



# 200 SERIES 0 to 3,000 PSIG

## H200 SERIES 0 to 6,000 PSIG

### CRACKING PRESSURE

**MINIMUM CRACKING PRESSURE AVAILABLE - 0.1 PSI**

**MAXIMUM CRACKING PRESSURE AVAILABLE - 25 PSI**

NOTE: Cracking pressure is defined as pressure at which flow is 5cc/min. except for 220 Series for which flow is approximately .02 cfm. When ordering a cracking pressure within the standard range or below the standard range of cracking pressure, the dash number is a "maximum." Example: 259A-4TT-.3 (C.P. tolerance will be +0%, -50%). When ordering a cracking pressure equal to or greater than the upper limit of the standard C.P. shown above, C.P. tolerance will be ±10%. Example: 259A-4TT-5. Cracking pressures over 8 psi should not be specified without consulting the factory. Where 200 Series valves are supplied with higher cracking pressures, a shroud ring may be used to confine the o-ring.



### LEAKAGE

External	Zero
Internal	
Elastomeric Seals	Zero
Teflon® Seals	0-50 psi 5cc/min max 50+ psi .5cc/min max

For cracking pressures less than standard, consult the factory for leakage rates.

### OPERATING PRESSURE 200 SERIES

Aluminum (A)	Tube	3/16" to 1-1/2"	0-3,000 PSIG to 200° F
	Pipe	1/8" to 1-1/2"	0-3,000 PSIG to 200° F
Brass	Tube	3/16" to 1-1/2"	0-3,000 PSIG to 300° F
	Pipe	1/8" to 1-1/2"	0-3,000 PSIG to 300° F
Brass	Pipe	2"	0-1,500 PSIG to 300° F
Steel	Tube	3/16" to 1-1/2"	0-3,000 PSIG to 300° F
	Pipe	1/8" to 2"	0-3,000 PSIG to 300° F
St. Steel	Tube	3/16" to 1-1/2"	0-3,000 PSIG to 450° F
	Pipe	1/8" to 2"	0-3,000 PSIG to 450° F

### OPERATING PRESSURE H200 SERIES

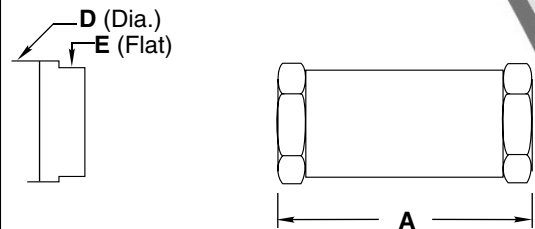
Aluminum (A)	Tube	3/16" to 1-1/4"	0-6,000 PSIG to 200° F
	Pipe	1/8" to 1-1/2"	0-6,000 PSIG to 200° F
Brass	Tube	3/16" to 1-1/4"	0-5,000 PSIG to 300° F
	Pipe	1/8" to 1-1/2"	0-5,000 PSIG to 300° F
Steel	Tube	3/16" to 1-1/4"	0-5,000 PSIG to 300° F
	Pipe	1/8" to 1-1/2"	0-5,000 PSIG to 300° F
St. Steel	Tube	3/16" to 2"	0-6,000 PSIG to 450° F
	Pipe	1/8" to 2"	0-6,000 PSIG to 450° F

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## End Connections, Dimensions (inches) & Weights

RR, BB - FEMALE TUBE								
Dash No.	Tube Size	A ± .050	B Ref.	C Hex & Rd.	Opt. Dimensions		Weights (lbs)	
					D	E	Alum	All Steel
4BB	1/4"	1.98	—	.75	—	—	.06	.16
5BB	5/16"	2.07*	—	.81	—	—	.08	.22
6BB	3/8"	2.44	—	.81	—	—	.08	.22
8BB	1/2"	3.06	—	1.00	—	—	.13	.37
10BB	5/8"	3.42	—	1.12	—	—	.18	.50
12BB	3/4"	3.83	—	1.50	1.75	1.50	.34	.88
16BB	1"	4.37	—	1.75	2.00	1.75	.52	1.50
20BB	1-1/4"	4.99	—	2.00	2.25	2.00	.68	2.18
24BB	1-1/2"	5.75	—	2.75	2.75	2.25	2.05	5.95

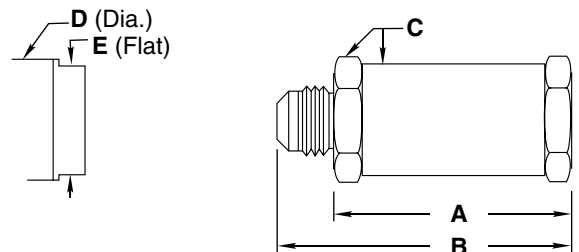
Optional  
(Based on availability)



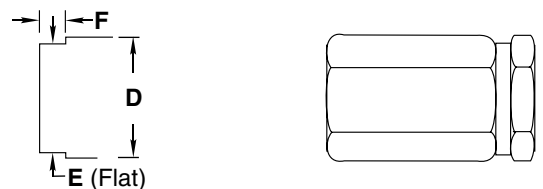
\*Exception: 200T-5BB (A Dim) is 2.44

BT - FEMALE TUBE > MALE TUBE or TB - MALE TUBE > FEMALE TUBE								
Dash No.	Tube Size	A ± .050	B Ref.	C Hex & Rd.	Opt. Dimensions		Weights (lbs)	
					D	E	Alum	All Steel
4BT	1/4"	1.53	2.08	.75	—	—	.06	.15
6BT	3/8"	1.98	2.54	.81	—	—	.08	.21
8BT	1/2"	2.37	3.03	1.00	—	—	.12	.34
12BT	3/4"	3.00	3.86	1.50	1.75	1.50	.32	.96
16BT	1"	3.50	4.41	1.75	2.00	1.75	.50	1.46
20BT	1-1/4"	3.97	4.93	2.00	2.25	2.00	.68	1.90
24BT	1-1/2"	4.73	5.81	2.75	2.75	2.25	1.82	5.31
4TB	1/4"	1.98	2.53	.75	—	—	.07	.20
5TB	5/16"	1.98	2.53	.81	—	—	.07	.20
6TB	3/8"	1.98	2.54	.81	—	—	.08	.21
8TB	1/2"	2.49	3.15	1.00	—	—	.14	.37
10TB	5/8"	2.80	3.56	1.12	—	—	.18	.50
12TB	3/4"	3.33	4.19	1.50	1.75	1.50	.37	1.07
16TB	1"	3.74	4.65	1.75	2.00	1.75	.55	1.60
20TB	1-1/4"	4.39	5.35	2.00	2.25	2.00	.80	2.30
24TB	1-1/2"	5.06	6.14	2.75	2.75	2.25	2.03	5.90

Optional  
(Based on availability)



Optional  
(Based on availability)

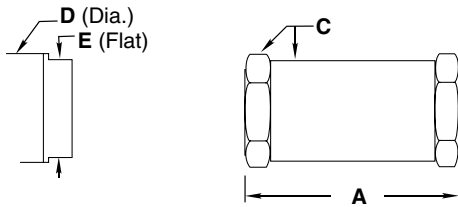


H200 SERIES DIMENSIONS						
End Connection	Alum.	Brass	Stl. S	Steel		
	(Stock Size Hex)			D Dia.	E	F
3T/3C	.625	.625	.625	.650	.560	160/.160
4T/4B	.875	.875	.812	.875	.750	160/.160
1P/5T,6T,6B	.937	.937	.875	.960	.813	160/.250
2P/8T,8B	1.125	1.250	1.125	1.250	1.000	190/.310
3P/10T,10B	1.375	1.375	1.250	1.375	1.125	250/.310
4P/12T,12B	1.750	1.875	1.750	1.875	1.625	310/.440
6P/16T,16B	2.000	2.250	2.000	2.125	1.875	440/.500
8P/20T,20B	2.250	2.500	2.250	2.500	2.125	500/.560

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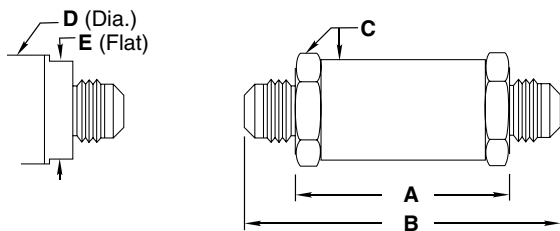
## End Connections, Dimensions (inches) & Weights

Optional  
(Based on availability)



PP - FEMALE PIPE								
Dash No.	Tube Size	A ± .050	B Ref.	C Hex & Rd.	Opt. Dimensions		Weights (lbs)	
					D	E	Alum	All Steel
1PP	1/8"	1.70	.81	—	—	.05	.15	.14
2PP	1/4"	2.25	1.00	—	—	.12	.36	.34
3PP	3/8"	2.43	1.12	—	—	.15	.46	.43
4PP	1/2"	2.93	1.50	1.50	1.25	.32	.98	.92
6PP	3/4"	3.37	1.75	1.75	1.50	.49	1.50	1.41
8PP	1"	3.99	2.00	2.00	1.75	.73	2.25	2.11
10PP	1-1/4"	4.50	2.75	2.75	2.25	1.60	5.00	4.80
12PP	1-1/2"	5.35	2.75	2.75	2.25	1.73	5.34	4.97
16PP	2"	6.10	—	3.50	2.75	2.60	8.00	7.50

Optional  
(Based on availability)



TT - MALE TUBE								
Dash No.	Tube Size	A ± .050	B Ref.	C Hex & Rd.	Opt. Dimensions		Weights (lbs)	
					D	E	Alum	All Steel
3TT	3/16"	.97*	1.93*	.56*	—	—	.03	.08
4TT	1/4"	1.53	2.63	.75	—	—	.07	.18
5TT	5/16"	1.53	2.63	.81	—	—	.07	.20
6TT	3/8"	1.53	2.63	.81	—	—	.07	.20
8TT	1/2"	1.81	3.12	1.00	—	—	.13	.35
10TT	5/8"	2.06	3.58	1.12	—	—	.18	.49
12TT	3/4"	2.50	4.23	1.50	1.75	1.50	.35	1.00
16TT	1"	2.87	4.69	1.75	2.00	1.75	.53	1.50
20TT	1-1/4"	3.37	5.29	2.00	2.25	2.00	.79	2.30
24TT	1-1/2"	4.04	6.21	2.75	2.75	2.25	1.80	5.22

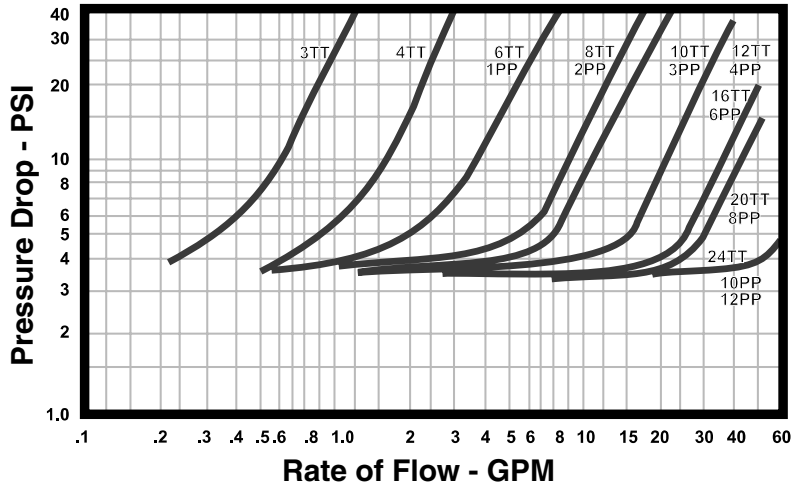
\* Exception: 200T-3TT-(A Dim) is 1.00; (B Dim) is 1.96; (C Dim) is .625

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## Flow Curves

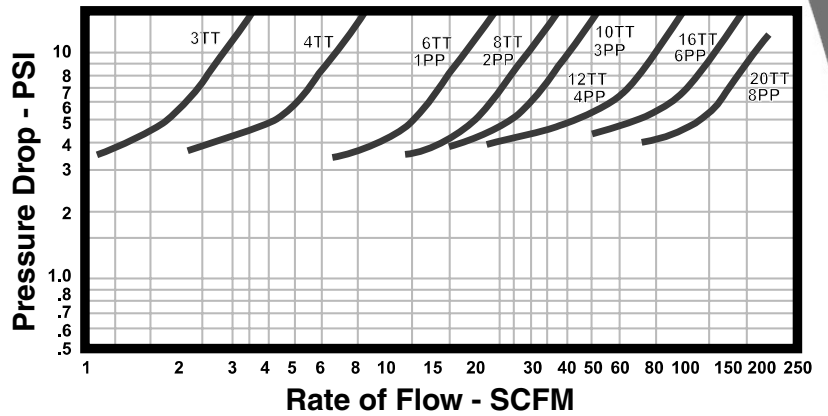
Model 249 262 233

### Hydraulic Fluid (MIL-H-5606)



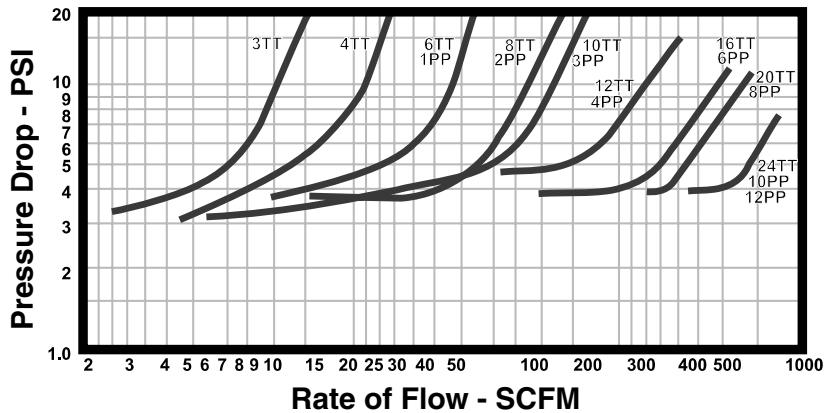
Model 249 262 233

### Air (Discharge to Atmosphere)



Model 249 262 233

### Air (100 PSI Inlet Pressure)

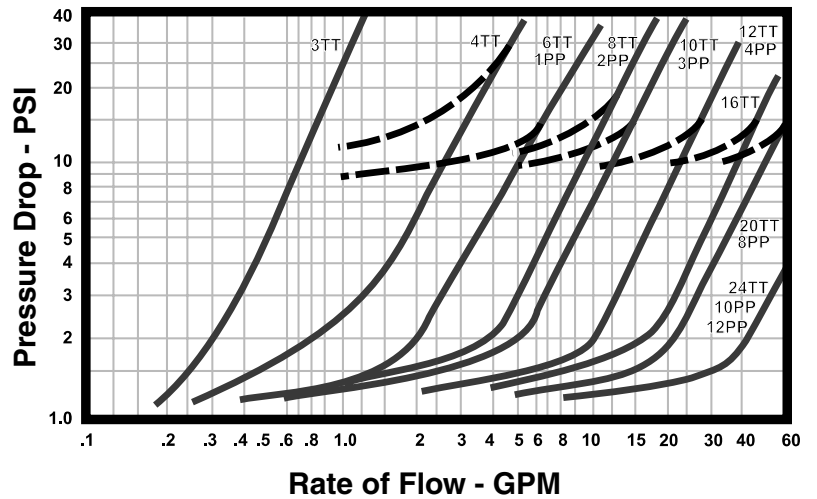


		Flow Rates									
VALVE SIZE	TUBE PIPE	3	4	6	8	10	12	16	20	24	32
$C_v$ (nominal)		0.30	0.7	1.6	2.7	3.5	6.6	10.3	12.5	23.2	51

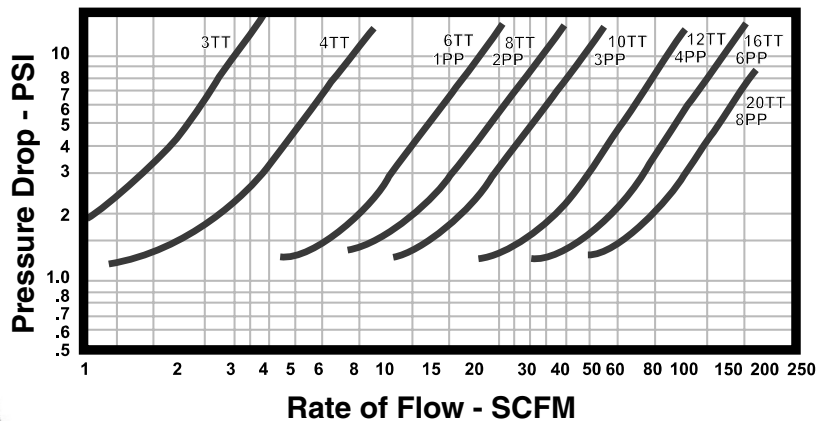
# 200 SERIES 0 to 3,000 PSIG H200 SERIES 0 to 6,000 PSIG

## Flow Curves

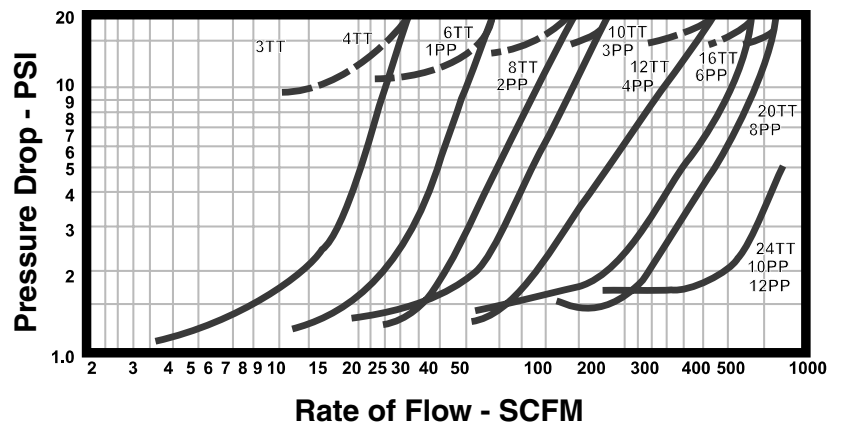
Model 259 232 269 264 265 253 224 220\*  
Hydraulic Fluid (MIL-H-5606)



Model 259 232 269 264 265 253 224  
Air (Discharge to Atmosphere)



Model 259 232 269 264 265 253 224 220\*  
Air (100 PSI Inlet Pressure)



\*220 approximately 6 psi higher at low rates

# 200 SERIES 0 to 3,000 PSIG H200 SERIES 0 to 6,000 PSIG

## How to Order

H 2 49 T1 - 4 TT(L) - 1

### VARIATION

- H** - Modified construction for 6,000 PSIG service (1/4" to 1-1/2" tube, 1/8" to 1-1/4" pipe & larger)
- K** - Cryogenic Service, special cleaning and testing (Stainless Steel valves only)

### BASIC MODEL NUMBER

200 Series

### O-RING MATERIAL TEMPERATURE & CRACKING PRESSURE RANGE

- |   |                    |            |
|---|--------------------|------------|
| <b>49</b> - Buna N                          | -65° F to +250° F  | 2-4 PSIG   |
| <b>59</b> - Buna N                          | -65° F to +275° F  | .5-1 PSIG  |
| <b>69</b> - Buna N (fuels)                  | -65° F to +180° F  | .5-1 PSIG  |
| <b>62</b> - Ethylene Propylene              | -65° F to +300° F  | 2-4 PSIG   |
| <b>64</b> - Fluorosilicone                  | -80° F to +350° F  | .5-1 PSIG  |
| <b>65</b> - Kalrez®                         | -40° F to +550° F  | .5-1 PSIG  |
| <b>33</b> - Neoprene                        | -40° F to +240° F  | 2-4 PSIG   |
| <b>53</b> - Neoprene                        | -40° F to +300° F  | .5-1 PSIG  |
| <b>24</b> - Silicone                        | -70° F to +450° F  | .5-1 PSIG  |
| <b>32</b> - Viton®                          | -20° F to +400° F  | .5-1 PSIG  |
| <b>20*</b> - Teflon®                        | -100° F to +400° F | 8 PSIG MAX |
| <b>20*</b> - Teflon® (K220T)                | -320° F to +165° F | 8 PSIG MAX |
| <b>80*</b> - Teflon® (No cryogenic testing) | -320° F to +165° F | 8 PSIG MAX |

### MATERIAL

- A** - 2024-T4/T351 Aluminum
- B** - Brass
- A1** - 6061-T6/T651 Aluminum
- S** - Steel
- T** - 303 Stainless Steel
- T1** - 316 Stainless Steel

\* For Teflon® specify stainless steel body material. The stainless steel valve design provides a Teflon® static seal for use in systems with low or high temperatures or with liquids or gases which would cause excessive swell or shrinkage of elastomeric compounds.

Teflon®, Kalrez® and Viton® are registered trademarks of Dupont. Gyrolok™ is a trademark of HOKE, Inc. Please consult your Circle Seal Controls Distributor or the factory for information on special connections, operating pressures and temperature ranges.

### For Your Safety

*It is the sole responsibility of the system designer and user to select products suitable for their specific application requirements and to ensure proper installation, operation and maintenance of these products. Material compatibility product ratings and application details should be considered in the selection. Improper selection or use of products described herein can cause personal injury or property damage.*

### Repair Kits:

In normal service the only part(s) which may require replacement is(are) the seal(s). A repair kit may be ordered by placing a **K/** in front of the complete part number (i.e. K/H249T1-4TT(L)-1).

### CRACKING PRESSURE

Call out dash number if not standard.

**1** - 1 PSIG

### SPECIAL CHARACTERISTICS

- 030** - Hole in poppet head, thousandth of an inch
- L** - Lockwire

### SIZE & END CONNECTIONS (Inlet/Outlet)

Pipe Sizes in 1/8" Increments

Tube Sizes in 1/16" Increments

- P** - Female Pipe, NPT
- T** - Male Tube, AS4395 (MS33656)
- B** - Female Tube, AND10050
- C** - Gyrolok™ Tube Fittings
- D** - Male Straight Tread, AS4395 (MS33656) w/ Cone Point removed
- E** - Flareless Male Tube, MS33514 (SAE)
- F** - Male Tube, SAE Flare 45°
- H** - Hose, MS33658
- J** - Female Tube, MS33649
- K** - British Parallel Pipe (Male)
- L** - British Parallel Pipe (Female)
- R** - Female Tube, SAE Straight Thread, MS16142
- S** - British Taper Pipe (Male)
- U** - Bulkhead Tube, AS4396 (MS33657)
- X** - British Taper Pipe (Female)