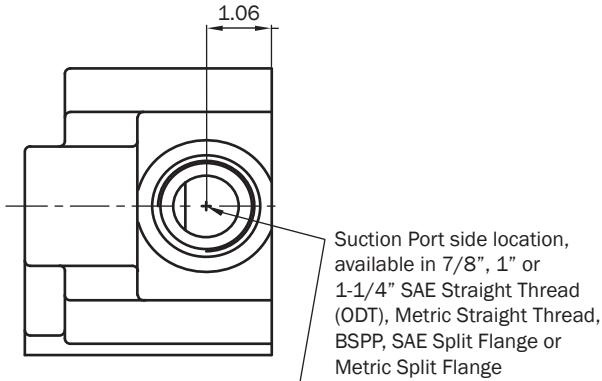
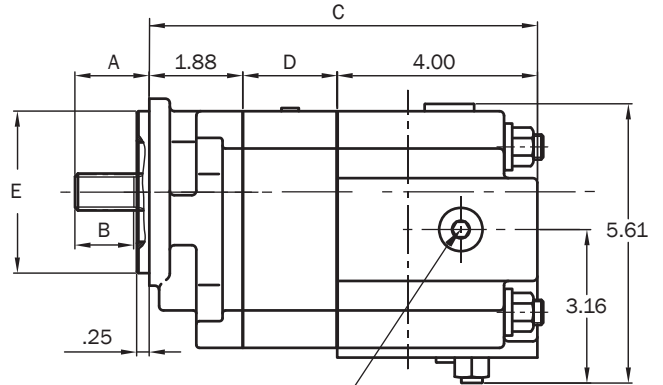
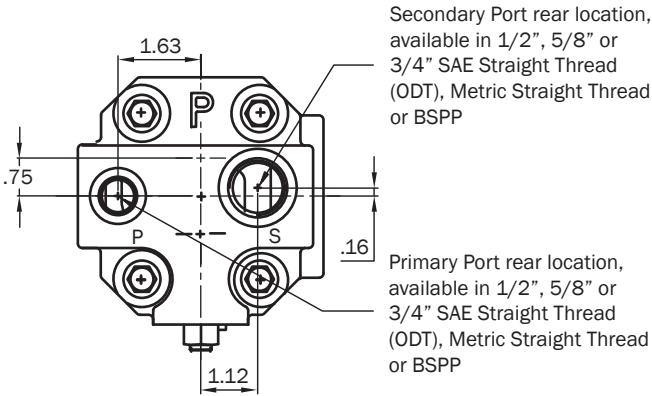


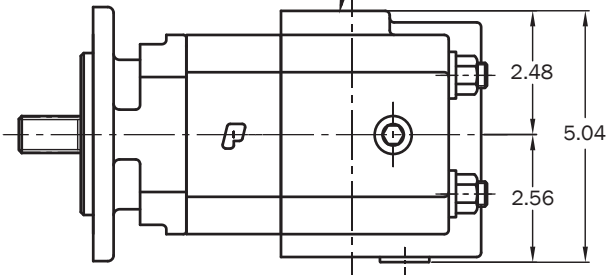
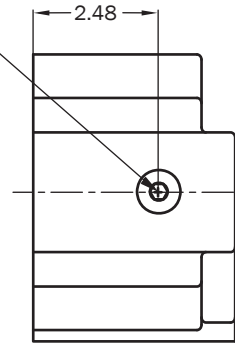


# 124 SERIES PRIORITY FLOW CONTROL RELIEF VALVE PORT END COVER

## PUMP PORT LOCATIONS



Primary Port side location optional, normally plugged at 1/2" SAE Straight Thread (ODT), consult factory for options



- A. 1.50" ANSI B92.1-96 11 Spline shaft shown, other shafts available.
- B. 1.18" 11 Spline shaft shown, other shafts available.
- C. 6.28" plus gear width.
- D. 0.4" plus gear width.
- E. 3.250" SAE-A-2 bolt shaft end cover shown, other shaft end covers available.

CW view shown, consult factory for all options



PERMCO 1500 Frost Road Streetsboro, Ohio 44241



## FLOW CONTROL FUNCTION

The **124 SERIES PRIORITY FLOW CONTROL COVER** allows a constant preset flow of oil from the primary port to a machine function regardless of changes in pump speed or increased demand from other circuits, however the pump output flow must be equal too or greater than the primary circuit flow requirements. Output flow from the primary port can be specified from 1 to 12 GPM (3.78 to 45 Liter) and is controlled to within  $\pm 10\%$  of nominal flow. Flow is controlled by a fixed orifice and is not field adjustable.

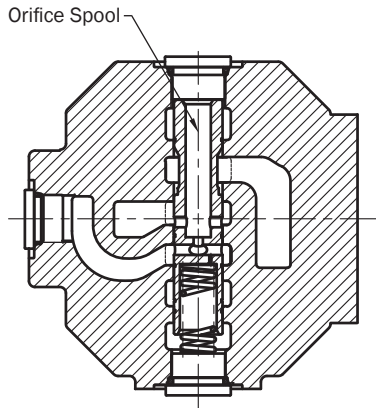
Excess flow is available through the secondary port for a downstream machine function or can be plumbed back to tank. The pressure compensated valve spool allows the primary and secondary ports to be pressurized independently or at the same time. The primary port has an optional built-in relief valve with settings from 1000 to 3300 PSI (69 to 228 BAR) that relieves to the pump inlet.

*Consult factory for optional relief valve settings.*

When sizing the pump it is important to take into consideration the desired primary flow, secondary flow, use of secondary flow, operating RPM, operating temperature, time dumping over relief and other factors to prevent burning of the pump.

*Consult factory for assistance.*

## FLOW CONTROL FUNCTION/ADJUSTMENT

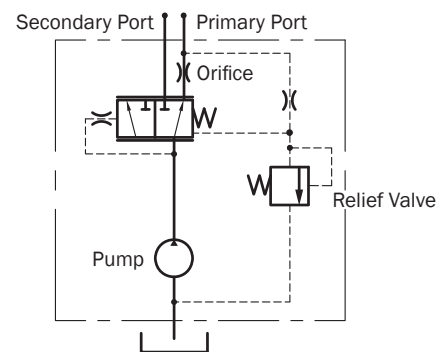
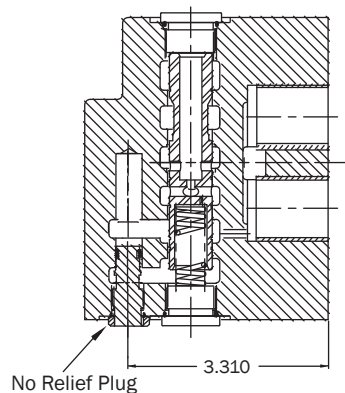
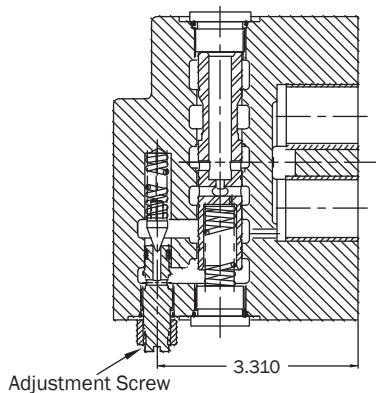


Flow GPM (LPM)	Part #	Drill Size	Flow GPM (LPM)	Part #	Drill Size
1 (3.78)	514C-L0013-01	.0699	7 (26.50)	514C-L0013-07	.1828
2 (7.57)	514C-L0013-02	.0985	8 (30.28)	514C-L0013-08	.1953
3 (11.36)	514C-L0013-03	.1203	9 (34.07)	514C-L0013-09	.2069
4 (15.14)	514C-L0013-04	.1387	10 (37.85)	514C-L0013-10	.2180
5 (18.93)	514C-L0013-05	.1548	11 (41.64)	514C-L0013-11	.2285
6 (22.71)	514C-L0013-06	.1694	12 (45.42)	514C-L0013-12	.2385

The **124 SERIES FLOW CONTROL COVER** pump has an easily changeable controlled flow orifice spool. The orifice spool slides into the spool bore and can be easily removed for changing the desired system flow or can be drilled out to a larger size for increased flow.

*Consult factory for flows and drill sizes not listed.*

## RELIEF VALVE FUNCTION

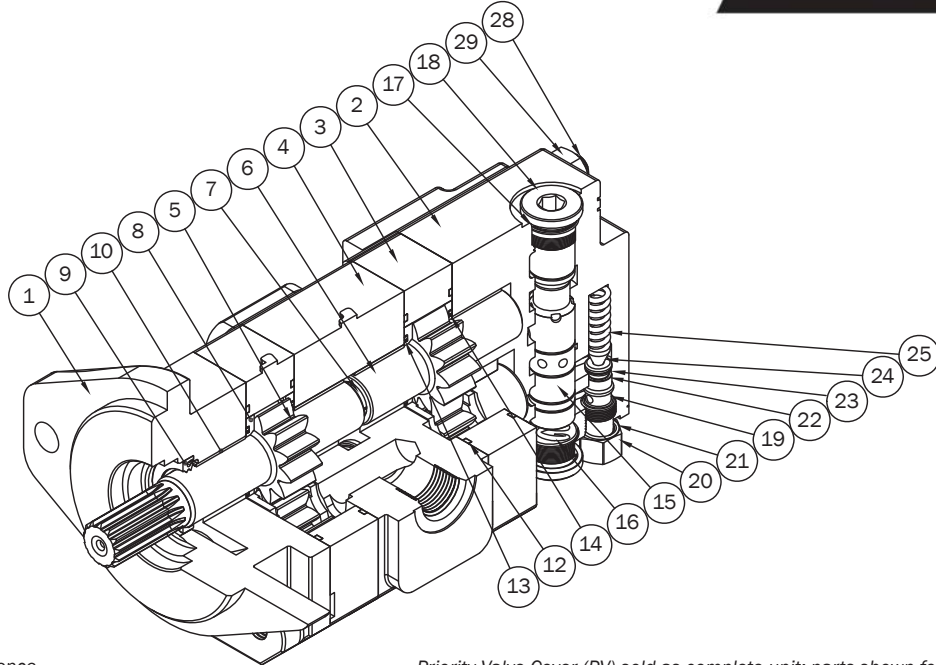


The **124 PRIORITY FLOW CONTROL RELIEF VALVE COVER** pump has an optional built-in adjustable relief valve with settings from 1000 to 3300 PSI (69 to 228 BAR). This relief valve is meant to be used as the primary port circuit protection. A main system relief valve is still required for the secondary port adjusted to the systems required pressure setting. Individual port reliefs are still required for particular functions that have a lower pressure setting requirement than that of the main system relief setting.

**NEVER EXCEED THE MAXIMUM PUMP PRESSURE RATING.** The 124 series has a maximum pressure rating of 3500 PSI (241 BAR) for .50" through 1.25" gear widths, 3300 PSI (228 BAR) for 1.50" gear width, 2900 PSI (200 BAR) for 1.75" gear width and 2500 PSI (172 BAR) for 2.00" gear width.



# PARTS BREAKDOWN



CW tandem unit shown for reference

Priority Valve Cover (PV) sold as complete unit; parts shown for reference only

Item#	Description	Part #	Qty	Item#	Description	Part #	Qty
1	Shaft End Cover (SAE-A-2-Bolt shown)	574-01218	1	16	Spring	514C-L0011	1
2	Port End Cover (1/2" JIC (S) X 1/2" JIC (P))	See Below	1	17	O-ring (included with plug part # 18)		2
3	Gear Housing	577-01109-15	2	18	Plug ODT 7/8-14	565-01598	2
4	Bearing Carrier (1-1/4" SF X 3/4" JIC shown)	576-01127	1	19	Screw	514C-L0006	1
5	Shaft Gear Set (11 Spline shown)	024-01344-15	1	20	Hex Nut	514C-L0008	1
6	Gear Set	996-01103-15	1	21	O-ring	995-01599	1
7	Connecting Shaft	022-01125	1	22	O-ring	995-01600	1
8	Thrust Plate	947-01105	4	23	Backup Ring	514-01601	1
9	Shaft Seal	226-01121	1	24	Poppet Floating	514C-L0007	1
10	Bushing	921-01108	8	25	Spring	514C-L0009	1
11	Dowel Pin (not shown)	280-1971-071	8	26	Plug ODT 3/4-16 (not shown)	W046-39	1
12	Housing Gasket Seal	TA-2995-152	4	27	O-ring (included with plug part # 26)		1
13	Thrust Plate Seal	947-01107	4	28	Stud	ZE-0391-11.5	4
14	Thrust Plate Backup Seal	947-01106	4	29	Nut	W3-40	4
15	Spool (see page 2 for part number)	514C-L0013-**	1	30	Washer (not shown)	W033-1	4

## MODEL CODING

The pump code for the 124 series priority flow relief valve cover series should be put into the model code as described below. The code consist of the "PV" which represent the priority valve plus 5 additional characters detailing the porting, flow rate and relief setting.

PV (1) (2) (3) (4) (5)

Sample Model Code: P124A082PVEDFLFZA15-54  
1 2 3 4 5

PV = Priority Valve Cover

(1) = Inlet Port

(2) = Primary Port

(3) = Secondary Port

(4) = Priority Flow Rate in GPM

(5) = Relief Valve Setting

No Relief Plug Part # 514C-L0017

### (1) INLET PORT

	JIC	SF	BSPB	MSF	MST
Blank	A	A	A	A	A
7/8"	C	H	N	T	X
1"	D	J	P	U	Y
1-1/4"	E	K	Q	V	Z

### (2) & (3) PRIMARY AND SECONDARY PORT

	JIC	BSPB	MST
Blank	A	A	A
1/2"	D	J	P
5/8"	E	K	Q
3/4"	F	L	R

### (4) FLOW RATE

1 GPM = A
2 GPM = C
3 GPM = E
4 GPM = G
5 GPM = J
6 GPM = L
7 GPM = N
8 GPM = Q
9 GPM = S
10 GPM = U
11 GPM = W
12 GPM = Y

### (5) RELIEF SETTING

No Relief = A
1000 PSI = B
1250 PSI = C
1500 PSI = D
1750 PSI = E
2000 PSI = F
2250 PSI = G
2500 PSI = H
2750 PSI = J
3000 PSI = K
3250 PSI = L

PV Cover Assembly Part Number = 124PV + PV Model Code (from above)

Example of PV Cover Assembly Part Number:

124PV-AAAAA or 124PV-AAAAB = Build Program PV Kit

124PV-EDEGF = Customer Specified Part Number

Due to hundreds of variations and combinations consult factory for assistance.

After pump testing PV cover must be disassembled, thoroughly cleaned and reassembled; residual break-in contamination can cause the PV to malfunction.

Cap Screws and Nuts : Torque to 120 lb.ft.

1/2" GW = W1-69 3/4" GW = W1-090

1" GW = W1-090 1-1/4" GW = W1-15

1-1/2" GW = W1-15 1-3/4" GW = W1-099

2" GW = W1-099

Studs = add 2-1/2" to standard flush and extended stud length for "PV" cover.

The product described herein including without limitation, product features, specification and design are subject to change by Permco without notice



## OIL SPECIFICATIONS

Use premium quality hydraulic fluid with a viscosity range of 150-300 SUS (32-65 CST) at 100°F (38°C). Normal operating viscosity range is between 10-1000 SUS (16-220 CST). Maximum start-up viscosity should not exceed 4000 SUS. Oil should have maximum anti-wear properties, foam depressant, rust and corrosion inhibitors, oxidation stability of 1500 hours minimum along with a low flash and fire point. Other desirable characteristics include a high demulsibility (low emulsibility) for separation of water, air and contaminants, resistance to the formation of sludges, acids, gums, tars and varnishes. Operation in cold conditions requires special oil consideration so maximum start-up viscosity is not exceeded. Under normal conditions of continuous operation, fluid temperature should not exceed 150°F (65°C). In no instance should the temperature exceed 185°F (85°C) for mineral based fluids. For water glycol and invert emulsions information, consult factory.

Maximum inlet vacuum not to exceed 5 IN HG (.17 BAR) or a positive pressure greater than 20 PSI (1.37 BAR). Degassing of the fluid and subsequent cavitation may occur if these values are exceeded.

## FILTRATION

For maximum pump life, the system should be protected from contamination at a level not to exceed 250 particles greater than 10 micrometers per milliliter of fluid. A 10 micrometer return line filter with a B 10 rating of at least 2.2 should provide this level of purity. A 149 micrometer suction strainer is also suggested for added pump protection, however very high viscosities may dictate not using a suction strainer. Consult your vehicle body manufacturers service manual for filtration details.

## HOSE SELECTION

Selecting the proper hose size and type is critical to proper system operation and hydraulic component longevity. Fluid velocities and pressure are determining factors, reference your hose manufacturing catalog for actual hose selection.

### Recommended Fluid Velocities

Inlet Line..... 4 Feet per Second  
Pressure Line..... 15 Feet per Second  
Return Line..... 8 Feet per Second

### Recommended Hose Type

Inlet Line.....SAE 100R4  
Pressure Line..... SAE 100R2 or higher  
Return/Bypass Line..... SAE 100R1

## SHAFT ALIGNMENT

To assure maximum pump and drive line life proper mounting of the pump is critical. In front mount applications the pump should be mounted parallel to the engine crankshaft within 1.5°. Universal joints need to be in phase and the drive line should be balanced to the maximum operating engine RPM. Shaft offset should be between 3-7°.

PTO direct mount units should have anti-seize grease applied to the pump and PTO shaft splines; annual re-applications are suggested along with semi-annual re-applications for severe duty cycles; refer to your PTO and/or vehicle body maintenance guide.

## REPLACEMENT PUMP

If you are replacing a pump on a system that has had a pump failure, it is important that the hydraulic system be thoroughly cleaned to protect your new pump. Often damaging debris and contamination is still within the system hoses, cylinders, control valves, filters, and hydraulic tank. The systems main relief valve and system port reliefs can also be affected, a malfunctioning relief or port relief can severely damage the pump. To insure the hydraulic system is properly flushed and the relief valve are working properly, refer to your vehicle body manufacturers service manual for hydraulic and filtration system cleaning details.

Before you begin operating the pump, back-off the systems main relief valve to a 0 PSI setting. Run the pump at engine idle RPM's for about 5 minutes (or until oil heats up) at 0 PSI with all the control valves in the neutral position. If everything seems to function properly and no unusual noises are heard, gradually adjust the main relief valve to the required system pressure setting. Refer to your vehicle body manufacturers service manual for adjusting relief valve details. **Never exceed the pressure rating of the pump.**

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