

PRESSURE COMPENSATED ADJUSTABLE FLOW CONTROL VALVES

MODEL RD-100 TOP PORT FLOW CONTROL



The PRINCE valve models RD-100 and RD-1900 are pressure compensated adjustable flow control valves. By rotating the handle, the flow out the "CF", or controlled flow port, can be varied from approximately 0 to the maximum controlled flow shown in the chart below. Any remaining flow is bypassed to the "EF" or excess flow port. This flow can be used to power another circuit or can be returned to tank. Once the controlled flow is set it will remain nearly constant with variations in pressure on either the controlled or excess flow ports.

Please note: If during operation the controlled flow port is blocked the valve will compensate in such a way as to shut off flow to the excess port.

These valves can also be used as a restrictive flow control by plugging the excess flow port.

MODEL RD-1900 SIDE PORT FLOW CONTROL



The PRINCE valve models RDRS-100 and RDRS-1900 have a built in adjustable pressure relief. For these models the excess flow port **must** be connected to tank.

It should be noted that whenever these or any valve is used to bypass or restrict, flow heat will be generated. Steps may be required to keep oil temperature from becoming too high.

VALVE SPECIFICATIONS:

Capacity: 30 gpm max inlet flow
Pressure: 3000 psi max
Weight: RD-100 8 lbs.
RD-1900 9 lbs.

FIELD REPAIR KITS:

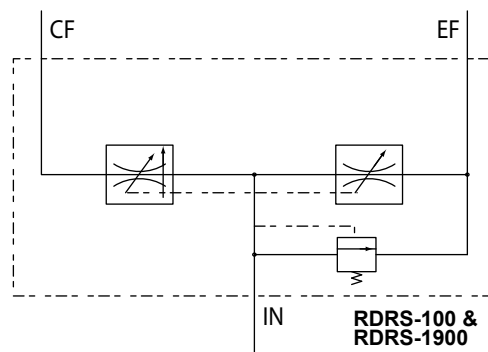
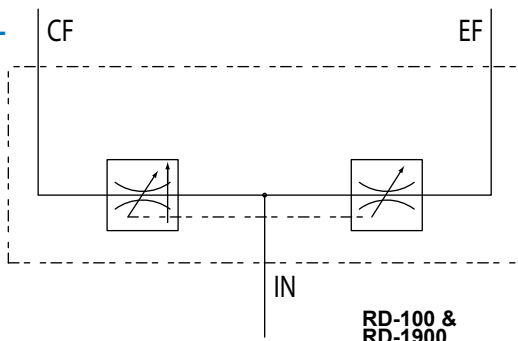
Handle hardware 660301002
Seal Kit 660501001

STANDARD MODELS AVAILABLE

MODEL NUMBER		PORT SIZES	CONTROLLED FLOW RANGE	For Other Relief Settings Please Specify:
RD-137-8	RD-1937-8	3/8 NPTF	0-8 GPM	
RD-150-8	RD-1950-8	1/2 NPTF	0-8 GPM	
RD-150-16	RD-1950-16	1/2 NPTF	0-16 GPM	
RD-175-16	RD-1975-16	3/4 NPTF	0-16 GPM	
RD-175-30	RD-1975-30	3/4 NPTF	0-30 GPM	RDRS-1950-16-20 └ Relief Pressure in Hundreds Example: 20=2000 PSI
RD-108-8	RD-1908-8	#8 SAE	0-8 GPM	
RD-112-30	RD-1912-30	#12 SAE	0-30 GPM	
RDRS-150-16	RDRS-1950-16	1/2 NPTF	0-16 GPM	These models have built in relief set at 1500 psi @ 10 GPM.
RDRS-175-30	RDRS-1975-30	3/4 NPTF	0-30 GPM	

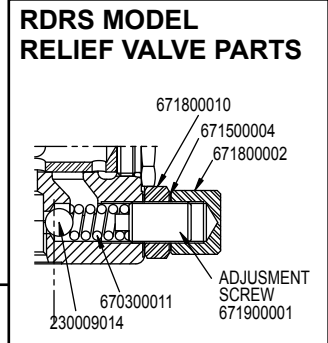
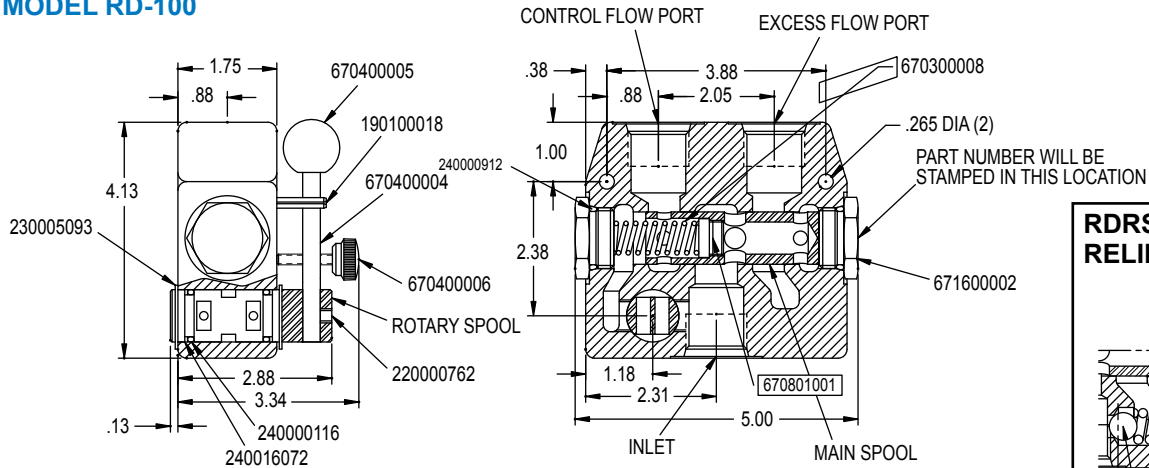
Special combinations of port size and controlled flow range are available in O E M quantities.
Please consult your sales representative.

SYMBOL

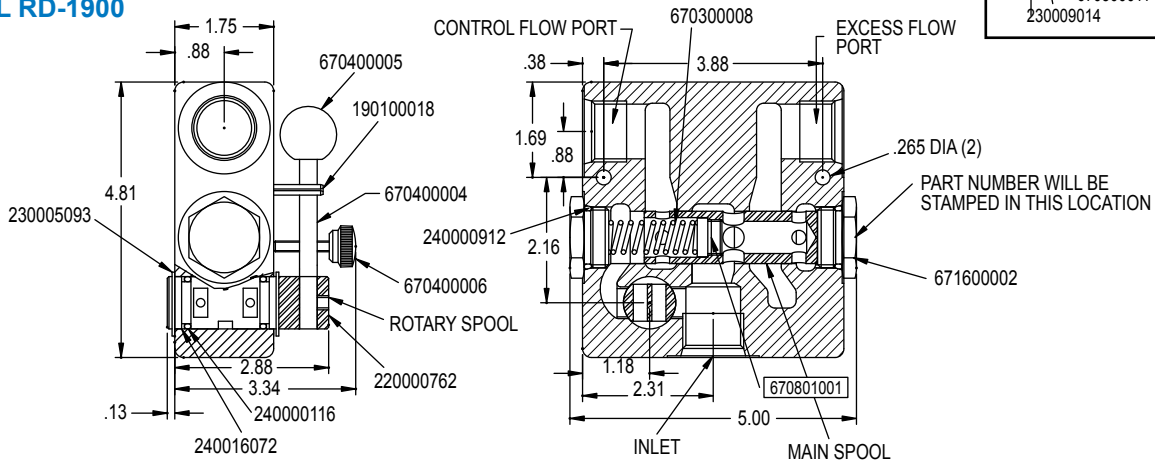


MODEL RD-100 AND RD-1900 PARTS BREAKDOWN AND DIMENSIONS

MODEL RD-100



MODEL RD-1900

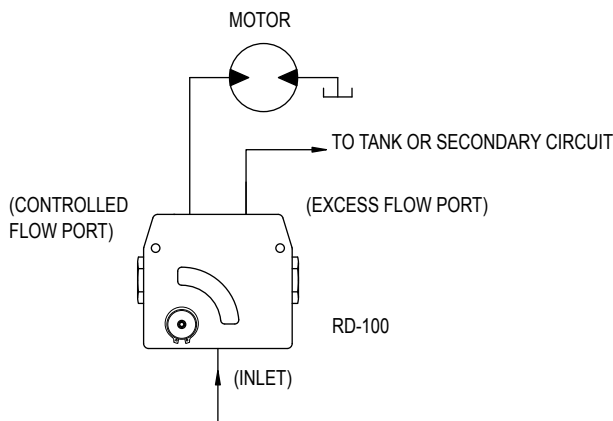


APPLICATIONS:

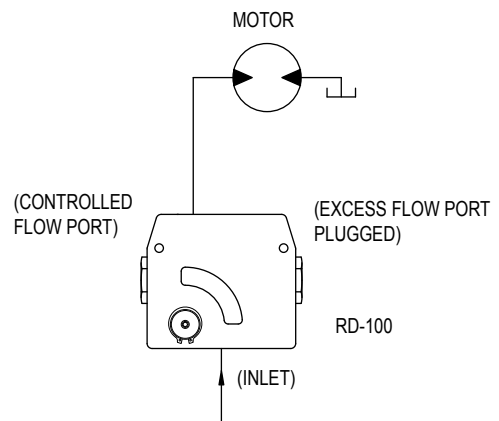
As illustrated in the circuit below the RD-100/RD-1900 adjustable flow control valves can be used to control the speed of a hydraulic motor. In this circuit oil from a source is directed into the inlet of the valve. By moving the handle the flow can be varied from approximately zero when handle is vertical to maximum when the handle is horizontal. Oil not going to the controlled flow port is bypassed to the excess flow port where it can be used to supply another circuit

or returned to tank. Instead of the control flow directly supplying a motor it can be used as an adjustable priority divider and provide adjustable priority flow to a directional control valve bank. Also as illustrated the RD-100/RD-1900 can be used as a restrictive type flow control. In this circuit the excess flow port is blocked. This would normally be used with a pressure compensated pump or in a closed center system.

BYPASS FLOW CIRCUIT

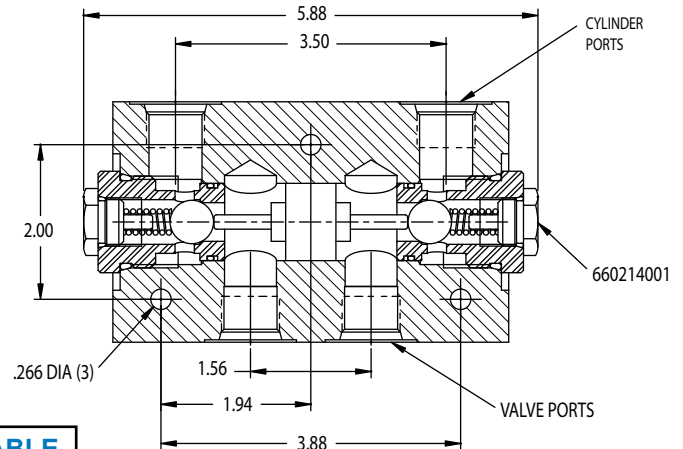
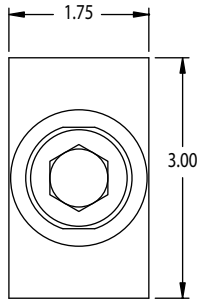
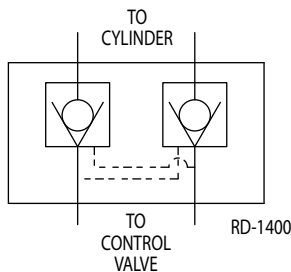


RESTRICTIVE FLOW CIRCUIT



PILOT-OPERATED CHECK VALVES

MODEL RD-1400 LOCK VALVE DOUBLE PILOT-OPERATED

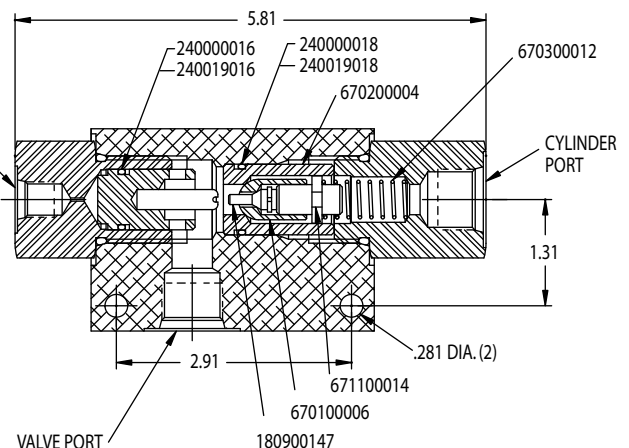
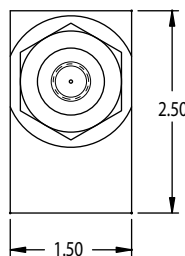
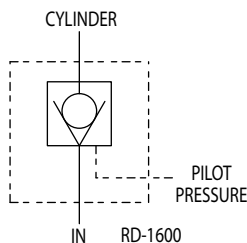


STANDARD MODELS AVAILABLE	
MODEL NUMBER	PORT SIZE
RD-1450	1/2 NPTF
RD-1475	3/4 NPTF

VALVE SPECIFICATIONS:

Capacity: 30 gpm max inlet flow
 Pressure: 3000 psi max
 Weight: 7 lbs.
 Pilot Ratio: 4:1

MODEL RD-1600 PILOT OPERATED CHECK VALVE



STANDARD MODELS AVAILABLE		
MODEL NUMBER	VALVE AND CYL. PORT	PILOT PORT
RD-1637	3/8 NPTF	1/4 NPTF
RD-1650	1/2 NPTF	1/4 NPTF
RD-1608	#8 SAE (3/4-16)	#4 SAE (7/16-20)

VALVE SPECIFICATIONS:

Capacity: 20 gpm max inlet flow
 Pressure: 3000 psi max
 Weight: 2 lbs.
 Pilot Ratio: 4:1
 Decompression Ratio: 16:1

VALVES

PRESSURE COMPENSATED PROPORTIONAL FLOW DIVIDERS

MODEL RD-200 PROPORTIONAL DIVIDER



The PRINCE model RD-200 valve is a pressure compensated proportional flow divider. The standard models of this valve will take one inlet flow and split it into two nearly equal outlet flows. The valve is also available with special ratio spools which will split the flow into two flows proportional to the ratio specified. Because the valve is pressure compensated the valve will maintain the divider ratio with quite different loads on the outlet ports as long as the inlet flow is within the range given in the chart below. **Flow through the RD-200 cannot be reversed.**

The PRINCE model RD-300 provides the same function as the RD-200 with the added feature of free reverse checks. This allows the reverse flow of oil from the outlet ports to the inlet port. **The reverse flow is not pressure compensated.**

VALVE SPECIFICATIONS:

Capacity: 30 gpm max inlet flow

Weight:

RD-200 7

lbs.

STANDARD MODELS AVAILABLE

MODEL NUMBER			DIVIDER RATIO	PORT SIZE	INLET FLOW RANGE
RD-237-8	RD-337-8		50:50	3/8 NPTF	4-8 GPM
RD-250-16	RD-350-16	RD-350-AB-16	50:50	1/2 NPTF	8-19 GPM
RD-275-30	RD-375-30	RD-375-AB-30	50:50	3/4 NPTF	16-30 GPM
RD-208-8	RD-308-8		50:50	3/4 16 SAE	4-8 GPM
RD-212-30	RD-312-30		50:50	1-1/16-12 SAE	16-30 GPM

In OEM quantities the RD-200 and RD-300 valves are available with special divider ratios. Ratios available are: 2:1, 80:20, 70:30, 60:40, and others as required. When ordering specify the divider ratio after the model number. EXAMPLE: RD-250-16 (70:30)

MODEL RD-300 PROPORTIONAL DIVIDER WITH FREE RETURN CHECKS



MODEL RD-500P PROPORTIONAL DIVIDER WITH ADJUSTABLE ORIFICE



The PRINCE model RD-500P is a pressure compensated proportional flow divider valve with one fixed and one adjustable orifice. This valve provides the same function as the RD-200 except the divider ratio can be changed in the field.

VALVE SPECIFICATIONS:

Capacity: 30 gpm max inlet flow
Pressure: 3000 psi max

Weight: RD-500P 7 lbs.

STANDARD MODELS AVAILABLE

MODEL NUMBER	PORT SIZE	INLET FLOW RANGE
RD-537P-8	3/8 NPTF	4-8 GPM
RD-550P-16	1/2 NPTF	8-16 GPM
RD-575P-30	3/4 NPTF	16-30 GPM

MODEL RD-1000S INTERNALLY PILOTED SEQUENCE VALVE WITH EXTERNAL DRAIN



The PRINCE valve model RD-1000S is an internally piloted adjustable sequence valve. This valve will prevent the flow of oil from going to the sequence port until the pressure on the inlet port reaches the sequence pressure. The sequence pressure is adjustable within the range given in chart below. A built in check valve allows flow from sequence port to inlet. To operate properly the **drain port must be connected to tank**. This valve is a spool type sequence valve and will provide smooth operation but should not be used in applications that require low leakage.

VALVE SPECIFICATIONS:

Capacity: 30 gpm max inlet flow
Pressure: 3000 psi max

Weight: 7 lbs.

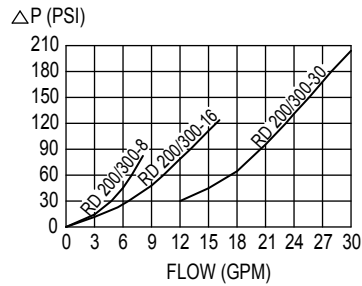
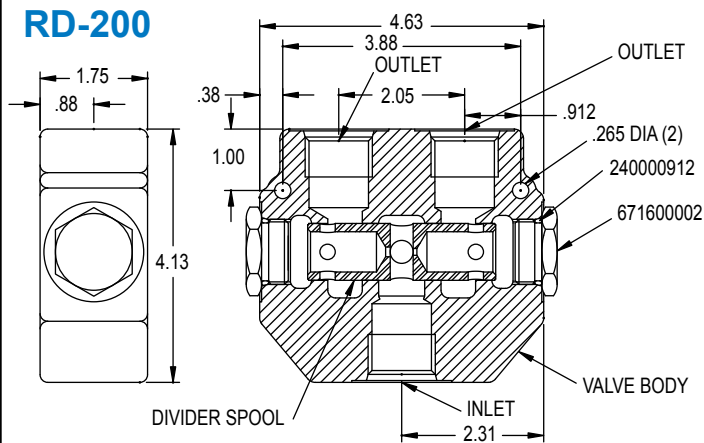
STANDARD MODELS AVAILABLE

MODEL NUMBER	PORT SIZE INLET AND SEQUENCE	DRAIN PORT	SPRING	SEQUENCE PRESSURE
RD-1050S__	1/2 NPTF	3/8 NPTF	L	40-350 PSI
RD-1075S__	3/4 NPTF	3/8 NPTF	M	350-1700 PSI
			H	1400-2500 PSI

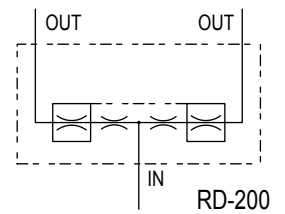
To complete the model number fill in the blank with the spring letter that corresponds to desired counter balance pressure range. **EXAMPLE:** RD-1050SM for 350-1700 psi spring range.

MODEL RD-200, RD-300, RD-300AB, RD-500P, AND RD-1000S PARTS BREAKDOWN AND DIMENSIONS

RD-200

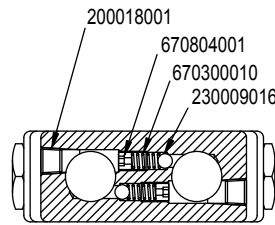
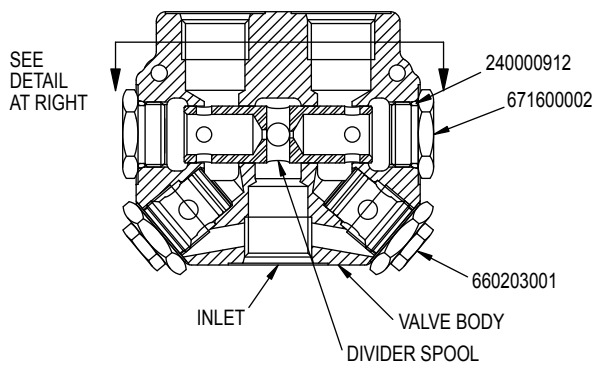


SYMBOL



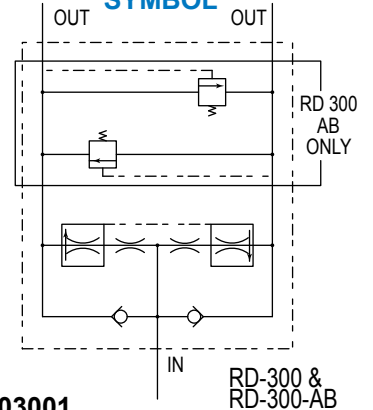
SEAL KIT NO. 660502001

RD-300



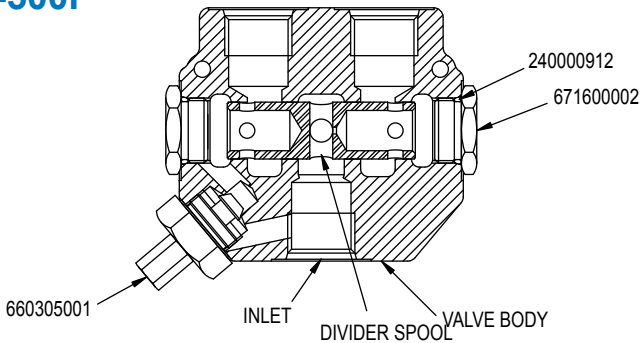
The RD-300AB valve has a built-in automatic bypass. This allows oil to crossover from one outlet to the other when the pressure difference between the two outlet reaches 750 PSI.

SYMBOL

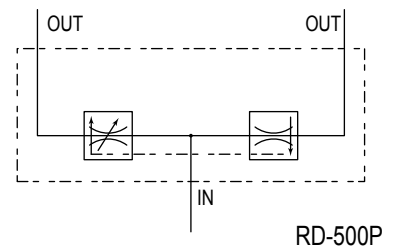


SEAL KIT NO. 660503001

RD-500P

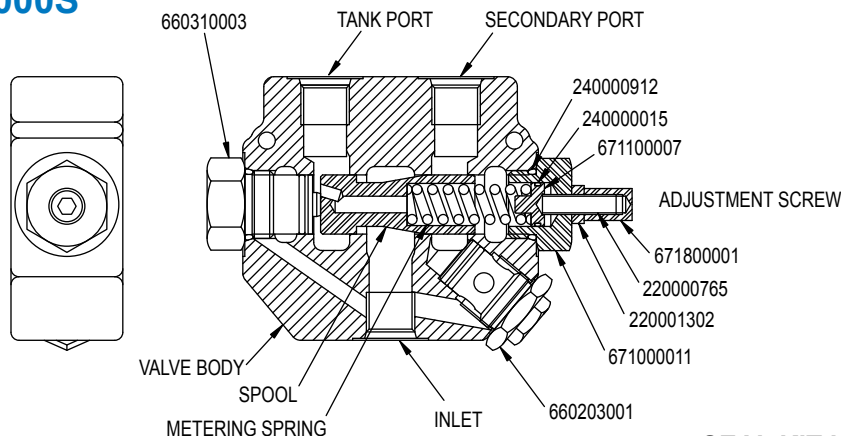


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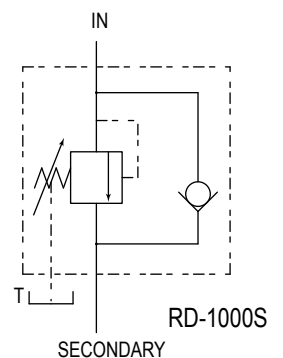


SEAL KIT NO. 660505001

RD-1000S



SYMBOL



SEAL KIT NO. 660510001

VALVES

CONSTANT VOLUME PRIORITY DIVIDERS

MODEL RD-400 FIXED FLOW PRIORITY DIVIDER



The PRINCE model RD-400 is a constant volume priority divider. It can be used in applications where two circuits are to be supplied by a single pump such as power steering systems. In operation the flow of oil supplied to the inlet is divided into two flows, the priority flow and the excess flow. The priority flow will remain nearly constant with variations in pressure on either the priority or excess flow port and will also remain nearly constant with variations in the inlet flow.

The priority flow GPM is determined by a fixed orifice inside the main spool. The desired priority GPM must be specified with model number, see below. The PRINCE model RD-400R provides the same function as described above with the addition of a built in pressure relief for the priority port only. This relief is internally adjustable and requires a separate line to tank. The relief is factory set at 1500 PSI.

VALVE SPECIFICATIONS:

Capacity: 30 gpm max inlet flow Weight: RD-400 7 lbs.
Pressure: 3000 psi max RD-400-R 7.5 lbs.

MODEL RD-400 R FIXED FLOW PRIORITY DIVIDER WITH PRIORITY PRESSURE RELIEF

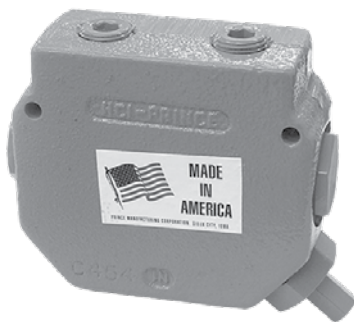


STANDARD MODELS AVAILABLE				PRIORITY GPM
VALVE MODEL NUMBER		PORT SIZE		
		INLET AND EXCESS PORT	PRIORITY PORT	
RD-400-___	RD-400R-___	3/4 NPTF	3/8 NPTF	1.5
RD-405-___	RD-405R-___	3/4 NPTF	1/2 NPTF	2
RD-412-___	RD-412R-___	#12 SAE	#8 SAE	3
RD-450-___	RD-450R-___	1/2 NPTF	3/8 NPTF	4
RD-455-___	RD-455R-___	1/2 NPTF	1/2 NPTF	5
RD-477-___	RD-477R-___	3/4 NPTF	3/4 NPTF	6
				7
				8
				9
				10
				12
				14

To complete the model number fill in the blank with the desired priority GPM from the list at right.

EX: RD-400-3 for 3 GPM priority flow; RD-405R-6 for 6 GPM priority flow.

MODEL RD-500 ADJUSTABLE FLOW PRIORITY DIVIDER



The PRINCE model RD-500 is an adjustable constant volume priority divider. This valve provides the same function as the PRINCE model RD-400 except the priority flow is adjustable from 2 GPM to 12 GPM. The priority flow is set using the adjusting screw and is then locked in place to maintain setting. This allows setting to be fine tuned in the field to the exact flow needed.

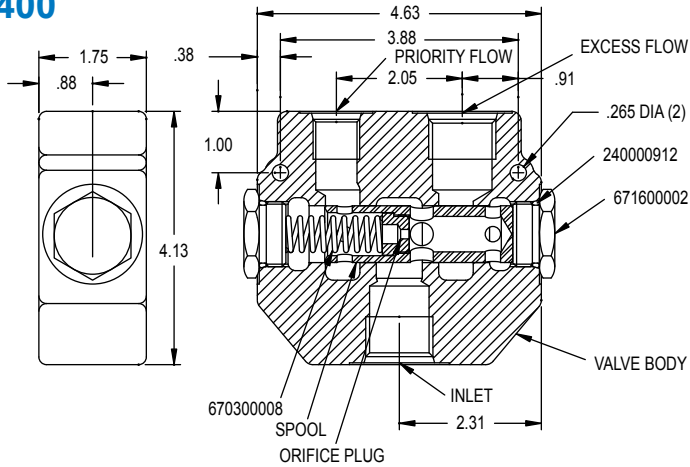
VALVE SPECIFICATIONS

Capacity: 30 gpm max inlet flow
Pressure: 3000 psi max
Weight: 7 lbs.

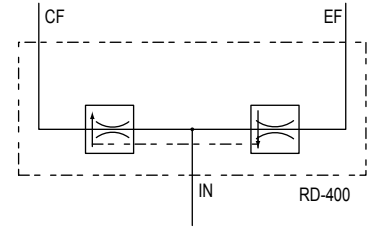
STANDARD MODELS AVAILABLE	
VALVE MODEL NUMBER	PORT SIZE
RD-537	3/8 NPTF
RD-550	1/2 NPTF
RD-575	3/4 NPTF

MODEL RD-400, RD-400R AND RD-500 PARTS BREAKDOWN AND DIMENSIONS

RD-400

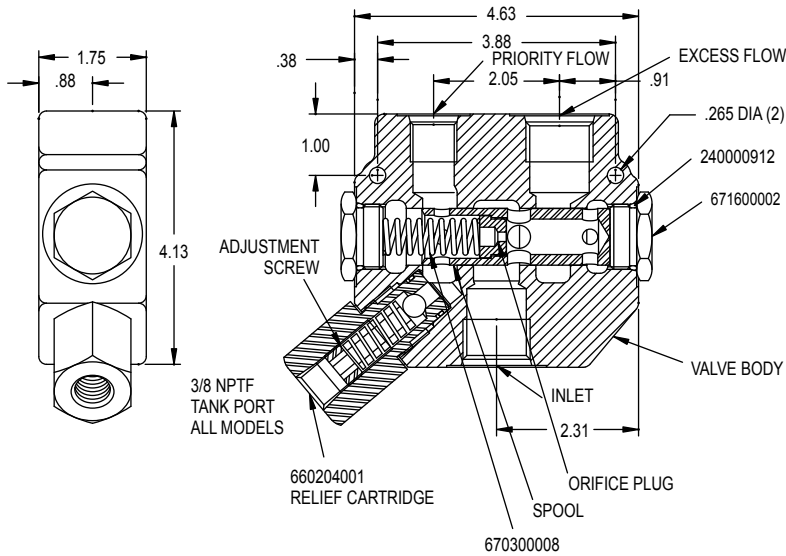


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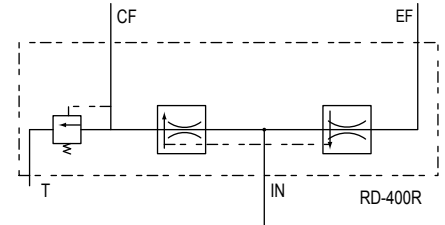


SEAL KIT NO. 660504001

RD-400R

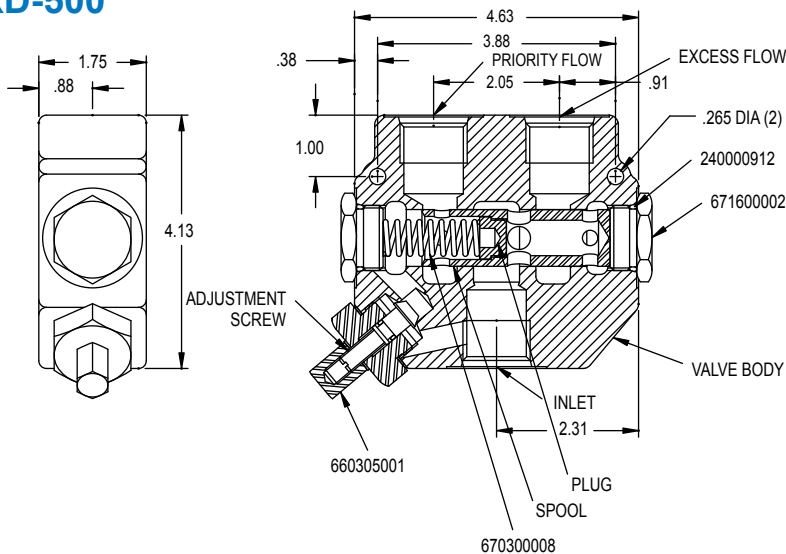


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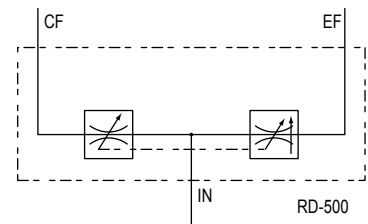


SEAL KIT NO. 660504002

RD-500



SYMBOL



SEAL KIT NO. 660505001

NOTE: spools are not available separately