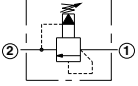
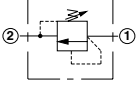
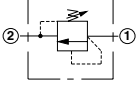
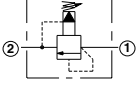
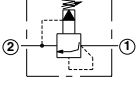
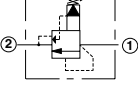
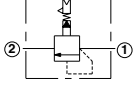
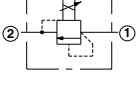
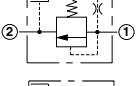
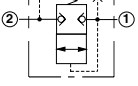
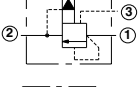
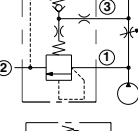
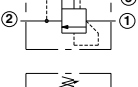
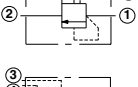
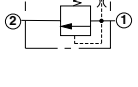
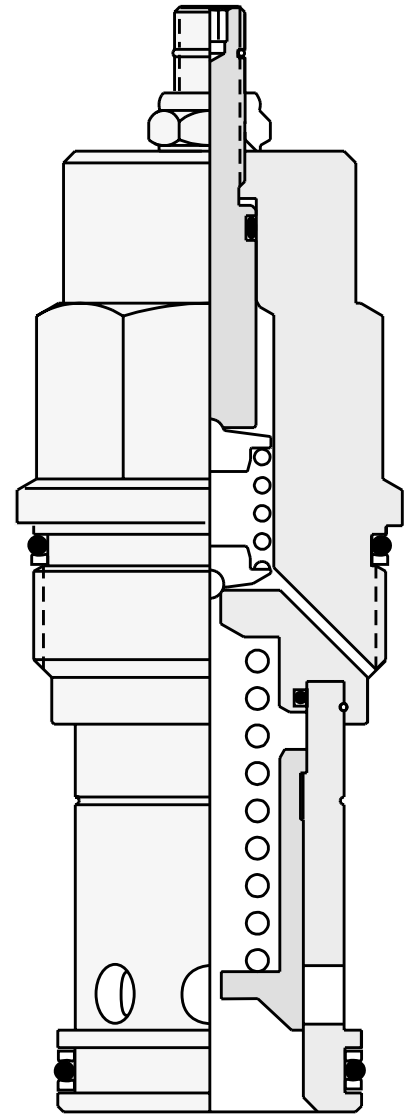
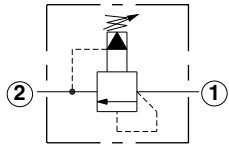
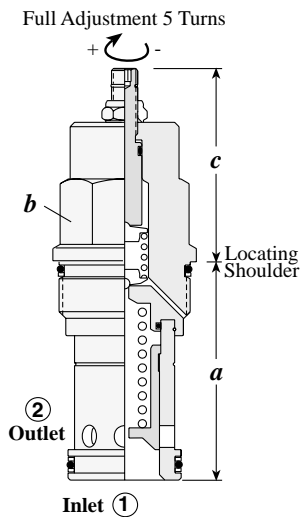


# Relief Cartridge Valves

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	Direct Acting, Pilot Stage	8
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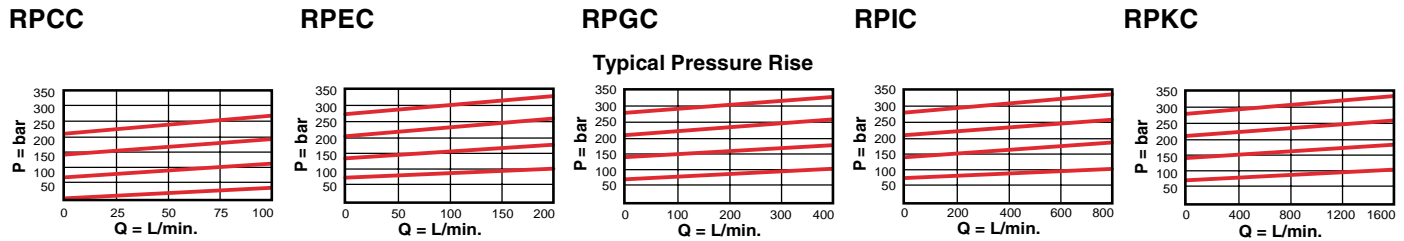


**PILOT OPERATED BALANCED PISTON,**



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions					Installation Torque (Nm)
			a	b	c			
					L	C	K	
45 L/min.	RPCC – LAN	T - 162A	31	19,1	54	56	59	35/40
95 L/min.	RPEC – LAN	T - 10A	39,7	22,2	51	53	58	40/50
200 L/min.	RPGC – LAN	T - 3A	47,8	28,6	54	56	61	60/70
380 L/min.	RPIC – LAN	T - 16A	61,9	31,8	62	64	69	200/215
760 L/min.	RPKC – LAN	T - 18A	79,4	41,3	72	74	78	465/500

Performance Curves



- Maximum operating pressure = 350 bar
- Will accept maximum pressure at Port 2
- Back pressure on the tank port (port 2) is directly additive at a 1:1 ratio to the valve setting
- Factory pressure settings established at 15 L/min.
- Typical response time 10 ms.
- Maximum leakage = RPCC, RPEC: 32,8 cc/min./70 bar, RPGC: 49,2 cc/min./70 bar, RPIC: 66,5 cc/min./70 bar, RPKC: 81,9 cc/min./70 bar
- RPCC minimum setting for all spring ranges is 5 bar.

**RP \* C - \* \* \***

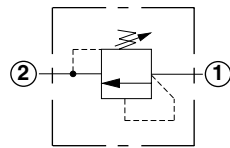
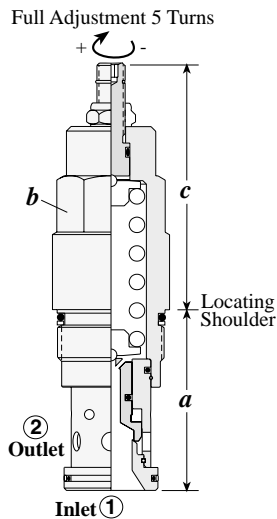
Nominal Capacity	Control**	Adjustment Range	Seal
<b>C</b> 45 L/min.*	<b>L</b> Standard Screw	<b>A</b> 7 - 210 bar	<b>N</b> Buna-N
<b>E</b> 95 L/min.	<b>C</b> Tamper Resistant	<b>B</b> 3,5 - 105 bar	<b>V</b> Viton
<b>G</b> 200 L/min.	<b>K</b> Handknob	<b>C</b> 10 - 420 bar	
<b>I</b> 380 L/min.		<b>N</b> 4 - 55 bar	
<b>K</b> 760 L/min.		<b>Q</b> 4 - 25 bar	
		<b>W</b> 10 - 315 bar	

Adjustment Range Options:  
 A, B, C, and W are standard set at 70 bar.  
 N Option is standard set at 25 bar.  
 Q Option is standard set at 14 bar.  
 \* Minimum setting 5 bar on all ranges.  
**Customer may specify pressure setting.**

\*\* See page 162 for information on Control Options

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## DIRECT ACTING



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (Nm)
			a	b	L	C	
45 L/min.	<b>RD</b> BA – LAN	T - 162A	31	19,1	54	56	35/40
95 L/min.	<b>RD</b> DA – LAN	T - 10A	39,7	22,2	61	63	40/50
200 L/min.	<b>RD</b> FA – LAN	T - 3A	47,8	28,6	64	66	60/70
380 L/min.	<b>RD</b> HA – LAN	T - 16A	61,9	31,8	83	85	200/215
760 L/min.	<b>RD</b> JA – LAN	T - 18A	79,4	41,3	100	104	465/500

### Performance Curves

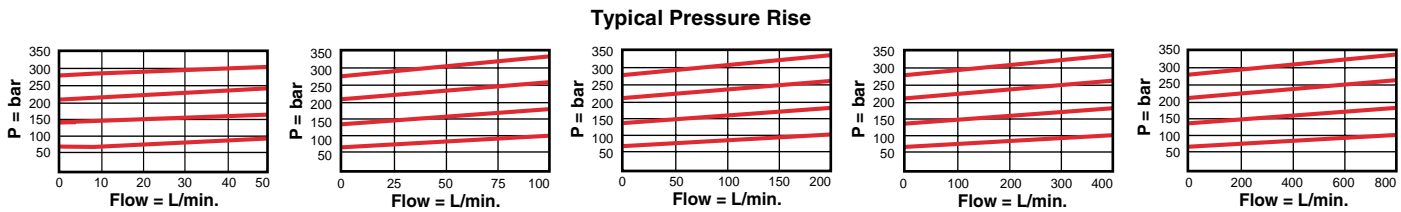
#### RD

#### RD

#### RD

#### RD

#### RD



- Maximum operating pressure = 350 bar
- Cannot be adjusted with pressure at Port 1.
- Will accept maximum pressure at Port 2.
- Back pressure on the tank port (port 2) is directly additive at a 1:1 ratio to the valve setting.
- Factory pressure settings established at 15 L/min.
- Typical response time 2 ms.
- Maximum leakage = 0,7 cc/min. at reseal.
- Reseat exceeds 90% of cracking pressure.

### RD ★ A - ★ ★ ★

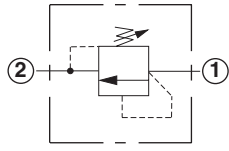
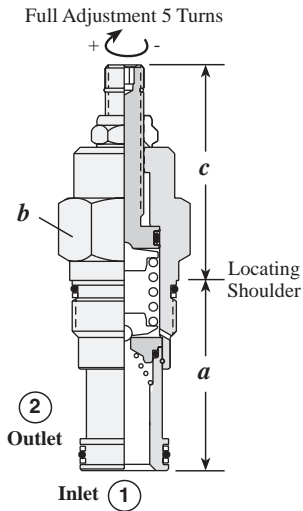
Nominal Capacity	Control**	Adjustment Range	Seal
<b>B</b> 45 L/min.	<b>L</b> Standard Screw	<b>A</b> 35 - 210 bar	<b>N</b> Buna-N
<b>D</b> 95 L/min.	<b>C</b> Tamper Resistant	<b>B</b> 20 - 105 bar	<b>V</b> Viton
<b>F</b> 200 L/min.		<b>C</b> 70 - 420 bar	
<b>H</b> 380 L/min.		<b>D</b> 14 - 55 bar	
<b>J</b> 760 L/min.		<b>E</b> 7 - 25 bar	
		<b>S</b> 3,5 - 14 bar	
		<b>W</b> 70 - 315 bar	

Adjustment Range Options:  
 A, B, C, and W are standard set at 70 bar.  
 D Option is standard set at 25 bar.  
 E Option is standard set at 14 bar.  
 S Option is standard set at 7 bar.  
**Customer may specify pressure setting.**

U.S. Patent #4,742,846    \*\* See page 162 for information on Control Options  
 European Patent Pending

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**DIRECT ACTING, PILOT STAGE**



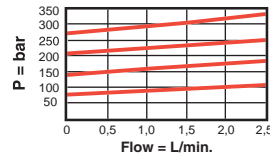
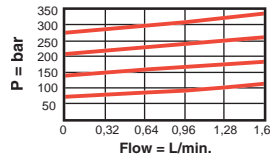
Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions					Installation Torque (Nm)
			a	b	c			
1 L/min.	<b>RBAC – LAN</b>	T - 10A	39,7	22,2	L	C	K	40/50
2 L/min.	<b>RBAA – LAN</b>	T - 3A	47,8	28,6	54	56	61	60/70

Performance Curves

**RBAC**

**RBAA**

Typical Pressure Rise



- Maximum operating pressure = 350 bar
- Typical response time 2 ms.
- Maximum leakage less than 0,4 cc/min.
- Back pressure on the tank port (port 2) is directly additive at a 1:1 ratio to the valve setting

**RB A ★ – ★ ★ ★**

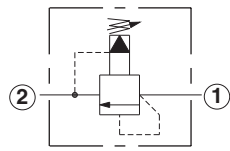
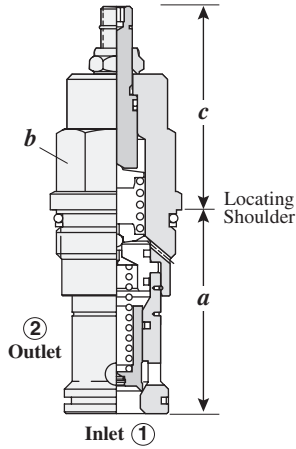
Nominal Capacity	Control**	Adjustment Range	Seal
<b>C</b> 1 L/min.	<b>L</b> Standard Screw	<b>A</b> 2 - 210 bar	<b>N</b> Buna-N
<b>A</b> 2 L/min.	<b>C</b> Tamper Resistant	<b>B</b> 2 - 105 bar	<b>V</b> Viton
	<b>K</b> Handknob	<b>C</b> 2 - 420 bar	
		<b>D</b> 2 - 55 bar	
		<b>E</b> 2 - 25 bar	
		<b>W</b> 2 - 315 bar	

\*\* See page 162 for information on Control Options

Adjustment Range Options:  
 A, B, C, and W are standard set at 70 bar.  
 D Option is standard set at 25 bar.  
 E Option is standard set at 14 bar.  
**Customer may specify pressure setting.**

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**PILOT OPERATED, BALANCED POPPET**



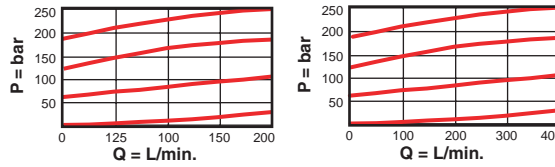
Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (Nm)
			a	b	L	C	
200 L/min	<b>RPGS – LAN</b>	T - 3A	47,8	28,6	54	55	60/70
380 L/min.	<b>RPIS – LAN</b>	T - 16A	61,9	31,8	62,0	62,0	200/215

**Performance Curves**

**RPGS**

**RPIS**

Typical Pressure Rise



- Maximum operating pressure = 350 bar
- Maximum leakage 0,7 cc/min. at reseal
- Reseat exceeds 90% of cracking pressure.
- Factory pressure settings established at 15 L/min.
- Typical response time 10 ms.
- Back pressure on the tank port (port 2) is directly additive at a 1:1 ratio to the valve setting

**RP ★ S – ★ ★ ★**

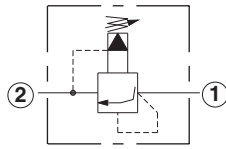
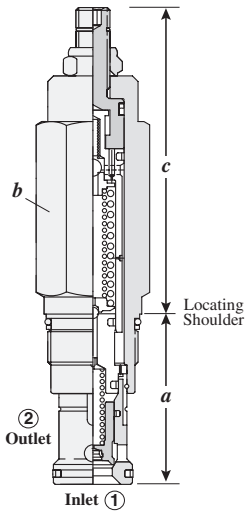
Nominal Capacity	Control**	Adjustment Range	Seal
<b>G</b> 200 L/min.	<b>C</b> Tamper Resistant Factory Set	<b>A</b> 7 - 210 bar	<b>N</b> Buna-N
<b>I</b> 380 L/min.	<b>K</b> Handknob	<b>B</b> 3,5 - 105 bar	<b>V</b> Viton
	<b>L</b> Standard Screw Adjustment	<b>C</b> 10 - 420 bar	
		<b>N</b> 4 - 55 bar	
		<b>Q</b> 4 - 25 bar	
		<b>W</b> 7 - 315 bar	

Adjustment Range Options:  
 A, B, C, and W are standard set at 70 bar.  
 N Option is standard set at 25 bar.  
 Q Option is standard set at 14 bar.  
 Customer may specify pressure setting.

\*\* See page 162 for information on Control Options

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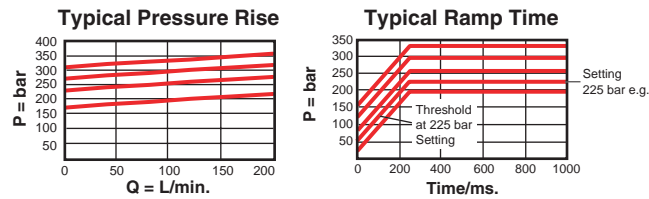
**PILOT OPERATED, BALANCED POPPET, SOFT START**



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (Nm)
			a	b	L	C	
200 l/min.	<b>RPGT - LAN</b>	T - 3A	47,8	28,6	85,8	88,1	60/70

Performance Curves

**RPGT**



- Maximum operating pressure = 350 bar
- Will accept maximum pressure at Port 2.
- Factory pressure settings established at 15 L/min.
- Shifting time from minimum to maximum setting 250 ms.
- Control pilot flow = 0,16 to 0,41 L/min.

**RP G T - \* \* \***

Nominal Capacity	Control**	Adjustment Range	Seal
<b>G</b> 200 L/min.	<b>C</b> Tamper Resistant Factory Set	<b>A</b> 140 - 210 bar	<b>N</b> Buna-N
	<b>L</b> Standard Screw Adjustment	<b>C</b> 315 - 420 bar	<b>V</b> Viton
		<b>W</b> 210-315 bar	

Patents:  
U.S. #6,039,070;  
Germany EP 1 001 197;  
Japan #3,119,230

\*\* See page 162 for information on Control Options

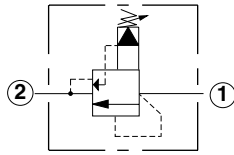
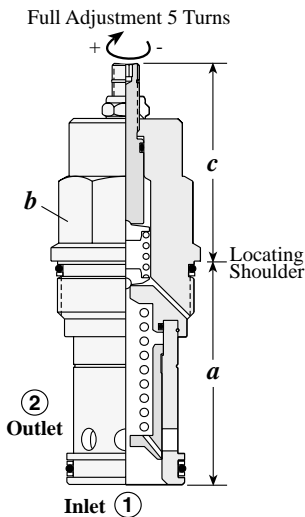
Adjustment Range Options:

A is standard set at 140 bar.  
C is standard set at 315 bar.  
W is standard set at 210 bar.

Customer may specify pressure setting.

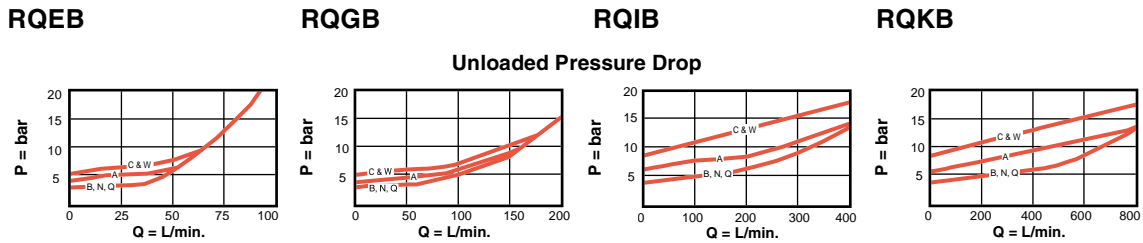
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**PILOT OPERATED, KICK-DOWN**



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions					Installation Torque (Nm)
			a	b	c			
95 L/min.	<b>RQEB – LAN</b>	T - 10A	39,7	22,2	51	53	58	40/50
200 L/min.	<b>RQGB – LAN</b>	T - 3A	47,8	28,6	54	56	61	60/70
380 L/min.	<b>RQIB – LAN</b>	T - 16A	61,9	31,8	62	64	69	200/215
760 L/min.	<b>RQKB – LAN</b>	T - 18A	79,4	41,3	72	74	78	465/500

Performance Curves



- Maximum operating pressure = 350 bar
- Will accept maximum pressure at Port 2.
- Flow through cartridge must cease to reset valve.
- Back pressure on the tank port (port 2) is directly additive at a 1:1 ratio to the valve setting
- Factory pressure settings established at kick down point.
- Typical response time 25 ms.
- Maximum leakage = RQEB: 32,8 cc/min./70 bar, RQGB: 49,2 cc/min./70 bar, RQIB: 65,5 cc/min./70 bar, RQKB: 81,9 cc/min./70 bar

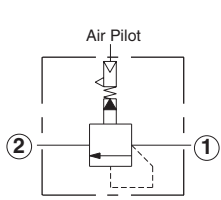
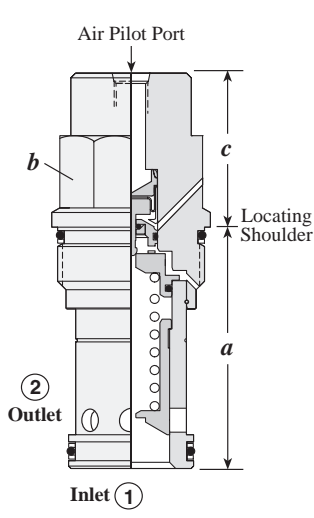
RQ ★ B – ★ ★ ★			
Nominal Capacity	Control**	Adjustment Range	Seal
<b>E</b> 95 L/min.	<b>L</b> Standard Screw	<b>A</b> 7 - 210 bar	<b>N</b> Buna-N
<b>G</b> 200 L/min.	<b>C</b> Tamper Resistant	<b>B</b> 3,5 - 105 bar	<b>V</b> Viton
<b>I</b> 380 L/min.	<b>K</b> Handknob	<b>C</b> 10 - 420 bar	
<b>K</b> 760 L/min.		<b>N</b> 4 - 55 bar	
		<b>Q</b> 4 - 25 bar	
		<b>W</b> 10 - 315 bar	

Adjustment Range Options:  
 A, B, C, and W are standard set at 70 bar.  
 N Option is standard set at 25 bar.  
 Q Option is standard set at 14 bar.  
**Customer may specify pressure setting.**

\*\* See page 162 for information on Control Options

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**PILOT OPERATED, BALANCED PISTON, AIR CONTROLLED**



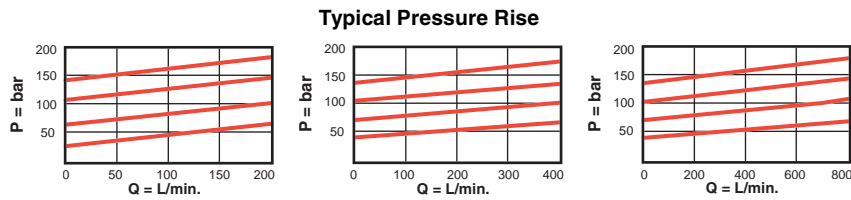
Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (Nm)
			a	b	c		
					A	B	
200 L/min.	<b>RPGD – ABN</b>	T - 3A	47,8	28,6	34	-	60/70
380 L/min.	<b>RPID – BBN</b>	T - 16A	61,9	31,8	-	42	200/215
760 L/min.	<b>RPKD – BBN</b>	T - 18A	79.4	41,3	-	51	465/500

Performance Curves

RPGD

RPID

RPKD



- Maximum operating pressure = 140 bar
- Will accept maximum pressure at Port 2.
- Maximum air pressure should not exceed 10 bar.
- Pilot ratio, air to hydraulic = 1:20
- Typical response time 10 ms.
- Maximum leakage = RPGD: 49,2 cc/min./70 bar, RPID: 65,5 cc/min./70 bar, RPKD: 81,9 cc/min./70 bar.

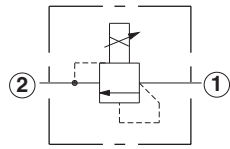
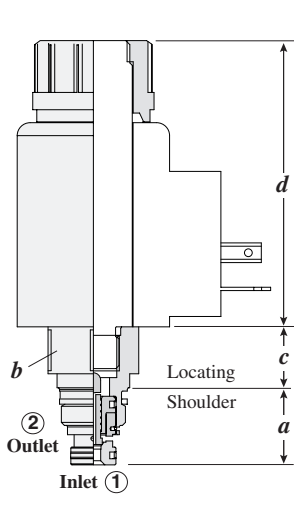
**RP ★ D – ★ ★ ★**

Nominal Capacity	Control	Adjustment Range	Seal
<b>G</b> 200 L/min.	Available for RPGD only	<b>B</b> 3,5 - 105 bar	<b>N</b> Buna-N
<b>I</b> 380 L/min.	<b>A</b> 1/4" NPTF Pilot Port at end of Cartridge*	<b>B</b> 3,5 - 105 bar	<b>V</b> Viton
<b>K</b> 760 L/min.			
<i>Available for RPID, RPKD only</i>			
	<b>B</b> SAE-4 Pilot Port at end of Cartridge*		
* Maximum air pilot pressure should not exceed 10 bar.			

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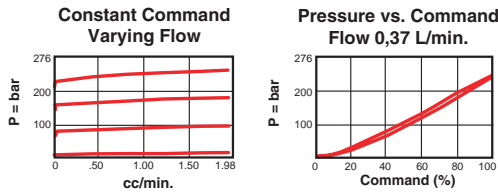
**ELECTRO-PROPORTIONAL PILOT**



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions				Installation Torque (Nm)
			a	b	c	d	
1 L/min.	<b>RBAP – MAN</b>	T - 8A	18,8	22,2	15,0	70,1	35/40

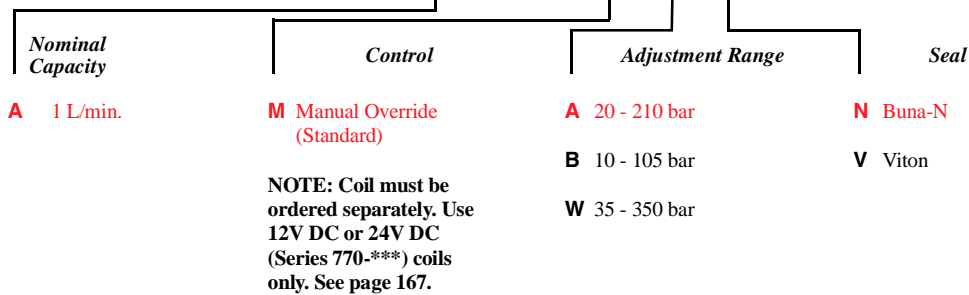
Performance Curves

**RBAP**



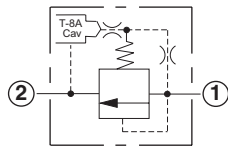
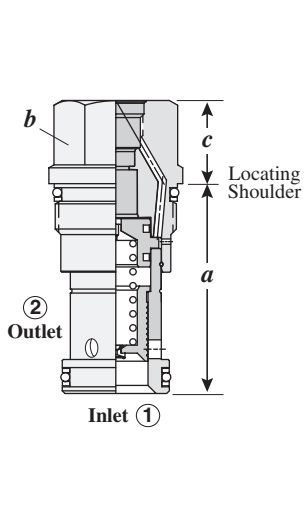
- Maximum operating pressure = 350 bar
- Maximum leakage = 24,6 cc/min at reseal
- Back pressure on the tank port (port 2) is directly additive at a 1:1 ratio to the valve setting
- Reseat exceeds 85% of crack
- Hysteresis with dither <4%
- Hysteresis with DC input <8%
- Linearity with dither <2%
- For optimum performance, an amplifier with current sensing and adjustable dither should be used. Dither should be adjustable between 100 - 250 Hz.

**RB A P – ★ ★ ★**



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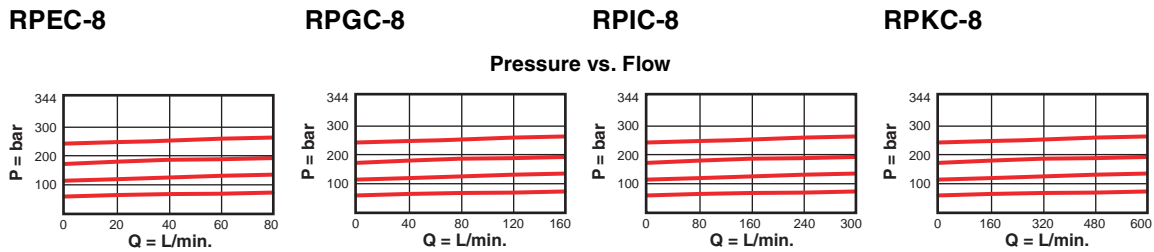
# BALANCED PISTON, MODULATING ELEMENT WITH INTEGRAL PILOT CONTROL CAVITY



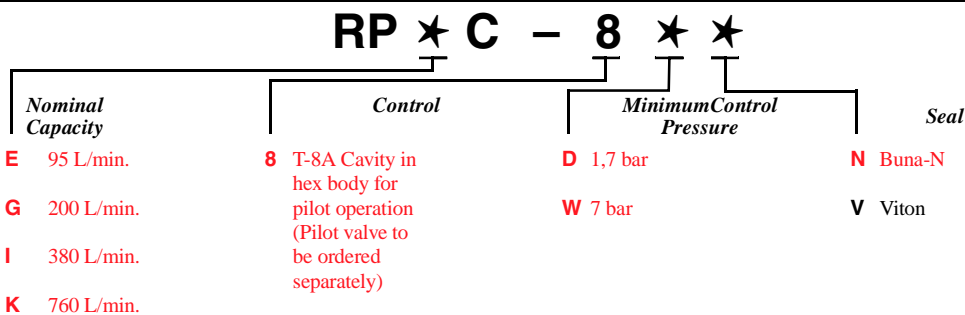
The -8 control option allows a pilot control valve to be incorporated directly into the end of the modulating element via the T-8A cavity. These pilot control cartridges are sold separately and include electro-proportional, solenoid, air pilot, and hydraulic pilot operation. See Pilot Control Cartridges on page 121.

Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (Nm)
			<i>a</i>	<i>b</i>	<i>c</i>	
95 L/min.	RPEC - 8WN	T - 10A	39,7	22,2	22,2	40/50
190 L/min.	RPGC - 8WN	T - 3A	47,8	28,6	22,2	60/70
380 L/min.	RPIC - 8WN	T - 16A	61,9	31,8	31,8	200/215
760 L/min.	RPKC - 8WN	T - 18A	79,9	41,3	41,3	465/500

Performance Curves

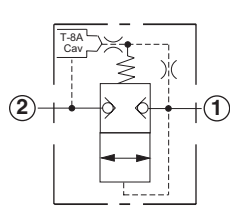
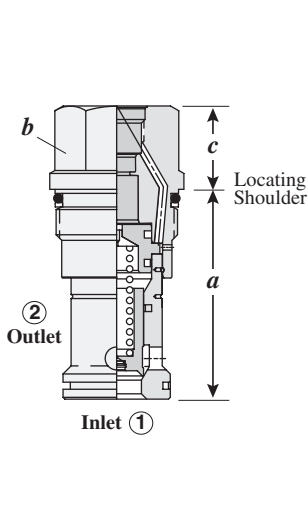


- Maximum operating pressure = 350 bar
- Will accept maximum pressure at Port 2.
- Back pressure on the tank port (port 2) is directly additive at a 1:1 ratio to the valve setting
- Control pilot flow = RPEC-8: 0,11 to 0,16 L/min., RPGC-8: 0,16 to 0,25 L/min., RPIC-8, RPKC-8: 0,25 to 0,33 L/min.
- Maximum leakage = RPEC-8: 32,8 cc/min./70 bar; RPGC-8: 49,2 cc/min./70; RPIC-8: 65,5 cc/min./70 bar; RPKC-8: 81,9 cc/min./70 bar.
- With the -8 control option, the main stage valve should first be installed to the correct torque value. The T-8A pilot control valve should then be installed into the main stage valve to its required torque value.



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**BALANCED POPPET, MODULATING ELEMENT WITH INTEGRAL PILOT CONTROL CAVITY**



The -8 control option allows a pilot control valve to be incorporated directly into the end of the modulating element via the T-8A cavity. These pilot control cartridges are sold separately and include electro-proportional, solenoid, air pilot, and hydraulic pilot operation. See Pilot Control Cartridges on page 121.

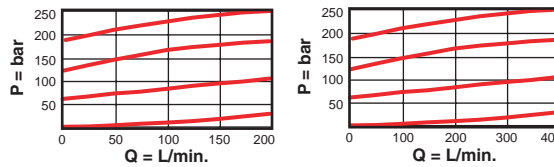
Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (Nm)
			a	b	c	
200 L/min.	<b>RPGS - 8WN</b>	T - 3A	84,7	28,6	22,2	60/70
380 L/min.	<b>RPIS - 8WN</b>	T - 16A	84,7	31,8	31,8	200/215

Performance Curves

**RPGS-8**

**RPIS-8**

Typical Pressure Rise



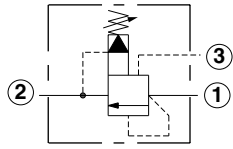
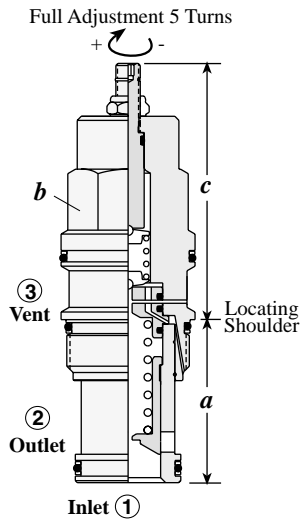
- Maximum operating pressure = 350 bar
- Will accept maximum pressure at Port 2
- Back pressure on the tank port (port 2) is directly additive at a 1:1 ratio to the valve setting.
- Typical response time 10 ms
- Control pilot flow = R PGS-8: 0,16 to 0,25 L/min., RPIS-8: 0,25 to 0,33 L/min.
- Maximum leakage = 0,7 cc/min. at reseal
- Reseat exceeds 90% of cracking pressure.
- With the -8 control option, the main stage valve should first be installed to the correct torque value. The T-8A pilot control valve should then be installed into the main stage valve to its required torque value.

**RP ★ S - 8 ★ ★**

Nominal Capacity	Control**	Minimum Control Pressure	Seal
<b>G</b> 200 L/min.	<b>8</b> T-8A Cavity in hex body for pilot operation (Pilot valve to be ordered separately)	<b>B</b> 3,5 bar	<b>N</b> Buna-N
<b>I</b> 380 L/min.		<b>W</b> 7 bar	<b>V</b> Viton

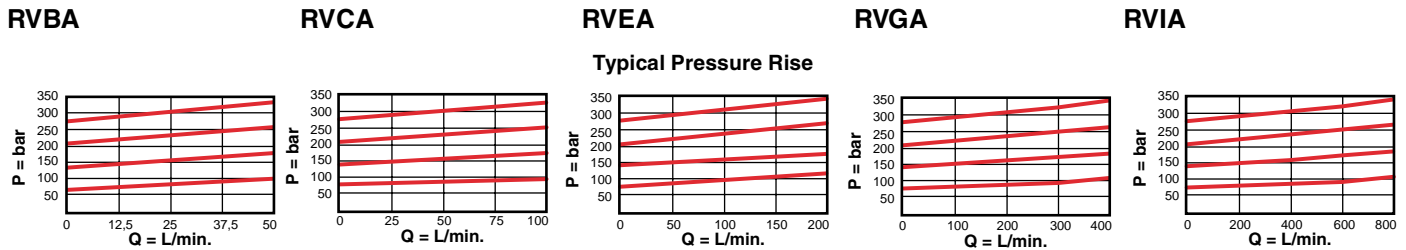
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**VENTABLE, PILOT OPERATED, BALANCED PISTON**



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions					Installation Torque (Nm)
			a	b	c			
					L	C	K	
30 L/min.	<b>RVBA – LAN</b>	T - 163A	31	19,1	65	67	71	35/40
60 L/min.	<b>RVCA – LAN</b>	T - 11A	34,9	22,2	64	66	70	40/50
120 L/min.	<b>RVEA – LAN</b>	T - 2A	34,9	28,6	72	74	78	60/70
240 L/min.	<b>RVGA – LAN</b>	T - 17A	46	31,8	84	86	90	200/215
480 L/min.	<b>RVIA – LAN</b>	T - 19A	63,5	41,3	100	104	107	465/500

Performance Curves



- Maximum operating pressure = 350 bar
- Pressure at port 3 (vent) controls the valve below its setting.
- Back pressure on the tank port (port 2) is directly additive at a 1:1 ratio to the valve setting.
- Control pilot flow = RVBA, RVCA: 0,11 L/min. to 0,16 L/min.; RVEA: 0,16 L/min. to 0,25 L/min.; RVGA, RVIA: 0,25 L/min. to 0,33 L/min.
- Factory pressure setting established at 15 L/min.
- Typical response time 10 ms.
- Maximum leakage = RVBA, RVCA: 32,8 cc/min/70 bar, RVEA: 49,2 cc/min/70 bar, RVGA: 65,5 cc/min/70 bar, RVIA: 81,9 cc/min/70 bar.
- RVBA minimum setting for all spring ranges is 5 bar.
- Will accept maximum pressure at port 2.

**RV ★ A – ★ ★ ★**

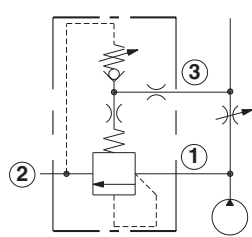
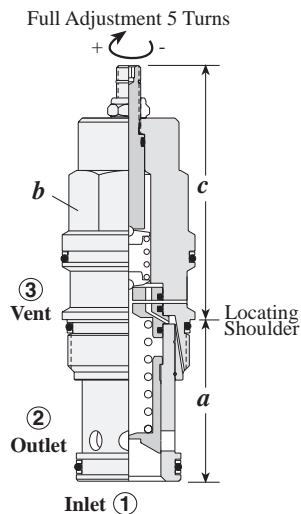
Nominal Capacity	Control**	Adjustment Range	Seal
<b>B</b> 30 L/min.*	<b>L</b> Standard Screw	<b>A</b> 7 - 210 bar	<b>N</b> Buna-N
<b>C</b> 60 L/min.	<b>C</b> Tamper Resistant	<b>B</b> 3,5 - 105 bar	<b>V</b> Viton
<b>E</b> 120 L/min.	<b>K</b> Handknob	<b>C</b> 10 - 420 bar	
<b>G</b> 240 L/min.		<b>N</b> 4 - 55 bar	
<b>I</b> 480 L/min.		<b>Q</b> 4 - 25 bar	
		<b>W</b> 10 - 315 bar	

Adjustment Range Options:  
 A, B, C, and W are standard set at 70 bar.  
 N Option is standard set at 25 bar.  
 Q Option is standard set at 14 bar.  
 \* Minimum setting 5 bar on all ranges.  
**Customer may specify pressure setting.**

\*\* See page 162 for information on Control Options

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**MODULATING ELEMENT WITH RELIEF FUNCTION**



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions					Installation Torque (Nm)
			a	b	c			
10 L/min.	<b>RVBB - LAN</b>	T - 163A	31	19,1	65	67	71	35/40
20 L/min.	<b>RVCB - LAN</b>	T - 11A	34,9	22,2	64	66	70	40/50
40 L/min.	<b>RVEB - LAN</b>	T - 2A	34,9	28,6	72	74	78	60/70
80 L/min.	<b>RVGB - LAN</b>	T - 17A	46	31,8	84	86	90	200/215
160 L/min.	<b>RVIB - LAN</b>	T - 19A	63,5	41,3	100	104	107	465/500

**Performance Curves**

**RVBB**

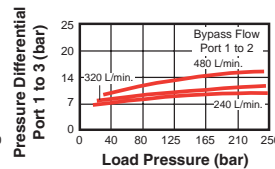
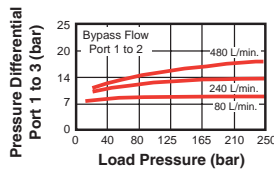
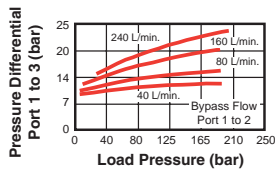
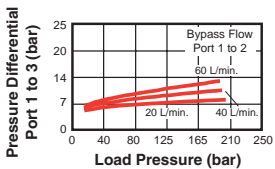
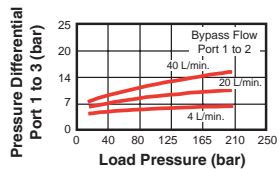
**RVCB**

**RVEB**

**RVGB**

**RVIB**

**Typical Compensator Differentials**



- Back pressure on the tank port (port 2) is directly additive at a 1:1 ratio to the valve setting.
- Maximum operating pressure = 350 bar
- Factory pressure setting established at 15 L/min.
- Typical response time 10 ms.
- Maximum leakage = RVBB, RVCB: 32,8 cc/min/70 bar, RVEB: 49,2 cc/min/70 bar, RVGB: 65,5 cc/min/70 bar, RVIB: 81,9 cc/min/70 bar.

**RV ★ B - ★ ★ ★**

Nominal Capacity	Control**	Adjustment Range	Seal
<b>B</b> 10 L/min.*	<b>L</b> Standard Screw	<b>A</b> 7 - 210 bar	<b>N</b> Buna-N
<b>C</b> 20 L/min.	<b>C</b> Tamper Resistant	<b>B</b> 7 - 105 bar**	<b>V</b> Viton
<b>E</b> 40 L/min.	<b>K</b> Handknob	<b>C</b> 7 - 420 bar	
<b>G</b> 80 L/min.			
<b>I</b> 160 L/min.			

\* For RVCB, the bias pressure is 4 bar.

Adjustment Range Options:

A, B, and C are standard set at 70 bar.

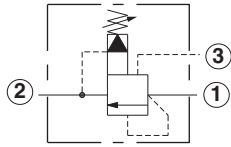
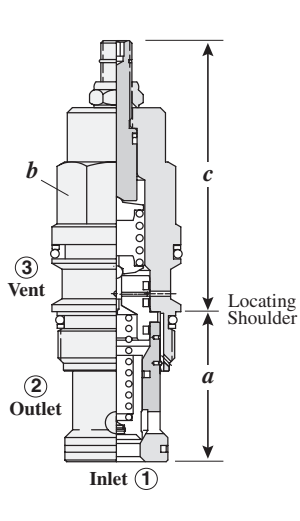
\* Minimum setting 7 bar on all ranges.

Customer may specify pressure setting.

\*\* See page 162 for information on Control Options

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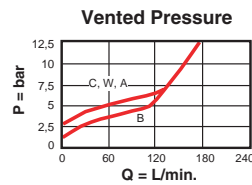
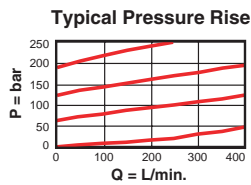
**VENTABLE, PILOT OPERATED, BALANCED POPPET**



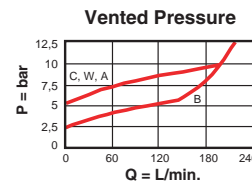
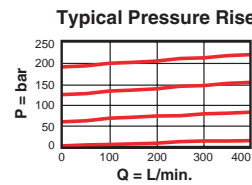
Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions					Installation Torque (Nm)
			a	b	c			
					L	C	K	
120 l/min.	<b>RVES – LAN</b>	T - 2A	35,0	28,6	71,0	73,0	78,0	60/70
200 l/min.	<b>RVGS – LAN</b>	T - 17A	46,0	31,8	83,3	84,1	89,7	200/215

Performance Curves

**RVES**



**RVGS**



- Maximum operating pressure = 350 bar.
- Will accept maximum pressure at port 2
- Pressure at port 3 (vent) controls the valve below its setting.
- Back pressure on the tank port (port 2) is directly additive at a 1:1 ratio to the valve setting.
- Factory pressure setting established at 15 L/min.
- Maximum leakage at reseal = 0,7 cc/min.
- Reseat exceeds 90% of crack
- Typical response 10 ms
- Control pilot flow = RVES: 0,16 L/min. to 0,25 L/min; RVGS: 0,25 L/min. to 0,33 L/min

**RV ★ S – ★ ★ ★**

Nominal Capacity	Control**	Adjustment Range	Seal
<b>E</b> 30 L/min.	<b>C</b> Tamper Resistant Factory Set	<b>A</b> 7 - 210 bar	<b>N</b> Buna-N
<b>G</b> 120 L/min.	<b>K</b> Handknob	<b>B</b> 3,5 - 105 bar	<b>V</b> Viton
	<b>L</b> Standard Screw Adjustment	<b>C</b> 10 - 420 bar	
		<b>N</b> 4 - 55 bar	
		<b>Q</b> 4 - 25 bar	
		<b>W</b> 10 - 315 bar	

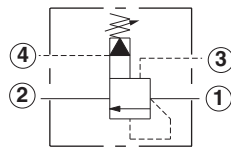
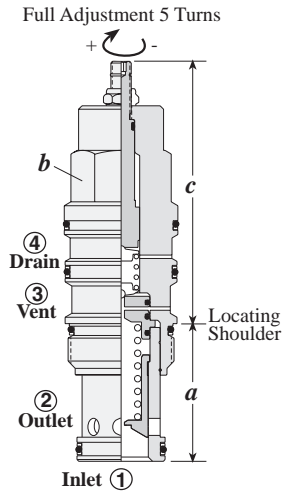
Adjustment Range Options:  
 A, B, C and W are standard set at .70 bar.  
 N Option is standard set at 25 bar.  
 Q option is standard set at 14 bar.

\*\* See page 162 for information on Control Options

Customer may specify pressure settings.

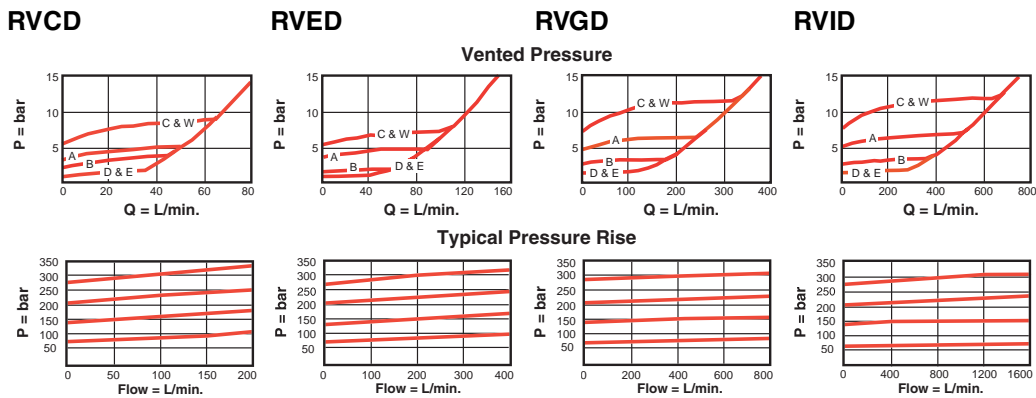
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**VENTABLE, PILOT OPERATED, BALANCED PISTON WITH EXTERNAL DRAIN**



Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions					Installation Torque (Nm)
			a	b	c			
					L	C	K	
60 L/min.	<b>RVCD – LAN</b>	T - 21A	34,9	22,2	79	81	85	40/50
120 L/min.	<b>RVED – LAN</b>	T - 22A	34,9	28,6	88	90	94	60/70
240 L/min.	<b>RVGD – LAN</b>	T - 23A	46	31,8	100	102	107	200/215
480 L/min.	<b>RVID – LAN</b>	T - 24A	63,5	41,3	122	126	129	465/500

Performance Curves



- Maximum operating pressure = 350 bar
- Pressure at port 4 is directly additive to the valve setting at a 1:1 ratio and should not exceed 350 bar
- Pressure at port 3 (vent) controls the valve below its setting.
- Control pilot flow = RVCD: 0,11 L/min. to 0,16 L/min.; RVED: 0,16 L/min. to 0,25 L/min.; RVGD, RVID: 0,25 L/min. to 0,33 L/min.
- Factory pressure setting established at 15 L/min.
- Typical response time 10 ms.
- Maximum leakage = RVCD: 32,8 cc/min/70 bar, RVED: 49,2 cc/min/70 bar, RVGD: 65,5 cc/min/70 bar, RVID: 81,9 cc/min/70 bar.

**RV ★ D – ★ ★ ★**

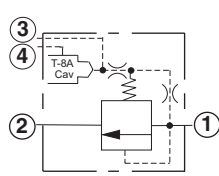
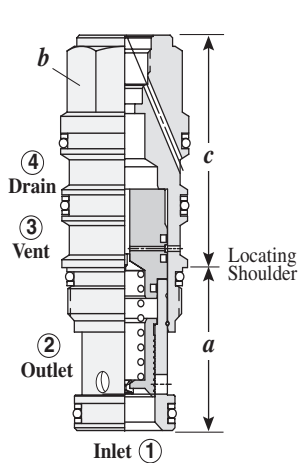
Nominal Capacity	Control**	Adjustment Range	Seal
<b>C</b> 60 L/min.	<b>L</b> Standard Screw	<b>A</b> 7 - 210 bar	<b>N</b> Buna-N
<b>E</b> 120 L/min.	<b>C</b> Tamper Resistant	<b>B</b> 3,5 - 105 bar	<b>V</b> Viton
<b>G</b> 240 L/min.	<b>K</b> Handknob	<b>C</b> 10 - 420 bar	
<b>I</b> 480 L/min.		<b>D</b> 2 - 55 bar	
		<b>E</b> 2 - 25 bar	
		<b>W</b> 10 - 315 bar	

Adjustment Range Options:  
 A, B, C, and W are standard set at 70 bar.  
 D Option is standard set at 25 bar.  
 E Option is standard set at 14 bar.  
**Customer may specify pressure setting.**

\*\*See page 162 for information on Control Options

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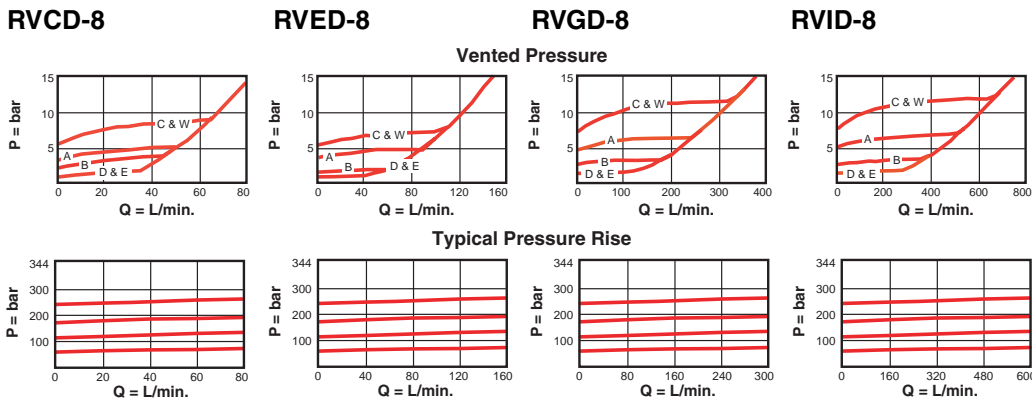
**VENTABLE, BALANCED PISTON, MODULATING ELEMENT WITH EXTERNAL DRAIN AND INTEGRAL PILOT CONTROL ELEMENT**



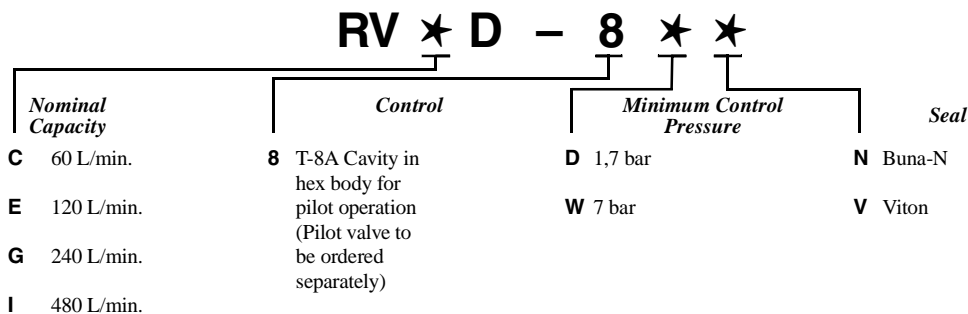
The -8 control option allows a pilot control valve to be incorporated directly into the end of the modulating element via the T-8A cavity. These pilot control cartridges are sold separately and include electro-proportional, solenoid, air pilot, and hydraulic pilot operation. See Pilot Control Cartridges on page 121.

Capacity	Typical Cartridge Model Code	Cavity	Cartridge Dimensions			Installation Torque (Nm)
			a	b	c	
60 L/min.	<b>RVCD - 8WN</b>	T - 21A	34,9	22,2	45,2	45/50
120 L/min.	<b>RVED - 8WN</b>	T - 22A	34,9	28,6	50,8	60/70
240 L/min.	<b>RVGD - 8WN</b>	T - 23A	46,0	31,8	65,8	200/215
480 L/min.	<b>RVID - 8WN</b>	T - 24A	63,5	41,3	80,3	465/500

Performance Curves



- Maximum operating pressure = 350 bar
- Pressure at port 4 is directly additive to the valve setting at a 1:1 ratio and should not exceed 350 bar
- Pressure at port 3 (vent) controls the valve below its setting.
- Control pilot flow = RVCD: 0,11 L/min. to 0,16 L/min.; RVED: 0,16 L/min. to 0,25 L/min.; RVGD, RVID: 0,25 L/min. to 0,33 L/min.
- Factory pressure setting established at 15 L/min.
- Typical response time 10 ms.
- Maximum leakage = RVCD: 32,8 cc/min/70 bar, RVED: 49,2 cc/min/70 bar, RVGD: 65,5 cc/min/70 bar, RVID: 81,9 cc/min/70 bar



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