

CSP Valve

3A3995L

EN

For the progressive delivery of mineral oil and grease for lubrication. For professional use only.

5076 psi (35 MPa, 350 bar) Maximum Operating Pressure

See page 3 for model information, including maximum working pressure and approvals.



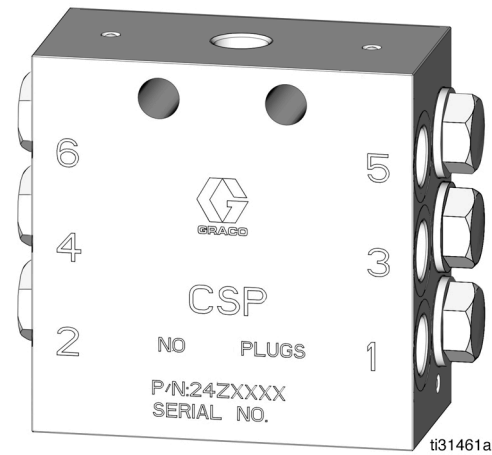
Important Safety Instructions

Read all warnings and instructions in this manual before using the equipment. Save all instructions.

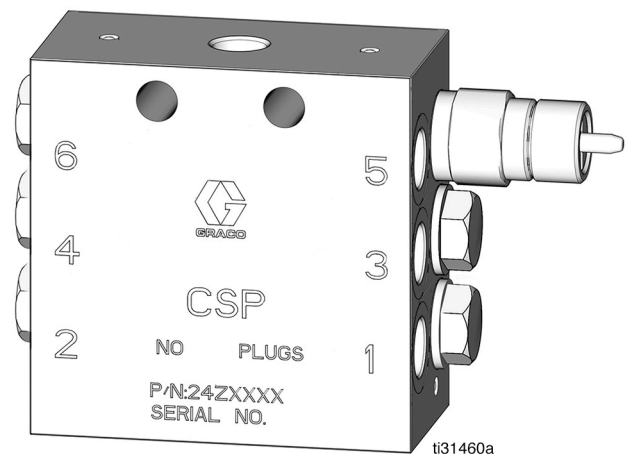
Related Manuals

Manual in English	Description
3A3159	Field Attachable Hose Fittings

Without Indicator Pin



With Indicator Pin



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Models*




*Lubricant output for these models: 0.2 cc per outlet and per stroke

Model	Series	Inlet	No. of Outlets	Indicator Included
24Z477	B	1/8 in. bspp	6	
24Z478	B	1/8 in. bspp	8	
24Z479	B	1/8 in. bspp	10	
24Z480	B	1/8 in. bspp	12	
24Z481	B	1/8 in. bspp	14	
24Z482	B	1/8 in. bspp	16	
24Z483	B	1/8 in. bspp	18	
24Z484	B	1/8 in. bspp	20	
24Z485	B	1/8 in. bspp	22	
24Z486	B	1/8 in. npt	6	
24Z487	B	1/8 in. npt	8	
24Z488	B	1/8 in. npt	10	
24Z489	B	1/8 in. npt	12	
24Z490	B	1/8 in. npt	14	
24Z491	B	1/8 in. npt	16	
24Z492	B	1/8 in. npt	18	
24Z493	B	1/8 in. npt	20	
24Z494	B	1/8 in. npt	22	
24Z495	B	1/8 in. bspp	6	✓
24Z496	B	1/8 in. bspp	8	✓
24Z497	B	1/8 in. bspp	10	✓
24Z498	B	1/8 in. bspp	12	✓
24Z499	B	1/8 in. bspp	14	✓
24Z500	B	1/8 in. bspp	16	✓
24Z501	B	1/8 in. bspp	18	✓
24Z502	B	1/8 in. bspp	20	✓
24Z503	B	1/8 in. bspp	22	✓
24Z504	B	1/8 in. npt	6	✓
24Z505	B	1/8 in. npt	8	✓
24Z506	B	1/8 in. npt	10	✓
24Z507	B	1/8 in. npt	12	✓
24Z508	B	1/8 in. npt	14	✓
24Z509	B	1/8 in. npt	16	✓
24Z510	B	1/8 in. npt	18	✓
24Z511	B	1/8 in. npt	20	✓
24Z512	B	1/8 in. npt	22	✓

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

	<p>SKIN INJECTION HAZARD</p> <p>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.</p> <ul style="list-style-type: none"> • 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.
	<p>EQUIPMENT MISUSE HAZARD</p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • 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.
	<p>PERSONAL PROTECTIVE EQUIPMENT</p> <p>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:</p> <ul style="list-style-type: none"> • Protective eyewear, and hearing protection. • Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Installation

Setup

The CSP valve is shipped ready to install in your system. It has been factory-tested and should not require any additional modification.

To install the CSP valve:

Select an appropriate mounting location for the CSP valve and mounting bracket (if required).

When mounting the CSP valve:

- the outlets must be in an easily accessible location to aid with troubleshooting in case the system is blocked.
- the indicator pins must be visible.

Output Combination

The output volume of a CSP valve outlet can be increased by installation of a doubling plug (17L651) into an adjacent outlet. The doubling plug causes the lubrication flow/output to be diverted to the next outlet away from the inlet port. When one or more outlets are plugged, the output is a multiple of the standard output.

For example:

One outlet provides 0.012 cu. in. (0.2 cc) of lubrication. Installation of one (1) doubling plug increases the combined lubrication total to 0.024 cu in. (0.4 cc) from the outlet below the doubling plug.

Installation of two (2) doubling plugs in adjacent outlets increases the combined lubrication total to 0.036 cu. in. (0.6 cc) from the outlet below the second doubling plug.

NOTE: Do not close or plug Outlets 1 or 2.

Outlet Fitting Installation

Refer to FIG. 1.

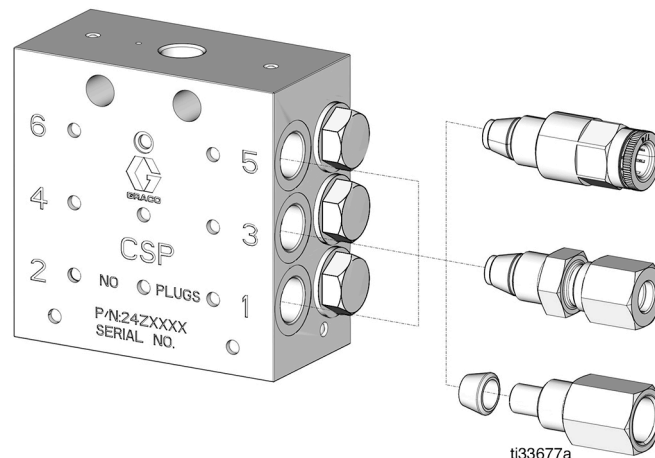


FIG. 1

NOTE:

- Always use Graco provided block outlet fittings with clamping ring in block outlet. Any fittings without a clamping ring will cause the lubrication system to fail.
- See CSP Divider Block Outlet Fittings, page 15, for a complete list of available outlet fittings.

System Monitoring

In a series progressive system, the primary and secondary CSP valves can be connected with high pressure hoses so every outlet is linked together.

If one plunger in one of the CSP valves is not working, lubricant is no longer supplied to any of the outlets.

If one of the secondary CSP valves is blocked, then the primary CSP valve is blocked and the entire system installed downstream from the pump stops working.

A cycle indicator makes it possible to monitor the operation of the entire system.

Cycle Indicator

A CSP valve can be equipped with a cycle indicator pin. The cycle indicator is connected to the plunger and moves back and forth during plunger movement and as lubricant is distributed.

NOTE: A micro limit switch/proximity switch/sensor can be installed to the cycle indicator to monitor the system electronically.

Electric System Monitoring

A system can be set up to use an electronic controller or to use a pump with a built in controller. A micro-limit/proximity switch/sensor can be installed to the cycle indicator on the CSP block and connected to the electronic controller. Together they control the pump operating time by counting cycles until the preset number of cycles has occurred.

The system can be set up to indicate a fault if the preset run time expires before the preset number of cycles are counted.

Proximity Switch Kits

NOTE: Available only for CSP valves with an indicator pin.

- 26C822 Switch, PNP, 9.5 in. (24 cm) Cable with M12 connector
- 26C823 Switch, PNP, 16.5 ft (5 m) Cable with flying leads

To install the proximity switch kit in the system, select the correct adapter from the package. Each package contains two types of adapters. The cylindrical adapter fits with the series A CSP valve (FIG. 2), and the rectangular adapter fits with the series B CSP valve (FIG. 3).

NOTE: Use of the wrong adapter will cause the system to fail.

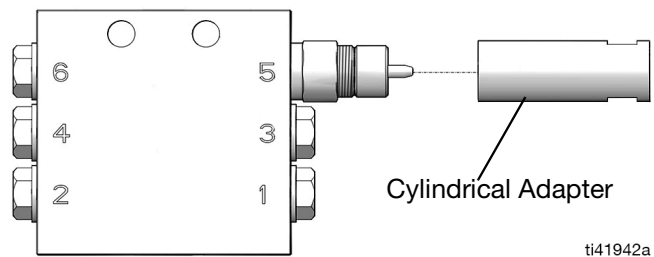


FIG. 2: Series A CSP Valve

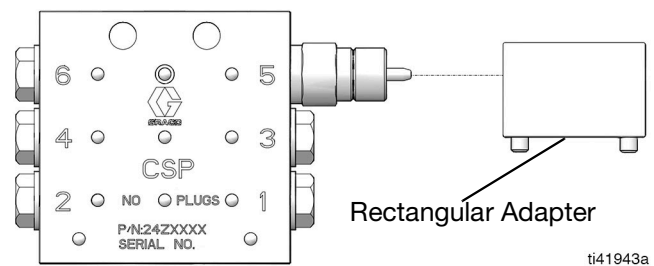


FIG. 3: Series B CSP Valve

When using the cylindrical adapter (FIG. 4):

1. Apply user supplied thread adhesive to the threads.
2. Thread the proximity switch onto the adapter, and torque to within 22 to 26 in-lbs (2.5 to 3 N•m) (FIG. 4).

NOTE: Over-torquing causes switch failure.

When using the rectangular adapter (FIG. 5):

1. Slide the switch into the adapter
2. Tighten the set screw to within 5 to 7 in-lbs (.6 to .8 N•m).

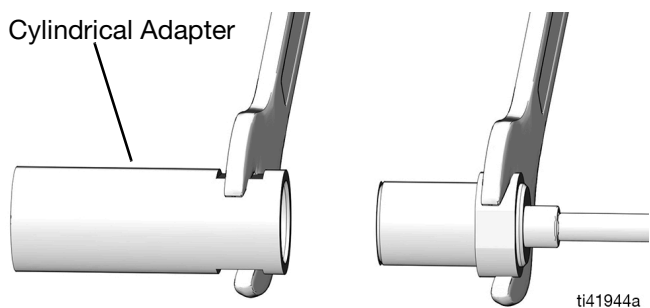


FIG. 4: Series A CSP Valve

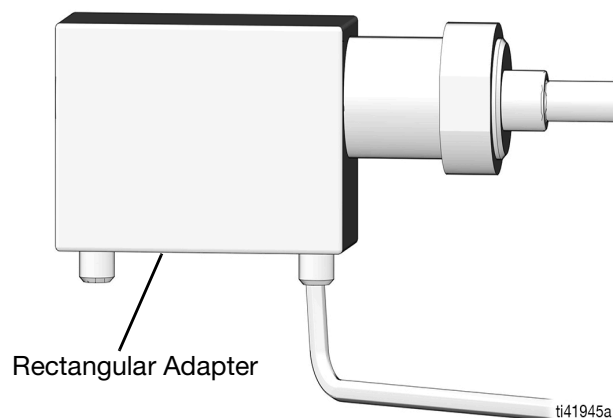


FIG. 5: Series B CSP Valve

3. Mount the proximity switch assembly to the CSP valve.
 - For Series A CSP Valves: torque to within 25 to 30 in-lbs (2.8 to 3.4 N•m) (FIG. 6).
 - For Series B CSP Valves: use a user supplied 5/64 in. (2 mm) hex key to torque the set screw to within 5 to 7 in-lbs (.6 to .8 N•m) (FIG. 7).

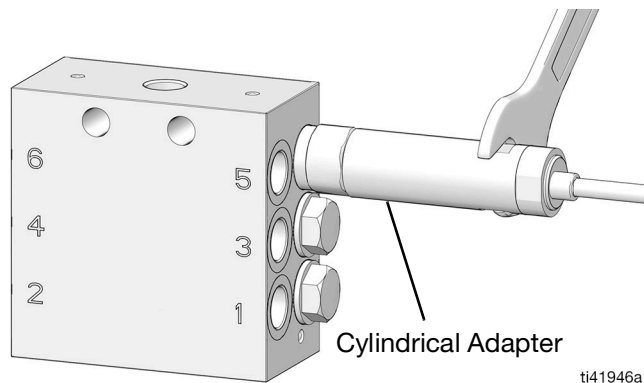


FIG. 6: Series A CSP Valve

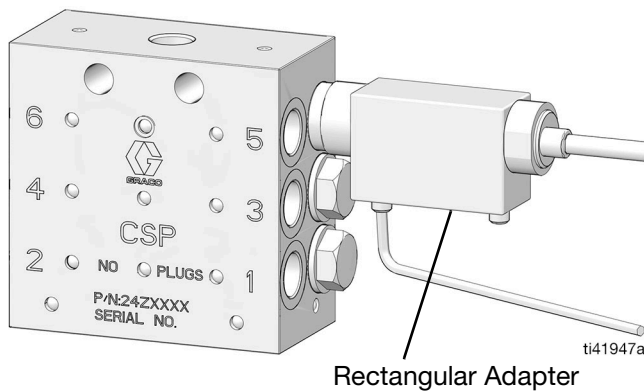


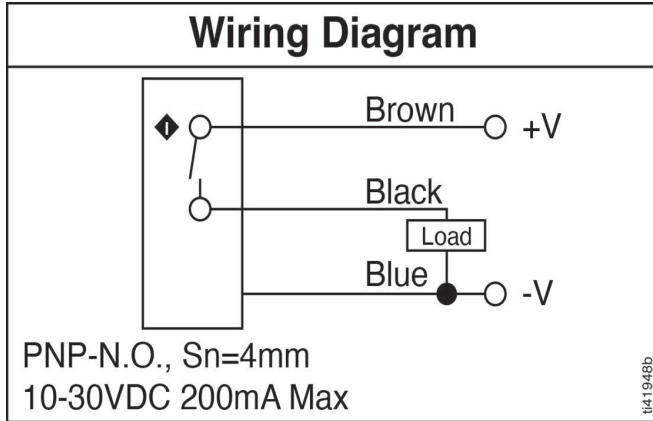
FIG. 7: Series B CSP Valve

Wiring Instructions

NOTICE

The electrical ratings for the system must not be exceeded. Overloading the switch can cause it to fail on the first cycle.

26C823 Flying Lead



26C822 M12 Connector Pin Out

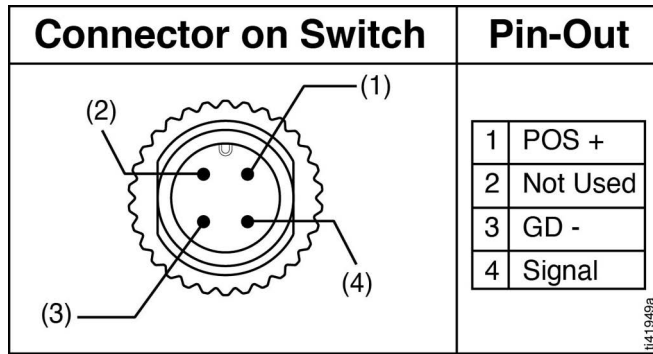





FIG. 8

Operation

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.

Loosen inlet connection to allow lubricant to bleed from fitting and relieve pressure in block (Fig. 9).

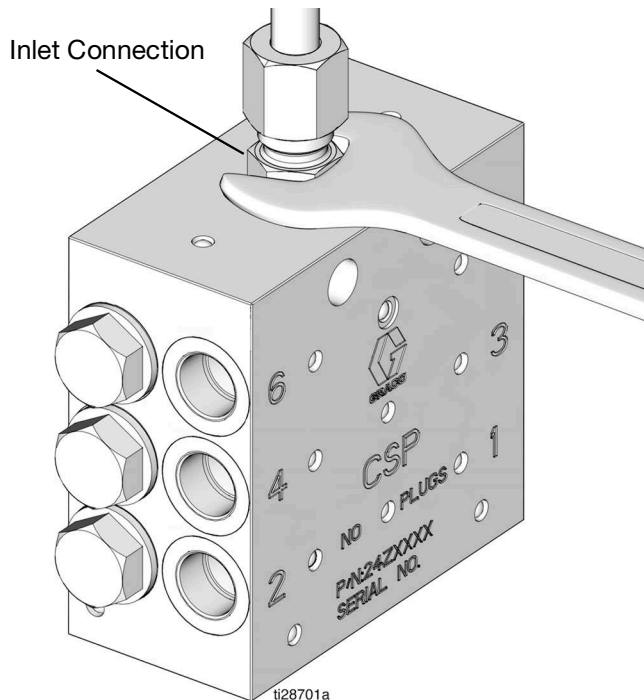


FIG. 9

Overview

- Lubricant supply can either be continuous or intermittent.
- Every movement of the plunger delivers a fixed quantity of lubricant.
- The cycle repeats as long as lubricant is supplied to the inlet port.
- If the lubricant supply is interrupted, when restarted the cycle continues from the point it previously stopped.
- Each plunger must complete a full movement before the next plunger can be moved.
- The failure of any one of the units causes the complete system to shut down.

Sequences

Sequence 1

1. Lubricant enters through the inlet provided at the top of the block.
2. Lubricant fills the left side of Plunger 1 pushing the plunger to the right.
3. Plunger 1 opens, delivering lubricant to Outlet 1 (FIG. 10).

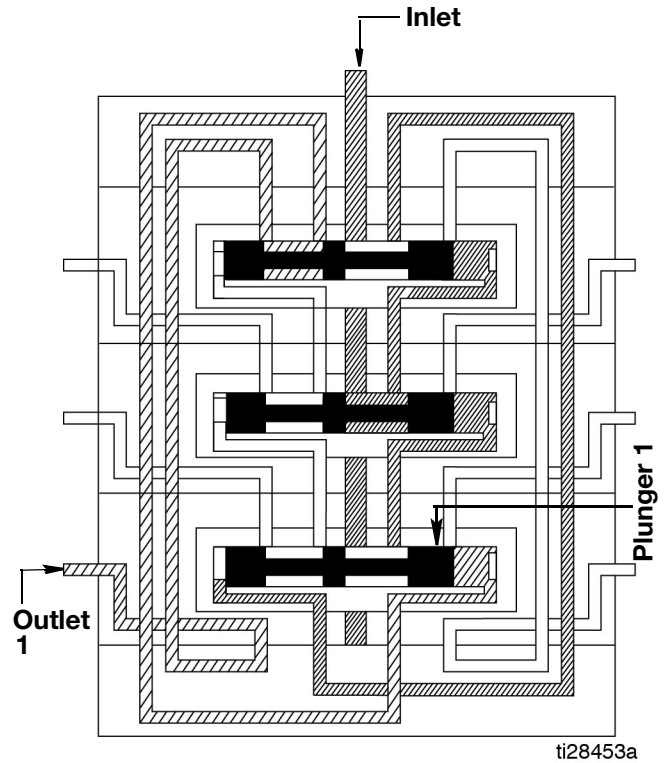


FIG. 10

Sequence 2

1. Lubricant fills the left side of Plunger 2 pushing the plunger to the right.
2. Plunger 2 opens, delivering lubricant to Outlet 4 (FIG. 11).

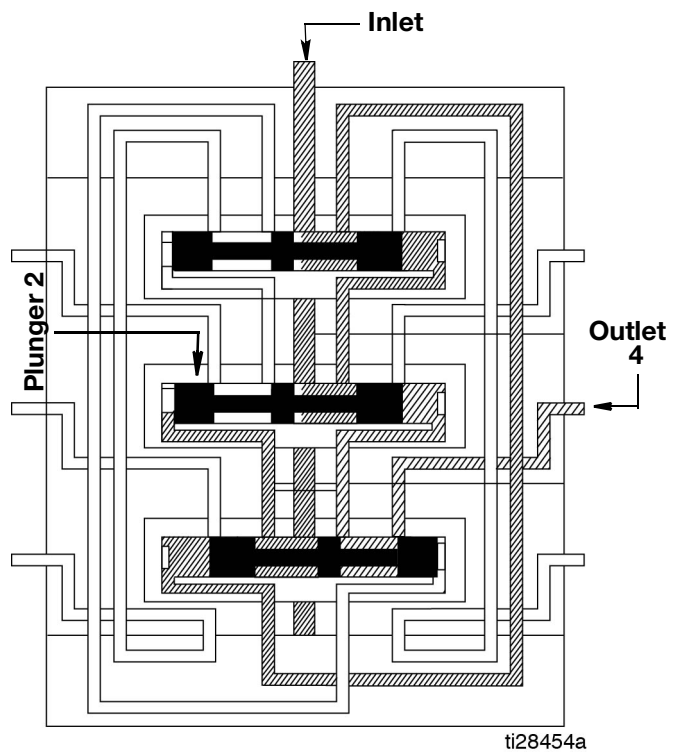


FIG. 11

Sequence 3

1. Lubricant fills the left side of Plunger 3 pushing the plunger to the right.
2. Plunger 3 opens, delivering lubricant to Outlet 6 (FIG. 12).

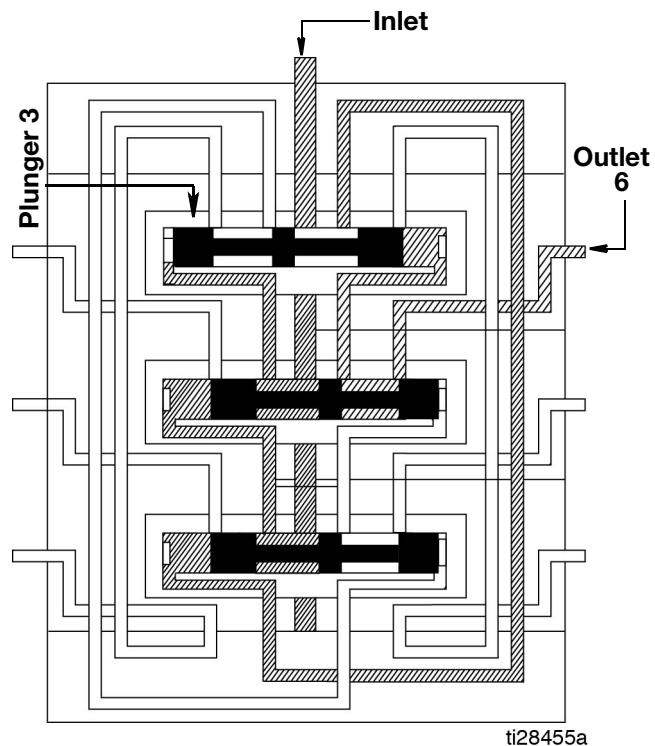


FIG. 12

Sequence 4

1. Lubricant fills the right side of Plunger 1 pushing the plunger to the left.
2. Plunger 1 opens, delivering lubricant to Outlet 2 (FIG. 13).

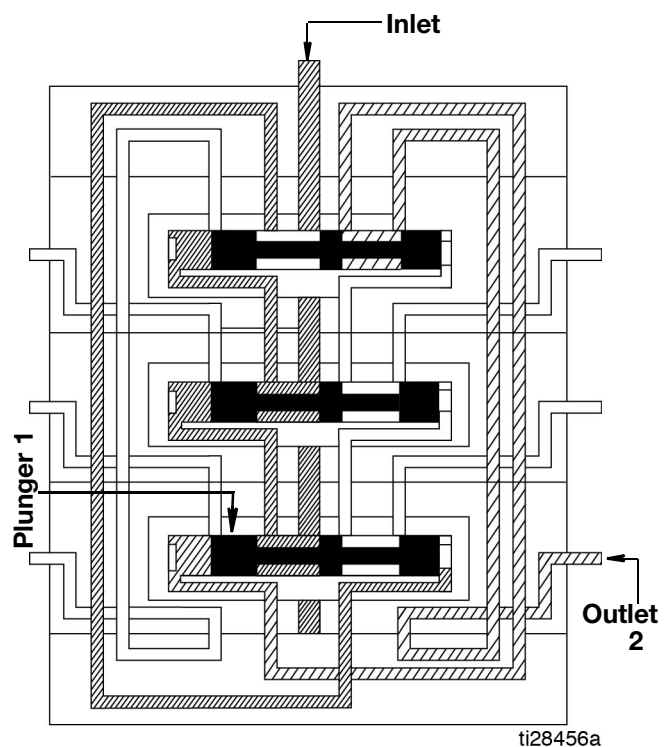


FIG. 13

Sequence 5

1. Lubricant fills the right side of Plunger 2 pushing the plunger to the left.
2. Plunger 2 opens, delivering lubricant to Outlet 3 (FIG. 14).

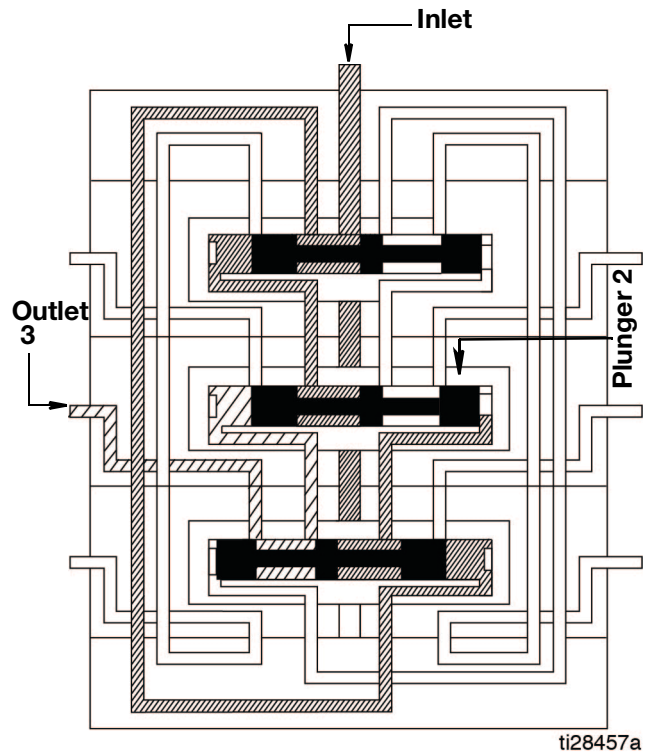


FIG. 14

Sequence 6

1. The final sequence completes the cycle. Lubricant fills the right side of Plunger 3.
2. Plunger 3 opens, delivering lubricant to Outlet 5 (FIG. 15).

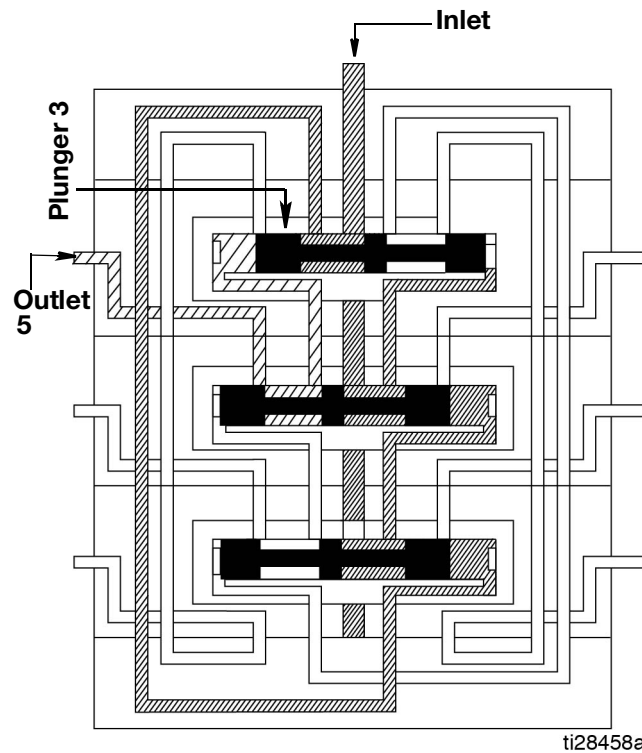


FIG. 15

Blockages

Clearing a blockage requires a higher than normal pumping pressure. Depending upon the application or system design, a blockage usually results in a complete loss of lubricant flow to the total system and no bearing receives lubrication.

The loss of flow due to a blockage is first indicated with the higher than normal system pressure that develops by the pump as it attempts to overcome the blockage. Higher pressure is limited, isolated, and signaled through the use of various performance indicators, reset and relief, incorporated into the system design. Contact your Graco distributor for available parts.

Cleaning Valves

NOTICE

- Dirt and foreign material damage lubricating equipment. Perform all service and disassembly under the cleanest possible conditions.
- Hard or sharp metal objects, such as punches, screwdrivers, and picks can scratch and damage the piston bore. When cleaning these surfaces use a brass rod and hand pressure only.

1. Follow **Pressure Relief Procedure**, page 9.
2. Remove end plugs only and try to move each piston back and forth without removing the piston from the valve section.
3. If all pistons move freely and there is no indication of a more serious problem: reinstall the end plugs.
4. If all pistons do not move freely: replace the entire valve.

Contamination Blockage

If dirt, foreign material or any other form of contamination is found in a valve, cleaning that valve will only temporarily solve contamination blockage problems. The source of the contamination must be eliminated for satisfactory service.

The system filtering method must be investigated. Inspect the filter elements and clean, if necessary.

The reservoir filling method should be reviewed to eliminate any chance of foreign material entering the reservoir during filling.

Separation Blockage

If a hard wax or soap-like material is found in the valve section, grease separation is occurring, and the oil is being squeezed from the grease at normal system operating pressure, and grease thickener is being deposited in the divider valve.

Cleaning the divider valve will only temporarily solve the problem. Consult your lubricant supplier for recommendations on alternate lubricants and your local Graco distributor to verify compatibility with centralized lubricating systems.

Recycling and Disposal

End of Product Life

At the end of the product's useful life, dismantle and recycle it in a responsible manner.

- Perform the **Pressure Relief Procedure**, page 9.
- Drain and dispose of fluids according to applicable regulations. Refer to the material manufacturer's Safety Data Sheet.
- Deliver remaining product to a recycling facility.

Kits and Accessories

CSP Divider Block Inlet Fittings

Part No.	Description	Qty
17L442◆	FITTING, push to connect, 1/4 in. hose stud x 1/8 in. npt male straight, 2000 psi (13.79 MPa, 137.9 bar)	1
17L449◆	FITTING, push to connect, 6 mm stud x 1/8 bspt male 90°, 2000 psi (13.79 MPa, 137.9 bar)	1
17L545◆	FITTING, push to connect, 6mm stud x 1/8 bspt male straight, 2000 psi (13.79 MPa, 137.9 bar)	1
17L546	FITTING, compression, 6 mm x 1/8 bspt male 90°, 3000 psi (20.68 MPa, 206.8 bar)	1
17L548	FITTING, compression, 6 mm x 1/8 bspt male straight, 3000 psi (20.68 MPa, 206.8 bar)	1
17T780	FITTING, compression, 6 mm x 1/8 npt male straight, 3000 psi (20.68 MPa, 206.8 bar)	1
17T781	FITTING, compression, 6 mm x 1/8 npt male 90°, 3000 psi (20.68 MPa, 206.8 bar)	1

◆ Always connect fittings to Graco designed stud to ensure connections.

CSP Divider Block Outlet Doubling Plug

Part No.	Description	Qty
17L651✿	PLUG, outlet doubling, 3000 psi (20.68 MPa, 206.8 bar)	1

✿ Torque to 10 to 12 ft.-lbs (13.56 to 16.27 N•m)

CSP Divider Block Outlet Combination Kits

Part No.	Description	Qty
25T510	KITS, combination, 6mm OD steel tube, 3000 psi (20.7 MPa, 206.8 bar)	
25T511	KITS, combination, 1/4 in. OD steel tube, 3000 psi (20.7 MPa, 206.8 bar)	

NOTE: Only used for combination CSP valve outlet numbers 1 and 2 (See FIG. 16, page 16).

CSP Divider Block Outlet Fittings

Part No.	Description	Qty
17Y692★❖†	FITTING, compression with check valve, 1/4 in. tube, 1000 psi (6.9 MPa, 69 bar)	1
17L440★❖†	FITTING, push to connect, 1/4 in. OD tube x M10 with check valve, 625 psi (4.31 MPa, 43.1 bar)	1
17L441◆★	FITTING, push to connect, 1/4 in. hose stud x M10 with check valve, 2000 psi (13.79 MPa, 137.9 bar)	1
17L458◆★	FITTING, push to connect, 6 mm hose stud x M10 with check valve, 2000 psi (13.79 MPa, 137.9 bar)	1
17L543★❖	FITTING, push to connect, valve outlet, 6 mm OD tube, 1000 psi (6.9 MPa, 69 bar)	1
17L550★	FITTING, compression, valve outlet, 6 mm OD tube, with check valve, 3000 psi (20.68 MPa, 206.8 bar)	1
17Y693★	ADAPTER, M10 x 1/8 npt female, with check valve, 5076 psi (35 MPa, 350 bar)	1
17Y689	Fitting, push to connect, 6 mm stud x 1/8 npt male, straight, 2000 psi (13.79 MPa, 137.9 bar)	
20A080★	Fitting, compression with check valve, valve outlet, 1/4 in. OD steel tube, 3000 psi (20.7 MPa, 206.8 bar)	1

NOTE:

Always use Graco outlet fittings for your applications.

◆ Always connect fittings to Graco designed stud to ensure connections.

★ Torque to 12 to 14 ft.-lbs (16.27 to 18.98 N•m)

❖ Used only for connection to nylon tube

† Used for nylon tube with outer diameter of 0.25 +/- 0.005 in.

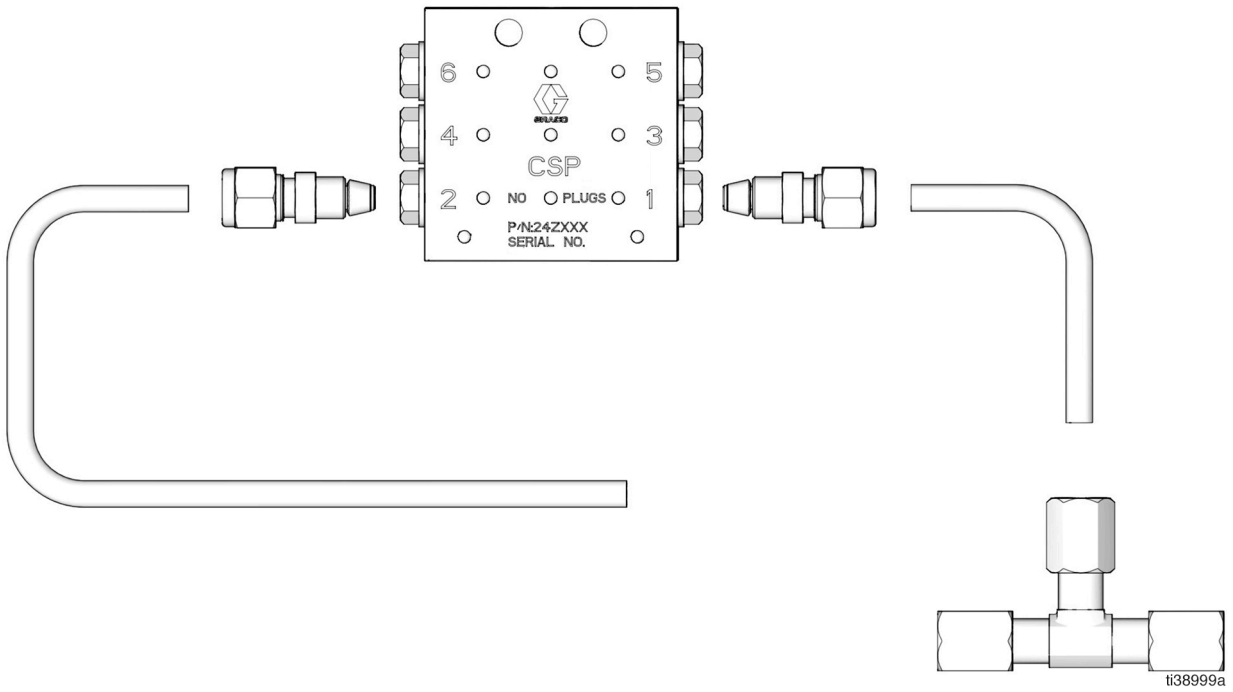


FIG. 16

Lubrication Point Fittings (English Threads)

Part No.	Description	Qty
17L652‡	FITTING, push to connect, 1/4 in. OD tube x 1/8 npt male 90°, 625 psi (4.31 MPa, 43.1 bar)	1
17L653‡	FITTING, push to connect, 1/4 in. OD tube x 1/8 npt male straight, 625 psi (4.31 MPa, 43.1 bar)	1
17L547◆	FITTING, push to connect, 1/4 in. stud x 1/4 npt male straight, 2000 psi (13.79 MPa, 137.9 bar)	1
17T782	FITTING, compression, 6 mm x 1/4 npt male straight, 3000 psi (20.68 MPa, 206.8 bar)	1
17T783	FITTING, compression, 6 mm x 1/4 npt male 90°, 3000 psi (20.68 MPa, 206.8 bar)	1

◆ Always connect fittings to Graco designed stud to ensure connections.

‡ Used only for connection to nylon tube with outer diameter of 0.25 +/- 0.005 in.

Lubrication Point Fittings (Metric Threads)

Part No.	Description	Qty
17L455‡	FITTING, push to connect, 6 mm tube x M10 tapered male straight, 1000 psi (6.9 MPa, 69 bar)	1
17L456‡	FITTING, push to connect, 6 mm tube x M8 tapered male straight, 1000 psi (6.9 MPa, 69 bar)	1
17L457‡	FITTING, push to connect, 6 mm tube x M6 tapered male straight, 1000 psi (6.9 MPa, 69 bar)	1
17R567‡	FITTING, push to connect, 6 mm tube x 1/8 bspt male straight 1000 psi (6.9 MPa, 69 bar)	1
17R568‡	FITTING, push to connect, 6 mm tube x 1/8 bspt male 90°, 1000 psi (6.9 MPa, 69 bar)	1
17R569◆	FITTING, push to connect, 6 mm stud x 1/4 bspt male, straight, 2000 psi (13.79 MPa, 137.9 bar)	1

17R570◆	FITTING, push to connect, 6mm stud x 1/4 bspt male 90°, 2000 psi (13.79 MPa, 137.9 bar)	1
17R571	FITTING, compression, 6 mm x 1/4 bspt male straight, 3000 psi (20.68 MPa, 206.8 bar)	1
17R572	FITTING, compression, 6 mm x 1/4 bspt male 90°, 3000 psi (20.68 MPa, 206.8 bar)	1
17R573	FITTING, compression, 6 mm x M6 tapered male straight, 3000 psi (20.68 MPa, 206.8 bar)	1
17R575	FITTING, compression, 6 mm x M8 tapered male straight, 3000 psi (20.68 MPa, 206.8 bar)	1
17R577	FITTING, compression, 6 mm x M10 tapered male straight, 3000 psi (20.68 MPa, 206.8 bar)	1
17R574	FITTING, compression, 6 mm x M6 tapered male 90°, 3000 psi (20.68 MPa, 206.8 bar)	1
17R576	FITTING, compression, 6 mm x M8 tapered male 90°, 3000 psi (20.68 MPa, 206.8 bar)	1
17R578	FITTING, compression, 6 mm x M10, tapered male 90°, 3000 psi (20.68 MPa, 206.8 bar)	1
17L446‡	FITTING, push to connect, elbow, 6 mm x M10 tapered male 90°, 1000 psi (6.9 MPa, 69 bar)	1
17L447‡	FITTING, push to connect, 6 mm tube x M8 tapered male 90°, 1000 psi (6.9 MPa, 69 bar)	1
17L448‡	FITTING, push to connect, 6 mm tube x M6 tapered male 90°, 1000 psi (6.9 MPa, 69 bar)	1

‡ Used only for connection to nylon tube.

◆ Always connect fittings to Graco designed stud to ensure connections.

1/8 in. ID Hose End Fittings (connect to 1/4 in. PTC fittings) ◆

Maximum working pressure - 3000 psi (20.68 MPa, 206.8 bar)

Part No.	Description	Qty
17L437	STUD, 90°, 1/8 in. hose x PTC fitting	1
17L438	STUD, straight, 1/8 in. hose x PTC fitting	1
17L647	SLEEVE, hose, 1/8 in. ID	1

8.6 MM OD Hose End Fittings (connect to 6 MM PTC fittings) ◆

Maximum working pressure - 3000 psi (20.68 MPa, 206.8 bar)

Part No.	Description	Qty
17L648	SLEEVE, hose, 8.6 mm	1
17L649	STUD, straight, 8.6 mm hose x PTC fitting	1
17L650	STUD, 90°, 8.6 mm hose x PTC fitting	1

8.6 MM OD Hose End Fittings (connect to 6 MM compression fittings) ◆

Maximum working pressure - 3000 psi (20.68 MPa, 206.8 bar)

Part No.	Description	Qty
17L648	SLEEVE, hose, 8.6 mm	1
17R565	STUD, straight, 8.6 mm hose x compression fitting, BLK	1
17R566	STUD, 90°, 8.6 mm hose x compression fitting, BLK	1

◆ For complete Warnings and instructions, see related manual 3A3159.

6 MM OD Nylon Tube

Maximum working pressure - 1000 psi (6.9 MPa, 69 bar)

Part No.	Description	Qty
17S556	TUBE, 6 mm x 25 m	1
17S557	TUBE, 6 mm x 50 m	1
17S558	TUBE, 6 mm x 100 m	1
17S559	TUBE, 6 mm x 200 m	1

8.6 MM OD High Pressure Hose

Maximum working pressure - 3000 psi (20.68 MPa, 206.8 bar)

Part No.	Description	Qty
17S552	HOSE, 8.6 mm x 25 m	1
17S553	HOSE, 8.6 mm x 50 m	1
17S554	HOSE, 8.6 mm x 100 m	1
17S555	HOSE, 8.6 mm x 200 m	1

Hose Guard

Use with 8.6 mm OD high pressure hose

Part No.	Description	Qty
123147	GUARD, hose, 9 mm ID, 10 m	1

Block Installation Kit

Part No.	Description	Qty
26A478*	KIT, weld stud	1
	STUD, M6 x 45	2
	NUT, M6, lock	2
	WASHER	2
26A479‡	KIT, plate	1
	PLATE	1
	NUT, M6 w/o lock	4

*Torque to 9 to 11 ft.-lbs (12.2 to 14.9 N•m)

‡26A479: kit, plate, weld, assistance (see FIG. 17).

Take the two (2) studs from Block Installation Kit 26A478. Assemble the parts as shown in FIG. 17. Discard the nuts and plate after the stud welding is complete.

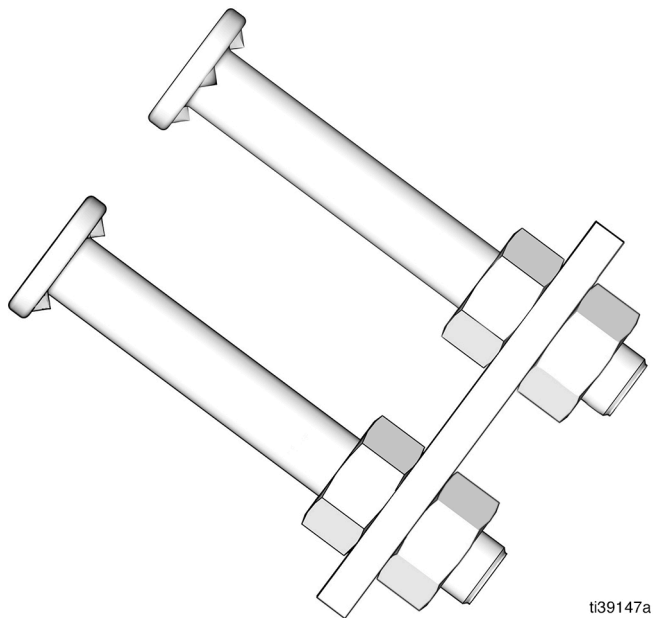


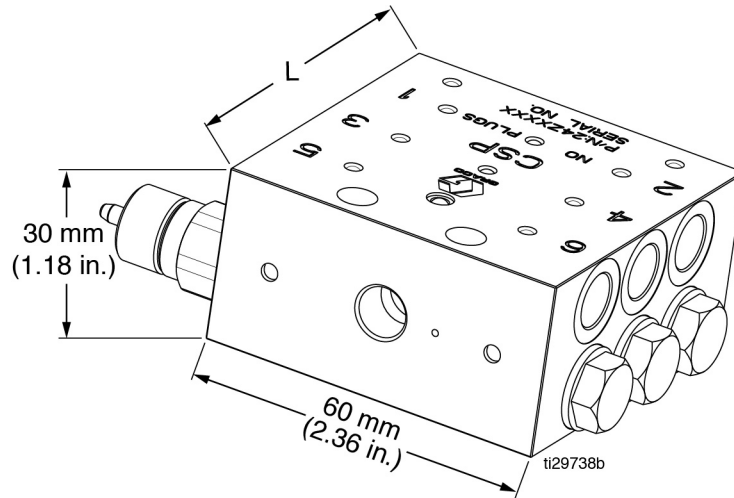
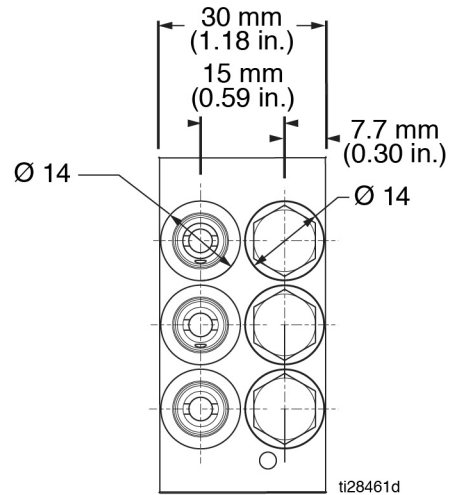
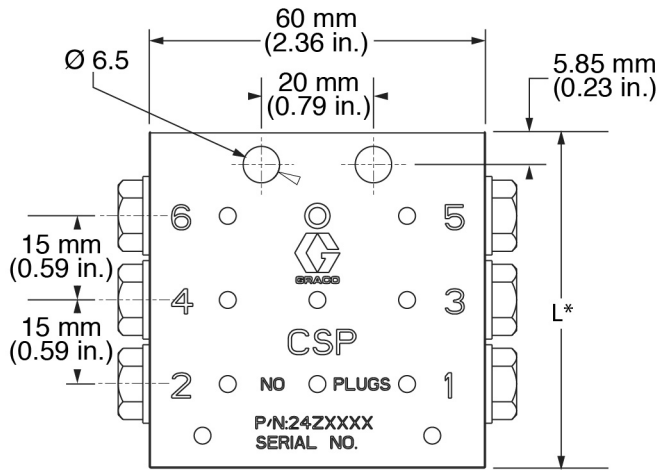
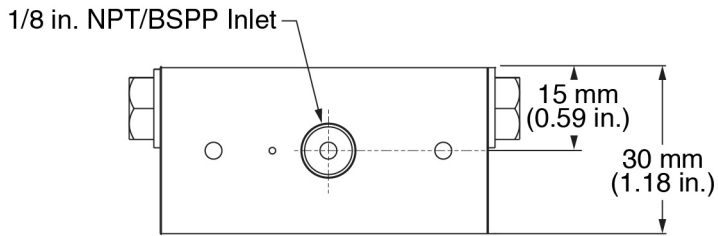
FIG. 17

Proximity Switch Kit

Only available for CSP valves with an indicator pin.

Part No.	Description
26C822	Switch, PNP, 9.5 in. (24 cm) Cable with M12 connector
26C823	Switch, PNP, 16.5 ft (5 m) Cable with flying leads

Dimensions



*This dimension varies and is determined by the number of outlets. See No. of Outlets, page 21 for this dimension.

Technical Specifications

CSP Valve		
	US	Metric
Type	Divider valve	
Model	See Models, page 3	
Lubricant Output (per outlet, per cycle)	0.012 in. ³	0.2 cc
Minimum Operating Pressure	350 psi	24.1 bar, 2.41 MPa
Maximum Operating Pressure	5076 psi	350 bar, 35 MPa
Inlet Connection Size	1/8 in. bspp, 1/8 in. npt	
Outlet Connection Size	M10 x 1 (f)	
Maximum Working Temperature	212°F	100°C
No. of Outlets (L, page 21)	LENGTH	
6 outlets	2.4 in.	60 mm
8 outlets	3.0 in.	75 mm
10 outlets	3.5 in.	90 mm
12 outlets	4.0 in.	105 mm
14 outlets	4.5 in.	120 mm
16 outlets	5.25 in.	135 mm
18 outlets	6.0 in.	150 mm
20 outlets	6.5 in.	165 mm
22 outlets	7.0 in.	180 mm
Monitoring	Cycle indicator / Limit switch / Proximity switch	
Lubricant	Max up to #2 NLGI grade	
Material of Construction	Carbon Alloy Steel	

*This dimension varies and is determined by the number of outlets. See No. of Outlets, page 21 for this dimension.

California Proposition 65

CALIFORNIA RESIDENTS

 **WARNING:** Cancer and reproductive harm – www.P65warnings.ca.gov.

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Original instructions. This manual contains English. MM 3A3995

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Revision L, November 2022