Repair/Parts

MODEL MVP-150
VAPOR RECOVERY PUMP

3A6340D
EN

Designed for hydrocarbon extraction processing.

For LP-Gas Recovery

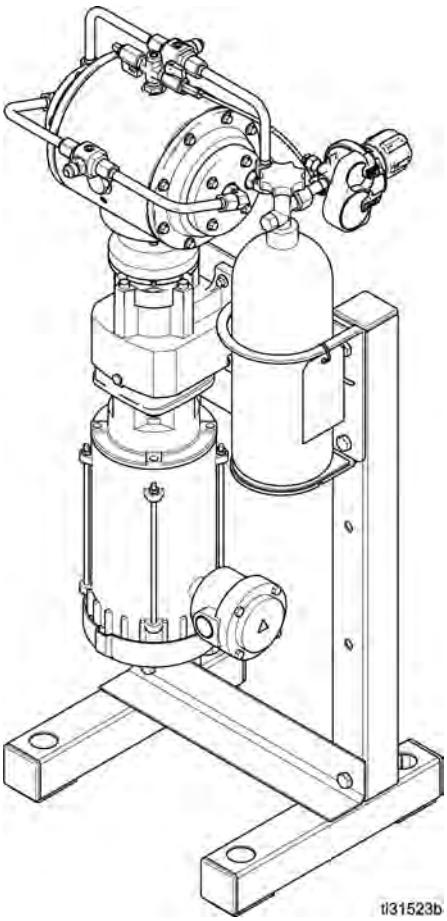
Electric-Powered

Dual-Diaphragm

Hazardous Location Motor

Stainless Steel Wetted Parts

Rated Maximum Allowable
Withstand Pressure (MAWP): LPG-375-PSI



For professional use only.

Important Safety Instructions
Read all warnings and instructions in this manual and in the pump Operation manual before using the equipment.
Save these instructions.

Contents

Models

Part Number	Model	Includes:		
		Motor	Pump	CO_2 Cylinder
25E114	MVP-150-1PH	2 HP 1-Phase	yes	no
25E113	MVP-150-3PH	2 HP 3-Phase	yes	no
25E115	MVP-150-ATEX			

Related Manuals

Manual Number	Title
3A6339	Model MVP-150 Vapor Recovery Pump, Operation

Approvals

Approvals	
Motors on pump models MVP-150-1PH, MVP-150-3PH certified to:	Class I Group C&D, Class II Group F&G, T3B
Pump model MVP-150-ATEX certified to:	II 2 G Ex d h IIB T3 Gb

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

⚠ WARNING

ELECTRIC SHOCK HAZARD

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power at main switch before disconnecting any cables and before servicing or installing equipment.
- Connect only to grounded power source.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

FIRE AND EXPLOSION HAZARD

Flammable fumes in **work area** can ignite or explode. Vapor or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Ground all equipment in the work area. See **Grounding** instructions.
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- **Stop operation immediately** if static sparking occurs or you feel a shock**.** Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

PRESSURIZED EQUIPMENT HAZARD

Vapor or solvent from the equipment, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.

- Follow the **Pressure Relief Procedure** when you stop operation and before cleaning, checking, or servicing equipment.
- Tighten all hose and pressure connections before operating the equipment.
- Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.

WARNING

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheet (SDS) from distributor or retailer.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

THERMAL EXPANSION HAZARD

Liquids subjected to heat in confined spaces,especially in hoses and pipes, can create a rapid rise in pressure due to the thermal expansion. Over-pressurization can result in equipment rupture and serious injury.

- All hoses and pipes possibly exposed to liquid LP-Gas must be fitted with proper hydrostatic relief valves to prevent over-pressurization.
- Replace hoses proactively at regular intervals based on your operating conditions.

LP-GAS HAZARD

LP-Gas can cause serious injury or death if splashed in the eyes or on skin, inhaled, or ignited.

- Read Safety Data Sheet (SDS) to know the specific hazards of the solvents you are using.
- Store hazardous solvent in approved containers, and dispose of it according to applicable guidelines.

WARNING

BURN HAZARD

Equipment surfaces can become very hot during operation. To avoid severe burns:

- Do not touch hot equipment.

PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of fumes, and burns. This protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the solvent manufacturer.

Troubleshooting

- Follow the Pressure Relief Procedure, page 8, before checking or servicing the equipment.
- Check all possible problems and causes before disassembly.

Problem	Cause	Solution
System not operating as expected.	– – –	Verify equipment pressure performance. See Verify Pressure Performance, page 7.
Pump cycles but will not prime and/or pump.	Pump head center section has no CO_2 pressure, or CO_2 pressure is too low.	Check CO_2 supply, adjust CO_2 to 150 psi.
	Check valves are worn or damaged.	Replace the check valves.
	Inlet or outlet hose is shut off.	Remove the restriction.
Motor will not run.	Motor or controller is wired improperly.	Wire per manual.
	No power to motor.	Check electrical circuit.
The motor is operating, but the pump will not cycle.	The jaw coupling between the motor and gearbox is not connected properly.	Check the motor coupling.
Equipment not generating expected outlet pressure.	Check valves are sticky or bent.	Clean or replace check valves.
	Ruptured diaphragm.	Replace diaphragms.
	Outlet pressure is less than center section charge pressure. Insufficient inlet pressure.	Increase inlet pressure to pump.
		Test the equipment for center section leaks.
Low-pressure regulator gauge is dropping.	Center section leaking.	Check radial shaft seal and diaphragms. Replace as needed.
Pump flow rate is irregular.	Inlet or outlet hose is pinched.	Inspect hoses.
	Check valves are sticky or bent.	Clean or replace check valves.
	Diaphragm ruptured.	Replace diaphragms.
CO_2 consumption is higher than expected.	CO_2 fitting is loose or hose damaged.	Inspect CO_2 fittings and hoses.
	Loose or damaged o-rings or shaft seal in center section.	Rebuild center section.
	Diaphragm ruptured.	Replace diaphragms.
Pump leaks externally from joints.	Loose diaphragm cover screws or fittings.	Check screws and fittings for tightness.

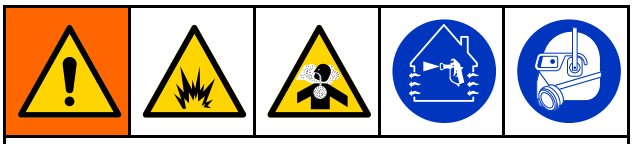
NOTE: For problems with a Variable Frequency Drive (VFD), see your VFD manual.

Verify Pressure Performance

If the system is not operating as expected, isolate the pump from the system to determine if the problem is from the pump or at another point in the system.

1. Perform the Pressure Relief Procedure, page 8 .
2. Turn off and disconnect power to the system.
3. Install a shutoff valve, pressure gauge, and pressure monitor near the pump outlet.
4. Reconnect power to the system and start the pump. See Related Manuals, page 2 for startup procedures.
5. Close the shutoff valve.
6. Monitor the pump pressure gauges.
   a. If the outlet pressure matches the center section pressure up to 100 psi (0.7 MPa, 7 bar), the pump is operating normally. The problem is at another point in the system. Identify and fix the problem.
   b. If the outlet pressure does not match the center section pressure, the problem is at the pump. See Troubleshooting, page 6 . Check all possible problems and causes before disassembly.
7. Perform the Pressure Relief Procedure, page 8 .

Repair



To avoid serious injury or death from fumes or fluids:

- Never move or lift a pump under pressure. If dropped, the center section may rupture. Always follow the Pressure Relief Procedure, page 8, before moving or lifting the pump.

Pressure Relief Procedure

Follow the Pressure Relief Procedure whenever you see this symbol.

This equipment stays pressurized until pressure is relieved manually. To help prevent serious injury from pressurized vapor, follow the Pressure Relief Procedure when you stop pumping for an extended period of time, and before you clean, check, or service the equipment.

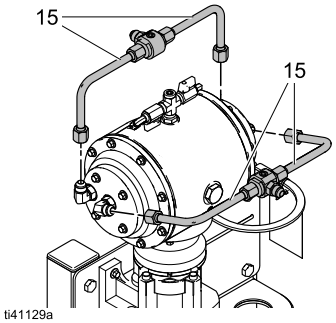
1. Disconnect power to the system.
2. Vent all LP-Gas vapor from the pump and hoses according to extractor system instructions.
3. Close the shutoff valve on the CO_2 cylinder.
4. On the CO_2 port (E), open the pump CO_2 bleed valve and CO_2 supply valve.

   NOTE: In the event of a diaphragm rupture, LP-Gas may be present in the pump center section. Always vent all LP-Gas according to extractor system instructions.
5. If performing repairs, remove the CO_2 regulator and tank from the pump prior to performing the work.

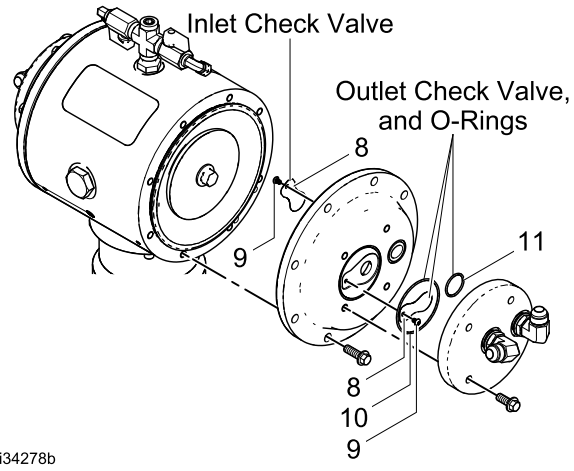
Check Valve Repair

Manifold tubing may become hot during operation. Prior to removal, ensure that tubing has cooled enough to handle safely.

1. Follow the Pressure Relief Procedure, page 8 . Disconnect power to the motor. Disconnect all hoses.
2. Remove manifold tubing (15).

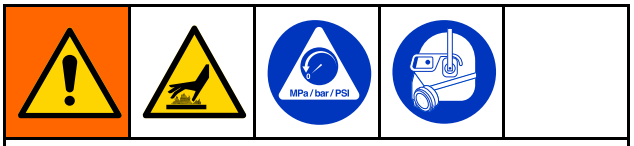


3. Use a 10 mm (M8) socket wrench to remove the 8 diaphragm cover screws (13) and the diaphragm cover (7).
4. Use a 10 mm (M8) socket wrench to remove the 4 vapor cap screws (13) and the vapor cap (12).
5. Inspect the o-rings (10, 11) between the diaphragm cover and the vapor cap for wear or damage. Replace as needed.
6. Remove the inlet check valve screws (9). Repeat for the outlet check valve.



7. Inspect the valve screws (9) for wear or damage. Replace as needed. Clean the inlet valve area and install the new check valve. Repeat for the outlet check valve.
8. Install the vapor cap (12) and loosely install the 4 screws (13).
9. Torque the vapor cap screws (13) as described in Torque Instructions, page 17.
10. Install the diaphragm cover (7) and loosely install the 8 screws (13).
11. Torque the diaphragm cover screws as described in Torque Instructions, page 17
12. Repeat steps 2–11 for other side of the pump.
13. Re-install all manifold tubing.

Diaphragm Repair

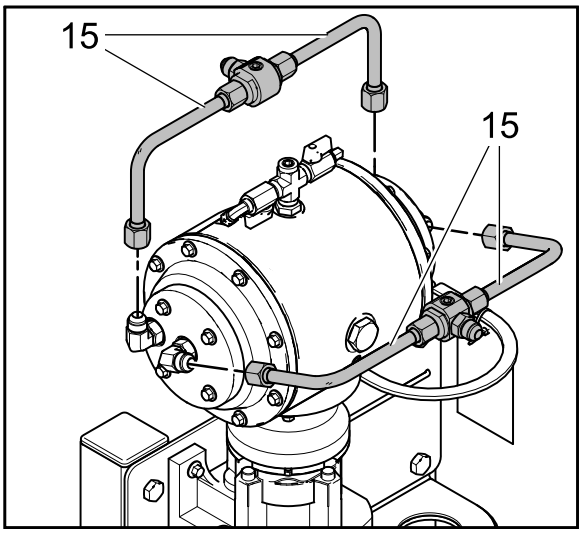


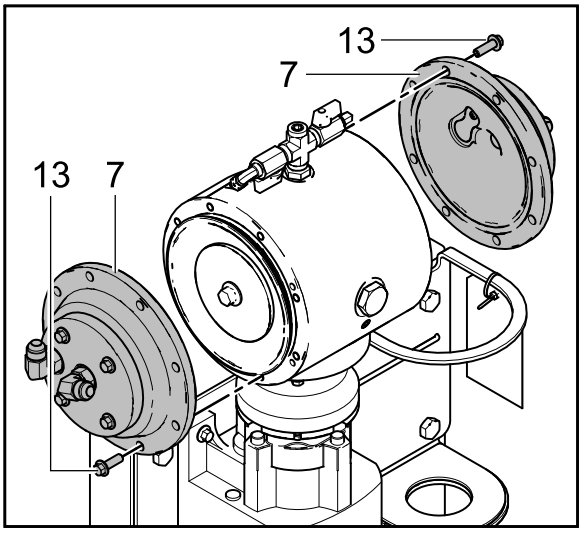
Manifold tubing may become hot during operation. Prior to removal, ensure that tubing has cooled enough to handle safely.

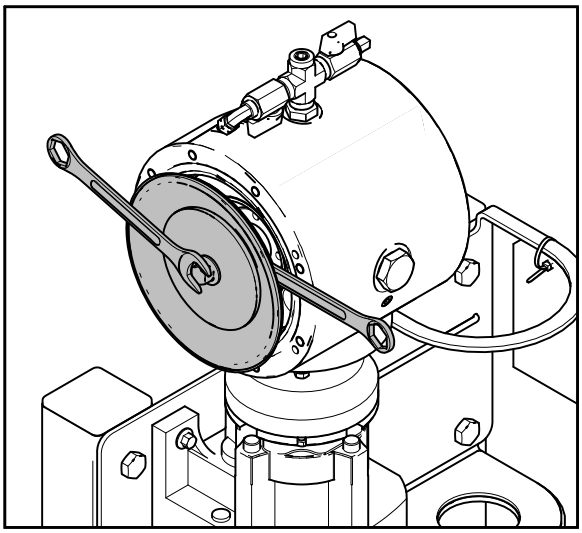
Disassemble the Diaphragms

NOTE: Diaphragm kit is available. See Parts section.

1. Follow the Pressure Relief Procedure, page 8 . Disconnect power to the motor. Disconnect all hoses.
2. Remove the manifold tubing (15).
3. Use a 10 mm socket wrench to remove the 8 screws (13) from the diaphragm covers (7), then pull the covers off of the pump.
4. To remove the diaphragms, move the piston fully to the side toward the diaphragm. If the pump is not attached to the motor, turn the shaft by hand to move the piston. If the pump is still attached to the motor, loosen the screws and remove the motor fan cover. Turn the fan by hand in one direction to rotate the shaft to shift the piston to one side.
5. Hold a 16 mm wrench on the wrench flats of the exposed piston shaft. Use another wrench (15 mm) on the shaft bolt (6) to remove the bolt. Then remove all parts of the diaphragm assembly.
6. Rotate the drive shaft to move the piston fully to the opposite side, as described in step 4. Then remove the other diaphragm assembly.
7. To continue with disassembly, see Disassemble the Center Section, page 12.



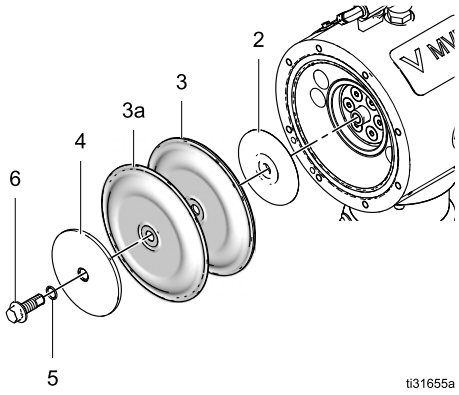




Reassemble the Diaphragms

TIP: If repairing or servicing the center section, see Center Section Repair, page 12, before replacing the diaphragms.

1. Clean all parts and inspect for wear or damage. Replace parts as needed. Be sure the center section is clean and dry.
2. Thoroughly clean or replace the piston shaft bolt (6). Install the o-ring (5).
3. Assemble the vapor side plate (4), the diaphragms (3, 3a), and the CO_2 side diaphragm plate (2) on the bolt (6) exactly as shown.
4. Clean the female threads of the piston shaft with a wire brush dipped in solvent to remove any residual thread locker. Apply thread-locking primer and allow it to dry.
5. Apply medium-strength (blue) thread locker to the threads of the bolt (6).
6. Rotate the drive shaft to move the piston fully to one side. See instructions in step 4 of Disassemble the Diaphragms, page 10.
7. On the side where the shaft extends outward the farthest from the center section, hold a 16 mm wrench on the wrench flats of the piston shaft. Screw the bolt onto the shaft and torque to 20–25 ft-lb (27–34 N•m).
8. Repeat to install the other diaphragm assembly.
9. Attach the diaphragm covers and vapor caps. Apply medium-strength (blue) thread locker to the screw threads. See Torque Instructions, page 17, to tighten.

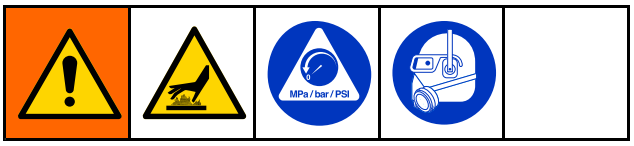


NOTICE

- After reassembly, allow the thread locker to cure for 12 hours, or according to manufacturer's instructions, prior to operating the pump. Damage to the pump will occur if the diaphragm shaft bolt loosens.
- Apply anti-seize to threads on stainless steel fittings used on the manifold tubes.

10. Attach all manifold tubing.

Center Section Repair



Disassemble the Center Section

See Drive Section.

1. Follow the Pressure Relief Procedure, page 8 . Disconnect power to the motor. Disconnect all hoses.
2. Remove the manifolds (15).
3. Remove the covers and diaphragms as directed in Disassemble the Diaphragms, page 10.
4. Remove the drive shaft:
   a. Use a 10 mm (M8) socket wrench to remove 4 screws (116). Disconnect the center section (101) and alignment housing (111) assembly from the gearbox.
   b. Use a 10 mm (M8) socket wrench to remove 4 screws (112). Pull the pump off of the alignment housing (111).

      TIP: It may be necessary to tap the pump with a rubber mallet to disengage the coupler.
   c. Disassemble alignment housing components as needed. Clean and inspect parts for wear or damage. Replace as needed.

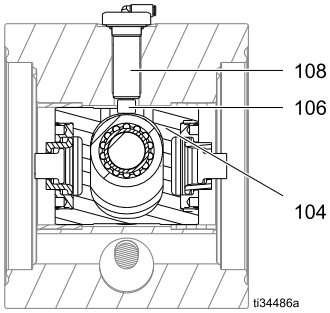
      NOTE: Only remove the radial seal (109) if replacing.
   d. Remove CO_2 inlet fittings. Use a 30 mm socket wrench to remove the bearing bolt (108) and the o-ring (107).
   e. Turn the shaft so the groove on the shaft is in line with the alignment markings on the center section.
   f. Use a 3/4–16 bolt to push out the drive shaft assembly (105). You can also use the bearing bolt (108), but remove the bearing (106) first. Be sure that the groove on the drive shaft remains aligned with the markings in the center section.

      NOTICE

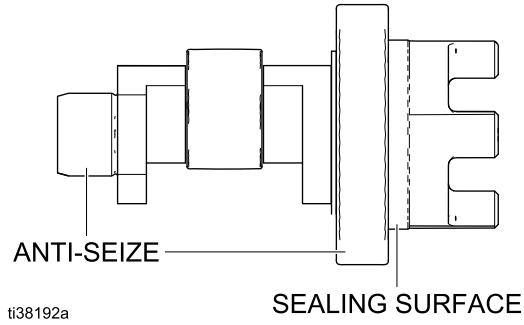
      Proper alignment is essential. Do not apply more than 10 in-lb (1.1 N•m) of torque. Excessive torque could strip the housing thread. If you encounter resistance, check alignment or contact your distributor.
   g. The shaft coupler (113) might come out with the drive shaft assembly. If not, reach into the alignment housing (111) and remove the shaft coupler (113).
5. Slide the piston assembly (102) out of the center.

Reassemble the Center Section

1. Clean and dry the center housing (101), the center of the piston (104) and the drive shaft (105).
2. Inspect the piston for excessive wear and replace if needed. Grease the piston and install in the center section with the groove in line with the alignment markings.
3. Install the o-ring (107) and the bearing bolt (108). Apply medium-strength (blue) thread locker and torque the bolt to 15–25 ft-lb (20–34 N•m). Be sure that the bearing (106) is in the groove on the piston, as shown. Be sure that the piston moves freely.

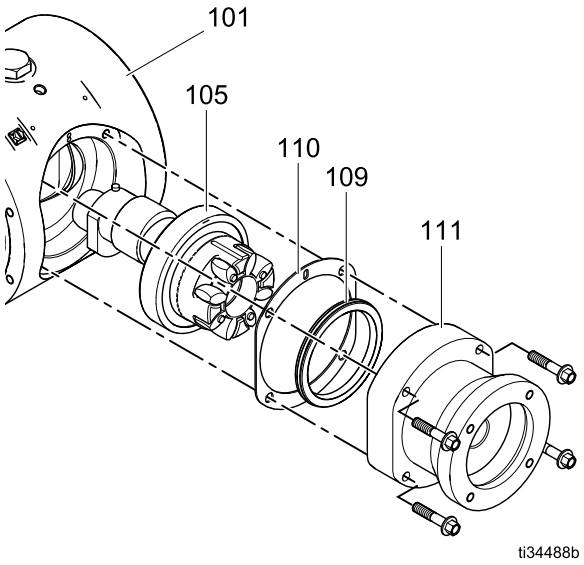


4. Install the drive shaft:
   a. If the radial seal (109) was removed, replace with the new radial seal. Clean the alignment housing groove, then press the radial seal (109) into the alignment housing (111). The lips on the radial seal must face **IN** toward the center section (101). The radial seal is tight-fitting and must be pressed evenly to prevent damage.
   b. Apply anti-seize lubricant on the mating edges of the drive shaft, as shown. Be sure the sealing surface of the drive shaft (105) is clean.



c. Center the piston in the housing and install the drive shaft assembly (105) into the center housing (101) with the groove facing up.

d. Inspect the shaft coupler (113) for wear and replace if needed. Install on the drive shaft.



e. If the gasket (110) was removed, install the gasket (110) on the center section (101).

f. Install the alignment housing (111). Press the alignment housing (111) onto the drive shaft assembly (105). Insert assembly into the center section (101).
NOTE: Use even pressure to install.

5. Be sure the gearbox coupler (115) is aligned properly. Turn by hand if needed. Connect the pump to the gearbox assembly, engaging the couplers.

6. Apply medium-strength (blue) thread locker and install the housing screws (112). Tighten about 5 turns at a time, in a crisscross pattern, to fully engage the coupler. Torque to 130–160 in-lb (15–18 N•m).

7. Install CO_2 inlet fittings.

8. See Reassemble the Diaphragms, page 11, and Check Valve Repair, page 9 .

9. Perform Center Section Leak Testing, page 15.

1 Apply medium-strength (blue) thread locker to threads.

2 Torque to 15–25 ft-lb (20–34 N•m).

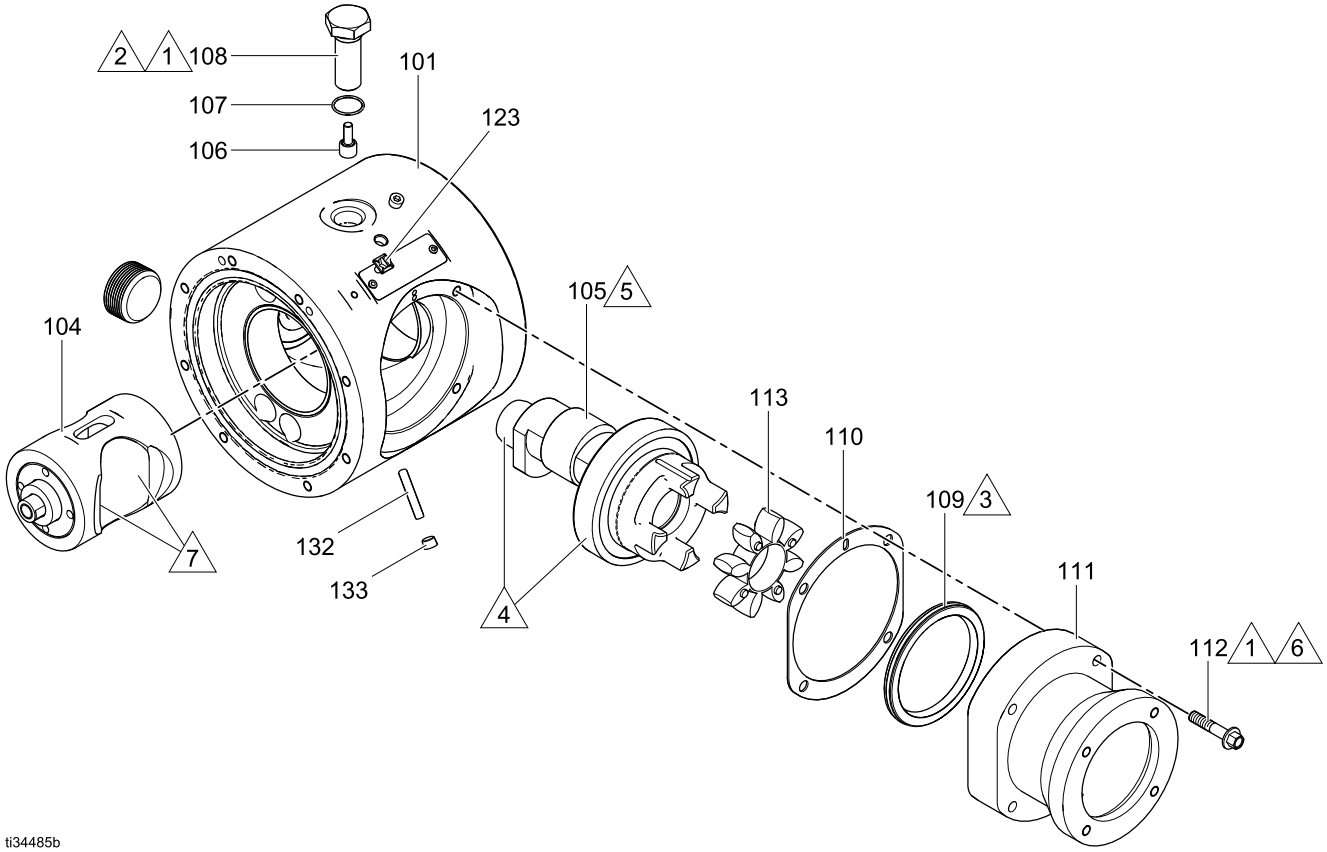
3 Lips must face **IN** toward the center.

4 Apply anti-seize lubricant liberally on the radial surfaces of the drive shaft assembly.

5 Install the drive shaft assembly with the groove facing up.

6 Tighten screws in a crisscross pattern, 5 turns at a time, to engage the coupler evenly. Torque to 130–160 in-lb (15–18 N•m).

7 Apply lubricant to inner mating surface.



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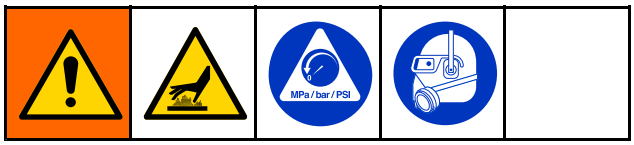
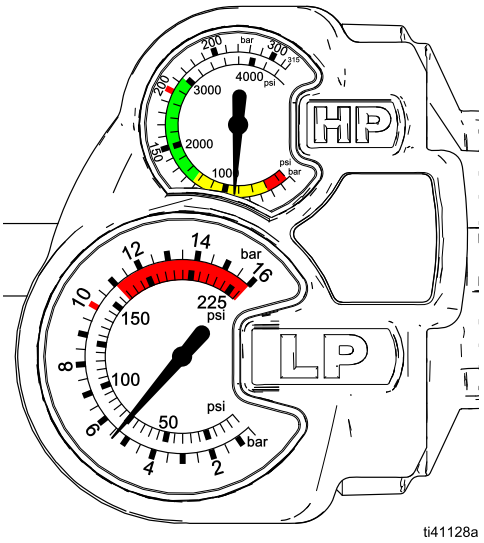
Center Section Leak Testing



1. Perform the Pressure Relief Procedure, page 8 .
2. Close the center section vent valve (22).
3. Open the shutoff valve on the CO_2 cylinder.
4. Open the CO_2 supply line valve (22).
5. Fill the equipment to 100 psi (0.70 MPa, 6.90 bar) with CO_2 and close the shutoff valve on the CO_2 cylinder.
6. Start the equipment and monitor the pressure gauges.

   NOTE: If the high-pressure (HP) gauge reading is less than 800 psi, the CO_2 supply is low. Replace the CO_2 supply.

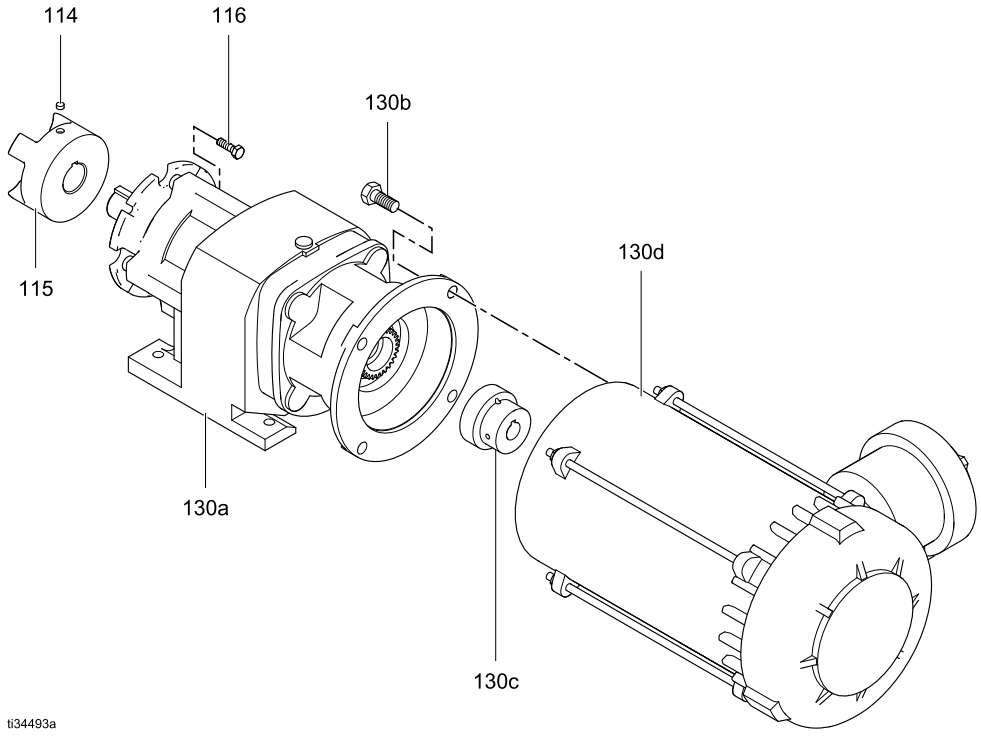
   NOTE: If the low-pressure (LP) gauge is dropping while the equipment is running, there is a leak in the center section. See Troubleshooting, page 6 .
7. Perform the Pressure Relief Procedure, page 8 .



Disconnect the Motor and Gearbox

NOTE: Normally, the motor remains connected to the gearbox. Disconnect the motor only if the motor or gearbox must be replaced.

1. Remove the pump from the stand.
2. Use a 9/16 in. socket wrench to remove 4 screws (130b).
3. Pull the motor (130d) straight off of the gearbox (130a).
4. Use a 10 mm socket wrench to remove 4 screws (116). Pull the gearbox off of the alignment housing.



Torque Instructions

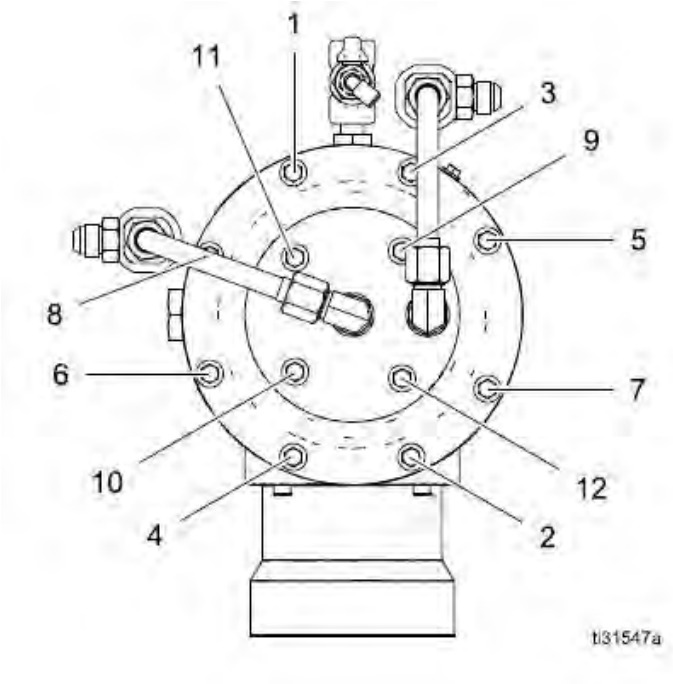
Use the following procedure to torque diaphragm cover or vapor cap fasteners.

NOTE: Cover and cap screws have a thread-locking adhesive patch applied to the threads. If this patch is excessively worn, the screws may loosen during operation. Replace screws with new ones or apply medium-strength (blue) thread locker to the threads.

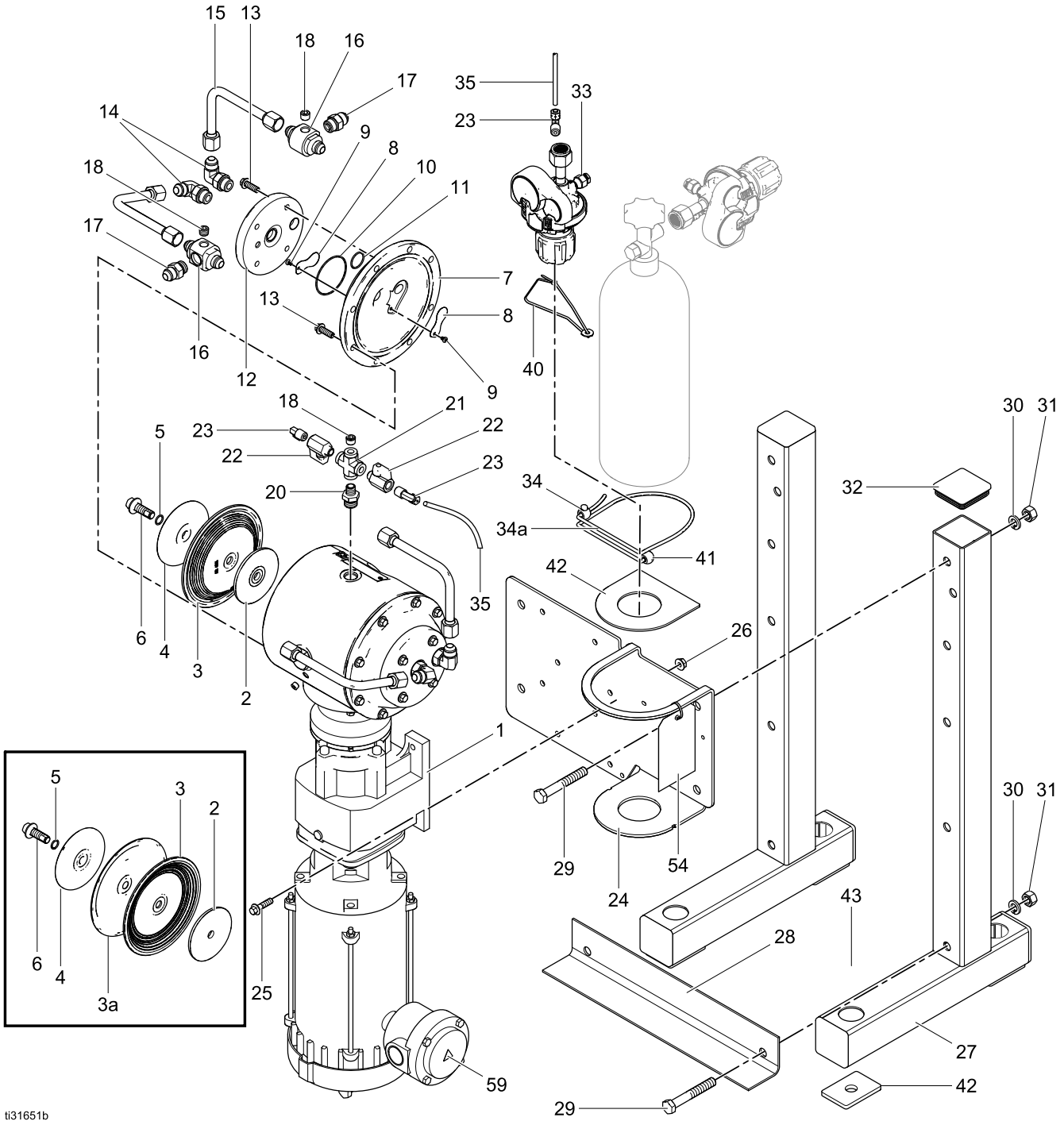
NOTE: Always completely torque covers and caps before tightening manifolds.

1. Start all screws a few turns. Then, turn down each screw until head contacts cover.
2. Turn each screw by 1/2 turn or less working in a crisscross pattern in the order shown to specified torque.

   Diaphragm covers and vapor cap screws: 90 in-lb (10.2 Nm)



Parts



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Parts/Kits Quick Reference

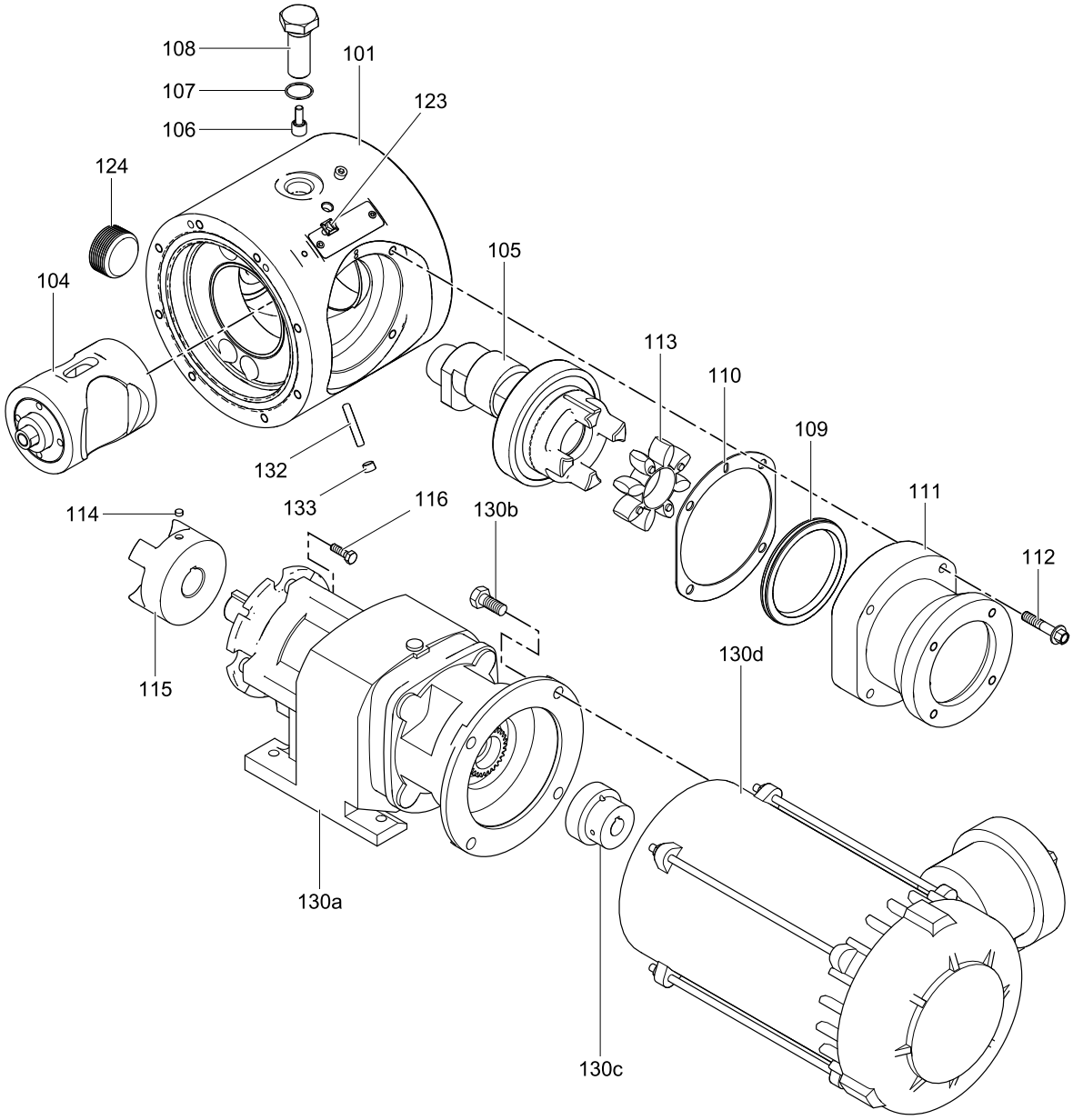
Use this table as a quick reference for kits. Go to the kit table on page 20 for a full description of kit contents.

Ref.	Kit Ref	Description	Qty.
1	— — —	MODULE, drive; *See page 18.*	1
2	— — —	PLATE, CO_2 side	2
3	207 208	DIAPHRAGM	2
3a	207	DIAPHRAGM, backer	2
4	— — —	PLATE, vapor side	2
5	207 208	O-RING, for diaphragm shaft bolt	2
6	207 208	BOLT, shaft	2
7	217	DIAPHRAGM COVER, SST	2
8	216 217	CHECK VALVE, reed	4
9	216 217	SCREW, M4 x 6	4
	223	SCREW, M4 x 6; Bulk Kit	40
10	216 217	O-RING	2
11	216 217	O-RING	2
12	217	VAPOR CAP, SST	2
13	217	SCREWS, cover, M8 x 1.25 x 25 mm	24
	224	SCREWS, cover, M8 x 1.25 x 25 mm; Bulk Kit	150
14	215	FITTING, elbow, 3/4	4
	225	FITTING, elbow, 3/4; Bulk Kit	20
15	215	TUBE, manifold	4
	226	TUBE, manifold; Bulk Kit	20
16	215	FITTING, JIC x 3/4	2
	227	FITTING, JIC x 3/4; Bulk Kit	10
17	215 222	FITTING, adapter	2
	228	FITTING, adapter; Bulk Kit	10
18	215 221	PLUG	3
	229	PLUG; Bulk Kit	15
20	221	FITTING, adapter	1
	230	FITTING, adapter; Bulk Kit	5
21	221	CROSS, pipe	1
	231	CROSS, pipe; Bulk Kit	5
22	221	VALVE, ball	2
	232	VALVE, ball; Bulk Kit	10
23	218 221	FITTING, elbow, 3/16	3
	233	FITTING, elbow, 1/4T x 1/4 NPT, Bulk Kit	15
24	220	BRACKET	1
25	214	BOLT, M8 x 1.25	4
26	214	NUT	4
27	219	FRAME, leg	2
28	219	BRACE, frame	1
29	219 220	SCREW	6
30	219 220	WASHER, lock	6
31	219 220	NUT	6
32	219	PLUG	6
33	218	REGULATOR, CO_2	1
34	— — —	CLAMP, ball, cord lock	2
34a	— — —	CORD	1
41	— — —	PAD, cylinder (not shown)	1
42	219	PAD, frame	4
43	219	CAP	4
44✂	25D054	LABEL, caution, electric shock	1
45✂	25D054	LABEL, warning, fire and explosion	1

— — — *Not sold separately.*

✂Replacement Warning labels, signs, tags, and cards are available at no cost.

Drive Section



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Ref	Kit Ref	Description	Qty
101	209	HOUSING, center section, assembly; *includes plugs (Ref. 123)*	1
104	206	PISTON, assembly	1
105	204	SHAFT, drive	1
106	234	BEARING, cam follower	1
107	234	O-RING, Size 019, Fluoroelastomer	1
108	234	BOLT, bearing	1
109	204 205	SEAL, radial	1
110	204 205	GASKET, housing	1
111	210	HOUSING, alignment	1
112	210	SCREW, hex washer head, M8 x 40 mm	4
	235	SCREW, hex washer head, M8 x 40 mm; Bulk Kit	20
113	203 236	COUPLER, shaft	1
114	236	MAGNET	1
115	236	COUPLER, gearbox	1
116	214	SCREW, cap, hex head, M6 x 20 mm	4
	237	SCREW, cap, hex head, M6 x 20 mm; Bulk Kit	20

Ref	Kit Ref	Description	Qty
122	212 213 214	SCREW, cap, hex head, 3/8 X 7/8	4
123	— — —	SCREW, ground, M5 x 0.8	1
124	— — —	PLUG, pipe, 1 1/4 NPTF, Headless	1
	243	PLUG, pipe, 1 1/4 NPTF, Headless, Bulk Kit	5
130a	214	GEARBOX	1
130b	242	SCREW, CAP, HEX Head 3/8-16	4
	238	SCREW, CAP, HEX Head 3/8-16; Bulk Kit	20
130c	241	COUPLER	1
130d	212 213	MOTOR	1
132	— — —	PIN, dowel	1
133	209	PLUG, pipe, headless	1
	240	PLUG, pipe, headless; Bulk Kit	15

— — — *Not sold separately.*

Kits and Accessories

Ref.	Kit	Description	Qty.
202	25E496	Kit, VFD, 2 HP	1
203	25E497	Kit, coupler, includes: Ref 113	1
204	25E498	Kit, shaft assembly, includes: Ref 105, 109, 110	1 ea
205	25E499	Kit, shaft seal, includes: Ref 109, 110	1 ea
206	25E500	Kit, piston, includes: Ref 104	1
207	25D038	Kit, diaphragm, 2-piece PTFE, includes: Ref 3, 3a, 5, 6	2 ea
208	25D039	Kit, diaphragm, fluoroelastomer, includes: Ref 3, 5, 6	2 ea
209	25E501	Kit, center section, includes: Ref 101	1
210	25E502	Kit, alignment housing, includes: Ref 111 Ref 112	1 4 ea
212	25E504	Kit, motor, 2 HP, 3 Phase, includes: Ref 130d	1
213	25E503	Kit, motor, 2 HP, 1 Phase, includes: Ref 130d	1
214	25E505	Kit, gear reducer, includes: Ref 130a Ref 116	1 ea 4 ea
215	25D046	Kit, manifold assembly, includes: Ref 16, 17, 18 Ref 14, 15	1 ea 2 ea
216	25D047	Kit, check valves, includes: Ref 8, 9 Ref 10, 11	4 ea 2 ea
217	25D048	Kit, fluid cover, includes: Ref 7, 10, 11, 12 Ref 8, 9 Ref 13	1 ea 2 ea 4 ea
218	25D049	Kit, CO_2 regulator, includes: Ref 23, 33	1 ea
219	25E506	Kit, stand legs, includes: Ref 28 Ref 27 Ref 42, 43 Ref 29,30,31,32	1 ea 2 ea 4 ea 6 ea
220	25E507	Kit, stand bracket, includes: Ref 24 Ref 29, 30, 31	1 ea 4 ea
221	25D052	Kit, fill/vent fittings, includes: Ref 18, 20, 21 Ref 22, 23	1 ea 2 ea
222	25D053	Kit, fitting, includes Ref 17	2
234	20B031	Kit, bearing, bolt, includes: Ref 106, 107, 108	1 ea
236	20B033	Kit, drive, coupler, includes: Ref. 113, 114, 115	1 ea

Bulk Kits

Ref.	Kit	Description	Qty.
223	20B009	Kit, reed check fastener, bulk, includes: Ref 9	40
224	20B010	Kit, cover, bolt, bulk, includes: Ref 13	150
225	20B011	Kit, fitting, elbow, bulk, includes: Ref 14	20
226	20B012	Kit, tube, manifold, bulk, includes: Ref 15	20
227	20B013	Kit, fitting, JIC, bulk, includes: Ref 16	10
228	20B014	Kit, fitting, adapter, bulk includes: Ref 17	10
229	20B015	Kit, plug, bulk, includes: Ref 18	15
230	20B016	Kit, fitting, adapter, bulk, includes: Ref 20	5
231	20B017	Kit, cross pipe, bulk, includes: Ref 21	5
232	20B018	Kit, valve ball, bulk, includes: Ref 22	10
233	20B019	Kit, fitting, elbow, bulk, includes: Ref 23	15
235	20B020	Kit, alignment housing bolt, bulk, includes: Ref. 112	20
237	20B022	Kit, bolt, bulk, includes: Ref 116	20
238	20B029	Kit, bolt, bulk, includes: Ref 130b	20
240	20B023	Kit, plug, bulk, includes: Ref 133	15
242	20B028	Kit, bolt, includes: Ref 130b	4
243	20B030	Kit, plug, bulk, includes: Ref 124	5

Technical Data

	US	Metric
Model MVP-150 Vapor Recovery Pump		
LP-Gas vapor recovery rate	6 cfm	0.17 m^3/min
Butane recovery rate	1.5 lb/min	0.68 kg/min
Butane recovery and re-condense rate	18 GPH	68.1 L/hour
Propane recovery rate	2 lb/min	0.9 kg/min
Propane recovery and re-condense rate	24 GPH	90.8 L/hour
Maximum pumping outlet pressure	150 psi	1.03 MPa, 10.3 bar
Maximum pumping inlet vacuum produced Gauge Absolute	 27 inHg 9.3 kPa, 93 Mbar	
Maximum center section CO_2 charge	150 psi	1.03 MPa, 10.3 bar
Equipment Withstand Pressure	375 psi	2.59 MPa, 25.9 bar
Maximum CO_2 consumption	<0.2 scfh	<0.006 cubic meters/hour
CO_2 inlet size	1/4 in. npt(f)	
Maximum pump speed	220 cpm	
Process Inlet and Outlet Size	3/4 in. tri-clamp or 1/2 in. JIC male	
Optional pressure gauge ports: inlet and outlet	1/4 in. npt(f)	
Weight	182.5 lb	82.8 kg
Electric Motor: Explosionproof for hazardous areas (see approvals page)		
Model MVP-150-3PH, inverter rated		
Power	2 Hp	1.5 kW
Speed	3600 rpm (60 Hz)	
Gear Ratio	16.5:1	
Voltage	3–phase 208-230/460V	
Maximum Amperage Load	5.2 A (230V) / 2.6 A (460V)	
Model MVP-150-1PH		
Power	2 Hp	1.5 kW
Speed	3600 rpm (60 Hz)	
Gear Ratio	16.5:1	
Voltage	1–phase 115/208-230V	
Maximum Amperage Load	20 A (115V) / 10 A (230V)	
Model MVP-150-ATEX		
Power	2 HP	1.5 kW
Speed	3420 rpm (60 Hz) or 2850 rpm (50 Hz)	
Gear Ratio	16.5:1	
Voltage	3–phase 240V / 3–Phase 415V	
Maximum Amperage Load	5.44 A (230V) / 3.14 A (460V)	
Noise Data		
Sound Power (measured per ISO-9614–2)	88.5 dBa	

	US	Metric
Sound Pressure [tested 3.28 ft (1 m) from equipment]	80.5 dBa	
Materials		
Process Pressure Section and Reed Valves	stainless steel	
Diaphragms	standard: PTFE optional: FKM fluoroelastomer	
Process Vapor Temperature Range	FKM: -40° to 275°F (-40° to 135°C) PTFE: +40° to 220°F (+4° to 104°C)	

Notes

MVP Standard Warranty

MVP warrants all equipment referenced in this document which is manufactured by MVP and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by MVP, MVP will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by MVP to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with MVP's written recommendations.

This warranty does not cover, and MVP shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-MVP component parts. Nor shall MVP be liable for malfunction, damage or wear caused by the incompatibility of MVP equipment with structures, accessories, equipment or materials not supplied by MVP, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by MVP.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized MVP distributor for verification of the claimed defect. If the claimed defect is verified, MVP will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

MVP's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

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In no event will MVP be liable for indirect, incidental, special or consequential damages resulting from MVP supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of MVP, or otherwise.

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MVP Information

For the latest information about MVP products, visit MasterVaporPumps.com.

Protected as patented technology.

To place an order, contact your MVP Distributor or call to identify the nearest distributor.

Toll Free: 1-888-502-3303

Email: info@MasterVaporPumps.com

All written and visual data contained in this document reflects the latest product information available at the time of publication.
MVP reserves the right to make changes at any time without notice.
Original Instructions. This manual contains English. MM 3A6340

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