Service Instructions

Pulse®, SDP and SDM Metered Dispense Valve Repair

For dispensing oil, automatic transmission fluid (ATF), gear oils, antifreeze and windshield washer solvent.

Not approved for use in explosive atmospheres or hazardous locations. For professional use only.

Metered Dispense Valve Models: (page 5)

1500 psi (10 MPa, 103 bar) Maximum Working Pressure

Repair Kits

26C287: Pulse Bezel Replacement, page 8
26C403: SDP8/18 Bezel Replacement, page 8
26C484: SDM8 and SDM18 Bezel Replacement, page 8
25D906: Swivel Seal and Filter Replacement, page 12
25D903: Trip Rod Replacement for Pulse and SDP meters, page 15
26C394: Trip Rod Replacement for SDM8 and SDM18 meters, page 17
25D904: Valve Replacement, page 19
25P665: Power Cable Replacement, page 11

Related Manuals

3A5412 - Pulse Metered Dispense Valve Installation and Operation
3A6711 - SMD8 and SDM18 Metered Dispense Valves Installation and Operation
3A6673 - SDP8 and SDP18 Preset Metered Dispense Valves Installation and Operation

Important Safety Instructions

Read all warnings and instructions in this manual and related Pulse System manuals. Save all instructions.

NOTICE

The metered dispense valve is designed to dispense petroleum-based lubricants, windshield washer solvent and antifreeze only. Dispensing brake cleaner and/or harsh solvents may damage the plastic components.
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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**

**SKIN INJECTION HAZARD**

High-pressure fluid from dispensing device, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not point dispensing device at anyone or at any part of the body.
- Do not put your hand over the fluid outlet.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow the **Pressure Relief Procedure** when you stop dispensing and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.

**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 Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer’s warnings. For complete information about your material, request Safety Data Sheets (SDSs) 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.
## Warnings

### FIRE AND EXPLOSION HAZARD

When flammable fluids are present in the work area, such as gasoline and windshield wiper fluid, be aware that flammable fumes can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well-ventilated area.
- Eliminate all ignition sources, such as cigarettes and portable electric lamps.
- Ground all equipment in the work area.
- Keep work area free of debris, including rags and spilled or open containers of solvent and gasoline.
- Do not plug or unplug power cords or turn lights on or off when flammable fumes are present.
- Use only grounded hoses.
- **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.

### PERSONAL PROTECTIVE EQUIPMENT

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

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

### CALIFORNIA PROPOSITION 65

**WARNING:** This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65warnings.ca.gov.
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*WWS = Windshield Washer Solvent
Service

Pressure Relief Procedure

Follow the Pressure Relief Procedure whenever you see this symbol.

This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop dispensing and before cleaning, checking, or servicing the equipment.

1. Turn off power supply to the pump or close fluid shut off valve (B).
2. Open nozzle.
3. Trigger the metered dispense valve into a waste container to relieve pressure.
   - Pulse meters require an authorized test dispense within the Pulse Fluid Management Software to enable the trigger.
   - SDP meters require a preset dispense activation to enable the trigger.
   - SDP meters with Pulse FC enabled require an enabled dispense card to authorize a dispense to enable the trigger.
   - SDM meter triggers are always enabled.
4. Open any bleed-type master air valves and fluid drain valves in the system.
5. Leave the drain valve open until you are ready to pressurize the system.

Battery Replacement

NOTE: The metered dispense valve does not have to be taken out of service to replace the batteries.

- Replace batteries with four AA, alkaline batteries.
- Be sure to follow the correct polarity as shown on the installation labels located on either side of the metered dispense valve when installing batteries in the battery compartment (Fig. 2).
- Do not mix different types of batteries together or old batteries with fresh ones. Always replace all 4 batteries with 4, fresh, new AA batteries.

To change the battery:

1. Remove screws (36) from the battery compartment cover (5).
2. Use a small, flat screwdriver to gently pry the cover away from the metered dispense valve housing on the bottom side of the cover, near the extension attachment as shown in Fig. 1.

3. Remove and separately recycle batteries according to all applicable regulations.
4. Install 4 new batteries. See labels on the each side of the housing and Fig. 2 for battery orientation.
Bezel Replacement

Pulse Meters use Bezel Replacement Kit 26C287
SDP Meters use Bezel Replacement Kit 26C403
SDM Meters use Bezel Replacement Kit 26C484

NOTE: The metered dispense valve does not have to be taken out of service to replace the bezel.

Disassembly

1. **Relieve pressure.** See Pressure Relief procedure, page 7.
2. Remove batteries. See **Battery Replacement**, page 7.
3. Remove 4 screws (21) and o-rings (20) and carefully lift bezel (19) off housing (12) (Fig. 4).

**NOTE:** The solenoid (Pulse and SDP Models only) and power will still be connected to the bezel via the power connections as shown in Fig. 5. Before the bezel can be completely separated from the housing, these connections must be detached.
4. Detach the red and white solenoid connection (a) (FIG. 5). Pulse and SDP Models only.

5. Detach the black and red power connection (b) (FIG. 5).

**NOTE:** Be careful not to disturb the white button board ribbon cable taped to the bezel housing if reusing the bezel (19).

**Reassembly**

1. Connect the black and red power wires (b) (FIG. 5).

**NOTE:** Be careful not to disturb the white button board ribbon cable taped to the bezel housing.

2. Connect red and white solenoid wires (a) (FIG. 5). Pulse and SDP Models only.

3. There are three wire groupings that must be carefully routed inside the housing.

   - Wrap the red and white solenoid wire (a) around the solenoid (37) (FIG. 6). Pulse and SDP Models only.

**FIG. 6**

- Route the red and black power wires (b) between the central valve boss (c) and the battery compartment (d) and under the foam retainer (FIG. 9).

**NOTE:** The foam retainer is not required for bezel models that have integral battery contact retaining bases.

**FIG. 4**

**FIG. 5**
The bezel with the integral battery contact retaining bosses do not require a foam retainer (Fig. 7).

The bezel without the integral battery contact retaining bosses requires a foam retainer (Fig. 8).

**Fig. 7**

The bezel without the integral battery contact retaining bosses requires a foam retainer (Fig. 8).

**Fig. 8**

- Route black and white wire (f) between the central valve boss (c) and gear cover screws (e) (Fig. 10).

**NOTE:** This wire runs between the two battery compartments.

**Fig. 9**

**Fig. 10**

Fig. 11 shows the inside of the housing with all wires routed correctly.
4. Take care that the wires will not be pinched between the bezel (19) and housing (12) and between the green printed circuit board and the gear cover when securing the bezel to the housing.

5. Verify o-ring (20) is in place on housing (12). Install bezel (19) to housing using o-rings (20) and 4 screws (21). Tighten screws securely.

6. Install batteries and battery cover. See Battery Replacement, page 7.

7. Recalibrate the metered dispense valve. See Calibrate the Metered Dispense Valve instructions provided in the appropriate Metered Dispense Valve Installation and Operation manual.

8. Pulse Pro meters must be registered and configured per instructions found in Pulse™ Metered Dispense Valve manual.

SDP meters with Pulse FC enabled must be configured per instructions found in SDP8/SDP18 Preset Metered Dispense Valve, Pulse FC Enabled manual.

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### Power Cable Replacement

1. Remove screws (36) and battery cover (5).

2. Remove screws (21), o-rings (20) and bezel (19).

3. Remove Foam (39) and adhesive. and discard.

4. Remove the Power Cable (38).

5. Install the new Power Cable (38).
   - Cord is to the left when holding the metered valve in a normal dispense position (Fig. 11).
   - The black battery contacts (g) are installed so that the springs (h) are located at the top of the installed contacts (Fig. 12).

6. Orient the wires following Reassembly, Step 3 on page 9.
   - Install new Foam (38) retainer. This holds the power cable in place. The foam is shown in the installed position (Fig. 13).

**NOTE:** Foam retainer is not required for bezel models that have integral battery contact retaining bases, see Fig. 7.
7. Reinstall the bezel following Reassembly steps 4 - 8, page 11.

Swivel Seal and Strainer Replacement

Use Swivel Seal and Filter Kit 25D906

1. **Relieve pressure.** See Pressure Relief procedure, page 7.

2. Slide the swivel boot (a) back, over the hose, to access the swivel fitting (6) (Fig. 14). Using two wrenches working in opposite directions, disconnect swivel fitting (6) from hose fitting (b) (Fig. 14).

3. Use a wrench to loosen and remove swivel fitting (6) from metered dispense valve (Fig. 15).

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**FIG. 13**

**FIG. 14**

**FIG. 15**
4. Use a pick to remove o-ring (10) (Fig. 16) from inlet.

5. Remove mesh strainer (4) from inlet (Fig. 17).

6. Install new mesh strainer (4) and o-ring (10) in the inlet (Fig. 18).

7. Reinstall swivel fitting (6) in inlet. Torque fitting to 20-25 ft.-lb (12-34 N•m).

8. Apply thread sealant to the male threads of the hose fitting. Thread the hose fitting (b) into the metered dispense valve swivel (6). Use two wrenches working in opposite directions, to tighten securely (Fig. 19).

**NOTE:** Allow sufficient time for the sealant cure to according to the manufacturer’s recommendations before circulating fluid through the system.
Trip Rod Replacement or Valve Replacement

Disassembly

Disassembly Steps 1 - 6 are required when replacing the trip rod or replacing the valve. After completing Step 6, refer to the specific repair procedure for the part(s) you are replacing:

Trip Rod Replacement - Page 15
Valve Replacement - Page 19

1. Relieve pressure. See Pressure Relief procedure, page 7.

2. Slide the swivel boot (a) back, over the hose, to access the swivel fitting (6) (Fig. 20). Using two wrenches working in opposite directions, disconnect swivel fitting (6) from hose fitting.

3. Remove screws (17 and 18) and trigger guard cover (16) (Fig. 21).

4. Remove clip (15a) as shown in Fig. 22.
5. Use a pick to push pin (15b) out (Fig. 23).

![Fig. 23](image1)

6. Remove trigger assembly (15) from the housing (Fig. 24).

![Fig. 24](image2)

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**Pulse and SDP Trip Rod Replacement**

*Pulse and SDP Models use Trip Rod Repair Kit 25D903*

1. Follow Disassembly instructions, Steps 1 - 6, beginning on page 14.

2. Remove the batteries and turn metered dispense valve over.

3. Remove 4 screws (21) and o-rings (20) and carefully lift bezel (19) off housing (12) (Fig. 25).

**NOTE:** The solenoid and power will still be connected to the bezel via the power connections as shown in Fig. 25. Before the bezel can be completely separated from the housing, these connections must be detached.

4. Disconnect the red and white solenoid connection (a) (Fig. 26).
5. Disconnect the black and red power connection (b) (Fig. 26).

**NOTE:** Be careful not to disturb the white button board ribbon cable taped to the bezel housing if reusing the bezel (19).

6. Loosen and remove solenoid (37) (Fig. 27). The trip rod assembly (27) is located below the solenoid.

7. Remove trip rod assembly (27) from housing (Fig. 29).

**NOTE:** Be careful when removing the trip rod assembly (Fig. 28). Cover the balls with your fingers or a rag to prevent them from falling out.

8. Use a pick to remove seal (28) from the bottom of the trip rod hole (a) (Fig. 29).
NOTE: Always use all the new parts provided in the kit. Do not reuse the old parts.

9. Insert balls (29) in trip rod (27) (Fig. 28).
10. Slide spring (27a) over trip rod (27) (Fig. 28).
11. Install seal (28) onto trip rod (27) See Fig. 30.

**NOTE:** The lipped side of the seal (28) should face down, away from the end of the trip rod that holds the balls.

12. Lubricate the trip rod above the seal, by applying one drop of oil to the rod.
13. Install trip rod assembly (27) into the trip rod hole (a) (Fig. 29).

14. Reinstall and firmly hand tighten the solenoid (37) (Fig. 31).

15. To complete the metered dispense valve reassembly, see Reassembly instructions page 20.

**SDM Trip Rod Replacement**

*SDM Models use Trip Rod Repair Kit 26C394*

1. Follow Disassembly instructions, Steps 1 - 6, beginning on page 14.
2. Remove the batteries and turn metered dispense valve over.
3. Remove 4 screws (21) and o-rings (20) and carefully lift bezel (19) off housing (12) (Fig. 32).

**NOTE:** The power will still be connected to the bezel as shown in Fig. 32. Before the bezel can be completely separated from the housing, this connection must be detached.
4. Disconnect the black and red power connection (a) (Fig. 33).

**NOTE:** Be careful not to disturb the white button board ribbon cable taped to the bezel housing if reusing the bezel (19).

5. Remove trip rod (27) from housing (Fig. 34).

6. Use a pick to remove seal (28) from the bottom of the trip rod hole (a) (Fig. 34).

7. Install seal (28) onto trip rod (27) See Fig. 35.

**NOTE:** The lipped side of the seal (28) should face down, away from the end of the trip rod that holds the balls.
8. Install trip rod assembly (27) into the trip rod hole (a) (FIG. 29).

9. To complete the metered dispense valve reassembly, see Reassembly instructions page 20.

Valve Replacement

When replacing the entire Valve assembly, use Valve Replacement Kit 25D904.

1. Follow Disassembly instructions, Steps 1 - 6, beginning on page 14.

2. Use a socket wrench to remove valve assembly (14) from housing (Fig. 36).

Valve Replacement 25D904

a. Apply a thin film of oil on each o-ring.

b. Install new valve assembly (14) (Kit 25D904) in housing (Fig. 37). Torque to 20 to 30 ft. lb (27.12 to 40.67 N·m).
Reassembly


2. Install trigger assembly (15) (Fig. 38). Push pin (15b) through holes in trigger (15) and trip rod assembly (27).

3. Install clip (15a) as shown in Fig. 39.

**NOTE:** When correctly installed, the clip is seated in the groove in the pin (15b).
4. Install trigger guard cover (16) using screws (17 and 18) (Fig. 40).

5. If the metered dispense valve was taken out of service (disconnected from the supply hose), apply thread sealant to the male threads of the hose fitting. Thread the hose fitting (b) into the metered dispense valve swivel (6). Use two wrenches to tighten securely (Fig. 41).

NOTE: Allow sufficient time for the sealant cure to according to the manufacturer’s recommendations before circulating fluid through the system.
Parts

Pulse and SDP Models

SDM Models

FIG. 42
### Parts

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<tr>
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<th>Description</th>
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<td>2</td>
<td>23</td>
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<td>PACKING, square ring</td>
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<td>1/2 - 14 BSPT</td>
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### Related Kits

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<td>26C484</td>
<td>BEZEL, electrical, SDM Models</td>
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<td>KIT, Swivel Filter, includes 4 and 10</td>
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</table>
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Original instructions. This manual contains English. MM 3A5413

Graco Headquarters: Minneapolis
International Offices: Belgium, China, Japan, Korea

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Revision October 2020