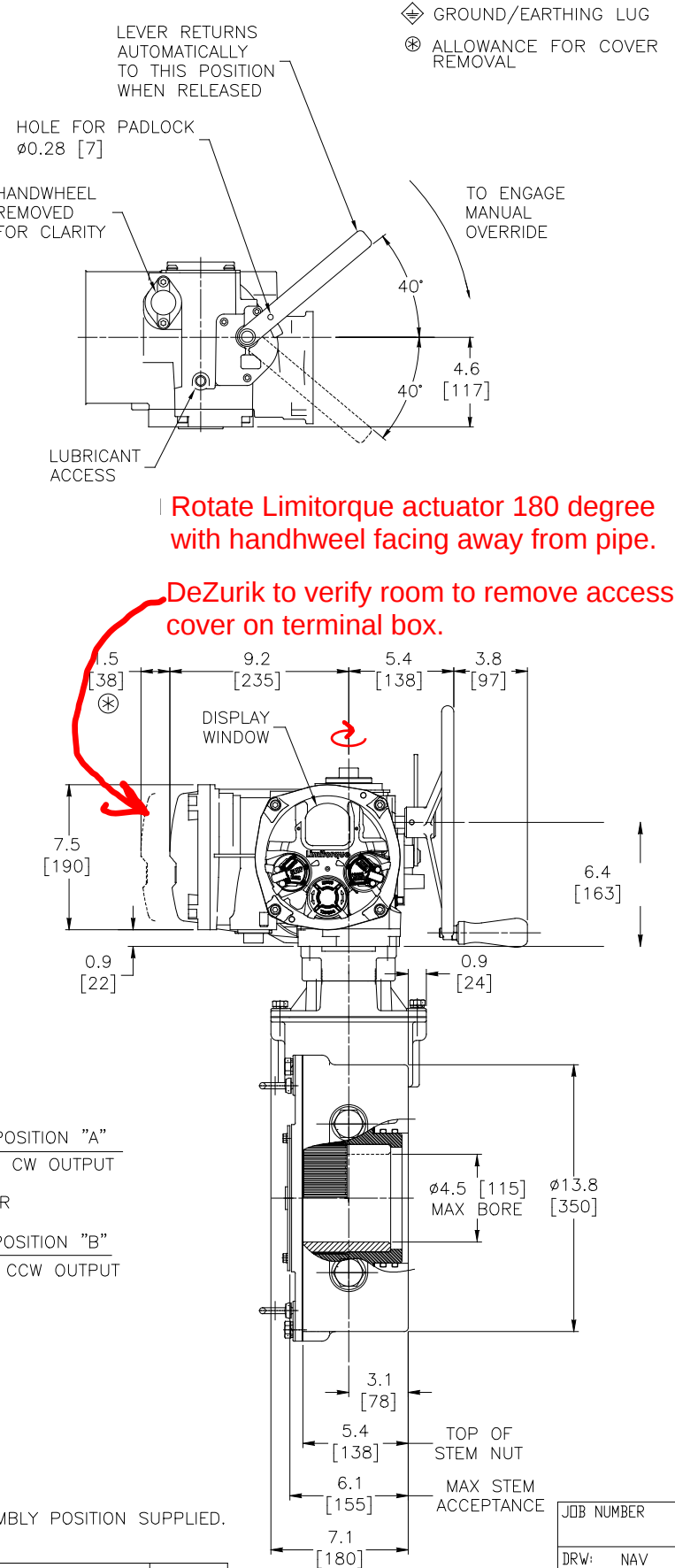
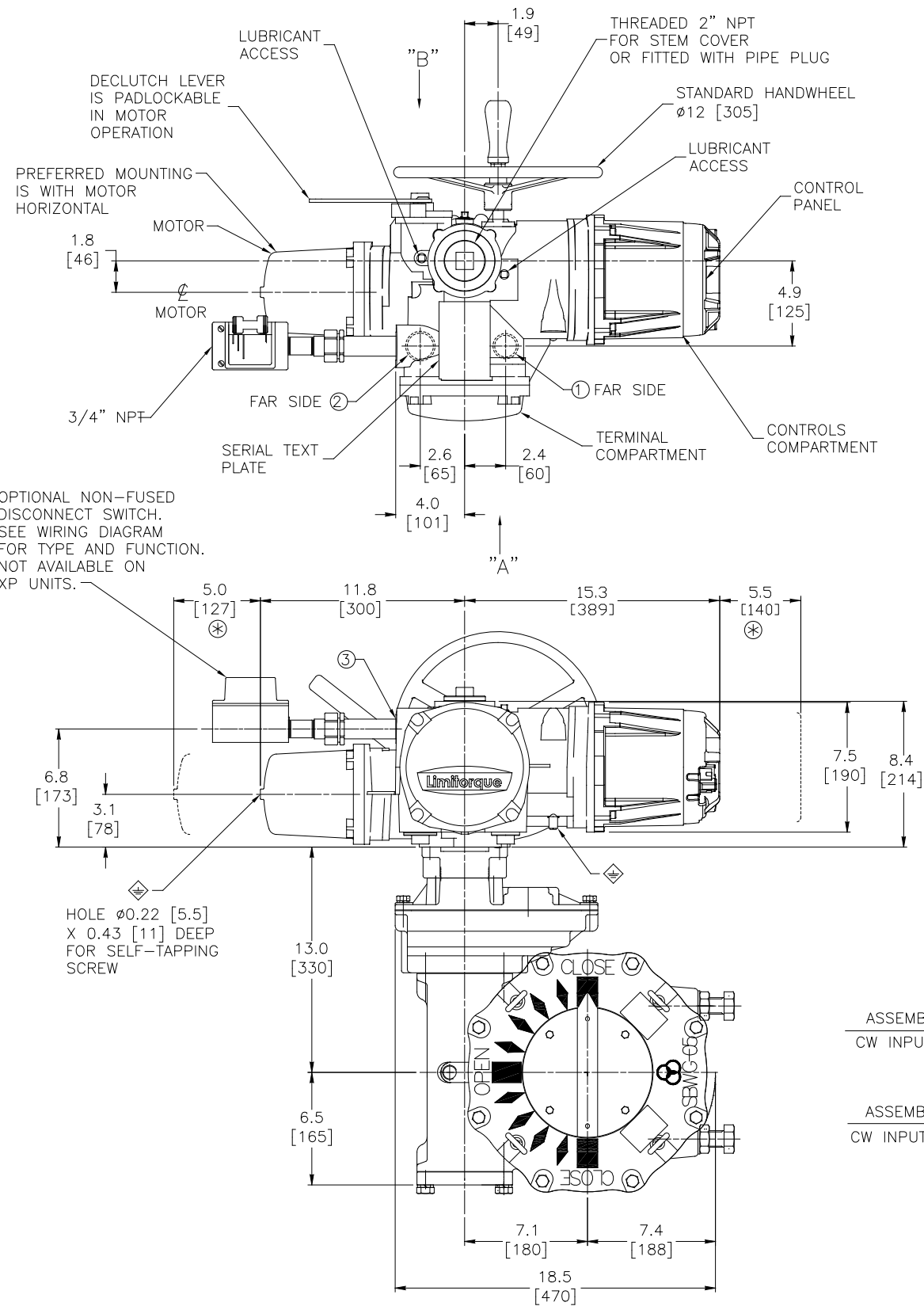


www.dezurik.com

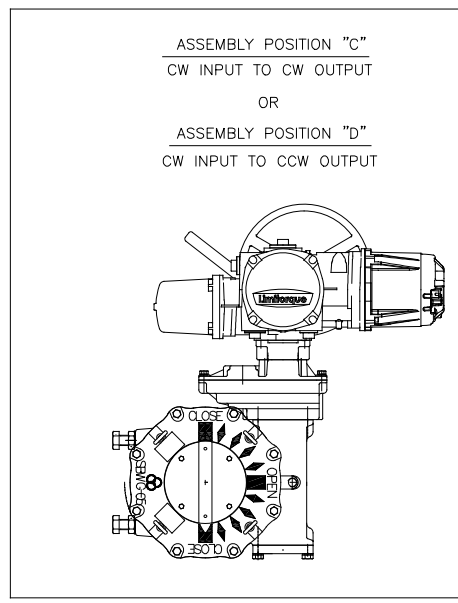
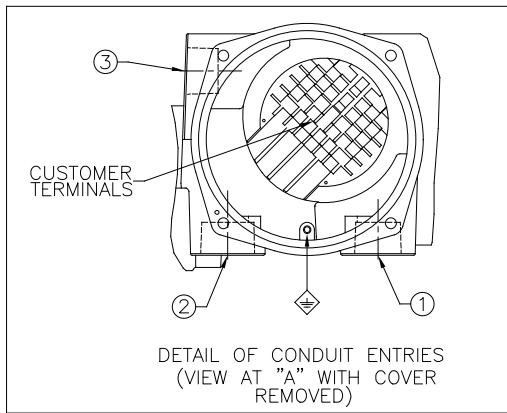
CONNECTING PARTS NON-STANDARD ACTUATOR
FUW 20.5 - 54 PEC ECCENTRIC VALVE

DOCT. CODE	DRAWN	APPROVED
C1	CHECKED	JDM
		DATE 08/20/99

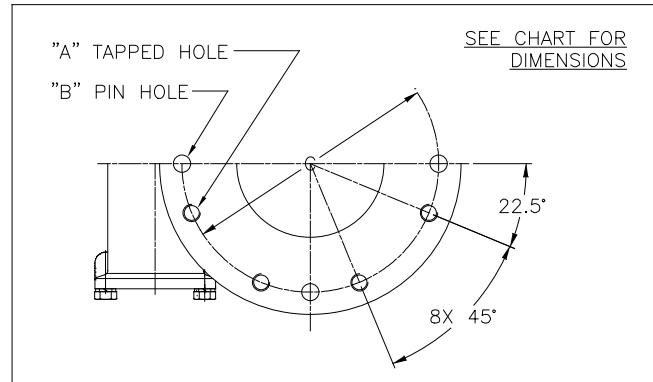
J78828



CONDUIT ENTRIES			
POSITION	①	②	③
STANDARD	1 1/4" NPT	1 1/2" NPT	1 1/4" NPT
OPTIONS	M32	M40 M32	M32
	PG21	PG29	PG21



ASSEMBLY POSITION "A"
CW INPUT TO CW OUTPUT
OR
ASSEMBLY POSITION "B"
CW INPUT TO CCW OUTPUT



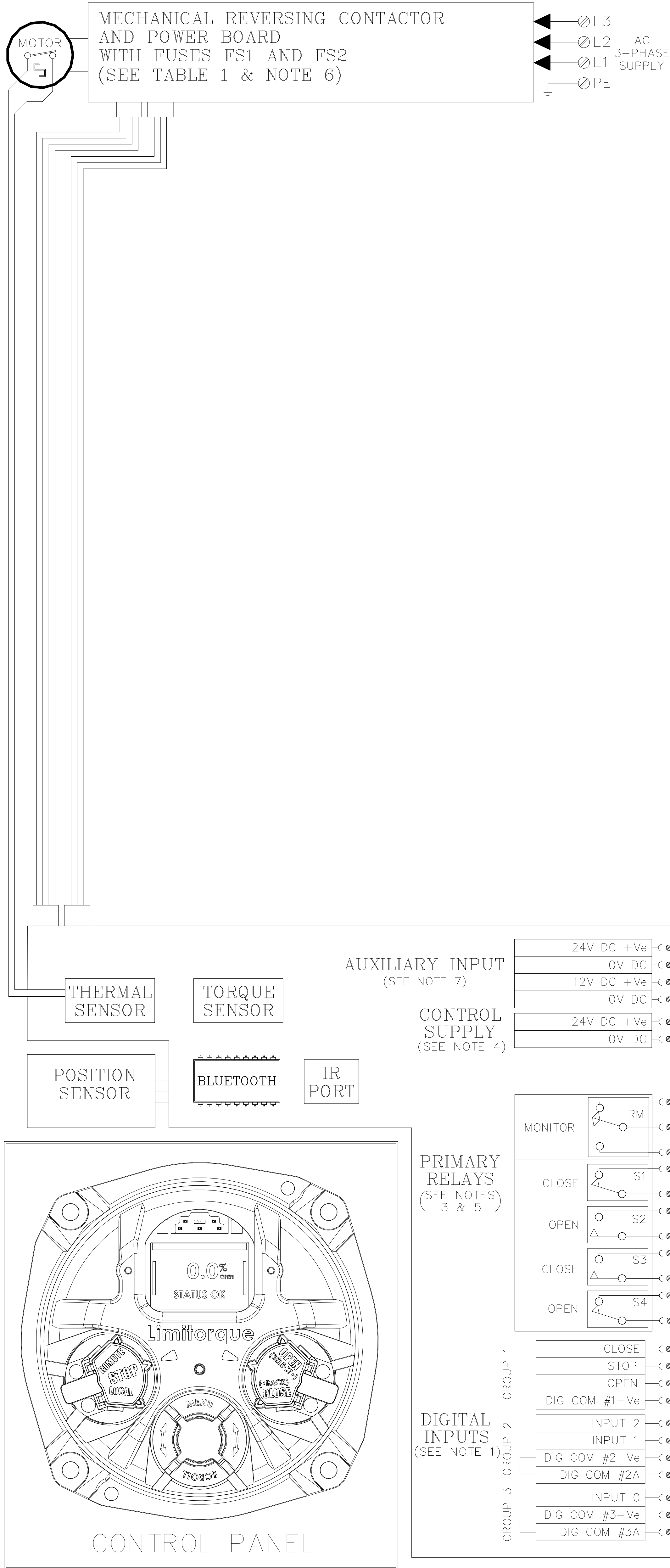
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	FA30	(8) 3/4-10 UNC TAP X 30 DP	(4) Ø.79 PIN X .79 DP	Ø11.7
ISO (METRIC)	F25	(8) M16 TAP X 24 DP	(4) Ø16 PIN X 16 DP	Ø254
	F30	(8) M20 TAP X 30 DP	(4) Ø20 PIN X 20 DP	Ø298

REV	CHG NO	DATE	REVD	CHKD	APVD

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JOB NUMBER		5114 WOODALL ROAD, LYNCHBURG, VA. USA 24506-1318	
DRW: NAV	DATE: 3-3-20	DRAWING TITLE	
CKD: RHD	DATE: 3-3-20	MX-10 STANDARD UNIT WITH: A) SIDE MOUNTED HANDWHEEL B) OPTIONAL DISCONNECT SWITCH C) WG-05-1SD WORM GEAR OPERATOR	
APV: MWR	DATE: 3-12-20	DRAWING NUMBER	
ALL DIMENSIONS ARE REFERENCE UNLESS OTHERWISE SPECIFIED		03-654-0012	
3rd ANGLE		SCALE	NONE
		UNITS	SHEET 1 OF 1



NOTES: (SEE INSTALLATION & OPERATION MANUAL VAIOM000071 FOR DETAILS)

CIRCUIT SHOWN WITH VALVE IN FULLY CLOSED POSITION AND WITH POWER OFF.

1. REMOTE INPUTS

SIGNAL THRESHOLD – MINIMUM "ON" 19.2V AC/DC
MAXIMUM "OFF" 5.0V AC/DC
MAX LOAD – 10 mA / 110V AC

REQUIRED CONTROL SIGNAL DURATION = 350ms MIN.
INPUTS 0, 1, & 2 ARE FIELD CONFIGURABLE FOR
CLOSE/OPEN/BOTH INHIBIT, USER INPUT, OR ESD.
INPUT 1 MAY ALSO BE CONFIGURED FOR
PARTIAL STROKE TEST.
INPUT 2 MAY ALSO BE CONFIGURED FOR CSE
REMOTE SELECTION INDICATION.
DEFAULT INPUT CONFIGURATION
INPUT 0 – ESD,
INPUT 1 – OPEN INHIBIT,
INPUT 2 – CLOSE INHIBIT.

2. REMOTE INPUT JUMPERS

JUMPERS CAN BE USER WIRED TO CONNECT DIG COMMONS #1, 2 & 3 (AS NEEDED). THE 3 REMOTE WIRING GROUPS ARE ELECTRICALLY ISOLATED, INTERNALLY. ONLY A SINGLE POWER SOURCE MAY BE USED TO POWER ANY ONE GROUP BUT DIFFERENT SOURCES MAY POWER DIFFERENT GROUPS. IF DIFFERENT SOURCES ARE USED, ENSURE THAT THE POLARITIES ARE CORRECT.

3. DEFAULT [S] SETTINGS

THE DEFAULT OPERATING CONFIGURATION FOR THE "S" OUTPUTS ARE SHOWN IN THE TABLE BELOW. THE CONTACT STATES SHOWN IN THE SCHEMATIC REPRESENT A FULLY CLOSED VALVE. SEE OPERATION MANUAL FOR ALTERNATE CONFIGURATIONS.

OUTPUT SWITCH	VALVE POSITION		FUNCTION
	FULL CLOSE	FULL OPEN	
S1	—	—	CLOSE LIMIT
S3	—	—	
S2	—	—	OPEN LIMIT
S4	—	—	

— OPEN CONTACT
— CLOSED CONTACT

4. MAXIMUM EXTERNAL LOAD

TERMINALS 21 AND 22 (24 VDC)
– 5W MAX. EXT. LOAD

5. CONTACT RATINGS

S1–S4 – 5 AMPS @ 250 VAC OR 30VDC (RESISTIVE)
THE TOTAL COMBINED CURRENT THROUGH ALL FOUR STATUS CONTACTS (S1–S4) MUST NOT EXCEED 8A
MONITOR– 5 AMPS @ 250 VAC OR 30 VDC (RESISTIVE)

6. FUSES

FS1 (PRIMARY) } 600V AC, 1A, 100kA Int RATING,
FAST ACTING 10.3 x 38.1mm TUBE,
UL LISTED, CSA CERTIFIED
FS2 (PRIMARY)

7. AUXILLIARY INPUTS

BACK-UP UPS POWER MAY BE CONNECTED: 24VDC TO TERMINALS 6 & 7, MAX. CURRENT DRAW 1 AMP; 12VDC TO TERMINALS 8 & 9, MAX. CURRENT DRAW 2 AMPS. THIS POWERS ALL CONTROLS AND OPTION BOARDS FOR LOCAL/REMOTE INDICATION AND CONFIGURATION. THE REVERSING CONTACTOR WILL NOT BE POWERED. CUSTOMER MUST SUPPLY FUSES AS REQUIRED BY LOCAL ELECTRICAL CODES.

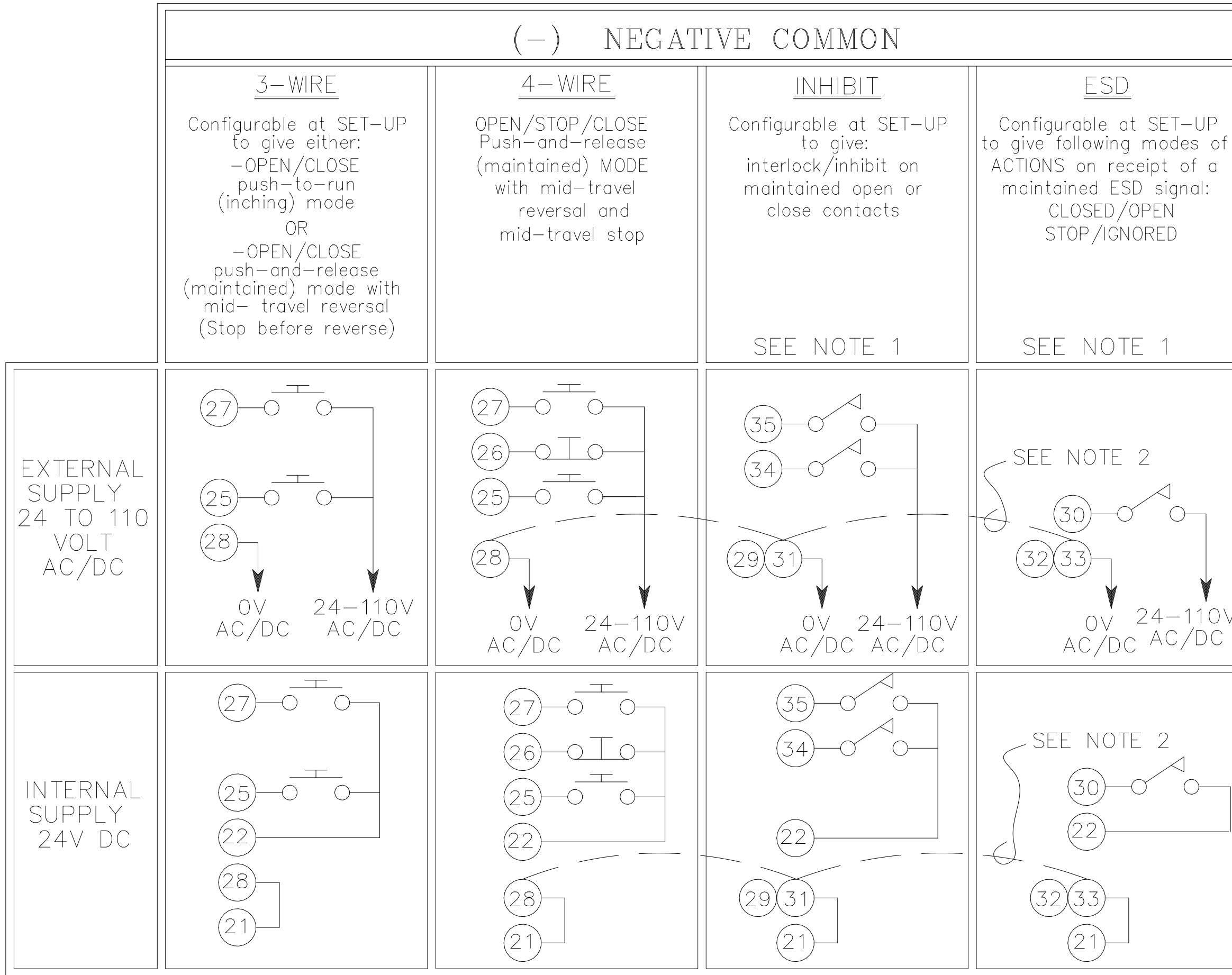
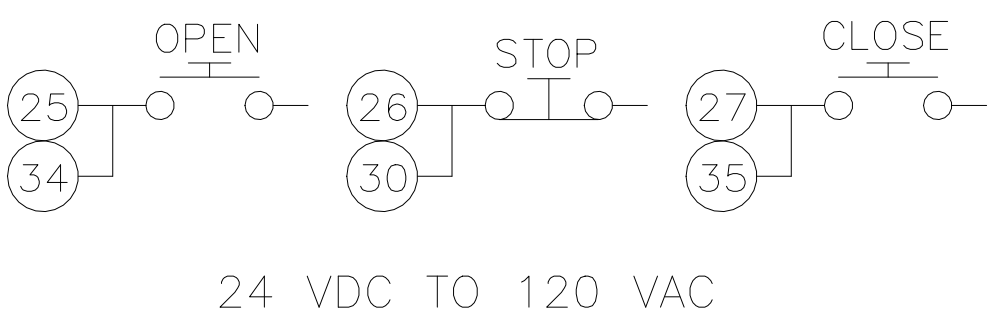


TABLE 1: TRANSFORMER TAPPING OPTIONS			
TYPE	TAPS	APPL. VOLTAGES	
1	106V	110V	
	115V	115V, 120V	
	200V	208V	
	212V	220V	
2	226V	226V,230V,240V	
	366V	380V	
	392V	400V,415V	
	450V	440V,460V,480V	
3	212V	220V	
	505V	525V	
	530V	550V	
	572V	575V,600V	

REMOTE WIRING CONNECTIONS

TERMINAL POINT FUNCTION CLOSE (27) +24V DC (22) 0V DC (21) OPEN INHIBIT (34) DIG COM #1 (28)
STOP (26) +110V AC (23) 0V AC (24) CLOSE INHIBIT (35) DIG COM #2(A) (29/31)
OPEN (25) EXTERNAL SUPPLY ↓ ESD (30) DIG COM #3(A) (32/33)

LIMIGARD CONFIG. WIRING



DRAWN	DATE	FLOWERVE Limitorque Actuation Systems 5114 WOODALL ROAD, LYNCHBURG, VIRGINIA 24506-1318	
NWN	01/16/20	TITLE MXb WIRING DIAGRAM Bluetooth	
CHECKED	DATE	Standard No Analog Mechanical Contactor R4 (4) 5A, (1) 5A monitor relay 3Wire/4Wire Negative Common	
JPS	01/17/20	UNIT TYPE MXb	
APPROVED	DATE	DWG NO WD-MXb-040000-0101	REV 00B
EMO	01/20/20	SHEET 1 of 1	



Submittal Data Sheet
Date: August 15, 2024

ECO TECH INC
PO BOX 956
HOLLY SPRINGS GA 30142
United States

P.O. 24051GA-16
FACTORY ORDER SO116840
PROJ. NAME 24051GA - Lower Poplar WRF Influent PS

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
11		1	9741837	PEC,16,F1,CI,NBR,NBR,DTR-S30SC0*X,SB16*A36116

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	16	16 Inch (400mm); SST Bearings; Welded-in Nickel Seat (Except Rubber Lined or Stainless Steel Bodies)
End Connection	F1	Flanged Drilling; ASME Class 125/150
Body Material	CI	Cast Iron
Packing	NBR	.5" - 3" Acrylonitrile-Butadiene Reinforced filler in a PTFE U-ring, -20 to 180° F. (-29 to 83° C.); 4" & Larger Acrylonitrile-Butadiene Reinforced V-type, -20 to 250° F. (-29 to 121° C.)
Plug Facing	NBR	Acrylonitrile-Butadiene; -20 to 180° F. (-29 to 83° C.)
Options	DTR	DeZURIK Standard Certified Production Hydrostatic Shell and Seat Test Report
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10) surface prep
Actuator	X	Specify Actuator in Special Construction
Stainless Steel Bolting & Tubing	SB16	316 Stainless Steel Bolting

Temperature Range	-20 to 180 Degrees F.
Valve Pressure	to 150 psig

RELATED DOCUMENTS

Z21272: DWG INST PEC F LIM MX-10/WG-35-D 14-20 GRP 1
A20730: DWG VALVE FLG 0350-20IN
J32718: DWG CONN PARTS NON-STD

MODIFIER

LIMITORQUE - MXb-10/WG-35-D - PN:1464169

FEATURES

TAG: PV-6



Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

Phone: 434-528-4400
Fax:

Customer Data Sheet

SALES ORDER NO. 205928 REV 0	ORDER LINE 008	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225342.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

ACTUATOR INFORMATION

Electric Actuator Type MX-10 Series B
Enclosure Type WP&SUBM NEMA 3,4,4X,6,IP68
Electric Output RPM 18
Valve Torque 1280 Ft Lbs 1736 Nm
MX/Gear Box Max Rated Torque 2080 Ft Lbs 2820 Nm
MX/Gear Box Stall Torque 3128 Ft Lbs 4242 Nm
Operating Time for 90 degrees 43 Sec
Handwheel SIDE Mounted 12 Inch
Open Direction CCW
Lube SHC-632
Gear Box Type WG-35-D
Gear Box Ratio 52:1
Gear Box SGA Ratio NA
Gear Box Position A
Gear Box Base MSS-FA16
Gear Box Output RPM 0.35
~Outline Drawing 03-654-0132
Sun Shade Drawing NA
Wiring Diagram WD-MXb-040000-0101
Disconnect Diagram NA
Conduit Entries 1-1/4,1-1/2,1-1/4,NONE
2-Speed Timer N Quik Board N
Control Options Network:STD Digital:R4 Analog:NONE
Main Board BLUETOOTH/UPS Wire Controls 3 WIRE MAINT
Disconnect Switch NONE
Warranty STANDARD
MOTOR INFORMATION
Motor Size 7 FT-LBS
Motor Voltage 480
Mtr Phase/Frequency Hz 3/60
Motor Horsepower 0.25
Motor RPM 1200
Locked Rotor Amps (LRA) 4.3
Full Load Amps (FLA) 1.3

Instruction Manual VAION000071 on the internet www.limitorque.com
Qualifications: The MX complies with all the test parameters identified in Limitorque MX qualification testing bulletin AIBR000087. Installation of the MX in environments outside the parameters identified in bulletin AIBR000087 voids the warranty.



Limitorque

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Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

Phone: 434-528-4400
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SOLD TO		DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

TAGGING AND INFORMATION:
TAG: 1464169

A	VALVE
C	MOTOR AND GEAR UNIT
P	CONNECTING PARTS

1. FLANGES ARE FLAT FACED WITH DIAMETER AND DRILLING TO CLASS 125 ANSI STANDARD B16.1, EXCEPT FOR TAPPED HOLES AS INDICATED. SEE A-16368 FOR NON-ANSI FLANGE DATA.

3. MOTOR CAN BE ROTATED IN 90° INCREMENTS FROM POSITION SHOWN.

— FOR LIQUIDS & GASES:
INSTALL VALVE WITH HIGHER PRESSURE
AGAINST END OPPOSITE SEAT.

- FOR SUSPENDED SOLIDS, SLURRIES, ETC:
 INSTALL VALVE WITH HIGHER PRESSURE
 AGAINST SEAT END. IN HORIZONTAL
 PIPELINES, VALVE SHOULD BE INSTALLED
 ON IT'S SIDE SO PLUG ROTATES TO THE
 TOP OF THE PIPELINE WHEN OPEN.
 (SEE DIAGRAM BELOW).

[illegible]

FOR COVER REMOVAL

$\frac{1.50}{38}$

$\frac{9.17}{233}$

$\frac{2.48}{63}$

$\frac{5.12}{130}$

$\frac{14.37}{365}$

C

P

A

K

C

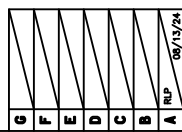
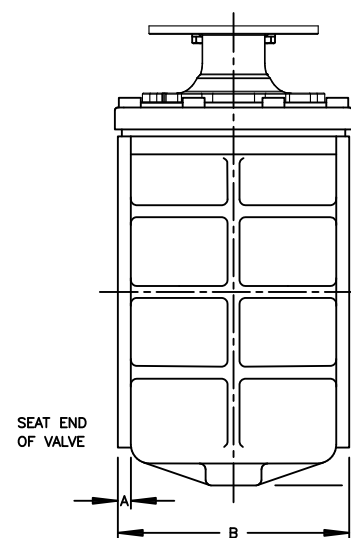
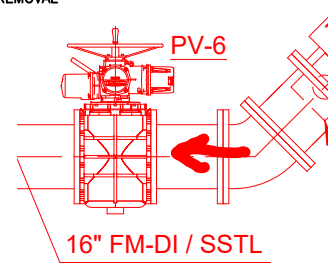
"H" DIA THRU HOLES
"J" QTY OF THRU HOLES PER FLANGE

"D" DIA BC

"E" SIZE OF TAPPED HOLES
"F" QTY OF TAPPED HOLES PER FLANGE
"G" DEPTH OF TAPPED HOLES

DECLUTCH LEVER
(SEE NOTE 2)

12.00
305 DIA

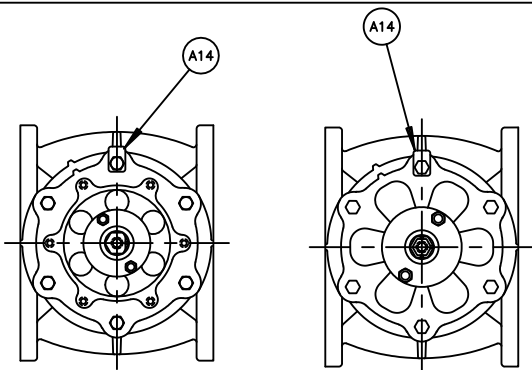


DeZURIK.com

PEC ECCENTRIC VALVES SIZE 14-20 FLANGED MATERIAL GROUP 1
LIMITORQUE MX-10/WG-35-D MOTOR ACTUATOR

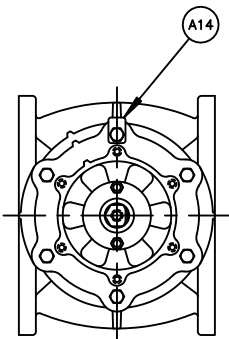
DOCT. CODE	DRAWN CTP	APPROVED RP
C1	CHECKED JWM	DATE 08/13/24

721272

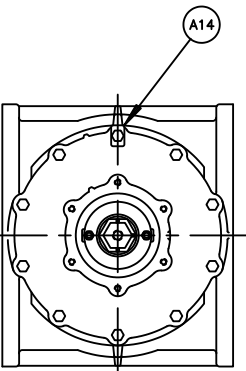


6.5 & 8 VALVES

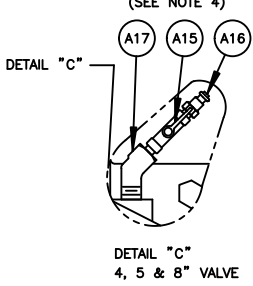
8.5 - 10 VALVES
(SEE NOTE 4)



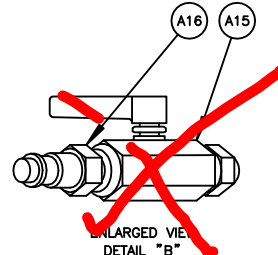
10.5 - 18 VALVES



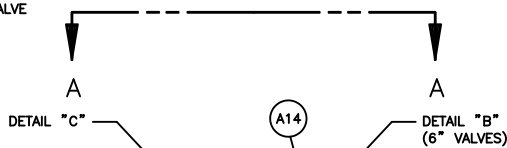
18.5 & 20 VALVES



DETAIL "C"
4, 5 & 8" VALVE

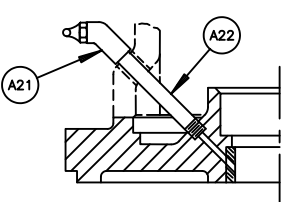


DETAIL "B"

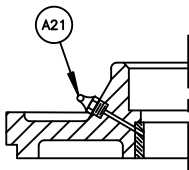


NON Lubricated valves specified
Delete lube ports

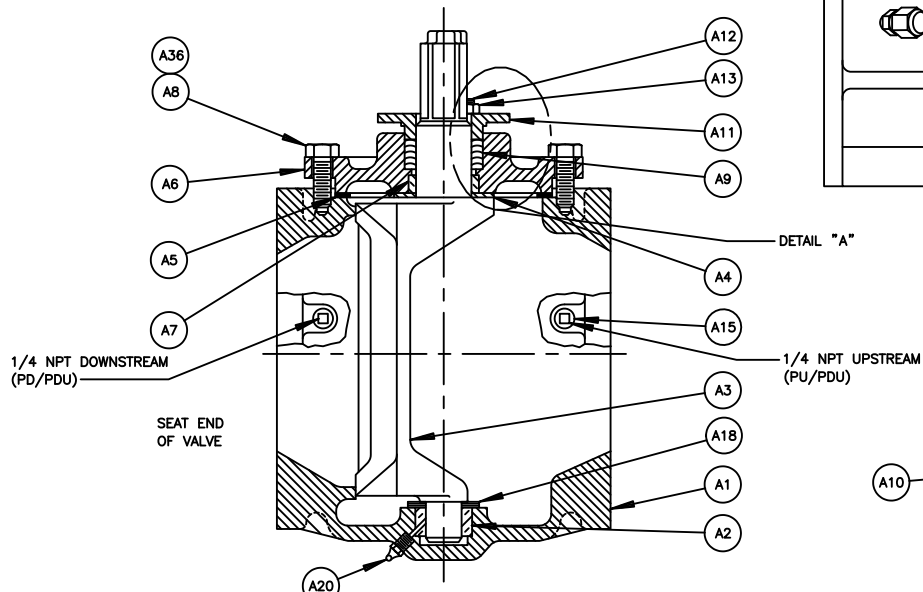
3.5 - 6 VALVES PETCOCKS AND QUICK DISCONNECTS
(SEE NOTE 4)



GREASE FITTING IN BONNET,
ALL ACTUATORS EXCEPT LV & NT

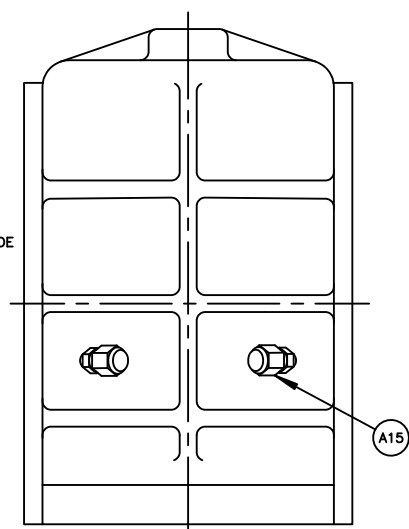


GREASE FITTING IN BONNET,
LV & NT ACTUATORS

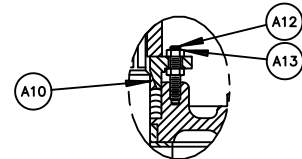


DETAIL "A"

VIEW A-A
TIRE FITTING



SEAT SIDE



DETAIL "A"
3.5 - 8 NT CONSTRUCTION

NOTE:

1. REPLACEABLE WEAR PARTS ARE ITEMS NUMBER A3, PLUG(IF RUBBER FACED), A4, A5 AND A9.
2. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE. ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
3. CLOCKWISE ROTATION OF PLUG STEM CLOSSES VALVE.
4. ON THE SIZE 3.5, 4, 4.5, 5, 6, 8.5, & 10 VALVES BONNET SCREWS ARE USED FOR MOUNTING ACTUATOR.
5. VALVE MAY BE FURNISHED WITH EITHER THE UPPER JOURNAL GREASE FITTING, THE LOWER JOURNAL GREASE FITTING OR BOTH.

NO	PART NAME	QTY
A1	BODY	1
A2	BEARING (3.5 - 8 VALVES)	1
A2	BEARING (8.5 - 18 VALVES)	2
A2	BEARING (18.5 & 20 VALVES)	1
A3	PLUG	1
A4	GRIT EXCLUDER	1
A5	GASKET (BODY)	1
A6	BONNET	1
A7	BEARING	1
A8	SCREW (3.5 - 18 VALVES)	6
A8	SCREW (18.5 & 20 VALVES)	10
A9	PACKING	-
A10	CONE, 3.5 - 8 NT (EXCEPT LOW FRICTION CAT. CHAR. NBRL & SQ. PACKING)	1
A11	GLAND	1
A12	STUD (3.5 - 20 GS--HD_ & GS--CW_)	2
A12	STUD (3.5 - 20 GS--C_)	2
A12	STUD (8.5 - 12 MNA)	NOT RECD
A12	STUD (8.5 - 12 LV)	NOT RECD
A12	STUD (3.5 - 20 GS--ML_)	2
A12	STUD (3.5 - 8 NT)	2
A13	NUT (3.5 - 20 GS--HD_ & GS--CW_)	2
A13	NUT (3.5 - 20 GS--C_)	2
A13	NUT (8.5 - 12 MNA)	NOT RECD
A13	NUT (8.5 - 12 LV)	NOT RECD
A13	NUT (3.5 - 12 GS--ML_)	2
A13	NUT (3.5 - 8 NT)	4
A14	CAUTION TAG	1
A15	PIPE PLUG (PU, PD OR PDU)	-
A15	TIRE FITTING (BV1)	2
A15	MANUAL VALVE (BV2)	2
A16	ADAPTOR (BV2)	2
A17	STREET ELBOW 45 DEG (4.5 & 8 VALVE) (BV2)	2
A18	GRIT EXCLUDER	-
A20	GREASE FITTING (OPTION GR ONLY)	1
A21	GREASE FITTING (OPTION GR ONLY)	1
A22	NIPPLE (EXCEPT LV & NT) (OPTION GR ONLY)	1
A36	WASHER (FUSION COATING)(3.5-18 VALVES)	6
A36	WASHER (FUSION COATING)(18.5-20 VALVES)	10

V	71280	09/28/20
U	70444	02/06/20
T	70338	11/20/18
S	63460	06/04/17
R	62259	04/20/12
Q	60047	07/28/11
P	61846	11/16/09
N	61612	06/10/08
M	61602	04/02/08
L	61371	11/22/05
K	60096	10/19/03
J	54463	03/20/99
H	54620	02/11/98
G	53796	09/03/96
F	50312	03/22/93
E	50312	03/03/93
D	51112	03/09/91
C	16317	03/09/91
B	15078	07/26/89
A	14670	11/22/88



www.dezurik.com

PEC ECCENTRIC VALVE ASSEMBLY 3.5 - 20, FLANGED, EXCEPT BODY MATERIAL CIS, DIS & CIH			
DOCT. CODE	DRAWN	APPROVED	RJP
C1	CHECKED	DATE	10-13-83
	TNB		

A20730



Materials Of Construction

DRAWING(S): A20730(A00)

SALES ORDER: SO116840

DESCRIPTION: PEC,16,F1,CI,NBR,NBR,DTR-S30SC0*X,SB16*A36116

ITEM	MATERIAL
A00	STAINLESS STEEL, TYPE 18-8
A00	STAINLESS STEEL, SERIES 300
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE 316L, SINTERED
A03	IRON, ASTM A126, CLASS B
A03	ACRYLONITRILE-BUTADIENE (NBR)
A04	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A05	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A06	IRON, ASTM A126, CLASS B
A07	STAINLESS STEEL, TYPE 316L, SINTERED
A08	STAINLESS STEEL, TYPE 316
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A11	IRON, ASTM A126, CLASS B
A12	STAINLESS STEEL, TYPE 316
A13	STAINLESS STEEL, TYPE 316
A14	STAINLESS STEEL, SERIES 300
A18	STAINLESS STEEL, TYPE 316, ASTM A269 OR A511



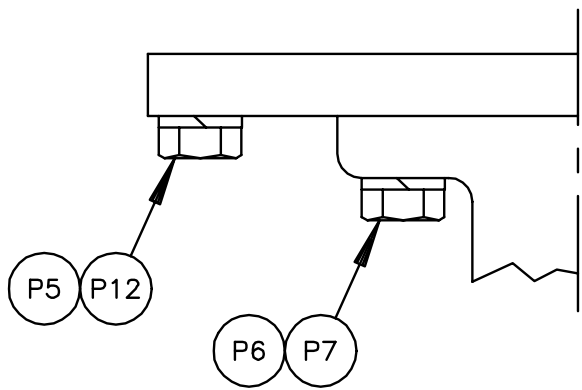
Materials Of Construction

DRAWING(S): A20730(A00)

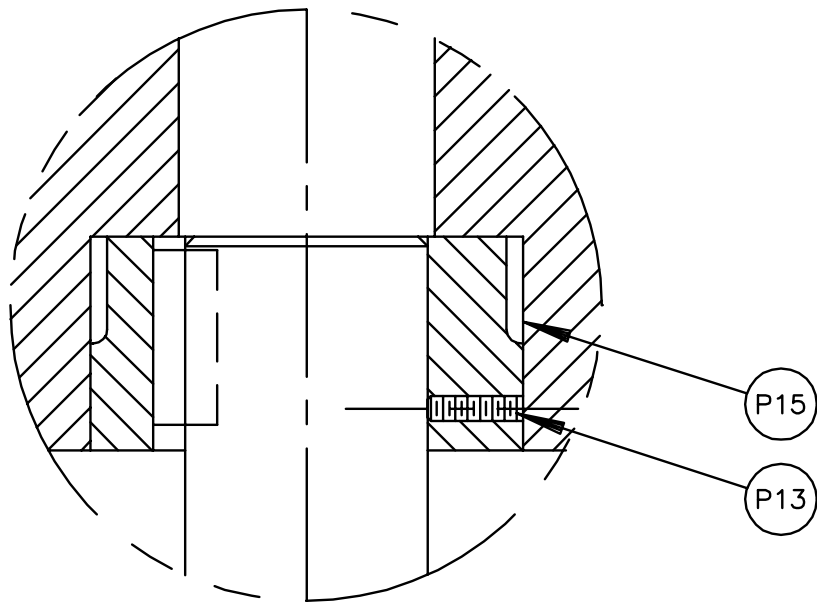
SALES ORDER: SO116840

DESCRIPTION: PEC,16,F1,CI,NBR,NBR,DTR-S30SC0*X,SB16*A36116

ITEM	MATERIAL
A00	STAINLESS STEEL, TYPE 18-8
A00	STAINLESS STEEL, SERIES 300
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE 316L, SINTERED
A03	IRON, ASTM A126, CLASS B
A03	ACRYLONITRILE-BUTADIENE (NBR)
A04	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A05	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A06	IRON, ASTM A126, CLASS B
A07	STAINLESS STEEL, TYPE 316L, SINTERED
A08	STAINLESS STEEL, TYPE 316
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A11	IRON, ASTM A126, CLASS B
A12	STAINLESS STEEL, TYPE 316
A13	STAINLESS STEEL, TYPE 316
A14	STAINLESS STEEL, SERIES 300
A18	STAINLESS STEEL, TYPE 316, ASTM A269 OR A511



ALTERNATE MOUNTING CONSTRUCTION

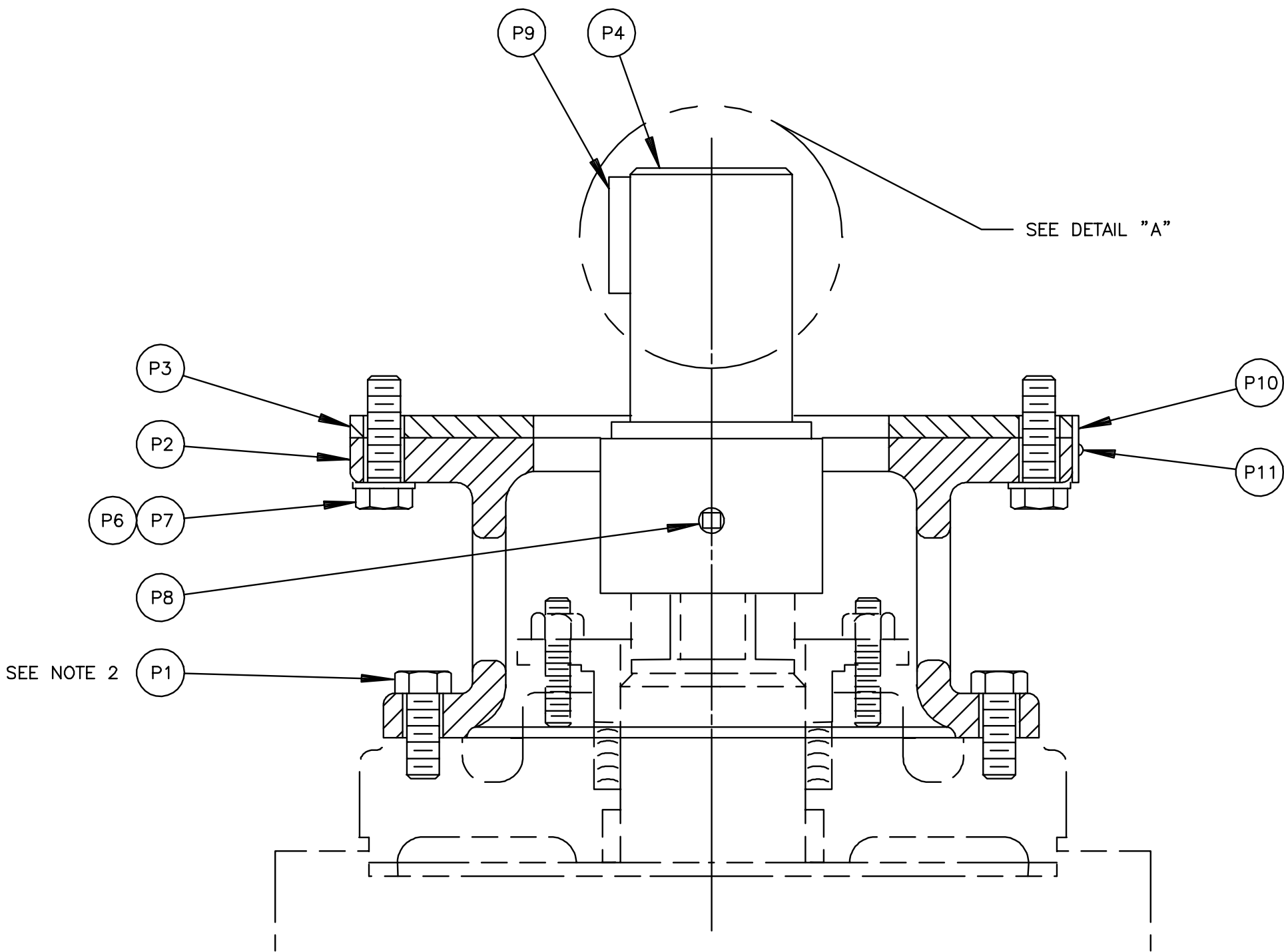


DETAIL "A"
SHOWING ACTUATOR WITH DRIVE SLEEVE

NO	PART NAME	QTY
P1	SCREW (4, 5, 6 & 10 VALVES) (SEE NOTE 2)	NOT REQD
P1	SCREW (8, 12, 14, 16, 18 & 20 VALVES)	6
P2	ADAPTOR	1
P3	ADAPTOR/SPACER PLATE (WHEN REQUIRED)	1
P4	DRIVE ADAPTOR	1
P5	SCREW (WHEN REQUIRED)	—
P6	LOCKWASHER (G6 ADAPTOR) (WHEN REQD)	4
P6	LOCKWASHER (G12 ADAPTOR) (WHEN REQD)	8
P7	SCREW (G6 ADAPTOR)	4
P7	SCREW (G12 ADAPTOR)	8
P8	SET SCREW	1
P9	KEY	1
P10	DATA PLATE	1
P11	DRIVE SCREW	2
P12	LOCKWASHER (WHEN REQUIRED)	—
P13	SET SCREW (WHEN REQUIRED)	1
P15	DRIVE BUSHING (WHEN REQUIRED)	1

NOTE:

1. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE. ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
2. ITEM NUMBER P1 IS NOT REQUIRED ON THE 4, 5, 6 & 10 VALVES. USE BONNET SCREWS ON BODY ASSEMBLY TO MOUNT ACTUATOR TO VALVE. ITEM NUMBER P1 IS ALSO NOT REQUIRED WHEN ACTUATOR IS MOUNTED ON FLOORSTAND.



G	F	E	D	C	B	A
					50312	50312
					06/25/12	06/13/08

DeZURIK
Sartell, MN USA 56377
www.dezurik.com

CONNECTING PARTS FOR NON-STANDARD ACTUATORS ON ECCENTRIC VALVES			
DOCT. CODE	DRAWN	APPROVED	
C1	RDD	RDD	
	CHECKED	DATE	
	RDD	04/02/97	

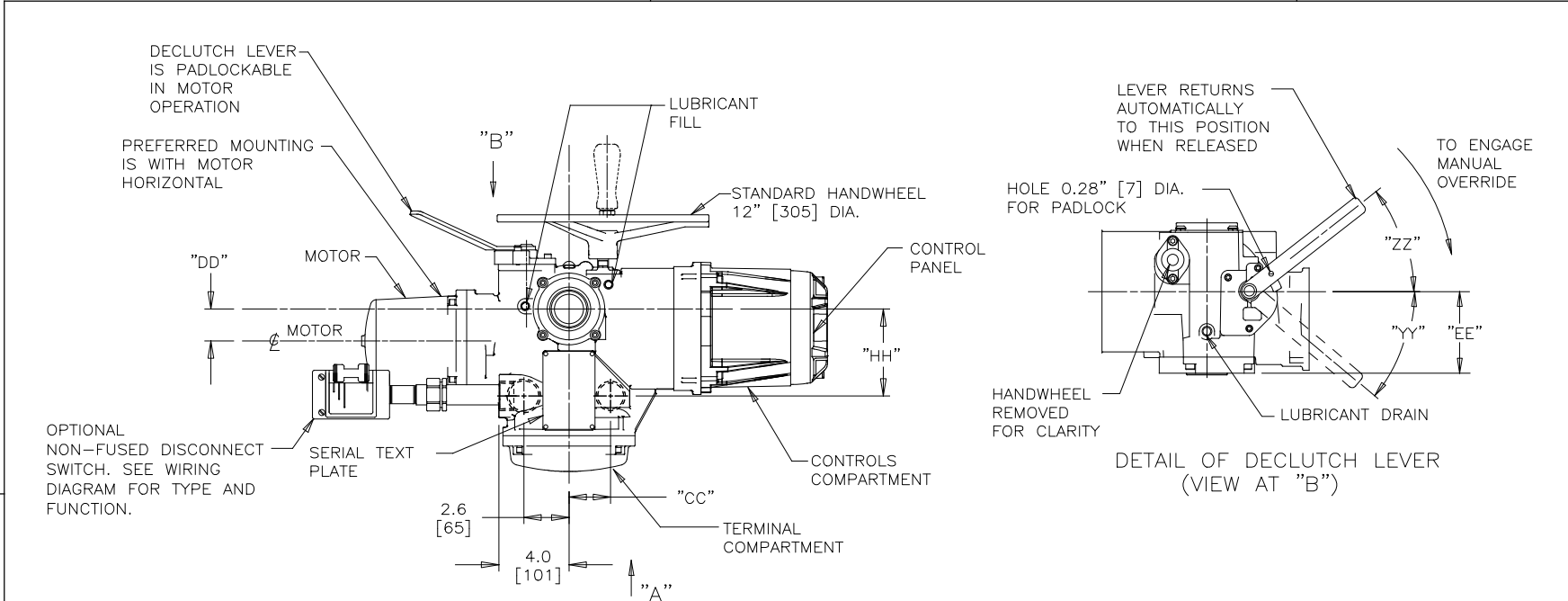
J32718

D

C

B

A



ACTUATOR OUTLINE DIMENSIONS (INCHES)																	
UNIT SIZE	BB	CC	DD	EE	FF	GG	HH	JJ	LL	MM	PP	QQ		RR		YY	ZZ
												1-PH	3-PH	1-PH	3-PH		
MX-10	5.3	2.4	1.8	4.6	9.2	6.8	4.9	8.4	6.4	3.1	15.3	14.7	11.7	4.0	5.0	40.0°	40.0°
MX-20	6.8	2.1	2.2	5.6	10.7	7.7	6.4	10.9	8.6	3.9	16.0	N/A	13.5	N/A		37.0°	33.5°
MX-40	8.8	2.1	2.7	5.9	11.1	7.8	6.9	11.7	9.0	4.1	16.3	N/A	13.8	N/A		37.0°	33.5°

ACTUATOR OUTLINE DIMENSIONS (METRIC)																	
UNIT SIZE	BB	CC	DD	EE	FF	GG	HH	JJ	LL	MM	PP	QQ		RR		YY	ZZ
												1-PH	3-PH	1-PH	3-PH		
MX-10	135	60	46	117	233	173	125	214	163	78	389	374	297	102	127	40.0"	40.0"
MX-20	168	54	57	141	272	196	163	277	217	100	406	N/A	344	N/A		37.0"	33.5"
MX-40	224	54	68	150	283	198	174	297	229	105	414	N/A	350	N/A		37.0"	33.5"

- ◆ GROUND/EARTHING LUG
⊙ ALLOWANCE FOR COVER REMOVAL

CONDUIT ENTRIES			
POSITION	①	②	③
STANDARD	1 1/4" NPT	1 1/2" NPT	1 1/4" NPT
OPTIONS	M32, M25 M20	M40, M32, M25, M20	M32, M25 M20
	PG21	PG29, PG21	PG21

TABLE 2

MAX BORE	MAX KEY (SQUARE)	MAX KEY (RECTANGLE)
ø2.625	5/8 X 5/8	—
ø2.813	—	3/4 X 1/2
[ø72]	—	[20 X 12]

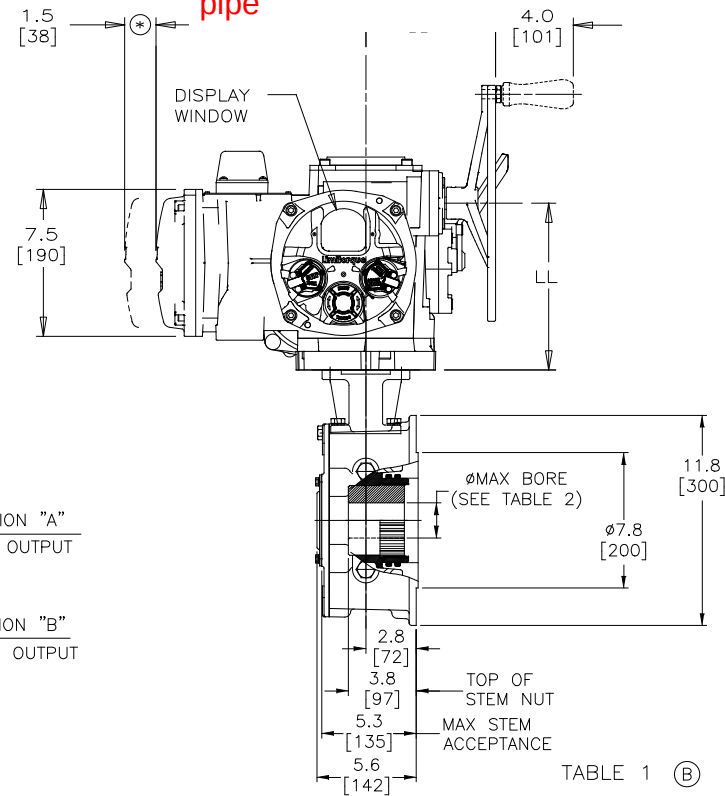
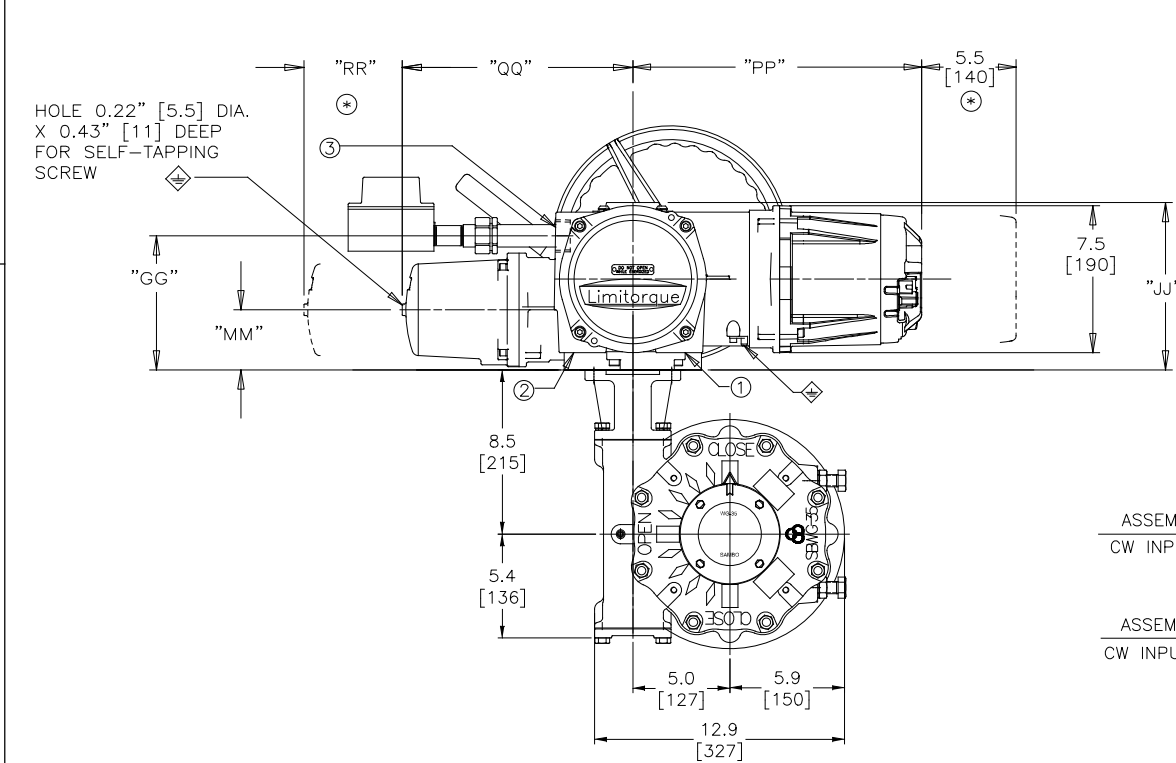


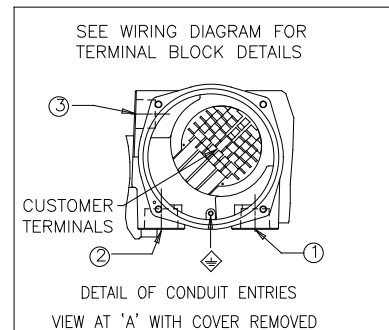
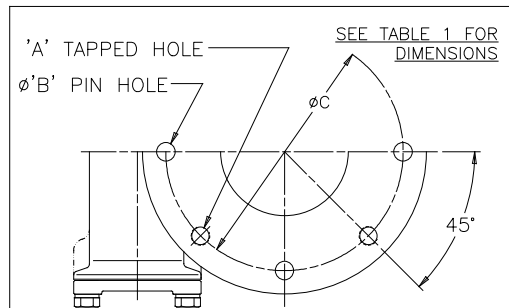
TABLE 1 ⑥

MOUNTING BASE		A	B	C
MSS (INCH)	FA16	(4) 3/4-10 UNC TAP X 1.2 DP	NA	ø6.5
ISO (METRIC)	F16	(4) M20 TAP X 30 DP	(4) ø20 PIN X 20 DP	ø165

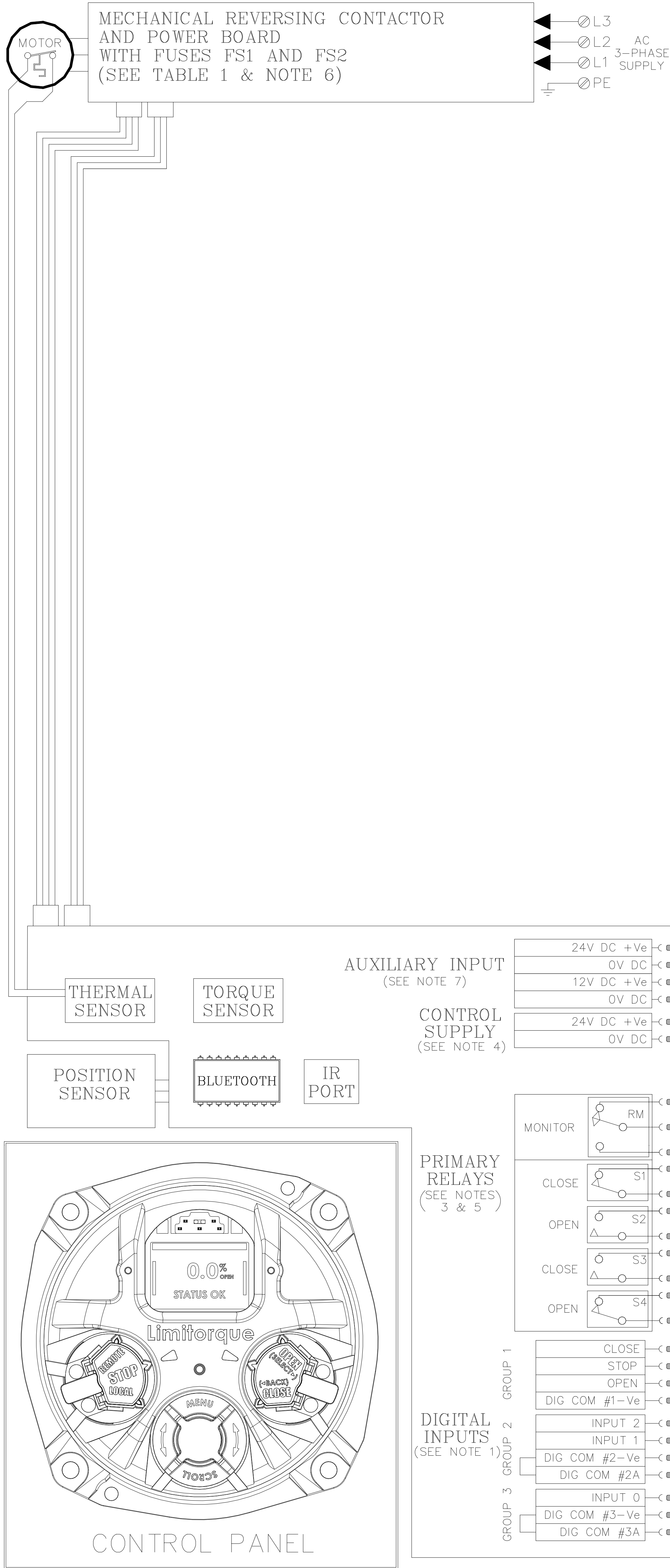
NOTE:
1. SEE CUSTOMER DATA SHEET TO DETERMINE BASE AND ASSEMBLY POSITION SUPPLIED.

B	2/27/23		RRB	APR	APR
	DESC: REMOVED FA14/F14 MOUNTING BASE FROM TABLE 1				
A	8/3/22		RRB	APR	SVA
	DESC: UPDATED GEARBOX DRAWING AS PER LATEST MODEL				
REV	CHG NO	DATE	REVD	CHKD	APVD

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JOB NUMBER		5114 WOODALL ROAD, LYNCHBURG, VA. USA 24506-1318			
DRW: KPR	DATE: 3-9-20	DRAWING TITLE MX-10-40 STANDARD UNITS WITH: A) SIDE MOUNTED HANDWHEEL B) OPTIONAL DISCONNECT SWITCH C) WG-35 WORM GEAR OPERATOR D) 1 & 3 PHASE MOTORS			
CKD: SVA	DATE: 3-9-20				
APV: MWR	DATE: 3-12-20				
ALL DIMENSIONS ARE REFERENCE UNLESS OTHERWISE SPECIFIED		SIZE C	DRAWING NUMBER 03-654-0132		REV. B
3rd ANGLE		SCALE NONE	UNITS	SHEET 1 OF 1	



NOTES: (SEE INSTALLATION & OPERATION MANUAL VAIOM000071 FOR DETAILS)

1. REMOTE INPUTS

SIGNAL THRESHOLD – MINIMUM "ON" 19.2V AC/DC
MAXIMUM "OFF" 5.0V AC/DC
MAX LOAD – 10 mA / 110V AC

REQUIRED CONTROL SIGNAL DURATION = 350ms MIN.
INPUTS 0, 1, & 2 ARE FIELD CONFIGURABLE FOR
CLOSE/OPEN/BOTH INHIBIT, USER INPUT, OR ESD.
INPUT 1 MAY ALSO BE CONFIGURED FOR
PARTIAL STROKE TEST.
INPUT 2 MAY ALSO BE CONFIGURED FOR CSE
REMOTE SELECTION INDICATION.
DEFAULT INPUT CONFIGURATION
INPUT 0 – ESD,
INPUT 1 – OPEN INHIBIT,
INPUT 2 – CLOSE INHIBIT.

2. REMOTE INPUT JUMPERS

JUMPERS CAN BE USER WIRED TO CONNECT DIG COMMONS
#1, 2 & 3 (AS NEEDED). THE 3 REMOTE WIRING GROUPS
ARE ELECTRICALLY ISOLATED, INTERNALLY. ONLY A SINGLE
POWER SOURCE MAY BE USED TO POWER ANY ONE GROUP
BUT DIFFERENT SOURCES MAY POWER DIFFERENT GROUPS.
IF DIFFERENT SOURCES ARE USED, ENSURE THAT THE
POLARITIES ARE CORRECT.

3. DEFAULT [S] SETTINGS

THE DEFAULT OPERATING CONFIGURATION FOR THE
"S" OUTPUTS ARE SHOWN IN THE TABLE BELOW.
THE CONTACT STATES SHOWN IN THE SCHEMATIC
REPRESENT A FULLY CLOSED VALVE.
SEE OPERATION MANUAL FOR ALTERNATE CONFIGURATIONS.

OUTPUT SWITCH CONTACT DEVELOPMENT			
OUTPUT SWITCH	VALVE POSITION		FUNCTION
	FULL CLOSE	FULL OPEN	
S1	—	—	CLOSE LIMIT
S3	—	—	
S2	—	—	OPEN LIMIT
S4	—	—	

— — OPEN CONTACT
— — CLOSED CONTACT

4. MAXIMUM EXTERNAL LOAD

TERMINALS 21 AND 22 (24 VDC)
— 5W MAX. EXT. LOAD

5. CONTACT RATINGS

S1–S4 – 5 AMPS @ 250 VAC OR 30VDC (RESISTIVE)
THE TOTAL COMBINED CURRENT THROUGH ALL FOUR
STATUS CONTACTS (S1–S4) MUST NOT EXCEED 8A
MONITOR– 5 AMPS @ 250 VAC OR 30 VDC (RESISTIVE)

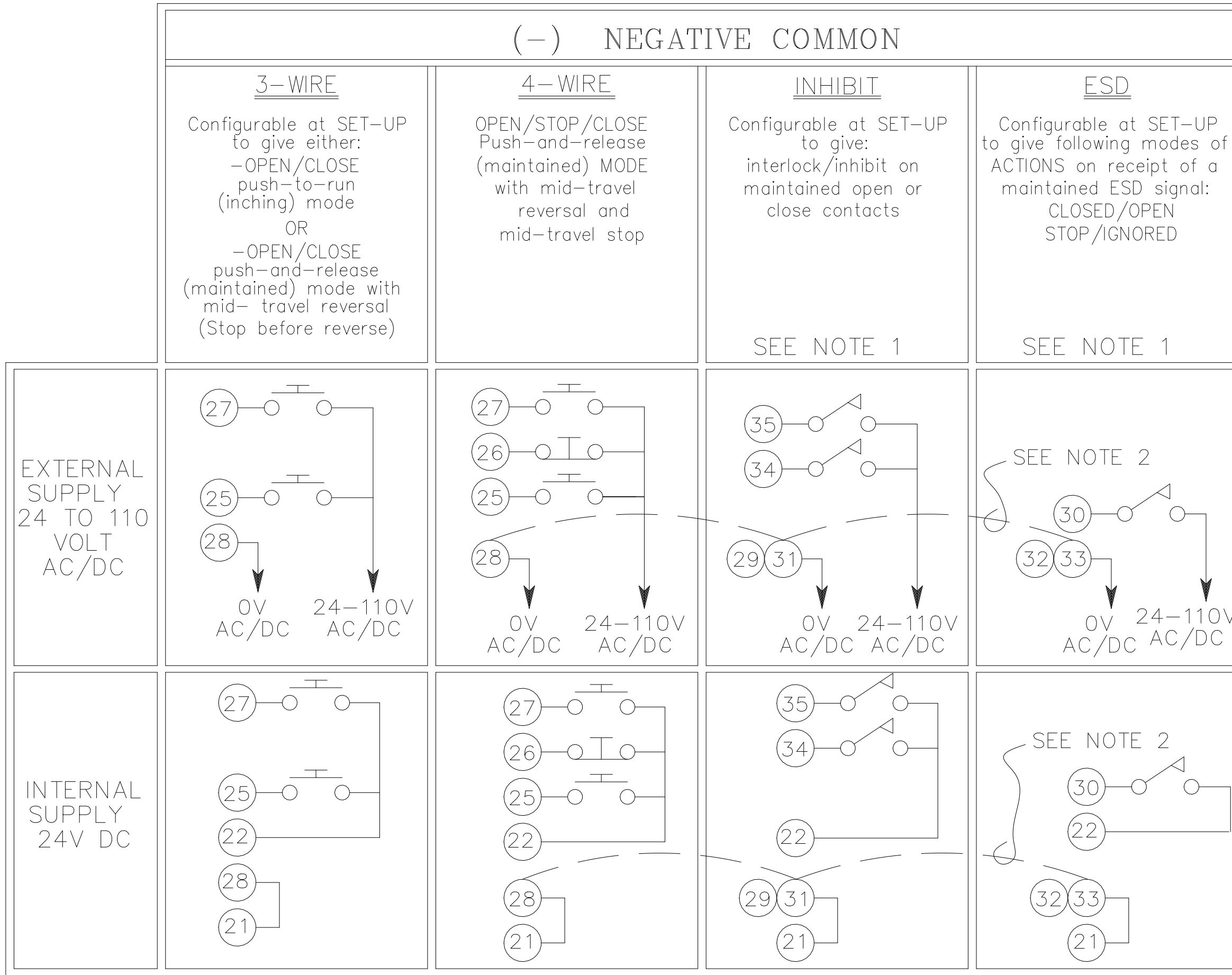
6. FUSES

FS1 (PRIMARY) — 600V AC, 1A, 100kA Int RATING,
FAST ACTING 10.3 x 38.1mm TUBE,
UL LISTED, CSA CERTIFIED
FS2 (PRIMARY) —

TABLE 1: TRANSFORMER TAPPING OPTIONS			
TYPE	TAPS	APPL. VOLTAGES	
1	106V	110V	
	115V	115V, 120V	
	200V	208V	
	212V	220V	
2	226V	226V, 230V, 240V	
	366V	380V	
	392V	400V, 415V	
	450V	440V, 460V, 480V	
3	212V	220V	
	505V	525V	
	530V	550V	
	572V	575V, 600V	

7. AUXILLIARY INPUTS

BACK-UP UPS POWER MAY BE CONNECTED: 24VDC TO
TERMINALS 6 & 7, MAX. CURRENT DRAW 1 AMP; 12VDC TO
TERMINALS 8 & 9, MAX. CURRENT DRAW 2 AMPS. THIS POWERS
ALL CONTROLS AND OPTION BOARDS FOR LOCAL/REMOTE
INDICATION AND CONFIGURATION. THE REVERSING CONTACTOR WILL
NOT BE POWERED. CUSTOMER MUST SUPPLY FUSES AS REQUIRED
BY LOCAL ELECTRICAL CODES.



REMOTE WIRING CONNECTIONS

TERMINAL POINT FUNCTION	CLOSE (27)	+24V DC (22)	0V DC (21)	OPEN INHIBIT (34)	DIG COM #1 (28)
	STOP (26)	+110V AC (23)	0V AC (24)	CLOSE INHIBIT (35)	DIG COM #2(A) (29/31)
	OPEN (25)	EXTERNAL SUPPLY ↓		ESD (30)	DIG COM #3(A) (32/33)

LIMIGARD CONFIG. WIRING

DRAWN	DATE	FLOWERVE Limatorque Actuation Systems 5114 WOODALL ROAD, LYNCHBURG, VIRGINIA 24506-1318	
NWN	01/16/20	TITLE MXb WIRING DIAGRAM Bluetooth	
CHECKED	DATE	Standard No Analog Mechanical Contactor	
JPS	01/17/20	R4 (4) 5A, (1) 5A monitor relay 3Wire/4Wire Negative Common	
APPROVED	DATE	UNIT TYPE	DWG NO
EMO	01/20/20	MXb	WD-MXb-040000-0101
REV	SHEET	1 of 1	



Submittal Data Sheet
Date: August 15, 2024

ECO TECH INC
PO BOX 956
HOLLY SPRINGS GA 30142
United States

P.O. 24051GA-16
FACTORY ORDER SO116840
PROJ. NAME 24051GA - Lower Poplar WRF Influent PS

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
3		1	9741838	PEC,36,MJ,CI,NBR,NBR,DTR-S30SC0*X,SB16*AE3888

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	36	36 Inch (900mm)
End Connection	MJ	Mechanical Joint, Conforms to ANSI/AWWA C111/A21.11
Body Material	CI	Cast Iron
Packing	NBR	.5" - 3" Acrylonitrile-Butadiene Reinforced filler in a PTFE U-ring, -20 to 180° F. (-29 to 83° C.); 4" & Larger Acrylonitrile-Butadiene Reinforced V-type, -20 to 250° F. (-29 to 121° C.)
Plug Facing	NBR	Acrylonitrile-Butadiene; -20 to 180° F. (-29 to 83° C.)
Options	DTR	DeZURIK Standard Certified Production Hydrostatic Shell and Seat Test Report
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10) surface prep
Actuator	X	Specify Actuator in Special Construction
Stainless Steel Bolting & Tubing	SB16	316 Stainless Steel Bolting

Temperature Range	-20 to 180 Degrees F.
Valve Pressure	to 150 psig

RELATED DOCUMENTS

Z21270: DWG INST PEC MJ GR1 20.5 - 36 LIMITORQUE MX-10/WG-07-1SD ENK
NECK EXTENSION
J78589: DWG VALVE ASSY PEC MJ 24-36
J78586: DWG ACCESS ENK FUW PEC VALVE

MODIFIER

AE3888 LIMITORQUE - MXb-10/WG-07-1SD-D - PN:1464170
ACTUATOR MOUNTED ON TOTALLY ENCLOSED EXTENSION C/L OF VALVE TO TOP OF EXTENSION
= 90 IN (7'6"). INNER EXTENSION TO BE 304 SS, OUTER EXTENSION TO BE CARBON STEEL.
8'-4"

TAG: PV-7



Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

Phone: 434-528-4400
Fax:

Customer Data Sheet

SALES ORDER NO. 205928 REV 0	ORDER LINE 003	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225336.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

ACTUATOR INFORMATION

Electric Actuator Type MX-10 Series B
Enclosure Type WP&SUBM NEMA 3,4,4X,6,IP68
Electric Output RPM 100
Valve Torque 7806 Ft Lbs 10585 Nm
MX/Gear Box Max Rated Torque 13797 Ft Lbs 18709 Nm
MX/Gear Box Stall Torque 20773 Ft Lbs 28168 Nm
Operating Time for 90 degrees 101 Sec
Handwheel SIDE Mounted 12 Inch
Open Direction CCW
Lube SHC-632
Gear Box Type WG-07-1SD-D
Gear Box Ratio 674:1
Gear Box SGA Ratio NA
Gear Box Position A
Gear Box Base MSS-FA35
Gear Box Output RPM 0.15
Outline Drawing 03-654-0061
Sun Shade Drawing NA
Wiring Diagram WD-MXb-040000-0101
Disconnect Diagram NA
Conduit Entries 1-1/4,1-1/2,1-1/4,NONE
2-Speed Timer N Quik Board N
Control Options Network:STD Digital:R4 Analog:NONE
Main Board BLUETOOTH/UPS Wire Controls 3 WIRE MAINT
Disconnect Switch NONE
Warranty STANDARD

MOTOR INFORMATION

Motor Size 9 FT-LBS
Motor Voltage 480
Mtr Phase/Frequency Hz 3/60
Motor Horsepower 0.49
Motor RPM 1800
Locked Rotor Amps (LRA) 7.0
Full Load Amps (FLA) 1.7

Instruction Manual VAION000071 on the internet www.limitorque.com
Qualifications: The MX complies with all the test parameters identified in Limitorque MX qualification testing bulletin AIBR000087. Installation of the MX in environments outside the parameters identified in bulletin AIBR000087 voids the warranty.



Limitorque

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Lynchburg, VA 24502-2248
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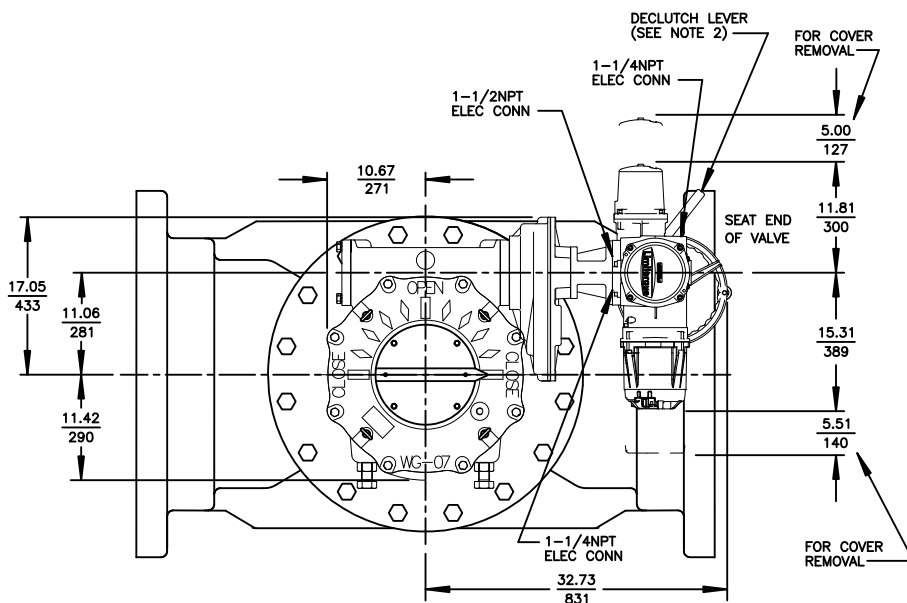
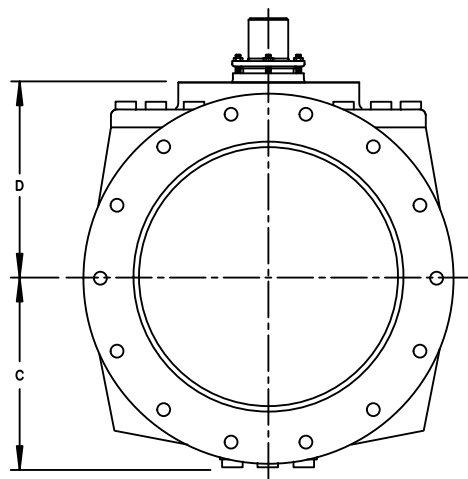
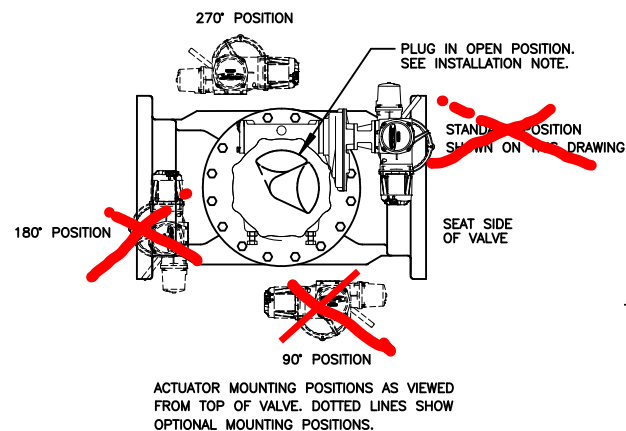
END USER **MACON, GA**
END PROJECT

TAGGING AND INFORMATION:
TAG: 1464170

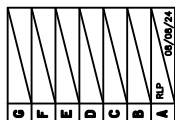
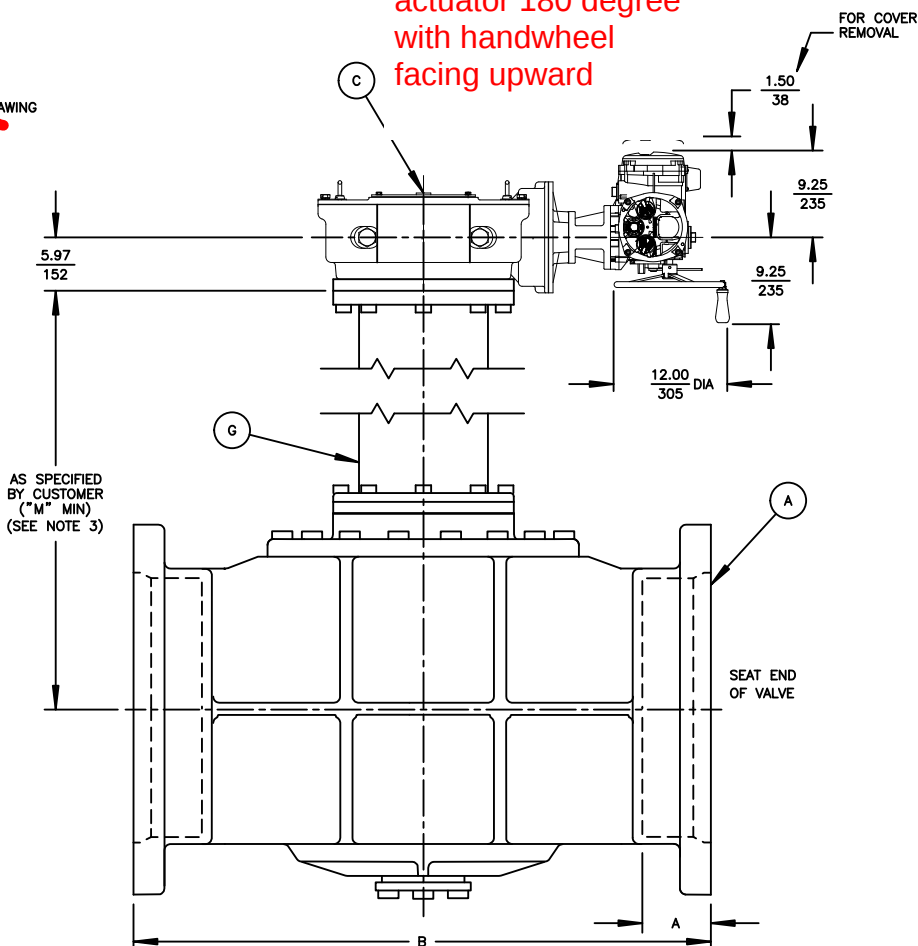
VALVE SIZE	PIPE SIZE		DIMENSIONS - INCHES MILLIMETERS				
	IN	MM	A	B	C	D	M
20.5	20	500	3.50 89	42.00 1067	18.31 465	17.06 433	51.19 1300
24	24	600	3.50 89	42.00 1067	18.31 465	17.06 433	51.19 1300
24.5	24	600	3.50 89	51.00 1295	21.88 556	21.12 536	55.25 1403
30	30	750	4.00 102	51.00 1295	21.88 556	21.12 536	55.25 1403
30.5	30	750	4.00 102	60.00 1524	24.81 630	24.31 617	58.81 1494
36	36	900	4.00 102	60.00 1524	24.81 630	24.31 617	58.81 1494

NOTES:

- MECHANICAL JOINT ENDS MEET AWWA STANDARD C111.
- FOR MANUAL OPERATION PUSH LEVER IN DIRECTION OF ARROW ONLY. UNIT REMAINS IN HAND OPERATION UNTIL MOTOR IS ENERGIZED.
- SUPPORT REQUIRED BY CUSTOMER WHEN MOUNTED OTHER THAN VERTICAL OR VERTICAL EXTENSIONS OVER $\frac{36.00}{914}$.
- INSTALLATION NOTE:
 - FOR LIQUIDS & GASES:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST END OPPOSITE SEAT.
 - FOR SUSPENDED SOLIDS, SLURRIES, ETC:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST SEAT END. IN HORIZONTAL PIPELINES, VALVE SHOULD BE INSTALLED ON IT'S SIDE SO PLUG ROTATES TO THE TOP OF THE PIPELINE WHEN OPEN. (SEE DIAGRAM BELOW).



Rotate Limitorque actuator 180 degree with handwheel facing upward

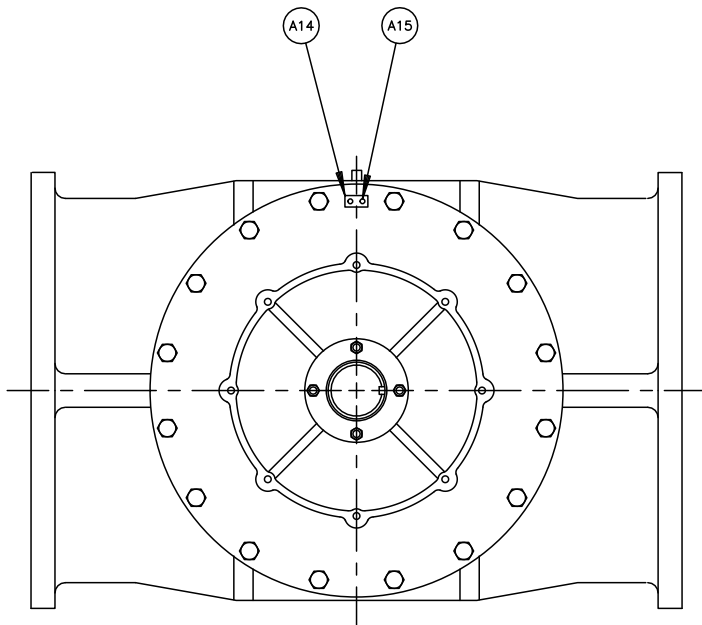


DeZURIK.com

PEC ECCENTRIC VALVES SIZE 20.5-36 MECHANICAL JOINT MATERIAL GROUP 1 LIMITORQUE WG-07-1SD/MX-10 3 PHASE MOTOR ACTUATOR W/SIDE MOUNTED HANDWHEEL WITH ENK NECK EXTENSION

DOCT. CODE	DRAWN	TPC	APPROVED	JWM
C1	CHECKED	JWM	DATE	08/08/24

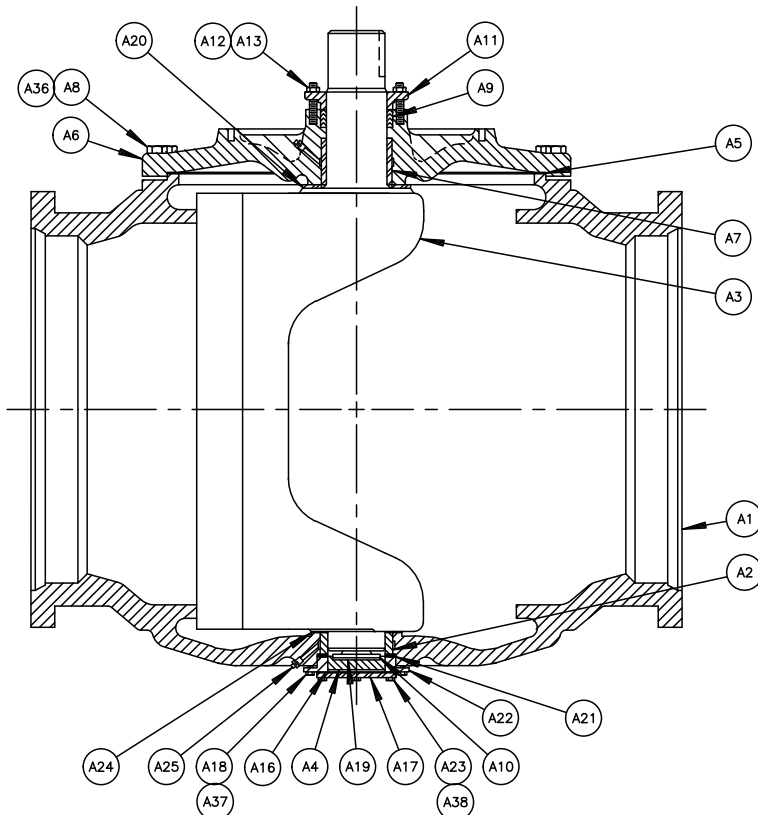
Z21270



NO	PART NAME	QTY
A1	BODY	1
A2	BEARING	1
A3	PLUG	1
A4	RETAINER NUT	1
A5	GASKET (BODY)	1
A6	BONNET	1
A7	BEARING	1
A8	SCREW	16
A9	PACKING	—
A10	THRUST PLATE	1
A11	GLAND	1
A12	STUD	4
A13	NUT	4
A14	CAUTION TAG	1
A15	DRIVE SCREW	2
A16	GASKET	1
A17	COVER	1
A18	SCREW	6
A19	BEARING	1
A20	GRIT EXCLUDER	1
A21	GASKET (JOURNAL COVER)	1
A22	JOURNAL COVER	1
A23	SCREW	6
A24	GRIT EXCLUDER	—
A25	PIPE PLUG	2
A36	WASHER (FUSION COATING)	16
A37	WASHER (FUSION COATING)	6
A38	WASHER (FUSION COATING)	6

NOTE:

1. RECOMMENDED SPARE PARTS ARE ITEMS A3, PLUG (IF RUBBER FACED) A5, A9, A16 & A21.
2. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE, ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
3. CLOCKWISE ROTATION ON PLUG STEM CLOSSES VALVE.



70843	03/24/20
63446	08/07/17
50312	11/04/08
50312	03/28/08



PEC ECCENTRIC VALVE ASSEMBLY 24-36 MECH JOINT
VALVES WITH PLUG SUPPORT

DOCT. CODE	DRAWN	JTD	APPROVED	JDM
C1	CHECKED	JDM	DATE	04/30/99

J78589



Materials Of Construction

DRAWING(S): J78589(A00)

SALES ORDER: SO116840

DESCRIPTION: PEC,36,MJ,CI,NBR,NBR,DTR-S30SC0*X,SB16*AE3888

ITEM	MATERIAL
A00	STAINLESS STEEL, SERIES 300
A00	STAINLESS STEEL, TYPE 18-8
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A03	IRON, ASTM A126, CLASS B
A03	ACRYLONITRILE-BUTADIENE (NBR)
A04	CARBON STEEL, ASTM A108, GRADE 12L14
A05	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A06	IRON, ASTM A126, CLASS B
A07	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A08	STAINLESS STEEL, TYPE 316
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A10	STAINLESS STEEL, TYPE 316, ASTM A276, CONDITION A
A11	IRON, ASTM A126, CLASS B
A12	STAINLESS STEEL, TYPE 316
A13	STAINLESS STEEL, TYPE 316
A14	STAINLESS STEEL, TYPE 302
A15	STAINLESS STEEL, TYPE 18-8
A16	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL

A17	STEEL, ASTM A36
A18	STAINLESS STEEL, TYPE 316
A19	TETRAFLUOROETHYLENE (TEFLON), SELF LUBRICATING, WITH 304 STAINLESS STEEL BACKING
A20	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A21	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A22	IRON, ASTM A126, CLASS B
A23	STAINLESS STEEL, TYPE 316
A24	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A25	STEEL

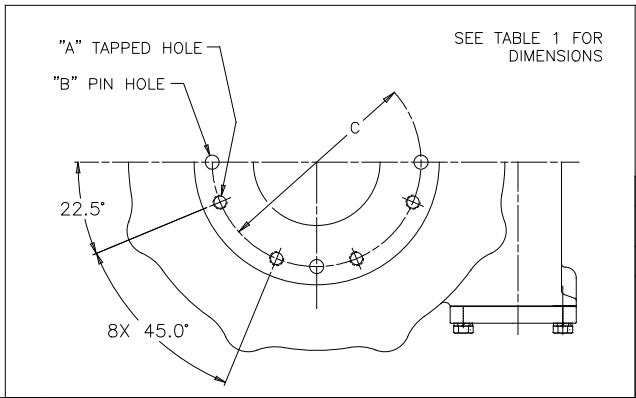
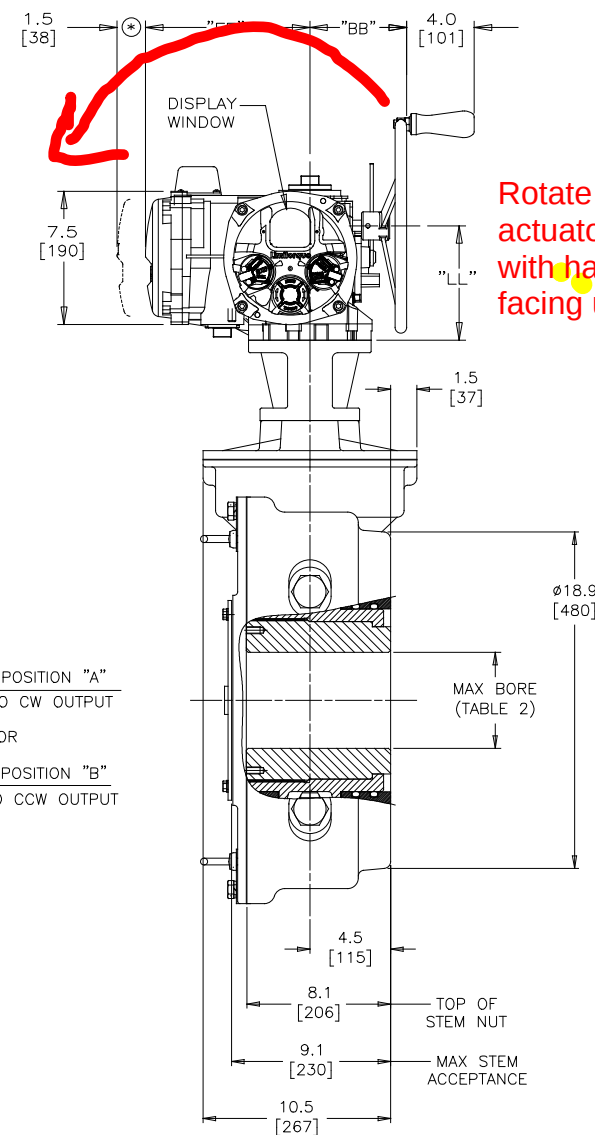
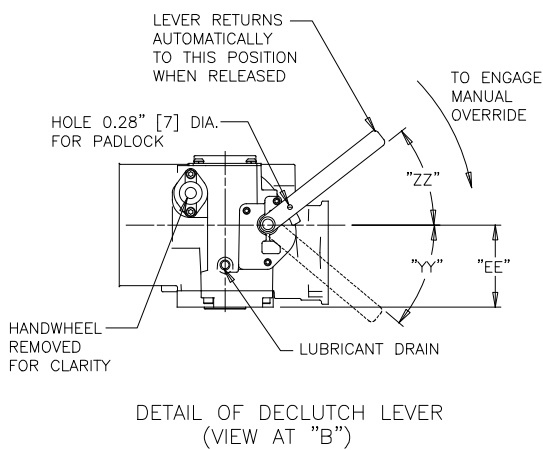
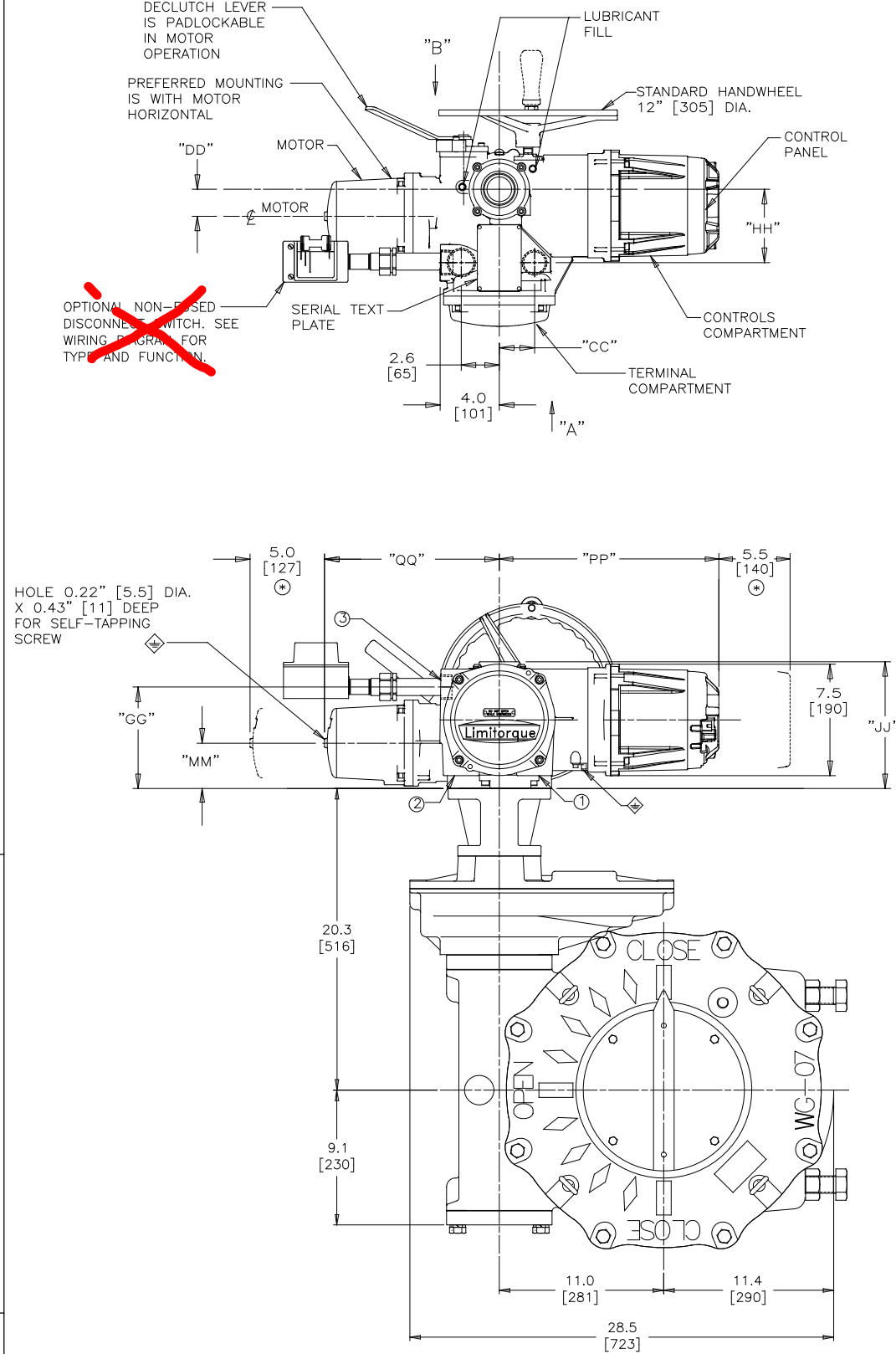
D

C

B

A

REV	CHG NO	DATE	REVD	CHKD	APVD
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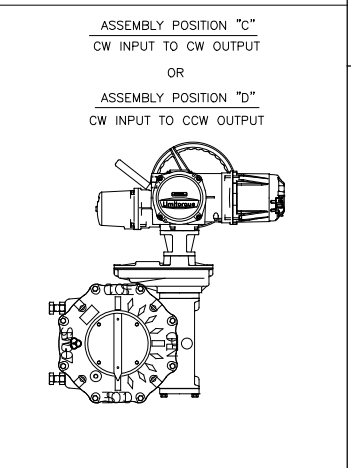
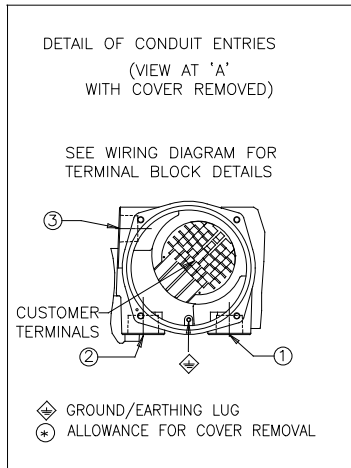
CONDUIT ENTRIES			
POSITION	①	②	③
STANDARD	1 1/4" NPT	1 1/2" NPT	1 1/4" NPT
OPTIONS	M32, M25 M20	M40, M32, M25, M20	M32, M25 M20
	PG21	PG29, PG21	PG21

MOUNTING BASE		A	B	C
MSS (INCH)	FA30	(8) 3/4-10 UNC TAP X 1.2 DP	N/A	Ø11.7
	FA35	(8) 1-8 UNC TAP X 1.8 DP	N/A	Ø14.0
	FA40	(8) 1 1/4-7 UNC TAP X 2.1 DP	N/A	Ø16.0
ISO (METRIC)	F30	(8) M20 TAP X 30 DP	(4) Ø20 PIN X 20 DP	Ø298
	F35	(8) M30 TAP X 45 DP	(4) Ø30 PIN X 30 DP	Ø356
	F40	(8) M36 TAP X 54 DP	(4) Ø36 PIN X 36 DP	Ø406

TABLE 2		
MAX BORE	MAX KEYWAY (SQUARE)	MAX KEYWAY (RECTANGLE)
Ø5.875	1 1/2 X 1 1/2	—
Ø6.313	—	1 1/2 X 1
[Ø164]	—	[40 X 22]

ACTUATOR OUTLINE DIMENSIONS (INCHES)														
UNIT SIZE	BB	CC	DD	EE	FF	GG	HH	JJ	LL	MM	PP	QQ	YY	ZZ
MX-10	5.3	2.4	1.8	4.6	9.2	6.8	4.9	8.4	6.4	3.1	15.3	11.7	40.0*	40.0*
MX-20	6.8	2.1	2.2	5.6	10.7	7.7	6.4	10.9	8.6	3.9	16.0	13.5	37.0*	33.5*
MX-40	8.8	2.1	2.7	5.9	11.1	7.8	6.9	11.7	9.0	4.1	16.3	13.8	37.0*	33.5*

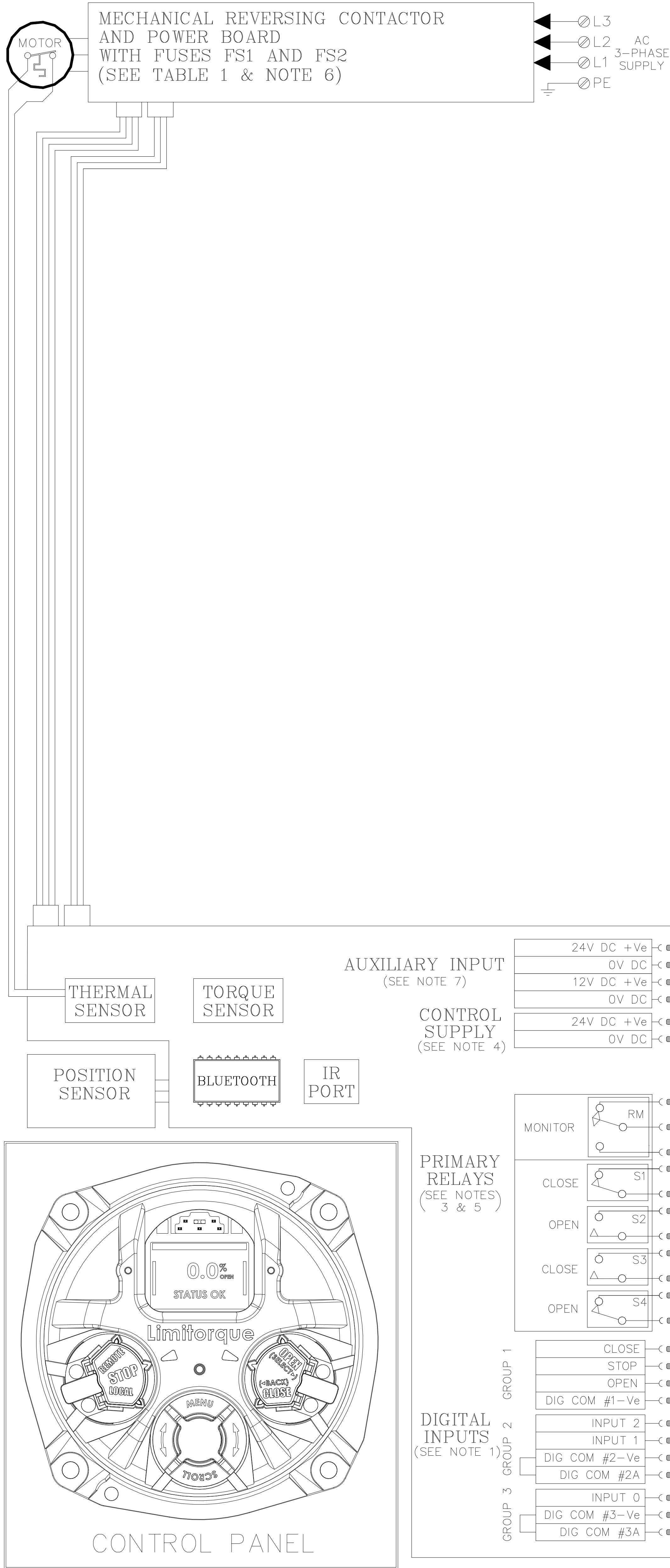
ACTUATOR OUTLINE DIMENSIONS (METRIC)														
UNIT SIZE	BB	CC	DD	EE	FF	GG	HH	JJ	LL	MM	PP	QQ	YY	ZZ
1X-10	135	60	46	117	233	173	125	214	163	78	389	297	40.0*	40.0*
1X-20	168	54	57	141	272	196	163	277	217	100	406	344	37.0*	33.5*
1X-40	224	54	68	150	283	198	174	297	229	105	414	350	37.0*	33.5*



NOTE:

1. SEE CUSTOMER DATA SHEET TO DETERMINE BASE AND ASSEMBLY POSITION SUPPLIED.

JOB NUMBER	5114 WOODALL ROAD, LYNCHBURG, VA. USA 24506-1318		
DRW: KVR	DRAWING TITLE MX-10-40 STANDARD UNITS WITH: A) SIDE MOUNTED HANDWHEEL B) OPTIONAL DISCONNECT SWITCH C) WG-07-1SD WORM GEAR OPERATOR D) MSS & ISO MOUNTING BASES		
DATE: 3-5-20			
CKD: SVA			
DATE: 3-5-20			
APV: MWR			
DATE: 3-12-20			
ALL DIMENSIONS ARE REFERENCE UNLESS OTHERWISE SPECIFIED	SIZE C	DRAWING NUMBER 03-654-0061	REV.
3rd ANGLE	SCALE NONE	UNITS	SHEET 1 OF 1



NOTES: (SEE INSTALLATION & OPERATION MANUAL VAIOM000071 FOR DETAILS)

1. REMOTE INPUTS

SIGNAL THRESHOLD – MINIMUM "ON" 19.2V AC/DC
MAXIMUM "OFF" 5.0V AC/DC
MAX LOAD – 10 mA / 110V AC

REQUIRED CONTROL SIGNAL DURATION = 350ms MIN.
INPUTS 0, 1, & 2 ARE FIELD CONFIGURABLE FOR CLOSE/OPEN/BOTH INHIBIT, USER INPUT, OR ESD.
INPUT 1 MAY ALSO BE CONFIGURED FOR PARTIAL STROKE TEST.
INPUT 2 MAY ALSO BE CONFIGURED FOR CSE
REMOTE SELECTION INDICATION.
DEFAULT INPUT CONFIGURATION
INPUT 0 – ESD,
INPUT 1 – OPEN INHIBIT,
INPUT 2 – CLOSE INHIBIT.

2. REMOTE INPUT JUMPERS

JUMPERS CAN BE USER WIRED TO CONNECT DIG COMMONS #1, 2 & 3 (AS NEEDED). THE 3 REMOTE WIRING GROUPS ARE ELECTRICALLY ISOLATED, INTERNALLY. ONLY A SINGLE POWER SOURCE MAY BE USED TO POWER ANY ONE GROUP BUT DIFFERENT SOURCES MAY POWER DIFFERENT GROUPS. IF DIFFERENT SOURCES ARE USED, ENSURE THAT THE POLARITIES ARE CORRECT.

3. DEFAULT [S] SETTINGS

THE DEFAULT OPERATING CONFIGURATION FOR THE "S" OUTPUTS ARE SHOWN IN THE TABLE BELOW. THE CONTACT STATES SHOWN IN THE SCHEMATIC REPRESENT A FULLY CLOSED VALVE. SEE OPERATION MANUAL FOR ALTERNATE CONFIGURATIONS.

OUTPUT SWITCH	VALVE POSITION		FUNCTION
	FULL CLOSE	FULL OPEN	
S1	—	—	CLOSE LIMIT
S3	—	—	
S2	—	—	OPEN LIMIT
S4	—	—	

— OPEN CONTACT
— CLOSED CONTACT

4. MAXIMUM EXTERNAL LOAD

TERMINALS 21 AND 22 (24 VDC)
– 5W MAX. EXT. LOAD

5. CONTACT RATINGS

S1–S4 – 5 AMPS @ 250 VAC OR 30VDC (RESISTIVE)
THE TOTAL COMBINED CURRENT THROUGH ALL FOUR STATUS CONTACTS (S1–S4) MUST NOT EXCEED 8A
MONITOR– 5 AMPS @ 250 VAC OR 30 VDC (RESISTIVE)

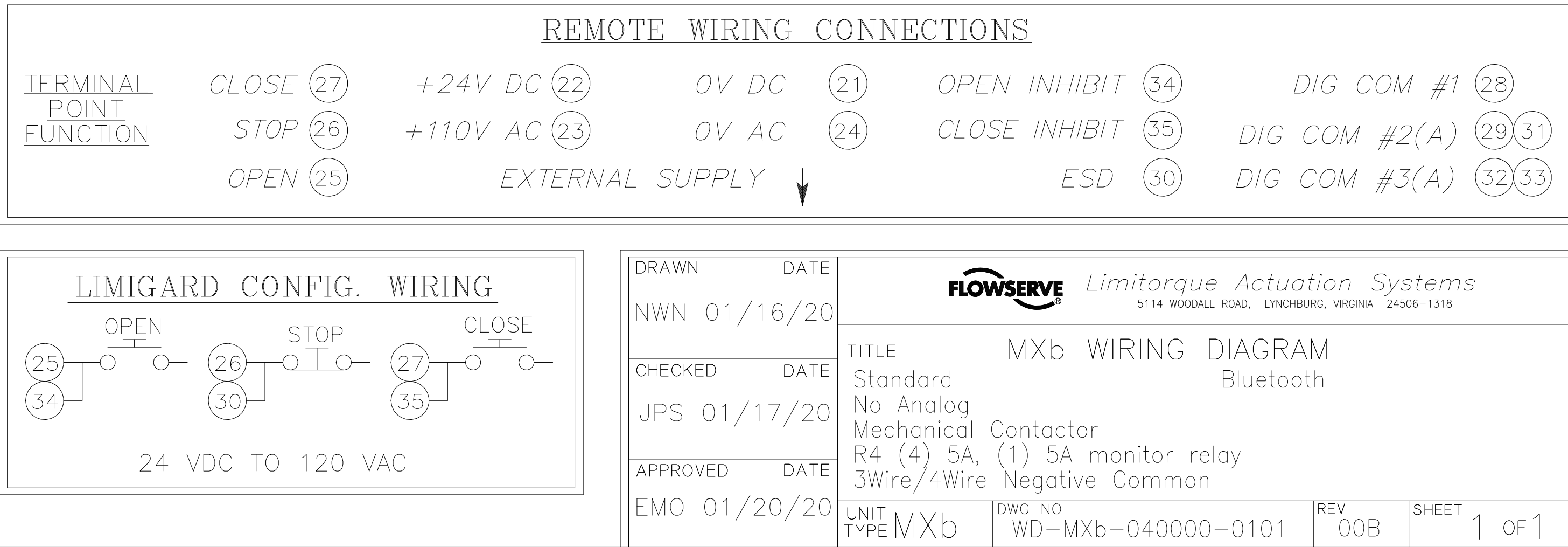
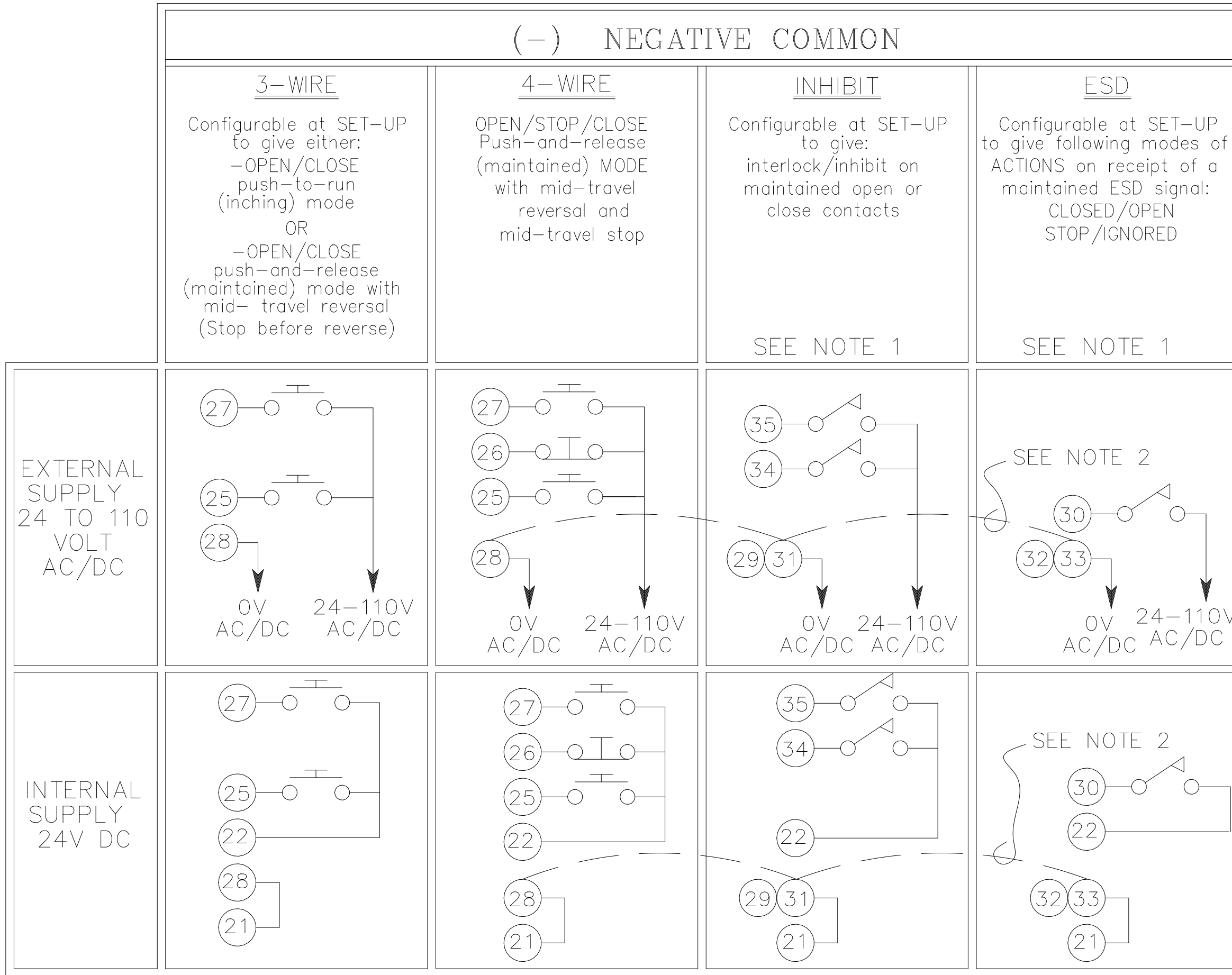
6. FUSES

FS1 (PRIMARY) } 600V AC, 1A, 100kA Int RATING,
FAST ACTING 10.3 x 38.1mm TUBE,
UL LISTED, CSA CERTIFIED
FS2 (PRIMARY) }

TABLE 1: TRANSFORMER TAPPING OPTIONS			
TYPE	TAPS	APPL. VOLTAGES	
1	106V	110V	
	115V	115V, 120V	
	200V	208V	
	212V	220V	
2	226V	226V, 230V, 240V	
	366V	380V	
	392V	400V, 415V	
	450V	440V, 460V, 480V	
3	212V	220V	
	505V	525V	
	530V	550V	
	572V	575V, 600V	

7. AUXILLIARY INPUTS

BACK-UP UPS POWER MAY BE CONNECTED: 24VDC TO TERMINALS 6 & 7, MAX. CURRENT DRAW 1 AMP; 12VDC TO TERMINALS 8 & 9, MAX. CURRENT DRAW 2 AMPS. THIS POWERS ALL CONTROLS AND OPTION BOARDS FOR LOCAL/REMOTE INDICATION AND CONFIGURATION. THE REVERSING CONTACTOR WILL NOT BE POWERED. CUSTOMER MUST SUPPLY FUSES AS REQUIRED BY LOCAL ELECTRICAL CODES.





Submittal Data Sheet
Date: August 15, 2024

ECO TECH INC
PO BOX 956
HOLLY SPRINGS GA 30142
United States

P.O. 24051GA-16
FACTORY ORDER SO116840
PROJ. NAME 24051GA - Lower Poplar WRF Influent PS

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
12		1	9741838	PEC,36,MJ,CI,NBR,NBR,DTR-S30SC0*X,SB16*AE3888

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	36	36 Inch (900mm)
End Connection	MJ	Mechanical Joint, Conforms to ANSI/AWWA C111/A21.11
Body Material	CI	Cast Iron
Packing	NBR	.5" - 3" Acrylonitrile-Butadiene Reinforced filler in a PTFE U-ring, -20 to 180° F. (-29 to 83° C.); 4" & Larger Acrylonitrile-Butadiene Reinforced V-type, -20 to 250° F. (-29 to 121° C.)
Plug Facing	NBR	Acrylonitrile-Butadiene; -20 to 180° F. (-29 to 83° C.)
Options	DTR	DeZURIK Standard Certified Production Hydrostatic Shell and Seat Test Report
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10) surface prep
Actuator	X	Specify Actuator in Special Construction
Stainless Steel Bolting & Tubing	SB16	316 Stainless Steel Bolting

Temperature Range	-20 to 180 Degrees
Valve Pressure	F. to 150 psig

RELATED DOCUMENTS

Z21270: DWG INST PEC MJ GR1 20.5 - 36 LIMITORQUE MX-10/WG-07-1SD ENK
NECK EXTENSION
J78589: DWG VALVE ASSY PEC MJ 24-36
J78586: DWG ACCESS ENK FUW PEC VALVE

MODIFIER

AE3888 LIMITORQUE - MXb-10/WG-07-1SD-D - PN:1464170
ACTUATOR MOUNTED ON TOTALLY ENCLOSED EXTENSION C/L OF VALVE TO TOP OF EXTENSION
= 90 IN (7'6"). INNER EXTENSION TO BE 304 SS, OUTER EXTENSION TO BE CARBON STEEL.

8'-4"

FEATURES

TAG: PV-8



Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

Phone: 434-528-4400
Fax:

Customer Data Sheet

SALES ORDER NO. 205928 REV 0	ORDER LINE 009	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225343.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

ACTUATOR INFORMATION

Electric Actuator Type MX-10 Series B
Enclosure Type WP&SUBM NEMA 3,4,4X,6,IP68
Electric Output RPM 100
Valve Torque 7806 Ft Lbs 10585 Nm
MX/Gear Box Max Rated Torque 13797 Ft Lbs 18709 Nm
MX/Gear Box Stall Torque 20773 Ft Lbs 28168 Nm
Operating Time for 90 degrees 101 Sec
Handwheel SIDE Mounted 12 Inch
Open Direction CCW
Lube SHC-632
Gear Box Type WG-07-1SD-D
Gear Box Ratio 674:1
Gear Box SGA Ratio NA
Gear Box Position A
Gear Box Base MSS-FA35
Gear Box Output RPM 0.15
Outline Drawing 03-654-0061
Sun Shade Drawing NA
Wiring Diagram WD-MXb-040000-0101
Disconnect Diagram NA
Conduit Entries 1-1/4,1-1/2,1-1/4,NONE
2-Speed Timer N Quik Board N
Control Options Network:STD Digital:R4 Analog:NONE
Main Board BLUETOOTH/UPS Wire Controls 3 WIRE MAINT
Disconnect Switch NONE
Warranty STANDARD

MOTOR INFORMATION

Motor Size 9 FT-LBS
Motor Voltage 480
Mtr Phase/Frequency Hz 3/60
Motor Horsepower 0.49
Motor RPM 1800
Locked Rotor Amps (LRA) 7.0
Full Load Amps (FLA) 1.7

Instruction Manual VAIOM000071 on the internet www.limitorque.com
Qualifications: The MX complies with all the test parameters identified in Limitorque MX qualification testing bulletin AIBR000087. Installation of the MX in environments outside the parameters identified in bulletin AIBR000087 voids the warranty.



Limitorque

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Lynchburg, VA 24502-2248
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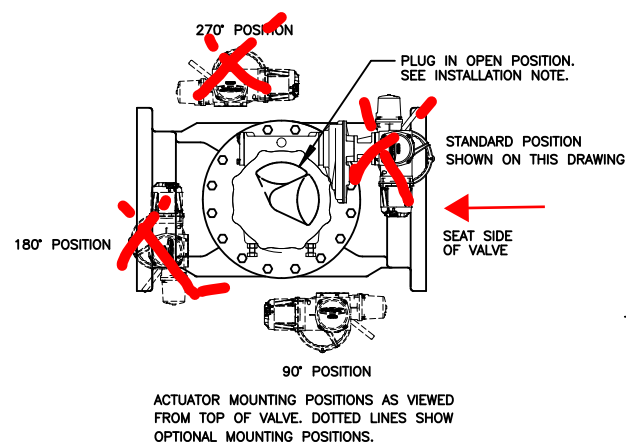
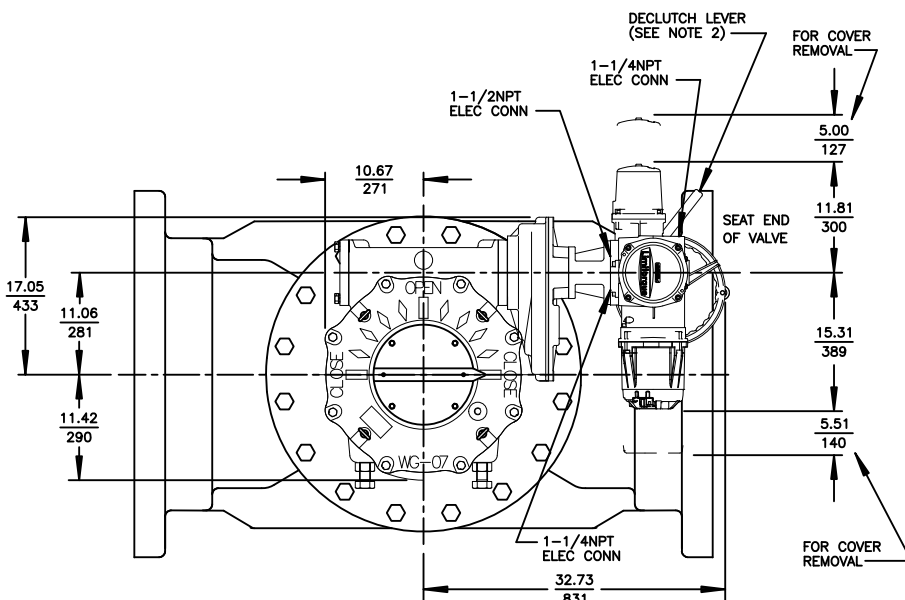
END USER **MACON, GA**
END PROJECT

TAGGING AND INFORMATION:
TAG: 1464170

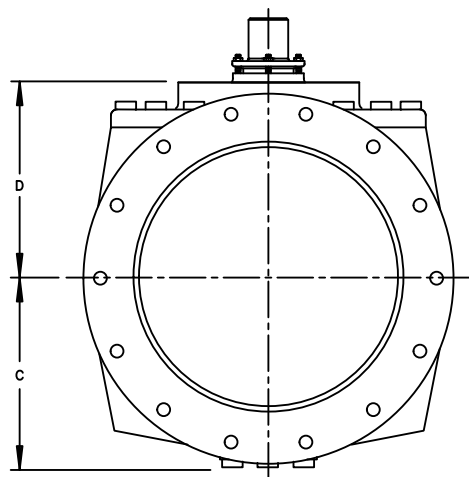
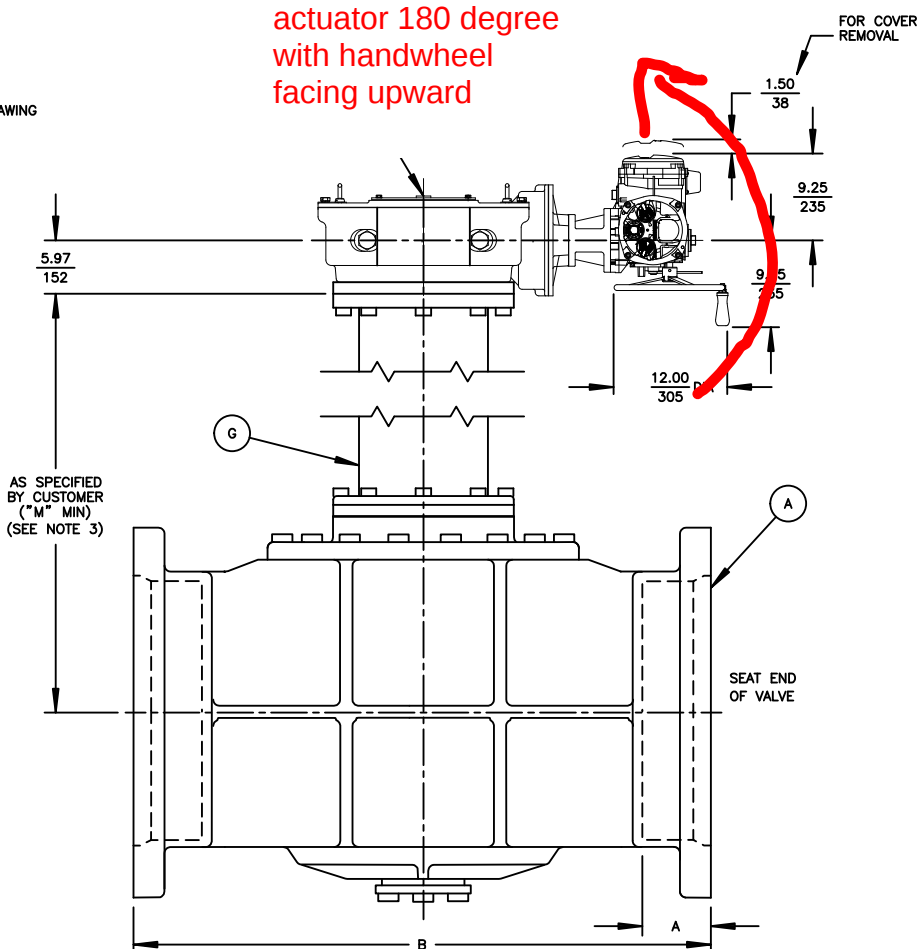
VALVE SIZE	PIPE SIZE		DIMENSIONS INCHES				
	IN	MM	A	B	C	D	M
20.5	20	500	3.50 89	42.00 1067	18.31 465	17.06 433	51.19 1300
24	24	600	3.50 89	42.00 1067	18.31 465	17.06 433	51.19 1300
24.5	24	600	3.50 89	51.00 1295	21.88 556	21.12 536	55.25 1403
30	30	750	4.00 102	51.00 1295	21.88 556	21.12 536	55.25 1403
30.5	30	750	4.00 102	60.00 1524	24.81 630	24.31 617	58.81 1494
36	36	900	4.00 102	60.00 1524	24.81 630	24.31 617	58.81 1494

NOTES:

- MECHANICAL JOINT ENDS MEET AWWA STANDARD C111.
- FOR MANUAL OPERATION PUSH LEVER IN DIRECTION OF ARROW ONLY. UNIT REMAINS IN HAND OPERATION UNTIL MOTOR IS ENERGIZED.
- SUPPORT REQUIRED BY CUSTOMER WHEN MOUNTED OTHER THAN VERTICAL OR VERTICAL EXTENSIONS OVER 36.00
914 .
- INSTALLATION NOTE:
 - FOR LIQUIDS & GASES:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST END OPPOSITE SEAT.
 - FOR SUSPENDED SOLIDS, SLURRIES, ETC:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST SEAT END. IN HORIZONTAL PIPELINES, VALVE SHOULD BE INSTALLED ON IT'S SIDE SO PLUG ROTATES TO THE TOP OF THE PIPELINE WHEN OPEN. (SEE DIAGRAM BELOW).



Rotate Limitorque actuator 180 degree with handwheel facing upward



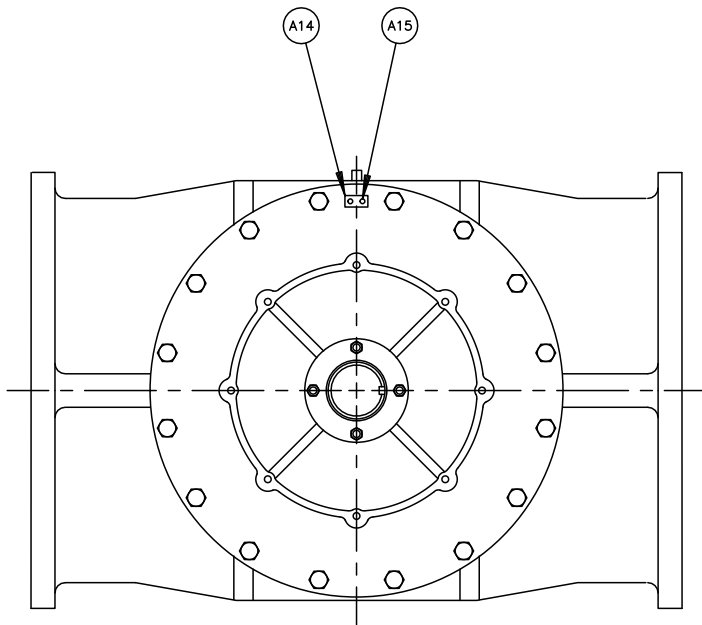
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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DeZURIK.com

PEC ECCENTRIC VALVES SIZE 20.5-36 MECHANICAL JOINT MATERIAL GROUP 1 LIMITORQUE WG-07-1SD/MX-10 3 PHASE MOTOR ACTUATOR W/SIDE MOUNTED HANDWHEEL WITH ENK NECK EXTENSION			
DOCT. CODE	DRAWN	TPC	APPROVED JWM
C1	CHECKED	JWM	DATE 08/08/24

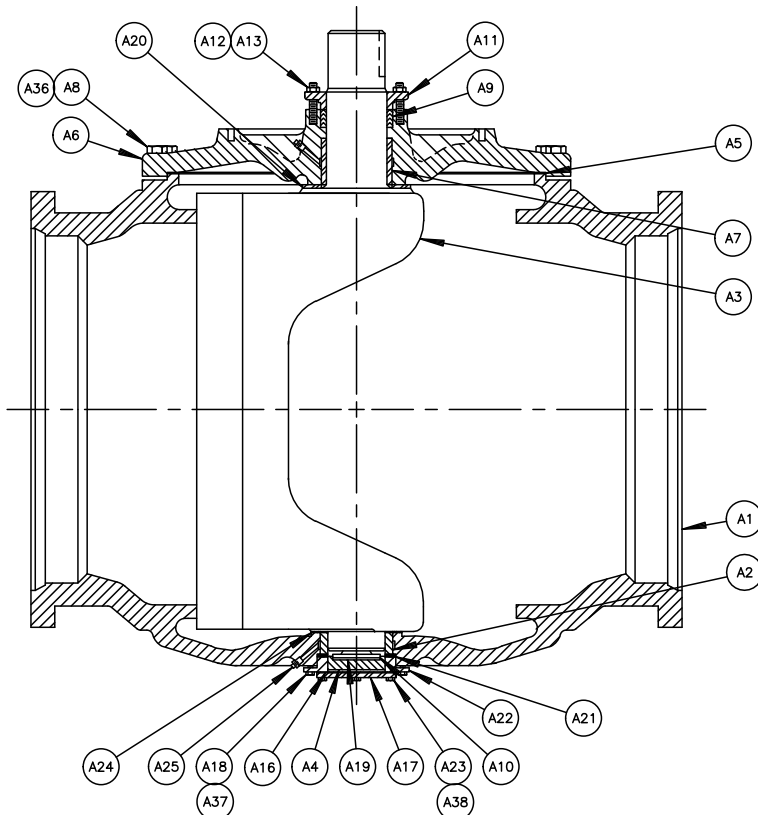
Z21270



NO	PART NAME	QTY
A1	BODY	1
A2	BEARING	1
A3	PLUG	1
A4	RETAINER NUT	1
A5	GASKET (BODY)	1
A6	BONNET	1
A7	BEARING	1
A8	SCREW	16
A9	PACKING	—
A10	THRUST PLATE	1
A11	GLAND	1
A12	STUD	4
A13	NUT	4
A14	CAUTION TAG	1
A15	DRIVE SCREW	2
A16	GASKET	1
A17	COVER	1
A18	SCREW	6
A19	BEARING	1
A20	GRIT EXCLUDER	1
A21	GASKET (JOURNAL COVER)	1
A22	JOURNAL COVER	1
A23	SCREW	6
A24	GRIT EXCLUDER	—
A25	PIPE PLUG	2
A36	WASHER (FUSION COATING)	16
A37	WASHER (FUSION COATING)	6
A38	WASHER (FUSION COATING)	6

NOTE:

1. RECOMMENDED SPARE PARTS ARE ITEMS A3, PLUG (IF RUBBER FACED) A5, A9, A16 & A21.
2. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE, ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
3. CLOCKWISE ROTATION ON PLUG STEM CLOSSES VALVE.



70843	03/24/20
63446	08/07/17
50312	11/04/08
50312	03/28/08



PEC ECCENTRIC VALVE ASSEMBLY 24-36 MECH JOINT
VALVES WITH PLUG SUPPORT

DOCT. CODE	DRAWN	JTD	APPROVED	JDM
C1	CHECKED	JDM	DATE	04/30/99

J78589



Materials Of Construction

DRAWING(S): J78589(A00)

SALES ORDER: SO116840

DESCRIPTION: PEC,36,MJ,CI,NBR,NBR,DTR-S30SC0*X,SB16*AE3888

ITEM	MATERIAL
A00	STAINLESS STEEL, SERIES 300
A00	STAINLESS STEEL, TYPE 18-8
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A03	IRON, ASTM A126, CLASS B
A03	ACRYLONITRILE-BUTADIENE (NBR)
A04	CARBON STEEL, ASTM A108, GRADE 12L14
A05	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A06	IRON, ASTM A126, CLASS B
A07	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A08	STAINLESS STEEL, TYPE 316
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A10	STAINLESS STEEL, TYPE 316, ASTM A276, CONDITION A
A11	IRON, ASTM A126, CLASS B
A12	STAINLESS STEEL, TYPE 316
A13	STAINLESS STEEL, TYPE 316
A14	STAINLESS STEEL, TYPE 302
A15	STAINLESS STEEL, TYPE 18-8
A16	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL

A17	STEEL, ASTM A36
A18	STAINLESS STEEL, TYPE 316
A19	TETRAFLUOROETHYLENE (TEFLON), SELF LUBRICATING, WITH 304 STAINLESS STEEL BACKING
A20	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A21	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A22	IRON, ASTM A126, CLASS B
A23	STAINLESS STEEL, TYPE 316
A24	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A25	STEEL

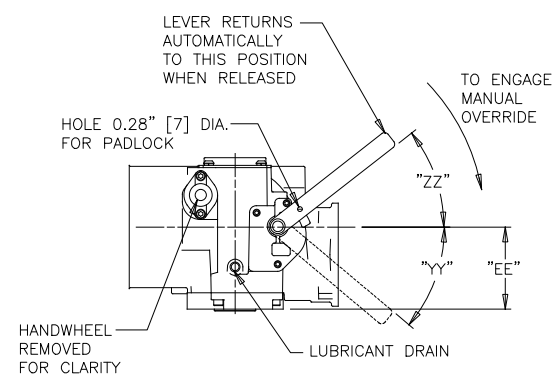
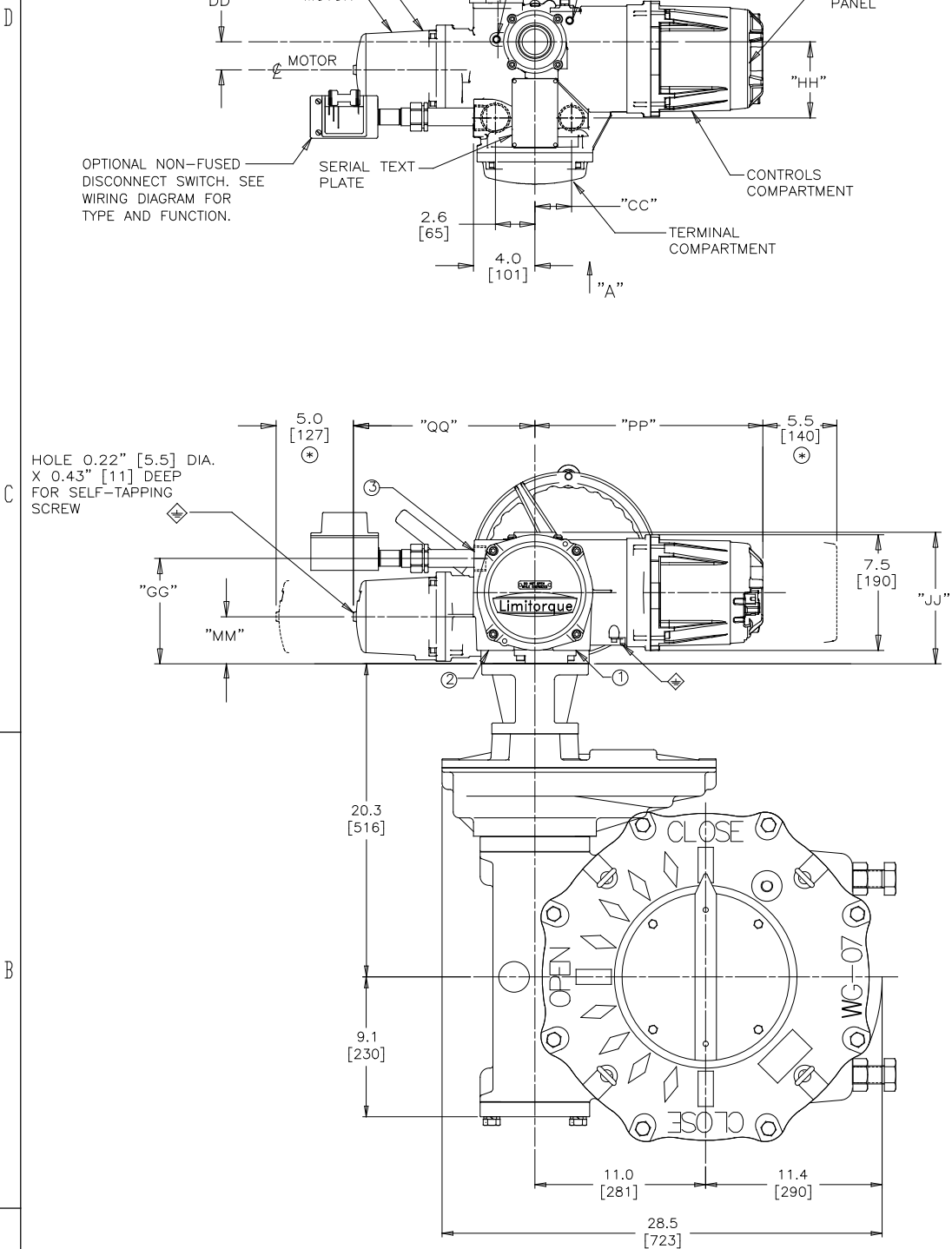
D

C

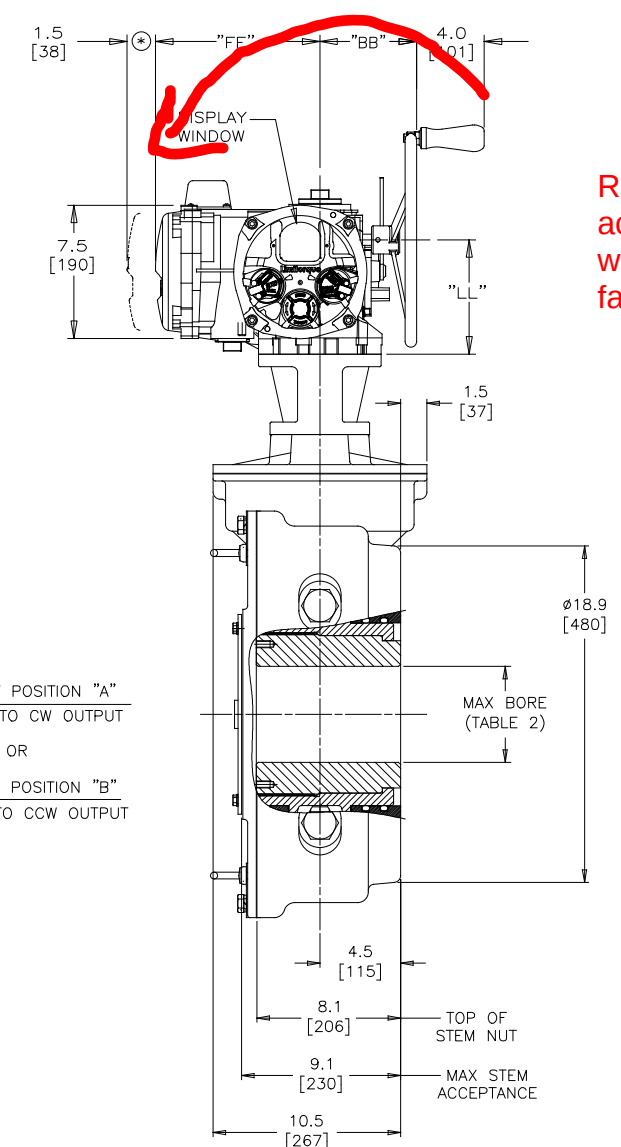
B

A

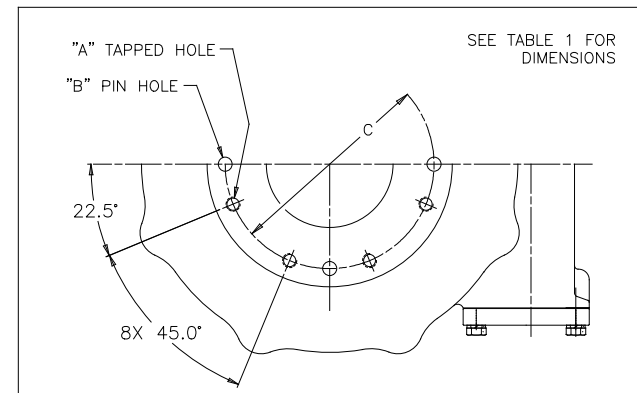
REV	CHG NO	DATE	REVD	CHKD	APVD
THIS PROPRIETARY AND/OR CONFIDENTIAL MATERIAL IS THE PROPERTY OF FLOWSERVE CORP. AND IS FURNISHED ONLY FOR THE PURPOSE INDICATED. FLOWSERVE RESERVES ALL RIGHTS IN THE MATERIAL, AND DOES NOT CONVEY PERMISSION TO MANUFACTURE OR USE THE CONFIDENTIAL OR PROPRIETARY INFORMATION CONTAINED HEREIN.					



DETAIL OF DECLUTCH LEVER (VIEW AT "B")



Rotate Limitorque actuator 180 degree with handwheel facing upward



CONDUIT ENTRIES			
POSITION	①	②	③
STANDARD	1 1/4" NPT	1 1/2" NPT	1 1/4" NPT
OPTIONS	M32, M25 M20	M40, M32, M25, M20	M32, M25 M20
	PG21	PG29, PG21	PG21

TABLE 1

MOUNTING BASE		A	B	C
MSS (INCH)	FA30	(8) 3/4-10 UNC TAP X 1.2 DP	N/A	Ø11.7
	FA35	(8) 1-8 UNC TAP X 1.8 DP	N/A	Ø14.0
	FA40	(8) 1 1/4-7 UNC TAP X 2.1 DP	N/A	Ø16.0
ISO (METRIC)	F30	(8) M20 TAP X 30 DP	(4) Ø20 PIN X 20 DP	Ø298
	F35	(8) M30 TAP X 45 DP	(4) Ø30 PIN X 30 DP	Ø356
	F40	(8) M36 TAP X 54 DP	(4) Ø36 PIN X 36 DP	Ø406

TABLE 2

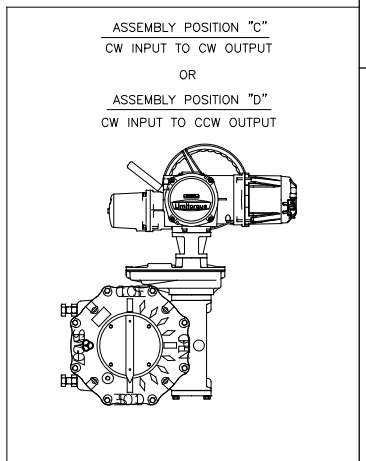
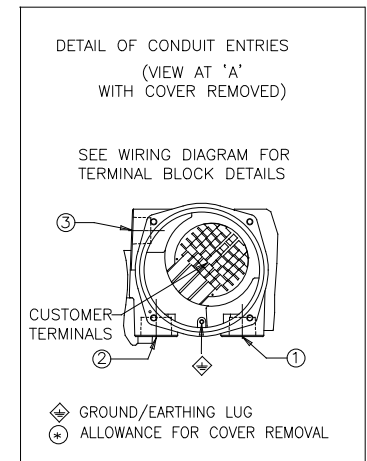
MAX BORE	MAX KEYWAY (SQUARE)	MAX KEYWAY (RECTANGLE)
Ø5.875	1 1/2 X 1 1/2	-
Ø6.313	-	1 1/2 X 1
[Ø164]	-	[40 X 22]

ACTUATOR OUTLINE DIMENSIONS (INCHES)

UNIT SIZE	BB	CC	DD	EE	FF	GG	HH	JJ	LL	MM	PP	QQ	YY	ZZ
MX-10	5.3	2.4	1.8	4.6	9.2	6.8	4.9	8.4	6.4	3.1	15.3	11.7	40.0"	40.0"
MX-20	6.8	2.1	2.2	5.6	10.7	7.7	6.4	10.9	8.6	3.9	16.0	13.5	37.0"	33.5"
MX-40	8.8	2.1	2.7	5.9	11.1	7.8	6.9	11.7	9.0	4.1	16.3	13.8	37.0"	33.5"

ACTUATOR OUTLINE DIMENSIONS (METRIC)

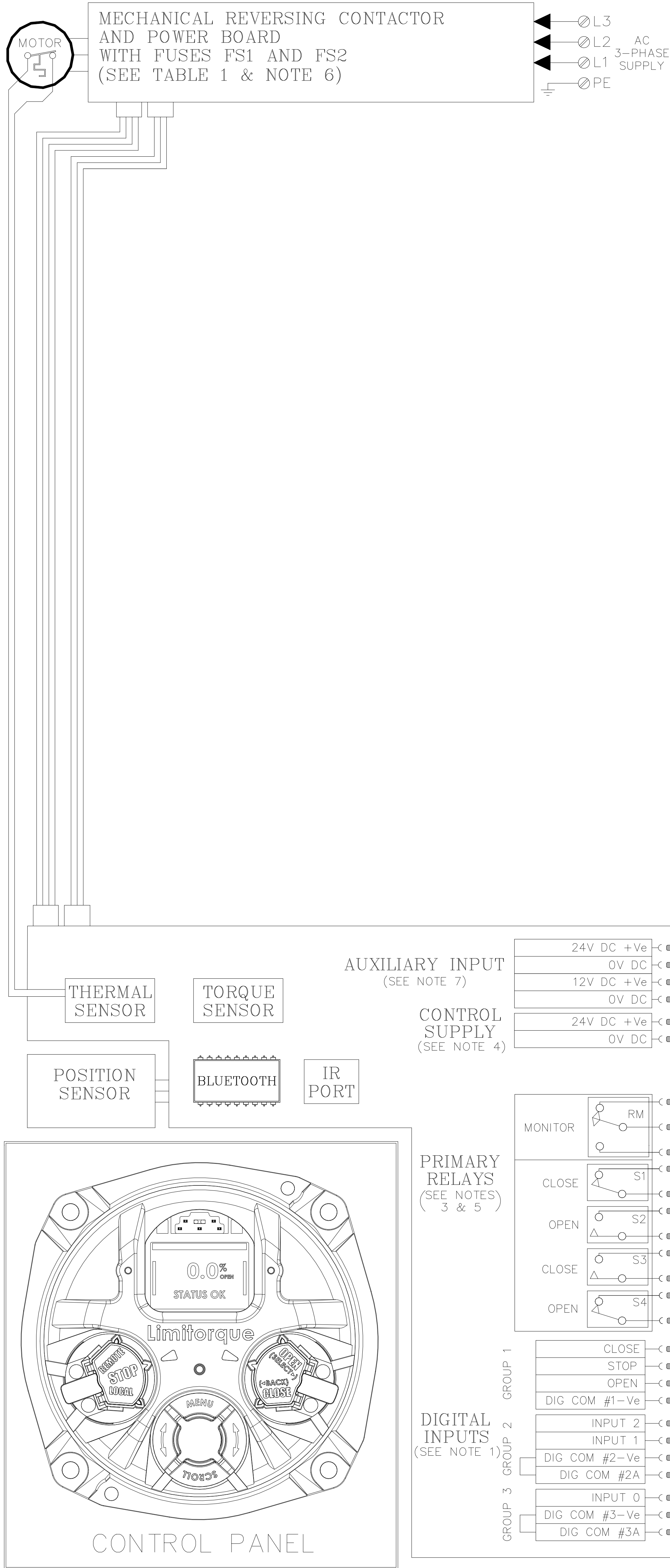
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NOTE:

1. SEE CUSTOMER DATA SHEET TO DETERMINE BASE AND ASSEMBLY POSITION SUPPLIED.

JOB NUMBER	5114 WOODALL ROAD, LYNCHBURG, VA. USA 24506-1318		
DRW: KVR	DRAWING TITLE		
DATE: 3-5-20	MX-10-40 STANDARD UNITS WITH:		
CKD: SVA	A) SIDE MOUNTED HANDWHEEL		
DATE: 3-5-20	B) OPTIONAL DISCONNECT SWITCH		
APV: MWR	C) WG-07-1SD WORM GEAR OPERATOR		
DATE: 3-12-20	D) MSS & ISO MOUNTING BASES		
ALL DIMENSIONS ARE REFERENCE UNLESS OTHERWISE SPECIFIED	SIZE C	DRAWING NUMBER 03-654-0061	REV.
3rd ANGLE	SCALE NONE	UNITS	SHEET 1 OF 1



NOTES: (SEE INSTALLATION & OPERATION MANUAL VAIOM000071 FOR DETAILS)

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MAXIMUM "OFF" 5.0V AC/DC
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INPUT 2 MAY ALSO BE CONFIGURED FOR CSE
REMOTE SELECTION INDICATION.
DEFAULT INPUT CONFIGURATION
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2. REMOTE INPUT JUMPERS

JUMPERS CAN BE USER WIRED TO CONNECT DIG COMMONS
#1, 2 & 3 (AS NEEDED). THE 3 REMOTE WIRING GROUPS
ARE ELECTRICALLY ISOLATED, INTERNALLY. ONLY A SINGLE
POWER SOURCE MAY BE USED TO POWER ANY ONE GROUP
BUT DIFFERENT SOURCES MAY POWER DIFFERENT GROUPS.
IF DIFFERENT SOURCES ARE USED, ENSURE THAT THE
POLARITIES ARE CORRECT.

3. DEFAULT [S] SETTINGS

THE DEFAULT OPERATING CONFIGURATION FOR THE
"S" OUTPUTS ARE SHOWN IN THE TABLE BELOW.
THE CONTACT STATES SHOWN IN THE SCHEMATIC
REPRESENT A FULLY CLOSED VALVE.
SEE OPERATION MANUAL FOR ALTERNATE CONFIGURATIONS.

OUTPUT SWITCH	VALVE POSITION		FUNCTION
	FULL CLOSE	FULL OPEN	
S1	—	—	CLOSE LIMIT
S3	—	—	
S2	—	—	OPEN LIMIT
S4	—	—	

— — OPEN CONTACT
— — CLOSED CONTACT

4. MAXIMUM EXTERNAL LOAD

TERMINALS 21 AND 22 (24 VDC)
— 5W MAX. EXT. LOAD

5. CONTACT RATINGS

S1–S4 – 5 AMPS @ 250 VAC OR 30VDC (RESISTIVE)
THE TOTAL COMBINED CURRENT THROUGH ALL FOUR
STATUS CONTACTS (S1–S4) MUST NOT EXCEED 8A
MONITOR– 5 AMPS @ 250 VAC OR 30 VDC (RESISTIVE)

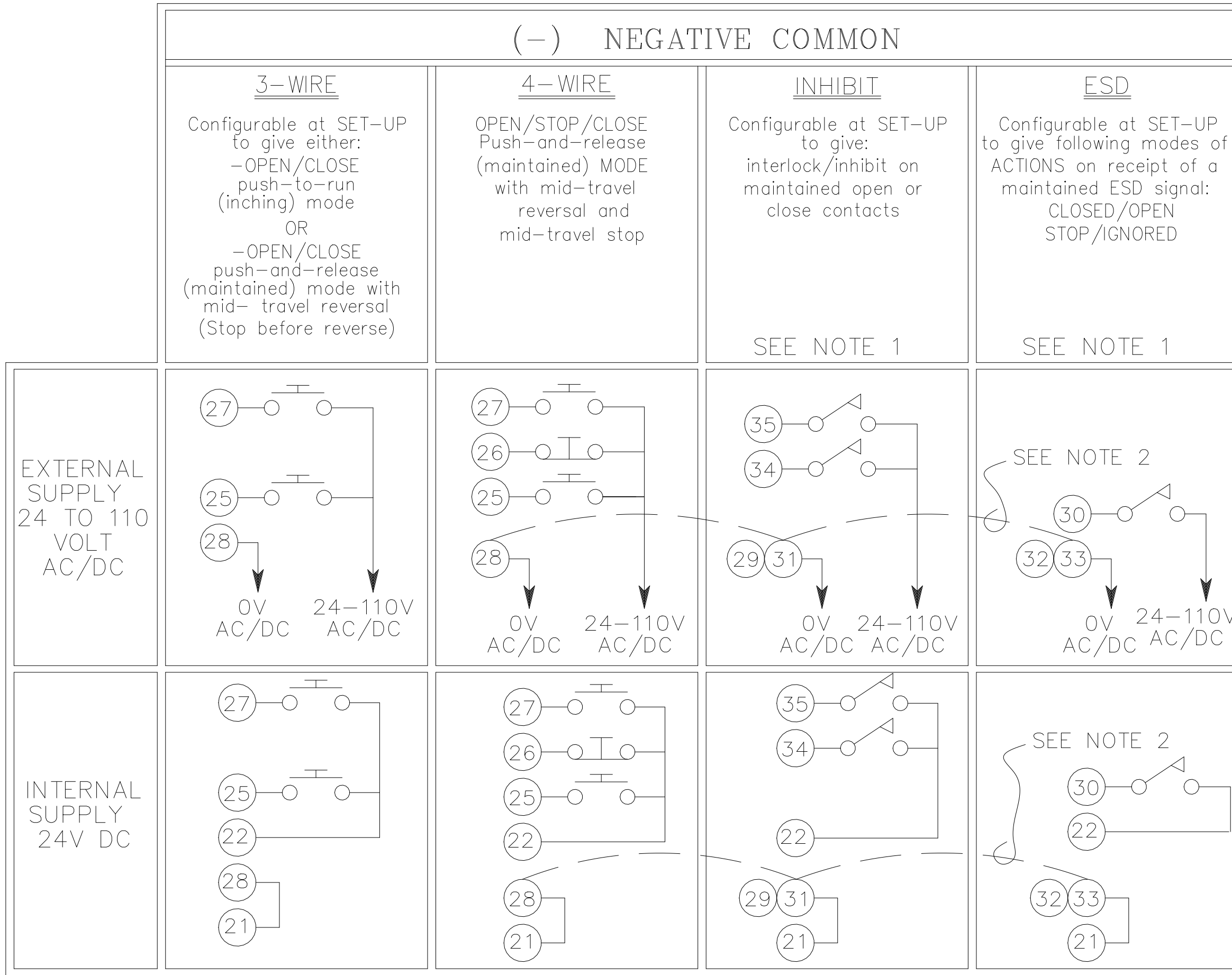
6. FUSES

FS1 (PRIMARY) — 600V AC, 1A, 100kA Int RATING,
FAST ACTING 10.3 x 38.1mm TUBE.
UL LISTED, CSA CERTIFIED
FS2 (PRIMARY) —

TABLE 1: TRANSFORMER TAPPING OPTIONS			
TYPE	TAPS	APPL. VOLTAGES	
1	106V	110V	
	115V	115V, 120V	
	200V	208V	
	212V	220V	
2	226V	226V,230V,240V	
	366V	380V	
	392V	400V,415V	
	450V	440V,460V,480V	
3	212V	220V	
	505V	525V	
	530V	550V	
	572V	575V,600V	

7. AUXILLIARY INPUTS

BACK-UP UPS POWER MAY BE CONNECTED: 24VDC TO
TERMINALS 6 & 7, MAX. CURRENT DRAW 1 AMP; 12VDC TO
TERMINALS 8 & 9, MAX. CURRENT DRAW 2 AMPS. THIS POWERS
ALL CONTROLS AND OPTION BOARDS FOR LOCAL/REMOTE
INDICATION AND CONFIGURATION. THE REVERSING CONTACTOR WILL
NOT BE POWERED. CUSTOMER MUST SUPPLY FUSES AS REQUIRED
BY LOCAL ELECTRICAL CODES.



REMOTE WIRING CONNECTIONS

TERMINAL POINT FUNCTION	CLOSE (27)	+24V DC (22)	0V DC (21)	OPEN INHIBIT (34)	DIG COM #1 (28)
	STOP (26)	+110V AC (23)	0V AC (24)	CLOSE INHIBIT (35)	DIG COM #2(A) (29/31)
	OPEN (25)	EXTERNAL SUPPLY ↓		ESD (30)	DIG COM #3(A) (32/33)

LIMIGARD CONFIG. WIRING

DRAWN	DATE	FLowsERVE <i>Limitorque Actuation Systems</i> 5114 WOODALL ROAD, LYNCHBURG, VIRGINIA 24506-1318	
NWN	01/16/20	TITLE MXb WIRING DIAGRAM Bluetooth	
CHECKED	DATE	Standard No Analog Mechanical Contactor	
JPS	01/17/20	R4 (4) 5A, (1) 5A monitor relay 3Wire/4Wire Negative Common	
APPROVED	DATE	UNIT TYPE	DWG NO
EMO	01/20/20	MXb	WD-MXb-040000-0101
REV	SHEET	00B 1 of 1	



Submittal Data Sheet
Date: August 15, 2024

ECO TECH INC
PO BOX 956
HOLLY SPRINGS GA 30142
United States

P.O. 24051GA-16
FACTORY ORDER SO116840
PROJ. NAME 24051GA - Lower Poplar WRF Influent PS

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
4		1	9741839	PEC,30,MJ,CI,NBR,NBR,DTR-S30SC0*X,SB16*AE3889

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	30	30 Inch (750mm)
End Connection	MJ	Mechanical Joint, Conforms to ANSI/AWWA C111/A21.11
Body Material	CI	Cast Iron
Packing	NBR	.5" - 3" Acrylonitrile-Butadiene Reinforced filler in a PTFE U-ring, -20 to 180° F. (-29 to 83° C.); 4" & Larger Acrylonitrile-Butadiene Reinforced V-type, -20 to 250° F. (-29 to 121° C.)
Plug Facing	NBR	Acrylonitrile-Butadiene; -20 to 180° F. (-29 to 83° C.)
Options	DTR	DeZURIK Standard Certified Production Hydrostatic Shell and Seat Test Report
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10) surface prep
Actuator	X	Specify Actuator in Special Construction
Stainless Steel Bolting & Tubing	SB16	316 Stainless Steel Bolting

Temperature Range	-20 to 180 Degrees
Valve Pressure	F. to 150 psig

RELATED DOCUMENTS

Z21270: DWG INST PEC MJ GR1 20.5 - 36 LIMITORQUE MX-10/WG-07-1SD ENK
NECK EXTENSION
J78589: DWG VALVE ASSY PEC MJ 24-36
J78586: DWG ACCESS ENK FUW PEC VALVE

MODIFIER

AE3889 LIMITORQUE - MXb-10/WG-07-1SD-D - PN:1464171
ACTUATOR MOUNTED ON TOTALLY ENCLOSED EXTENSION C/L OF VALVE TO TOP OF EXTENSION
= 90 IN (7'6"). INNER EXTENSION TO BE 304 SS, OUTER EXTENSION TO BE CARBON STEEL.

8'-4"

FEATURES

TAG: PV-9



Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

Phone: 434-528-4400
Fax:

Customer Data Sheet

SALES ORDER NO. 205928 REV 0	ORDER LINE 004	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225337.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

ACTUATOR INFORMATION

Electric Actuator Type MX-10 Series B
Enclosure Type WP&SUBM NEMA 3,4,4X,6,IP68
Electric Output RPM 155
Valve Torque 4854 Ft Lbs 6582 Nm
MX/Gear Box Max Rated Torque 13797 Ft Lbs 18709 Nm
MX/Gear Box Stall Torque 20773 Ft Lbs 28168 Nm
Operating Time for 90 degrees 65 Sec
Handwheel SIDE Mounted 12 Inch
Open Direction CCW
Lube SHC-632
Gear Box Type WG-07-1SD-D
Gear Box Ratio 674:1
Gear Box SGA Ratio NA
Gear Box Position A
Gear Box Base MSS-FA35
Gear Box Output RPM 0.23
Outline Drawing 03-654-0061
Sun Shade Drawing NA
Wiring Diagram WD-MXb-040000-0101
Disconnect Diagram NA
Conduit Entries 1-1/4,1-1/2,1-1/4,NONE
2-Speed Timer N Quik Board N
Control Options Network:STD Digital:R4 Analog:NONE
Main Board BLUETOOTH/UPS Wire Controls 3 WIRE MAINT
Disconnect Switch NONE
Warranty STANDARD

MOTOR INFORMATION

Motor Size 7 FT-LBS
Motor Voltage 480
Mtr Phase/Frequency Hz 3/60
Motor Horsepower 0.74
Motor RPM 3600
Locked Rotor Amps (LRA) 7.4
Full Load Amps (FLA) 1.3

Instruction Manual VAIOM000071 on the internet www.limitorque.com
Qualifications: The MX complies with all the test parameters identified in Limitorque MX qualification testing bulletin AIBR000087. Installation of the MX in environments outside the parameters identified in bulletin AIBR000087 voids the warranty.



Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
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END USER **MACON, GA**
END PROJECT

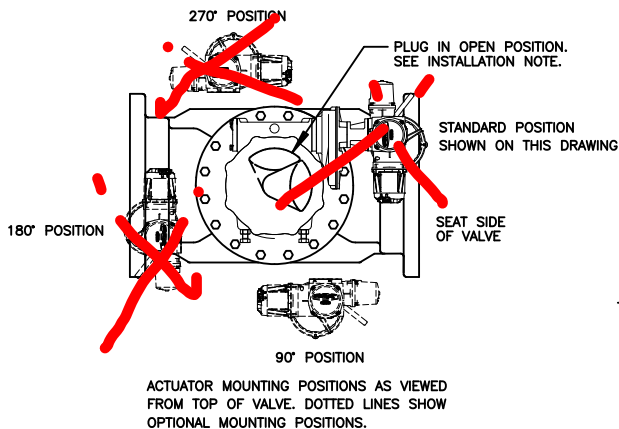
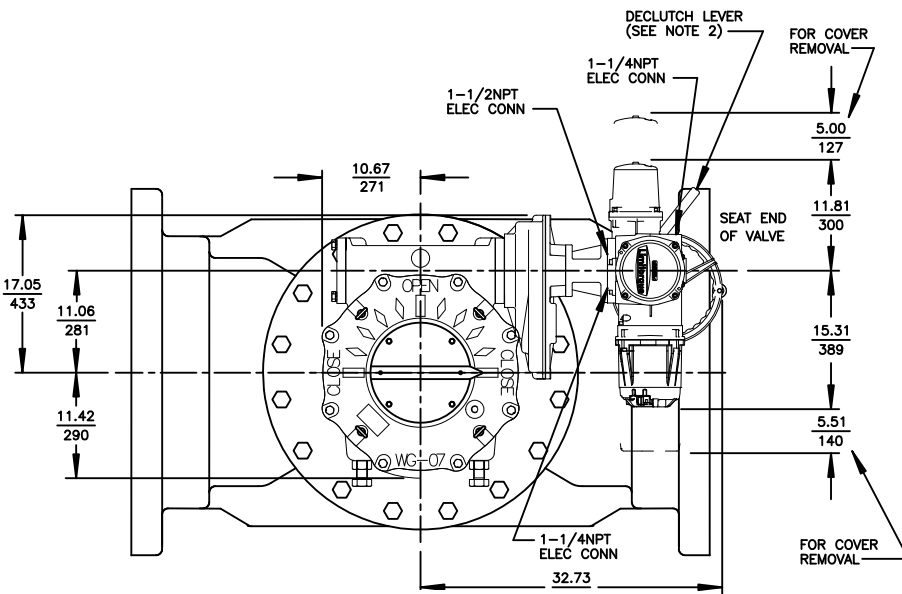
TAGGING AND INFORMATION:
TAG: 1464171

VALVE SIZE	PIPE SIZE		DIMENSIONS INCHES				
	IN	MM	A	B	C	D	M
20.5	20	500	3.50 89	42.00 1067	18.31 465	17.06 433	51.19 1300
24	24	600	3.50 89	42.00 1067	18.31 465	17.06 433	51.19 1300
24.5	24	600	3.50 89	51.00 1295	21.88 556	21.12 536	55.25 1403
30	30	750	4.00 102	51.00 1295	21.88 556	21.12 536	55.25 1403
30.5	30	750	4.00 102	60.00 1524	24.81 630	24.31 617	58.81 1494
36	36	900	4.00 102	60.00 1524	24.81 630	24.31 617	58.81 1494

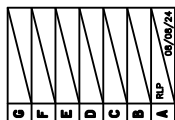
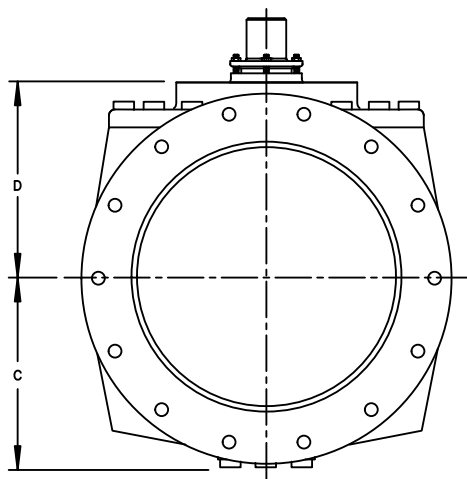
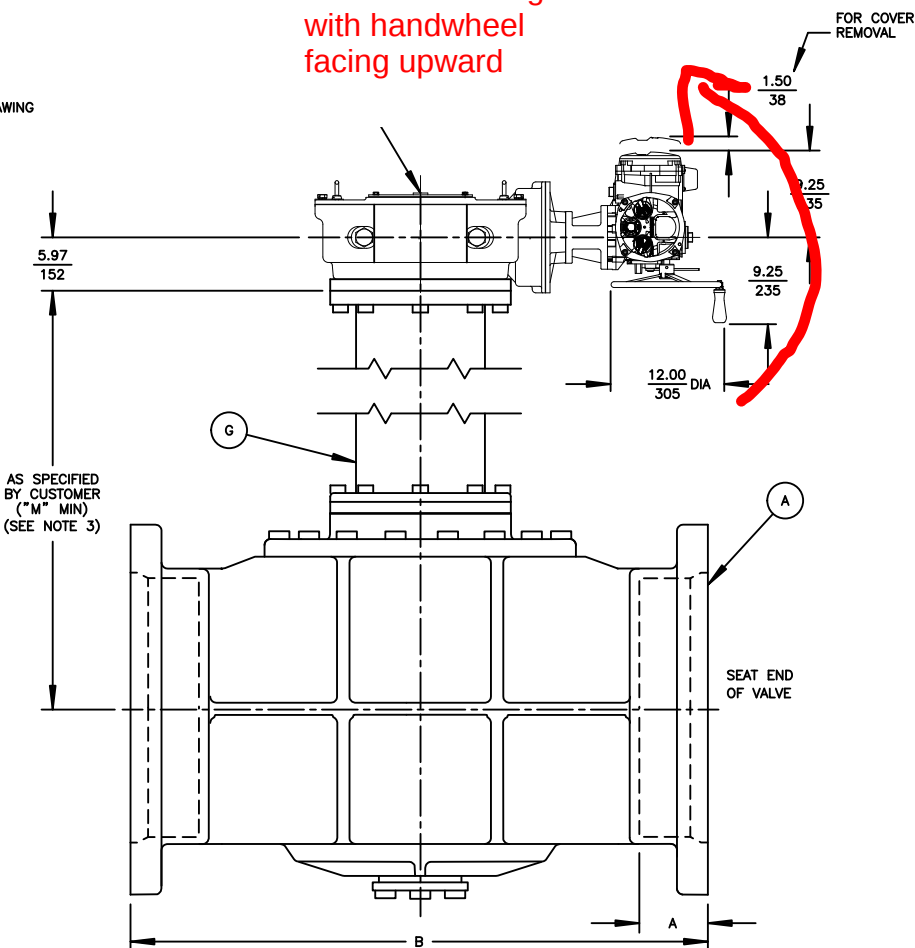
NOTES:

- MECHANICAL JOINT ENDS MEET AWWA STANDARD C111.
- FOR MANUAL OPERATION PUSH LEVER IN DIRECTION OF ARROW ONLY. UNIT REMAINS IN HAND OPERATION UNTIL MOTOR IS ENERGIZED.
- SUPPORT REQUIRED BY CUSTOMER WHEN MOUNTED OTHER THAN VERTICAL OR VERTICAL EXTENSIONS OVER 36.00
914 .
- INSTALLATION NOTE:

- FOR LIQUIDS & GASES:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST END OPPOSITE SEAT.
- FOR SUSPENDED SOLIDS, SLURRIES, ETC:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST SEAT END. IN HORIZONTAL PIPELINES, VALVE SHOULD BE INSTALLED ON IT'S SIDE SO PLUG ROTATES TO THE TOP OF THE PIPELINE WHEN OPEN. (SEE DIAGRAM BELOW).



Rotate Limitorque actuator 180 degree with handwheel facing upward

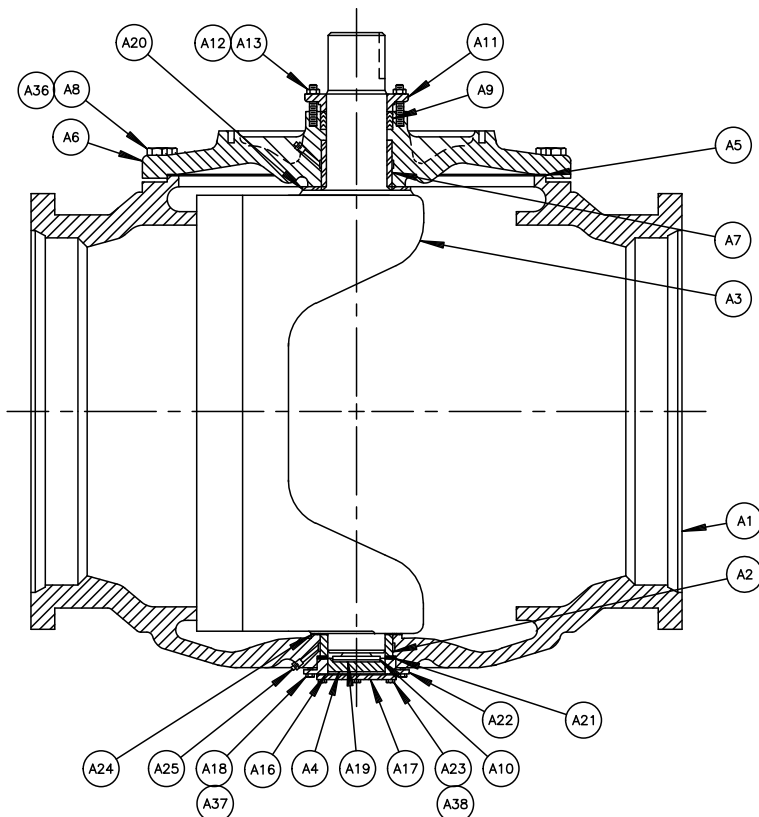
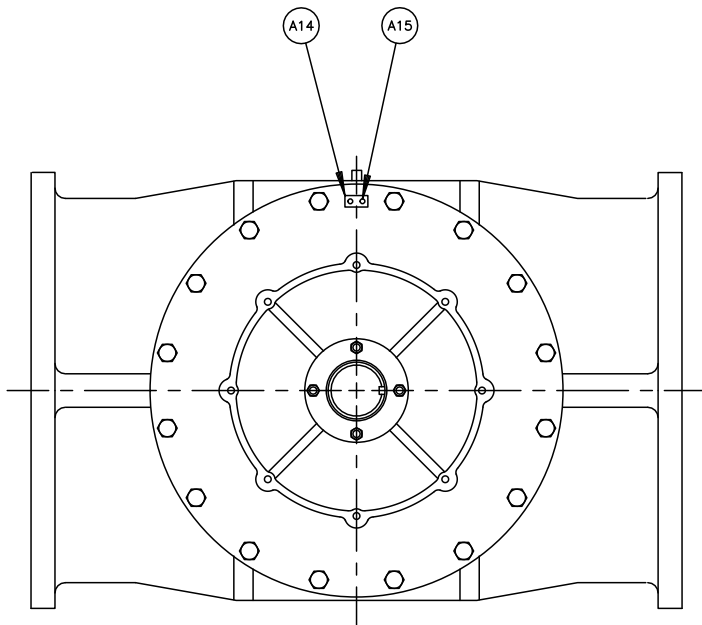


DeZURIK.com

PEC ECCENTRIC VALVES SIZE 20.5-36 MECHANICAL JOINT MATERIAL GROUP 1 LIMITORQUE WG-07-1SD/MX-10 3 PHASE MOTOR ACTUATOR W/SIDE MOUNTED HANDWHEEL WITH ENK NECK EXTENSION

DOCT. CODE	DRAWN	TPC	APPROVED	JWM
C1	CHECKED	JWM	DATE	08/08/24

Z21270



NO	PART NAME	QTY
A1	BODY	1
A2	BEARING	1
A3	PLUG	1
A4	RETAINER NUT	1
A5	GASKET (BODY)	1
A6	BONNET	1
A7	BEARING	1
A8	SCREW	16
A9	PACKING	—
A10	THRUST PLATE	1
A11	GLAND	1
A12	STUD	4
A13	NUT	4
A14	CAUTION TAG	1
A15	DRIVE SCREW	2
A16	GASKET	1
A17	COVER	1
A18	SCREW	6
A19	BEARING	1
A20	GRIT EXCLUDER	1
A21	GASKET (JOURNAL COVER)	1
A22	JOURNAL COVER	1
A23	SCREW	6
A24	GRIT EXCLUDER	—
A25	PIPE PLUG	2
A36	WASHER (FUSION COATING)	16
A37	WASHER (FUSION COATING)	6
A38	WASHER (FUSION COATING)	6

NOTE:

1. RECOMMENDED SPARE PARTS ARE ITEMS A3, PLUG (IF RUBBER FACED) A5, A9, A16 & A21.
2. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE, ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
3. CLOCKWISE ROTATION ON PLUG STEM CLOSSES VALVE.

70843	03/24/20
63446	08/07/17
50312	11/04/08
50312	03/26/08



PEC ECCENTRIC VALVE ASSEMBLY 24-36 MECH JOINT
VALVES WITH PLUG SUPPORT

DOCT. CODE	DRAWN	JTD	APPROVED	JDM
C1	CHECKED	JDM	DATE	04/30/99

J78589



Materials Of Construction

DRAWING(S): J78589(A00)

SALES ORDER: SO116840

DESCRIPTION: PEC,30,MJ,CI,NBR,NBR,DTR-S30SC0*X,SB16*AE3890

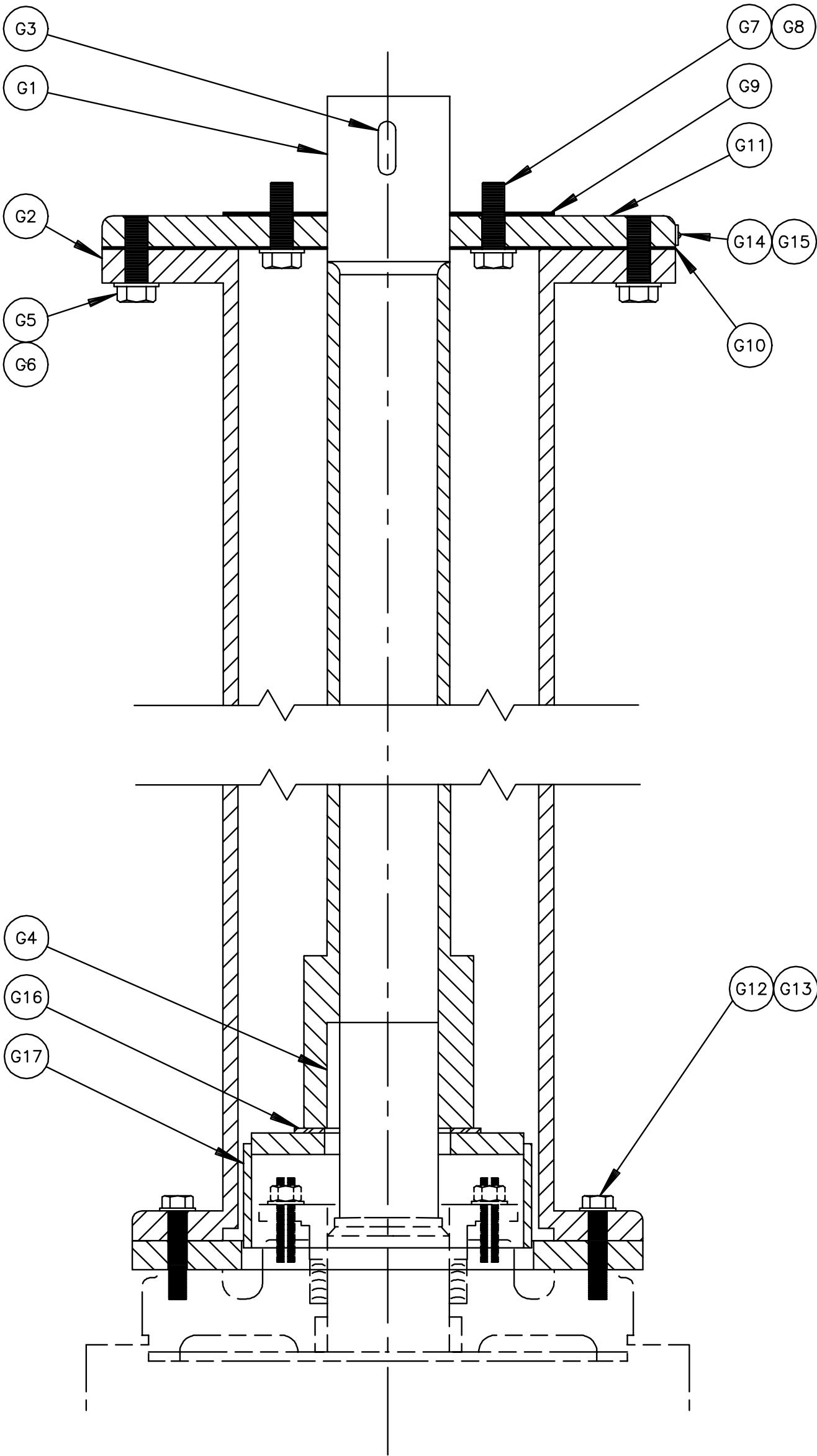
ITEM	MATERIAL
A00	STAINLESS STEEL, SERIES 300
A00	STAINLESS STEEL, TYPE 18-8
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A03	IRON, ASTM A126, CLASS B
A03	ACRYLONITRILE-BUTADIENE (NBR)
A04	CARBON STEEL, ASTM A108, GRADE 12L14
A05	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A06	IRON, ASTM A126, CLASS B
A07	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A08	STAINLESS STEEL, TYPE 316
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A10	STAINLESS STEEL, TYPE 316, ASTM A276, CONDITION A
A11	IRON, ASTM A126, CLASS B
A12	STAINLESS STEEL, TYPE 316
A13	STAINLESS STEEL, TYPE 316
A14	STAINLESS STEEL, TYPE 302
A15	STAINLESS STEEL, TYPE 18-8
A16	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL

A17	STEEL, ASTM A36
A18	STAINLESS STEEL, TYPE 316
A19	TETRAFLUOROETHYLENE (TEFLON), SELF LUBRICATING, WITH 304 STAINLESS STEEL BACKING
A20	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A21	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A22	IRON, ASTM A126, CLASS B
A23	STAINLESS STEEL, TYPE 316
A24	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A25	STEEL

NO	PART NAME	QTY
G1	DRIVE SHAFT	1
G2	EXTENSION	1
G3	KEY (WHEN REQUIRED)	1
G4	KEY	1
G5	SCREW	8
G6	WASHER	8
G7	SCREW (WHEN REQUIRED)	—
G8	WASHER (WHEN REQUIRED)	—
G9	GASKET (WHEN REQUIRED)	1
G10	GASKET	2
G11	ADAPTOR (WHEN REQUIRED)	1
G12	SCREW	8
G13	WASHER	8
G14	DATA PLATE	1
G15	DRIVE SCREW	2
G16	THRUST BEARING	1
G17	SUPPORT FAB	1

NOTE:

1. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE. ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.



50312	08/23/99
A	B
C	D
E	F
G	

**DeZURIK**
Sartell, MN USA 56377
www.dezurik.com

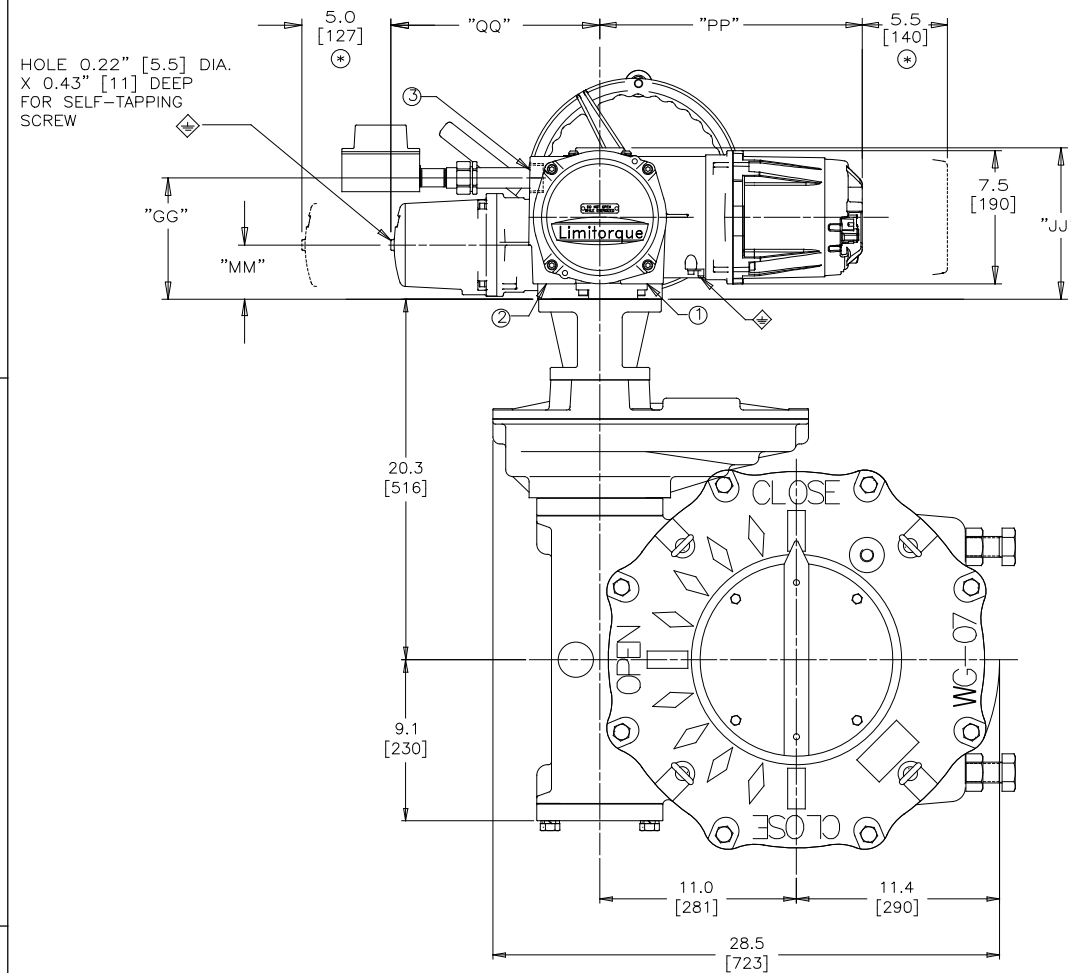
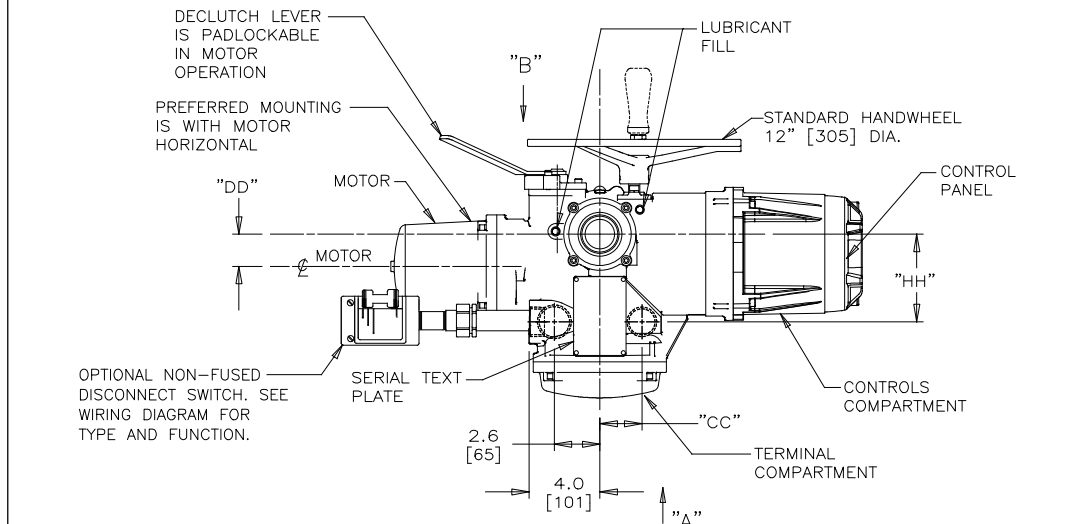
ENK NECK EXTENSION ON PEC ECCENTRIC VALVE FOR USE WITH NON-STANDARD ACTUATOR			
DOCT. CODE	DRAWN <i>JTD</i>	APPROVED <i>JDM</i>	J78586
C1	CHECKED <i>JDM</i>	DATE 04/30/99	

D

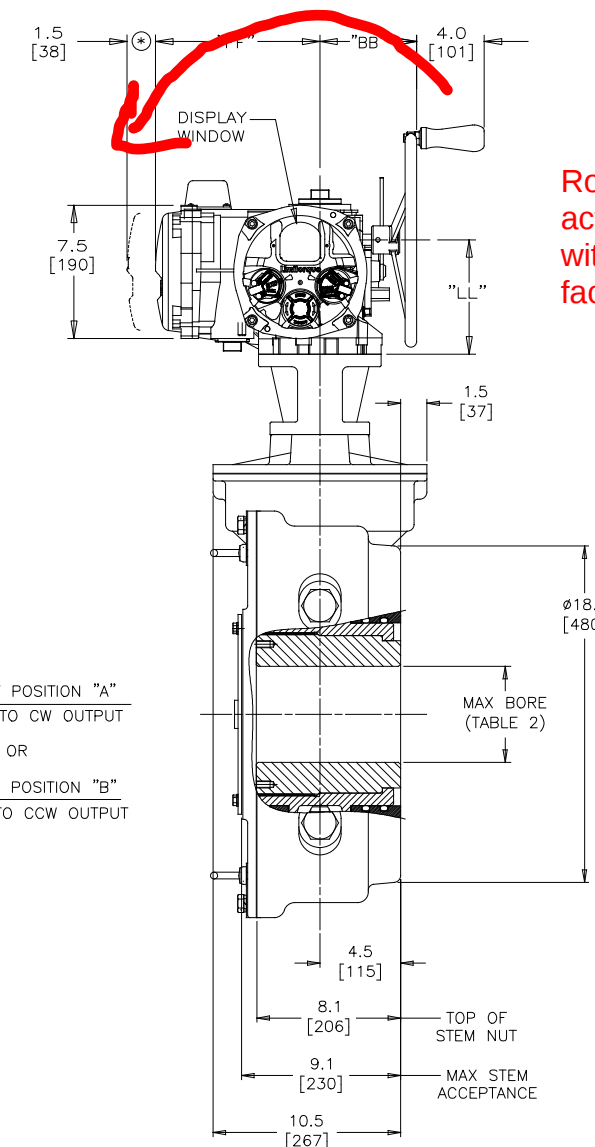
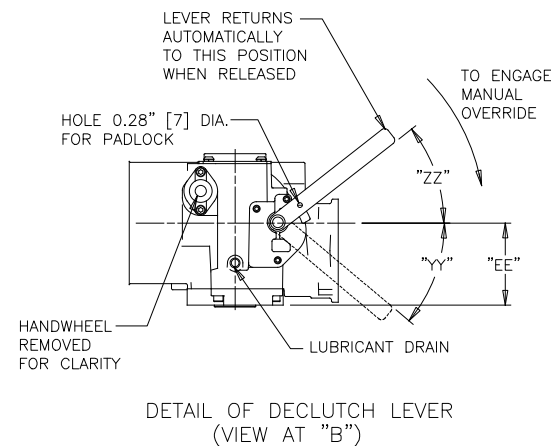
C

B

A



ASSEMBLY POSITION "A"
CW INPUT TO CW OUTPUT
OR
ASSEMBLY POSITION "B"
CW INPUT TO CCW OUTPUT



Rotate Limitorque actuator 180 degree with handwheel facing upward

TABLE 1

MOUNTING BASE		A	B	C
MSS (INCH)	FA30	(8) 3/4-10 UNC TAP X 1.2 DP	N/A	Ø11.7
	FA35	(8) 1-8 UNC TAP X 1.8 DP	N/A	Ø14.0
	FA40	(8) 1 1/4-7 UNC TAP X 2.1 DP	N/A	Ø16.0
ISO (METRIC)	F30	(8) M20 TAP X 30 DP	(4) Ø20 PIN X 20 DP	Ø298
	F35	(8) M30 TAP X 45 DP	(4) Ø30 PIN X 30 DP	Ø356
	F40	(8) M36 TAP X 54 DP	(4) Ø36 PIN X 36 DP	Ø406

TABLE 2

MAX BORE	MAX KEYWAY (SQUARE)	MAX KEYWAY (RECTANGLE)
Ø5.875	1 1/2 X 1 1/2	-
Ø6.313	-	1 1/2 X 1
[Ø164]	-	[40 X 22]

ACTUATOR OUTLINE DIMENSIONS (INCHES)

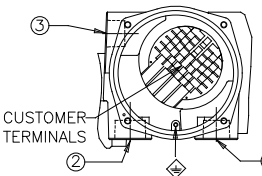
UNIT	SIZE	BB	CC	DD	EE	FF	GG	HH	JJ	LL	MM	PP	QQ	YY	ZZ
MX-10		5.3	2.4	1.8	4.6	9.2	6.8	4.9	8.4	6.4	3.1	15.3	11.7	40.0"	40.0"
MX-20		6.8	2.1	2.2	5.6	10.7	7.7	6.4	10.9	8.6	3.9	16.0	13.5	37.0"	33.5"
MX-40		8.8	2.1	2.7	5.9	11.1	7.8	6.9	11.7	9.0	4.1	16.3	13.8	37.0"	33.5"

ACTUATOR OUTLINE DIMENSIONS (METRIC)

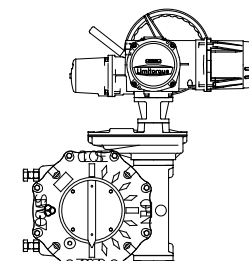
UNIT	SIZE	BB	CC	DD	EE	FF	GG	HH	JJ	LL	MM	PP	QQ	YY	ZZ
		135	60	46	117	233	173	125	214	163	78	389	297	40.0"	40.0"
		168	54	57	141	272	196	163	277	217	100	406	344	37.0"	33.5"
		224	54	68	150	283	198	174	297	229	105	414	350	37.0"	33.5"

DETAIL OF CONDUIT ENTRIES (VIEW AT "A" WITH COVER REMOVED)

SEE WIRING DIAGRAM FOR TERMINAL BLOCK DETAILS



ASSEMBLY POSITION "C"
CW INPUT TO CW OUTPUT
OR
ASSEMBLY POSITION "D"
CW INPUT TO CCW OUTPUT



NOTE:

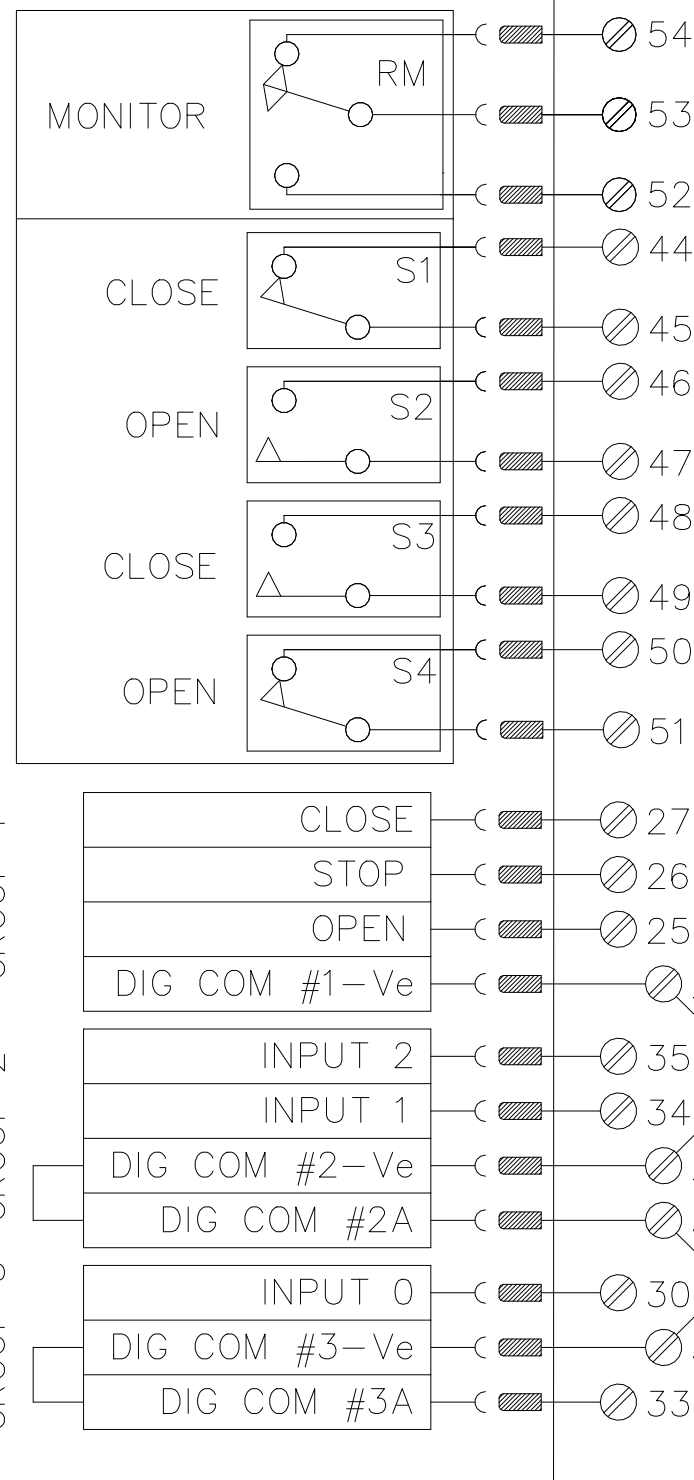
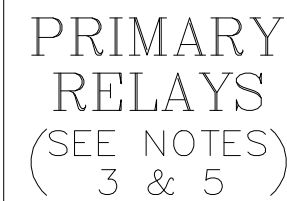
1. SEE CUSTOMER DATA SHEET TO DETERMINE BASE AND ASSEMBLY POSITION SUPPLIED.

JOB NUMBER		5114 WOODALL ROAD, LYNCHBURG, VA. USA 24506-1318	
DRW: KVR	DATE: 3-5-20	DRAWING TITLE	
CKD: SVA	DATE: 3-5-20	MX-10-40 STANDARD UNITS WITH:	
APV: MWR	DATE: 3-12-20	A) SIDE MOUNTED HANDWHEEL	
ALL DIMENSIONS ARE REFERENCE UNLESS OTHERWISE SPECIFIED		B) OPTIONAL DISCONNECT SWITCH	
		C) WG-07-1SD WORM GEAR OPERATOR	
		D) MSS & ISO MOUNTING BASES	
		SIZE C	DRAWING NUMBER 03-654-0061
		SCALE NONE	SHEET 1 OF 1

REV	CHG NO	DATE	REVD	CHKD	APVD

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CONDUIT ENTRIES			
POSITION	①	②	③
STANDARD	1 1/4" NPT	1 1/2" NPT	1 1/4" NPT
OPTIONS	M32, M25 M20	M40, M32, M25, M20	M32, M25 M20
	PG21	PG29, PG21	PG21



CIRCUIT SHOWN WITH VALVE IN FULLY CLOSED POSITION AND WITH POWER OFF.

SIGNAL THRESHOLD – MINIMUM "ON" 19.2V AC/DC
MAXIMUM "OFF" 5.0V AC/DC
MAX LOAD – 10 mA / 110V AC

```

REQUIRED CONTROL SIGNAL DURATION = 350ms MIN.
INPUTS 0, 1, & 2 ARE FIELD CONFIGURABLE FOR
    CLOSE/OPEN/BOTH INHIBIT, USER INPUT, OR ESD.
INPUT 1 MAY ALSO BE CONFIGURED FOR
    PARTIAL STROKE TEST.
INPUT 2 MAY ALSO BE CONFIGURED FOR CSE
    REMOTE STROKING INDICATION.
DEFAULT INPUT CONFIGURATION
    INPUT 0 - ESD,
    INPUT 1 - OPEN INHIBIT,
    INPUT 2 - CLOSE INHIBIT.

```

JUMPERS CAN BE USED WIRED TO CONNECT DIG COMMONS #1, 2 & 3 (AS NEEDED). THE 3 REMOTE WIRING GROUPS ARE ELECTRICALLY ISOLATED, INTERNALLY. ONLY A SINGLE POWER SOURCE MAY BE USED TO POWER ANY ONE GROUP BUT DIFFERENT SOURCES MAY POWER DIFFERENT GROUPS. IF DIFFERENT SOURCES ARE USED, ENSURE THAT THE POLARITIES ARE CORRECT.

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OUTPUT SWITCH CONTACT DEVELOPMENT			
OUTPUT SWITCH	VALVE POSITION		FUNCTION
	FULL CLOSE	FULL OPEN	
S1			CLOSE LIMIT
S3			
S2			OPEN LIMIT
S4			

— — OPEN CONTACT
 ■■■■ CLOSED CONTACT

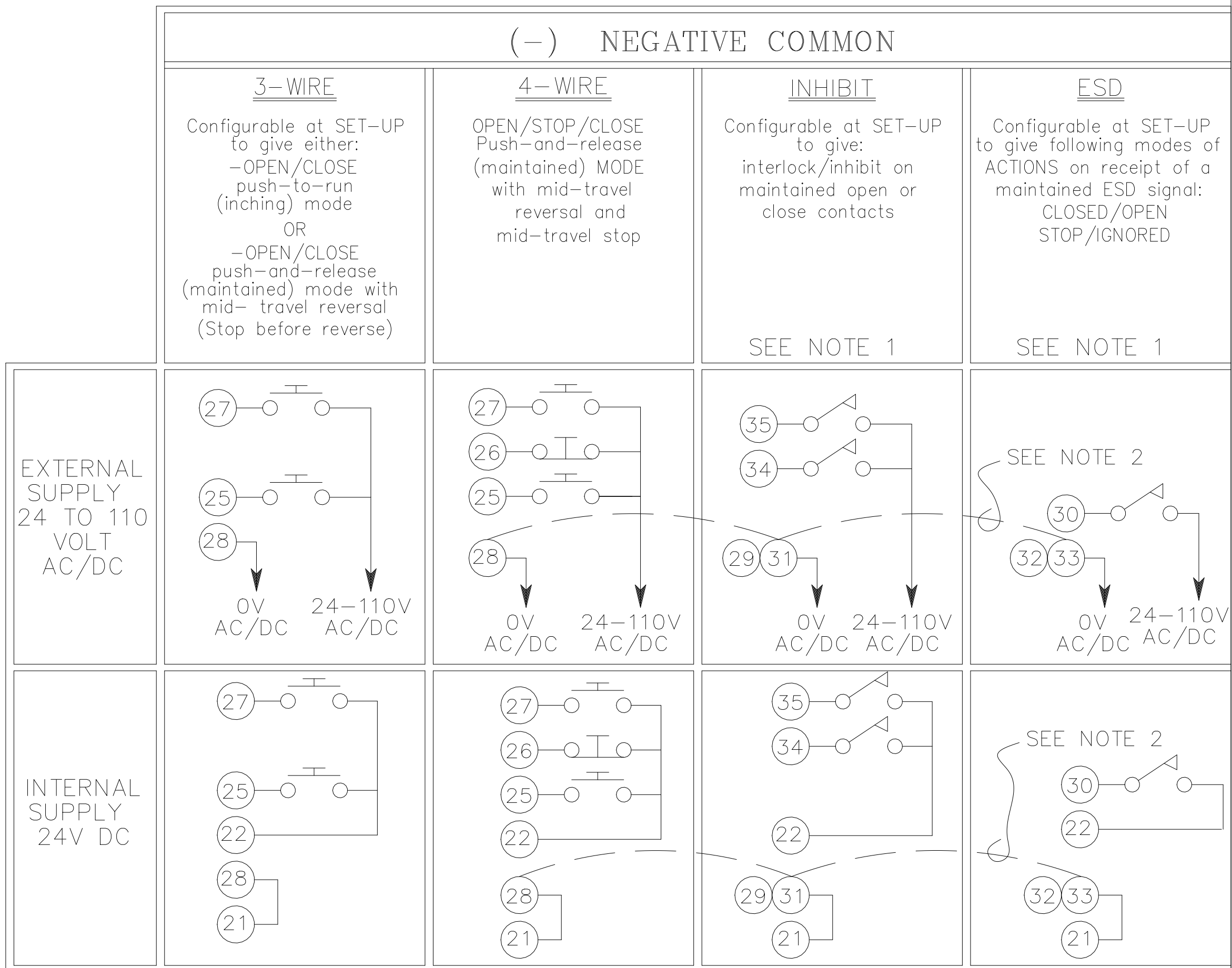
TERMINALS 21 AND 22 (24 VDC)
— 5W MAX. EXT. LOAD

S1-S4 - 5 AMPS @ 250 VAC OR 30VDC (RESISTIVE)
THE TOTAL COMBINED CURRENT THROUGH ALL FOUR
STATUS CONTACTS (S1-S4) MUST NOT EXCEED 8A
MONITOR- 5 AMPS @ 250 VAC OR 30 VDC (RESISTIVE)

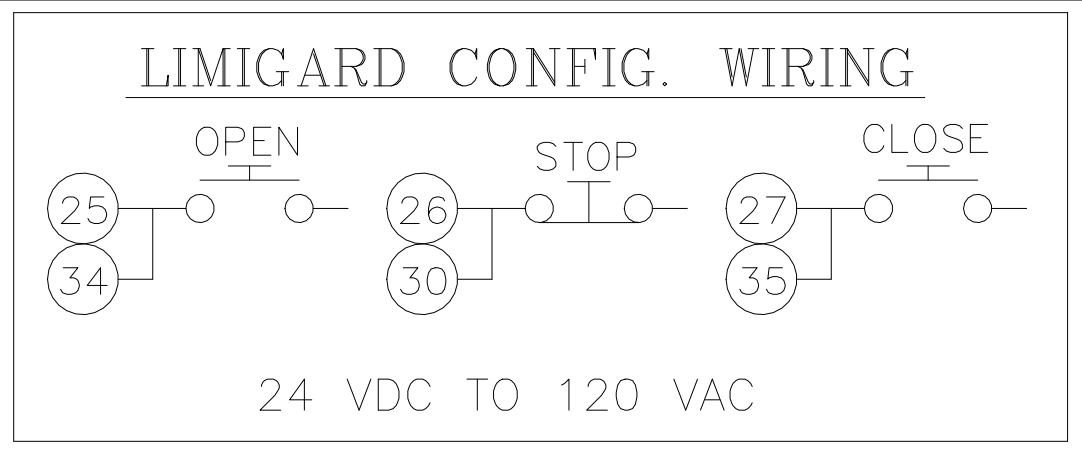
FS1 (PRIMARY) } 600V AC, 1A, 100kA Int RATING,
FS2 (PRIMARY) } FAST ACTING 10.3 x 38.1mm TUBE.
UL LISTED, CSA CERTIFIED

TYPE	TAPS	APPL. VOLTAGES
1	106V	110V
	115V	115V, 120V
	200V	208V
	212V	220V
2	226V	226V, 230V, 240V
	366V	380V
	392V	400V, 415V
	450V	440V, 460V, 480V
3	212V	220V
	505V	525V
	530V	550V
	572V	575V, 600V

BACK-UP UPS POWER MAY BE CONNECTED: 24VDC TO
TERMINALS 6 & 7, MAX. CURRENT DRAW 1 AMP; 12VDC TO
TERMINALS 8 & 9, MAX. CURRENT DRAW 2 AMPS. THIS POWERS
ALL CONTROLS AND OPTION BOARDS FOR LOCAL/REMOTE
INDICATION AND CONFIGURATION. THE REVERSING CONTACTOR WILL
NOT BE POWERED. CUSTOMER MUST SUPPLY FUSES AS REQUIRED
BY LOCAL ELECTRICAL CODES.



TERMINAL POINT FUNCTION	CLOSE (27)	+24V DC (22)	0V DC (21)	OPEN INHIBIT (34)	DIG COM #1 (28)
STOP (26)		+110V AC (23)	0V AC (24)	CLOSE INHIBIT (35)	DIG COM #2(A) (29)(31)
OPEN (25)		EXTERNAL SUPPLY ↓		ESD (30)	DIG COM #3(A) (32)(33)



DRAWN	DATE	 Limitorque Actuation Systems 5114 WOODALL ROAD, LYNCHBURG, VIRGINIA 24506-1318			
NWN	01/16/20	TITLE MXb WIRING DIAGRAM Standard Bluetooth No Analog Mechanical Contactor R4 (4) 5A, (1) 5A monitor relay 3Wire/4Wire Negative Common			
CHECKED	DATE				
JPS	01/17/20				
APPROVED	DATE				
EMO	01/20/20	UNIT TYPE	DWG NO WD-MXb-040000-0101	REV 00B	SHEET 1 OF 1



Submittal Data Sheet
Date: August 15, 2024

ECO TECH INC
PO BOX 956
HOLLY SPRINGS GA 30142
United States

P.O. 24051GA-16
FACTORY ORDER SO116840
PROJ. NAME 24051GA - Lower Poplar WRF Influent PS

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
5		1	9741840	PEC,30,MJ,CI,NBR,NBR,DTR-S30SC0*X,SB16*AE3890

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	30	30 Inch (750mm)
End Connection	MJ	Mechanical Joint, Conforms to ANSI/AWWA C111/A21.11
Body Material	CI	Cast Iron
Packing	NBR	.5" - 3" Acrylonitrile-Butadiene Reinforced filler in a PTFE U-ring, -20 to 180° F. (-29 to 83° C.); 4" & Larger Acrylonitrile-Butadiene Reinforced V-type, -20 to 250° F. (-29 to 121° C.)
Plug Facing	NBR	Acrylonitrile-Butadiene; -20 to 180° F. (-29 to 83° C.)
Options	DTR	DeZURIK Standard Certified Production Hydrostatic Shell and Seat Test Report
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10) surface prep
Actuator	X	Specify Actuator in Special Construction
Stainless Steel Bolting & Tubing	SB16	316 Stainless Steel Bolting

Temperature Range	-20 to 180 Degrees
Valve Pressure	F. to 150 psig

RELATED DOCUMENTS

Z21270: DWG INST PEC MJ GR1 20.5 - 36 LIMITORQUE MX-10/WG-07-1SD ENK
NECK EXTENSION
J78589: DWG VALVE ASSY PEC MJ 24-36
J78586: DWG ACCESS ENK FUW PEC VALVE

MODIFIER

AE3890 LIMITORQUE - MXb-10/WG-07-1SD-D - PN:1464171
ACTUATOR MOUNTED ON TOTALLY ENCLOSED EXTENSION C/L OF VALVE TO TOP OF EXTENSION
= 114 IN (9'6"). INNER EXTENSION TO BE 304 SS, OUTER EXTENSION TO BE CARBON STEEL.
8'-4"

TAG: PV-10



Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

Phone: 434-528-4400
Fax:

Customer Data Sheet

SALES ORDER NO. 205928 REV 0	ORDER LINE 005	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225338.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

ACTUATOR INFORMATION

Electric Actuator Type MX-10 Series B
Enclosure Type WP&SUBM NEMA 3,4,4X,6,IP68
Electric Output RPM 155
Valve Torque 4854 Ft Lbs 6582 Nm
MX/Gear Box Max Rated Torque 13797 Ft Lbs 18709 Nm
MX/Gear Box Stall Torque 20773 Ft Lbs 28168 Nm
Operating Time for 90 degrees 65 Sec
Handwheel SIDE Mounted 12 Inch
Open Direction CCW
Lube SHC-632
Gear Box Type WG-07-1SD-D
Gear Box Ratio 674:1
Gear Box SGA Ratio NA
Gear Box Position A
Gear Box Base MSS-FA35
Gear Box Output RPM 0.23
Outline Drawing 03-654-0061
Sun Shade Drawing NA
Wiring Diagram WD-MXb-040000-0101
Disconnect Diagram NA
Conduit Entries 1-1/4,1-1/2,1-1/4,NONE
2-Speed Timer N Quik Board N
Control Options Network:STD Digital:R4 Analog:NONE
Main Board BLUETOOTH/UPS Wire Controls 3 WIRE MAINT
Disconnect Switch NONE
Warranty STANDARD
MOTOR INFORMATION
Motor Size 7 FT-LBS
Motor Voltage 480
Mtr Phase/Frequency Hz 3/60
Motor Horsepower 0.74
Motor RPM 3600
Locked Rotor Amps (LRA) 7.4
Full Load Amps (FLA) 1.3

Instruction Manual VAIOM000071 on the internet www.limitorque.com
Qualifications: The MX complies with all the test parameters identified in Limitorque MX qualification testing bulletin AIBR000087. Installation of the MX in environments outside the parameters identified in bulletin AIBR000087 voids the warranty.



Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

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Fax:

Customer Data Sheet

SALES ORDER NO. 205928 REV 0	ORDER LINE 005	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225338.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

TAGGING AND INFORMATION:
TAG: 1464171

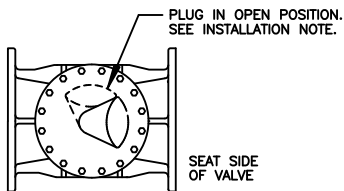
VALVE SIZE	PIPE SIZE		DIMENSIONS INCHES MILLIMETERS									
	IN	MM	A	B	C	D	E	F	G	H	J	K
20.5	20	500	$\frac{1.25}{32}$	$\frac{42.00}{1067}$	$\frac{18.31}{465}$	$\frac{25.00}{635}$	1-1/8-7UNC	20	THRU	N/A	N/A	$\frac{21.19}{538}$
24	24	600	$\frac{1.88}{48}$	$\frac{42.00}{1067}$	$\frac{18.31}{465}$	$\frac{29.50}{749}$	N/A	N/A	N/A	$\frac{1.38}{35}$	20	$\frac{21.19}{538}$
24.5	24	600	$\frac{1.94}{49}$	$\frac{42.00}{1067}$	$\frac{21.88}{556}$	$\frac{29.50}{749}$	1-1/4-7UNC	20	$\frac{1.50}{38}$	N/A	N/A	$\frac{25.75}{654}$
30	30	750	$\frac{2.12}{54}$	$\frac{51.00}{1295}$	$\frac{21.88}{556}$	$\frac{36.00}{914}$	N/A	N/A	N/A	$\frac{1.38}{35}$	28	$\frac{25.75}{654}$
30.5	30	750	$\frac{2.12}{54}$	$\frac{51.00}{1295}$	$\frac{24.81}{630}$	$\frac{36.00}{914}$	1-1/4-7 UNC	28	$\frac{2.00}{51}$	N/A	N/A	$\frac{29.44}{748}$
36	36	900	$\frac{2.38}{60}$	$\frac{60.00}{1524}$	$\frac{24.81}{630}$	$\frac{42.75}{1086}$	N/A	N/A	N/A	$\frac{1.62}{41}$	32	$\frac{29.44}{748}$

A	VALVE
C	MOTOR W/GEARBOX
P	CONNECTING PARTS

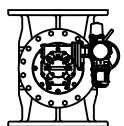
NOTES:

- FLANGES ARE FLAT FACED WITH DIAMETER AND DRILLING TO CLASS 125 ANSI STANDARD B16.1, EXCEPT FOR TAPPED HOLES AS INDICATED. SEE A-16368 FOR NON-ANSI FLANGE DATA.
- FOR MANUAL OPERATION PUSH LEVER IN DIRECTION OF ARROW ONLY. UNIT REMAINS IN HAND OPERATION UNTIL MOTOR IS ENERGIZED.
- INSTALLATION NOTE:

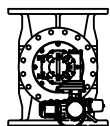
- FOR LIQUIDS & GASES:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST END OPPOSITE SEAT.
- FOR SUSPENDED SOLIDS, SLURRIES, ETC:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST SEAT END. IN HORIZONTAL PIPELINES, VALVE SHOULD BE INSTALLED ON IT'S SIDE SO PLUG ROTATES TO THE TOP OF THE PIPELINE WHEN OPEN. (SEE DIAGRAM BELOW).



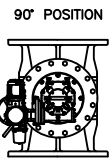
ACTUATOR MOUNTING POSITIONS AS VIEWED FROM TOP OF VALVE. DOTTED LINES SHOW OPTIONAL MOUNTING POSITIONS.



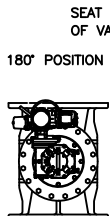
SEAT END OF VALVE
STANDARD POSITION
SHOWN ON THIS DRAWING



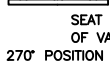
SEAT END
OF VALVE



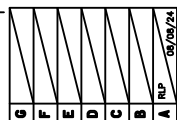
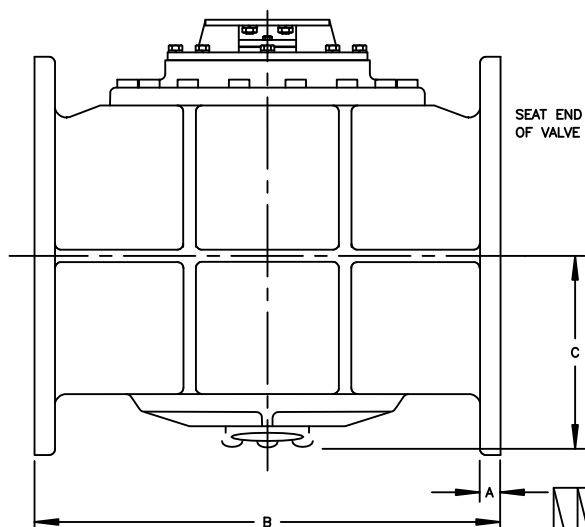
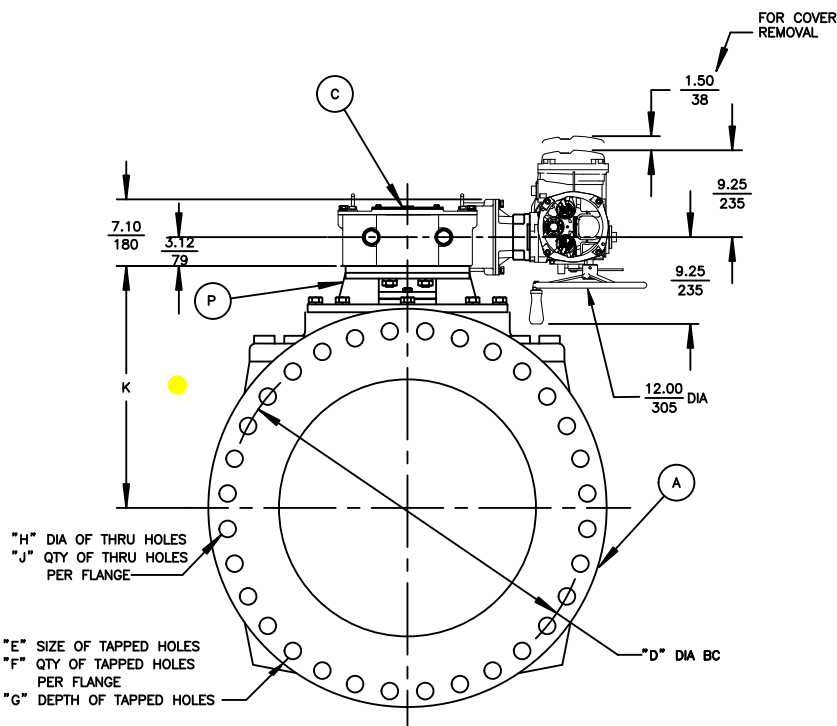
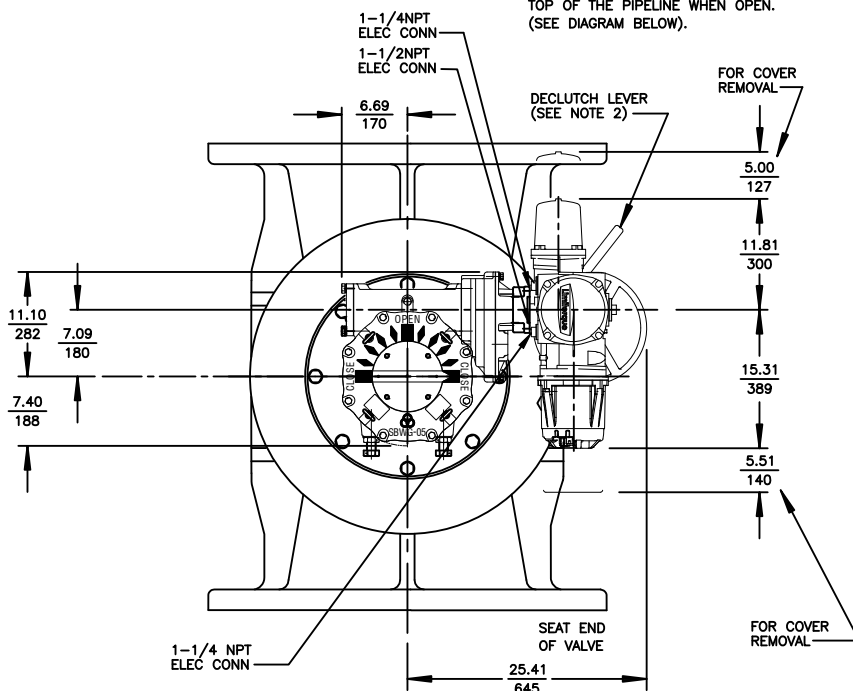
90° POSITION



180° POSITION



SEAT END
OF VALVE
270° POSITION

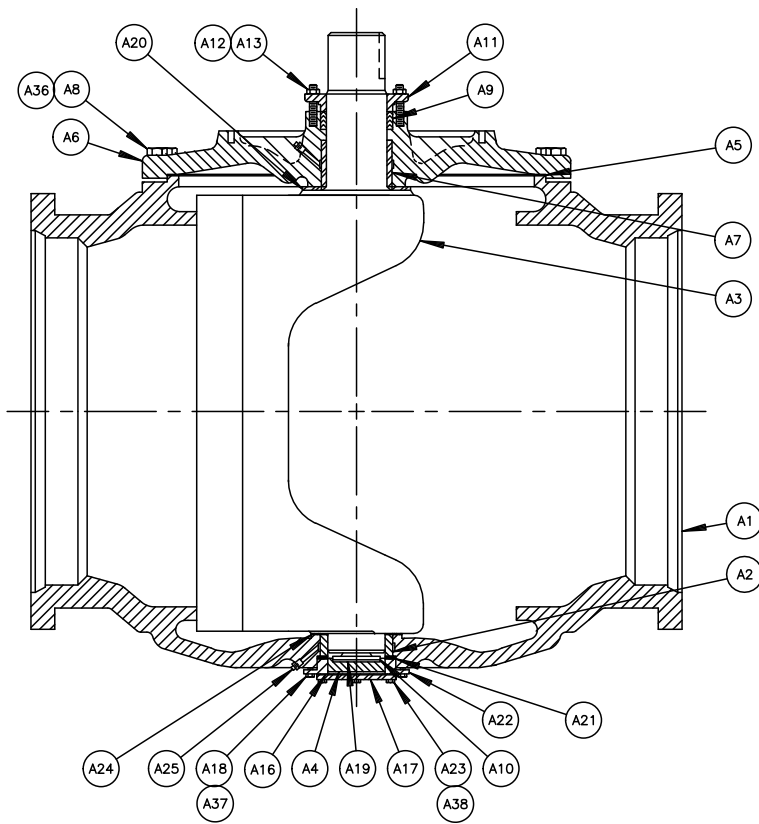
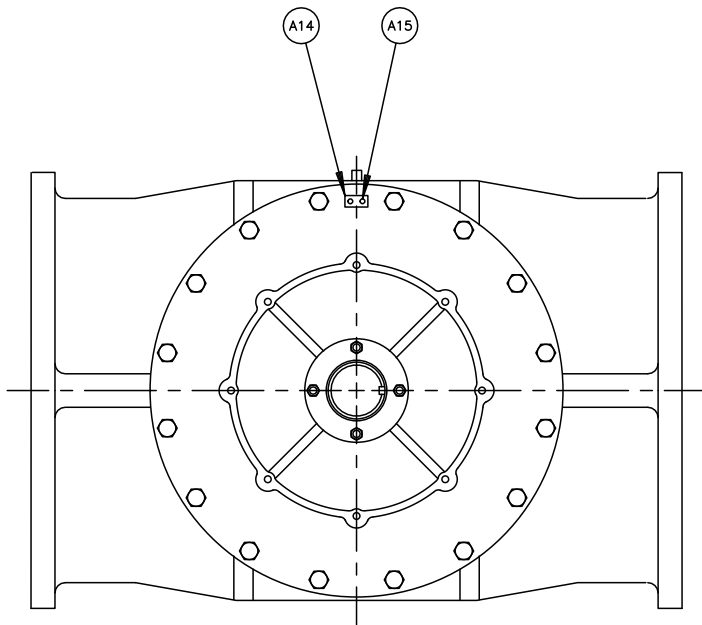


DeZURIK.com

PEC ECCENTRIC VALVES SIZE 20.5-36 FLANGED, MATERIAL GROUP 1
LIMITORQUE MX-10/WG-05-1SD MOTOR ACTUATOR

DOCT. CODE	DRAWN	JE	APPROVED	JWM
C1	CHECKED	JWM	DATE	08/08/24

Z21271



NO	PART NAME	QTY
A1	BODY	1
A2	BEARING	1
A3	PLUG	1
A4	RETAINER NUT	1
A5	GASKET (BODY)	1
A6	BONNET	1
A7	BEARING	1
A8	SCREW	16
A9	PACKING	—
A10	THRUST PLATE	1
A11	GLAND	1
A12	STUD	4
A13	NUT	4
A14	CAUTION TAG	1
A15	DRIVE SCREW	2
A16	GASKET	1
A17	COVER	1
A18	SCREW	6
A19	BEARING	1
A20	GRIT EXCLUDER	1
A21	GASKET (JOURNAL COVER)	1
A22	JOURNAL COVER	1
A23	SCREW	6
A24	GRIT EXCLUDER	—
A25	PIPE PLUG	2
A36	WASHER (FUSION COATING)	16
A37	WASHER (FUSION COATING)	6
A38	WASHER (FUSION COATING)	6

NOTE:

1. RECOMMENDED SPARE PARTS ARE ITEMS A3, PLUG (IF RUBBER FACED) A5, A9, A16 & A21.
2. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE, ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
3. CLOCKWISE ROTATION ON PLUG STEM CLOSSES VALVE.

70843	03/24/20
63446	08/07/17
50312	11/04/08
50312	03/26/08



PEC ECCENTRIC VALVE ASSEMBLY 24-36 MECH JOINT
VALVES WITH PLUG SUPPORT

DOCT. CODE	DRAWN	JTD	APPROVED	JDM
C1	CHECKED	JDM	DATE	04/30/99

J78589



Materials Of Construction

DRAWING(S): J78589(A00)

SALES ORDER: SO116840

DESCRIPTION: PEC,30,MJ,CI,NBR,NBR,DTR-S30SC0*X,SB16*AE3890

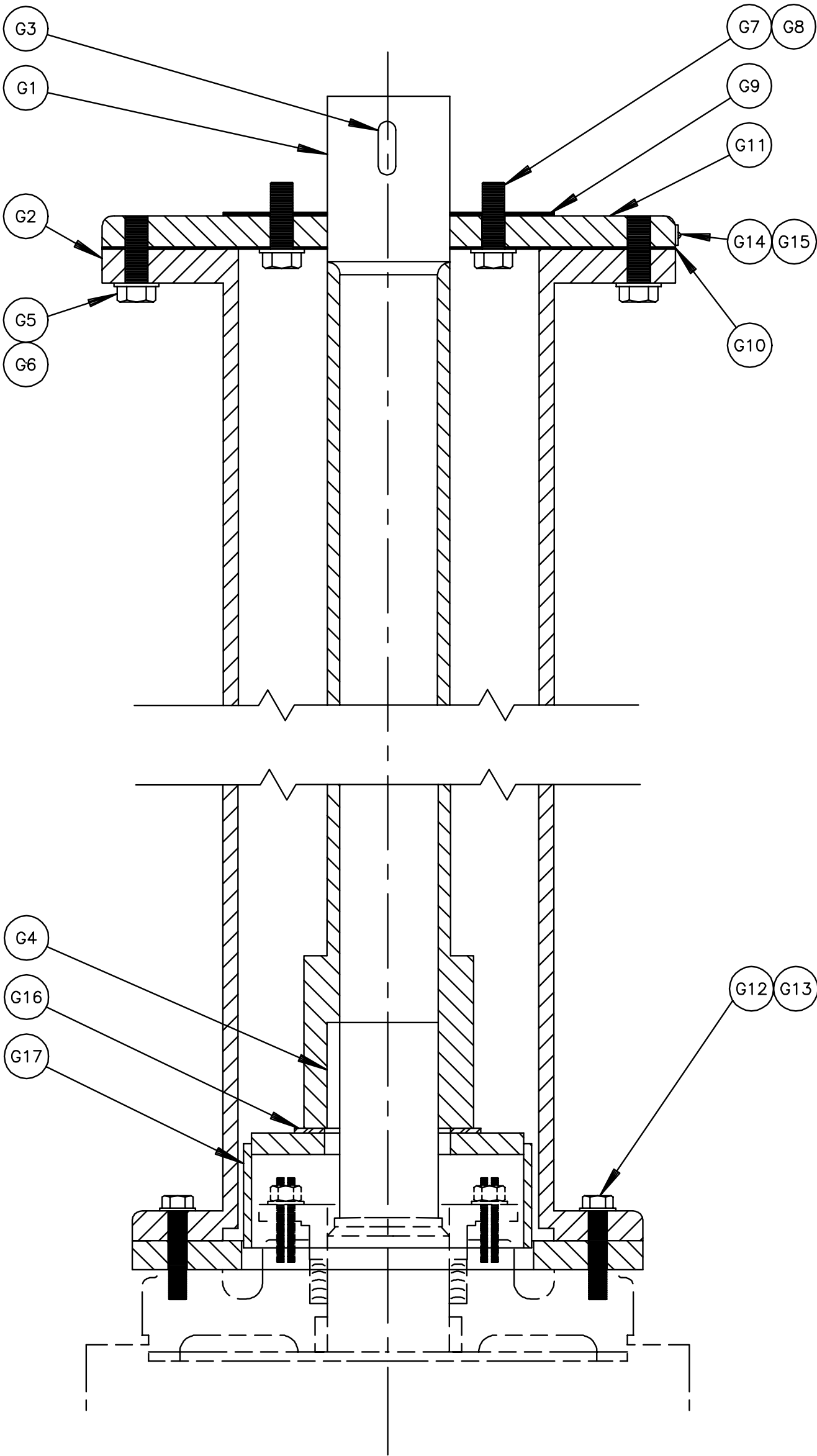
ITEM	MATERIAL
A00	STAINLESS STEEL, SERIES 300
A00	STAINLESS STEEL, TYPE 18-8
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A03	IRON, ASTM A126, CLASS B
A03	ACRYLONITRILE-BUTADIENE (NBR)
A04	CARBON STEEL, ASTM A108, GRADE 12L14
A05	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A06	IRON, ASTM A126, CLASS B
A07	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A08	STAINLESS STEEL, TYPE 316
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A10	STAINLESS STEEL, TYPE 316, ASTM A276, CONDITION A
A11	IRON, ASTM A126, CLASS B
A12	STAINLESS STEEL, TYPE 316
A13	STAINLESS STEEL, TYPE 316
A14	STAINLESS STEEL, TYPE 302
A15	STAINLESS STEEL, TYPE 18-8
A16	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL

A17	STEEL, ASTM A36
A18	STAINLESS STEEL, TYPE 316
A19	TETRAFLUOROETHYLENE (TEFLON), SELF LUBRICATING, WITH 304 STAINLESS STEEL BACKING
A20	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A21	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A22	IRON, ASTM A126, CLASS B
A23	STAINLESS STEEL, TYPE 316
A24	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A25	STEEL

NO	PART NAME	QTY
G1	DRIVE SHAFT	1
G2	EXTENSION	1
G3	KEY (WHEN REQUIRED)	1
G4	KEY	1
G5	SCREW	8
G6	WASHER	8
G7	SCREW (WHEN REQUIRED)	—
G8	WASHER (WHEN REQUIRED)	—
G9	GASKET (WHEN REQUIRED)	1
G10	GASKET	2
G11	ADAPTOR (WHEN REQUIRED)	1
G12	SCREW	8
G13	WASHER	8
G14	DATA PLATE	1
G15	DRIVE SCREW	2
G16	THRUST BEARING	1
G17	SUPPORT FAB	1

NOTE:

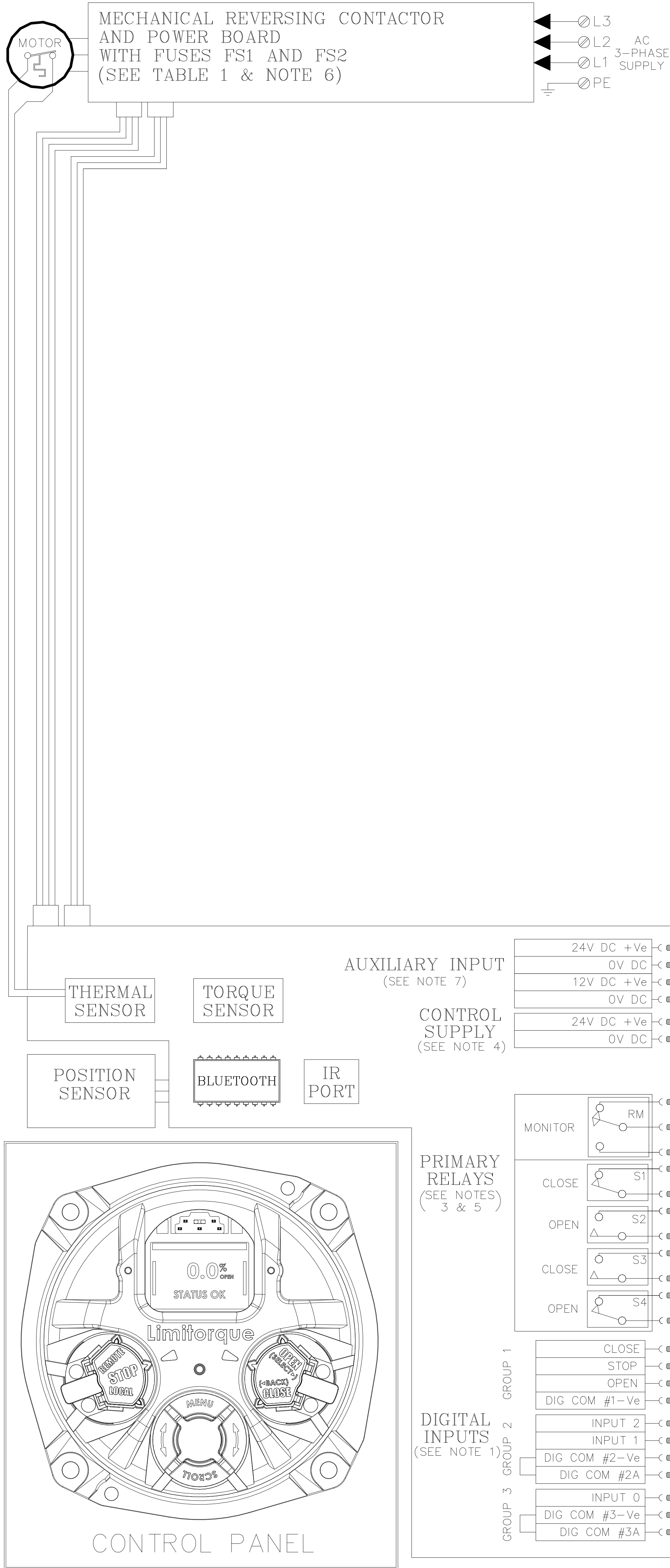
1. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE. ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.



50312	08/23/99
A	B
C	D
E	F
G	

**DeZURIK**
Sartell, MN USA 56377
www.dezurik.com

ENK NECK EXTENSION ON PEC ECCENTRIC VALVE FOR USE WITH NON-STANDARD ACTUATOR			
DOCT. CODE	DRAWN <i>JTD</i>	APPROVED <i>JDM</i>	J78586
C1	CHECKED <i>JDM</i>	DATE 04/30/99	



NOTES: (SEE INSTALLATION & OPERATION MANUAL VAIOM000071 FOR DETAILS)

CIRCUIT SHOWN WITH VALVE IN FULLY CLOSED POSITION AND WITH POWER OFF.

1. REMOTE INPUTS

SIGNAL THRESHOLD – MINIMUM "ON" 19.2V AC/DC
MAXIMUM "OFF" 5.0V AC/DC
MAX LOAD – 10 mA / 110V AC

REQUIRED CONTROL SIGNAL DURATION = 350ms MIN.
INPUTS 0, 1, & 2 ARE FIELD CONFIGURABLE FOR CLOSE/OPEN/BOTH INHIBIT, USER INPUT, OR ESD.
INPUT 1 MAY ALSO BE CONFIGURED FOR PARTIAL STROKE TEST.
INPUT 2 MAY ALSO BE CONFIGURED FOR CSE
REMOTE SELECTION INDICATION.
DEFAULT INPUT CONFIGURATION
INPUT 0 – ESD,
INPUT 1 – OPEN INHIBIT,
INPUT 2 – CLOSE INHIBIT.

2. REMOTE INPUT JUMPERS

JUMPERS CAN BE USER WIRED TO CONNECT DIG COMMONS #1, 2 & 3 (AS NEEDED). THE 3 REMOTE WIRING GROUPS ARE ELECTRICALLY ISOLATED, INTERNALLY. ONLY A SINGLE POWER SOURCE MAY BE USED TO POWER ANY ONE GROUP BUT DIFFERENT SOURCES MAY POWER DIFFERENT GROUPS. IF DIFFERENT SOURCES ARE USED, ENSURE THAT THE POLARITIES ARE CORRECT.

3. DEFAULT [S] SETTINGS

THE DEFAULT OPERATING CONFIGURATION FOR THE "S" OUTPUTS ARE SHOWN IN THE TABLE BELOW. THE CONTACT STATES SHOWN IN THE SCHEMATIC REPRESENT A FULLY CLOSED VALVE. SEE OPERATION MANUAL FOR ALTERNATE CONFIGURATIONS.

OUTPUT SWITCH CONTACT DEVELOPMENT			
OUTPUT SWITCH	VALVE POSITION		FUNCTION
	FULL CLOSE	FULL OPEN	
S1	—	—	CLOSE LIMIT
S3	—	—	
S2	—	—	OPEN LIMIT
S4	—	—	

— OPEN CONTACT
— CLOSED CONTACT

4. MAXIMUM EXTERNAL LOAD

TERMINALS 21 AND 22 (24 VDC)
– 5W MAX. EXT. LOAD

5. CONTACT RATINGS

S1–S4 – 5 AMPS @ 250 VAC OR 30VDC (RESISTIVE)
THE TOTAL COMBINED CURRENT THROUGH ALL FOUR STATUS CONTACTS (S1–S4) MUST NOT EXCEED 8A
MONITOR– 5 AMPS @ 250 VAC OR 30 VDC (RESISTIVE)

6. FUSES

FS1 (PRIMARY) } 600V AC, 1A, 100kA Int RATING,
FAST ACTING 10.3 x 38.1mm TUBE,
UL LISTED, CSA CERTIFIED
FS2 (PRIMARY) }

7. AUXILLIARY INPUTS

BACK-UP UPS POWER MAY BE CONNECTED: 24VDC TO TERMINALS 6 & 7, MAX. CURRENT DRAW 1 AMP; 12VDC TO TERMINALS 8 & 9, MAX. CURRENT DRAW 2 AMPS. THIS POWERS ALL CONTROLS AND OPTION BOARDS FOR LOCAL/REMOTE INDICATION AND CONFIGURATION. THE REVERSING CONTACTOR WILL NOT BE POWERED. CUSTOMER MUST SUPPLY FUSES AS REQUIRED BY LOCAL ELECTRICAL CODES.

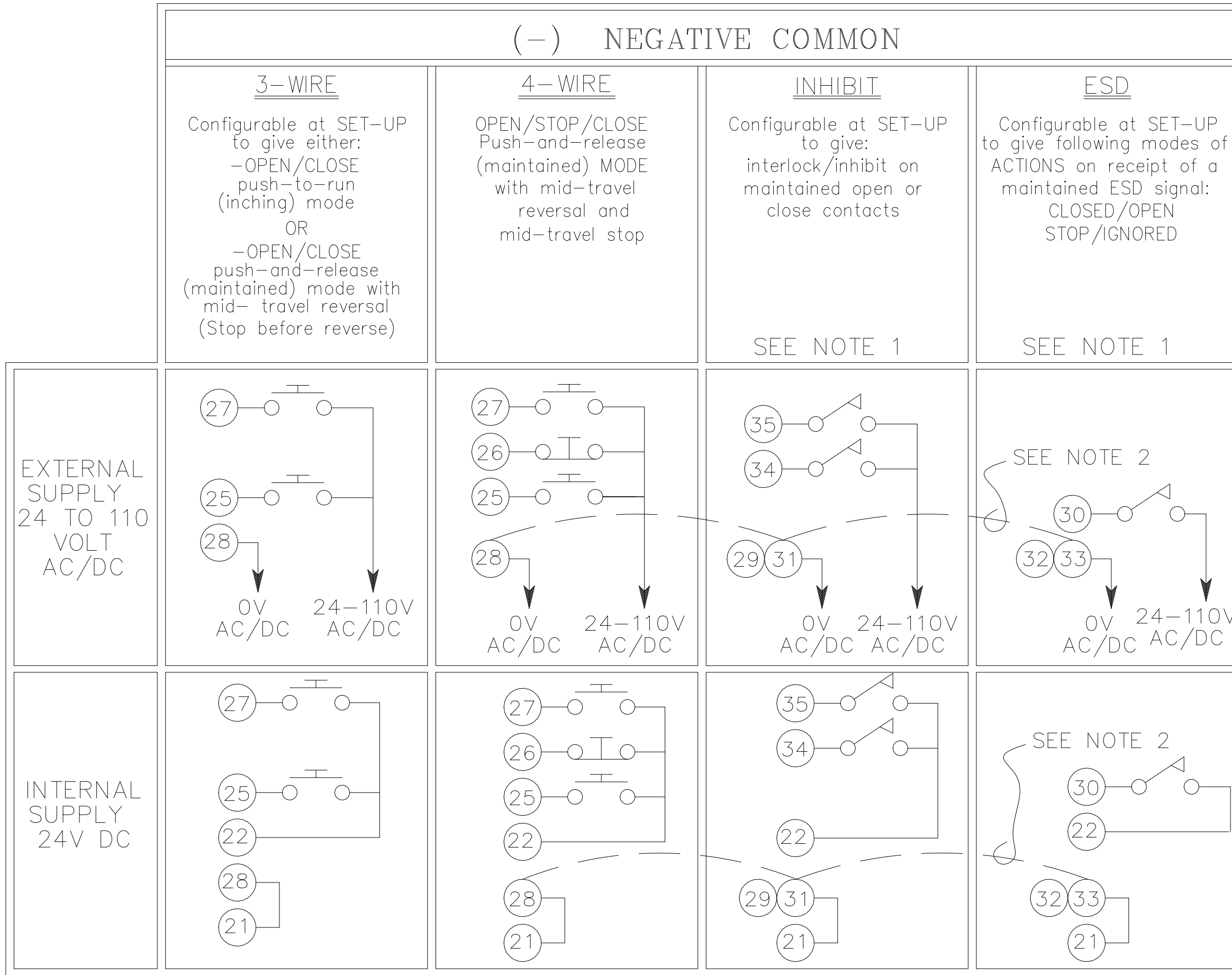
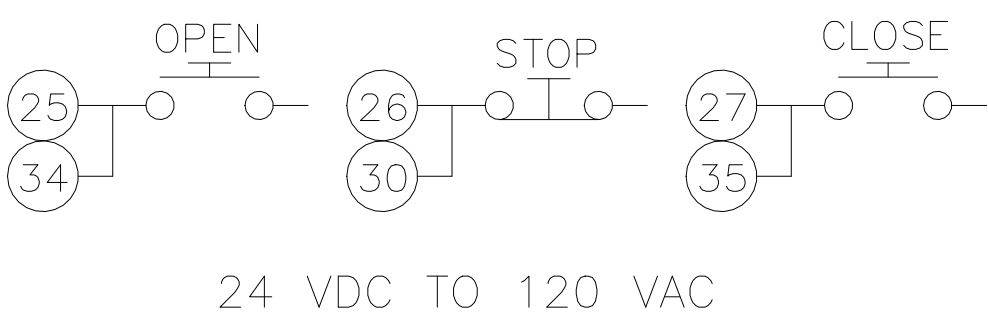


TABLE 1: TRANSFORMER TAPPING OPTIONS			
TYPE	TAPS	APPL. VOLTAGES	
1	106V	110V	
	115V	115V, 120V	
	200V	208V	
	212V	220V	
2	226V	226V, 230V, 240V	
	366V	380V	
	392V	400V, 415V	
	450V	440V, 460V, 480V	
3	212V	220V	
	505V	525V	
	530V	550V	
	572V	575V, 600V	

REMOTE WIRING CONNECTIONS

TERMINAL POINT FUNCTION CLOSE (27) +24V DC (22) 0V DC (21) OPEN INHIBIT (34) DIG COM #1 (28)
STOP (26) +110V AC (23) 0V AC (24) CLOSE INHIBIT (35) DIG COM #2(A) (29/31)
OPEN (25) EXTERNAL SUPPLY ↓ ESD (30) DIG COM #3(A) (32/33)

LIMIGARD CONFIG. WIRING



DRAWN	DATE	FLOWSERVE <i>Limitorque Actuation Systems</i> 5114 WOODALL ROAD, LYNCHBURG, VIRGINIA 24506-1318			
NWN	01/16/20	TITLE MXb WIRING DIAGRAM Bluetooth			
CHECKED	DATE	Standard No Analog Mechanical Contactor R4 (4) 5A, (1) 5A monitor relay 3Wire/4Wire Negative Common			
JPS	01/17/20				
APPROVED	DATE				
EMO	01/20/20				
UNIT TYPE	MXb	DWG NO	WD-MXb-040000-0101	REV	00B
				SHEET	1 of 1



Submittal Data Sheet
Date: August 15, 2024

ECO TECH INC
PO BOX 956
HOLLY SPRINGS GA 30142
United States

P.O. 24051GA-16
FACTORY ORDER SO116840
PROJ. NAME 24051GA - Lower Poplar WRF Influent PS

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
6		1	9741841	PEC,36,MJ,CI,NBR,NBR,DTR-S30SC0*X,SB16*AE3890

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	36	36 Inch (900mm)
End Connection	MJ	Mechanical Joint, Conforms to ANSI/AWWA C111/A21.11
Body Material	CI	Cast Iron
Packing	NBR	.5" - 3" Acrylonitrile-Butadiene Reinforced filler in a PTFE U-ring, -20 to 180° F. (-29 to 83° C.); 4" & Larger Acrylonitrile-Butadiene Reinforced V-type, -20 to 250° F. (-29 to 121° C.)
Plug Facing	NBR	Acrylonitrile-Butadiene; -20 to 180° F. (-29 to 83° C.)
Options	DTR	DeZURIK Standard Certified Production Hydrostatic Shell and Seat Test Report
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10) surface prep
Actuator	X	Specify Actuator in Special Construction
Stainless Steel Bolting & Tubing	SB16	316 Stainless Steel Bolting

Temperature Range	-20 to 180 Degrees
Valve Pressure	F. to 150 psig

RELATED DOCUMENTS

Z21270: DWG INST PEC MJ GR1 20.5 - 36 LIMITORQUE MX-10/WG-07-1SD ENK
NECK EXTENSION
J78589: DWG VALVE ASSY PEC MJ 24-36
J78586: DWG ACCESS ENK FUW PEC VALVE

MODIFIER

AE3890 LIMITORQUE - MXb-10/WG-07-1SD-D - PN:1464171
ACTUATOR MOUNTED ON TOTALLY ENCLOSED EXTENSION C/L OF VALVE TO TOP OF EXTENSION
= 11'-4" IN (9'6"). INNER EXTENSION TO BE 304 SS, OUTER EXTENSION TO BE CARBON STEEL.

8'-4"

FEATURES

TAG: PV-11



Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736www.flowserve.com

Phone: 434-528-4400
Fax:

Customer Data Sheet

SALES ORDER NO. 205928 REV 0	ORDER LINE 006	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225340.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

ACTUATOR INFORMATION

Electric Actuator Type MX-10 Series B
Enclosure Type WP&SUBM NEMA 3,4,4X,6,IP68
Electric Output RPM 100
Valve Torque 7806 Ft Lbs 10585 Nm
MX/Gear Box Max Rated Torque 13797 Ft Lbs 18709 Nm
MX/Gear Box Stall Torque 20773 Ft Lbs 28168 Nm
Operating Time for 90 degrees 101 Sec
Handwheel SIDE Mounted 12 Inch
Open Direction CCW
Lube SHC-632
Gear Box Type WG-07-1SD-D
Gear Box Ratio 674:1
Gear Box SGA Ratio NA
Gear Box Position A
Gear Box Base MSS-FA35
Gear Box Output RPM 0.15
Outline Drawing 03-654-0061
Sun Shade Drawing NA
Wiring Diagram WD-MXb-040000-0101
Disconnect Diagram NA
Conduit Entries 1-1/4,1-1/2,1-1/4,NONE
2-Speed Timer N Quik Board N
Control Options Network:STD Digital:R4 Analog:NONE
Main Board BLUETOOTH/UPS Wire Controls 3 WIRE MAINT
Disconnect Switch NONE
Warranty STANDARD

MOTOR INFORMATION

Motor Size 9 FT-LBS
Motor Voltage 480
Mtr Phase/Frequency Hz 3/60
Motor Horsepower 0.49
Motor RPM 1800
Locked Rotor Amps (LRA) 7.0
Full Load Amps (FLA) 1.7

Instruction Manual VAIOM000071 on the internet www.limitorque.com
Qualifications: The MX complies with all the test parameters identified in Limitorque MX qualification testing bulletin AIBR000087. Installation of the MX in environments outside the parameters identified in bulletin AIBR000087 voids the warranty.



Limitorque

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SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

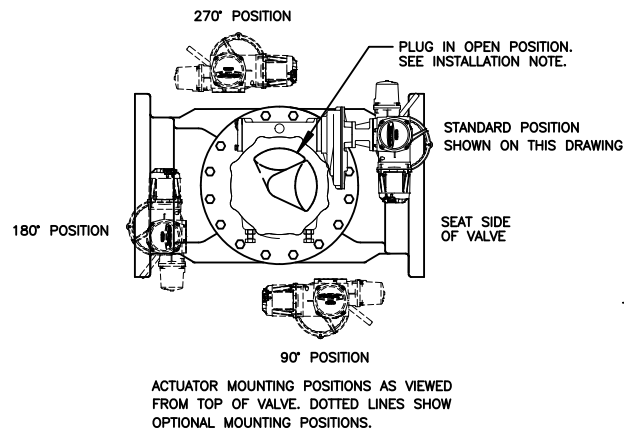
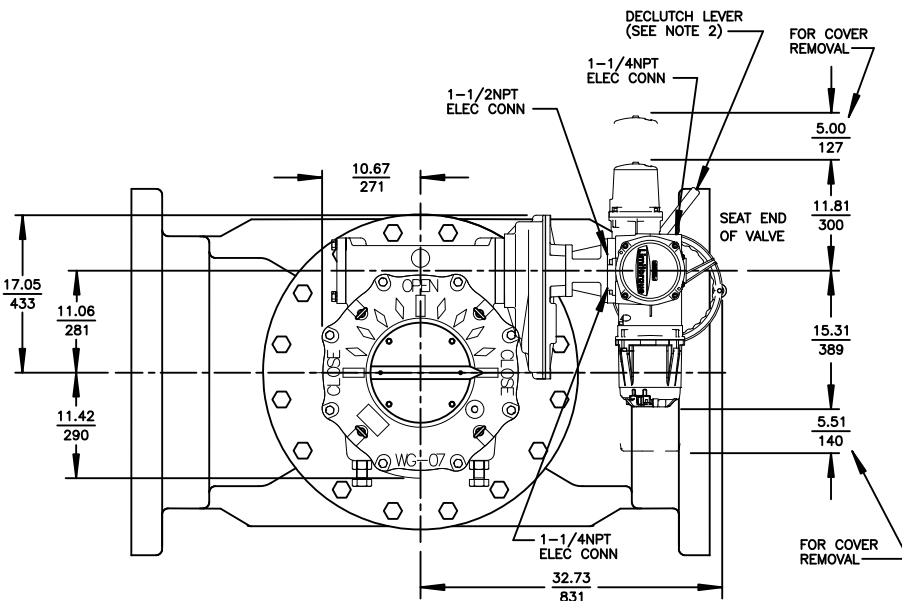
END USER **MACON, GA**
END PROJECT

TAGGING AND INFORMATION:
TAG: 1464170

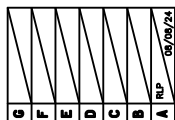
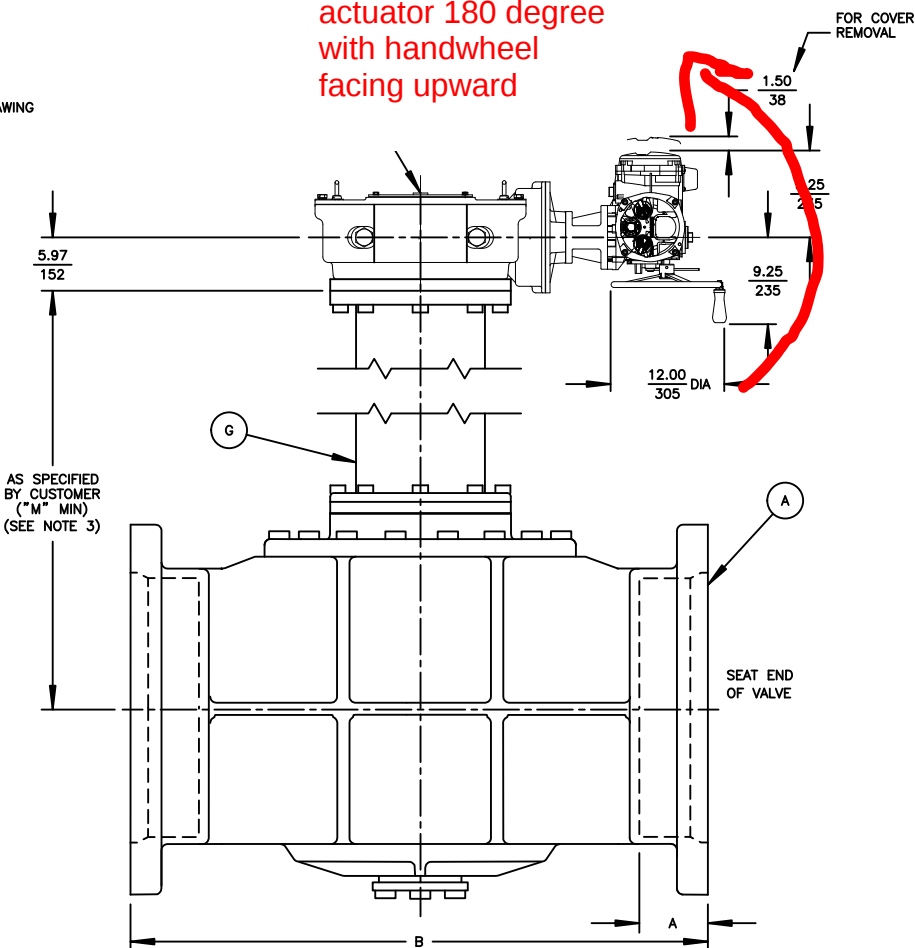
VALVE SIZE	PIPE SIZE		DIMENSIONS - INCHES MILLIMETERS				
	IN	MM	A	B	C	D	M
20.5	20	500	3.50 89	42.00 1067	18.31 465	17.06 433	51.19 1300
24	24	600	3.50 89	42.00 1067	18.31 465	17.06 433	51.19 1300
24.5	24	600	3.50 89	51.00 1295	21.88 556	21.12 536	55.25 1403
30	30	750	4.00 102	51.00 1295	21.88 556	21.12 536	55.25 1403
30.5	30	750	4.00 102	60.00 1524	24.81 630	24.31 617	58.81 1494
36	36	900	4.00 102	60.00 1524	24.81 630	24.31 617	58.81 1494

NOTES:

- MECHANICAL JOINT ENDS MEET AWWA STANDARD C111.
- FOR MANUAL OPERATION PUSH LEVER IN DIRECTION OF ARROW ONLY. UNIT REMAINS IN HAND OPERATION UNTIL MOTOR IS ENERGIZED.
- SUPPORT REQUIRED BY CUSTOMER WHEN MOUNTED OTHER THAN VERTICAL OR VERTICAL EXTENSIONS OVER $\frac{36.00}{914}$.
- INSTALLATION NOTE:
 - FOR LIQUIDS & GASES:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST END OPPOSITE SEAT.
 - FOR SUSPENDED SOLIDS, SLURRIES, ETC:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST SEAT END. IN HORIZONTAL PIPELINES, VALVE SHOULD BE INSTALLED ON IT'S SIDE SO PLUG ROTATES TO THE TOP OF THE PIPELINE WHEN OPEN. (SEE DIAGRAM BELOW).



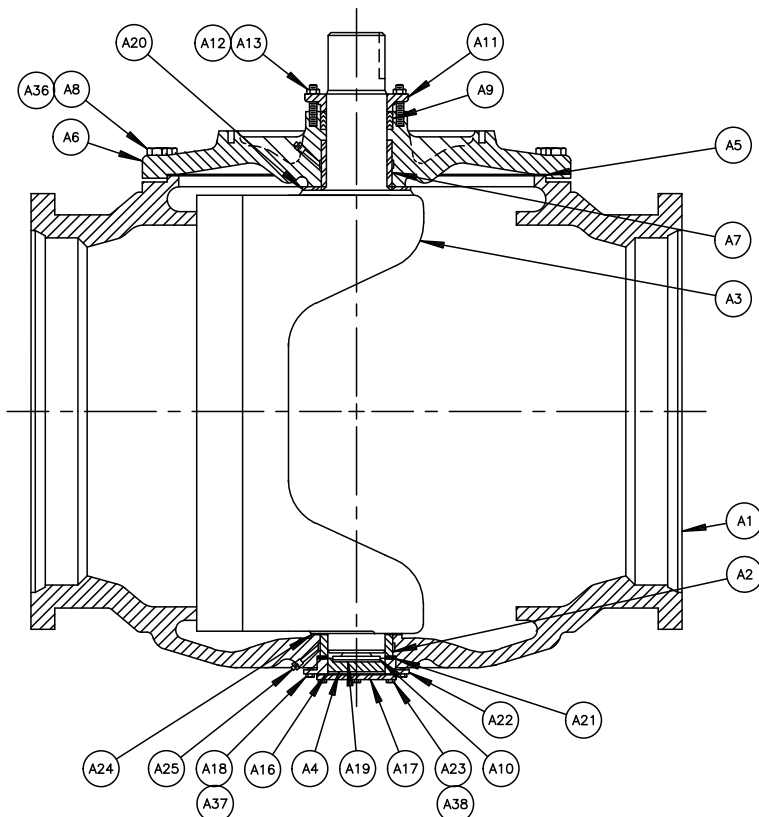
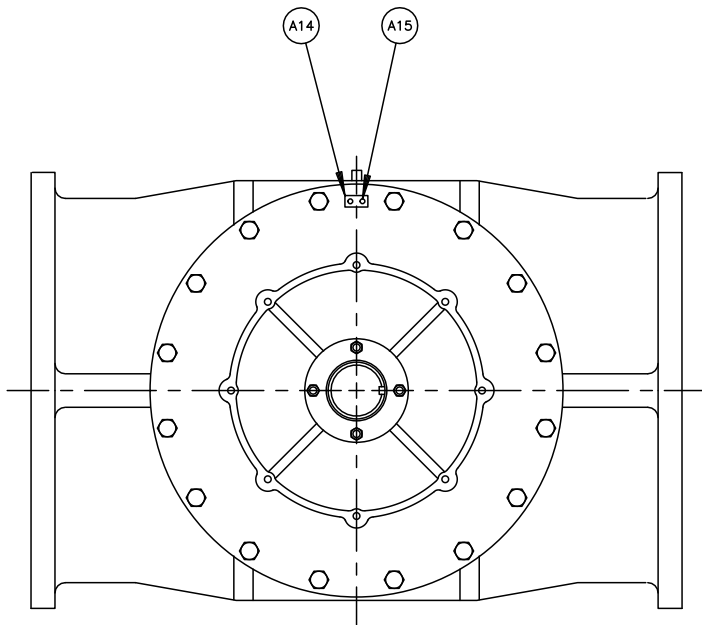
Rotate Limitorque actuator 180 degree with handwheel facing upward



DeZURIK.com

PEC ECCENTRIC VALVES SIZE 20.5-36 MECHANICAL JOINT MATERIAL GROUP 1 LIMITORQUE WG-07-1SD/MX-10 3 PHASE MOTOR ACTUATOR W/SIDE MOUNTED HANDWHEEL WITH ENK NECK EXTENSION			
DOCT. CODE	DRAWN	TPC	APPROVED JWM
C1	CHECKED	JWM	DATE 08/08/24

Z21270



NO	PART NAME	QTY
A1	BODY	1
A2	BEARING	1
A3	PLUG	1
A4	RETAINER NUT	1
A5	GASKET (BODY)	1
A6	BONNET	1
A7	BEARING	1
A8	SCREW	16
A9	PACKING	—
A10	THRUST PLATE	1
A11	GLAND	1
A12	STUD	4
A13	NUT	4
A14	CAUTION TAG	1
A15	DRIVE SCREW	2
A16	GASKET	1
A17	COVER	1
A18	SCREW	6
A19	BEARING	1
A20	GRIT EXCLUDER	1
A21	GASKET (JOURNAL COVER)	1
A22	JOURNAL COVER	1
A23	SCREW	6
A24	GRIT EXCLUDER	—
A25	PIPE PLUG	2
A36	WASHER (FUSION COATING)	16
A37	WASHER (FUSION COATING)	6
A38	WASHER (FUSION COATING)	6

NOTE:

1. RECOMMENDED SPARE PARTS ARE ITEMS A3, PLUG (IF RUBBER FACED) A5, A9, A16 & A21.
2. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE, ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
3. CLOCKWISE ROTATION ON PLUG STEM CLOSSES VALVE.

70843	03/24/20
63446	08/07/17
50312	11/04/08
50312	03/28/08



PEC ECCENTRIC VALVE ASSEMBLY 24-36 MECH JOINT
VALVES WITH PLUG SUPPORT

DOCT. CODE	DRAWN	JTD	APPROVED	JDM
C1	CHECKED	JDM	DATE	04/30/99

J78589



Materials Of Construction

DRAWING(S): J78589(A00)

SALES ORDER: SO116840

DESCRIPTION: PEC,36,MJ,CI,NBR,NBR,DTR-S30SC0*X,SB16*AE3890

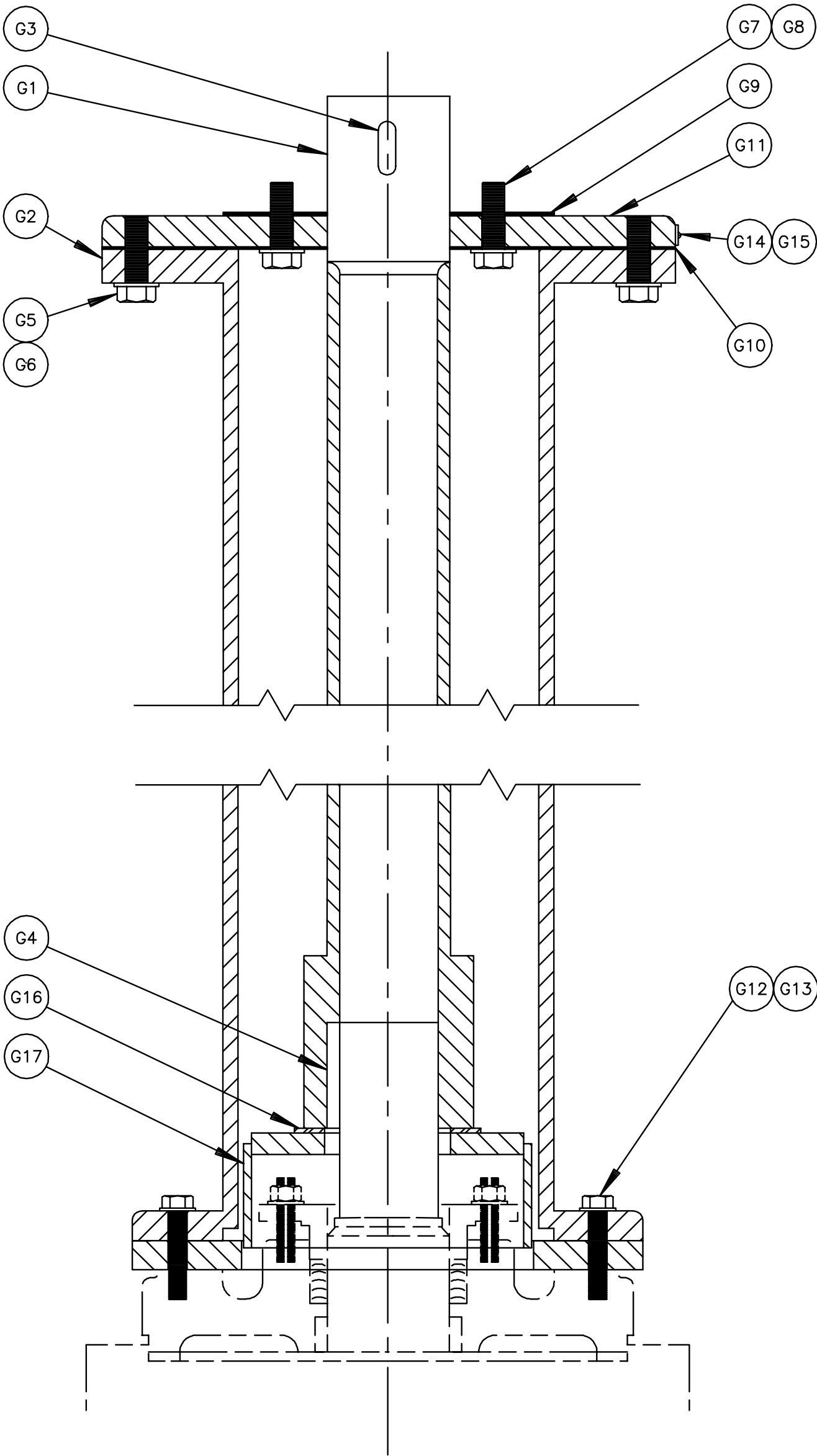
ITEM	MATERIAL
A00	STAINLESS STEEL, SERIES 300
A00	STAINLESS STEEL, TYPE 18-8
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A03	IRON, ASTM A126, CLASS B
A03	ACRYLONITRILE-BUTADIENE (NBR)
A04	CARBON STEEL, ASTM A108, GRADE 12L14
A05	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A06	IRON, ASTM A126, CLASS B
A07	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A08	STAINLESS STEEL, TYPE 316
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A10	STAINLESS STEEL, TYPE 316, ASTM A276, CONDITION A
A11	IRON, ASTM A126, CLASS B
A12	STAINLESS STEEL, TYPE 316
A13	STAINLESS STEEL, TYPE 316
A14	STAINLESS STEEL, TYPE 302
A15	STAINLESS STEEL, TYPE 18-8
A16	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL

A17	STEEL, ASTM A36
A18	STAINLESS STEEL, TYPE 316
A19	TETRAFLUOROETHYLENE (TEFLON), SELF LUBRICATING, WITH 304 STAINLESS STEEL BACKING
A20	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A21	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A22	IRON, ASTM A126, CLASS B
A23	STAINLESS STEEL, TYPE 316
A24	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A25	STEEL

NO	PART NAME	QTY
G1	DRIVE SHAFT	1
G2	EXTENSION	1
G3	KEY (WHEN REQUIRED)	1
G4	KEY	1
G5	SCREW	8
G6	WASHER	8
G7	SCREW (WHEN REQUIRED)	—
G8	WASHER (WHEN REQUIRED)	—
G9	GASKET (WHEN REQUIRED)	1
G10	GASKET	2
G11	ADAPTOR (WHEN REQUIRED)	1
G12	SCREW	8
G13	WASHER	8
G14	DATA PLATE	1
G15	DRIVE SCREW	2
G16	THRUST BEARING	1
G17	SUPPORT FAB	1

NOTE:

1. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE. ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.



50312	08/23/99
A	B
C	D
E	F
G	

**DeZURIK**
Sartell, MN USA 56377
www.dezurik.com

ENK NECK EXTENSION ON PEC ECCENTRIC VALVE FOR USE WITH NON-STANDARD ACTUATOR			
DOCT. CODE	DRAWN <i>JTD</i>	APPROVED <i>JDM</i>	J78586
C1	CHECKED <i>JDM</i>	DATE 04/30/99	

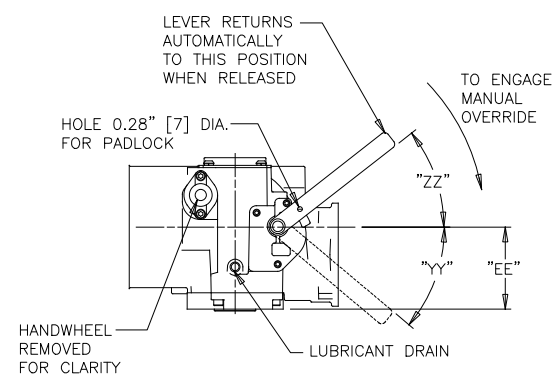
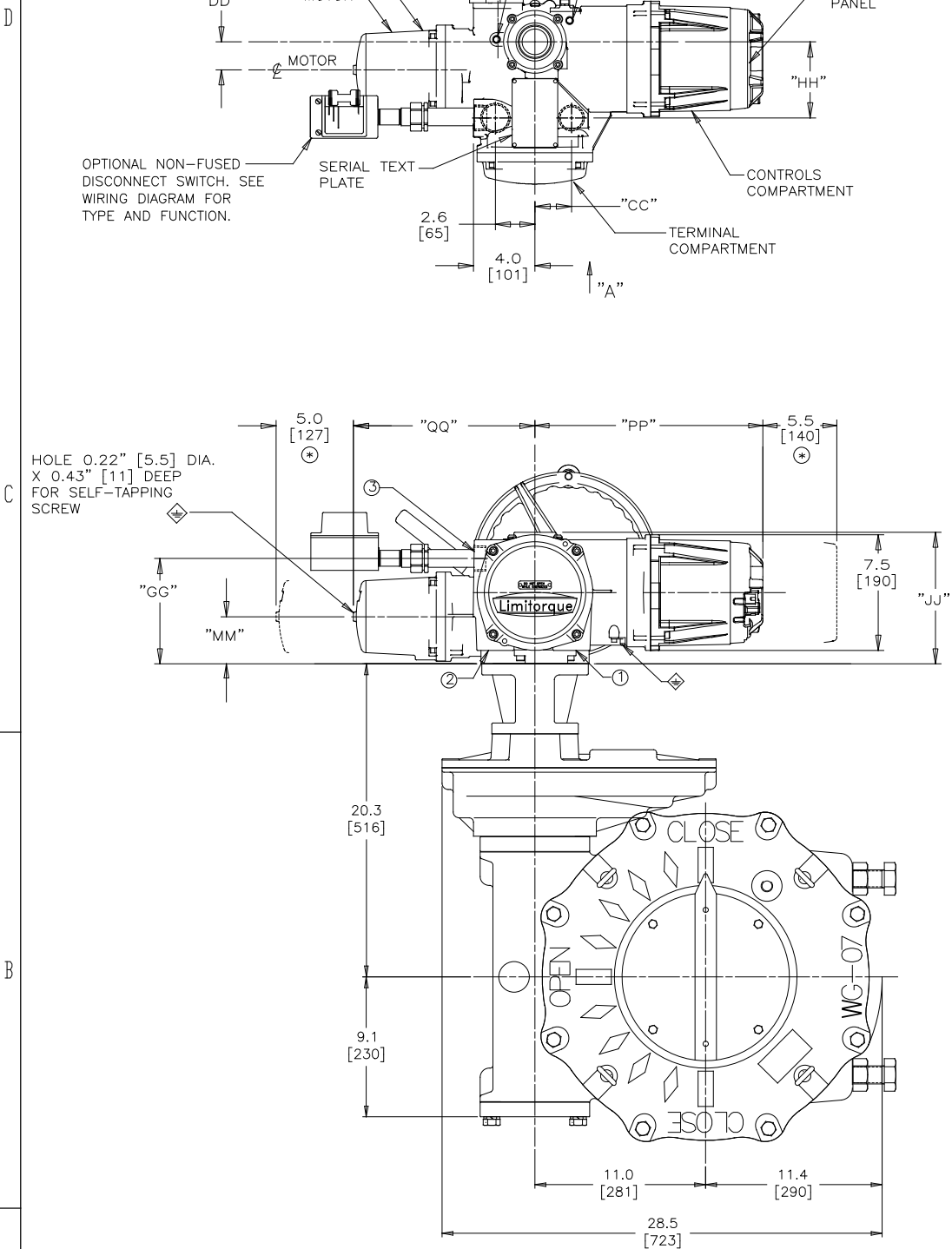
D

C

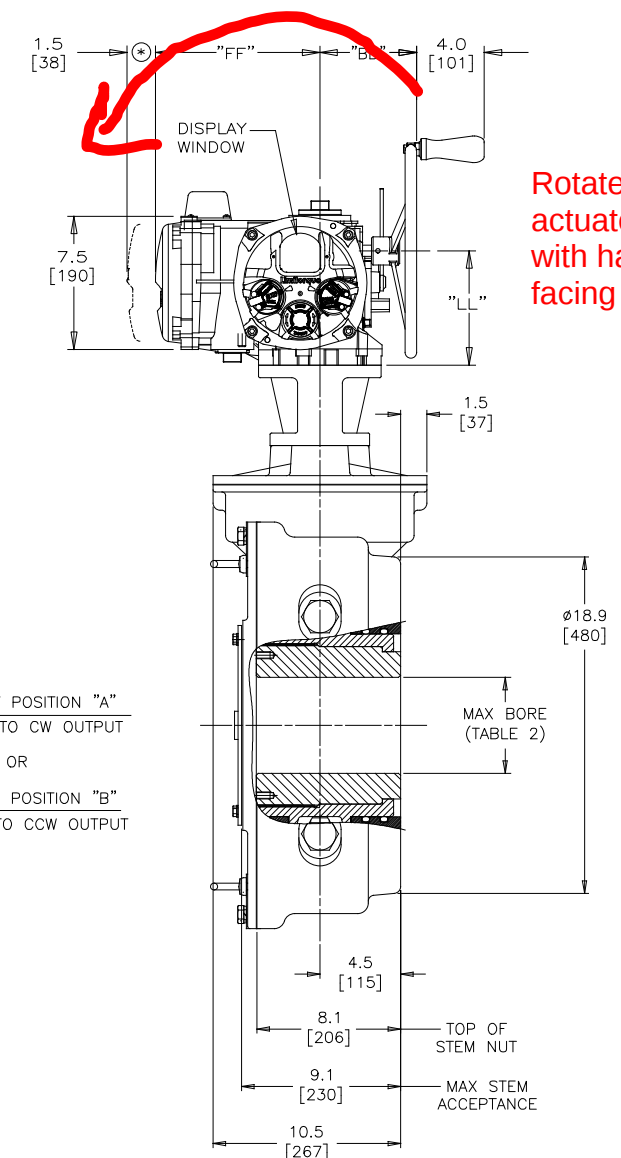
B

A

REV	CHG NO	DATE	REVD	CHKD	APVD
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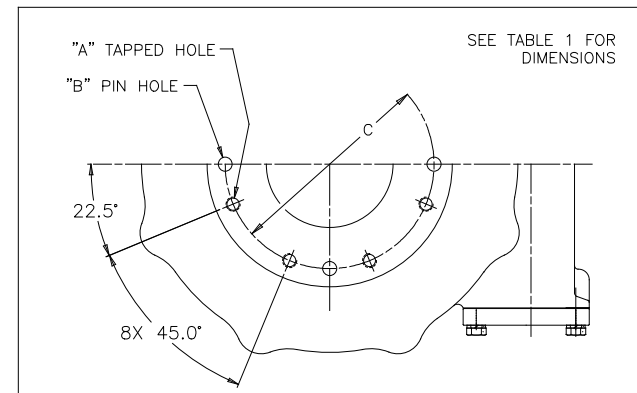


DETAIL OF DECLUTCH LEVER (VIEW AT "B")



Rotate Limitorque actuator 180 degree with handwheel facing upward

ASSEMBLY POSITION "A"
CW INPUT TO CW OUTPUT
OR
ASSEMBLY POSITION "B"
CW INPUT TO CCW OUTPUT



CONDUIT ENTRIES			
POSITION	①	②	③
STANDARD	1 1/4" NPT	1 1/2" NPT	1 1/4" NPT
OPTIONS	M32, M25 M20	M40, M32, M25, M20	M32, M25 M20
	PG21	PG29, PG21	PG21

TABLE 1

MOUNTING BASE		A	B	C
MSS (INCH)	FA30	(8) 3/4-10 UNC TAP X 1.2 DP	N/A	Ø11.7
	FA35	(8) 1-8 UNC TAP X 1.8 DP	N/A	Ø14.0
	FA40	(8) 1 1/4-7 UNC TAP X 2.1 DP	N/A	Ø16.0
ISO (METRIC)	F30	(8) M20 TAP X 30 DP	(4) Ø20 PIN X 20 DP	Ø298
	F35	(8) M30 TAP X 45 DP	(4) Ø30 PIN X 30 DP	Ø356
	F40	(8) M36 TAP X 54 DP	(4) Ø36 PIN X 36 DP	Ø406

TABLE 2

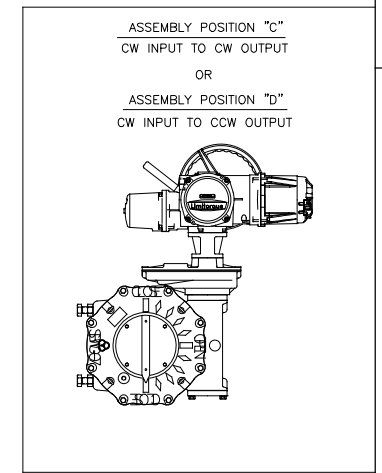
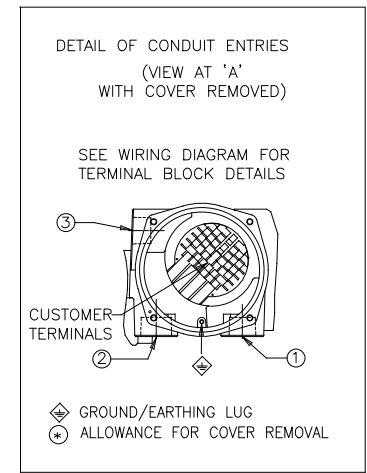
MAX BORE	MAX KEYWAY (SQUARE)	MAX KEYWAY (RECTANGLE)
Ø5.875	1 1/2 X 1 1/2	—
Ø6.313	—	1 1/2 X 1
[Ø164]	—	[40 X 22]

ACTUATOR OUTLINE DIMENSIONS (INCHES)

UNIT SIZE	BB	CC	DD	EE	FF	GG	HH	JJ	LL	MM	PP	QQ	YY	ZZ
MX-10	5.3	2.4	1.8	4.6	9.2	6.8	4.9	8.4	6.4	3.1	15.3	11.7	40.0*	40.0*
MX-20	6.8	2.1	2.2	5.6	10.7	7.7	6.4	10.9	8.6	3.9	16.0	13.5	37.0*	33.5*
MX-40	8.8	2.1	2.7	5.9	11.1	7.8	6.9	11.7	9.0	4.1	16.3	13.8	37.0*	33.5*

ACTUATOR OUTLINE DIMENSIONS (METRIC)

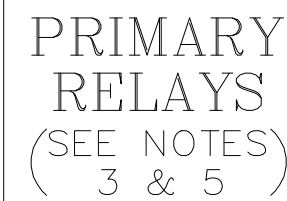
T SIZE	BB	CC	DD	EE	FF	GG	HH	JJ	LL	MM	PP	QQ	YY	ZZ
-10	135	60	46	117	233	173	125	214	163	78	389	297	40.0*	40.0*
-20	168	54	57	141	272	196	163	277	217	100	406	344	37.0*	33.5*
-40	224	54	68	150	283	198	174	297	229	105	414	350	37.0*	33.5*



NOTE:

1. SEE CUSTOMER DATA SHEET TO DETERMINE BASE AND ASSEMBLY POSITION SUPPLIED.

JOB NUMBER		5114 WOODALL ROAD, LYNCHBURG, VA. USA 24506-1318	
DRW: KVR	DATE: 3-5-20	DRAWING TITLE	
CKD: SVA	DATE: 3-5-20	MX-10-40 STANDARD UNITS WITH: A) SIDE MOUNTED HANDWHEEL B) OPTIONAL DISCONNECT SWITCH C) WG-07-1SD WORM GEAR OPERATOR D) MSS & ISO MOUNTING BASES	
APV: MWR	DATE: 3-12-20	DRAWING NUMBER	
ALL DIMENSIONS ARE REFERENCE UNLESS OTHERWISE SPECIFIED		03-654-0061	
3rd ANGLE		SCALE NONE	SHEET 1 OF 1



1. REMOTE INPUTS

SIGNAL THRESHOLD - MINIMUM "ON" 19.2V AC/DC
MAXIMUM "OFF" 5.0V AC/DC
MAX LOAD - 10 mA / 110V AC

REQUIRED CONTROL SIGNAL DURATION = 350ms MIN.
 INPUTS 0, 1, & 2 ARE FIELD CONFIGURABLE FOR
 CLOSE/OPEN/BOTH INHIBIT, USER INPUT, OR ESD.
 INPUT 1 MAY ALSO BE CONFIGURED FOR
 PARTIAL STROKE TEST.

INPUT 2 MAY ALSO BE CONFIGURED FOR CSE
REMOTE SELECTION INDICATION.

DEFAULT INPUT CONFIGURATION
 INPUT 0 – ESD,
 INPUT 1 – OPEN INHIBIT,
 INPUT 2 – CLOSE INHIBIT.

2. REMOTE INPUT JUMPERS

JUMPERS CAN BE USED WIRE TO CONNECT DIG COMMONS #1, 2 & 3 (AS NEEDED). THE 3 REMOTE WIRING GROUPS ARE ELECTRICALLY ISOLATED, INTERNALLY. ONLY A SINGLE POWER SOURCE MAY BE USED TO POWER ANY ONE GROUP, BUT DIFFERENT SOURCES MAY POWER DIFFERENT GROUPS. IF DIFFERENT SOURCES ARE USED, ENSURE THAT THE POLARITIES ARE CORRECT.

3. DEFAULT [S] SETTINGS

THE DEFAULT OPERATING CONFIGURATION FOR THE "S" OUTPUTS ARE SHOWN IN THE TABLE BELOW. THE CONTACT STATES SHOWN IN THE SCHEMATIC REPRESENT A FULLY CLOSED VALVE. SEE OPERATION MANUAL FOR ALTERNATE CONFIGURATIONS.

OUTPUT SWITCH CONTACT DEVELOPMENT			
OUTPUT SWITCH	VALVE POSITION		FUNCTION
	FULL CLOSE	FULL OPEN	
S1			CLOSE LIMIT
S3			
S2			OPEN LIMIT
S4			

— — OPEN CONTACT
 ■■■■ CLOSED CONTACT

4. MAXIMUM EXTERNAL LOAD

TERMINALS 21 AND 22 (24 VDC)
— 5W MAX. EXT. LOAD

5. CONTACT RATINGS

S1-S4 - 5 AMPS @ 250 VAC OR 30VDC (RESISTIVE)
THE TOTAL COMBINED CURRENT THROUGH ALL FOUR
STATUS CONTACTS (S1-S4) MUST NOT EXCEED 8A
MONITOR- 5 AMPS @ 250 VAC OR 30 VDC (RESISTIVE)

6. FUSES

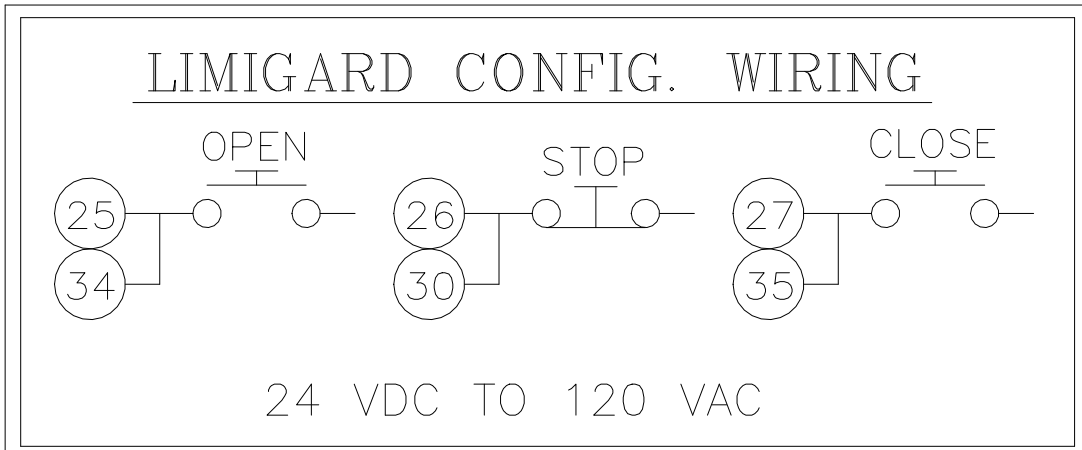
FS1 (PRIMARY)	}	600V AC, 1A, 100kA Int RATING, FAST ACTING 10.3 x 38.1mm TUBE. UL LISTED, CSA CERTIFIED
FS2 (PRIMARY)		

7. AUXILLIARY INPUTS

BACK-UP UPS POWER MAY BE CONNECTED: 24VDC TO TERMINALS 6 & 7, MAX. CURRENT DRAW 1 AMP; 12VDC TO TERMINALS 8 & 9, MAX. CURRENT DRAW 2 AMPS. THIS POWERS ALL CONTROLS AND OPTION BOARDS FOR LOCAL/REMOTE INDICATION AND CONFIGURATION. THE REVERSING CONTACTOR WILL NOT BE POWERED. CUSTOMER MUST SUPPLY FUSES AS REQUIRED BY LOCAL ELECTRICAL CODES.



TERMINAL POINT FUNCTION	CLOSE (27)	+24V DC (22)	0V DC (21)	OPEN INHIBIT (34)	DIG COM #1 (28)
STOP	(26)	+110V AC (23)	0V AC (24)	CLOSE INHIBIT (35)	DIG COM #2(A) (29) (31)
OPEN	(25)	EXTERNAL SUPPLY ↓		ESD (30)	DIG COM #3(A) (32) (33)



DRAWN	DATE	 Limitorque Actuation Systems 5114 WOODALL ROAD, LYNCHBURG, VIRGINIA 24506-1318			
NWN	01/16/20	TITLE Mxb WIRING DIAGRAM Standard Bluetooth No Analog Mechanical Contactor R4 (4) 5A, (1) 5A monitor relay 3Wire/4Wire Negative Common			
CHECKED	DATE				
JPS	01/17/20				
APPROVED	DATE	UNIT DWG NO REV SHEET TYPE WD-MXB-040000-0101 00B 1 of 1			
EMO	01/20/20				

TYPE	TAPS	APPL. VOLTAGES
1	106V	110V
	115V	115V, 120V
	200V	208V
	212V	220V
2	226V	226V, 230V, 240V
	366V	380V
	392V	400V, 415V
	450V	440V, 460V, 480V
3	212V	220V
	505V	525V
	530V	550V
	572V	575V, 600V



Submission Data Sheet
Date: August 15, 2024

ECO TECH INC
PO BOX 956
HOLLY SPRINGS GA 30142
United States

P.O. 24051GA-16

FACTORY ORDER SO116840

PROJ. NAME 24051GA - Lower Poplar WRF Influent PS

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
7		1	9741842	PEC,24,MJ,CI,NBR,NBR,DTR-S30SC0*X,SB16*AE3887

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	24	24 Inch (600mm); SST Bearings; Welded-in Nickel Seat
End Connection	MJ	Mechanical Joint, Conforms to ANSI/AWWA C111/A21.11
Body Material	CI	Cast Iron
Packing	NBR	.5" - 3" Acrylonitrile-Butadiene Reinforced filler in a PTFE U-ring, -20 to 180° F. (-29 to 83° C.); 4" & Larger Acrylonitrile-Butadiene Reinforced V-type, -20 to 250° F. (-29 to 121° C.)
Plug Facing	NBR	Acrylonitrile-Butadiene; -20 to 180° F. (-29 to 83° C.)
Options	DTR	DeZURIK Standard Certified Production Hydrostatic Shell and Seat Test Report
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10) surface prep
Actuator	X	Specify Actuator in Special Construction
Stainless Steel Bolting & Tubing	SB16	316 Stainless Steel Bolting

Temperature Range	-20 to 180 Degrees
Valve Pressure	F. to 150 psig

RELATED DOCUMENTS

Z21269: DWG INST PEC MJ GR1 20.5 - 36 LIMITORQUE MX-10/WG-05-1SD ENK
NECK EXTENSION
J78589: DWG VALVE ASSY PEC MJ 24-36
J78586: DWG ACCESS ENK FUW PEC VALVE

MODIFIER

AE3887 LIMITORQUE - MXb-10/WG-05-1SD-D - PN:1464168
ACTUATOR MOUNTED ON TOTALLY ENCLOSED EXTENSION C/L OF VALVE TO TOP OF EXTENSION
= 282 IN (23'6"). INNER EXTENSION TO BE 304 SS, OUTER EXTENSION TO BE CARBON STEEL.

FEATURES

TAG: PV-12

Flowserve®

Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736 www.flowserve.com

Phone: 434-528-4400
Fax:

Customer Data Sheet

SALES ORDER NO. 205928 REV 0	ORDER LINE 007	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036		CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225341.0
SOLD TO	DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

ACTUATOR INFORMATION

Electric Actuator Type **MX-10** Series **B**
Enclosure Type **WP&SUBM** NEMA **3,4,4X,6,IP68**
Electric Output RPM **100**
Valve Torque **3083 Ft Lbs** **4181 Nm**
MX/Gear Box Max Rated Torque **8288 Ft Lbs** **11239 Nm**
MX/Gear Box Stall Torque **12478 Ft Lbs** **16920 Nm**
Operating Time for 90 degrees **58 Sec**
Handwheel **SIDE Mounted 12 Inch**
Open Direction **CCW**
Lube **SHC-632**
Gear Box Type **WG-05-1SD-D**
Gear Box Ratio **388:1**
Gear Box SGA Ratio **NA**
Gear Box Position **A**
Gear Box Base **MSS-FA30**
Gear Box Output RPM **0.26**
Outline Drawing **03-654-0012**
Sun Shade Drawing **NA**
Wiring Diagram **WD-MXb-040000-0101**
Disconnect Diagram **NA**
Conduit Entries **1-1/4,1-1/2,1-1/4,NONE**
2-Speed Timer **N** Quik Board **N**
Control Options **Network:STD Digital:R4 Analog:NONE**
Main Board **BLUETOOTH/UPS** Wire Controls **3 WIRE MAINT**
Disconnect Switch **NONE**
Warranty **STANDARD**

MOTOR INFORMATION

Motor Size **9 FT-LBS**
Motor Voltage **480**
Mtr Phase/Frequency Hz **3/60**
Motor Horsepower **0.49**
Motor RPM **1800**
Locked Rotor Amps (LRA) **7.0**
Full Load Amps (FLA) **1.7**

Instruction Manual **VAIOM000071** on the internet www.limitorque.com
Qualifications: The MX complies with all the test parameters identified in Limitorque MX qualification testing bulletin **AIBR000087**. Installation of the MX in environments outside the parameters identified in bulletin **AIBR000087** voids the warranty.

Customer Data Sheet

Flowserve®

Limitorque

5114 Woodall Road
Lynchburg, VA 24502-2248
434-845-9736 www.flowserve.com

Phone: 434-528-4400
Fax:

SALES ORDER NO. 205928 REV 0		ORDER LINE 007	DATE ORDERED 08/06/24
CUSTOMER PURCHASE ORDER QUO093036			CUSTOMER NO. 89
OPERATOR AWINGFIELD		CONFIGURATION 225341.0	
SOLD TO		DEZURIK 250 RIVERSIDE AVENUE NORTH SARTELL, MN 56377 UNITED STATES	

END USER **MACON, GA**
END PROJECT

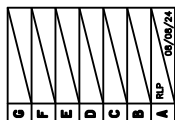
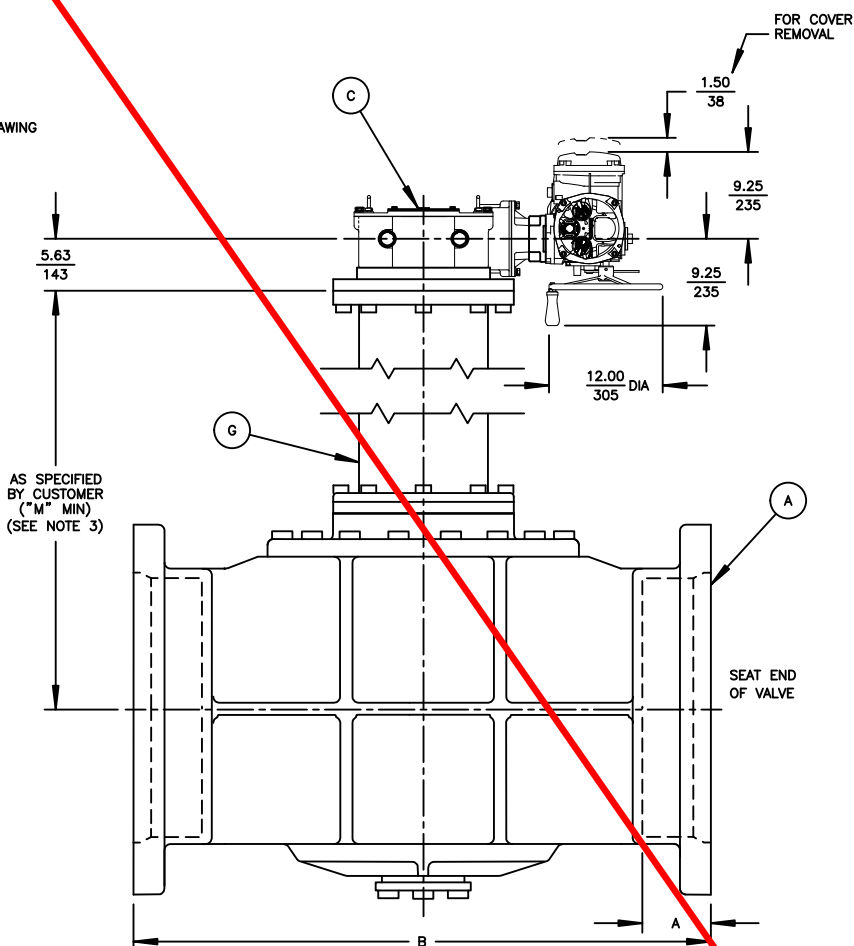
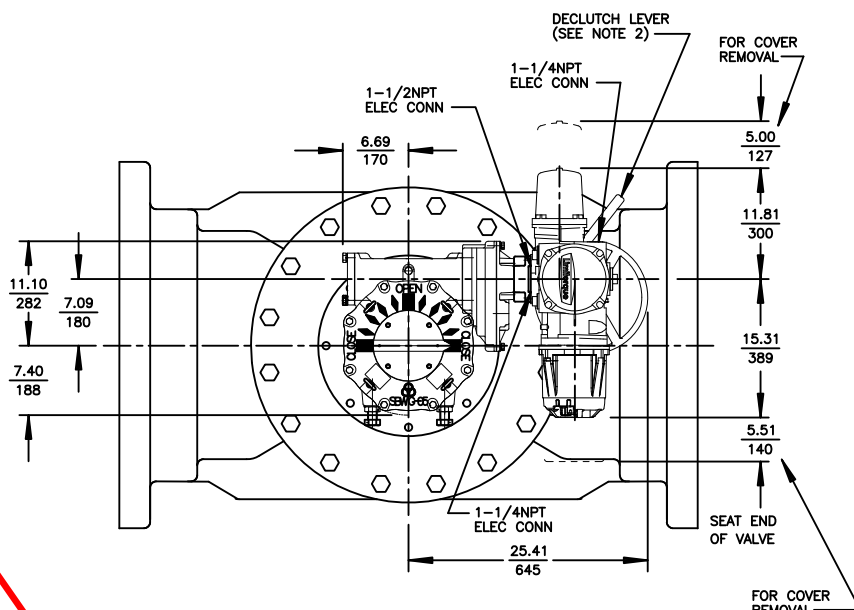
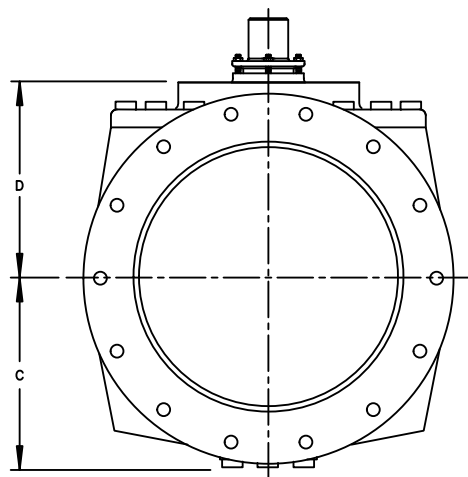
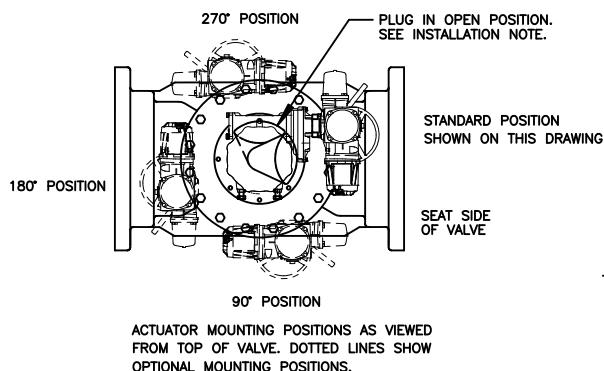
TAGGING AND INFORMATION:
TAG ALL: 1464168

VALVE SIZE	PIPE SIZE		DIMENSIONS - INCHES MILLIMETERS				
	IN	MM	A	B	C	D	M
20.5	20	500	3.50 89	42.00 1067	18.31 465	17.06 433	51.19 1300
24	24	600	3.50 89	42.00 1067	18.31 465	17.06 433	51.19 1300
24.5	24	600	3.50 89	51.00 1295	21.88 556	21.12 536	55.25 1403
30	30	750	4.00 102	51.00 1295	21.88 556	21.12 536	55.25 1403
30.5	30	750	4.00 102	60.00 1524	24.81 630	24.31 617	58.81 1494
36	36	900	4.00 102	60.00 1524	24.81 630	24.31 617	58.81 1494

NOTES:

- MECHANICAL JOINT ENDS MEET AWWA STANDARD C111.
- FOR MANUAL OPERATION PUSH LEVER IN DIRECTION OF ARROW ONLY. UNIT REMAINS IN HAND OPERATION UNTIL MOTOR IS ENERGIZED.
- SUPPORT REQUIRED BY CUSTOMER WHEN MOUNTED OTHER THAN VERTICAL OR VERTICAL EXTENSIONS OVER 36.00
914 .
- INSTALLATION NOTE:

- FOR LIQUIDS & GASES:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST END OPPOSITE SEAT.
- FOR SUSPENDED SOLIDS, SLURRIES, ETC:
INSTALL VALVE WITH HIGHER PRESSURE AGAINST SEAT END. IN HORIZONTAL PIPELINES, VALVE SHOULD BE INSTALLED ON IT'S SIDE SO PLUG ROTATES TO THE TOP OF THE PIPELINE WHEN OPEN. (SEE DIAGRAM BELOW).

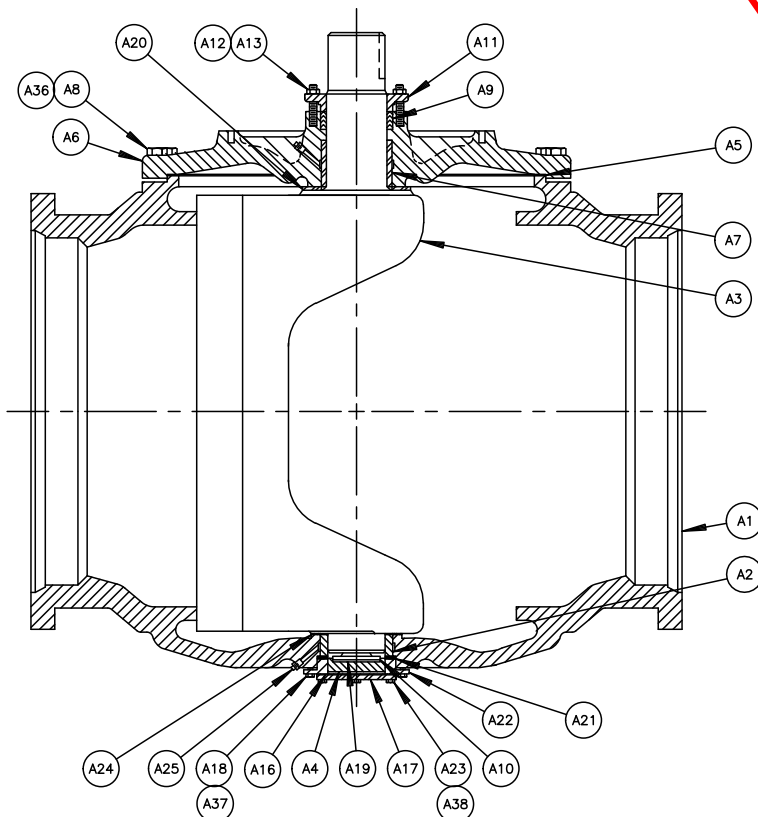
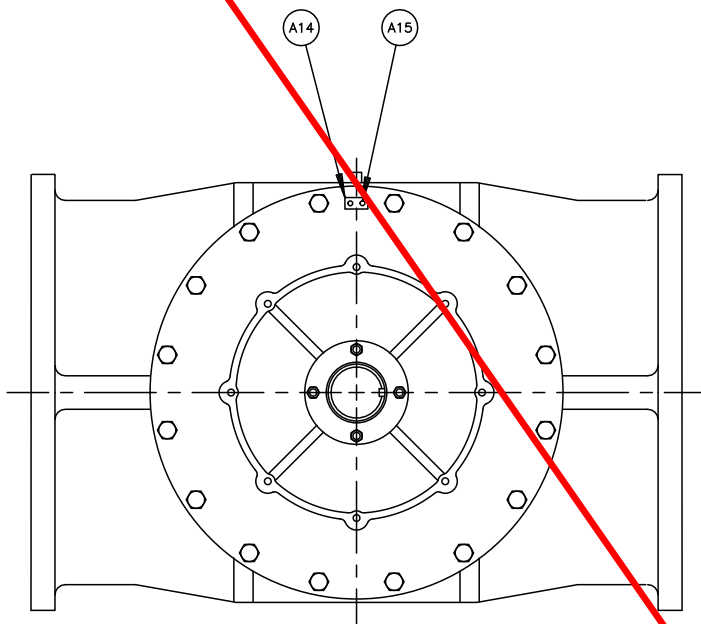


DeZURIK.com

PEC ECCENTRIC VALVES SIZE 20.5-36 MECHANICAL JOINT MATERIAL GROUP 1 LIMITORQUE WG-05-1SD/MX-10 3 PHASE MOTOR ACTUATOR W/SIDE MOUNTED HANDWHEEL WITH ENK NECK EXTENSION

DOCT. CODE	DRAWN	TPC	APPROVED	JWM
C1	CHECKED	JWM	DATE	08/07/24

Z21269



NO	PART NAME	QTY
A1	BODY	1
A2	BEARING	1
A3	PLUG	1
A4	RETAINER NUT	1
A5	GASKET (BODY)	1
A6	BONNET	1
A7	BEARING	1
A8	SCREW	16
A9	PACKING	—
A10	THRUST PLATE	1
A11	GLAND	1
A12	STUD	4
A13	NUT	4
A14	CAUTION TAG	1
A15	DRIVE SCREW	2
A16	GASKET	1
A17	COVER	1
A18	SCREW	6
A19	BEARING	1
A20	GRIT EXCLUDER	1
A21	GASKET (JOURNAL COVER)	1
A22	JOURNAL COVER	1
A23	SCREW	6
A24	GRIT EXCLUDER	—
A25	PIPE PLUG	2
A36	WASHER (FUSION COATING)	16
A37	WASHER (FUSION COATING)	6
A38	WASHER (FUSION COATING)	6

NOTE:

1. RECOMMENDED SPARE PARTS ARE ITEMS A3, PLUG (IF RUBBER FACED) A5, A9, A16 & A21.
2. WHEN ORDERING PARTS, INCLUDE VALVE SIZE AND PART NUMBER FROM DATA PLATE, ALSO INCLUDE THIS DRAWING NUMBER WITH PART NAME, NUMBER AND QUANTITY.
3. CLOCKWISE ROTATION ON PLUG STEM CLOSSES VALVE.

70843	03/24/20
63446	08/07/17
50312	11/04/08
50312	03/28/08



PEC ECCENTRIC VALVE ASSEMBLY 24-36 MECH JOINT
VALVES WITH PLUG SUPPORT

DOCT. CODE	DRAWN	JTD	APPROVED	JDM
C1	CHECKED	JDM	DATE	04/30/99

J78589



Materials Of Construction

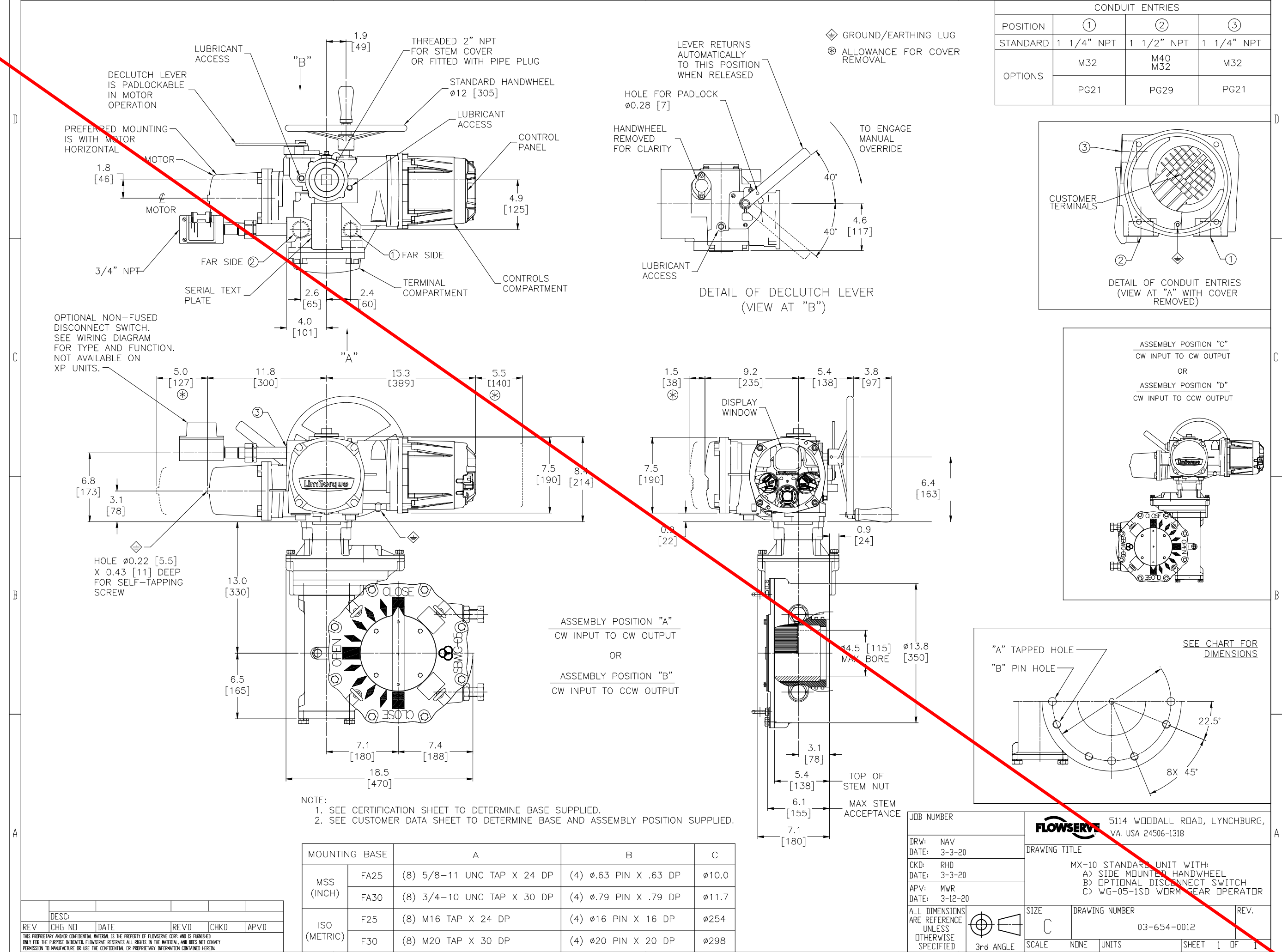
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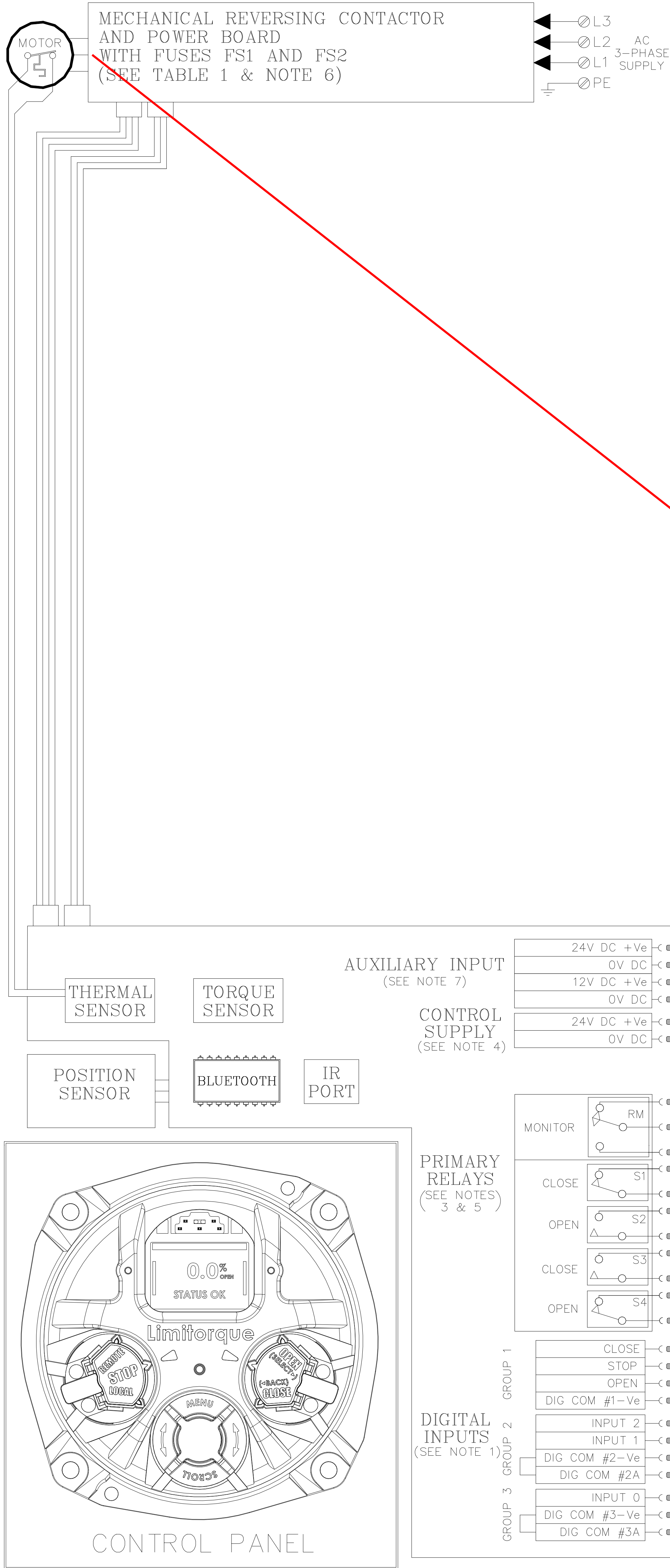
SALES ORDER: SO116840

DESCRIPTION: PEC,24,M1,CI,NBR,NBR,DTR-S30SC0*X,SB16*AE3887

ITEM	MATERIAL
A00	STAINLESS STEEL, SERIES 300
A00	STAINLESS STEEL, TYPE 18-8
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A03	IRON, ASTM A126, CLASS B
A03	ACRYLONITRILE-BUTADIENE (NBR)
A04	CARBON STEEL, ASTM A108, GRADE 102L14
A05	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A06	IRON, ASTM A126, CLASS B
A07	STAINLESS STEEL, TYPE CF-8M, ASTM A743
A08	STAINLESS STEEL, TYPE 316
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A10	STAINLESS STEEL, TYPE 316, ASTM A276, CONDITION A
A11	IRON, ASTM A126, CLASS B
A12	STAINLESS STEEL, TYPE 316
A13	STAINLESS STEEL, TYPE 316
A14	STAINLESS STEEL, TYPE 302
A15	STAINLESS STEEL, TYPE 18-8
A16	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL

A17	STEEL, ASTM A36
A18	STAINLESS STEEL, TYPE 316
A19	TETRAFLUOROETHYLENE (TEFLON), SELF LUBRICATING, WITH 304 STAINLESS STEEL BACKING
A20	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A21	GASKET, NON-ASBESTOS COMPRESSED SHEET GASKET MATERIAL
A22	IRON, ASTM A126, CLASS B
A23	STAINLESS STEEL, TYPE 316
A24	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1
A25	STEEL





NOTES: (SEE INSTALLATION & OPERATION MANUAL VAIOM000071 FOR DETAILS)

1. REMOTE INPUTS

SIGNAL THRESHOLD - MINIMUM "ON" 19.2V AC/DC
MAXIMUM "OFF" 5.0V AC/DC
MAX LOAD - 10 mA / 110V AC

REQUIRED CONTROL SIGNAL DURATION = 350ms MIN.
INPUTS 0, 1, & 2 ARE FIELD CONFIGURABLE FOR
CLOSE/OPEN/BOTH INHIBIT, USER INPUT, OR ESD.
INPUT 1 MAY ALSO BE CONFIGURED FOR
PARTIAL STROKE TEST.
INPUT 2 MAY ALSO BE CONFIGURED FOR CSE
REMOTE SELECTION INDICATION.
DEFAULT INPUT CONFIGURATION
INPUT 0 - ESD,
INPUT 1 - OPEN INHIBIT,
INPUT 2 - CLOSE INHIBIT.

2. REMOTE INPUT JUMPERS

JUMPERS CAN BE USER WIRED TO CONNECT DIG COMMONS
#1, 2 & 3 (AS NEEDED). THE 3 REMOTE WIRING GROUPS
ARE ELECTRICALLY ISOLATED, INTERNALLY. ONLY A SINGLE
POWER SOURCE MAY BE USED TO POWER ANY ONE GROUP
BUT DIFFERENT SOURCES MAY POWER DIFFERENT GROUPS.
IF DIFFERENT SOURCES ARE USED, ENSURE THAT THE
POLARITIES ARE CORRECT.

3. DEFAULT [S] SETTINGS

THE DEFAULT OPERATING CONFIGURATION FOR THE
"S" OUTPUTS ARE SHOWN IN THE TABLE BELOW.
THE CONTACT STATES SHOWN IN THE SCHEMATIC
REPRESENT A FULLY CLOSED VALVE.
SEE OPERATION MANUAL FOR ALTERNATE CONFIGURATIONS.

OUTPUT SWITCH	VALVE POSITION		FUNCTION
	FULL CLOSE	FULL OPEN	
S1	■	---	CLOSE LIMIT
S3	---	■	
S2	---	■	OPEN LIMIT
S4	■	---	

--- OPEN CONTACT
■ CLOSED CONTACT

4. MAXIMUM EXTERNAL LOAD

TERMINALS 21 AND 22 (24 VDC)
- 5W MAX EXT. LOAD

5. CONTACT RATINGS

S1-S4 - 5 AMPS @ 250 VAC OR 30VDC (RESISTIVE)
THE TOTAL COMBINED CURRENT THROUGH ALL FOUR
STATUS CONTACTS (S1-S4) MUST NOT EXCEED 8A
MONITOR- 5 AMPS @ 250 VAC OR 30 VDC (RESISTIVE)

6. FUSES

FS1 (PRIMARY) 600V AC, 1A, 100kA INT. RATING,
FAST ACTING 10.3 x 38.1mm TUBE.
UL LISTED, CSA CERTIFIED
FS2 (PRIMARY)

7. AUXILLIARY INPUTS

BACK-UP UPS POWER MAY BE CONNECTED: 24VDC TO
TERMINALS 6 & 7, MAX. CURRENT DRAW 1 AMP; 12VDC TO
TERMINALS 8 & 9, MAX. CURRENT DRAW 2 AMPS. THIS POWERS
ALL CONTROLS AND OPTION BOARDS FOR LOCAL/REMOTE
INDICATION AND CONFIGURATION. THE REVERSING CONTACTOR WILL
NOT BE POWERED. CUSTOMER MUST SUPPLY FUSES AS REQUIRED
BY LOCAL ELECTRICAL CODES.

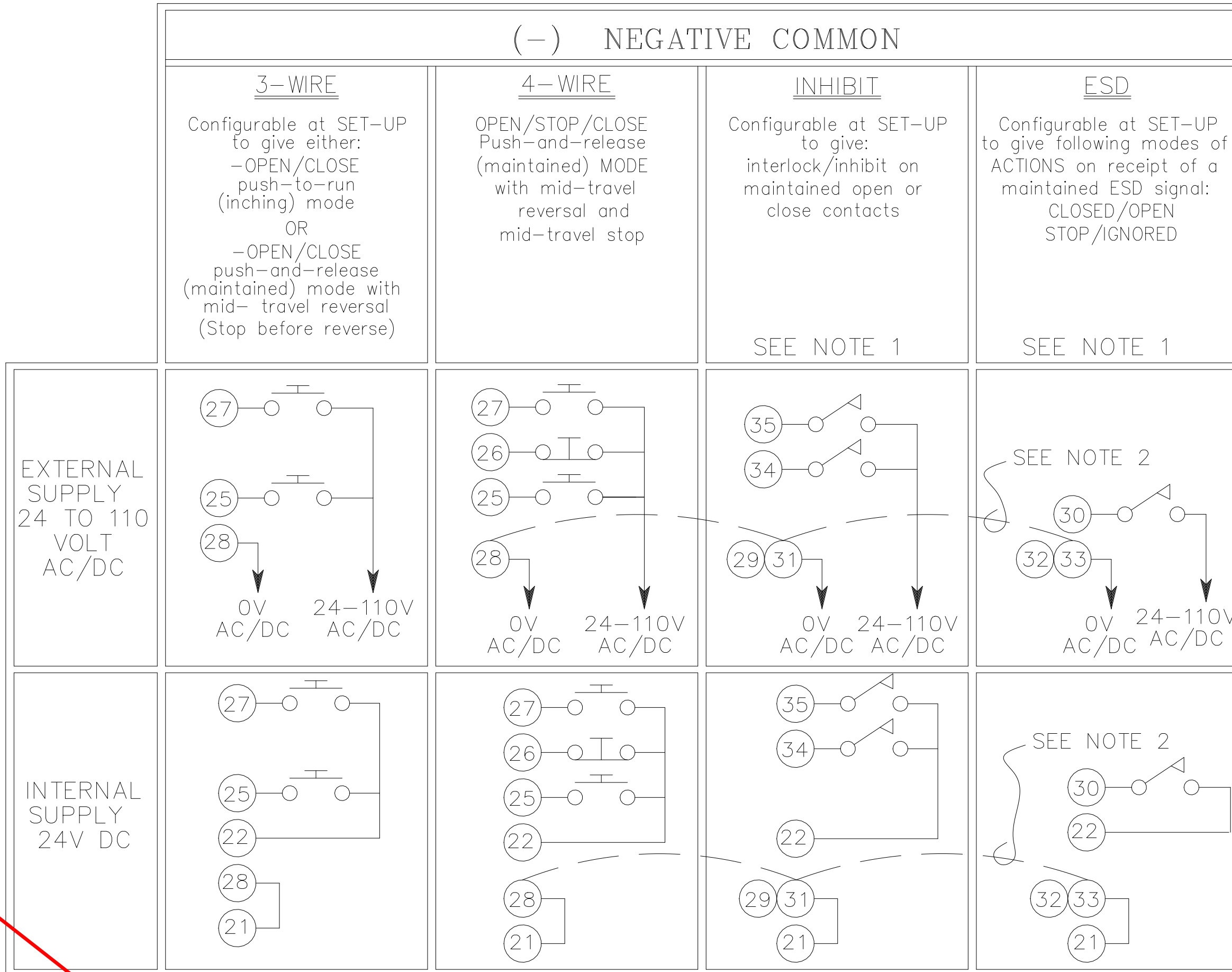


TABLE 1: TRANSFORMER TAPPING OPTIONS			
TYPE	TAPS	APPL. VOLTAGES	
1	106V	110V	
	115V	115V, 120V	
	200V	208V	
	212V	220V	
2	226V	226V, 230V, 240V	
	366V	380V	
	392V	400V, 415V	
	450V	440V, 460V, 480V	
3	212V	220V	
	505V	525V	
	530V	550V	
	572V	575V, 600V	

REMOTE WIRING CONNECTIONS

TERMINAL POINT FUNCTION	CLOSE (27)	+24V DC (22)	0V DC (21)	OPEN INHIBIT (34)	DIG COM #1 (28)
	STOP (26)	+110V AC (23)	0V AC (24)	CLOSE INHIBIT (35)	DIG COM #2(A) (29/31)
	OPEN (25)	EXTERNAL SUPPLY ↓		ESD (30)	DIG COM #3(A) (32/33)

LIMIGARD CONFIG. WIRING

DRAWN	DATE	<i>Limitorque Actuation Systems</i> 5114 WOODBURN ROAD, LYNCHBURG, VIRGINIA 24506-1318	
NWN	01/16/20		
CHECKED	DATE	TITLE	
JPS	01/17/20	MXb WIRING DIAGRAM Standard No Analog Mechanical Contactor R4 (4) 5A, (1) 5A monitor relay 3Wire/4Wire Negative Common	
APPROVED	DATE	UNIT TYPE	REV
EMO	01/20/20	MXb	00B
DWG NO	WD-MXb-040000-0101	SHEET	1 of 1



RECOMMENDED SHORT & LONG TERM STORAGE PROCEDURES

SHORT TERM STORAGE (LESS THAN 6 MONTHS)

1. All valves shall be stored in the position in which they were shipped. Do not stack (or store) items on top of the rubber components.
2. Valves shall be protected from dirt, debris, excessive moisture and UV exposure. Store at temperatures ranging from 35°F to 95°F (2°C to 35°C) with humidity levels not exceeding 50%.

LONG TERM STORAGE (6 MONTHS +)

1. All valves shall be stored in the position in which they were shipped. Do not stack (or store) items on top of the rubber components.
2. Valves shall be stored fully enclosed in a crate or on a skid. It is acceptable to store the valves uncrated but protected from any dirt, debris or UV exposure as long as the environmental conditions as described in item 3 are met. Any desiccant packages received with the original shipment should be replaced before putting valves into long term storage. Please follow your desiccant manufacturer's recommended usage of any desiccant based on the volume of the enclosed area.
3. Valves shall be stored in a well ventilated, clean, dry indoor facility on skids or raised racks with temperatures ranging from 35°F to 95°F (2°C to 35°C) with humidity levels not exceeding 50%. Rubber components shall be stored within temperature range 59°F to 77°F (15°C to 25°C)
4. If the above conditions cannot be met, valves shall be separately packaged inside sealed heavy duty plastic sheeting and a weather resistant enclosure, or a standard crate lined with moisture proof paper, to protect the valves from dirt, debris and UV exposure. Desiccant packages shall be used to control moisture both inside the enclosure and the sealed heavy duty plastic covering. Please follow your desiccant manufacturer's recommended usage of any desiccant based on the volume of the enclosed area.
5. Do not store valves next to operating electric motors or equipment which may emit ozone, which can cause deterioration of valve elastomers. Store in an environment with less than 0.1 ppm concentration, at least 25 feet from ozone emitting devices, with ventilation.
6. Valves with cylinder actuators and control valves which are stored for extended periods may be subject to cylinder blow-by caused by permanent distortion of any of the seals. Valves should be operated prior to installation and damaged seals replaced. If possible, it is recommended that cylinders be cycled every 4-6 months to maintain seals.
7. Valves with electric motor operators shall be stored in accordance with the individual motor manufacturer's recommended long term storage procedures.
8. All electrical components shall be visually inspected prior to valve installation.

SHELF LIFE (RUBBER COMPONENTS)

For rubber components or elastomers stored for longer than the time shown below contact the manufacturer to coordinate a visual inspection.

- Three (3) years for Natural (Pure Gum) Rubber and Styrene-Butadiene (SBR) components.
- Five (5) years for Chloroprene (Neoprene), Acrylonitrile-Butadiene (Nitrile, Buna-N), Chlorosulfonated Polyethylene (Hypalon), Chloro-Isobutylene-Isoprene (Chlorobutyl), EPDM, and Fluoroelastomer components.