

### KEY EXPLANATION:

1. Port No. 1, System Inlet
2. Port No. 2, System Outlet
3. Poppet, Hard Stainless Steel
4. Seat passage sealing area, Hard Stainless Steel
5. O-Ring Seal, Buna N ( Also See Options )
6. Filter, 10 Micron, Sintered Bronze
7. Vent ( 2 Pl. ) Optional T Port Locations
8. Filter Retainer
9. Poppet and Actuator Return Spring, Stainless
10. Piston Guide Ring UHMW material
11. Piston O-Ring Seal, Buna N ( Also See Options )
12. Bonnet O-Ring Seal, Buna N ( Also See Options )
13. 3/16" ( 4.763 ) Spanner Holes ( 2 Pl. )
14. 1/8 NPT Pilot Port X ( Also See Options )
15. Bonnet, Aluminum material
16. Actuator Body, Aluminum
17. Actuator Piston, Aluminum
18. Poppet Return Spring Retainer Assembly
19. Poppet Seal, TFE
20. 1/8" ( 3.175 ) Spanner Holes ( 4 or 6 Pl. )
21. Cartridge Seat Retaining Ring
22. Mount O-Ring Seal, Buna N ( Also See Options )
23. Cartridge Mounting Threads, Stainless Steel
24. Cartridge Seat, Hard Stainless
25. Backup Ring, Teflon
26. O-Ring Seal, Buna N ( Also See Options )
27. Spring ( Used on valves with 2-1/4" "A" Diameter )

### SPECIFICATIONS:

Pilot operated two way cartridge valve. Normally closed. Pilot to open passage between ports one and two. Valve will not hold pressure from 2 to 1. Use No. 1 port as pressure inlet port.

Maximum pressure 5,000 PSI Port 1, 3,000 PSI Port 2

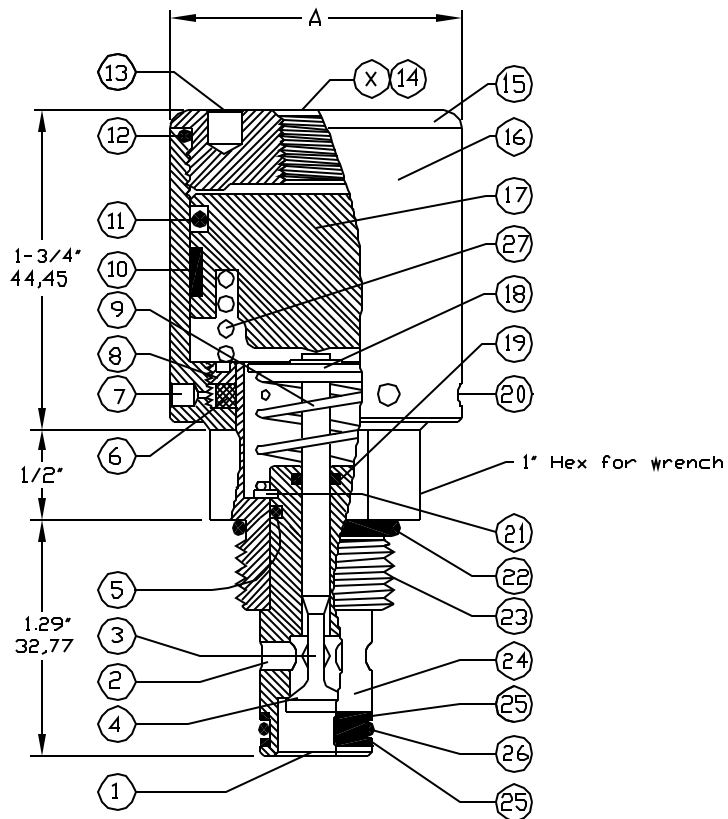
Pilot Pressure Range, 50 PSI Min. to 150 PSI Max.  
 Fluid temperature -45°F, (-42.7°C) to 200°F, (93.3°C)  
 Install Cartridge valve using 1" wrench  
 Valve should screw in freely to the Mount Seal.  
 Final tightening to 20 foot pounds torque.  
 Use lubricant on external oil seals and mounting threads.

### PILOT RATIO NOTES:

TO CALCULATE THE CORRECT PILOT RATIO VALVE, FOLLOW THESE STEPS:

1. Determine the MAXIMUM possible system pressure. Multiply X 11 = SYSTEM
2. Determine MINIMUM possible pilot pressure. Multiply X 9 = PILOT
3. Divide SYSTEM by PILOT = PILOT TO SYSTEM RATIO
4. Round up to standard available ratio.

## CARTRIDGE VALVE



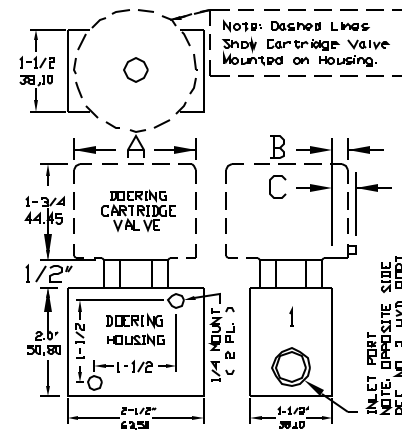
### STANDARD OPTIONS

Pilot Port ( Key X ) 1/8 NPT. Optional SAE4 Available.  
 Seals: Buna N, Viton or Teflon. Others please specify.  
 T Option: 10-32 Ports at Key 7 & 20, Random 360° Pass  
 Seat ( Key 4 ) Hard Stainless. Optional Soft Available.

### TOOLING

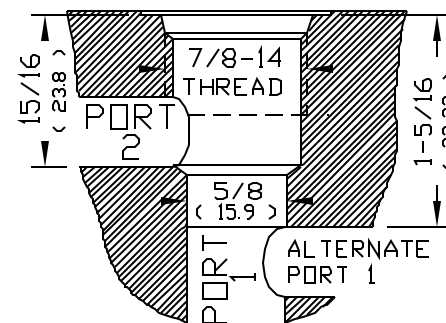
\* Cavity Form Tools: FT- cavity#  
 \* 1/8 ( 3.175 ) Pin Spanner Tool  
 Order No. 471, Ref. Key No. 20  
 \* 3/16 ( 4.763 ) Face Spanner Tool  
 Order No. 482, Ref. Key No. 13

## HOUSING



Standard Housing is 3/8 NPT. -2 is 1/4 NPT. -6 is SAE6  
 Standard Housing Material is Aluminum.  
 For Stainless add -S or -2S or -6S to Housing No.

## CAVITY



REQUEST CAVITY DRAWING: C-8542  
 REFERENCE FORM TOOL: FT-8542

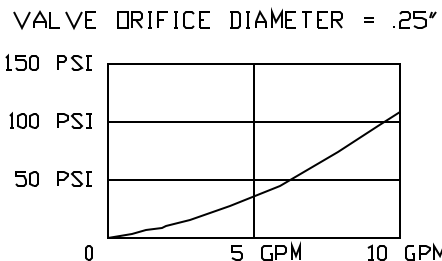
PILOT TO SYSTEM RATIOS:	" A " DIAMETER	" B " MAXIMUM
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19:1	1-1/2 38,10	NOT APPLICABLE
24:1	1-5/8 41,28	.06 1,53
33:1	1-7/8 47,63	.19 4,83
50:1	2-1/4 57,15	.38 9,65

CARTRIDGE VALVE NO.	HOUSING BODY NO.
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84H2090191	S8542
	S8542-2
	S8542-5
	S8542-6
	S8542-8
84H3090241	For Stainless Steel add Letter S to end of part number.
84H6090331	
84H7090501	

FLOW AND PRESSURE DROP CHART.  $C_v = 0.9$



## 2PB SERIES

IN CLOSED POSITION, VALVE DOES NOT FREE FLOW FROM 2 TO 1.

