

CITY OF GRAND JUNCTION
SOLE SOURCE JUSTIFICATION FORM

Date: 6-3-24 Requested By: Aaron Rice
Department: Utilities Division: Persigo
Vendor Name: Municipal Treatment Net Cost Delivered: \$ 21,000

Provide G/L Account where funds are budgeted: 902-615-620-380.8340
Project code, if applicable F0010-F001054

SOLE SOURCE JUSTIFICATION

(INITIAL ALL ENTRIES THAT APPLY)

Material/Service Description: Electric Actuated Valves for Grease Dump Facility.

1. - Uniqueness: Is unique and unavailable from any other source due to proprietary rights, patents, copyrights, secret processes, or monopoly control;
2. X - Compatibility: There is a need for compatibility with existing equipment, technologies, or processes, and only a specific product or service can satisfy that need;
3. - Urgency: Delay would lead to serious injury, death, or significant financial loss;
4. - Expertise: The vendor has unique experience, expertise, or capabilities unavailable elsewhere;
5. X - Standardization: There is a need to standardize specific equipment or supplies to reduce training, inventory, or maintenance costs, and only one vendor can meet this need;
6. X - Written demonstration and justification is available which reasonably and practicably establishes that the selection of a sole source vendor is in the best interest of the City.

Attach Justification Memo and Pricing Documentation, then proceed with signatures below.
After Dept Head approval, forward to Purchasing.

Department Director Approval:

I recommend that competitive procurement be waived and that the service or material described herein be purchased as a sole source.

Signed: DocuSigned by:
Randi Kim - Utilities Director 6/3/2024
F3B7E9047688412... Date
Department Head Signature

Purchasing Approval:

Based on the above and attached documents, I have determined this to be a sole source with no other vendor practicably available.

Signed: DocuSigned by:
Jay Valentine 6/3/2024
09BA36D53ED0467... Date
Purchasing Manager Signature

Final Authorization

City Manager Approval Required (\$25K to \$50K) yes / no

Signed: _____, _____
City Manager Signature Date

City Council Approval Required (over \$50K) yes / no



Memorandum

TO: Randi Kim, Utilities Director
Jay Valentine, Purchasing Manager
FROM: Aaron Rice, Wastewater Maintenance Supervisor
DATE: 5/17/2024

SUBJECT: Sole Source Justification for electric actuated valves for Grease Dump Facility

This memo is to serve as sole source justification for the procurement of two 8” Dezurik electric actuated valves for the Grease Dump Facility at the Persigo WWTP.

Grease haulers dump restaurant grease at the Grease Dump Facility (GDF). Once a week, Operators skim the grease from the tank and haul it to the landfill. The pipe and valve infrastructure at the GDF is from the early 2000’s. Unfortunately, it is a common occurrence for the current electric actuated valves not to function when we skim grease. This causes disruptions to our process and can delay grease haulers from dumping at our facility.

Fortunately, Municipal Treatment Equipment carries Dezurik/Rotork electric actuated valves. We exclusively use Rotork/Dezurik electric actuated valves on site. We recently upgraded our Raw Sewage pump station and replaced them all with Dezurik/Rotork electric valves and we have dozens more onsite. Standardization across the plant simplifies preventive and corrective maintenance and simplifies programming them into our SCADA system.

This purchase request satisfies the criteria in the City of Grand Junction’s “Purchasing Policy and Procedure Manual”, section 14: Sole Source Designation, 14.2: Sole Source Criteria:

(b) The compatibility or conformity with City-owned equipment or materials in which nonconformance would require the expenditure of additional funds



TABLE OF CONTENTS

A Data Sheet is included for each line item on the purchase order.
Document numbers are listed at the bottom of the Data Sheet.
Any one drawing may apply to more than one item number.
All documents are assembled in alpha/numeric order within each section.

- Data Sheets
- Installation Drawing
- Materials Of Construction
- Cross Section Drawings
- Recommended Long & Short Term Storage Procedures

Project Name Grease Tank		
<input checked="" type="checkbox"/> NO EXCEPTION TAKEN	<input type="checkbox"/> REJECTED	
<input type="checkbox"/> REVISE	<input type="checkbox"/> NOT REVIEWED	
BY tobyt		DATE 5/13/2024
SUBMITTAL#	SPEC	
<small>This review is only for general conformance of the project and general compliance. Corrections or comments made on these drawings during this review do not relieve Contractor/Subcontractor from compliance with the requirements of the plans and specifications. Contractor is responsible for all dimensions and fabrication to be confirmed and correlated at the job site</small>		



Submittal Data Sheet
 Date: May 9, 2024

MUNICIPAL TREATMENT EQUIPMENT LLC
 17301 W COLFAX AVE
 #300
 GOLDEN CO 80401
 United States

P.O.
 FACTORY QUOTE QUO088403
 PROJ. NAME CITY OF GRAND JUNCTION PEC

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
1		1	9XXXXXX	PEC,8,MJ,CI,NBR,CR,S30SC0*GS-6-N

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	8	8 Inch (200mm); SST Bearings; Welded-in Nickel Seat (Except Rubber Lined or Stainless Steel Bodies)
End Connection	MJ	Mechanical Joint, Conforms to ANSI/AWWA C111/A21.11
Body Material	CI	Cast Iron; (.5"-12" (15-300mm) Pressure Rating 175 psi (1210 kPa); (14"& larger (350mm and larger) Pressure Rating 150 psi (1030 kPa)
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	CR	Chloroprene; -20 to 180° F. (-29 to 83° C.)
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue Epoxy DeZURIK with Standard (SP10) surface prep
Actuator	GS-6-N	G-Series Nut; 2 In Square

Valve Weight (Approx) 223 lbs/ 102 kgs
 Temperature Range -20 to 180 Degrees F
 Valve Pressure

Project Name

Grease Tank

☒ NO EXCEPTION TAKEN
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☐ REVISE
 ☐ NOT REVIEWED

BY tobyt

DATE 5/13/2024

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SPEC

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VALVE SIZE		DIMENSIONS				
		INCHES MILLIMETERS				
INCH	MM	B	C	K	L	S
4	100	$\frac{14.25}{362}$	$\frac{5.38}{137}$	$\frac{9.62}{244}$	$\frac{13.27}{337}$	$\frac{10.25}{260}$
6	150	$\frac{15.75}{400}$	$\frac{6.50}{165}$	$\frac{11.81}{300}$	$\frac{15.46}{393}$	$\frac{12.12}{308}$
8	200	$\frac{17.38}{441}$	$\frac{8.25}{210}$	$\frac{13.63}{346}$	$\frac{17.28}{439}$	$\frac{12.12}{308}$
10	250	$\frac{19.38}{492}$	$\frac{10.28}{261}$	$\frac{15.12}{384}$	$\frac{18.77}{477}$	$\frac{14.50}{368}$
12	300	$\frac{20.75}{527}$	$\frac{11.69}{297}$	$\frac{16.75}{425}$	$\frac{20.40}{518}$	$\frac{15.25}{387}$

A	VALVE
B	ACTUATOR

- NOTE:
- MECHANICAL JOINT ENDS MEET AWWA STANDARD C111.
 - 13 TURNS OF WRENCHING SQUARE ARE REQUIRED TO OPEN VALVE.
 - 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).

NOTICE

THIS DRAWING DOES NOT SHOW ACTUATOR ACCESSORIES. IF ACCESSORIES ARE REQUIRED, REFER TO THE APPROPRIATE ACCESSORY INSTALLATION DRAWING FOR DIMENSIONS AND OTHER RELATED INFORMATION.

$\frac{2.00}{51}$ SQUARE

Project Name
Grease Tank

☒ NO EXCEPTION TAKEN

☐ REJECTED

☐ REVISE

☐ NOT REVIEWED

BY tobyt

DATE 5/13/2024

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CITY OF
Grand Junction
COLORADO
PUBLIC WORKS

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PLUG IN OPEN POSITION.
SEE INSTALLATION NOTE.

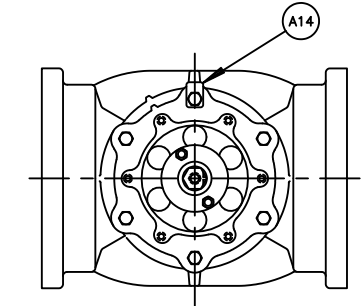
STANDARD POSITION
SHOWN ON THIS DRAWING

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

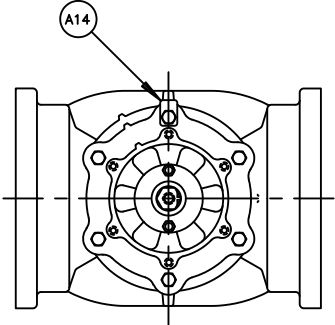
* THE 90° AND 270° POSITIONS REQUIRE
DIFFERENT INTERNAL GEARING.
THESE POSITIONS MUST BE NOTED ON
THE PURCHASE ORDER.

G	F	E	D	C	B	A
61842	02/12/10					

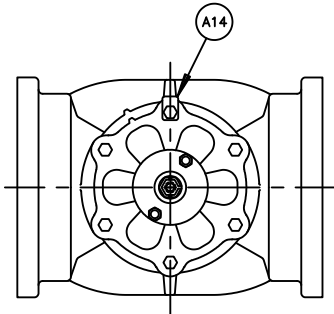
PEC ECCENTRIC VALVES SIZE 4-12 MECH. JOINT MATERIAL GROUP 1 GS-6-N NUT ACTUATOR			
DOCT . CODE	DRAWN BMP	APPROVED TPK	A46412
C1	CHECKED TPK	DATE 02/08/99	



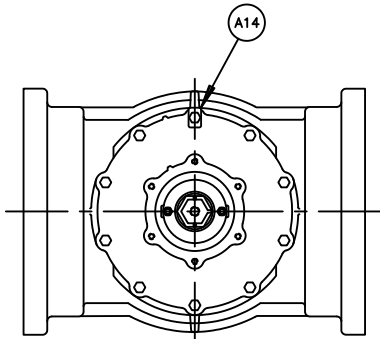
6.5 - 8 VALVES



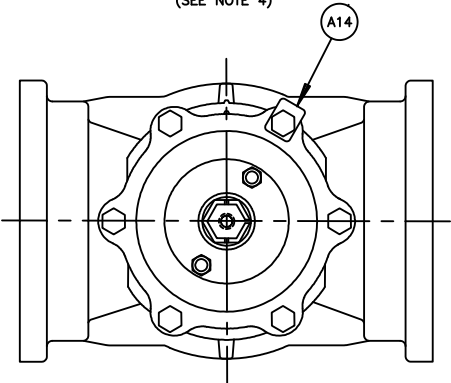
10.5 - 18 VALVES



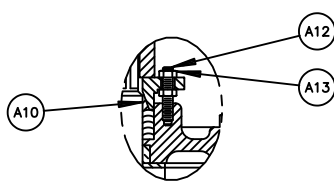
8.5 - 10 VALVES
(SEE NOTE 4)



18.5 & 20 VALVES



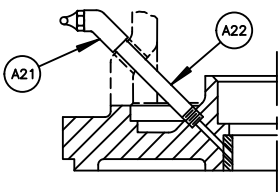
4 - 6 VALVES
(SEE NOTE 4)



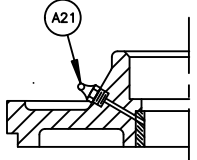
DETAIL "A"
4 - 8 NT CONSTRUCTION

1/4 NPT DOWNSTREAM
(PD/PDU)

NO	PART NAME	QTY
A1	BODY	1
A2	BEARING (4-8 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 (4-18 VALVES)	6
A8	SCREW (18.5-20 VALVES)	10
A9	PACKING	-
A10	CONE, 4-8 NT (EXCEPT LOW FRICTION CAT. CHAR. NBRL & SQ. PACKING)	1
A11	GLAND	1
A12	STUD (4-20 GS--HD_ & GS--CW_)	2
A12	STUD (4-20 GS--C_)	2
A12	STUD (8.5-12 MNA)	NOT REQ'D
A12	STUD (8.5-12 LV)	NOT REQ'D
A12	STUD (4-20 GS--ML_)	2
A12	STUD (4-8 NT)	2
A13	NUT (4-20 GS--HD_ & GS--CW_)	2
A13	NUT (4-20 GS--C_)	2
A13	NUT (8.5-12 MNA)	NOT REQ'D
A13	NUT (8.5-12 LV)	NOT REQ'D
A13	NUT (4-12 GS--ML_)	2
A13	NUT (4-8 NT)	4
A14	CAUTION TAG	1
A15	PIPE PLUG (PU,PD OR PDU)	-
A18	GRIT EXCLUDER	-
A20	GREASE FITTING (OPTIONAL GR ONLY)	1
A21	GREASE FITTING (OPTIONAL GR ONLY)	1
A22	COUPLING	1
A36	WASHER (FUSION COATING)(3.5-18 VALVES)	6
A36	WASHER (FUSION COATING)(18.5-20 VALVES)	10



GREASE FITTING IN BONNET,
ALL ACTUATORS EXCEPT LV & NT



GREASE FITTING IN BONNET,
LV & NT ACTUATORS

Project Name
Grease Tank

☒ NO EXCEPTION TAKEN ☐ REJECTED
☐ REVISE ☐ NOT REVIEWED

BY tobyt DATE 5/13/2024

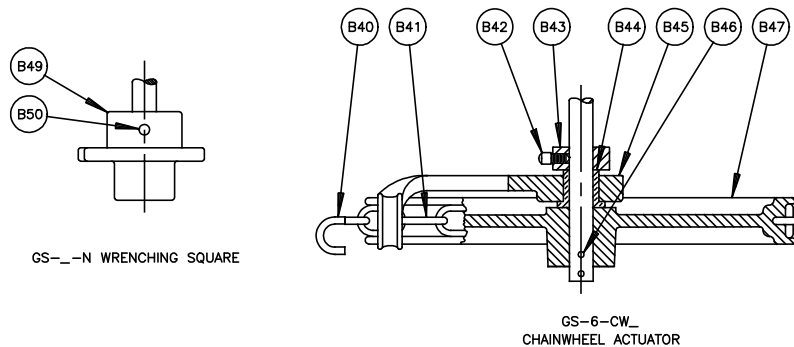
SUBMITTAL# SPEC

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P	71280	03/28/22
N	70446	02/06/20
M	63460	08/07/17
L	62022	05/28/13
K	62258	04/20/12
J	62042	07/27/11
H	61615	06/10/08
G	61602	04/02/08
F	61371	11/21/05
E	60206	10/19/00
D	54653	03/20/99
C	54620	02/12/99
B	51112	03/06/91
A	15278	11/22/82



PEC ECCENTRIC VALVE ASSEMBLY 4-20, MECHANICAL JOINT, BODY MATERIAL CI/DI ONLY			
DOCT. CODE	DRAWN	APPROVED	A22430
C1	CHECKED	RJP	
TBN		DATE 10-13-83	



B48	V
B49	V
B50	F
B51	
B52	
B53	C

SEE DETAIL "B"

B29

B5

B9

B2

B7

B33

B35


B36

B1

B3

Project Name

Grease Tank



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BY tobyt

DATE 5/13/2024

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M	71050	06/01/21
L	61668	10/13/08
K	61398	03/24/06
J	60075	02/22/01
H	54620	04/28/99
G	54230	04/09/98
F	53449	12/23/96
E	53132	06/23/95
D	52851	12/01/94
C	52699	02/25/94
B	51744	06/15/92
A	51112	03/04/91



GS-6 WITH HANDWHEEL, CHAINWHEEL AND NUT ACTUATORS OR
GS-12 WITH HANDWHEEL AND NUT
FOR USE WITH ECCENTRIC VALVES

DOCT. CODE	DRAWN <i>RBA</i>	APPROVED BOOS
C1	CHECKED RIP	DATE 10-30-81

A22553



Materials Of Construction

DRAWING(S): A22430(A00)
QUOTE: QUO088403
DESCRIPTION: PEC,8,MJ,CI,NBR,CR,S30SC0*GS-6-N

ITEM	MATERIAL
A01	IRON, ASTM A126, CLASS B
A02	STAINLESS STEEL, TYPE 316L, SINTERED
A03	IRON, ASTM A126, CLASS B
A03	CHLOROPRENE (CR)
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	CARBON STEEL, ZINC PLATED
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A09	ACRYLONITRILE-BUTADIENE (NBR)
A11	IRON, ASTM A126, CLASS B
A12	CARBON STEEL, ZINC PLATED
A13	CARBON STEEL, ZINC PLATED
A14	STAINLESS STEEL, TYPE 316L, SINTERED
A18	PTFE, TYPE II, ASTM D3294 OR D3308, GRADE 1

Project Name

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☐ NOT REVIEWED

BY

DATE

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Submittal Data Sheet
Date: May 9, 2024

MUNICIPAL TREATMENT EQUIPMENT LLC
17301 W COLFAX AVE
#300
GOLDEN CO 80401
United States

P.O.
FACTORY QUOTE QUO088403
PROJ. NAME CITY OF GRAND JUNCTION PEC

LINE #	Cust LINE #	QTY	PART NO.	DESCRIPTION
2		2	9XXXXXX	PEC,8,MJ,CI,NBR,CR,S30SC0*EMO

Style	PEC	Eccentric Plug Valve, Rectangular Port (AWWA C517) (PEC)
Size	8	8 Inch (200mm); SST Bearings; Welded-in Nickel Seat (Except Rubber Lined or Stainless Steel Bodies)
End Connection	MJ	Mechanical Joint, Conforms to ANSI/AWWA C111/A21.11
Body Material	CI	Cast Iron; (.5"-12" (15-300mm) Pressure Rating 175 psi (1210 kPa); (14"& larger (350mm and larger) Pressure Rating 150 psi (1030 kPa)
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	CR	Chloroprene; -20 to 180° F. (-29 to 83° C.)
Coating	S30SC0	Interior: 8 mils minimum of Blue DeZURIK Epoxy with Standard (SP10). Exterior: 8 mils minimum of Blue Epoxy DeZURIK with Standard (SP10) surface prep
Actuator	EMO	ROTORK

Valve Weight (Approx) 229 lbs/ 104 kgs
Temperature Range -20 to 180 Degrees F
Valve Pressure

Project Name

☐ NO EXCEPTION TAKEN

☐ REJECTED

☐ REVISE

☐ NOT REVIEWED

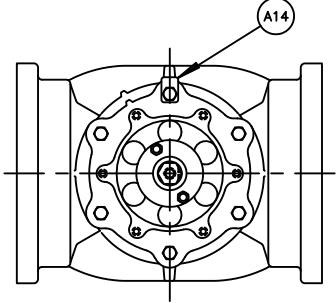
BY

DATE

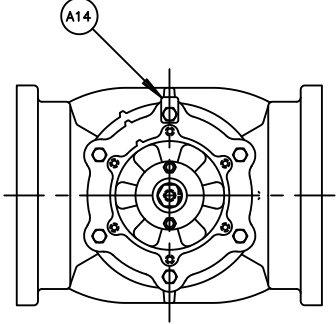
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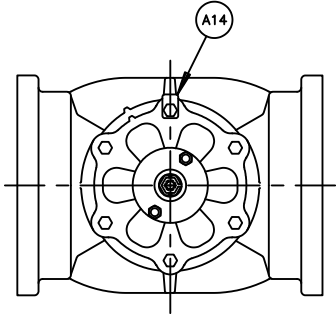
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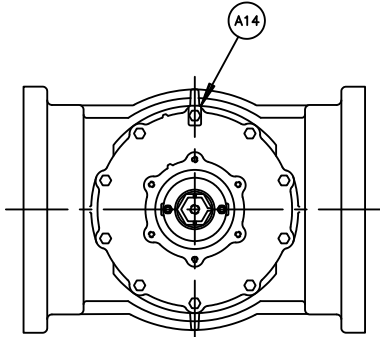
6.5 - 8 VALVES



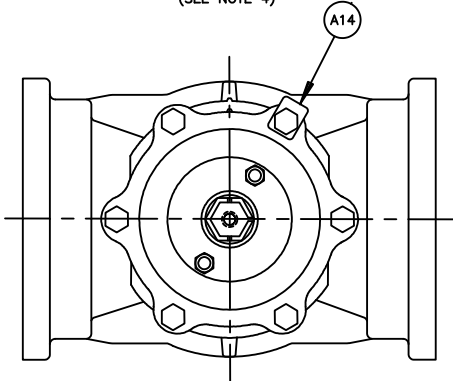
10.5 - 18 VALVES



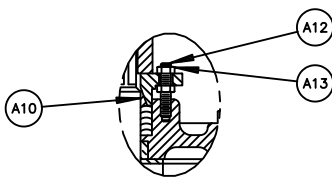
8.5 - 10 VALVES
(SEE NOTE 4)



18.5 & 20 VALVES



4 - 6 VALVES
(SEE NOTE 4)

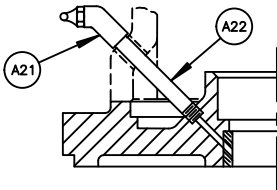


DETAIL "A"
4 - 8 NT CONSTRUCTION

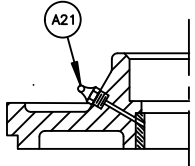
1/4 NPT DOWNSTREAM
(PD/PDU)

- NOTE:
1. REPLACEABLE WEAR PARTS ARE ITEMS NUMBER A3, PLUG (IF RUBBER FACED), A4, A5, AND A9.
 2. WHEN ORDERING PARTS, SPECIFY VALVE SIZE AND MODEL NUMBER FROM DATA PLATE, ALSO GIVE DRAWING NUMBER WITH PART NAME, ITEM NUMBER AND QUANTITY.
 3. CLOCKWISE ROTATION OF PLUG STEM CLOSSES VALVE.
 4. ON THE SIZE 4, 4.5, 6, 8.5, & 10 VALVES BONNET SCREWS ARE USED FOR MOUNTING THE ACTUATOR.

NO	PART NAME	QTY
A1	BODY	1
A2	BEARING (4-8 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 (4-18 VALVES)	6
A8	SCREW (18.5-20 VALVES)	10
A9	PACKING	-
A10	CONE, 4-8 NT (EXCEPT LOW FRICTION CAT. CHAR. NBRL & SQ. PACKING)	1
A11	GLAND	1
A12	STUD (4-20 GS--HD_ & GS--CW_)	2
A12	STUD (4-20 GS--C_)	2
A12	STUD (8.5-12 MNA)	NOT REQ'D
A12	STUD (8.5-12 LV)	NOT REQ'D
A12	STUD (4-20 GS--ML_)	2
A12	STUD (4-8 NT)	2
A13	NUT (4-20 GS--HD_ & GS--CW_)	2
A13	NUT (4-20 GS--C_)	2
A13	NUT (8.5-12 MNA)	NOT REQ'D
A13	NUT (8.5-12 LV)	NOT REQ'D
A13	NUT (4-12 GS--ML_)	2
A13	NUT (4-8 NT)	4
A14	CAUTION TAG	1
A15	PIPE PLUG (PU,PD OR PDU)	-
A18	GRIT EXCLUDER	-
A20	GREASE FITTING (OPTIONAL GR ONLY)	1
A21	GREASE FITTING (OPTIONAL GR ONLY)	1
A22	COUPLING	1
A36	WASHER (FUSION COATING)(3.5-18 VALVES)	6
A36	WASHER (FUSION COATING)(18.5-20 VALVES)	10



GREASE FITTING IN BONNET,
ALL ACTUATORS EXCEPT LV & NT



GREASE FITTING IN BONNET,
LV & NT ACTUATORS

Project Name

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☐ REJECTED

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BY

DATE

SUBMITTAL#

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P	71280	03/28/22
N	70446	02/06/20
M	63460	08/07/17
L	62022	05/28/13
K	62258	04/20/12
J	62042	07/27/11
H	61615	06/10/08
G	61602	04/02/08
F	61371	11/21/05
E	60206	10/19/00
D	54653	03/20/99
C	54620	02/12/99
B	51112	03/06/91
A	15278	11/22/82



www.dezurik.com

PEC ECCENTRIC VALVE ASSEMBLY 4-20, MECHANICAL JOINT, BODY MATERIAL CI/DI ONLY			
DOCT. CODE	DRAWN	APPROVED	RJP
C1	CHECKED	TNB	DATE 10-13-83
			A22430

NO	PART NAME	QTY
B1	STUD	1
B2	ADAPTOR	1
B3	SEAL (GEAR SECTOR)	2
B4		
B5	BEARING	2
B6		
B7	SCREW <div>3.5, 4, 4.5, 5, 6, 8.5 & 10 VALVES SEE NOTE 3</div>	NOT REQD
B7	SCREW <div>6.5, 8, 10.5, 12, 12.5, 14, 14.5, 16, 16.5, 18, 18.5 & 20 VALVES</div>	6
B8	GEAR SECTOR	1
B9	GASKET (HOUSING)	2
B10		
B11	BEARING	1
B12	HOUSING	1
B13	WORM	1
B14	PIN	1
B15	THRUST BEARING (GS-6)	1
B15	THRUST BEARING (GS-12)	2
B16	BEARING	1
B17	SEAL (HOUSING)	1
B18	DRIVE SHAFT	1
B19	PIN	1
B20	HANDWHEEL	1
B21	BEARING RACE (GS-6)	2
B21	BEARING RACE (GS-12)	4
B22	PIPE PLUG	1
B23	SEAL (HOUSING)	
B24	JAM NUT	1
B25	SET SCREW	1
B26		
B27		
B28		
B29	COVER	1
B30	SCREW	8
B31	POINTER	1
B32		
B33	WRENCHING SQUARE (SEE NOTE 4)	1
B34		
B35	SPRING WASHER	5
B36	LOCK NUT	1
B37	DATA PLATE	1
B38	DRIVE SCREW	2
B39		
B40	CLOSING LINK	1
B41	CHAIN	-
B42	SET SCREW (SB16 OPTION ONLY)	1
B43	COLLAR & SET SCREW (CHAINWHEEL)	1
B44	BEARING	1
B45	CHAIN GUIDE	1
B46	PIN	2
B47	CHAINWHEEL (GS-6)	1
B48		
B49	WRENCHING SQUARE	1
B50	PIN	1
B51		
B52		
B53	OPEN TAG (24" HANDWHEELS ONLY)	1
B53	PIPE SCREW (24" HANDWHEELS ONLY)	2

RECOMMENDED SPARE PARTS ARE ITEMS NUMBER & B17.

ORDERING PARTS, SPECIFY VALVE SIZE MODEL NUMBER FROM DATA PLATE, ALSO DRAWING NUMBER WITH PART NAME NUMBER AND QUANTITY.

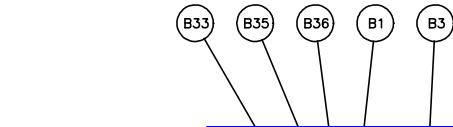
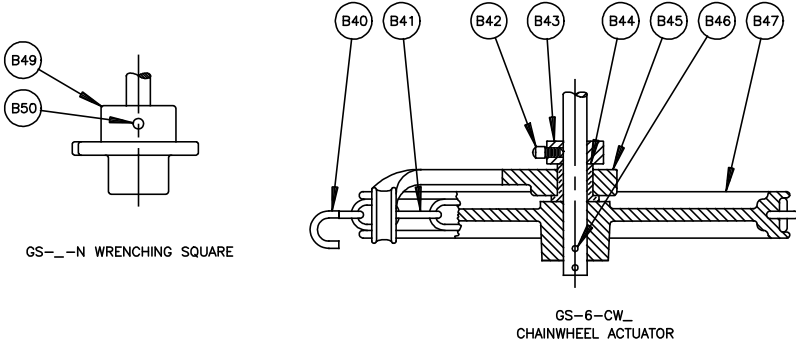
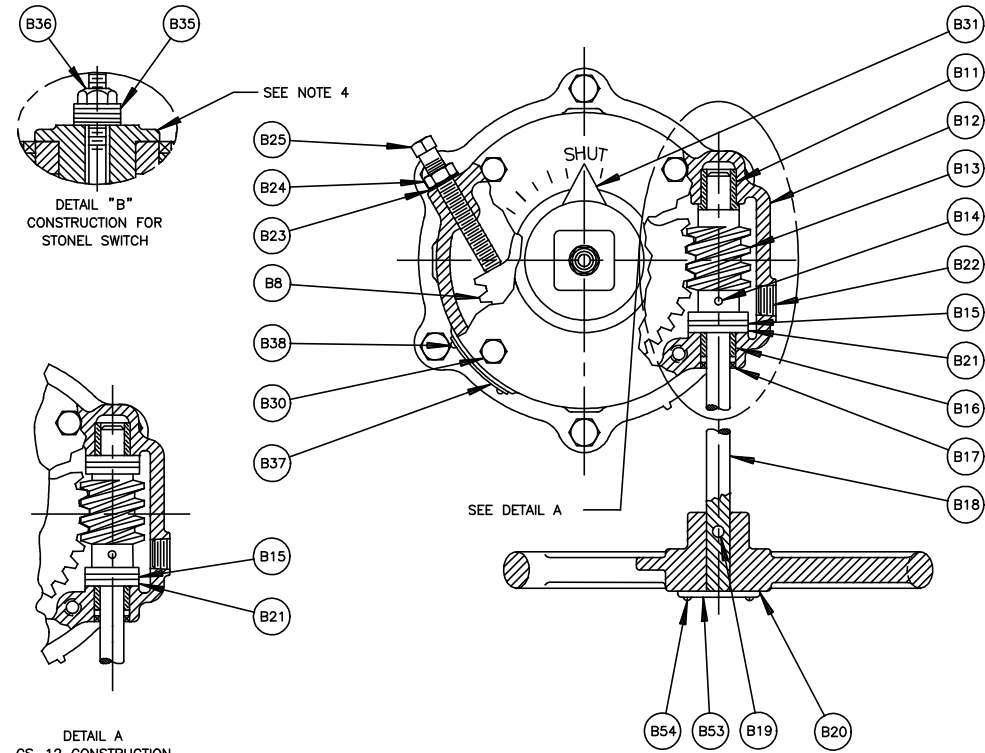
NUMBER B7 IS NOT REQUIRED ON THE 4.5, 5, 6, 8.5 & 10 VALVES. JAM NUT SCREWS ON BODY ONLY TO MOUNT ACTUATOR TO VALVE.

IF STONEL SWITCH IS USED, B33, WRENCHING SQUARE IS REQUIRED BY A STUD SUPPORT.

GS-6 WITH HANDWHEEL, CHAINWHEEL AND NUT ACTUATORS OR GS-12 WITH HANDWHEEL AND NUT FOR USE WITH ECCENTRIC VALVES

DOCT. CODE	DRAWN	APPROVED
C1	CHKD RJP	BOOS DATE 10-30-81

A22553



SEE DETAIL "B"

B29

B5

B9

B2

B7

Project Name

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☐ REVISE ☐ NOT REVIEWED

BY _____ DATE _____

SUBMITTAL# _____ SPEC _____

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71050	06/01/21
61608	10/13/08
61398	03/24/08
60075	02/22/01
54620	04/28/09
54030	04/09/08
53448	12/23/08
53132	06/23/05
52851	12/01/04
52699	02/25/04
51744	06/15/02
51112	03/04/91

DeZURIK
Sartell, MN USA 56377
www.dezurik.com



675 Mile Crossing Blvd.
Rochester, NY 14624
phone: (585) 328-1550
fax: (585) 328-5848



Electric Motor Actuator Data Sheet

Date:	04/16/2024	Line:	1
Contract Eng.:			
Project:	CITY OF GRAND JUNCTION		
Consultant:			
MOV Tag No.'s:			
SERVICE DUTY	OPEN/CLOSE		

CUSTOMER DATA

Name:	
P.O. No.:	
P.O. Item:	

VALVE DATA

Make:	DEZURIK
Size:	8"
Type:	PLUG
Class:	150# MJ

ACTUATOR DATA

Model No.:	IQT 500 FA10
Base:	FA10
Actuator/Gear Weight:	50 lbs
Enclosure:	NEMA 4/6
Rated Torque:	369 ftlbs
Wiring Diagram:	300B0000
Operating Time:	30 SECONDS

Handwheel Type:	SIDE - Close Clockwise
Paint Spec.:	Polyester Powder Coating
Conduit 1 & 3:	ASA 0.75"
Conduit 2:	ASA 1.5"
Conduit 4:	None
Lubrication:	STD
Operating Temp.:	-30C TO +70C

MOTOR DATA

Locked Rotor Amps:	
Rated Load Amps:	
*Nominal Load Amps:	
*Nom. Motor HP:	

Supply V/Ph/Hz:	120/1/60
Insulation Class/Duty:	"H"
Service Factor	1
Type:	Totally Enclosed Non-Ventilated

*Nominal HP and Run Load Amps are at 1/3 full rated torque output.

SECONDARY GEARBOX DATA

Model Number/Size:	
Ratio:	
Combined Torque:	

DRIVE BUSHING THREAD

Nominal Diameter:	
Thread Form:	
Number of Starts:	

Project Name

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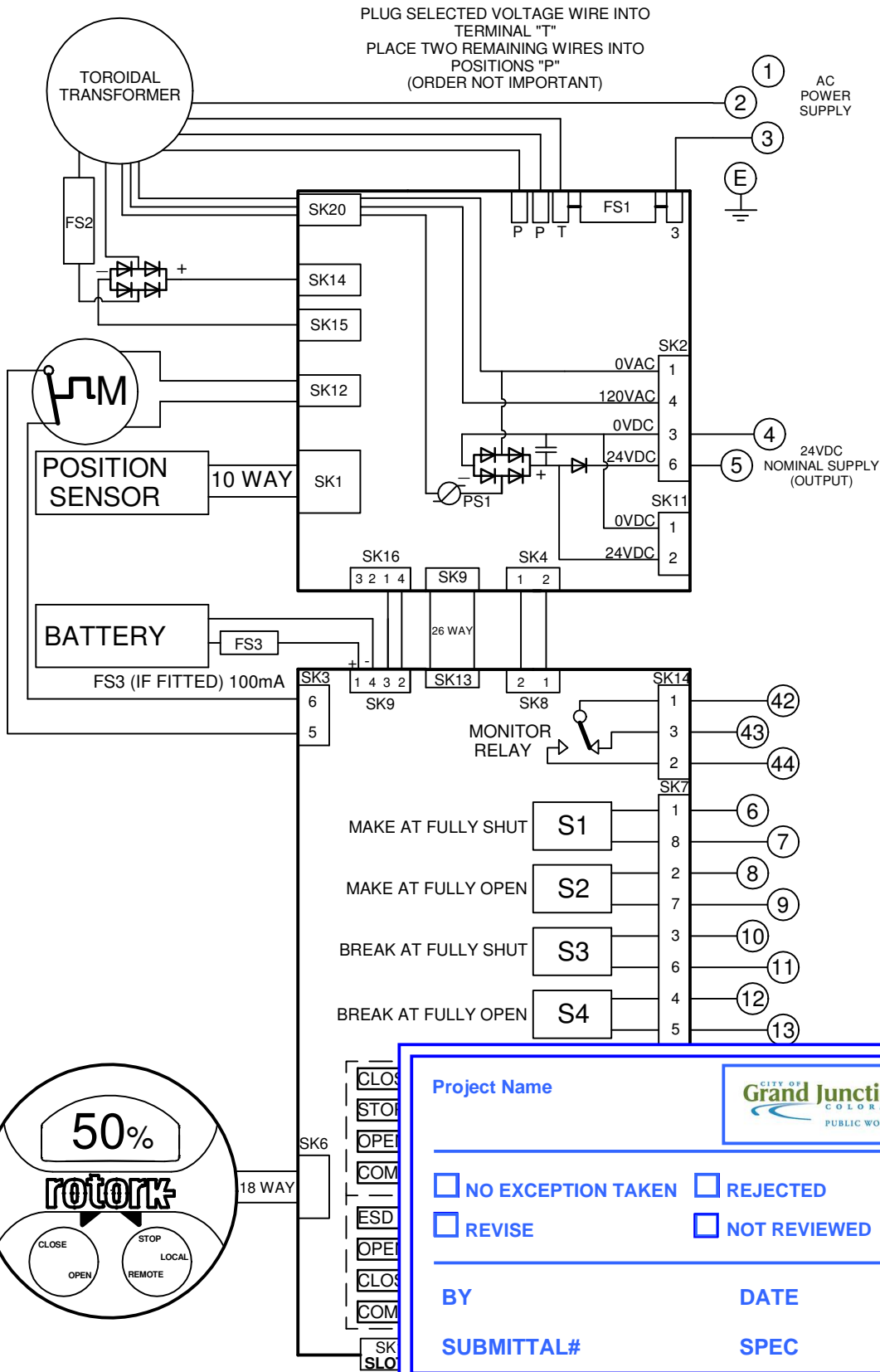
☐ REVISE ☐ NOT REVIEWED

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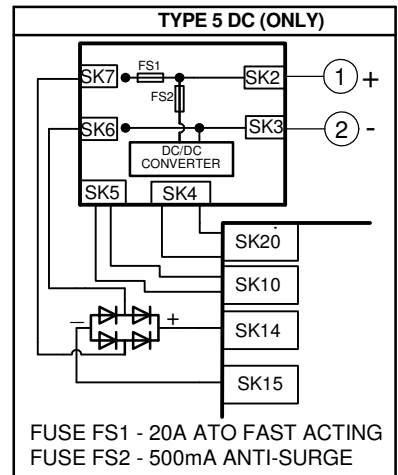
FOR TYPICAL REMOTE CONTROL
DETAILS, SEE DOCUMENT
RWS100



TRANSFORMER VOLTAGE OPTIONS:
CONNECT CORRESPONDING
COLOUR TO "T"

TYPE 1		
GREY	100V	FS1 - 5A ANTISURGE
PURPLE	110V	
BROWN	120V	
TYPE 2		
GREY	200V	FS1 - 2.5A ANTISURGE
PURPLE	230V	
BROWN	270V	
TYPE 3		
GREY	380V	FS1 - 2.0A ANTISURGE
PURPLE	400V	
BROWN	415V	
TYPE 4		
GREY	480V	FS1 - 2.0A ANTISURGE
PURPLE	575V	
BROWN	690V	

FS2 - 20A ATO FAST ACTING ALL TYPES



REFER TO SHEET 2 FOR NOTES
& OPTION PCB'S IF FITTED

NO
OPTIONS
FITTED

NOTES


1.FUSES:

- PS1 is a self-resetting fuse.
- Refer to publication PUB002-065 for approved fuses.
- Actuator rated voltage specified on nameplate. Voltage does not apply for rated torque performance; duty cycle is 100%.

2.REMOTE CONTROL:

- For typical remote control circuits refer to: PUB002-041.
- For DC and AC control, connect -ve/0V to terminal 1.
- (For negative switch / positive common, refer to PUB002-041.)
- Control signal threshold voltages:
 - DC: "on" ≥16Vdc / "off" ≤8Vdc, max 60Vdc.
 - AC: "on" ≥60Vac / "off" ≤40Vac, max 120Vac.
- Control signal duration to be 300ms minimum.
- Maximum current drawn from remote control signals is:
 - 8mA at 24Vdc or 12mA at 120Vac.
- Supply provided on terminals 4 & 5:
 - Intended for remote control.
 - Max external load 5W at 24Vdc / 5VA at 120Vac

Project Name



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☐ REJECTED

☐ REVISE

☐ NOT REVIEWED

BY

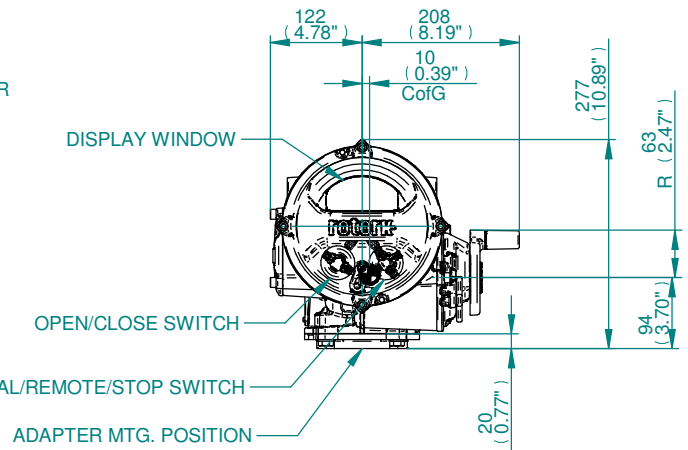
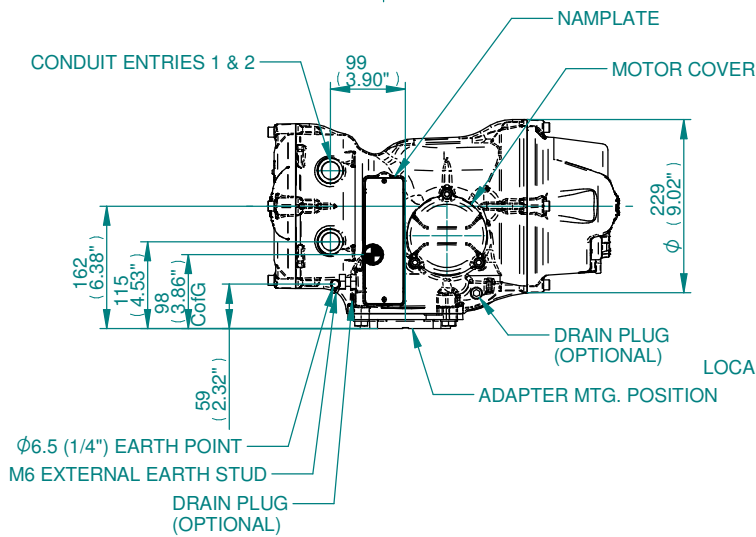
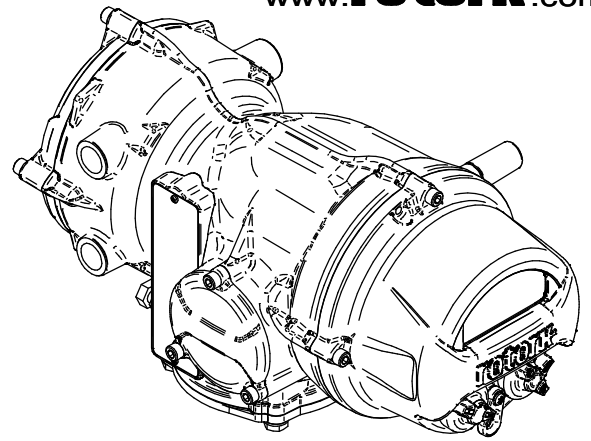
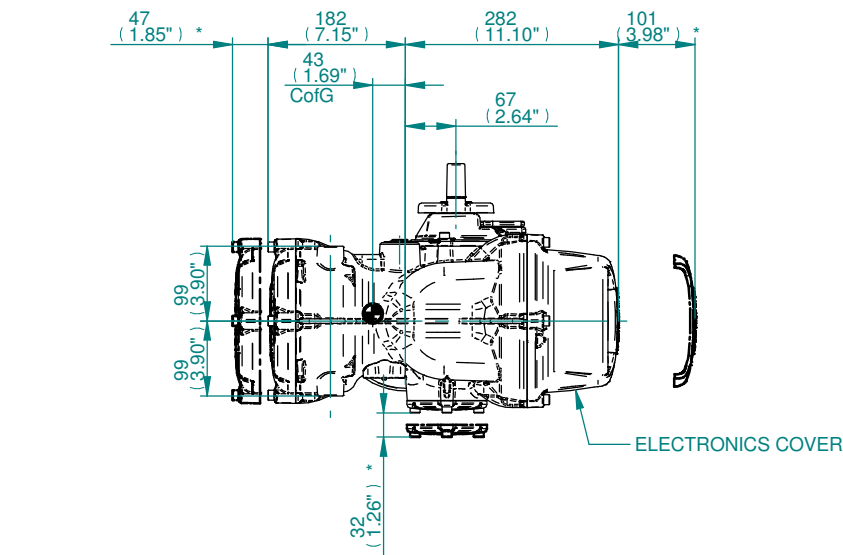
DATE

SUBMITTAL#

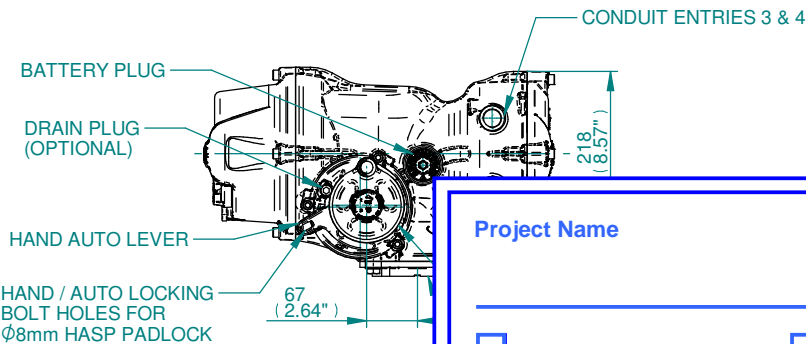
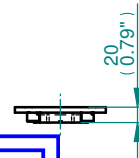
SPEC

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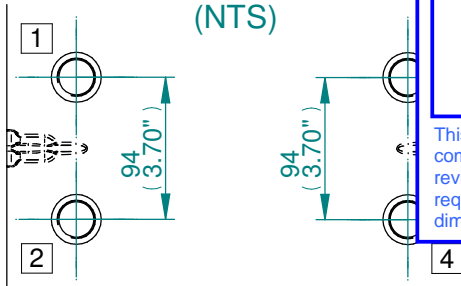
- Refer to publication PUB002-041.
 - Refer to configuration instructions.
 - Refer to remote control (shown in default position) and configuration instructions.
 - Control signal voltage must not exceed 150Vac
 - Control signal current must not exceed 3.5A inductive, 5A resistive
 - Control signal voltage and no more than 8A in total for all 4 contacts.
- 4.BATTERY:
- Battery maintains local and remote "S" contact indication only.
 - Refer to installation manual for approved replacement battery types.



F05/FA05 & F07/FA07 BASE ADAPTER



CONDUIT ENTRIES (NTS)



DEFAULT HOLE SIZE: M25x1.5P

Project Name



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BY

DATE

SUBMITTAL#

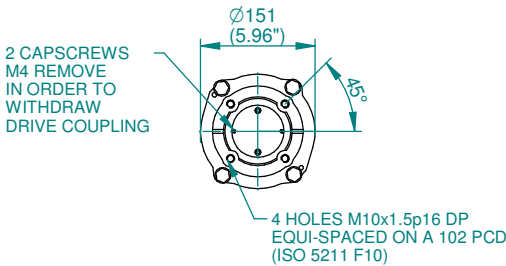
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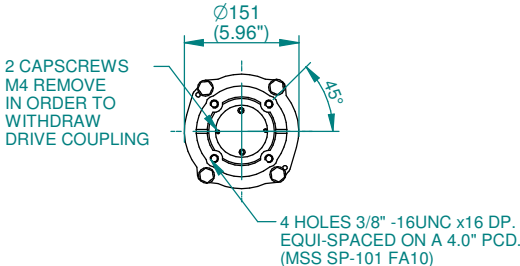
NOTES

1. THE BASE ADAPTER SHOULD BE LOADED TO MTG POSITION INDICATED IF REQUIRED.
2. "*" REMOVAL ALLOWANCE REQUIRED.

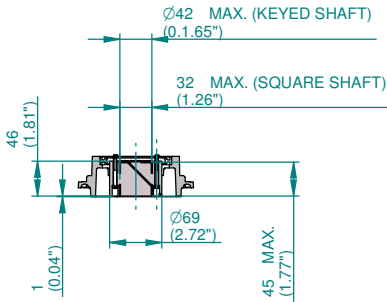
HAND / AUTO LOCKING
BOLT HOLES
FOR $\phi 8$ mm HASP PADLOCK



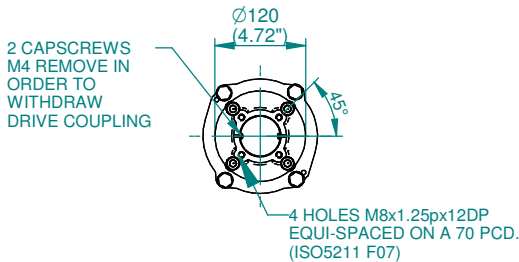
F10 BASE DETAILS



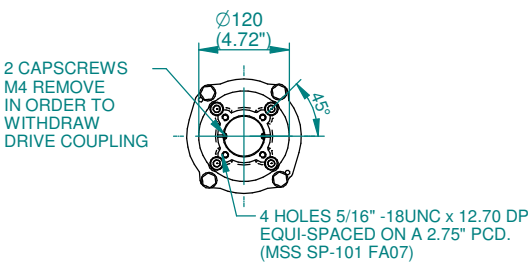
FA10 BASE DETAILS



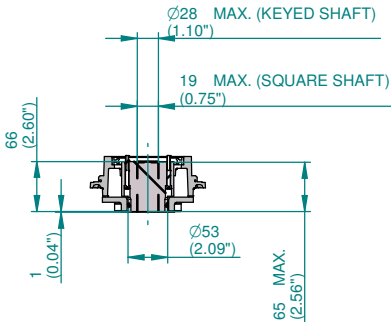
COUPLING DETAILS
(F10/FA10)



F07 BASE DETAILS

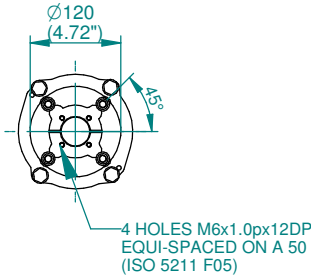


FA07 BASE DETAILS



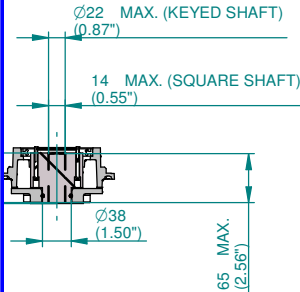
COUPLING DETAILS
(F07/FA07)

Project Name			
<input type="checkbox"/> NO EXCEPTION TAKEN		<input type="checkbox"/> REJECTED	
<input type="checkbox"/> REVISE		<input type="checkbox"/> NOT REVIEWED	
BY		DATE	
SUBMITTAL#		SPEC	
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F05 BASE DETAILS

FA05 BASE DETAILS



COUPLING DETAILS
(F05/FA05)

Document Title: **STANDARD IQ REMOTE CONTROL CIRCUITRY (24VDC)**

THE BLUETOOTH® SETTING TOOL ENABLES ALL CONFIGURABLE ACTUATOR SETTINGS TO BE MADE.

BEFORE PUTTING THE ACTUATOR INTO SERVICE, IT MUST BE INSTALLED AND COMMISSIONED IN ACCORDANCE WITH PUBLICATION PUB002-039 INSTALLATION AND MAINTENANCE INSTRUCTIONS.
UNLESS SPECIFIED WITH ORDER, THE ACTUATOR IS DESPATCHED WITH DEFAULT SETTINGS AS LISTED IN PUBLICATION PUB002-040.

FOR IQ CONTROL AND MONITORING FACILITIES, REFER TO PUBLICATION PUB002-041.

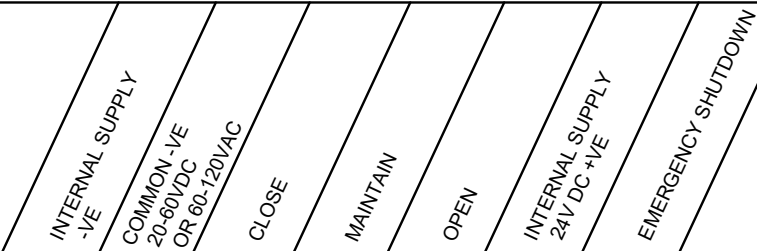
NOTE:
ACTUATOR REMOTE CONTROL SIGNALS MAY BE INTERNALLY OR EXTERNALLY SUPPLIED.

INTERNALLY SUPPLIED:
FIT LINK '#' AS SHOWN AND CONNECT REMOTE CONTROL CONTACTS TO INTERNAL SUPPLY ON TERMINAL 5.

EXTERNALLY SUPPLIED:
CONNECT CONTROL CONTACTS TO EXTERNAL SUPPLY LIVE/+VE.
CONNECT SUPPLY ZERO/-VE
TO TERMINAL 36 & 31 FOR SUPPLIES 20-60VDC OR 60-120VAC

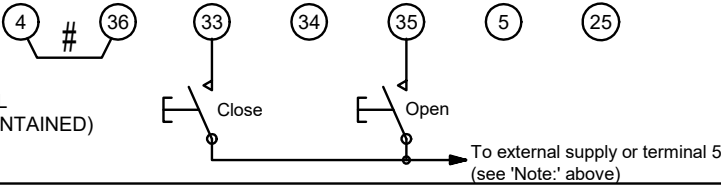
FOR CONTROL FORMS D & E, LINK '#' MUST BE FITTED.
CONNECT ZERO/-VE AS INDICATED ABOVE.

CUSTOMER CONNECTION FOR
REMOTE CONTROL



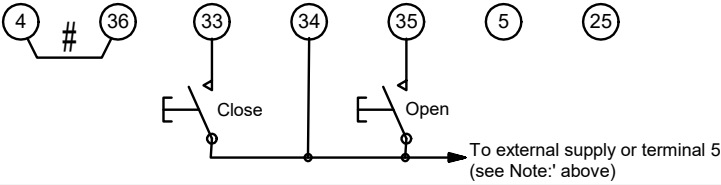
FORM A

OPEN/CLOSE PUSH TO RUN CONTROL
(LOCAL CONTROL REMAINS SELF MAINTAINED)



FORM B

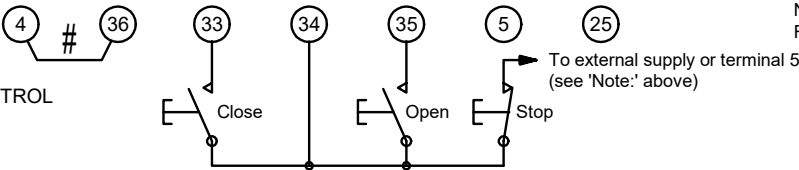
OPEN/CLOSE MAINTAINED CONTROL
WITH MID TRAVEL REVERSAL



NOT APPLICABLE
FOR IQM/IQML

FORM C

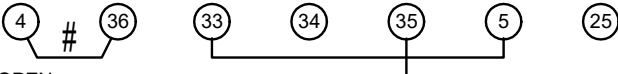
OPEN/STOP/CLOSE MAINTAINED CONTROL



NOT APPLICABLE
FOR IQM/IQML

FORM D

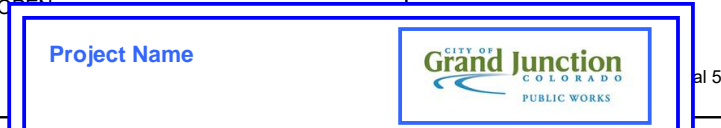
TWO WIRE CONTROL, ENERGISE TO OPEN
DE-ENERGISE TO CLOSE.
(CONFIGURE FOR OPEN PRIORITY)
CUSTOMER TO LINK 5 - 33



NOT APPLICABLE
FOR IQM/IQML

FORM E

TWO WIRE CONTROL, ENERGISE TO OPEN
DE-ENERGISE TO CLOSE.
(CONFIGURE FOR CLOSE PRIORITY)
CUSTOMER TO LINK 5 - 35




NOT APPLICABLE
FOR IQM/IQML

FORM F

EMERGENCY SHUT-DOWN CIRCUIT.
THE ESD CIRCUIT CAN BE ADDED TO ANY OF THE CIRCUITS SHOWN ABOVE.
AN ESD SIGNAL APPLIED TO THE ACTUATOR WILL DE-ENERGISE THE ACTUATOR.
ANY EXISTING OPEN OR CLOSE CONTACTS WILL REMAIN IN THEIR PREVIOUS STATE.
THE DEFAULT ESD CONFIGURATION IS FROM A N/O CONTACT (SIGNAL APPLIED TO TERMINAL 35).
FOR OTHER CONFIGURABLE ESD SETTING OPTIONS, REFER TO PUBLICATION PUB002-040 INSTALLATION AND MAINTENANCE INSTRUCTIONS.

Project Name



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DATE

SUBMITTAL#

SPEC

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Electric Consumption Data for IQT, IQTM and IQTF Actuators



Introduction

This guide provides IQT actuator range motor data, at the following supply voltages:

Voltages at 50 Hz and 60 Hz

100, 110, 115, 120, 200, 208, 220, 230, 240, 270, 380, 400, 415, 440, 460, 480, 500, 550, 575, 590, 600, 660 and 690.

AC voltage tolerance: +10 / -15%, frequency + / - 5%

DC voltage tolerance: 17 – 36 VDC

For AC supplies the IQT range utilises 2 phases only (phase - neutral / phase – phase) which are internally transformed and rectified to supply the control package and DC motor.

In order to achieve supply load diversity on 3-phase supplies, multiple actuators should be connected equally across all three phases. Three terminals are provided for cable connection. Refer to wiring diagram.

Design criteria

Motors designed for operation of valve actuators require special consideration. As continuous running is not a requirement with isolating, inching and throttling motors need only be short duty time.

Valve load can vary dramatically as a function of pressure to stroke as process and valve condition varies.

These conditions can vary from light to heavy with a facility to exceed rated when actual motor loading has no constant duty cycle.

To apply traditional motor protection methods therefore flawed, leading to spurious trips at all.

Rotork recognise the special nature of these applications and have therefore designed the IQT range control package with this unique duty at t

Motor design

IQT incorporate low inertia, 24 V permanent magnet DC motors and are class F insulated.

Motor control protection

The primary protection for the motor is torque switch protection. By measuring the actuator output torque and comparing to the open and close torque switch setting, effective motor and more importantly, valve protection is achieved.

Thermostats providing over temperature protection, if the duty cycle exceeds actuator rating, also protect IQT units. IQT control protection will prevent motor stall in the event of valve jamming. Using torque as the primary means of motor protection, along with thermostat and IQT control protection, the requirement for traditional protection methods and their inherent weakness when applied to short time duty, variable load motors is eliminated.

Power supply cable sizing

As a minimum requirement, cables must be sized to ensure the minimum supply voltage at the actuator.

When sizing cables for short duty and taking in consideration the protection of the IQT, the cable size should be based on protecting the actuator.

The power supply should conform to the general terms actuators require, such as EN 50160 and should be supplied by Public

Project Name

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Electric Consumption Data for IQT, IQTM and IQTF Actuators

IQT, IQTM and IQTF Electrical Performance Data

Data is at actuator rated torque. Data is valid for both 50 Hz and 60 Hz supplies. Manufacturing tolerances may mean values do not exactly match those shown.

Supply Voltage	IQTF50		IQTF100		IQT125 IQTM125 IQTF125		IQT250 IQTM250 IQTF250		IQT500 IQTM500 IQTF500		IQT1000 IQTM1000 IQTF1000		IQT2000 IQTM2000 IQTF2000		IQT3000 IQTM3000 IQTF3000	
	Current Amps	Power kW	Current Amps	Power kW	Current Amps	Power kW	Current Amps	Power kW	Current Amps	Power kW	Current Amps	Power kW	Current Amps	Power kW	Current Amps	Power kW
24 VDC	10.0	0.24	10.0	0.24	10.0	0.24	12.0	0.29	13.0	0.32	13.0	0.32	15.0	0.36	N/A	N/A
100	2.8	0.28	2.8	0.28	3.5	0.33	4.5	0.43	4.5	0.43	4.7	0.45	5.3	0.50	6.0	0.60
110	2.8	0.28	2.8	0.28	3.2	0.33	4.1	0.43	4.1	0.43	4.3	0.45	4.8	0.50	5.4	0.60
115	2.8	0.28	2.8	0.28	3.2	0.33	4.1	0.43	4.1	0.43	4.3	0.45	4.8	0.50	5.4	0.60
120	2.3	0.28	2.3	0.28	2.9	0.33	3.7	0.43	3.7	0.43	3.9	0.45	4.4	0.50	5.0	0.60
200	1.4	0.28	1.4	0.28	1.7	0.33	2.2	0.43	2.2	0.43	2.4	0.45	2.6	0.50	3.0	0.60
208	1.4	0.28	1.4	0.28	1.7	0.33	2.2	0.43	2.2	0.43	2.4	0.45	2.6	0.50	3.0	0.60
220	1.4	0.28	1.4	0.28	1.7	0.33	2.2	0.43	2.2	0.43	2.4	0.45	2.6	0.50	3.0	0.60
230	1.2	0.28	1.2	0.28	1.5	0.33	1.9	0.43	1.9	0.43	2.1	0.45	2.3	0.50	2.6	0.60
240	1.2	0.28	1.2	0.28	1.5	0.33	1.9	0.43	1.9	0.43	2.1	0.45	2.3	0.50	2.6	0.60
270	1.2	0.28	1.2	0.28	1.5	0.33	1.9	0.43	1.9	0.43	2.1	0.45	2.3	0.50	2.6	0.60
380	0.7	0.22	0.7	0.22	0.9	0.33	1.2	0.43	1.2	0.43	1.2	0.45	1.4	0.50	1.6	0.60
400	0.7	0.22	0.7	0.22	0.9	0.33	1.2	0.43	1.2	0.43	1.2	0.45	1.4	0.50	1.6	0.60
415	0.7	0.22	0.7	0.22	0.9	0.33	1.2	0.43	1.2	0.43	1.2	0.45	1.4	0.50	1.6	0.60
440	0.7	0.22	0.7	0.22	0.9	0.33	1.2	0.43	1.2	0.43	1.2	0.45	1.4	0.50	1.6	0.60
460	0.7	0.22	0.7	0.22	0.9	0.33	1.2	0.43	1.2	0.43	1.2	0.45	1.4	0.50	1.6	0.60
480	0.6	0.22	0.6	0.22	0.7	0.33	0.9	0.43	0.9	0.43	1.0	0.45	1.1	0.50	1.2	0.60
500	0.6	0.22	0.6	0.22	0.7	0.33	0.9	0.43	0.9	0.43	1.0	0.45	1.1	0.50	1.2	0.60
550	0.6	0.22	0.6	0.22	0.7	0.33	0.9	0.43	0.9	0.43	1.0	0.45	1.1	0.50	1.2	0.60
575	0.6	0.22	0.6	0.22	0.7	0.33	0.9	0.43	0.9	0.43	1.0	0.45	1.1	0.50	1.2	0.60
590	0.6	0.22	0.6	0.22	0.7	0.33	0.9	0.43	0.9	0.43	1.0	0.45	1.1	0.50	1.2	0.60
600	0.6	0.22	0.6	0.22	0.7	0.33	0.9	0.43	0.9	0.43	1.0	0.45	1.1	0.50	1.2	0.60
660	0.6	0.22	0.6	0.22	0.7	0.33	0.9	0.43	0.9	0.43	1.0	0.45	1.1	0.50	1.2	0.60
690	0.6	0.22	0.6	0.22	0.7	0.33	0.9	0.43	0.9	0.43	1.0	0.45	1.1	0.50	1.2	0.60

Project Name



☐ NO EXCEPTION TAKEN
 ☐ REJECTED
☐ REVISE
 ☐ NOT REVIEWED

BY

DATE

SUBMITTAL#

SPEC

This review is only for general conformance of the project and general compliance. Corrections or comments made on these drawings during this review do not relieve Contractor/Subcontractor from compliance with the requirements of the plans and specifications. Contractor is responsible for all dimensions and fabrication to be confirmed and correlated at the job site

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Red Valve

Tideflex



RKL Controls

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. Valves should be cycled every 4-6 months to maintain seals.

7. Valves with electric motor operated actuators shall be stored in accordance with the manufacturer's recommended long term storage procedures.

8. All electrical components shall be stored in accordance with the manufacturer's recommended long term storage procedures.

SHELF LIFE (RUBBER COMPONENTS)

For rubber components or elastomer seals, the contractor shall coordinate a visual inspection.

- Three (3) years for Natural (Pure Rubber)
- Five (5) years for Chloroprene (NBR), Polyethylene (Hypalon), Chloro-butyl (CR), and Fluoropolymer (FPM).

Project Name			
<input type="checkbox"/> NO EXCEPTION TAKEN		<input type="checkbox"/> REJECTED	
<input type="checkbox"/> REVISE		<input type="checkbox"/> NOT REVIEWED	
BY		DATE	
SUBMITTAL#		SPEC	
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for manufacturer's

the manufacturer to

nts.

pro-sulfonated elastomer components.