ADDENDUM #2

Tender No. ENG 25-04 – Uganda Pump Station Upgrades

Please note the following Change to the Revised Appendix 1 – Schedule of Quantities and Prices, Revised Supplementary Specification, and Questions and Answers for the above noted Tender is to be known as Addendum #2. Bidders are to reference receipt of Addendum #2 in their submission.

Additions, Revisions, and Clarifications

1. A revised – *Appendix 1 – Schedule of Quantities and Prices - Form of Tender* is attached with updated payment items. You must use this revised – Appendix 1 when submitting your Tender.

2. A revised – *Supplementary Specifications* is attached. You must use this revised – Supplementary Specifications when submitting your Tender.

Bidder Questions and Township Answers:

Question #1: The tender form shows 6 plug valves. Please confirm the correct quantity and advise if a specification is available for these valves.

Answer #1: The quantity for **Item 1.7 – Plug Valves** in the Schedule of Quantities is **5** and will be measured as **Unit: Each**. Payment will be made on a per valve installed basis in accordance with Supplementary Specification 1.8.

The specified plug valve is:
150mm FxF Dezurik Eccentric Plug Valve, PEC-6-F1-CI-NBR-CR*GS-6-HD8

- **6** = 150 mm (6”)
- **F1** = Flange
- **CI** = Cast Iron
- **NBR** = Nitrile Butadiene Rubber packing material
- **CR** = Chloroprene plug facing material
- **GS-6-HD-8** = G-series gear operator with a handwheel

Unless otherwise noted, standard port valves are to be provided.

Question #2: Can a site visit be arranged to open the wet well and review the inlet configuration to assist in planning the bypass pumping

Answer #2: Due to the tender close timeframe, confined space entry requirements, and associated safety considerations, a site visit to open the wet well will not be arranged.

Additional reference information regarding the inlet configuration is provided in this addendum.

Bypass pumping will be required between the existing wet well and the existing bypass connection to the forcemain. Bypass pumping will be required once the pumps are taken offline until the pumps and piping are commissioned and operating off the existing starters, and again during commissioning of the new VFDs in the new electrical kiosk.

Question #3: Are these 100% port PEF plugs or PEC valves?

Answer #3: The design assumes **PEC** plug valves.

Question #4: For the swing check valves, will the Township accept the APCO alternate?

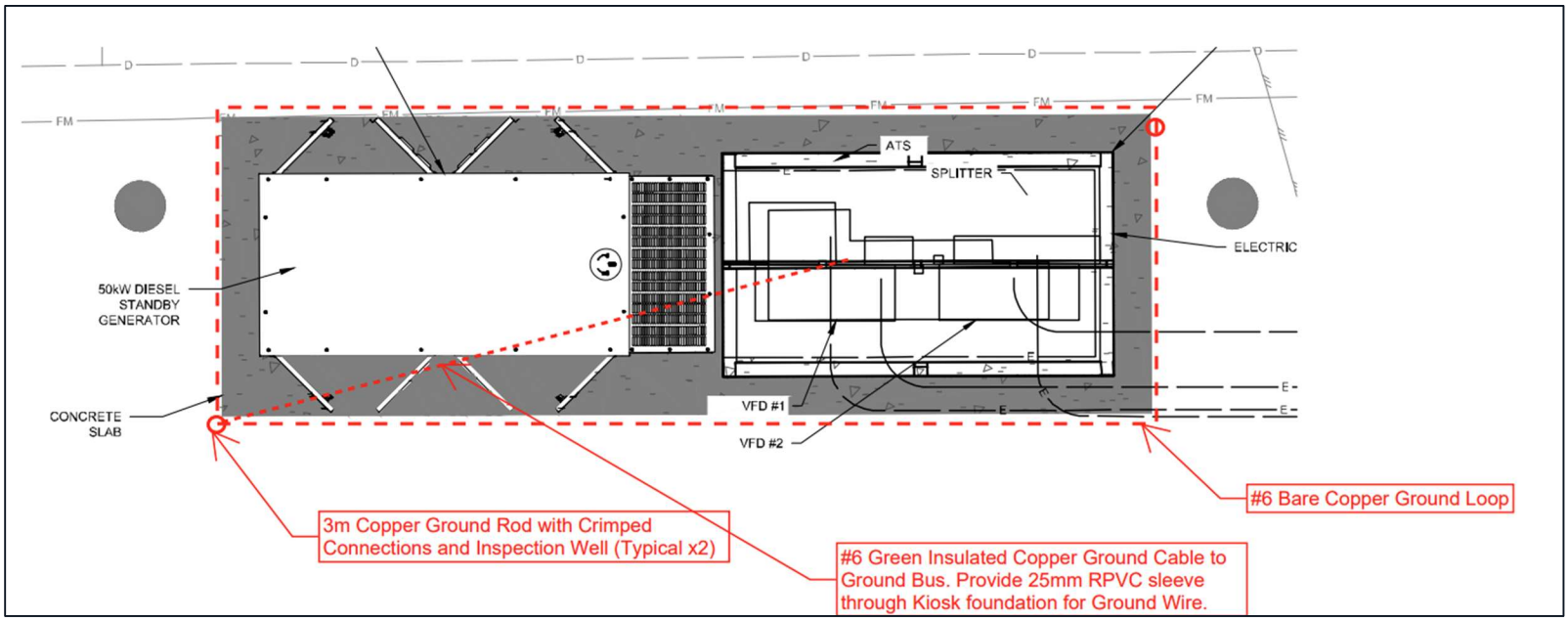
Answer #4: Yes, APCO swing check valves are acceptable as an alternate, provided they match the specified size and variety.

Question #5: What type of actuator do the plug valves require?

Answer #5: The design for the plug valves assumes **G-series actuators - D10063**. It is possible to rotate this actuator in 60° increments, which may be necessary to avoid conflicts within the tight space.

Question #6: Please Provide a drawing showing the required/desired grounding for this project.

Answer #6:



Question #7: DWG P-100 shows electrical process items (Floats, pump controls) and a control panel, are these existing or are the required to be provided for?

Answer #7: Control panel and floats are existing, and pumps will initially be wired to, and controlled by, existing starters.

UGANDA LIFT STATION UPGRADES

ITEM	SSMP REF.	DESCRIPTION	Unit	Est. Qty.	Unit Price	Amount
DIVISION 1 - GENERAL REQUIREMENTS						
01 10 00SS - General Requirements						
1.1	1.2S	Survey Layout, Quantity Survey, Volume Calculations and Record Survey	Lump Sum	**1**		
1.2	1.3S	Concrete cutting, removal and disposal	Lump Sum	**1**		
1.3	1.4S	Electrical/Communication Duct/Cabling	LM	**55**		
1.4	1.5S	Electrical Kiosk	Lump Sum	**1**		
1.5	1.6S	Pumps - including base	Each	**2**		
1.6	1.7S	Piping, Supports, and Fittings	Lump Sump	**1**		
1.7	1.8S	Plug Valves	Each	**5**		
1.8	1.9S	Check Valves	Each	**2**		
1.9	1.10S	**OPTIONAL** Flow Meter	Each	**1**		
1.10	1.11S	Hatches	Lump Sum	**1**		
1.11	1.12S	Ladder / Folding Metal Access Platform	Lump Sum	**1**		
1.12	1.13S	Vent	Lump Sum	**1**		
1.13	1.14S	**OPTIONAL** Generator	Lump Sum	**1**		
1.14	1.15S	Steel Shoring	Lump Sum	**1**		
01 52 01 - Temporary Structures						
1.14	1.6.2S	Mobilization/Demobilization	Lump Sum	1		
1.15	1.6.3S	Contaminated Soil Testing	Lump Sum	1		
01 53 01 - Temporary Facilities						
1.16	1.11S	Temporary Utility Pole Support	Lump Sum	1		
1.17	1.12S	Bypass pumping	Lump Sum	1		
01 55 00 - Traffic Control, Vehicle Access and Parking						
1.18	1.5.1	Traffic Management Plan	Lump Sum	1		
1.19	1.5.2S	Traffic Control, Vehicle Access and Parking	Lump Sum	1		
DIVISION 3 - CONCRETE						
03 30 53 - Cast-In-Place Concrete						
2.1	1.52S	**Concrete Generator Slab** Supply and install 300mm thick reinforced concrete slab including subgrade preparation and granular base. Excludes specified reinforcement.	Lump Sum	1		
2.2	1.56S	**Concrete Generator Slab - Reinforcement** Reinforcing steel as specified.	Lump Sum	1		

ITEM	SSMP REF.	DESCRIPTION	Unit	Est. Qty.	Unit Price	Amount
DIVISION 31 - EARTHWORK						
31 11 01 - Clearing and Grubbing						
3.1	1.4.1S	**Clearing and Grubbing**	Square Metre	120		
DIVISION 32 - ROAD AND SITE IMPROVEMENTS						
32 11 23 - Granular Base						
4.1	1.4.1S	**19mm Minus Granular Base - Driveway** 100mm thickness	Lump Sum	1		
32 13 13 - Portland Cement Concrete Paving						
4.3	1.5S	**Concrete Driveway Paving** Reinstate per existing thickness	Lump Sum	1		
32 31 13 - Chain Link Fences & Gates						
4.4	1.5.5S	**Bollards** Supply and Install	Each	5		
32 91 21 - Topsoil and Finish Grading						
4.6	1.4.1S	**Boulevard Topsoil** (150mm Thickness)	Square Metres	5		
32 92 20 - Seeding						
4.7	1.8.1	**Seeding**	Square Metres	5		

TOWNSHIP OF ESQUIMALT - SUPPLEMENTARY SPECIFICATIONS

Revise the following MMCD Specifications 2019 Edition

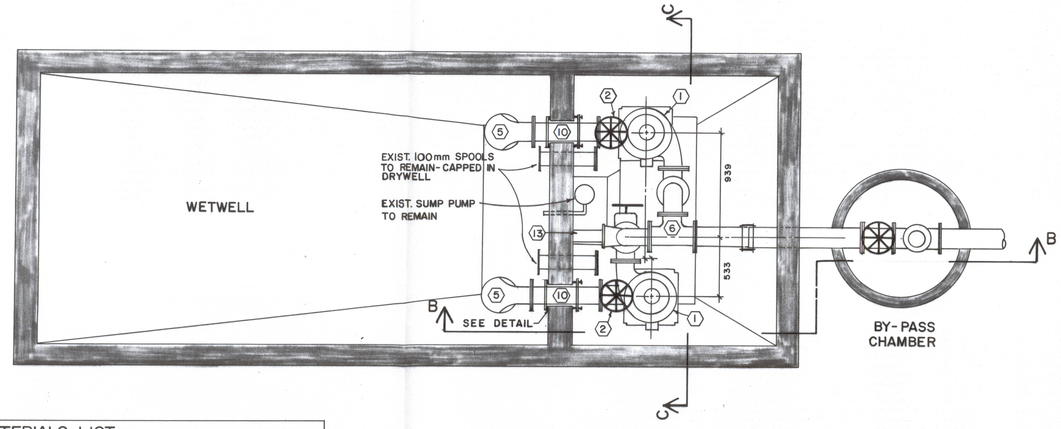
DIVISION 1 - GENERAL REQUIREMENTS			
SECTION	**SUB SECTION**	**TITLE**	**SUPPLEMENTARY SPECIFICATION**
01 10 00SS		**General Requirements**	
	1.0	General	**Add Clause 1.1:** "Section 01 10 00SS addresses additional measurement and payment clauses which do not apply to other specification sections."
	1.2	Payment	**Add Clause 1.2:** " .1 Payment shall be based on the Lump Sum bid in the Schedule of Quantities and Unit Prices as measured and accepted by the *Contract Administrator*. Payment shall be accepted as full compensation for everything furnished and done. .2 Payment of the lump sum bid will be paid in equal amounts each month. .3 The *Contractor* is responsible for all staking and survey layout and quantity calculations required for the completion of all Work, as shown on the Contract Drawings, and to affect incidental field adjustments. .4 The unit price bid shall include, but not be limited to: all survey layout, staking/nails, calculations of volumes required for tender items, coordination required for the completion of the work, record survey, and all other work and materials incidental and necessary to complete the Work to provide a functional system. .5 Any calculations necessary shall be performed by the *Contractor* and shall be provided to the Contract Administrator at any time upon request. Information shall include both text files and any CAD drawings.".."
	1.3	Concrete Cutting	**Add Clause 1.3:** "Payment shall be lump sum. Payment shall be accepted as full compensation for everything furnished and done. The price bid shall be full compensation for all labour, equipment, materials, and incidentals required to complete the work including but not limited to coring and cutting, and appropriate disposal of removed materials"
	1.4	Electrical/Communication Duct/Cabling	**Add Clause 1.4:** "Payment shall be based on the Lineal Meter bid in the Schedule of Quantities and Unit Prices as measured and accepted by the Contract Administrator. Payment shall be accepted as full compensation for everything furnished and done. Payment of the Lineal Meter bid will be paid by completeness as submitted by the Contractor and accepted by the Contract Administrator. The price bid shall include, but not be limited to the following work: Supply and Installation of specified conduits and cabling for power and communications, earthworks (trenching, backfilling, compaction), end to end testing, warning tape, cleaning of ducts before laying, capping during construction, pull line, penetration sealing, identification, termination ends, connections to existing service and replacement of main service breaker, connection to pumps and to (optional) generator and ATS.

	1.5	Electrical Kiosk	**Add Clause 1.5:** "Payment shall be 50% per acceptance of shop drawings and 50% upon complete commissioning. Payment shall be accepted as full compensation for everything furnished and done. The price bid shall include, but not limited to, the following work and items: • Doubled Sided 4-door Electrical Kiosk • Main Service entrance rated Breaker, Splitter and Surge Protection Device • Distribution Panel, Kiosk Lighting, heating, ventilation and temperature control (thermostats). • Automatic Transfer Switch • 25HP VFD Panels to interface to existing control panel.
	1.6	Pumps	**Add Clause 1.6:** "Payment shall be 50% of approved shop drawings and 50% upon successful commissioning. Payment shall be accepted as full compensation for everything furnished and done. The price bid shall be full compensation for all labour, equipment, materials, and incidentals required to complete the work including but not limited to the supply and installation of the pumps, inclusive of the pump base.
	1.7	Piping, Supports and Fittings	**Add Clause 1.7:** "Payment shall be lump sum. Payment shall be accepted as full compensation for everything furnished and done. The price bid shall be full compensation for all labour, equipment, materials, and incidentals required to complete the work including but not limited to the supply of custom stainless steel spool pieces, elbows, tees, reducers, flange connections, and pipe supports. Scope to include a custom spool piece to go in place of the flow meter if purchase of the flow meter is deferred.
	1.8	Plug Valves	**Add Clause 1.8:** "Payment shall be per valve installed. Payment shall be accepted as full compensation for everything furnished and done. The price bid shall be full compensation for all labour, equipment, materials, and incidentals required to complete the work including but not limited to the supply and installation of plug valves as specified.
	1.9	Check Valves	**Add Clause 1.9:** "Payment shall be per valve insatlled. Payment shall be accepted as full compensation for everything furnished and done. The price bid shall be full compensation for all labour, equipment, materials, and incidentals required to complete the work including but not limited to the supply and installation of check valves as specified.

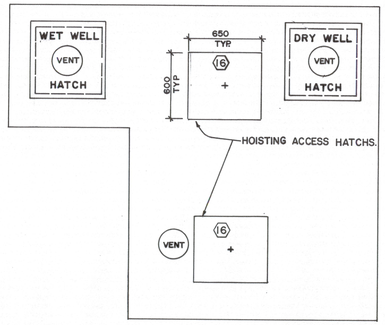
	1.10	**OPTIONAL** Flow Meter	**Add Clause 1.10:** "Payment shall be lump sum. Payment shall be accepted as full compensation for everything furnished and done. Note the supply and installation of this is **OPTIONAL** work and shall included for a credit to not include spool piece. The price bid shall be full compensation for all labour, equipment, materials, and incidentals required to complete the work including but not limited to the supply and installation of a flow meter. Please note this is an optional item which may be excluded at the instruction of the Township of Esquimalt.
	1.11	Hatches	**Add Clause 1.11:** "Payment shall be lump sum. Payment shall be accepted as full compensation for everything furnished and done. The price bid shall be full compensation for all labour, equipment, materials, and incidentals required to complete the work including but not limited to the supply and installation of the hatches and all associated hardware."
	1.12	Ladder/ Folding Metal Access Platform	**Add Clause 1.12:** "Payment shall be lump sum. Payment shall be accepted as full compensation for everything furnished and done. The price bid shall be full compensation for all labour, equipment, materials, and incidentals required to complete the work including but not limited to the engineering, supply and installation of the ladder, the folding metal access platform, and all associated hardware."
	1.13	Vent	**Add Clause 1.13:** "Payment shall be lump sum. Payment shall be accepted as full compensation for everything furnished and done. The price bid shall be full compensation for all labour, equipment, materials, and incidentals required to complete the work including but not limited to removal and disposal of the existing vent, sealing of the existing vent hole, coring of new vent hole, supply and installation of new vent.
	1.14	**OPTIONAL** Generator	**Add Clause 1.14:** "Payment shall be 50% upon approved hop drawings and 50% upon commissioning. Payment shall be accepted as full compensation for everything furnished and done. Note this work is **Optional.** • 50kW 120/208V 60Hz 3Ph, 4W Diesel fueled standby generator • Level 2 Sound attenuated enclosure including intake and exhaust openings and motorized dampers. • Basis of approval: Generac SD050 • Automatic transfer switch (ATS) • Installation and commissioning of generator and ATS • Manufacturer commissioning, setup and on-site load bank testing. Refer to sections 20 of the electrical specifications on Sheet E-900 of the drawing package for all requirements.
	1.15	Steel Shoring	**Add Clause 1.15:** "Payment shall be lump sum. Payment shall be accepted as full compensation for everything furnished and done. The price bid shall be full compensation for all labour, equipment, materials, and incidentals required to complete the work including but not limited to the supply and installation of the steel shoring and all associated hardware, mill certificates, galvanizing and touch ups."
01 52 01		**Temporary Structures**	
	1.1	Section Includes	**Add Clause 1.1.4:** "Mobilization/Demobilization."

	1.6	Payment	**Add Clause 1.6.2:** "Payment for mobilization and demobilization shall include all the Contractor costs of mobilization at the beginning of the project and the cost of demobilization at the end of the project. 1. Included in the mobilization are such items as bonding, insurance, permits, moving personnel, equipment and materials to the site, setting up temporary facilities and all preparation for performing the Work. 2. Included in demobilization are preparation and submission of record drawings, operation and maintenance manuals, removal of all personnel, equipment, temporary tape/paint, and materials and cleanup of the Site and the Work. 3. The lump sum price bid for this work shall be relative to the costs involved but shall not exceed ten percent of the Tender Price. 4. Payment shall be made as follows, as approved by the *Contract Administrator*: 1. 60% of the lump sum bid will be included in the first progress payment certificate. 2. 40% of the lump sum bid will be included in the final progress payment certificate. 5. The *Contract Administrator* may at their discretion authorize partial payment if mobilization or demobilization is not complete. 6. The cost of other items specified under General Requirements shall be considered incidental to the work and separate payment will not be made for any other items in the General Requirements unless specifically noted in the Schedule of Quantities and Prices."
	1.6	Payment	**Add clause 1.6.3:** " Payment for soil testing will be made as a lump sum. Payment will include all equipment, materials, labor, and analysis necessary to meet the requirements of local disposal sites on Vancouver Island, as well as all applicable provincial regulations. The scope of testing must include all areas and work indicated on the contract drawings. Payment will be upon submitted results of the soil testing as approved by the *Contract Administrator*"
01 53 01		**Temporary Facilities**	
	1.1	Section Includes	**Add Clause 1.1.5:** "Temporary Utility Pole Support During Construction."
	1.11	Temporary Utility Pole Support During Construction	**Add Clause 1.11:** "Temporary Utility Pole Support During Construction." **Add Clause 1.11.1:** "Provide temporary support for Utility Poles (both power and communications) during construction as required to allow for work adjacent to poles." **Add Clause 1.11.2:** "Contractors working on utility poles must be able to perform switching on the BC Hydro system.
	1.9	Payment	**Add Clause 1.9.2:**"Payment for all work related to the management of sanitary flows (noise attenuating by-pass pumping isolation, blocking, diverting, etc.) including preparation of an approved bypass plan, and the supply installation, maintenance and removal of the temporary system. The *Contractor* will be entitled to 50% of the payment item on the first progress payment after the bypass system is in place and 50% on the first progress payment following dismantling and removal of the bypass system."
01 55 00		**Traffic Control, Vehicle Access and Parking**	
	1.5	Payment	**Add Clause 1.5.2:** "Payment for traffic control will be progressed monthly using a percentage based on the overall completion of the project as determined by the *Contract Administrator*."
DIVISION 3 - CONCRETE			
03 30 53		**Cast-In-Place Concrete**	
	1.5	Measurement and Payment	**Revise clause 1.5.2 to read:** "Payment for cast-in-place slabs will be made as lump sum and includes all form work, drain holes, concrete footing and subgrade preparation and granular sub- base all as shown on contract drawings. The unit price shall be full compensation for all labour, equipment, materials, and incidentals required to complete the work."

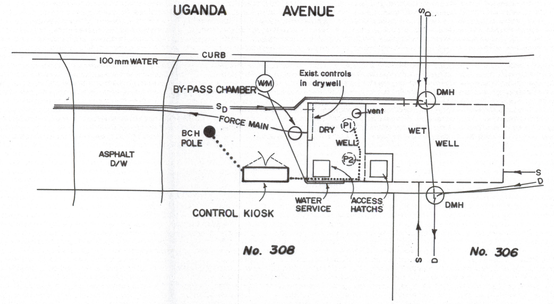
	1.5	Measurement and Payment	**Add Clause 1.5.6:** "Payment will be made as lump sum for all reinforcement installed and accepted. The unit price shall be full compensation for all labour, equipment, materials, and incidentals required to complete the work."
DIVISION 31 - EARTHWORK			
31 11 01		**Clearing and Grubbing**	
	1.4	Measurement and Payment	**Revise clause 1.4.1 to read:** "Payment for all clearing and grubbing items includes the removal and disposal of all branches, stumps, timber, shrubs, bushes, small trees, and other vegetation remains. Payment also includes the salvage and delivery of any irrigation components designated for reuse to the Township of Esquimalt Public Works Yard."
DIVISION 32 - ROAD AND SITE IMPROVEMENTS			
32 11 23		**Granular Base**	
	1.4	Measurement and Payment	**Add Clause 1.4.5 to read:** "Measurement for payment for granular base under concrete driveways is made under Section 32 13 13 – Portland Cement Concrete Paving, paragraph 1.4.3. "
32 13 13		**Portland Cement Concrete Paving**	
	1.4	Measurement and Payment	**Delete Clauses 1.4.1. and 1.42.**
	1.5	Measurement and Payment	**Revised Clause 1.4.3 to read:** " Payment for Portland cement concrete paving includes the necessary form work supply of concrete construction in alternate panels if required tie bars and towels compaction curing adjusting and cleaning frames covers and lids of all castings affected prior to paving. Payment includes for the saw cutting, and removal of concrete driveway to the extents shown on the Contract Documents. For driveways payment also includes, wire mesh, backfill of trench and the supply, placement and compaction of 100mm of granular base beneath the concrete. Measurement of Portland cement concrete paving will be by square meter of actual place material as approved by the *Contract Administrator*. "
32 31 13		**Chain Link Fences & Gates**	
	1.5	Measurement and Payment	**Add clause 1.5.5:** "Payment for installation of bollards includes supply, install, and all labour, equipment and material required to install the material where shown on the Contract Drawings and per the manufacturers recommendations. Payment will be made for each complete item of each type installed."
32 91 21		**Topsoil and Finish Grading**	
	1.4	Measurement and Payment	**Revised Clause 1.4.1 to read:** "Payment for import topsoil includes supply of materials, on-site handling, subgrade preparation, placement to thickness specified, application of fertilizers and finished grading. Payment for import topsoil will be made by actual area placed and compacted by landscape roller to the specified thickness as approved by the *Contract Administrator*."
32 92 19		**Hydraulic Seeding**	
	1.8.1	Measurement and Payment	**Add to the end of Clause 1.8.1:** "Hydraulic seeding type to Township's acceptance of Seed Type."



SECTION AA: PLAN VIEW - NEW PUMPS
1:25

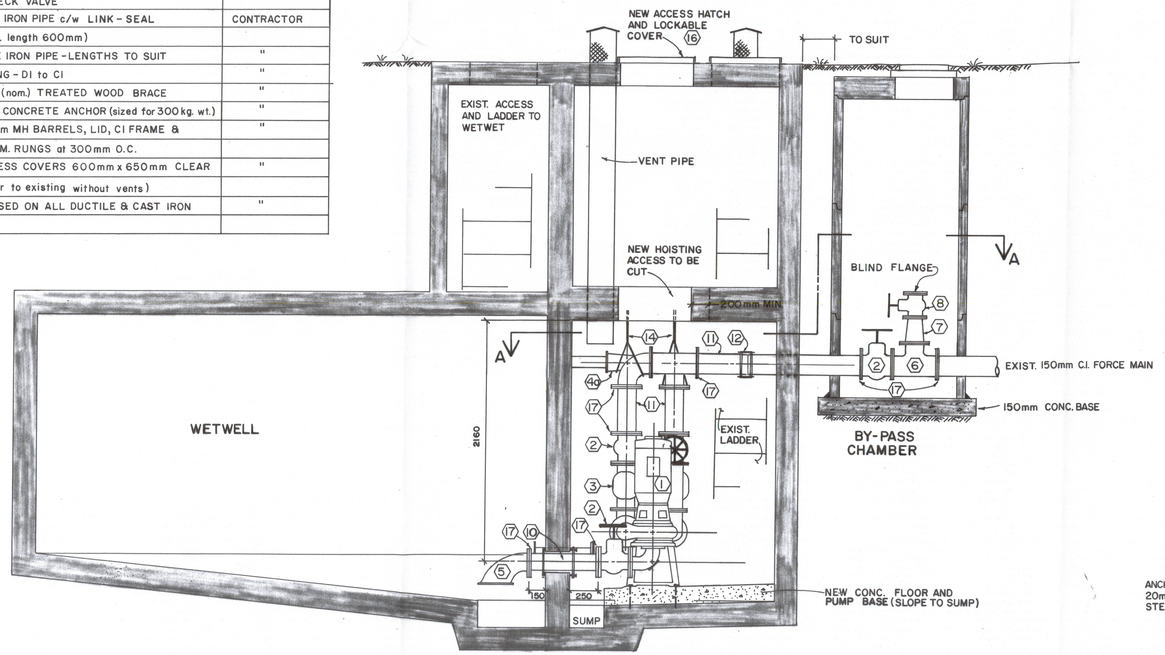


ROOF PLAN
1:25

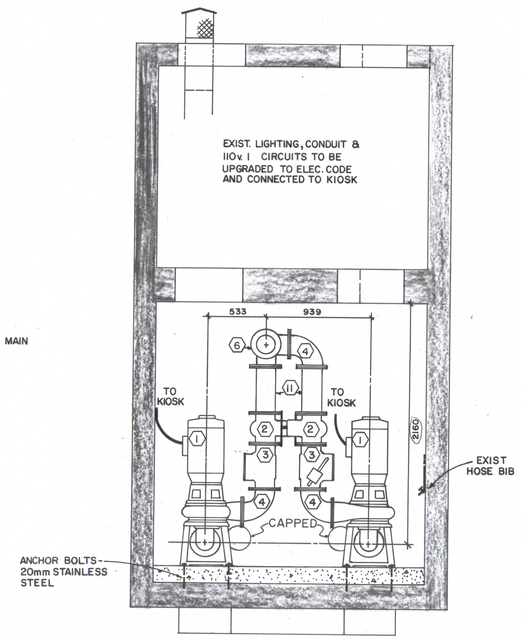


SITE PLAN
SCALE- 1:100

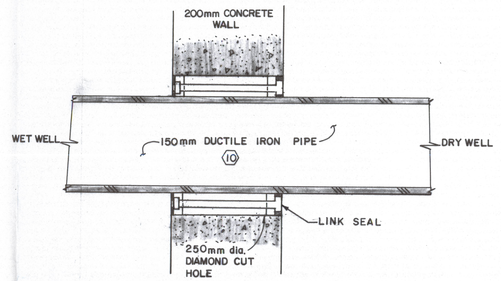
MATERIALS LIST			
NO.	QTY	DESCRIPTION	SUPPLIER
1	2	20 H.P. HYDROMATIC SEWAGE PUMP MODEL RV6A	MUNICIPALITY
2	5	150mm, f x f, GATE VALVE c/w RESILIENT SEAT	"
3	2	150mm, f x f, CHECK VALVE c/w OUTSIDE LEVER &	"
		WEIGHT	
4	3	150mm, f x f, 90° ELBOW	"
4(a)	1	150mm, f x f, 90° BASE ELBOW	"
5	2	150mm, f x BELL MOUTH CASTING - 90° STYLE	"
6	2	150mm x 150mm x 150mm, f x f x f, TEE	"
7	1	150mm x 100mm, f x f, TAPER REDUCER	"
8	1	100mm, f x f, GATE VALVE c/w RESILIENT SEAT	"
9	1	100mm, f x f, CHECK VALVE	"
10	2	150mm DUCTILE IRON PIPE c/w LINK - SEAL	CONTRACTOR
		FLANGE (approx. length 600mm)	
11	3	150mm DUCTILE IRON PIPE - LENGTHS TO SUIT	"
12	1	150mm COUPLING - DI to CI	"
13	1	100mm x 100mm (nom.) TREATED WOOD BRACE	"
14	2	PIPE HANGER & CONCRETE ANCHOR (sized for 300 kg. wt.)	"
15	1	PRECAST 1050mm MH BARRELS, LID, CI FRAME &	"
		COVER, c/w ALUM. RUNGS at 300mm O.C.	
16	2	LOCKABLE ACCESS COVERS 600mm x 650mm CLEAR	"
		OPENING (similar to existing without vents)	
17	13	UNI-FLANGE - USED ON ALL DUCTILE & CAST IRON	"
		PIPE ENDS	



SECTION BB: SIDE ELEVATION - NEW PUMPS
1:25



SECTION CC: END ELEVATION - NEW PUMPS
1:25



DETAIL: PIPE THROUGH WALL
1:5

NOTES

1. CONTRACTOR SHALL VERIFY ALL PIPE LOCATIONS AND DIMENSIONS PRIOR TO START OF CONSTRUCTION.
2. FOR CLARITY OF NEW CONSTRUCTION ELECTRICAL DUCTS, FIXTURES, CONTROL BOXES WATER PIPING AND OTHER MISC. DETAILS ARE NOT SHOWN ON THIS DRAWING. SEE DRAWING DATED DEC. 1974 FOR DETAILS OF EXISTING PUMPHOUSE.
3. BACKFILL AROUND BY-PASS CHAMBER SHALL BE COMPACTED PIT-RUN GRAVEL WITH TOPPING OF 150mm TOP SOIL AND SEED.

DEC. 8, 1986 AS-CONSTRUCTED

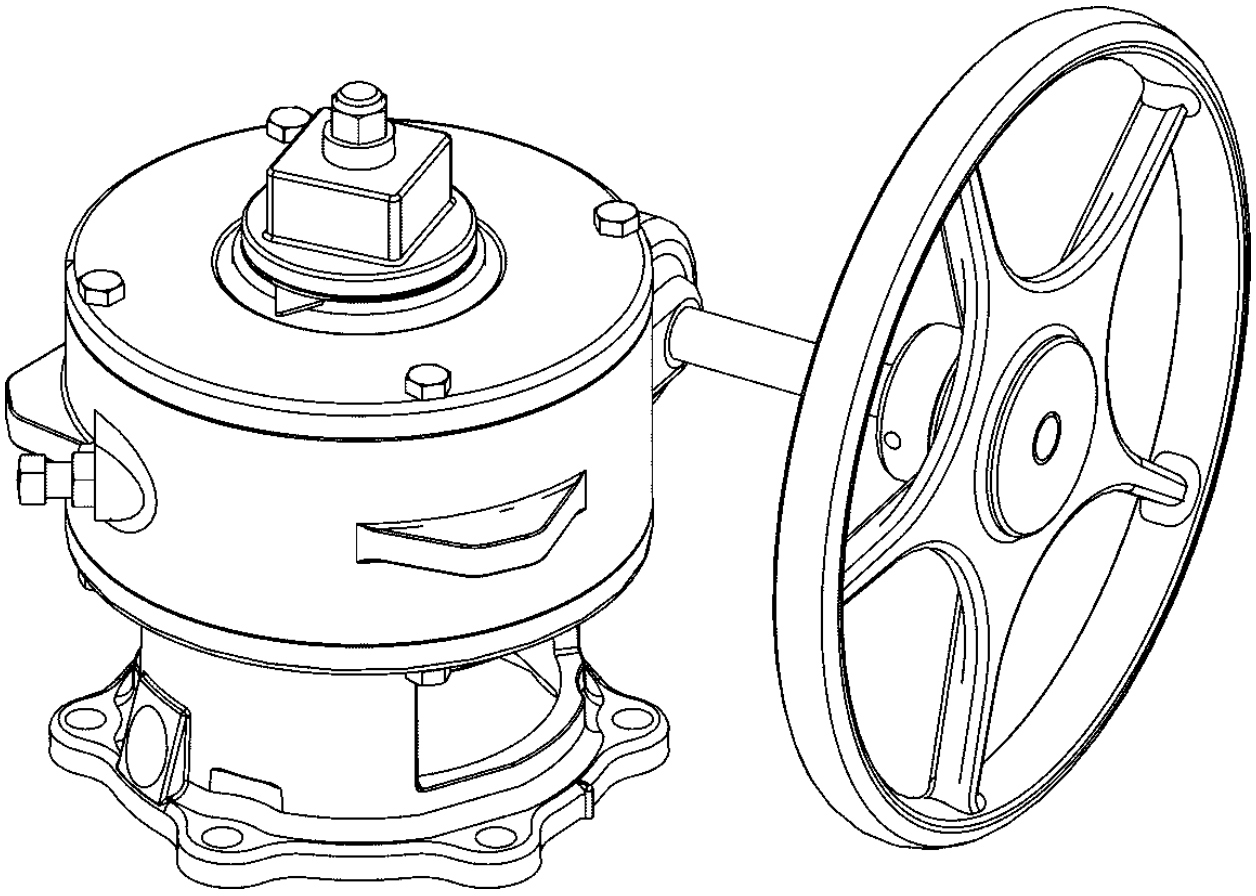
TOWNSHIP OF ESQUIMALT

UGANDA SEWAGE LIFT STATION
UPGRADING TO 20 H.P. HYDROMATIC SEWAGE PUMPS

DRAWN N.P.	MUN. ENG. R.V.N.	DESIGN	
DATE JULY 1986	DESIGN N.P.	DWG. NO.	13-86

DEZURIK MANUAL G-SERIES ACTUATORS

USED ON PEC ECCENTRIC VALVES



Instruction **D10063**
August 2012

DeZURIK, Inc. Sartell, Minnesota USA | Phone: 320-259-2000 | www.dezurik.com | info@dezurik.com

Instructions

These instructions are for use by personnel who are responsible for the installation, operation and maintenance of DeZURIK valves, actuators or accessories.

Safety Messages

All safety messages in the instructions are identified by a general warning sign and the signal word CAUTION, WARNING or DANGER. These messages indicate procedures to avoid injury or death.

Safety label(s) on the product indicate hazards that can cause injury or death. If a safety label becomes difficult to see or read, or if a label has been removed, please contact DeZURIK for replacement label(s).

⚠WARNING

Personnel involved in the installation or maintenance of valves should be constantly alert to potential emission of pipeline material and take appropriate safety precautions. Always wear suitable protection when dealing with hazardous pipeline materials. Handle valves which have been removed from service with suitable protection for any potential pipeline material in the valve.

Inspection

Your DeZURIK product has been packaged to provide protection during shipment; however, items can be damaged in transport. Carefully inspect the unit for damage upon arrival and file a claim with the carrier if damage is apparent.

Parts

Replaceable wear parts are listed on the assembly drawing. These parts can be stocked to minimize downtime. Order parts from your local DeZURIK sales representative or directly from DeZURIK. When ordering parts please provide the following information:

If the valve has a data plate: please include the 7-digit part number with either 4-digit revision number (example: 9999999R000) or 8-digit serial number (example: S1900001) whichever is applicable. The data plate will be attached to the valve assembly. Also, include the part name, the assembly drawing number, the balloon number and the quantity stated on the assembly drawing.

If there isn't any data plate visible on the valve: please include valve model number, part name, and item number from the assembly drawing. You may contact your local DeZURIK Representative to help you identify your valve.

DeZURIK Service

DeZURIK service personnel are available to maintain and repair all DeZURIK products. DeZURIK also offers customized training programs and consultation services. For more information, contact your local DeZURIK sales representative or visit our website at DeZURIK.com.

Table of Contents

Description

The manual operated G-Series actuator is designed to operate a PEC Eccentric valve. Integral stops limit actuator stroke for both the open and closed valve positions. This actuator is available in three sizes: Size 6, Size 12 and Size 16. See Figure 1 to identify which unit you have.

CAUTION!

This actuator can be furnished with either cast iron or ductile iron gears.

The ductile iron gear is necessary for submerged or buried service valves or when a 2" operating nut is installed on the input shaft. Breakage of the gear teeth will occur if cast iron gears are torqued above 200 ft-lb's.

Cast Iron & Ductile Iron are similar in appearance: To determine if the gear material is ductile iron, remove the cover as described in the ACTUATOR DISASSEMBLY Section. Size 6 gears have "M199" cast in raised letters on the round surface opposite the teeth. Size 12 & Size 16 gears have "M199" cast in raised letters on either the top or under side of the web between the hub and the teeth, removal of the gear is necessary to see the marking. If there is no "M199" on the gear, the material is cast iron.

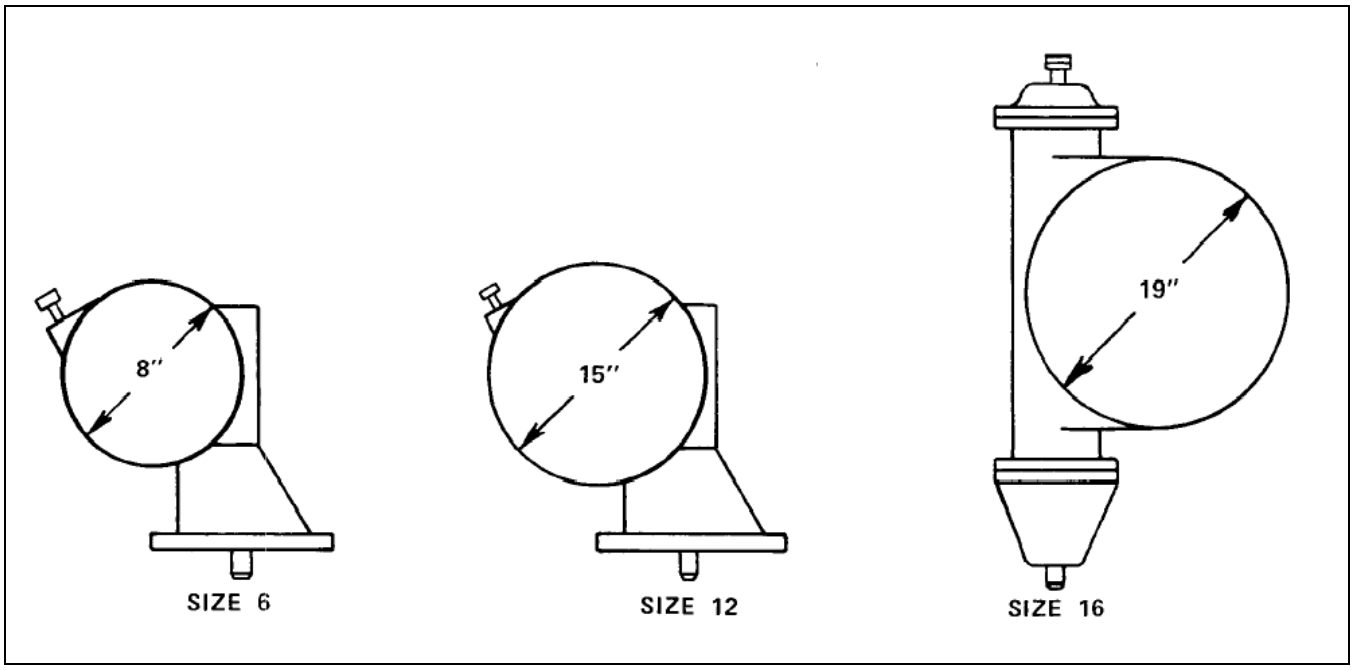


Figure 1— G-Series Actuator Identification

Operation

Rotating the operator (handwheel or chainwheel) clockwise closes the valve. To actuate the valve from full open to full closed (or vice-versa), the Size 6 requires 13 revolutions, the Size 12 requires 19 revolutions and the Size 16 requires 33 revolutions of the operator.

Required Tools

This actuator is assembled using only SAE fasteners. To service this unit, you should have a full set of combination wrenches, Allen wrenches, a flat tipped screwdriver, a pin punch and a dead blow hammer.

Lubrication

The G-Series actuator has been lubricated at the factory and requires no routine maintenance lubrication. If the actuator is disassembled, apply a liberal amount of lubricant to the gear sector, bearings and worm gear (size 6 and Size 12) or the rack (Size 16) using one of these lubricants:

- Keystone Zeniplex-1 (**recommended**)
- Amoco Amolith Grease #1-EP (alternate)
- Amsoil GHD (alternate)
- Mobil Mobilux EP 1 (alternate)
- Petro-Canada Vultrex MPG EP 1 (alternate)
- Shell Alvania EP 1 (alternate)
- Texaco Multifak EP 1 (alternate)

Stop Adjustments

This actuator has a stop to limit valve stroke at each end of the cycle. The open position stop is an integral, non-adjustable stop in the actuator cover; the closed position stop is an adjustable stop screw located in the side of the actuator housing (Size 6 and Size 12) or in the end of the extension cap (Size 16). To adjust the closed position stop, follow these steps:

1. Relieve pipeline pressure.
2. Loosen the jam nut on the closed position stop screw, then turn the closed position stop screw counterclockwise about 1 ½".
3. Close the valve with the torque specified in Table A.
4. While maintaining the torque from Table A, turn the closed position stop adjusting screw in just until resistance is felt as it contacts the gear.
5. Lock the stop in this position by tightening the jam nut against the actuator.

Table A: Valve Closing Torques

Valve Size	Actuator Size	Seating Torque (ft lbs)									
		Direct Pressure Drop (psi)	Reverse Pressure Drop								
			25	50	75	100	125	150	175	200	230
4	G6	4	4	4	5	5	5	5	5	5	5
5	G6	8	8	9	10	11	11	11	11	11	11
6	G6	8	8	9	10	11	11	11	11	11	11
8	G6	15	15	17	19	20	21	21	21	21	21
10	G6	22	22	25	29	33	36	N/A	N/A	N/A	N/A
10	G12	11	11	18	18	18	18	18	18	18	18
12	G6	29	29	29	29	N/A	N/A	N/A	N/A	N/A	N/A
12	G12	15	15	15	15	15	15	15	15	15	15
14	G12	18	18	24	29	34	34	34	34	34	34
16	G12	22	22	29	37	45	45	45	45	N/A	N/A
16	G16	19	19	26	26	26	26	26	26	26	26
18	G12	26	26	35	45	55	55	N/A	N/A	N/A	N/A
18	G16	21	21	29	29	29	29	29	29	29	29
20	G12	29	29	44	55	55	N/A	N/A	N/A	N/A	N/A
20	G16	22	22	32	32	32	32	32	32	32	32
24.00	G16	24	24	29	34	39	N/A	N/A	N/A	N/A	N/A
24.50 & 30.00	G16	26	26	35	42	49	N/A	N/A	N/A	N/A	N/A
30.50 & 36.00	G16	57	57	72	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: The "N/A" designation in Table A indicates that the Valve/Actuator combination cannot be used for that particular reverse pressure.

Stop Adjustments *(continued)*

Direct Pressure - When the higher pressure is at the end opposite the seat. See Figure 2.

Reverse Pressure - When the higher pressure is at the seat end of the valve. See Figure 2.

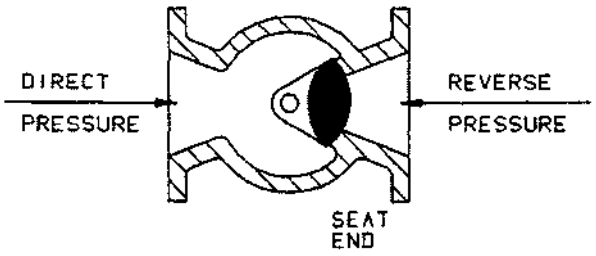


Figure 2 – Pressure Direction

Actuator Removal

The actuator removal procedure is dependent upon whether or not the actuator is built for submerged service. Follow the correct section to properly and safely remove the actuator.

WARNING!

When Eccentric valves are mounted in a vertical pipeline, or mounted in a horizontal pipeline with the plug stem horizontal, there is a chance that gravity will cause the plug to swing to a lower position in the valve body when the actuator is removed. To avoid this hazard, place the plug in the lowest position before removing the actuator.

Submerged Service Actuators

1. Discontinue flow and relieve pipeline pressure.

WARNING!

The valve is a pressure vessel. Pressure must be completely released before removing the bonnet bolts on the 4”, 5”, 6” and 10” valves.

2. Scribe corresponding lines on the valve and actuator to be used for alignment during actuator installation.

Actuator Removal *(Continued)*

3. Scribe corresponding lines on the actuator housing and top cover so the cover can be reinstalled in the correct position.
4. Remove the screws attaching the top cover on the actuator and lift the cover from the housing.
5. If the valve is a size 4" thru 20", remove the lock nut, spring washers and flat washers from the plug stud and go to Step 9. If the valve is a size 24" thru 36", do not remove anything, go to the next step.
6. Loosen lockscrew #1 about 6 to 8 turns. Loosen lockscrews #2 about 3 turns. See Figure 3.

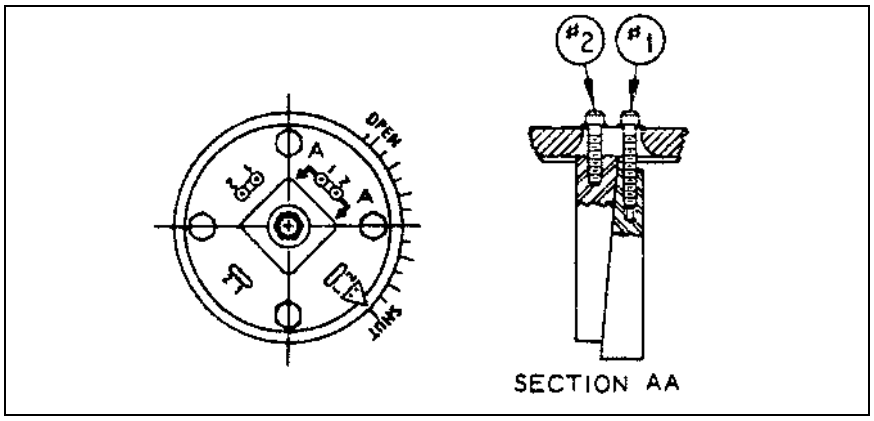


Figure 3 – 24" thru 36" Key and Lockscrew Arrangement

7. Using a soft hammer, tap the heads of the #1 lockscrews to loosen the keys.
8. Remove the four screws holding the washer to the gear sector, then remove the stud, locknut, spring washers and the washer with the keys attached.
9. Remove the 6 screws fastening the adaptor to the valve. On the 4", 5", 6" and 10" valves, these screws also hold the bonnet to the valve body.
10. Lift the actuator and adaptor off the valve.
11. Scrape the old gasket material from the valve bonnet and the bottom of the adaptor.
12. Scrape the gasket material from the actuator cover and housing.

Non-Submerged Service Actuators

1. Discontinue flow and relieve pipeline pressure.

WARNING!

The valve is a pressure vessel. Pressure must be completely released before removing the bonnet bolts on the 4", 5", 6" and 10" valves.

2. Scribe corresponding lines on the valve and actuator to be used for alignment during actuator installation.
3. If the valve is a size 4" thru 20", remove the lock nut, spring washers, wrenching nut and pointer from the plug stud, then go to Step 7. If the valve is a size 24" thru 36", do not remove anything and go to the next step.

Actuator Removal *(Continued)*

4. Loosen lockscrew #1 about 6 to 8 turns. Loosen lockscrews #2 about 3 turns. See Figure 3.
5. Using a soft hammer, tap the heads of the #1 lockscrews to loosen the keys.
6. Remove the four screws holding the wrenching nut to the gear sector, then remove the stud, locknut, spring washers and the wrenching nut with the keys attached.
7. Remove the 6 screws fastening the adaptor to the valve. On the 4”, 5”, 6” and 10” valves, these screws also hold the bonnet to the valve body.
8. Lift the actuator and adaptor off the valve.

Actuator Installation

The actuator installation procedure is dependent upon whether or not the actuator is built for submerged service. Follow the correct section to properly install the actuator.

Submerged Service Actuators

1. Place the valve in the position it was in when the actuator was removed. Normally this will be so the plug is in the lowest position in the valve body.
2. Place a new gasket on the valve bonnet, lining up the holes in the bonnet and gasket.
3. Line up the scribe marks on the valve and actuator made during actuator removal, then set the actuator on the valve so the valve shaft slides into the actuator gear sector.
4. Fasten the actuator adaptor to the valve with six screws.
5. Slide the flat washer down the plug stud so it rests on top of the gear sector. If the valve is a size 24” thru 36”, hold the keys in position when you slide the washer over the plug stud and guide the keys into the gear sector and stem slots. Then install the four screws fastening the washer to the gear sector.
6. Place the spring washers on the plug stud as shown in Figure 4.

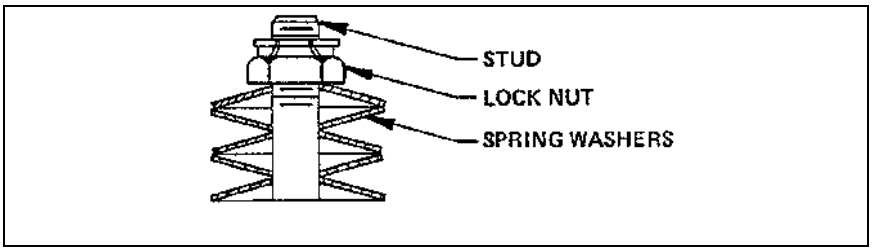


Figure 4—Spring Washer Stackup

7. Screw the lock nut down the plug stud until it is tight and the spring washers are completely compressed, then back the nut off one full turn.
8. If the valve is a size 24” thru 36”, tighten the #2 lockscrews and then the #1 lockscrews to hold the keys in place. Skip this step if the valve is a size 4” thru 20”.
9. Line up the scribe marks on the cover and housing, then set the cover on the actuator. Fasten the cover in place.
10. Check the closed position stop setting and readjust if necessary.
11. Pipeline flow may now be restored.

Actuator Installation (*Continued)*

Non-Submerged Service Actuators

1. Place the valve in the position it was in when the actuator was removed. Normally this will be so the plug is in the lowest position in the valve body.
2. Line up the scribe marks on the valve and actuator made during actuator removal, then set the actuator on the valve so the valve shaft slides into the actuator gear sector.
3. Fasten the actuator adaptor to the valve with six screws.
4. Slide the pointer and wrenching nut down the plug stud so it rests on top of the gear sector; the pointer should point to indicate the correct valve position. If the valve is a size 24” thru 36”, hold the keys in position when you slide the wrenching nut over the plug stud and guide the keys into the gear sector and stem slots. Then install the four screws fastening the wrenching nut to the gear sector.
5. Place the spring washers on the plug stud as shown in Figure 4.
6. Screw the lock nut down the plug stud until the spring washers are completely compressed, then back the nut off until the washers return to their normal unstressed shape.
7. If the valve is a size 24” thru 36”, tighten the #2 lockscrews and then the #1 lockscrews to hold the keys in place. Skip this step if the valve is a size 4” thru 20”.
8. Pipeline flow may now be restored.

Recommended Spare Parts Replacement

Follow these steps to replace the recommended spare parts in this actuator. This procedure is dependent upon the actuator size (see Figure 1); make sure you are using the correct section for your actuator.

WARNING!

When Eccentric valves are mounted in a vertical pipeline, or mounted in a horizontal pipeline with the plug stem horizontal, there is a chance that gravity will cause the plug to swing to a lower position in the valve body when the actuator is removed. To avoid this hazard, place the plug in the lowest position before removing the actuator.

Size 6 and Size 12 Actuators

1. Remove the actuator from the valve as described in the ACTUATOR REMOVAL Section of this Instruction.
2. Scribe corresponding lines on the actuator cover and housing, then remove the cover screws and cover from the top of the actuator (non-submerged units).
3. Note the position of the gear sector in the housing, then lift the gear sector out.
4. Remove the pipe plug in the side of the housing.
5. Reaching in thru the hole where the pipe plug was, drive out the pin connecting the worm gear to the actuator drive shaft. Take the pin out of the housing.

Recommended Spare Parts Replacement *(Continued)*

6. Slide the drive shaft (complete with operator) out of the actuator.
7. Reach into the housing and remove the worm gear, thrust bearing(s) and bearing races. The Size 6 actuator has one thrust bearing and two bearing races; the Size 12 has two bearings and four bearing races.
8. Remove the gear sector seals from the top cover and adaptor.
9. Remove the drive shaft seal from the housing.
10. Scrape the gasket material from the top cover and actuator housing.
11. Grease the new seals and press them into the top cover and adaptor.
12. Push a new drive shaft seal into the housing.
13. **Size 6 Actuators** - Slide the drive shaft into the housing and thru these components in the following order: bearing race, bearing, bearing race, worm gear, and then into the bearing in the housing.

    Size 12 Actuators - Slide the drive shaft into the housing and thru these components in the following order: bearing race, bearing, bearing race, worm gear, bearing race, bearing, bearing race, and then into the bearing in the housing.
14. Turn the drive shaft and worm gear until the holes in them line up with the pipe plug hole in the housing.
15. Reaching in thru the pipe plug hole, insert the pin to connect the drive shaft and worm gear.
16. Screw the pipe plug into the hole in the housing.
17. Place the gear sector on the valve shaft in the same position noted before it was removed.
18. Apply a liberal amount of grease to the gear sector, bearings and worm gear.
19. Set a new cover gasket on the housing, then install and fasten the top cover on the housing; make sure the scribe marks line up (non-submerged units only).
20. Install the actuator on the valve as described in the ACTUATOR INSTALLATION Section of this Instruction.

Size 16 Actuators

1. Remove the actuator from the valve as described in the ACTUATOR REMOVAL Section of this Instruction.
2. Scribe corresponding lines on the actuator cover and housing, then remove the cover screws and cover from the top of the actuator (non-submerged units).
3. Note the position of the gear sector in the housing, then lift the gear sector out.
4. Mark one tooth on the rack with a center punch, then mark two adjacent teeth on the gear so the rack and gear can be re-installed in the correct position.
5. Remove the four screws that hold the drive shaft housing assembly to the actuator housing.
6. Turn the operator clockwise to remove the drive shaft housing assembly from the actuator housing.
7. Lift the gear sector and rack from the housing.
8. Drive the pin out that holds the rack guide in place, then remove the rack guide and pin from the housing.

Recommended Spare Parts Replacement *(Continued)*

9. Remove the gear sector seals from the top cover and adaptor.
10. Scrape the gasket material from the top cover, actuator housing and drive shaft housing.
11. Rebuild the drive shaft housing assembly as follows:
    a. Remove the set screw inside the housing and turn the threaded collar out. The bearing and two bearing faces will also come out.
    b. Remove the pin securing the operator to the drive shaft and slide the operator off the shaft.
    c. Push the housing off the operator end of the drive shaft. The remaining bearing and two races will come out at this time.
    d. Pull the seal out of the drive shaft housing.
    e. Lightly grease the new seal and slide it into the drive shaft housing.
    f. Sandwich the bearing between the two races and slide them down the operator end of the drive shaft until they sit on the sleeve.
    g. Apply a liberal amount of grease to the bearing and races.
    h. Carefully push the operator end of the drive shaft thru the seal from inside the housing.
    i. Slide the operator onto the shaft, line up the holes in the operator and shaft, then install the pin.
    j. Sandwich the bearing between the two races and slide them against the sleeve inside the housing.
    k. Apply a liberal amount of grease to the bearings.
    l. Screw the threaded collar into place and secure with the set screw.
12. Grease the new seals and press them into the top cover and adaptor.
13. Pin the rack guide in position in the housing.
14. Place the gear sector and rack in the housing, carefully aligning the teeth marked during disassembly.
15. Place a new gasket on the drive shaft housing, then push the drive shaft housing assembly into the actuator housing.
16. Turn the operator counterclockwise to screw the drive shaft into the rack until the drive shaft housing is tight against the actuator housing.
17. Fasten the drive shaft housing to the actuator housing with four screws.
18. Apply a liberal amount of grease to the gear sector and rack.
19. Set a new cover gasket on the housing, then install and fasten the top cover on the housing; make sure the scribe marks line up (non-submerged units only).
20. Install the actuator on the valve as described in the ACTUATOR INSTALLATION Section of this Instruction.

Changing Actuator Mounting Position

On **4–20" (100–500mm)** valves, the actuator can be mounted in 60° increments around the valve shaft. 90° or 270° position changes require changing the gear sector on Size 6 & Size 12 actuators or the timing between the gear sector and the rack on Size 16 actuators; 60° position changes do not require changing the gear sector or timing.

On **24–36" (600–900mm**) valves, handwheel/chainwheel sizes will limit actuator mounting positions. However, the actuator can be mounted in 45° increments around the valve shaft. 45° position changes require changing the timing between the gear sector and the rack; 90° position changes do not require changing the timing.

Mounting Actuator in 60° Increments on 4–20" (100–500mm) Valves and 90° Increments on 24–36" (600–900mm) Valves

1. Remove the actuator from the valve. See "*Removing Actuator*" section.

WARNING!

This valve is a pressure vessel. On 4, 5, 6 and 10" (100, 125, 150 and 250mm) valves, the same bolts hold both the actuator and the bonnet.

Removing the bolts on 4, 5, 6 and 10" (100, 125, 150 and 250mm) valves before relieving pipeline pressure can result in personal injury or equipment damage.

Always relieve pipeline pressure before removing the actuator.

2. Rotate the actuator into position.
3. Install the actuator on the valve. See "*Installing Actuator*".

Changing Actuator to 90°/270° Positions on 4–20" (100–500mm) Valves with Size 6 & Size 12 Actuators Only (Requires a different gear sector)

When eccentric valves are mounted in a vertical pipeline, or mounted in a horizontal pipeline with the plug stem horizontal, gravity can cause the plug to swing to a lower position in the valve body when the gear sector is removed. To avoid this problem, place the plug in the lowest position before removing the gear sector.

1. Discontinue flow and relieve pipeline pressure.
2. If possible, put the valve in the closed position just so the plug is touching the valve seat.
3. Remove the lock nut, spring washers, wrenching nut and pointer from the plug stud.
4. Scribe corresponding lines on the actuator cover and housing, then remove the cover screws and cover from the top of the actuator.
5. Note that one edge of the gear is either against or close to the stop screw in the side of the gear housing, this is where the other gear should be after the actuator has been rotated 90° and the new gear installed. Now lift the gear sector out of the actuator.
6. Remove the 4 screws fastening the gear housing to the adaptor.
7. Pry the gear housing loose from the valve adaptor and turn it 90°clockwise or counterclockwise to suit your need. Line up the bolt holes and install and tighten the 4 screws.

Changing Mounting Positions *(Continued)*

8. Make sure the plug is still touching the valve seat, then using the new gear, liberally grease the teeth and journals then drop the gear in over the plug hex making sure the edge of the gear is close to or will touch the stop screw.

   NOTE: The gear has two different length journals. The longer journal must engage the plug and the shorter journal must stick up thru the actuator cover.

9. Set a new cover gasket on the housing, then install and fasten the top cover on the housing; make sure the scribe marks line up.
10. Test actuate the valve by turning the handwheel to open the valve. The valve plug must go 90° from the seat and stop as the gear sector hits the stop lug that is cast in the cover. Now turn the handwheel to close the valve, the plug should contact the seat before the gear hits the stop screw. If the valve does not operate as described, remove the cover from the gear housing and make sure the edge of the gear is touching or very close to the stop screw when the plug is in the closed position.
11. When you are satisfied that the valve is operating properly, put the valve in the closed position. With the cover bolted in place, slide the pointer and wrenching nut down the plug stud so it rests on top of the gear sector; the pointer should point to indicate the correct valve position.
12. Place the spring washers on the plug stud as shown in Figure 5.
13. Screw the lock nut down the plug stud until it is tight and the spring washers are completely compressed, then back the nut off one full turn.
14. Adjust the position stops. See "*Position Stops*" section.

Changing Actuator to 90°/270° Positions on 12"–20" (300–500mm) Valves with Size 16 Actuator Only

When eccentric valves are mounted in a vertical pipeline, or mounted in a horizontal pipeline with the plug stem horizontal, gravity can cause the plug to swing to a lower position in the valve body when the gear sector is removed. To avoid this problem, place the plug in the lowest position before removing the gear sector.

1. Discontinue flow and relieve pipeline pressure.
2. Remove the lock nut, spring washers, wrenching nut and pointer from the plug stud.
3. Scribe corresponding lines on the actuator cover and housing, then remove the cover screws and cover from the top of the actuator.
4. Mark which teeth of the rack and gear are engaged and lift the gear sector out of the actuator.
5. Remove the screws fastening the adapter to the valve.
6. Take out the screws fastening the actuator housing to the adapter.
7. Rotate the adapter on the valve, and the actuator on the adapter until the holes line up and the actuator is in the desired position. Replace all of the screws.
8. Find the tooth that was marked on the gear sector and count over clockwise five teeth. This is the tooth that will engage with the marked tooth on the rack. Install the gear sector using the new tooth engagement, and be sure the gear sector fits on the plug stem properly.

Changing Mounting Positions *(Continued)*

9. Set a new cover gasket on the housing, then install and fasten the top cover on the housing; make sure the scribe marks line up.
10. Slide the pointer and wrenching nut down the plug stud so it rests on top of the gear sector; the pointer should point to indicate the correct valve position.
11. Place the spring washers on the plug stud as shown in Figure 5.
12. Screw the lock nut down the plug stud until it is tight and the spring washers are completely compressed, then back the nut off one full turn.
13. Adjust the position stops. See "*Position Stops*" section.

Mounting Actuator in 45° Increments on 24–36" (600–900mm) Valves Only

When eccentric valves are mounted in a vertical pipeline, or mounted in a horizontal pipeline with the plug stem horizontal, gravity can cause the plug to swing to a lower position in the valve body when the gear sector is removed. To avoid this problem, place the plug in the lowest position before removing the gear sector.

1. Discontinue flow and relieve pipeline pressure.

WARNING!

When Eccentric valves are mounted in a vertical pipeline, or mounted in a horizontal pipeline with the plug stem horizontal, there is a chance that gravity will cause the plug to swing to a lower position in the valve body when the gear sector is removed. To avoid this hazard, place the plug in the lowest position before removing the gear sector.

2. Loosen lockscrews #1 about 6 to 8 turns. Loosen lockscrews #2 about 3 turns. See Figure 4.
3. Using a soft hammer, tap the heads of the #1 lockscrews to loosen the keys.
4. Remove the four screws that hold the wrenching nut to the gear sector, then remove the stud locknut, spring washers and the wrenching nut with the keys.
5. Scribe corresponding lines on the actuator cover and housing, then remove the cover screws and cover from the top of the actuator.
6. Mark which teeth of the rack and gear are engaged, and lift the gear sector out of the actuator.
7. Remove the screws fastening the adapter to the valve.
8. Remove the screws fastening the actuator housing to the adapter.
9. Rotate the adapter on the valve and the actuator on the adapter until the holes line up and the actuator is in the desired position. Replace all of the screws.
10. Note the tooth that was marked on the gear sector and count clockwise five teeth on the size 16 actuator. This is the tooth that will engage with the marked tooth on the rack. Install the gear sector using the new tooth engagement, and be sure the keyways in the gear sector match the keyways in the plug stem.
11. Set a new cover gasket on the housing, then install the top cover on the housing, making sure the scribe marks line up.

Changing Mounting Positions *(Continued)*

12. Hold the keys in position and slide the wrenching nut over the plug stud, then guide the keys into the gear sector and stem slots.
13. Install the four screws fastening the wrenching nut to the gear sector.
14. Place the spring washers on the plug stud as shown in Figure 5.
15. Screw the lock nut down the plug stud until it is tight and the spring washers are completely compressed, then back the nut off one full turn.
16. Tighten the #2 lockscrews, and then the #1 lockscrews to hold the keys in place.
17. Adjust the position stops—see "*Position Stops*" section.

Limited Warranty

DeZURIK, Inc. (“Seller”) manufactured products, auxiliaries and parts thereof that we manufacture for a period of twenty-four (24) months from date of shipment from Seller’s factory, are warranted to the original purchaser only against defective workmanship and material, but only if properly stored, installed, operated, and serviced in accordance with Seller’s recommendations and instructions.

For items proven to be defective within the warranty period, your exclusive remedy under this limited warranty is repair or replacement of the defective item, at Seller’s option, FCA Incoterms 2020 Seller’s facility with removal, transportation, and installation at your cost.

Products or parts manufactured by others but furnished by Seller are not covered by this limited warranty. Seller may provide repair or replacement for other’s products or parts only to the extent provided in and honored by the original manufacturer’s warranty to Seller, in each case subject to the limitations contained in the original manufacturer’s warranty.

No claim for transportation, labor, or special or consequential damages or any other loss, cost or damage is being provided in this limited warranty. You shall be solely responsible for determining suitability for use and in no event shall Seller be liable in this respect.

This limited warranty does not warrant that any Seller product or part is resistant to corrosion, erosion, abrasion or other sources of failure, nor does Seller warrant a minimum length of service.

Your failure to give written notice to us of any alleged defect under this warranty within twenty (20) days of its discovery, or attempts by someone other than Seller or its authorized representatives to remedy the alleged defects therein, or failure to return product or parts for repair or replacement as herein provided, or failure to store, install, or operate said products and parts according to the recommendations and instructions furnished by Seller shall be a waiver by you of all rights under this limited warranty.

This limited warranty is voided by any misuse, modification, abuse or alteration of Seller’s product or part, accident, fire, flood or other Act of God, or your failure to pay entire contract price when due.

The foregoing limited warranty shall be null and void if, after shipment from our factory, the item is modified in any way or a component of another manufacturer, such as but not limited to; an actuator is attached to the item by anyone other than a Seller factory authorized service personnel.

All orders accepted shall be deemed accepted subject to this limited warranty, which shall be exclusive of any other or previous warranty, and this shall be the only effective guarantee or warranty binding on Seller, despite anything to the contrary contained in the purchase order or represented by any agent or employee of Seller in writing or otherwise, notwithstanding, including but not limited to implied warranties.

THE FOREGOING REPAIR AND REPLACEMENT LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, OBLIGATIONS AND LIABILITIES, INCLUDING, BUT NOT LIMITED TO, ALL WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR OF MERCHANTABILITY OR OTHERWISE, EXPRESSED OR IMPLIED IN FACT OR BY LAW, AND STATE SELLER’S ENTIRE AND EXCLUSIVE LIABILITY AND YOUR EXCLUSIVE REMEDY FOR ANY CLAIM IN CONNECTION WITH THE SALE AND FURNISHING OF SERVICES, GOODS OR PARTS, THEIR DESIGN, SUITABILITY FOR USE, INSTALLATION OR OPERATIONS. NEITHER ANY PERFORMANCE OR OTHER CONDUCT, NOR ANY ORAL OR WRITTEN INFORMATION, STATEMENT, OR ADVICE PREPARED BY SELLER OR ANY OF OUR EMPLOYEES OR AGENTS WILL CREATE A WARRANTY, OR IN ANY WAY INCREASE THE SCOPE OR DURATION OF THE LIMITED WARRANTY.

Disclaimer

Metric fasteners should not be used with ASME Class 150/300 bolt holes and flange bolt patterns. If you use metric fasteners with ASME Class 150/300 bolt holes and flange bolt patterns, it may lead to product failure, injury, and loss of life. DeZURIK Inc. disclaims all liability associated with the use of metric fasteners with ASME Class 150/300 bolt holes and flange patterns, including but not limited to personal injury, loss of life, loss of product, production time, equipment, property damage, lost profits, consequential damages of any kind and environment damage and/or cleanup. Use of metric fasteners with ASME Class 150/300 bolt holes and flange bolt patterns is a misuse that voids all warranties and contractual assurances. If you use metric fasteners with ASME Class 150/300 bolt holes and flange bolt patterns, you do so at your sole risk and any liability associated with such use shall not be the responsibility of DeZURIK, Inc. In addition to the foregoing, DeZURIK’s Manufacturer’s Conditions apply.

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Sales and Service

For information about our worldwide locations, approvals, certifications and local representative:

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