

# Check Valves

## BALL TYPE

### Description

Ball type check valves are produced in three sizes: 10-32, 1/8" NPT and 1/4" NPT. They are available in both brass and stainless steel and are suitable for use with liquids or gases. Free flow occurs in one direction only; reverse flow is prevented.

All valve seats are metal to metal construction. Minor amounts of seat leakage can be expected. See General Specifications.

### Features

- All metal construction
- Long life operation
- Choice of cracking pressure
- High pressure capability

### General Specifications

#### Materials of Construction

Body – Brass or 303 SS  
 Ball Check Assembly – 304 SS  
 Flow Control Orifice – Brass or 303 SS  
 Sealant – Locite 609, 680  
 High pressure types only

#### Maximum Temperature

NPT – 300°F (max.)  
 10-32 – 150°F (max.)

#### Maximum Operating Pressure

##### Standard Pressure Type

NPT – 200 psig (max.)  
 10-32 – 125 psig (max.)

##### High Pressure Type (Suffix H)

NPT – 2000 psig (max.)

#### Seat Leakage – 20 sccm (max.)

Air flow at 25 psi differential

#### Flow Capacity

Free Flow Direction

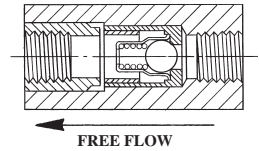
Size	10-32	1/8" NPT	1/4" NPT
Type	FFLC	BLC, BLCH DLC, DFCL	ELC, ELCH GLC, GFLC
C <sub>v</sub>	.081	.081	.190

#### Check Valve Cracking Pressure

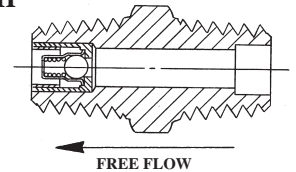
Selectable 0, 2, 10 or 15 psid  
 See chart on next page

### Construction

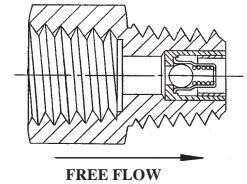
#### Type FFLC



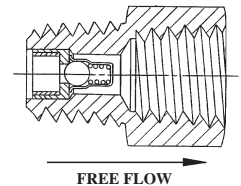
#### Type BLC BLCH



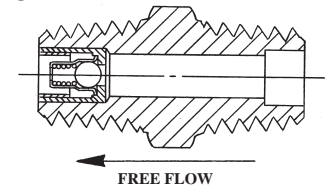
#### Type DLC GLC



#### Type DFCL GFLC



#### Type ELC ELCH



### Part Numbers

The complete part number for a ball type check valve includes Type, Cracking Pressure and Body Material.

#### EXAMPLES

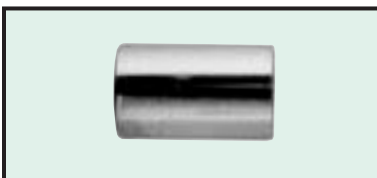
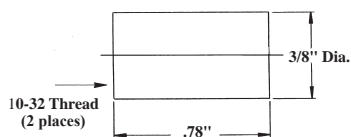
Type	Cracking Pressure psid*	Body Material	Part Number
FFLC	2	BR	FFLC-2-BR
BLC	10	SS	BLC-10-SS (standard pressure)
ELCH	15	BR	ELCH-15-BR (high pressure)
GLC	0	SS	GLC-0-SS (standard pressure)
DFLC	2	BR	DFLC-2-BR (standard pressure)

\*psid – pounds per square inch differential

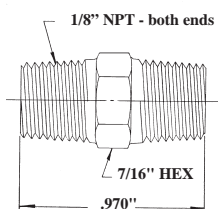
## BALL TYPE

### Dimensions

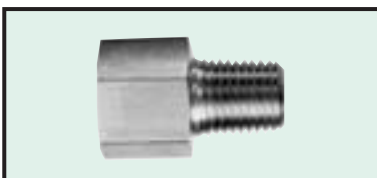
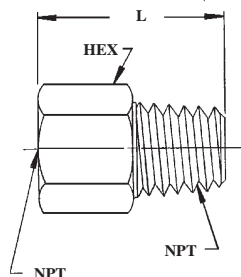
#### Type FFLC



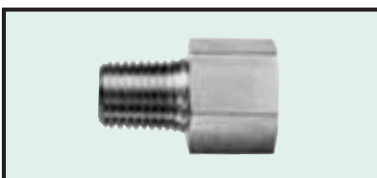
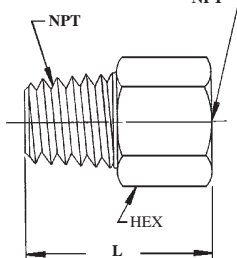
#### Type BLC BLCH



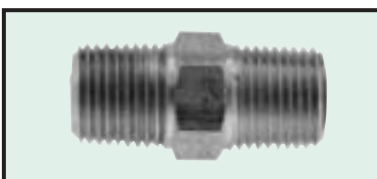
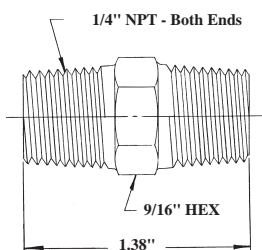
#### Type DLC GLC



#### Type DFLLC GFLC



#### Type ELC ELCH



### Specifications

#### 10-32 COUPLING

**Body** – Brass or 303 SS  
**Valve Assembly** – 304 SS  
**C<sub>v</sub> and Flow Data** – See chart below  
**Maximum Operating Pressure** – 125 psig  
**Cracking Pressure** – See chart below

#### 1/8" NPT NIPPLE

**Body** – Brass or 303 SS  
**Valve Assembly** – 304 SS  
**C<sub>v</sub> and Flow Data** – See chart below  
**Maximum Operating Pressure** –  
     BLC 200 psig  
     BLCH 2000 psig  
**Cracking Pressure** – See chart below

#### 1/8" OR 1/4" NPT ADAPTER

**Body** – Brass or 303 SS  
**Valve Assembly** – 304 SS  
**C<sub>v</sub> and Flow Data** – See chart below  
**Maximum Operating Pressure** – 200 psig  
**Cracking Pressure** – See chart below

TYPE	L	NPT	HEX
DLC	.880"	1/8"	9/16"
GLC	1.25"	1/4"	3/4"

#### 1/8" OR 1/4" NPT ADAPTER

**Body** – Brass or 303 SS  
**Valve Assembly** – 304 SS  
**C<sub>v</sub> and Flow Data** – See chart below  
**Maximum Operating Pressure** – 200 psig  
**Cracking Pressure** – See chart below

TYPE	L	NPT	HEX
DFLLC	.880"	1/8"	9/16"
GFLC	1.25"	1/4"	3/4"

#### 1/4" NPT NIPPLE

**Body** – Brass or 303 SS  
**Valve Assembly** – 304 SS  
**C<sub>v</sub> and Flow Data** – See chart below  
**Maximum Operating Pressure** –  
     ELC 200 psig  
     ELCH 2000 psig  
**Cracking Pressure** – See chart below

### Valve Characteristics

Type	Selectable Cracking Pressure – psid*				C <sub>v</sub>	Inlet Pressure – 100 psig Outlet Pressure – Atmos.	
	0	2	10	15		Air Free Flow – SCFH	Water Flow – GPM
FFLC	✓	✓	✓		.081	331	.8
BLC, BLCH, DLC, DFLLC	✓	✓	✓		.081	331	.8
ELC, ELCH GLC, GFLC	✓	✓		✓	.190	781	1.9

\*psid – pounds per square inch differential

# Check Valves

## BALL TYPE THREADED INSERTS

### Description

The threaded insert style check valves are available in 3 thread sizes, 10/32, 5/16•24 and 7/16•20. Body materials are brass or stainless steel and are suitable for use with compatible liquids or gases. Free flow occurs in one direction and reverse flow is blocked.

### Features

- All metal construction for 5/16" and 7/16" sizes
- Long life operation
- Choice of cracking pressure
- Optional O-ring body seal

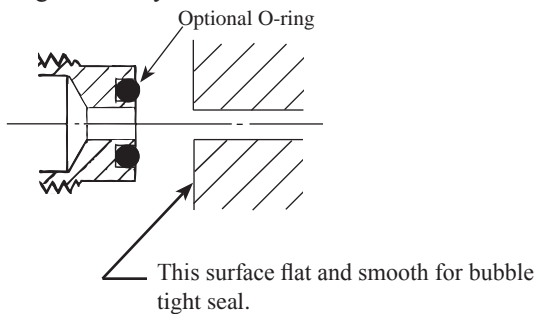
### Installation

#### Thread Sealant Method

Use Loctite 542 Thread Sealant or equal to seal threads on type ZLC Check Valves or Checked Orifices.

#### O-Ring Seal Method

- Seal nose end of valve with embedded Viton O-ring
- Tighten firmly



### General Specifications

#### Materials of Construction

Body – Brass or 303 SS  
Ball Check Assembly – 304 SS  
Internal Seal (10/32 only) Viton

#### Maximum Temperature

5/16•24 and 7/16•20 – 300°F (max.)  
10-32 – 150°F (max.)

#### Maximum Operating Pressure

5/16•24 and 7/16•20 – 200 psig (max.)  
10-32 – 125 psig (max.)

#### Cracking Pressure

Selectable 0, 2, 6, 10 or 15 psid  
See chart on next page

#### Seat Leakage

20 sccm (max.)  
air flow at 25 psi differential

#### Flow Capacity

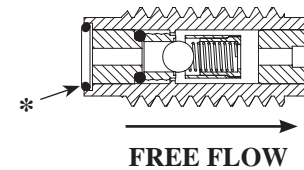
Free Flow Direction  
See chart on next page

#### Option

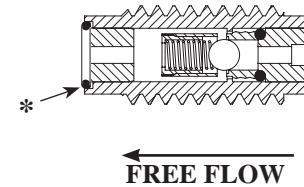
Nose end seal  
Viton O-ring (suffix "V")

### Construction

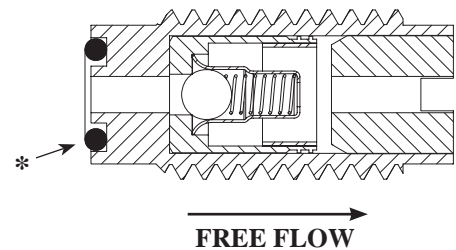
#### Type ZLC 10/32



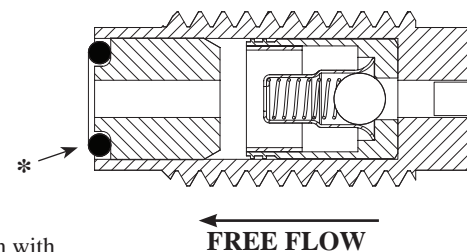
#### Type ZFLC 10/32



#### Type ZLC 5/16•24 7/16•20



#### Type ZFLC 5/16•24 7/16•20



\* Shown with optional O-ring

### Part Numbers

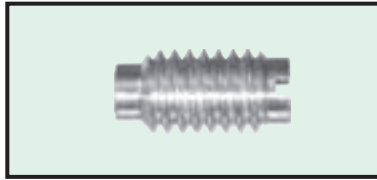
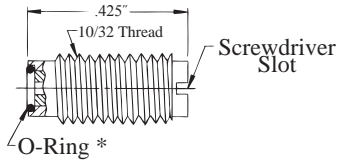
The complete part number for a threaded insert ball type check valve includes Type, Cracking Pressure, Body Material, Thread Size and Options.

EXAMPLES Type	Cracking Pressure	Thread Size	Body Material	Option (suffix)	Part Number
ZLC	2	10/32	BR	None	ZLC-2-10/32-BR
ZFLC	6	10/32	SS	V	ZFLC-6-10/32-SS-V
ZLC	0	5/16•24	BR	V	ZLC-0-5/16•24-BR-V
ZFLC	10	5/16•24	SS	None	ZFLC-10-5/16•24-SS
ZLC	15	7/16•20	BR	None	ZLC-15-7/16•20-BR
ZFLC	2	7/16•20	SS	V	ZFLC-2-7/16•20-SS-V

## BALL TYPE THREADED INSERTS

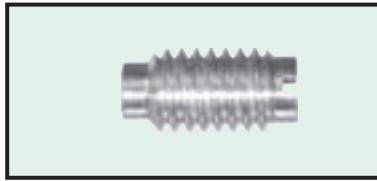
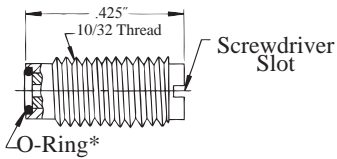
### Dimensions

#### Type ZLC 10/32



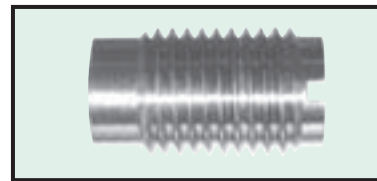
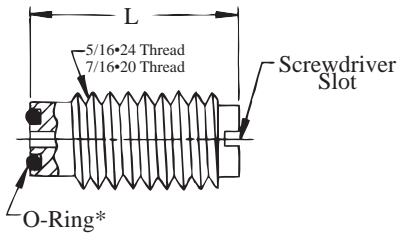
FREE FLOW

#### Type ZFLC 10/32



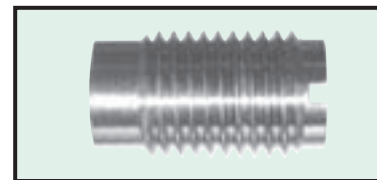
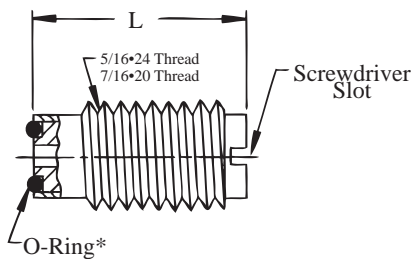
FREE FLOW

#### Type ZLC 5/16" or 7/16"



FREE FLOW

#### Type ZFLC 5/16" or 7/16"



FREE FLOW

\* optional

TYPE	L
ZLC 5/16*24	.669"
ZLC 7/16*20	.781"

TYPE	L
ZFLC 5/16*24	.669"
ZFLC 7/16*20	.781"

### Specifications

#### 10-32 THREADED INSERT

**Body** - Brass or 303 SS  
**Valve Assembly** - 304 SS  
**C<sub>v</sub> and Flow Data** - See chart below  
**Maximum Operating Pressure** - 125 psig  
**Cracking Pressure** - 0, 2 or 6 psid

#### 10-32 THREADED INSERT

**Body** - Brass or 303 SS  
**Valve Assembly** - 304 SS  
**C<sub>v</sub> and Flow Data** - See chart below  
**Maximum Operating Pressure** - 125 psig  
**Cracking Pressure** - 0, 2 or 6 psid

#### 5/16" OR 7/16" THREADED INSERT

**Body** - Brass or 303 SS  
**Valve Assembly** - 304 SS  
**C<sub>v</sub> and Flow Data** - See chart below  
**Maximum Operating Pressure** - 200 psig  
**Cracking Pressure**  
 5/16" 0, 2, 6 or 10 psid  
 7/16" 0, 2 or 15 psid

#### 5/16" OR 7/16" THREADED INSERT

**Body** - Brass or 303 SS  
**Valve Assembly** - 304 SS  
**C<sub>v</sub> and Flow Data** - See chart below  
**Maximum Operating Pressure** - 200 psig  
**Cracking Pressure**  
 5/16" 0, 2, 6 or 10 psid  
 7/16" 0, 2 or 15 psid

### Valve Characteristics

Type	Thread	Selectable Cracking Pressure - psid*					C <sub>v</sub>	Inlet Pressure - 100 psig Outlet pressure - Atmos.	
		0	2	6	10	15		Air Free Flow SCFH	Water Flow GPM
ZLC	10/32	✓	✓	✓			.020	87	.2
ZFLC	10/32	✓	✓	✓			.020	87	.2
ZLC	5/16*24	✓	✓	✓	✓		.081	331	.8
ZFLC	5/16*24	✓	✓	✓	✓		.081	331	.8
ZLC	7/16*20	✓	✓			✓	.190	781	1.9
ZFLC	7/16*20	✓	✓			✓	.190	781	1.9

\*psid - pounds per square inch differential

# Check Valves

## DISK TYPE

### Description

Disk type check valves are produced in four sizes: 10-32, 1/8" NPT, 1/4" NPT and 3/8" NPT. They are available in both brass and stainless steel and are suitable for use with liquids or gases. Free flow occurs in one direction only; reverse flow is prevented.

### Features

- High Flow Capacity
- Low Pressure Loss
- Low Cracking Pressure
- Long Life Operation

### General Specifications

**Maximum Pressure** – 150 psig (NPT)  
125 psig (10-32)

#### Maximum Temperature

Brass Disk Assembly	225°F
303 SS Disk Assembly	225°F
Delrin Disk Assembly	120°F
All 10-32 Assemblies	120°F

#### Flow Capacity

Free Flow Direction

Size	10-32	1/8" NPT	1/4" NPT	3/8" NPT
Cv	.15	.43	.61	1.09

#### Materials of Construction

*Body* – Brass or 303 SS

*Seals* – Viton, Silicone

*Disk* – Brass, 303 SS or Delrin

#### Cracking Pressure

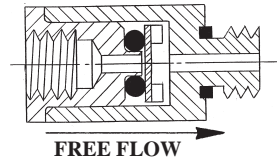
Less than 0.25 psid (NPT)

Less than 0.5 psid (10-32)

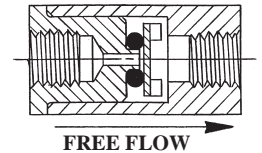
Use "0" in part number

### Construction

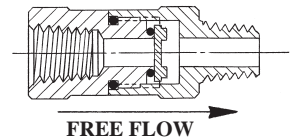
#### Type FMOC



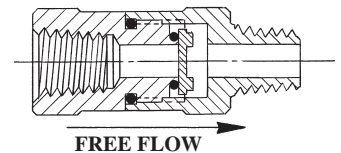
#### Type FFOC



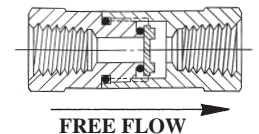
#### Type DOC



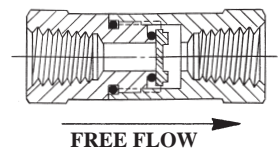
#### Type GOC



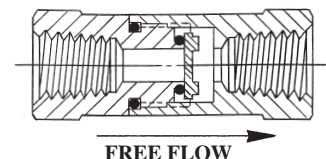
#### Type Y2C



#### Type Y4C



#### Type Y6C



### Part Numbers

The complete part number for a disk check valve includes Type, Cracking Pressure (0), Body Material and Disk Material.

#### EXAMPLES

Type	Cracking* Pressure	Body Material	Disk Material	Part Number
GOC (1/4" male/female)	0	SS (303 SS)	DE (Delrin)	GOC-0-SS-DE
Y6C (3/8" female/female)	0	BR (Brass)	BR (Brass)	Y6C-0-BR-BR
FMOC (10-32 male/female)	0	BR (Brass)	BR (Brass)	FMOC-0-BR-BR

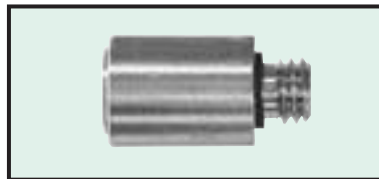
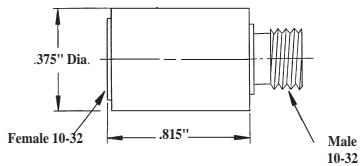
\* Cracking Pressure designation is "0" for Disk Check Valves.

## DISK TYPE

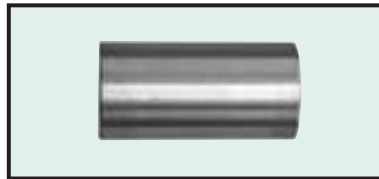
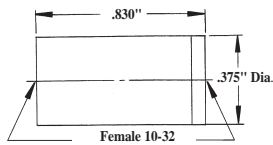
### Dimensions

### Specifications

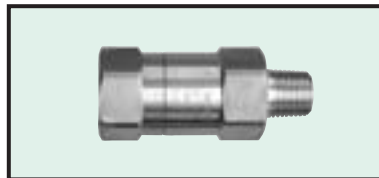
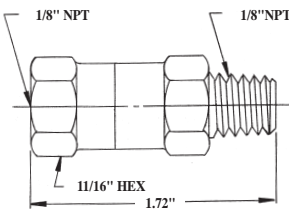
#### Type FMOG



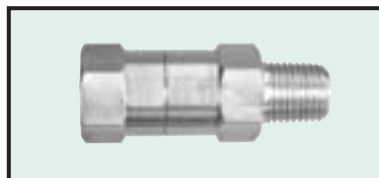
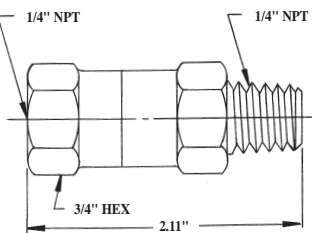
#### Type FFOG



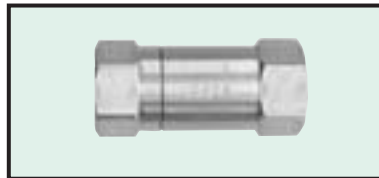
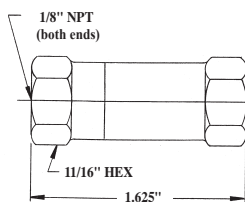
#### Type DOG



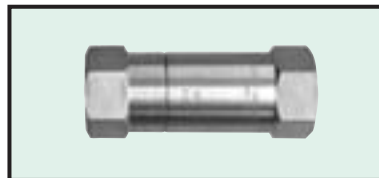
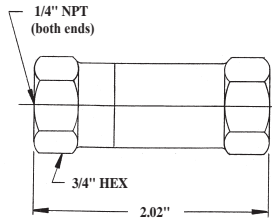
#### Type GOG



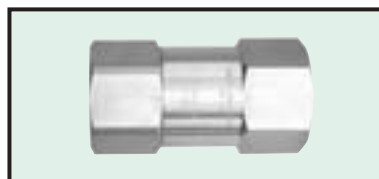
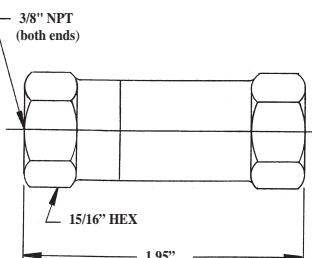
#### Type Y2C



#### Type Y4C



#### Type Y6C



#### 10-32 ADAPTER

**Body** – Brass or 303 SS  
**Disk** – Brass or 303 SS  
**Seals** – Silicone  
 $C_v$  – .15  
**Maximum Operating Pressure** – 125 psig  
**Cracking Pressure** – Less than 0.5 psid\*

#### 10-32 COUPLING

**Body** – Brass or 303 SS  
**Disk** – Brass or 303 SS  
**Seals** – Silicone  
 $C_v$  – .15  
**Maximum Operating Pressure** – 125 psig  
**Cracking Pressure** – Less than 0.5 psid\*

#### 1/8" ADAPTER

**Body** – Brass or 303 SS  
**Disk** – Brass, 303 SS or Delrin  
**Seals** – Viton  
 $C_v$  – .43  
**Maximum Operating Pressure** – 150 psig  
**Cracking Pressure** – Less than 0.25 psid\*

#### 1/4" NPT ADAPTER

**Body** – Brass or 303 SS  
**Disk** – Brass, 303 SS or Delrin  
**Seals** – Viton  
 $C_v$  – .61  
**Maximum Operating Pressure** – 150 psig  
**Cracking Pressure** – Less than 0.25 psid\*

#### 1/8" NPT COUPLING

**Body** – Brass or 303 SS  
**Disk** – Brass, 303 SS or Delrin  
**Seals** – Viton  
 $C_v$  – .43  
**Maximum Operating Pressure** – 150 psig  
**Cracking Pressure** – Less than 0.25 psid\*

#### 1/4" NPT COUPLING

**Body** – Brass or 303 SS  
**Disk** – Brass, 303 SS or Delrin  
**Seals** – Viton  
 $C_v$  – .61  
**Maximum Operating Pressure** – 150 psig  
**Cracking Pressure** – Less than 0.25 psid\*

#### 3/8" NPT COUPLING

**Body** – Brass or 303 SS  
**Disk** – Brass, 303 SS or Delrin  
**Seals** – Viton  
 $C_v$  – 1.09  
**Maximum Operating Pressure** – 150 psig  
**Cracking Pressure** – Less than 0.25 psid\*

\*psid – pounds per square inch differential

# Check Valves

## ECONOMY LINE

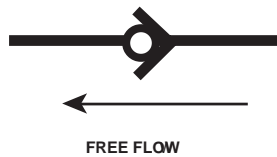
### Description

This miniature check valve line employs a free floating stainless steel or buna-N ball, which allows free flow in one direction; reverse flow is prevented. The valves are suitable for air, water, inert gases, light oil and liquids compatible with the materials of construction. The valves are fast acting and are suitable for long life applications.

### Features

- All metal construction option
- Long life operation
- Low cost

### Symbol-Check Valve



### General Specifications

#### Materials of Construction

Body – Brass or 303 SS  
 Ball Stop – Brass or 303 SS  
 Ball – Buna-N or 302 SS  
 Gasket (Type FMC) – Viton

#### Maximum Temperature

Buna-N Ball – 180°F  
 SS Ball – 300°F

#### Maximum Operating Pressure

Type FMC – 125 psig max  
 (SS or Buna-N Ball)

#### Type ZC

Brass – 500 psig (SS Ball)  
 SS – 1000 psig (SS Ball)  
 Brass or SS – 125 psig (Buna-N Ball)

#### Seat Leakage

SS Ball  
 20 sccm (max) air flow at 25 psig  
 Buna-N Ball  
 0 sccm @ 50-125 psig (air flow)  
 <5 sccm @ 25 psig (air flow)

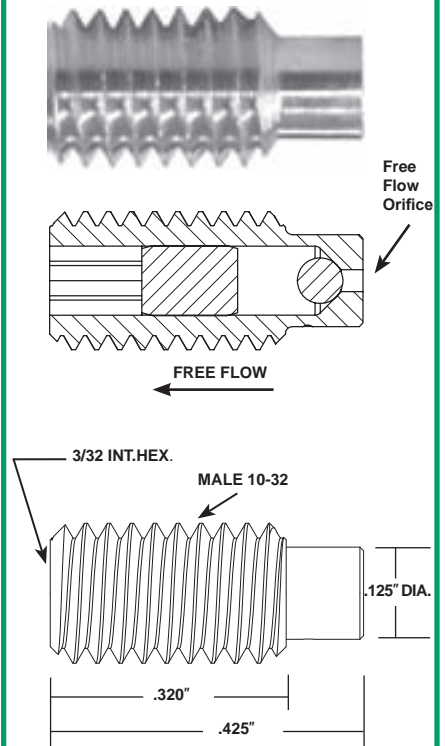
#### Flow Capacity

Type ZC or FMC  
 Orifice – .031" diameter  
 Cv – .02  
 40 slpm at 100 psig (air flow)

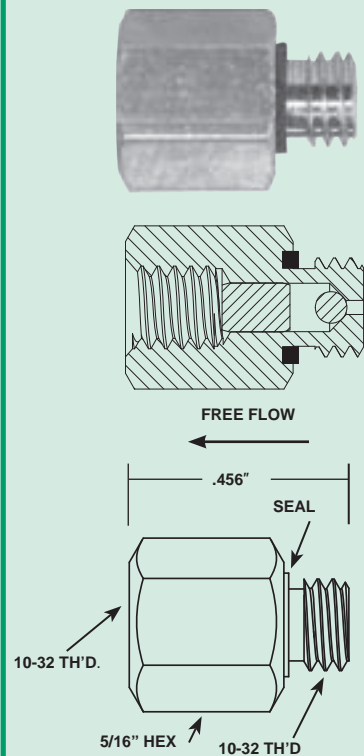
#### Thread Sealant

For 10-32 straight thread on Type ZC,  
 use Loctite 542 thread sealant or equal.

### Type ZC



### Type FMC



#### Part Number

#### Body

#### Ball

ZC-31-0-10/32-BR-BN	Brass	Buna-N
ZC-31-0-10/32-BR-SS	Brass	SS
ZC-31-0-10/32-SS-BN	SS	Buna-N
ZC-31-0-10/32-SS-SS	SS	SS
FMC-31-0-10/32-BR-BN	Brass	Buna-N
FMC-31-0-10/32-BR-SS	Brass	SS
FMC-31-0-10/32-SS-BN	SS	Buna-N
FMC-31-0-10/32-SS-SS	SS	SS

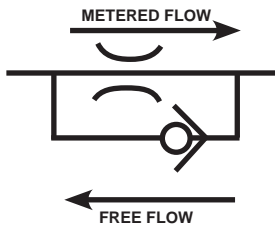
## ECONOMY LINE

### Description

These low cost flow controls employ a check valve with a stainless steel or buna-N ball and a precision orifice. Free flow occurs in one direction and metered flow occurs through the precision orifice in the opposite direction. Available with 10-32 threads, the fixed flow controls are available as a set screw or as a male/female fitting.

### Symbol

### Fixed Flow Controls



### General Specifications

#### Materials of Construction

- Body – Brass or 303 SS
- Ball Stop – Brass or 303 SS
- Ball – Buna-N or 302 SS
- Gasket (Type FMF) – Viton

#### Maximum Temperature

- Buna-N Ball – 180°F
- SS Ball – 300°F

#### Maximum Operating Pressure

Type FMF – 125 psig max  
(SS or Buna-N Ball)

Type ZF

- Brass – 500 psig (SS Ball)
- SS – 1000 psig (SS Ball)
- Brass or SS – 125 psig (Buna-N Ball)

#### Flow Capacity

Free Flow

$$C_v = .02 + C_{vm}$$

See chart for  $C_{vm}$

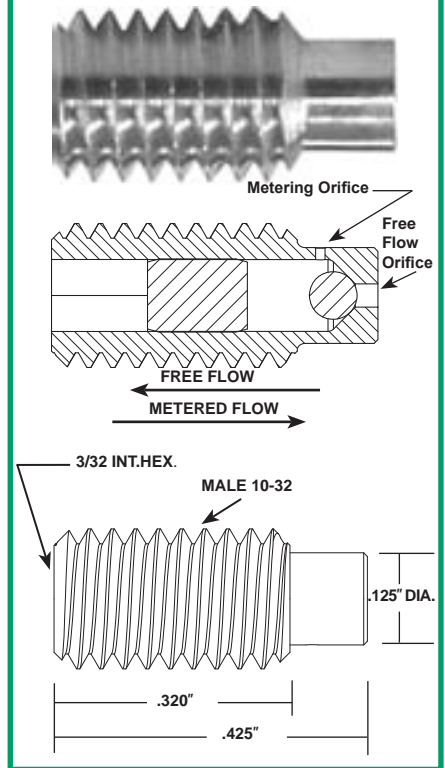
Metered Flow

$C_{vm}$  – chart value

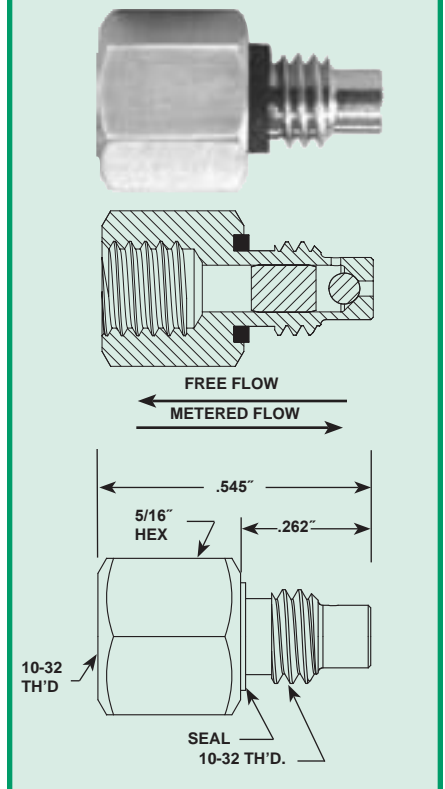
#### Thread Sealant

For 10-32 straight thread on Type ZF, use Loctite 542 thread sealant or equal.

### Type ZF



### Type FMF



### Part Numbers

Metering Orifice		
Size Number	Orifice Diameter (In)	$C_{vm}$
4	.004	.00035
5	.005	.00061
6	.006	.00086
7	.007	.0012
8	.008	.0015
9	.009	.0019
10	.010	.0025
11	.011	.0028
12	.012	.0034
13	.013	.0038
14	.014	.0043
15	.015	.0050
16	.016	.0055
17	.017	.0067
18	.018	.0073
19	.019	.0080
20	.020	.009
21	.021	.010
22	.022	.011
23	.023	.012
24	.024	.013

Type	Description
ZF	10/32 Set Screw
FMF	10/32 Male/Female

Designation	Body Material
BR	Brass
SS	303 Stainless Steel

Designation	Body Material
SS	302 Stainless Steel
BN	Buna-N

### Part Number Examples

Type Select	Metering Orifice Size No.	Free Flow Orifice Size No.	Cracking Pressure	Thread Size	Body Material	Ball Material
eg.	Select	31	0	10/32	Select	Select
ZF	15 (.015")	31 (.031")	0	10/32	BR (Brass)	BN (Buna-N)
FMF	8 (.008")	31 (.031")	0	10/32	SS	SS (302SS)



# Fixed Flow Controls

## BALL TYPE

### Description

Fixed flow controls are a parallel arrangement of a ball check valve and a precision orifice. Free flow occurs in one direction and metered flow occurs in the opposite direction. Suitable for both liquids and gases the fixed flow controls are available in brass or stainless steel.

### Features

- All Metal Construction
- Long Life Operation
- Choice of Cracking Pressure
- Tamperproof Orifice
- High Pressure Capacity

### General Specifications

#### Materials of Construction

- Body – Brass or 303 SS
- Ball Check Assembly – 304 SS
- Flow Control Orifice – Brass or 303 SS
- Sealant – Locite 609, 680
- High pressure types only

**Maximum Temperature** – 300°F

#### Maximum Operating Pressure

##### Standard Pressure Type

- NPT – 200 psig (max.)
- 10-32 – 125 psig (max.)

##### High Pressure Type (Suffix H)

- NPT – 2000 psig (max.)

#### Seat Leakage – 20 sccm (max.)

Air flow at 25 psi differential

#### Flow Capacity

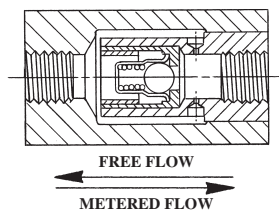
See charts on page 11 for details

#### Check Valve Cracking Pressure

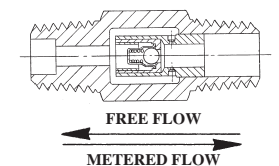
Selectable 0, 2, 10 or 15 psid

### Construction

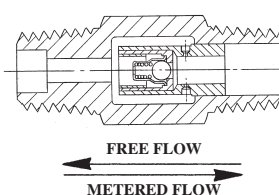
#### Type FFLF



#### Type BLF, BLFH



#### Type ELF, ELFH



### Valve Characteristics

Type	Selectable Cracking Pressure – psid*				Free Flow C <sub>v</sub>	Inlet Pressure – 100 psig Outlet Pressure – Atmos.	
	0	2	10	15		Air Free Flow – SCFH	Water Flow GPM
FFLF	✓	✓	✓		.084 to .162	346 to 662	.8 to 1.6
BLF BLFH	✓	✓	✓		.084 to .162	346 to 662	.8 to 1.6
ELF ELFH	✓	✓		✓	.194 to .396	809 to 1650	1.9 to 3.9

### Ordering Information

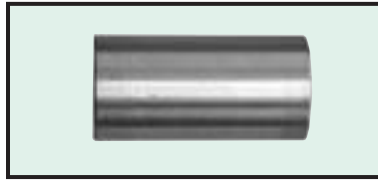
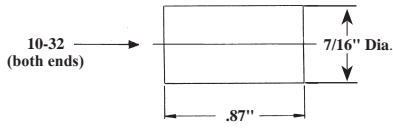
FIXED FLOW CONTROL – PART NUMBER				
<i>EXAMPLES</i>				
Type	Orifice Size Number	Cracking Pressure psid*	Body Material	Part Number
FFLF	10	10	BR	FFLF-10-10-BR (standard pressure)
BLFH	25	2	SS	BLFH-25-2-SS (high pressure)
ELF	60	15	SS	ELF-60-15-SS (standard pressure)

\*psid – pounds per square inch differential

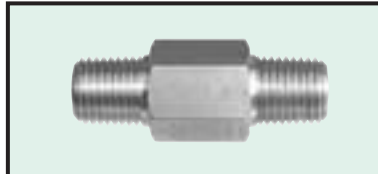
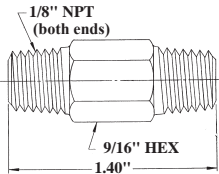
## BALL TYPE

### Dimensions

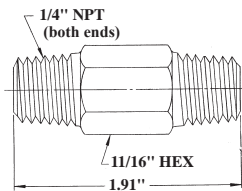
#### Type FFLF



#### Type BLF BLFH



#### Type ELF ELFH



### Specifications

#### 10-32 COUPLING

**Body** – Brass or 303 SS  
**Valve** – 304 SS  
**C<sub>v</sub>** – Variable, see chart below  
**Maximum Operating Pressure** – 125 psig  
**Cracking Pressure** – 0, 2 or 10 psid

#### 1/8" NPT NIPPLE

**Body** – Brass or 303 SS  
**Valve** – 304 SS  
**C<sub>v</sub>** – Variable, see chart below  
**Maximum Operating Pressure** –  
 BLF – 200 psig  
 BLFH – 2000 psig  
**Cracking Pressure** – 0, 2 or 10 psid

#### 1/4" NPT NIPPLE

**Body** – Brass or 303 SS  
**Valve** – 304 SS  
**C<sub>v</sub>** – Variable, see chart below  
**Maximum Operating Pressure** –  
 ELF – 200 psig  
 ELFH – 2000 psig  
**Cracking Pressure** – 0, 2 or 15 psid

### Types BLE, BLFH, FFLF

Orifice Size Number	Orifice Dia. In.	Orifice Cv (return)	Check Valve Cv	Assembly Forward Cv	Cv Ratio Forward Cv Return Cv
10	.0102	0.0025	0.081	0.084	33.40
11	.0110	0.0028	0.081	0.084	29.93
*12	.0122	0.0034	0.081	0.084	24.82
13	.0130	0.0038	0.081	0.085	22.32
14	.0142	0.0043	0.081	0.085	19.84
15	.0150	0.0050	0.081	0.086	17.20
16	.016	0.0055	0.081	0.087	15.73
17	.017	0.0067	0.081	0.088	13.09
18	.018	0.0073	0.081	0.088	12.10
19	.019	0.0080	0.081	0.089	11.13
*20	.020	0.0088	0.081	0.090	10.20
21	.021	0.0096	0.081	0.091	9.44
22	.022	0.011	0.081	0.092	8.36
23	.023	0.012	0.081	0.093	7.75
24	.024	0.013	0.081	0.094	7.23
25	.025	0.014	0.081	0.095	6.79
*26	.026	0.016	0.081	0.097	6.06
27	.027	0.017	0.081	0.098	5.76
28	.028	0.018	0.081	0.099	5.50
29	.029	0.019	0.081	0.100	5.26
31	.031	0.022	0.081	0.103	4.68
*32	.032	0.024	0.081	0.105	4.38
33	.033	0.025	0.081	0.106	4.24
35	.035	0.028	0.081	0.109	3.89
37	.037	0.031	0.081	0.112	3.61
38	.038	0.032	0.081	0.113	3.53
39	.039	0.033	0.081	0.114	3.45
*40	.040	0.036	0.081	0.117	3.25
41	.041	0.038	0.081	0.119	3.13
42	.042	0.039	0.081	0.120	3.08
43	.043	0.041	0.081	0.122	2.98
47	.047	0.048	0.081	0.129	2.69
*52	.052	0.059	0.081	0.140	2.37
55	.055	0.068	0.081	0.149	2.19
60	.060	0.081	0.081	0.162	2.00

\*These sizes are normally stocked with 2 psid cracking pressure.

### Types ELF, ELFH

Orifice Size Number	Orifice Dia. In.	Orifice Cv (return)	Check Valve Cv	Assembly Forward Cv	Cv Ratio Forward Cv Return Cv
10	.0102	0.0025	0.191	0.194	77.40
11	.0110	0.0028	0.191	0.194	69.21
*12	.0122	0.0034	0.191	0.194	57.18
13	.0130	0.0038	0.191	0.195	51.26
14	.0142	0.0043	0.191	0.195	45.42
15	.0150	0.0050	0.191	0.196	39.20
16	.016	0.0055	0.191	0.197	35.73
17	.017	0.0067	0.191	0.198	29.51
18	.018	0.0073	0.191	0.198	27.16
19	.019	0.0080	0.191	0.199	24.88
*20	.020	0.0088	0.191	0.200	22.70
21	.021	0.0096	0.191	0.201	20.90
22	.022	0.011	0.191	0.202	18.36
23	.023	0.012	0.191	0.203	16.92
24	.024	0.013	0.191	0.204	15.69
25	.025	0.014	0.191	0.205	14.64
*26	.026	0.016	0.191	0.207	12.94
27	.027	0.017	0.191	0.208	12.24
28	.028	0.018	0.191	0.209	11.61
29	.029	0.019	0.191	0.210	11.05
31	.031	0.022	0.191	0.213	9.68
*32	.032	0.024	0.191	0.215	8.96
33	.033	0.025	0.191	0.216	8.64
35	.035	0.028	0.191	0.219	7.82
37	.037	0.031	0.191	0.222	7.16
38	.038	0.032	0.191	0.223	6.97
39	.039	0.033	0.191	0.224	6.79
*40	.040	0.036	0.191	0.227	6.31
41	.041	0.038	0.191	0.229	6.03
42	.042	0.039	0.191	0.230	5.90
43	.043	0.041	0.191	0.232	5.66
47	.047	0.048	0.191	0.239	4.98
*52	.052	0.059	0.191	0.250	4.24
55	.055	0.068	0.191	0.259	3.81
60	.060	0.081	0.191	0.272	3.36
63	.063	0.088	0.191	0.279	3.17
67	.067	0.10	0.191	0.291	2.91
70	.070	0.11	0.191	0.301	2.74
73	.073	0.12	0.191	0.311	2.59
76	.076	0.13	0.191	0.321	2.47
79	.079	0.14	0.191	0.331	2.36
81	.081	0.15	0.191	0.341	2.27
86	.086	0.17	0.191	0.361	2.12
89	.089	0.18	0.191	0.371	2.06
94	.094	0.20	0.191	0.391	1.96

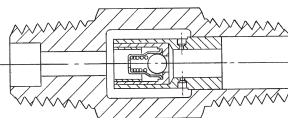
\*These sizes are normally stocked with 2 psid cracking pressure.

Metered Flow –

Free Flow –

Return C<sub>v</sub>

Forward C<sub>v</sub>



## DISK TYPE

## Description

Fixed flow controls are a parallel arrangement of a disk check valve and a precision orifice. Free flow occurs in one direction and metered flow occurs in the opposite direction. Suitable for both liquids and gases the fixed flow controls are available in brass or stainless steel.

## Applications

- Air Cylinder Speed Controls
- Compressed Air Dryer Purge Controls
- Timing Circuits

## Features

- High Flow Capacity
- Low Pressure Loss
- Low Cracking Pressure
- Long Life Operation
- Tamperproof Orifice

## Ordering Information

EXAMPLES		FIXED FLOW CONTROL – PART NUMBER				
Type	Orifice Size No.*	Body Material	Disk Material	Part Number		
GOF (1/4" male/female)	10 (.010" orifice)	SS (303 SS)	SS (303 SS)	GOF-10-SS-SS		
Y6F (3/8" female/female)	22 (.022" orifice)	BR (Brass)	DE (Delrin)	Y6F-22-BR-DE		

\*See chart on page 14.

## Valve Characteristics

Type	Thread	End Connections	Metering* Orifice Size No.	Body Material	Disk Material	Maximum Pressure	Free Flow Cv
FMOF	10-32	male/female	4 to 25	Brass (BR)	Brass (BR)	NPT 150 psig	.15-.17
DOF	1/8" NPT		4 to 125				.43-.51
GOF	1/4" NPT						.61-.98
FFOF	10-32	female/female	4 to 25	303 SS (SS)	or Delrin (DE)	10-32 125 psig	.15-.17
Y2F	1/8" NPT		4 to 125				.43-.51
Y4F	1/4" NPT						.61-.98
Y6F	3/8" NPT						1.09-1.46

\*See chart on page 14.

## General Specifications

## Maximum Operating Pressure

NPT – 150 psig  
10-32 – 125 psig

## Maximum Temperature

Brass Disk Assembly 225°F  
303 SS Disk Assembly 225°F  
Delrin Disk Assembly 120°F  
All 10-32 Assemblies 120°F

## Flow Capacity – See chart below

## Materials of Construction

Body – Brass or 303 SS  
Seals – Viton, Silicone  
Disk – Brass, 303 SS or Delrin

## Cracking Pressure – Less than 0.5 psid

## Orifice Sizes (Fixed Flow Controls)

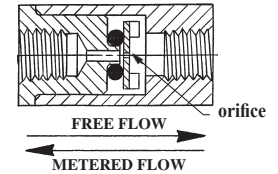
.004" to .125" (NPT)  
.004" to .025" (10-32)

## Seat Leakage (Check Valves)

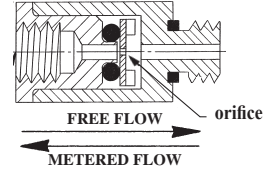
Bubbletight for differential pressure greater than 2 psid (NPT)

## Construction

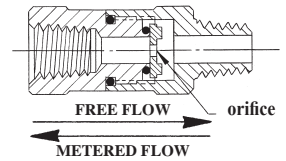
## Type FFOF



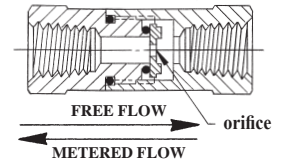
## Type FMOF



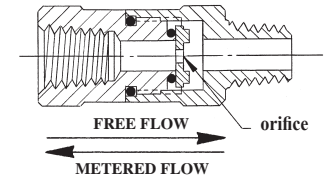
## Type DOF



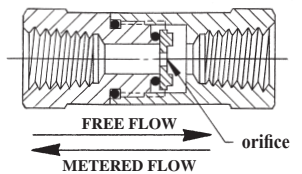
## Type Y2F



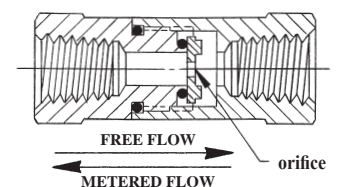
## Type GOF



## Type Y4F



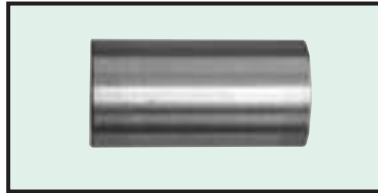
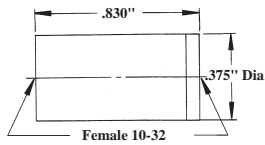
## Type Y6F



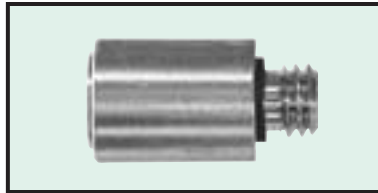
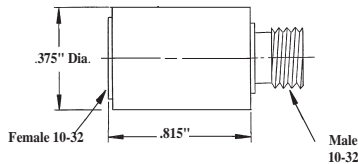
## DISK TYPE

### Dimensions

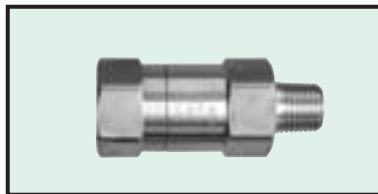
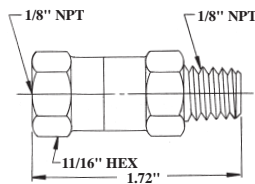
#### Type FFOF



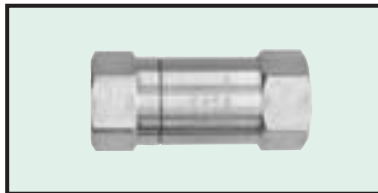
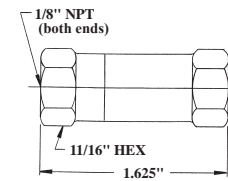
#### Type FMOF



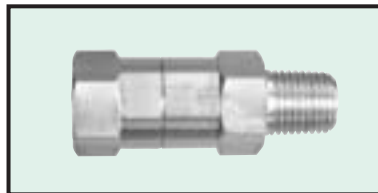
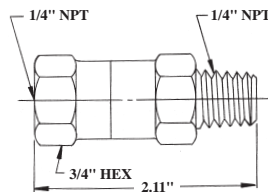
#### Type DOF



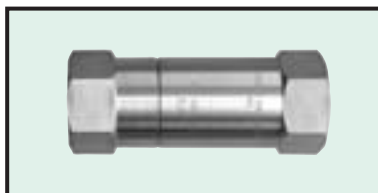
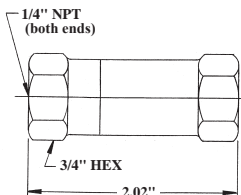
#### Type Y2F



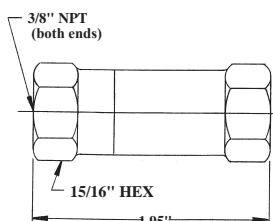
#### Type GOF



#### Type Y4F



#### Type Y6F



### Specifications

#### 10-32 COUPLING

**Body** – Brass or 303 SS  
**Disk** – Brass or 303 SS  
**Seals** – Viton, Silicone  
**Maximum Operating Pressure** – 125 psig  
**Orifice Size Numbers** – 4 to 25  
**Flow Capacity** – See chart on page 14

#### 10-32 ADAPTER

**Body** – Brass or 303 SS  
**Disk** – Brass or 303 SS  
**Seals** – Viton, Silicone  
**Maximum Operating Pressure** – 125 psig  
**Orifice Size Numbers** – 4 to 25  
**Flow Capacity** – See chart on page 14

#### 1/8" NPT ADAPTER

**Valve Body** – Brass or 304 SS  
**Disk** – Brass, 303 SS, Delrin  
**Seals** – Viton  
**Maximum Operating Pressure** – 150 psig  
**Orifice Size Numbers** – 4 to 125  
**Flow Capacity** – See chart on page 14

#### 1/8" NPT COUPLING

**Valve Body** – Brass or 304 SS  
**Disk** – Brass, 303 SS, Delrin  
**Seals** – Viton  
**Maximum Operating Pressure** – 150 psig  
**Orifice Size Numbers** – 4 to 125  
**Flow Capacity** – See chart on page 14

#### 1/4" NPT ADAPTER

**Valve Body** – Brass or 304 SS  
**Disk** – Brass, 303 SS, Delrin  
**Seals** – Viton  
**Maximum Operating Pressure** – 150 psig  
**Orifice Size Numbers** – 4 to 125  
**Flow Capacity** – See chart on page 14

#### 1/4" NPT COUPLING

**Valve Body** – Brass or 304 SS  
**Disk** – Brass, 303 SS, Delrin  
**Seals** – Viton  
**Maximum Operating Pressure** – 150 psig  
**Orifice Size Numbers** – 4 to 125  
**Flow Capacity** – See chart on page 14

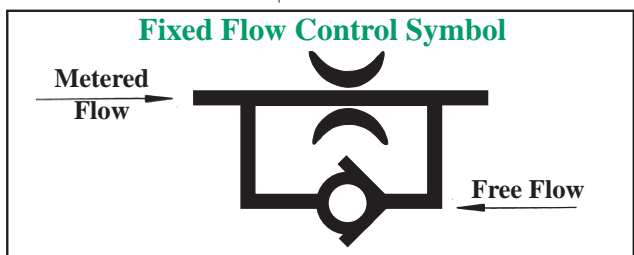
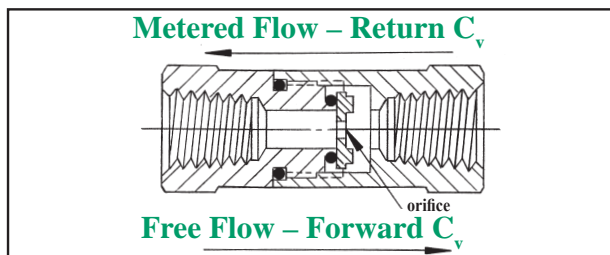
#### 3/8" NPT COUPLING

**Valve Body** – Brass or 304 SS  
**Disk** – Brass, 303 SS, Delrin  
**Seals** – Viton  
**Maximum Operating Pressure** – 150 psig  
**Orifice Size Numbers** – 4 to 125  
**Flow Capacity** – See chart on page 14

# Fixed Flow Controls

## DISK TYPE

Orifice Size No.	Orifice Dia.	Orifice Cv (return)	Types FFOF, FMOF		Types DOF, Y2F		Types GOF, Y4F		Type Y6F	
			Forward Cv	Cv Ratio Forward Cv Return Cv	Forward Cv	Cv Ratio Forward Cv Return Cv	Forward Cv	Cv Ratio Forward Cv Return Cv	Forward Cv	Cv Ratio Forward Cv Return Cv
4	.0039	.00035	.150	428.57	.430	1229.57	.614	1755.29	1.091	3118.14
5	.0051	.00061	.151	247.54	.431	705.92	.615	1007.56	1.092	1789.52
6	.0059	.00086	.151	175.58	.431	501.00	.615	714.95	1.092	1269.60
7	.0071	.0012	.151	125.83	.431	359.33	.615	512.67	1.092	910.17
8	.0079	.0015	.152	101.33	.432	287.67	.616	410.33	1.093	728.33
9	.0091	.0019	.152	80.00	.432	227.32	.616	324.16	1.093	575.21
10	.0102	.0025	.153	61.20	.433	173.00	.617	246.60	1.094	437.40
11	.0110	.0028	.153	54.64	.433	154.57	.617	220.29	1.094	390.64
12	.0122	.0034	.153	45.00	.433	127.47	.617	181.59	1.094	321.88
13	.0130	.0038	.154	40.53	.434	114.16	.618	162.58	1.095	288.11
14	.0143	.0043	.154	35.81	.434	101.00	.618	143.79	1.095	254.72
15	.0150	.0050	.155	31.00	.435	87.00	.619	123.80	1.096	219.20
16	.016	.0055	.156	28.36	.436	79.18	.620	112.64	1.097	199.36
17	.017	.0067	.157	23.43	.437	65.18	.621	92.64	1.098	163.84
18	.018	.0073	.157	21.51	.437	59.90	.621	85.11	1.098	150.45
19	.019	.0080	.158	19.75	.438	54.75	.622	77.75	1.099	137.38
20	.020	.0088	.159	18.07	.439	49.86	.623	70.77	1.100	124.98
21	.021	.0096	.160	16.67	.440	45.79	.624	64.96	1.101	114.65
22	.022	.011	.161	14.64	.441	40.09	.625	56.82	1.102	100.18
23	.023	.012	.162	13.50	.442	36.83	.626	52.17	1.103	91.92
24	.024	.013	.163	12.54	.443	34.08	.627	48.23	1.104	84.92
25	.025	.014	.164	11.71	.444	31.71	.628	44.86	1.105	78.93
26	.026	.016			.446	27.88	.630	39.38	1.107	69.19
27	.027	.017			.447	26.29	.631	37.12	1.108	65.18
28	.028	.018			.448	24.89	.632	35.11	1.109	61.61
29	.029	.019			.449	23.63	.633	33.32	1.110	58.42
31	.031	.022			.452	20.55	.636	28.91	1.113	50.59
32	.032	.024			.454	18.92	.638	26.58	1.115	46.46
33	.033	.025			.455	18.20	.639	25.56	1.116	44.64
35	.035	.028			.458	16.36	.642	22.93	1.119	39.96
37	.037	.031			.461	14.87	.645	20.81	1.122	36.19
38	.038	.032			.462	14.44	.646	20.19	1.123	35.09
39	.039	.033			.463	14.03	.647	19.61	1.124	34.06
40	.040	.036			.466	12.94	.650	18.06	1.127	31.31
41	.041	.038			.468	12.32	.652	17.16	1.129	29.71
42	.042	.039			.469	12.03	.653	16.74	1.130	28.97
43	.043	.041			.471	11.49	.655	15.98	1.132	27.61
47	.047	.048			.478	9.96	.662	13.79	1.139	23.73
52	.052	.059			.489	8.29	.673	11.41	1.150	19.49
55	.055	.068			.498	7.32	.682	10.03	1.159	17.04
60	.060	.081			.511	6.31	.695	8.58	1.172	14.47
63	.063	.088			.518	5.89	.702	7.98	1.179	13.40
67	.067	.10			.530	5.30	.714	7.14	1.191	11.91
70	.070	.11			.540	4.91	.724	6.58	1.201	10.92
73	.073	.12			.550	4.58	.734	6.12	1.211	10.09
76	.076	.13			.560	4.31	.744	5.72	1.221	9.39
79	.079	.14			.570	4.07	.754	5.39	1.231	8.79
81	.081	.15			.580	3.87	.764	5.09	1.241	8.27
86	.086	.17			.600	3.53	.784	4.61	1.261	7.42
89	.089	.18			.610	3.39	.794	4.41	1.271	7.06
94	.094	.20			.630	3.15	.814	4.07	1.291	6.46
96	.096	.21			.640	3.05	.824	3.92	1.301	6.20
100	.100	.23			.660	2.87	.844	3.67	1.321	5.74
104	.104	.25			.680	2.72	.864	3.46	1.341	5.36
109	.109	.27			.700	2.59	.884	3.27	1.361	5.04
113	.113	.31			.740	2.39	.924	2.98	1.401	4.52
120	.120	.34			.770	2.27	.954	2.81	1.431	4.21
125	.125	.37			.800	2.16	.984	2.66	1.461	3.95

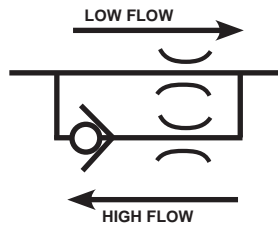


## ECONOMY LINE

### Description

Bidirectional fixed flow orifices provide metered flow in two opposite directions. Flow in one direction occurs only through the low flow orifice. Flow in the opposite direction occurs through both the low flow and high flow orifices. Bodies are available in brass or stainless steel.

### Symbol - Bidirectional Fixed Flow Controls



### Part Numbers

Size Number	Diameter (in)	Orifice C <sub>VM</sub>	Orifice C <sub>V2</sub>
4	.004	.000351	-
5	.005	.00061	-
6	.006	.00086	-
7	.007	.0012	-
8	.008	.0015	-
9	.009	.0019	-
10	.010	.0025	.0025
11	.011	.0028	.0028
12	.012	.0034	.0034
13	.013	.0038	.0038
14	.014	.0043	.0043
15	.015	.0050	.0050
16	.016	.0055	.0055
17	.017	.0067	.0067
18	.018	.0073	.0073
19	.019	.0080	.0080
20	.020	.009	.009
21	.021	.010	.010
22	.022	.011	.011
23	.023	.012	.012
24	.024	.013	.013
25	.025	-	.014
26	.026	-	.016
27	.027	-	.017
28	.028	-	.018
29	.029	-	.019
30	.030	-	.020

### General Specifications

#### Materials of Construction

- Body – Brass or 303 SS
- Ball Stop – Brass or 303 SS
- Ball – Buna-N or 302 SS
- Gasket (Type FMFRR) – Viton

#### Maximum Temperature

- Buna-N Ball – 180°F
- SS Ball – 300°F

#### Maximum Operating Pressure

- Type FMFRR – 125 psig max (SS or Buna-N Ball)
- Type ZFRR
  - Brass – 500 psig (SS Ball)
  - SS – 1000 psig (SS Ball)
  - Brass or SS – 125 psig (Buna-N Ball)

#### Thread Sealant

For 10-32 straight thread on Type ZFRR, use Loctite 542 thread sealant or equal.

#### Flow Capacity

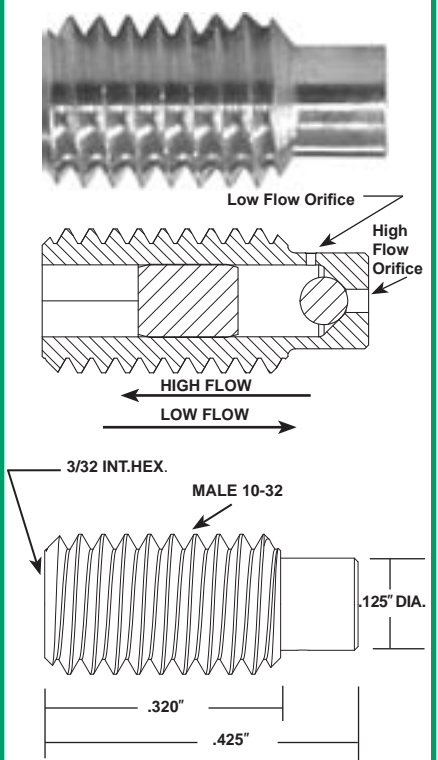
- High Flow  $C_v = C_{VM} + C_{V2}$
- Low Flow  $C_v = C_{VM}$

Type	Description
ZFRR	10/32 Set Screw
FMFRR	10/32 Male/Female

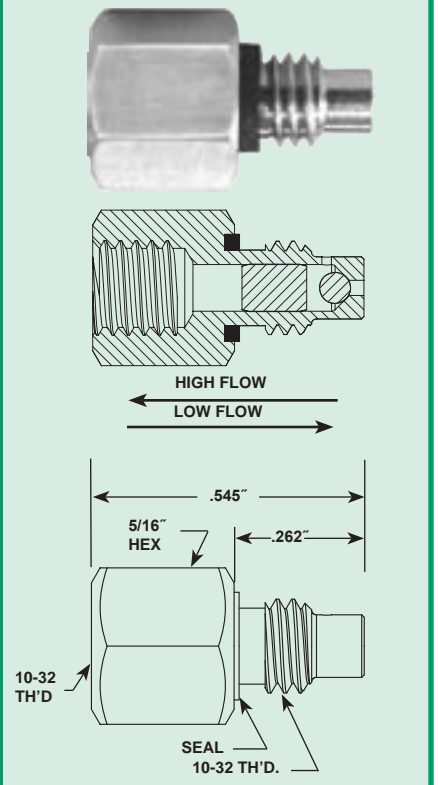
Designation	Body Material
BR	Brass
SS	303 Stainless Steel

Designation	Ball Material
SS	302 Stainless Steel
BN	Buna-N

### Type ZFRR



### Type FMFRR



### Part Number Examples

Type Select	Metering Orifice Size No. Select	Free Flow Orifice Size No. Select	Cracking Pressure 0	Thread Size 10/32	Body Material Select	Ball Material Select
eg.						
ZFRR	12 (.012")	25 (.025")	0	10/32	BR (Brass)	BN (Buna-N)
FMFRR	10 (.010")	15 (.015")	0	10/32	SS (303SS)	SS (302SS)

# Checked Orifices

## ECONOMY LINE

### Description

These checked orifices consist of a precision orifice in series with a ball check valve. The flow rate of the restricted flow is set by the orifice size. Reverse flow is checked by the ball. The assembly provides a selectable flow rate in one direction and checked flow in the opposite direction.

### General Specifications

#### Materials of Construction

- Body – Brass or 303 SS
- Ball Stop – Brass or 303 SS
- Ball – Buna-N or 302 SS
- Gasket (Type FMCR) – Viton

#### Maximum Temperature

- Buna-N Ball – 180°F
- SS Ball – 300°F

#### Maximum Operating Pressure

- Type FMCR – 125 psig max
- Type ZCR – 125 psig max

#### Seat Leakage

- SS Ball**  
20 sccm (max) air flow at 25 psid
- Buna-N Ball**  
0 sccm air flow @ 50 psid  
Minor leakage at lower differential

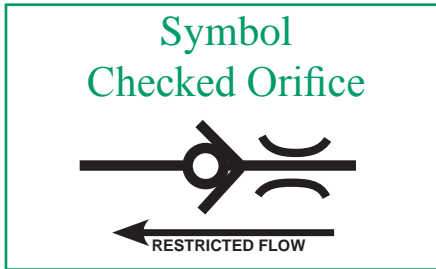
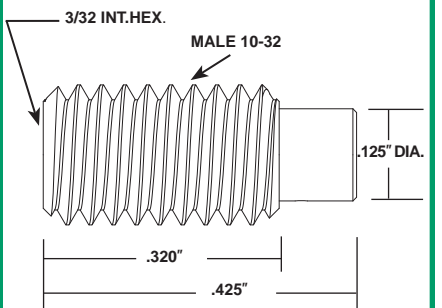
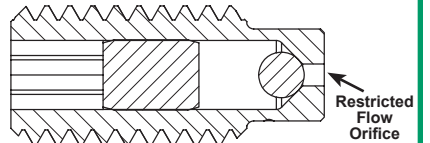
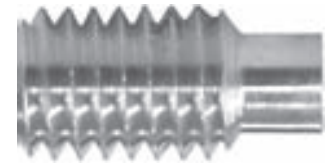
#### Thread Sealant

For 10-32 straight thread on Type ZCR, use Loctite 542 thread sealant or equal.

#### Cracking Pressure – 0 psid

#### Capacity–Cv (see chart)

### Type ZCR



### Part Numbers

#### Metering Orifice

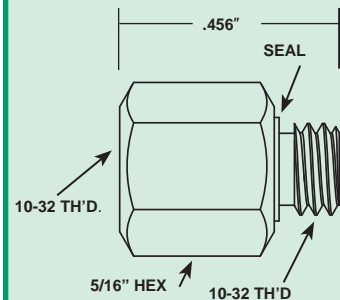
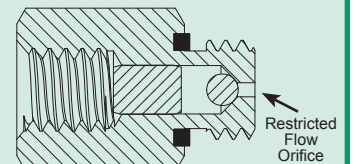
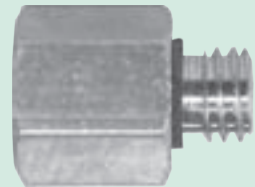
Size Number	Orifice Diameter	C <sub>v</sub>
10	0.010	0.0025
11	0.011	0.0028
12	0.012	0.0034
13	0.013	0.0038
14	0.014	0.0043
15	0.015	0.0050
16	0.016	0.0055
17	0.017	0.0067
18	0.018	0.0073
19	0.019	0.0080
20	0.020	0.0090
21	0.021	0.0100
22	0.022	0.011
23	0.023	0.012
24	0.024	0.013
25	0.025	0.014
26	0.026	0.016
27	0.027	0.017
28	0.028	0.018
29	0.029	0.019
30	0.030	0.020

Type	Description
ZCR	10/32 Set Screw
FMCR	10/32 Male/Female

Designation	Body Material
BR	Brass
SS	303 Stainless Steel

Designation	Ball Material
SS	302 Stainless Steel
BN	Buna-N

### Type FMCR



#### Part Number Examples

Type Select	Orifice Size No. Select	Cracking Pressure	Thread Size	Body Material Select	Ball Material Select
eg. ZCR	10 (.010")	0	10/32	BR (Brass)	BN (Buna-N)
FMCR	20 (.020")	0	10/32	SS (Stainless Steel)	SS (Stainless Steel)

## BALL TYPE

### Description

Checked orifices are a series arrangement of a precision orifice, a ball check valve and an optional screen. The all metal assemblies are made of brass or stainless steel. Gas or liquid can flow in one direction only, at a rate established by the metering orifice. Reverse pressure differential does not result in reverse flow. Standard sizes are 10-32, 1/8" NPT and 1/4" NPT. Custom requirements will be reviewed for large quantity applications.

### Applications

- Unidirectional gas or liquid flow
- Backflow prevention in metering systems
- Fluid contamination reduction
- Isolation of fluid sources in mixers
- Fuel line metering with no reverse flow
- Medical metering of fluids

### Ordering Information

Part Number System

Type	Orifice Size No.	Cracking Pressure psid*	Material
<b>EXAMPLES</b>			
<b>BIFLC</b> (Standard Pressure)	<b>10</b> .010"	<b>2</b> 2 psig	<b>BR</b> Brass
<b>FIFLCS</b> (With Screen)	<b>31</b> .031"	<b>10</b> 10 psig	<b>BR</b> Brass
<b>EIJLCSH</b> (High Pressure With Screen)	<b>81</b> .081"	<b>15</b> 15 psig	<b>SS</b> Stainless Steel

Select – Type from illustrations in right column and from SPECIFICATIONS

Orifice Size No. from chart

Cracking Pressure from SPECIFICATIONS

Material - Brass or Stainless Steel

\*psid – pounds per square inch differential

### Specifications

**Materials of Construction**

Body - Brass or 303 SS

Ball Check Assembly - 304 SS

Flow Control Orifice -

Brass or 303 SS

Sealant - Loctite 609, 680

High pressure types only

**Temperature** - 300°F (max.)

**Maximum Operating Pressure**

**Standard Pressure Type**

NPT - 200 psig (max.)

10-32 - 125 psig (max.)

**High Pressure Type (Suffix H)**

NPT - 2000 psig (max.)

**Seat Leakage** - 20 sccm (max.)

air flow at 25 psi differential

**Cracking Pressure**

- 10-32 or 1/8" NPT

0, 2 or 10 psid

- 1/4" NPT

0, 2 or 15 psid

**Flow Capacity** - Cv and air flow shown in chart below

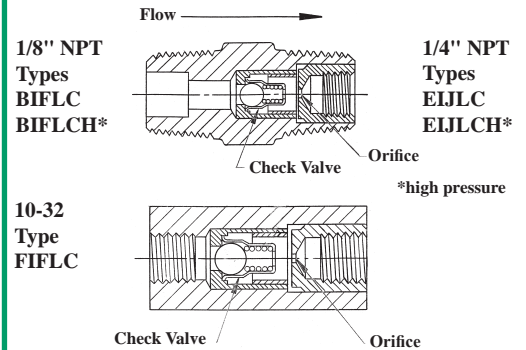
Orifice Size Number	Orifice Dia. In.	Orifice Cv	Air Flow-SCFH	
			25 psig	100 psig
10	0.0102	0.0025	3.37	9.81
11	0.0110	0.0028	3.62	10.5
*12	0.0122	0.0034	4.66	13.4
13	0.0130	0.0038	5.30	15.3
14	0.0142	0.0043	6.06	17.4
15	0.015	0.0050	6.95	20.0
*16	0.016	0.0055	7.25	21.8
17	0.017	0.0067	8.31	25.0
18	0.018	0.0073	9.43	28.4
19	0.019	0.0080	10.4	31.1
*20	0.020	0.0088	11.8	35.2
21	0.021	0.0096	12.7	38.1
22	0.022	0.011	15.5	44.7
23	0.023	0.012	16.8	48.7
24	0.024	0.013	18.3	53.2
25	0.025	0.014	19.9	58.1
*26	0.026	0.016	21.6	62.3
27	0.027	0.017	22.7	65.3
28	0.028	0.018	24.8	71.4
29	0.029	0.019	27.1	78.0
31	0.031	0.022	30.1	86.7
*32	0.032	0.024	32.6	94.5
33	0.033	0.025	34.5	101
35	0.035	0.028	37.5	114
37	0.037	0.031	41.5	126
38	0.038	0.032	44.1	135
39	0.039	0.033	47.9	146
*40	0.04	0.036	50.9	156
41	0.041	0.038	52.3	164
42	0.042	0.039	54.9	167
43	0.043	0.041	58.5	177
47	0.047	0.048	67.6	203
*52	0.052	0.059	85.4	254
55	0.055	0.068	94.5	282
60	0.060	0.081	112	331
63	0.063	0.088	122	362
67	0.067	0.10	141	415
70	0.070	0.11	158	468
73	0.073	0.12	168	496
76	0.076	0.13	183	540
*79	0.079	0.14	198	587
81	0.081	0.15	212	627
86	0.086	0.17	233	697
89	0.089	0.18	248	739
94	0.094	0.20	278	831

FOR 10-32, 1/8" NPT and 1/4" NPT

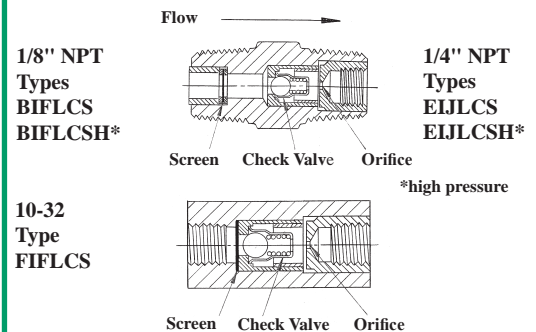
1/4" NPT ONLY



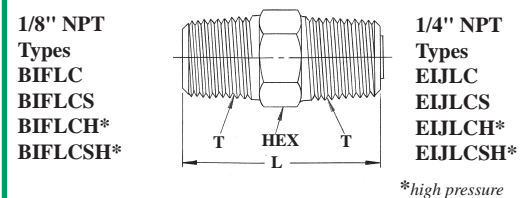
### Check Valve/Orifice



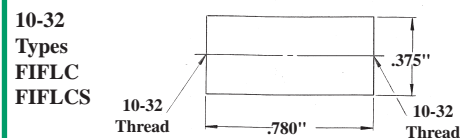
### Screen/Check Valve/Orifice



### Dimensions



Thread (T)	HEX	L
1/8" NPT	7/16"	.970"
1/4" NPT	9/16"	1.38"





## SELF-REGENERATIVE

### Description

The air dryer products of O'Keefe Controls Co. employ a self-regenerative, desiccant style drying system. "Self-regenerative" means that the dryer automatically and continuously discharges collected water vapor which has been removed from the air passing through the system. Desiccant style means that a material (a desiccant) is used to selectively remove water vapor from the air surrounding this material. Three common desiccant materials are silica gel, alumina and molecular sieve.

### How It Works!

In the O'Keefe Controls Co. air dryers desiccant material is a molecular sieve. This type desiccant adsorbs the water vapor molecule in tiny pores on the surface of each bead of the molecular sieve material. Moist air passing by this desiccant is dried as vapor molecules are selectively attracted to the pores in the molecular sieve beads. A dew point as low as minus 100°F is possible using molecular sieve material.

Another equally important characteristic of the molecular sieve is that extremely dry air (very low dew point) passing by this desiccant will reabsorb the water vapor trapped in the pores; thus providing a means of automatic regeneration of the desiccant.

Two desiccant tanks are employed in each air dryer. Wet pressurized air enters one tank and is dried as it passes through to the outlet. A portion of the dried air is directed into the top of the second tank through a purge orifice and flows at near atmospheric pressure through this tank to atmosphere. As this dry air passes around the molecular sieve beads it reabsorbs water vapor and then exhausts to atmosphere.

**Call for Free Catalog!**

**Also on Website**

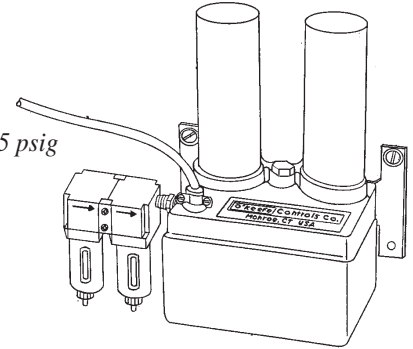
**[www.okcc.com](http://www.okcc.com)**

Twenty-four page catalog presents 36 air dryer models for generating low dew point compressed air. Additionally included are important accessories for air dryer systems.



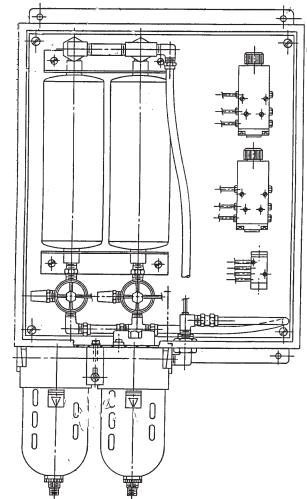
#### Compact Air Dryer

- Shoebox size
- Air flow up to 6 scfm
- Operating pressure 80-125 psig
- Dew point minus 50°F
- Lower at reduced flow



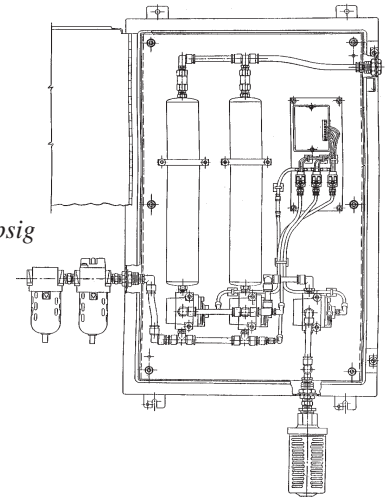
#### Standard Air Dryer

- Enclosure 16" x 14" x 6"
- Air flow up to 13 scfm
- Operating pressure 80-125 psig
- Dew point minus 50°F
- Lower at reduced flow



#### High Flow Air Dryer

- Enclosure 36" x 24" x 7"
- Air flow up to 20 scfm
- Operating pressure 80-125 psig
- Pulse free
- Quiet Operation
- Dew point minus 50°F
- Lower at reduced flow



Founded in 1975, the company manufactures specialty fluid control products in its Monroe, CT location. Chief among the products is an extensive line of precision orifices for accurate metering of liquids or gases. Other products include miniature in-line screens for use with small orifices, and several unique pneumatic sensors used in industrial control applications.

The company provides extensive engineering support for product selection and application to its customers. Accurate calibration of orifices can also be provided using in-house NIST traceable instrumentation.

O'Keefe Controls Co. encourages inquiries for custom fluid control products from its customers. Special orifice sizes, configurations, and flow specifications are routinely satisfied on an attractive economic scale. Please call with your special requirements.



## Precision Orifice Processing at O'Keefe Controls Co.



*Ultrasonic cleaners are used to remove contamination from the interior of orifice assemblies. Small particles can cause major changes in orifice flow rates.*

At O'Keefe Controls Co. there are several important steps in the production of precision fluid restrictors. All orifice assemblies are 100% cleaned, inspected under a microscope, and flow tested before shipment.

With orifice diameters as small as .0003" it is important to have the assembly cleaned so that physical contaminants do not obstruct flow through the orifice.

The ultimate objective of a precision fluid restrictor is to accurately meter the flow of a gas or liquid. The restrictors available from O'Keefe Controls Co. are 100% tested and must meet exacting flow standards before shipment.



*All production orifices are examined by experienced inspectors using a microscope to detect contaminants and to assure orifice quality.*



*Orifice diameter dimensions are checked using a precision measuring microscope. Accuracy is better than .0001".*



*Mass flowmeters are used for NIST traceable calibration of orifice flow.*



*All production orifices are flow tested and must meet exacting flow standards. A special test bench has been constructed for this purpose.*

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