Digital Valve Rebuild Kits (K94444-05 and K94444-10) Installation Instructions for Encore®, Eclipse®, and The Advantage® Series Units March 2013

Introduction

Purpose

This document provides instructions for rebuilding the Digital Valve unit for Encore®, Eclipse®, and The Advantage® Series units.

Additional Information

These kits can be used for two different valve style (T20013-G1/G2 and M00246A001 assemblies). The Pilot Tube Assemblies are reversed between the T20013 and M00246 valve types. Therefore, it is important that the instructions regarding the valve type are carefully followed. It is also strongly recommended that the Digital Valve Piston Replacement Kit (K94444-09) be available when using the Standard Seal and Diaphragm Replacement Kit (K94444-10) [refer to "Removing and Rebuilding Digital Valve Unit" on page 6]. This is due to the probability that a Plastic Piston Cup or Metal Piston could be damaged or that the Piston Assembly is of an obsolete design.

The Cold Weather Kit [(K94444-05), refer to "Installing Lisk Digital Valve Kit (Cold Weather Kit)" on page 15] contains repair external seals to improve seal reliability in very cold weather conditions. For parts provided in this kit, refer to "Parts List for Cold Weather Kit (K94444-05)" on page 2.

Table of Contents

Required Tools and Materials

Following tools and materials are required to rebuild the Digital Valve unit for Encore, Eclipse, and The Advantage Series units:

- Approved Absorbent Material
- Approved Containers for Catching Fuel
- Arbor Press
- Channel Lock Pliers
- Needle Nose Pliers
- Screwdrivers, Flat-blade, assorted sizes
- Socket Set 3/8-inch Drive, US
- Wrench Set, US

Parts List for Standard Seal and Diaphragm Replacement Kit (K94444-10)

Rebuild Kit for Digital Valve (T20013-G1/G2 or M00246A001). The Standard Seal and Diaphragm Replacement Kit contains the following parts.

Note: Order one kit per Digital Valve. Also, refer to Note 2 in determining whether to order K94444-09 Kit as a supplement.

Kit Number	Part Number	Description	Quantity
K94444-10	VY2-3157	(G.W. Lisk Kit and Kit Numbers)	1 (per Digital Valve)
	VP2-1075-2	Diaphragm Piston Assembly	1
	V12-0151-1	O-ring Seal	2
	V12-0292-1	O-ring Seal	2
	V12-0292-2	O-ring Seal	1
	V12-0151-4	O-ring Seal	2
	VY3-0659	Ball, Viton	1
	VP3-0504	Poppet Assembly	1
	VV3-0497	Plunger	1
	VM3-0363	Spring	2
	VM3-0364	Spring	1
	VY2-1795	Part Identification Sheet	1
	VR2-1010	Diaphragm Retainer	1

Notes: 1) When disassembling Digital Valve from Manifold, new O-rings will be required. For more information, refer to MDE-3804 Encore and Eclipse Start-up/Service Manual.

2) Order K96621-01 Kit (one kit per Manifold) to reinstall Digital Valve to Manifold. The kit also contains a special gasket, which is used only for Canadian applications. For more information, refer to PT-1936 Encore Illustrated Parts Manual. K94444-05 Kit also contains the same parts.

3) If the Plastic Piston Cup or Metal Piston are damaged, or if the Piston Assembly is an obsolete design, it must be replaced with a piston from the K94444-09 Kit.

4) For cold weather applications, order Digital Valve Seal Repair Kit (K94444-05). Refer to "Parts List for Cold Weather Kit (K94444-05)" and the replacement process under this cover.

Parts List for Cold Weather Kit (K94444-05)

Rebuild Kit for Digital Valve [T20013-G1/G2 or M00246A001 (at present The Advantage Series, and earlier Encore and Eclipse Series)]. The Cold Weather Seal Replacement Kit (K94444-05) contains the following parts. This kit replaces the Piston Assembly Cover and O-rings for the Piston Assembly Cover and Pilot Valve Tubes.

Kit Number	Part Number	Description	Quantity
K94444-05	VY2-1534	G.W. Lisk Kit and Kit Numbers	1 (per Digital Valve)
	V12-0292-1	O-ring Seal	2
	V12-0292-2	O-ring Seal	1
	V12-0297-1	O-ring Seal	2
	V12-0297-2	O-ring Seal	1
	VY2-0729	Piston Assembly Cover	1
	VY2-1794	Part Identification Sheet	1

Related Documents

Document Number	Title	GOLD Library
MDE-2530	Pump and Dispenser Installation Manual	Advantage and Legacy® models
MDE-2531	Start-up and Service Manual for The Advantage Series	• Pump & Dispenser Start-up & Service Manual • Service Manual
MDE-3804	Encore and Eclipse Start-up/Service Manual	• Encore and Eclipse • Service Manual
PT-1728	The Advantage Series Illustrated Parts Manual	Parts Manual
PT-1936	Encore Illustrated Parts Manual	• Parts Manual • Encore and Eclipse • Encore and Eclipse Installers
PT-1938	Eclipse Illustrated Parts Manual	• Parts Manual • Encore and Eclipse • Encore and Eclipse Installers

Abbreviations and Acronyms

Term	Description
D-Box	Distribution Box
NC	Normally Closed
NO	Normally Open
STP	Submersible Turbine Pump

Important Safety Information

Notes: 1) Save this Important Safety Information section in a readily accessible location.

2) Although DEF is non-flammable, Diesel is flammable. Therefore, for DEF cabinets that are attached to Diesel dispensers, follow all the notes in this section that pertain to flammable fuels.

This section introduces the hazards and safety precautions associated with installing, inspecting, maintaining, or servicing this product. Before performing any task on this product, read this safety information and the applicable sections in this manual, where additional hazards and safety precautions for your task will be found. Fire, explosion, electrical shock, or pressure release could occur and cause death or serious injury, if these safe service procedures are not followed.

Preliminary Precautions
You are working in a potentially dangerous environment of flammable fuels, vapors, and high voltage or pressures. Only trained or authorized individuals knowledgeable in the related procedures should install, inspect, maintain, or service this equipment.

Emergency Total Electrical Shut-Off
The first and most important information you must know is how to stop all fuel flow to the pump/dispenser and island. Locate the switch or circuit breakers that shut off all power to all fueling equipment, dispensing devices, and Submerged Turbine Pumps (STPs).

⚠ WARNING

The EMERGENCY STOP, ALL STOP, and PUMP STOP buttons at the cashier's station WILL NOT shut off electrical power to the pump/dispenser. This means that even if you activate these stops, fuel may continue to flow uncontrolled.

You must use the TOTAL ELECTRICAL SHUT-OFF in the case of an emergency and not the console's ALL STOP and PUMP STOP or similar keys.

Total Electrical Shut-Off Before Access
Any procedure that requires access to electrical components or the electronics of the dispenser requires total electrical shut off of that unit. Understand the function and location of this switch or circuit breaker before inspecting, installing, maintaining, or servicing Gilbarco equipment.

Evacuating, Barricading, and Shutting Off
Any procedure that requires access to the pump/dispenser or STPs requires the following actions:

- An evacuation of all unauthorized persons and vehicles from the work area
- Use of safety tape, cones, or barricades at the affected unit(s)
- A total electrical shut-off of the affected unit(s)

Read the Manual
Read, understand, and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call a Gilbarco Authorized Service Contractor or call the Gilbarco Support Center at 1-800-800-7498. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

Follow the Regulations
Applicable information is available in National Fire Protection Association (NFPA) 30A; *Code for Motor Fuel Dispensing Facilities and Repair Garages*, NFPA 70; *National Electrical Code (NEC)*, Occupational Safety and Health Administration (OSHA) regulations and federal, state, and local codes. All these regulations must be followed. Failure to install, inspect, maintain, or service this equipment in accordance with these codes, regulations, and standards may lead to legal citations with penalties or affect the safe use and operation of the equipment.

Replacement Parts
Use only genuine Gilbarco replacement parts and retrofit kits on your pump/dispenser. Using parts other than genuine Gilbarco replacement parts could create a safety hazard and violate local regulations.

Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

Alert Symbol

This safety alert symbol is used in this manual and on warning labels to alert you to a precaution which must be followed to prevent potential personal safety hazards. Obey safety directives that follow this symbol to avoid possible injury or death.

Signal Words
These signal words used in this manual and on warning labels tell you the seriousness of particular safety hazards. The precautions below must be followed to prevent death, injury, or damage to the equipment:

DANGER: Alerts you to a hazard or unsafe practice which will result in death or serious injury.

WARNING: Alerts you to a hazard or unsafe practice that could result in death or serious injury.

CAUTION with Alert symbol: Designates a hazard or unsafe practice which may result in minor injury.

CAUTION without Alert symbol: Designates a hazard or unsafe practice which may result in property or equipment damage.

Working With Fuels and Electrical Energy

Prevent Explosions and Fires
Fuels and their vapors will explode or burn, if ignited. Spilled or leaking fuels cause vapors. Even filling customer tanks will cause potentially dangerous vapors in the vicinity of the dispenser or island.

DEF is non-flammable. Therefore, explosion and fire safety warnings do not apply to DEF lines.

No Open Fire

Open flames from matches, lighters, welding torches, or other sources can ignite fuels and their vapors.

No Sparks - No Smoking

Sparks from starting vehicles, starting, or using power tools, burning cigarettes, cigars, or pipes can also ignite fuels and their vapors. Static electricity, including an electrostatic charge on your body, can cause a spark sufficient to ignite fuel vapors. Every time you get out of a vehicle, touch the metal of your vehicle, to discharge any electrostatic charge before you approach the dispenser island.

Working Alone

It is highly recommended that someone who is capable of rendering first aid be present during servicing. Familiarize yourself with Cardiopulmonary Resuscitation (CPR) methods, if you work with or around high voltages. This information is available from the American Red Cross. Always advise the station personnel about where you will be working, and caution them not to activate power while you are working on the equipment. Use the OSHA Lockout/Tagout procedures. If you are not familiar with this requirement, refer to this information in the service manual and OSHA documentation.

Working With Electricity Safely

Ensure that you use safe and established practices in working with electrical devices. Poorly wired devices may cause a fire, explosion, or electrical shock. Ensure that grounding connections are properly made. Take care that sealing devices and compounds are in place. Ensure that you do not pinch wires when replacing covers. Follow OSHA Lockout/Tagout requirements. Station employees and service contractors need to understand and comply with this program completely to ensure safety while the equipment is down.

Hazardous Materials

Some materials present inside electronic enclosures may present a health hazard if not handled correctly. Ensure that you clean hands after handling equipment. Do not place any equipment in the mouth.

⚠ WARNING

The pump/dispenser contains a chemical known to the State of California to cause cancer.

⚠ WARNING

The pump/dispenser contains a chemical known to the State of California to cause birth defects or other reproductive harm.

In an Emergency

Inform Emergency Personnel

Compile the following information and inform emergency personnel:

- Location of accident (for example, address, front/back of building, and so on)
- Nature of accident (for example, possible heart attack, run over by car, burns, and so on)
- Age of victim (for example, baby, teenager, middle-age, elderly)
- Whether or not victim has received first aid (for example, stopped bleeding by pressure, and so on)
- Whether or not a victim has vomited (for example, if swallowed or inhaled something, and so on)

⚠ WARNING

Gasoline/DEF ingested may cause unconsciousness and burns to internal organs. Do not induce vomiting. Keep airway open. Oxygen may be needed at scene. Seek medical advice immediately.

⚠ WARNING

DEF generates ammonia gas at higher temperatures. When opening enclosed panels, allow the unit to air out to avoid breathing vapors.
If respiratory difficulties develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.

⚠ WARNING

Gasoline inhaled may cause unconsciousness and burns to lips, mouth, and lungs. Keep airway open. Seek medical advice immediately.

⚠ WARNING

Gasoline/DEF spilled in eyes may cause burns to eye tissue. Irrigate eyes with water for approximately 15 minutes. Seek medical advice immediately.

⚠ WARNING

Gasoline/DEF spilled on skin may cause burns. Wash area thoroughly with clear water. Seek medical advice immediately.

⚠ WARNING

DEF is mildly corrosive. Avoid contact with eyes, skin, and clothing. Ensure that eyewash stations and safety showers are close to the work location. Seek medical advice/recommended treatment if DEF spills into eyes.

IMPORTANT: Oxygen may be needed at scene if gasoline has been ingested or inhaled. Seek medical advice immediately.

Lockout/Tagout

Lockout/Tagout covers servicing and maintenance of machines and equipment in which the unexpected energization or start-up of the machine(s) or equipment or release of stored energy could cause injury to employees or personnel. Lockout/Tagout applies to all mechanical, hydraulic, chemical, or other energy, but does not cover electrical hazards. Subpart S of 29 CFR Part 1910 - Electrical Hazards, 29 CFR Part 1910.333 contains specific Lockout/Tagout provision for electrical hazards.

Removing and Rebuilding Digital Valve Unit

To rebuild the Digital Valve unit, proceed as follows:

Removing Digital Valve

The Digital Valve must be removed from the Manifold Assembly before it can be rebuilt.

To remove the existing Digital Valve from the Manifold Assembly, refer to *MDE-3804 Encore and Eclipse Start-up/Service Manual.*

Removing Existing Parts

To remove the existing parts, proceed as follows:

1 Prepare for any residual fuel and pressure that may be in Digital Valve or Manifold using approved absorbent materials and practices.

⚠ WARNING

Residual pressure and entrapped fuel may still be present and may spray when removing parts.

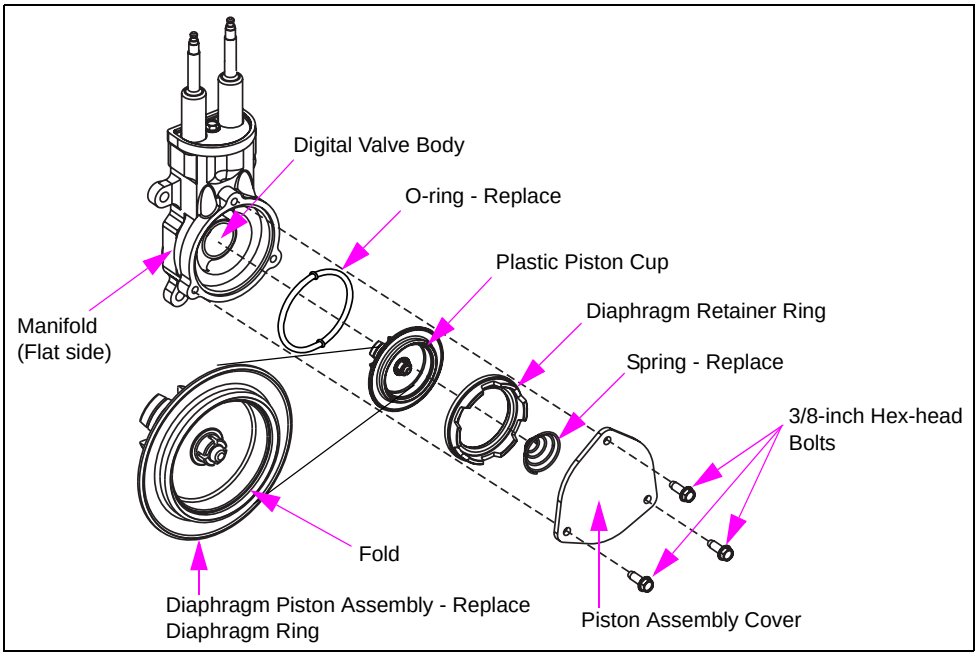
Fire and explosion could result in severe injury or death.

- Wear eye protection.
- Remove the parts slowly. Catch fuel in approved containers.
- Clean up all spills promptly.

Note: A light coating of silicone grease can be used to hold parts temporarily in position.

2 Remove the Digital Valve from the Manifold. For more information, refer to *MDE-2531 Start-up and Service Manual for The Advantage Series* or *MDE-3804 Encore and Eclipse Start-up/Service Manual*.

Figure 1: Removing Existing Parts



3 Slowly remove the three 3/8-inch hex-head bolts from the Piston Assembly Cover and remove the cover (see Figure 1). Remove and discard the large O-ring between the cover and Digital Valve Body.

Note: Observe the fold in the Diaphragm in the Digital Valve Body. Use this reference point in your observation along with installation steps to correctly position the replacement Diaphragm Piston Assembly, keeping in mind that the second Diaphragm must be installed identically.

4 Remove the Diaphragm Retainer Ring (see Figure 1).

Note: Retainer ring is not threaded, it is pressed in place. This may be done in conjunction with the removal of the Diaphragm Piston Assembly.

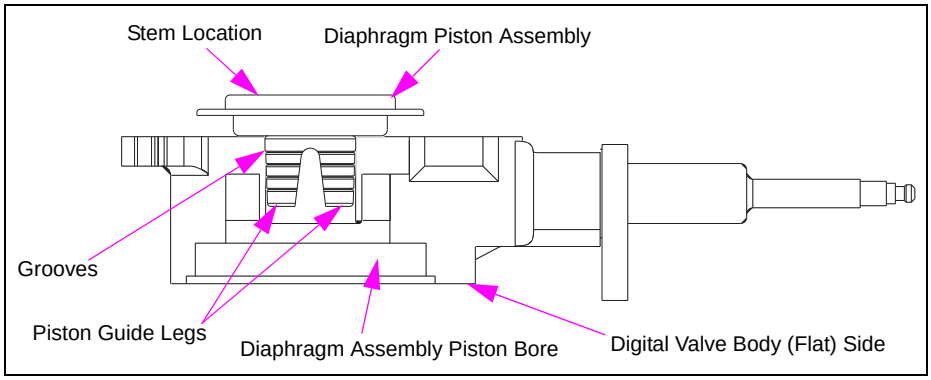
5 Remove and discard spring from center of the Diaphragm Piston Assembly.

Note: The spring is snapped onto the center Stem of the Diaphragm Piston Assembly.

6 Position the Diaphragm Piston so that you can push through the center of the discharge port using your finger on the flat side of the valve, pushing the Diaphragm Piston Assembly from the Manifold (see Figure 2). As the piston raises, remove the Diaphragm Retainer ring, grasp the Plastic Piston Cup, and carefully pull the Diaphragm Piston Assembly out of the Digital Valve Body.

If	Then
The Metal Piston legs are smooth.	The Piston Assembly is an obsolete design and must be replaced with the Piston Assembly from K94444-09 Kit.
~OR~	
The Metal Piston legs have grooves shown in Figure 2 and Figure 3 on page 9.	Remove the piston from the Diaphragm (see Figure 2).

Figure 2: Disassembling Piston



7 Place the Diaphragm Piston Assembly on the Manifold side of the Digital Valve Body as shown in Figure 2. This serves as a fixture allowing you to push the piston down and out of the Plastic Piston Cup to which it is clamped using an arbor press.

8 Press down the end of the Stem to the Metal Piston, forcing the Stem downward and out of the Plastic Piston Cup (see Figure 3 on page 9) using press. This frees up the Diaphragm for replacement.

⚠ CAUTION

Separating the Metal Piston from the Plastic Piston Cup may take considerable force and must be done with caution to prevent injury. Ensure that there is adequate clearance below the piston. This may require elevating the valve body using washers or some other similar spacing material.

9 If the Plastic Piston Cup or Metal Piston is damaged, replace the old Piston Assembly with the Piston Assembly from the K94444-09 Kit and proceed to step 1 on page 10.

10 To replace the Diaphragm, refer to "Removing Existing Parts" on page 6.

Installing New Diaphragm

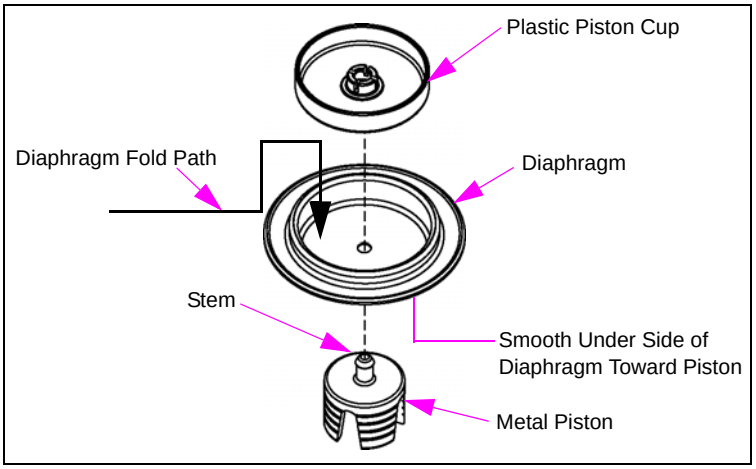
To install the new Diaphragm, proceed as follows:

1. Place the Metal Piston on a flat workstation with the piston guide legs facing down (see Figure 3).

2. Take a new Diaphragm and gently place it over the Plastic Piston Cup as shown in Figure 3. The smooth side with a small number mark must be on the outside of the cup facing the Metal Piston.

3. Set the prepared Diaphragm on top of the Metal Piston and press the saved piston guide legs onto the top of the Piston Retainer Knuckle until it snaps in place (see Figure 3).

Figure 3: Orientation of Diaphragm in Diaphragm Piston Assembly



Assembling Main Valve

Notes: 1) It is important that replacement parts and visible surfaces in the Digital Valve Body are free of contaminants.

2) If Cold Weather O-rings are required, refer to K94444-05 Kit for the correct Piston Assembly Cover and O-ring Seal.

1. Place the saved Digital Valve Body on a flat clean surface with the manifold side facing down.

2. Gently press in the Diaphragm Retainer ring (VR2-1010) into the Digital Valve Body as oriented in Figure 1 on page 7. Snap the small end of the large cone shaped Spring (VM3-0334) onto the Diaphragm Piston Assembly center Stem and press it down firmly to seat.

3. Carefully insert the Diaphragm Piston Assembly into the Digital Valve Body until Piston Assembly seats. The Metal Piston must be positioned in the Digital Valve Body so that none of the piston guide legs block the cross slot located in the main bore of the body.

4. Ensure that the Piston Assembly moves freely in the bore.

5. Insert the new O-ring Seal (V12-0292-2) into the Digital Valve Body O-ring groove. It helps to add a small amount of grease to hold the O-ring in place.

6. Position the Piston Assembly Cover over spring ensuring that the flat, machined surface faces the O-ring. Compress spring positioning the cover so that all the bolt holes are in alignment and secure with the three bolts removed earlier.
   Note: Install bolts, ensuring that they do not cross thread in the valve body.

7. Tighten the bolts evenly to avoid warping cover. Torque to 10-12 ft-lbs.

8. Clean the cover.

9. With a permanent marker, mark “Piston Assembly Installed” on the cover to indicate the installation of the kit.

Disassembling Pilot Valves

To disassemble the Pilot Valves, proceed as follows:

1. Use approved absorbent materials and exposure to fuel safety practices. Prepare for any residual fuel that may be in valve.

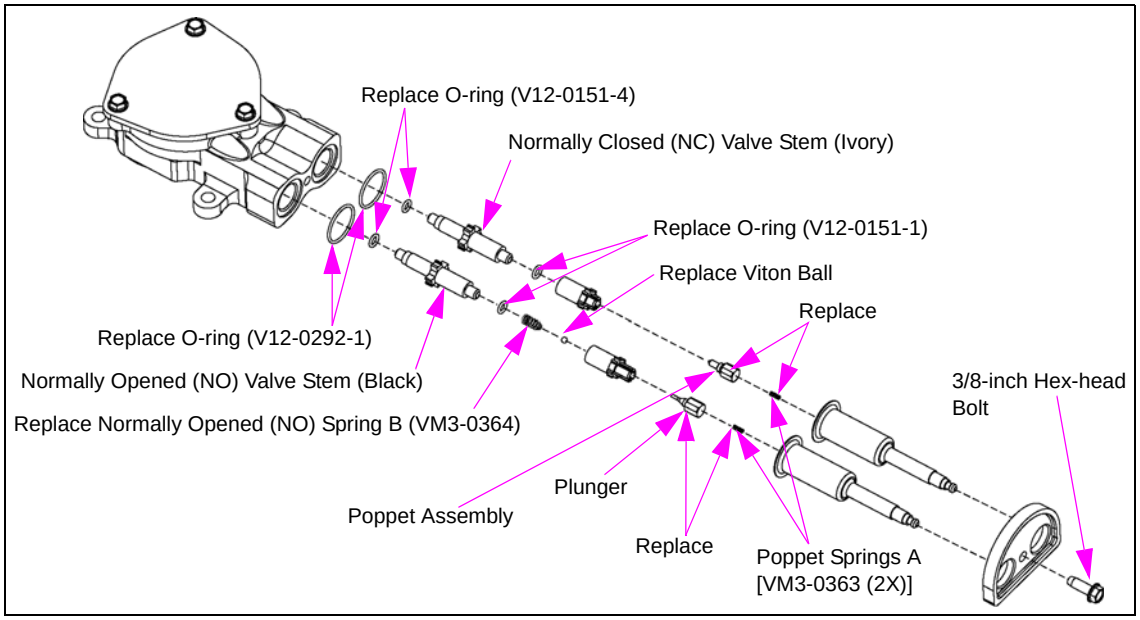
2. Slowly remove the 3/8-inch hex-head bolt from the valve body. Retain all the parts except O-rings, Viton Ball, Poppet Assembly, Plunger, and Poppet Springs A and B.

3. Ensure that you remove small O-rings at the bottom of each Normally Open (NO)/Normally Closed (NC) Valve Bore if they do not come out with each valve assembly.

4 Disassemble the Normally Closed (NC) Valve Stem and Normally Open (NO) Assembly (see Figure 4 and Figure 5 on page 12).

5 Clean the Digital Valve Body and other saved parts, if required.

Figure 4: Pilot Valve Disassembly



Note: Figure 4 shows the T20013-G1/G2 valve construction for The Advantage Series unit. M00246A001 valve construction for the Encore and Eclipse units is similar except the Normally Closed (NC) and Normally Open (NO) Pilot Valve Tube Assemblies are reversed.

Assembling Poppet Valve Stems

Note: When assembling the Pilot Valves [Normally Closed (NC) Valve and Normally Open (NO) Valve], as the valves are visually similar, exercise care to get the parts into the correct side when reassembling.

⚠ CAUTION

Exercise care to prevent contamination inside the valve Stems during reassembly or valve malfunction may occur.

1 Assemble the ivory-colored Normally Closed (NC) Valve accordingly (see Figure 4 and Figure 5 on page 12). Use light coating of silicone grease and slide each O-ring (note the different part numbers and sizes) on to the appropriate end of the Stem. Carefully slide the Normally Closed (NC) orifice down over the O-ring (V12-0151-1) until the Stem bottoms out.

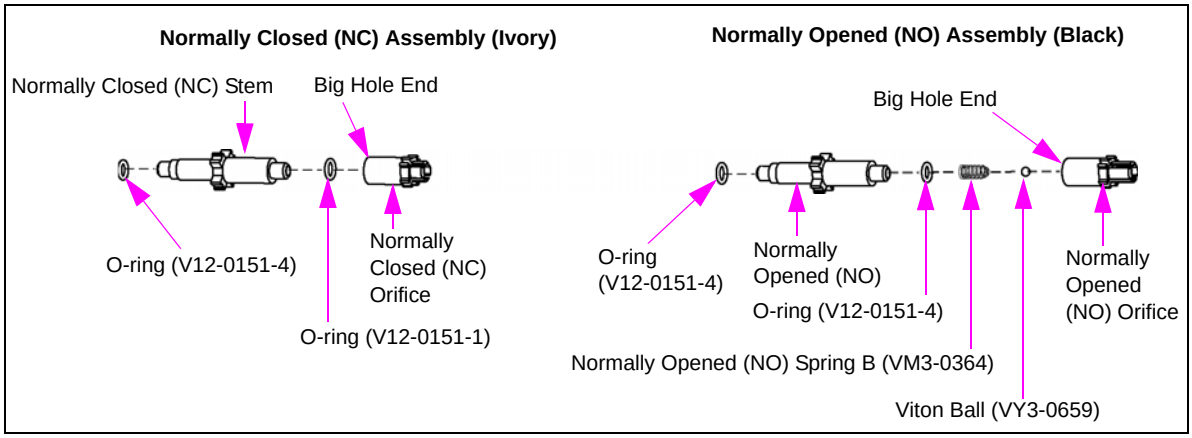
2 Assemble the black-colored Normally Open (NO) Valve accordingly (see Figure 4 and Figure 5 on page 12). Use a light coating of silicone grease on each O-ring and slide the O-rings shown in Figure 4 and Figure 5 on page 12 to each end of the Stem.
Note: They are of two different sizes.

3 Position the Stem with the big hole end pointing away from the Digital Valve Body and drop the Viton Ball into the hole.

4 Drop the spring in with the small end first (small end pressing against the ball). Carefully slide the Normally Closed (NC) Stem down into the orifice until the Stem bottoms out.

The spring forces the ball against an internal orifice, sealing the valve. The Plunger pushes the ball off the seat to open the valve until the coil is energized.

Figure 5: Valve Sub-assembly (Open and Closed)



5 Position a Pilot Valve Tube with the small end down (open end up) and drop a Poppet Spring (A) down into the tube (see Figure 6 on page 13).

There is a small bore at the bottom of the tube. The spring must be in this bore. To achieve this, you may require to shake the tube slightly until the springs falls into the hole.

6 Drop the Poppet Assembly into the tube with the pointed end up.
Note: Ensure that the Poppet falls to the bottom of the tube and sits on the Poppet Spring.

7 Carefully insert the ivory-colored Normally Closed (NC) Valve Sub-assembly into the tube orifice end first. Push it in until it bottoms out.

The Stem centering wings will be at the opening of the Pilot Valve Tube. Carefully put this assembly to one side for later assembly to the Digital Valve Body. If possible, keep in the vertical position as the parts could fall out if laid horizontally.

8 Position the second Pilot Valve Tube [Normally Opened (NO)] with the small end down (open end up) and repeat the installation of the Poppet Spring as described in step 5. Drop the Plunger into the tube with the pointed end up.
Note: Ensure that the Plunger falls to the bottom of the tube and sits on the Poppet Spring.

9 Carefully insert the black-colored Normally Opened (NO) Valve Sub-assembly into the tube orifice end first. Push it in until it bottoms out.

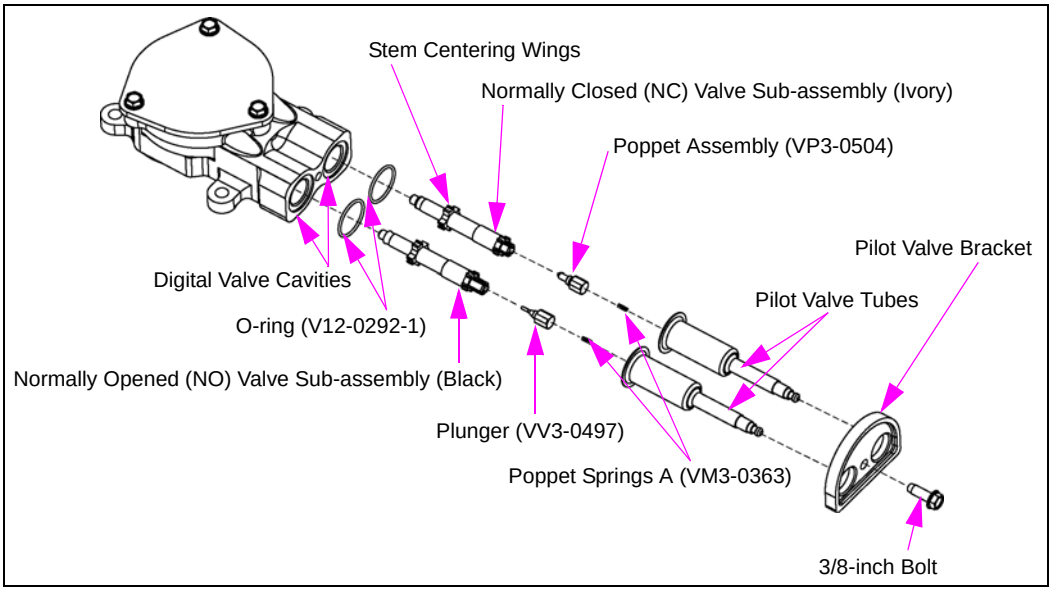
Carefully put this assembly aside for assembling later to the Digital Valve Body. If possible, keep in the vertical position as the parts could fall out if laid horizontally.

Note: The Plunger Pin must go down into the hole of the orifice and dislodge the internal sealing ball in the Normally Opened (NO) Valve Stem. The Stem centering wings will be situated at the opening of the tube providing alignment.

10 Place one new O-ring on each Pilot Valve Seal seat on the Digital Valve Body as shown in Figure 6. Hold it in place with silicone grease.

Note: Determine whether the Cold Weather O-rings are required. For the correct O-rings, Piston Assembly Cover, and O-ring Seal, refer to K94444-05 Kit.

Figure 6: T20013-G1/G2 Valve Assembly



11 Carefully insert an ivory-colored Normally Closed (NC) Valve Sub-assembly into the Pilot Valve cavity, while secure the Digital Valve vertically (see Figure 7 on page 14) for the T20013-G1/G2 Valve.

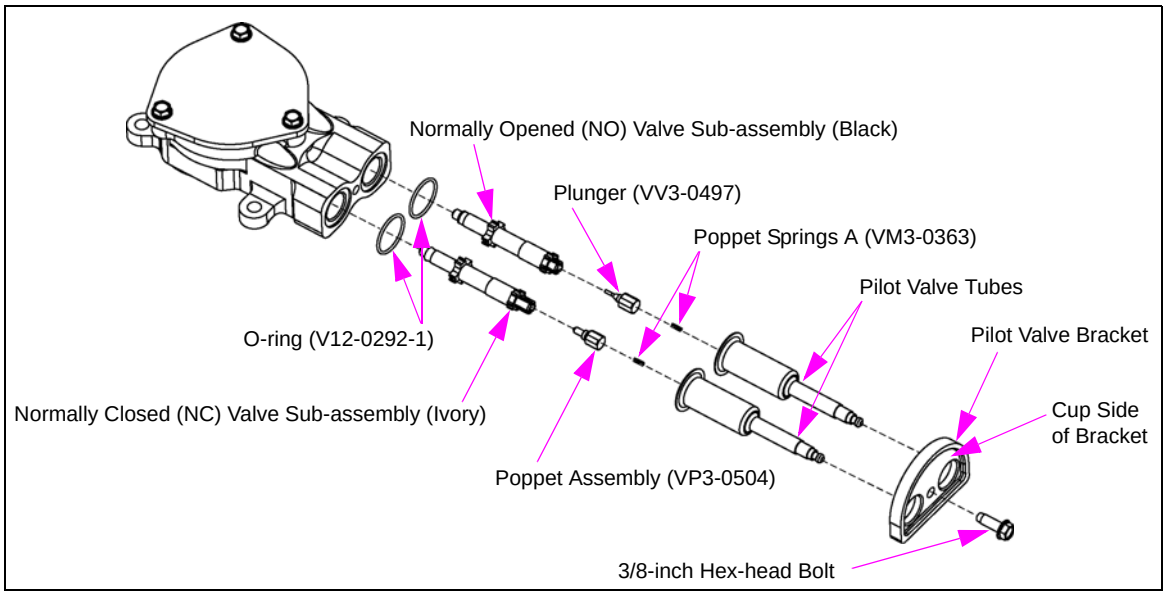
IMPORTANT INFORMATION
Observe that the positions of the ivory and black valve sub-assemblies are reversed on the M00246A001 Valve.

12 Insert the ivory-colored Valve Assembly into the Digital Valve cavity (see Figure 7 on page 14).

13 Insert the black-colored Valve Assembly into the Digital Valve cavity (see Figure 7 on page 14).

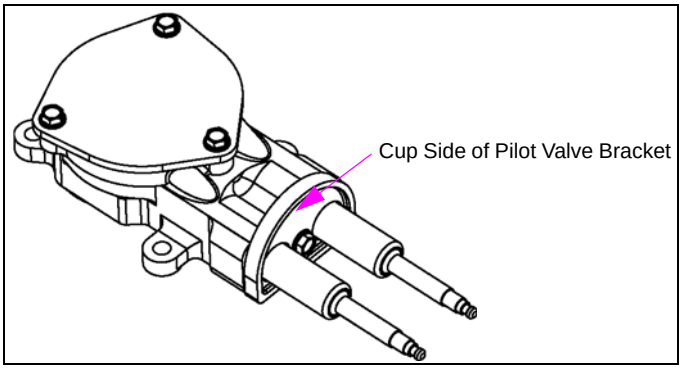
14 Push the valve until the Valve Pilot Tube Flange bottoms against the valve body and O-ring. Repeat the process with the black-colored Normally Opened (NO) Valve until it is inserted into the valve cavity (see Figure 5 on page 12 or Figure 6 on page 13).

Figure 7: M00246A001 Valve Assembly



15 Secure both Pilot Valve Tubes using Pilot Valve Bracket and bolt. The cup side of the bracket must face away from the Digital Valve Body (see Figure 8). Torque bolt to 10-12 ft-lbs.

Figure 8: Cup Side of Pilot Valve Bracket



16 To reattach the Digital Valve to the Manifold Assembly, refer to *MDE-3804 Encore and Eclipse Start-up/Service Manual*. Use K96621-01 Kit (one kit per Manifold) to reinstall Digital Valve to Manifold.

Note: The kit also contains a special gasket that is used only for Canadian applications. For more information, refer to PT-1936 Encore Illustrated Parts Manual.

17 Proceed to "Completing Installation" on page 17 when the process is completed.

Installing Lisk Digital Valve Kit (Cold Weather Kit)

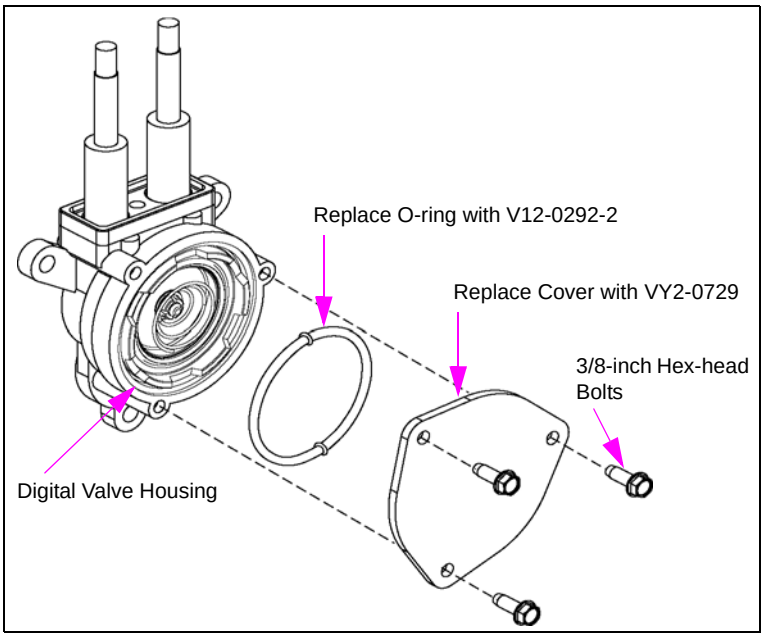
The replacement of designated O-rings and Piston Assembly Cover for the Lisk Digital Valve are described in the following steps.

The Lisk Digital Valve must be removed from the Manifold Assembly before it can be rebuilt. To remove and reinstall the Digital Valve Assembly, refer to *MDE-3804 Encore and Eclipse Start-up/Service Manual*.

Removing and Installing New Cover Plate Parts

To remove and install new Cover Plate parts, proceed as follows:

Figure 9: Cover Plate Removal and O-ring and Cover Replacement



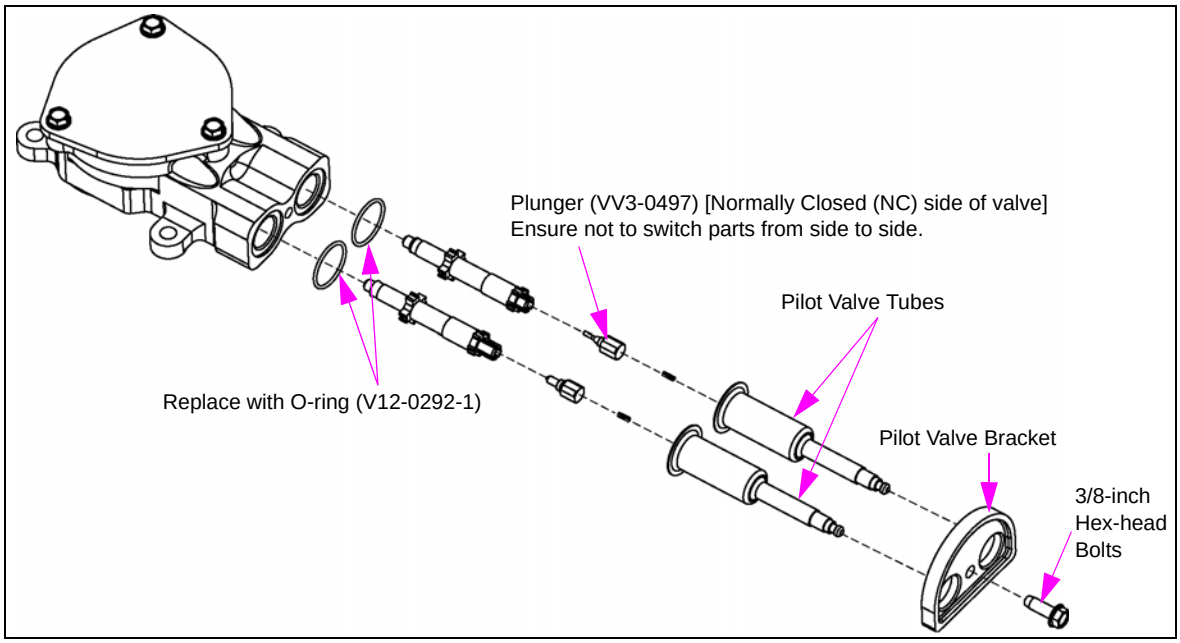
Note: Avoid introducing contamination inside the valve during service.

1. Remove the three 3/8-inch hex-head bolts from the Piston Assembly Cover (see Figure 10 on page 16), and remove the cover. Discard the cover.
2. Remove and discard the large O-ring.
3. Insert the new O-ring (V12-0292-2) into the Digital Valve Housing O-ring groove.
4. Position the new Piston Assembly Cover (VY2-0729) over the spring, ensuring that the flat, machined surface faces the O-ring. Use hand pressure to compress the spring and to position the cover onto the Digital Valve Body.
5. Loosely install the three bolts removed in step 1, ensuring that they are threaded in correctly (not cross threaded). Hand tighten evenly and then torque to 10-12 ft-lbs.

Removing and Installing Pilot Tube O-rings

To remove and install the Pilot Tube O-rings, proceed as follows:

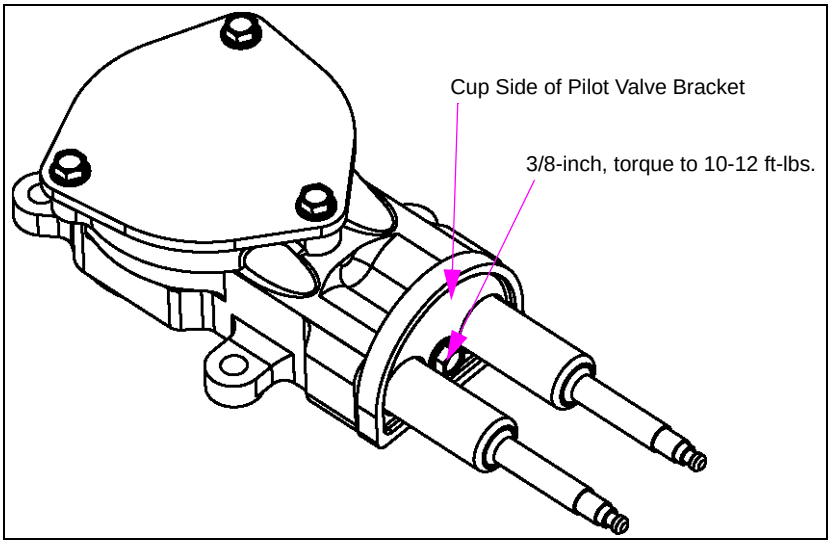
Figure 10: M00246A001 Valve Assembly - O-ring Replacement



1. Remove the three 3/8-inch hex-head bolts from the valve body (see Figure 10).
2. Remove the Pilot Valve Bracket, with the assembly held in the vertical position (Pilot Valve Tubes pointing upward).
3. Remove one of the Pilot Valve Tubes keeping the internal parts together in the order in which they were assembled.
4. Remove the old Pilot Tube O-ring from the body groove and discard.
5. Place a new O-ring (V12-0292-1) on the Pilot Tube Seal seat in the valve body (see Figure 9 on page 15 and Figure 10) using silicone grease.
6. Reinstall the internal parts and Pilot Valve Tube. Repeat steps 3 to 5 with the other Pilot Valve Tube.

7 Reinstall the Pilot Valve Bracket and bolt to secure both Pilot Valve Tubes. The cup side of the bracket must face away from the Digital Valve Body (see Figure 11). Torque bolt to 10-12 ft-lbs.

Figure 11: Installing Digital Pilot Valve Bracket



8 Reinstall the Digital Valve(s) onto the valve casting using new O-rings provided in the kit. Following table lists the required parts.

Assembly	Part Number	Quantity
T20013-G1/G2	V12-0297-1	1
	V12-0297-2	1
M00246A001	V12-0297-1	2

Note: To reinstall the Digital Valve Assembly, refer to MDE-3804 Encore and Eclipse Start-up/Service Manual.

Completing Installation

To complete the installation, proceed as follows:

1 Open the shear valve on dispensers only.

2 Restore all power to the unit. Power on the Submersible Turbine Pump (STP), if applicable. In the Distribution Box (D-Box), place the unit in normal operation.

3 Purge air, check for leaks, and proper operation. For instruction and test procedures, refer to *MDE-2531 Start-up and Service Manual for The Advantage Series*.

The rebuilding of the Digital Valve unit for Encore, Eclipse, and The Advantage Series unit is now complete.

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