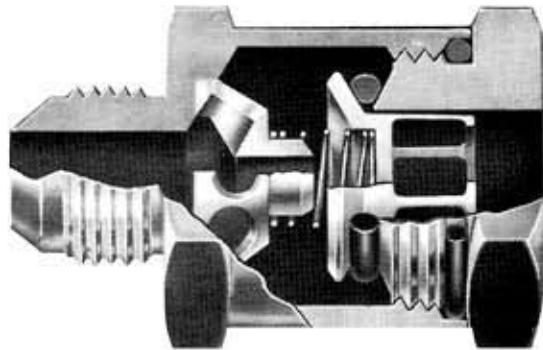


Wherever perfect sealing is required,  
 the proven reliability of Circle Seal precision valves  
 provides the one complete answer —  
 a combination of absolute leakproof sealing when closed  
 and virtually maintenance-free operation.



**CIRCLE SEAL**  
  
**CONTROLS**

## VACUUM BREAKER VALVES

### TYPICAL TECHNICAL CHARACTERISTICS

Part Number	P-664	P2-534	P10-635
Material — Body	Aluminum 2024-T4	Aluminum	Aluminum
Seals	MIL-P-5315	MIL-P-5315	Buna N
Connection — Inlet	MS33514-8	—	—
Outlet	—	AND 10056-6	MS33656-16 (Modified)
Service Pressure	Aircraft fuel	Air, CO <sub>2</sub> , Aircraft fuel	Air, N <sub>2</sub>
Cracking Pressure	2.5" H <sub>2</sub> O Max.	14" H <sub>2</sub> O Max.	As specified
Operating Pressure	0-600 psi	0-600 psi	
Operating Temperature	-65 to 160°F	-65 to 165°F	-65 to 250°F
Leakage	0	0	0

### TYPICAL APPLICATIONS

Vent valve for fuel cell, vent for battery case.

### NOTES

In hermetically sealed containers P-262 and P-308 type Vent and Breather Valves are used for vacuum breaker service. 800 series check valves are used where inlet and outlet connections are required.

### TYPE OF VALVE

A normally closed check or relief valve designed to open at low pressure and to seal dead tight against reverse flow or pressure. As valve is open to atmosphere, normally only one connection is required.

### PURPOSE

To allow air to flow into a container or system — in the event internal pressure is less than ambient pressure — to prevent crushing or collapse of cell or container.

### OPERATING CHARACTERISTICS

Valve opens at very low pressure differential or preset pressure differential.

When internal pressure equals or exceeds ambient pressure, Circle Seal principle insures dead tight shutoff with no leakage or dripping.

Symmetrical, in-line construction permits valve to be mounted in any position.

Not affected by vibration.

### QUALIFICATION STATUS

P-664 and P2-534 designs meet the functional and environmental requirements of MIL-V-7879. Specific valves qualified for system requirements. Qualification test reports are on file.

 **CIRCLE SEAL CONTROLS, INC.**  
 A CIRCOR International company

2301 WARDLOW CIRCLE  
 CORONA, CALIFORNIA 92880  
 TEL: (951) 270-6200 FAX: (951) 270-6201

# VACUUM BREAKER VALVES

## TYPE OF VALVE

Vacuum Breaker.

## PURPOSE

To allow flow of pressurizing air into a fuel cell and prevent leakage of fuel or fuel vapor into air pressurizing system.

## OPERATING CHARACTERISTICS

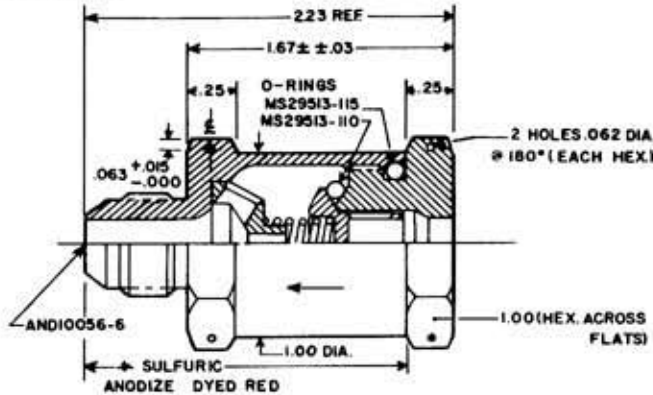
Under pressure, valve is dead tight. With vacuum exceeding 14" H<sub>2</sub>O (1" Hg.) valve opens to allow flow.

## TYPICAL APPLICATIONS

Vacuum breaker or pressurizing line for fuel cell. Qualified for Boeing 10-1472.

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CONFORMS TO BAC D10-1472-6  
INSPECTION SEAL NOT ALLOWED  
TEST PER T.M.138



MATERIAL:  
SPRING: STAINLESS STEEL, CADMIUM PLATE PER  
SPEC. QQ-P-416 MACH. PARTS: 2024-T4 (ALUM.)

UNLESS NOTED SURFACES ARE TO BE FINISHED TO 32 R.M.S. UNLESS OTHERWISE SPECIFIED.	BREAK SHARP EDGES	PRODUCT	CHECK VALVE
ANGLES TO BE 45° UNLESS OTHERWISE SPECIFIED.	FILLETED TO 0.015" DIA. UNLESS OTHERWISE SPECIFIED.	PART	OUTLINE DIMENSIONED
2 PLACE DECIMALS DIA. UNLESS OTHERWISE SPECIFIED.	2 PLACE DECIMALS DIA. UNLESS OTHERWISE SPECIFIED.	STOCK PER 100 PCS	DRAWN M.R. 7-18-57
ANODIZE PER MIL-A-8625A, 13 MAX. UNLESS OTHERWISE SPECIFIED.	TYPE I EXCEPT AS NOTED	CHECKED H.B. 9-3-57	DES ENGR. 10-1-57
		APPVD. 10-1-57	

P2-534			
LET	C.D.	REVISION	DATE
178	RELEASE		9-29-57

TECHNICAL DATA  
OPERATING PRESSURE 0-600 PSI.  
PROOF PRESSURE OVER 1200 PSI.  
BURST PRESSURE 1500 PSI  
OPERATING TEMP.  
-65° TO +135°F FOR FUEL  
-75° TO +160°F FOR AMBIENT  
CRACKING PRESSURE 14" H<sub>2</sub>O MAX.  
PRESSURE DROP  
.7 PSI. MAX. @ 5 CFM  
1.4 PSI. MAX. @ 10 CFM  
WITH AIR  
O-RING MATERIAL MIL-P-5315  
MOUNT. LIMITATIONS NONE  
SUITABLE FOR  
CARBON DIOXIDE, NITROGEN,  
METHYL ALCOHOL,  
AIR, HELIUM, MIL-F-5616,  
MIL-F-5624, MIL-F-5572

CIRCLE SEAL PRECISION VALVES PARADISE, CALIFORNIA	SCALE	P2-534
	NONE	

## TYPE OF VALVE

Low pressure relief valve.

## PURPOSE

To permit flow into a container under vacuum at a preset pressure differential.

## OPERATING CHARACTERISTICS

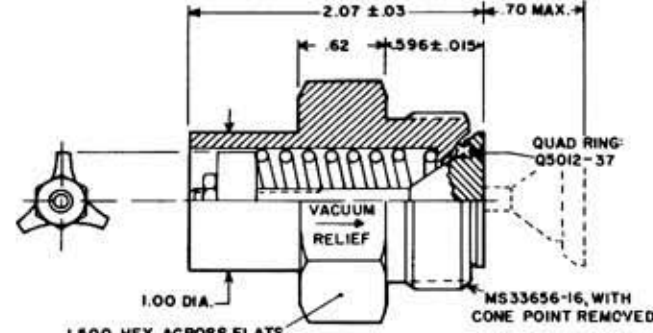
Valve seals dead tight to lower limit of C.P. tolerance ( $\pm 5\%$  of preset cracking pressure), reseals close to cracking pressure, hold back pressure without leakage.

## TYPICAL APPLICATIONS

Vacuum relief of airborne containers or batteries.

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CONFORMS TO BAC D10-1472-6  
INSPECTION SEAL NOT ALLOWED  
TEST PER T.M.138



VALVE DASH NUMBER (NOMINAL C.P.)	RANGE OF ADJUSTMENT	VALVE DASH NUMBER (NOMINAL C.P.)	RANGE OF ADJUSTMENT
-1	.5 TO 2.5 PSI	-20	10. TO 30. PSI
-4	2. TO 6. PSI	-50	25. TO 75. PSI
-10	5. TO 15. PSI	-100	60. TO 140. PSI

UNLESS NOTED SURFACES ARE TO BE FINISHED TO 32 R.M.S. UNLESS OTHERWISE SPECIFIED.	BREAK SHARP EDGES	PRODUCT	VACUUM RELIEF VALVE
ANGLES TO BE 45° UNLESS OTHERWISE SPECIFIED.	FILLETED TO 0.015" DIA. UNLESS OTHERWISE SPECIFIED.	PART	OUTLINE DIMENSIONED
2 PLACE DECIMALS DIA. UNLESS OTHERWISE SPECIFIED.	2 PLACE DECIMALS DIA. UNLESS OTHERWISE SPECIFIED.	STOCK PER 100 PCS	DRAWN M.R. 7-10-61
CHROMIUM ANODIZE UNLESS OTHERWISE SPECIFIED.	TYPE I EXCEPT AS NOTED	CHECKED H.B. 7-10-61	DES ENGR. 10-1-61
		APPVD. 10-1-61	

PIO-635			
LET	C.D.	REVISION	DATE
1298	RELEASE		10-1-61

TECHNICAL DATA  
CRACKING PRESSURE  
NOMINAL  $\pm 5\%$   
EXCEPT WHEN OTHERWISE SPECIFIED, IN WHICH CASE CRACKING PRESSURE IS INK STAMPED ON VALVE.  
LEAKAGE BELOW CRACKING PRESSURE  
0 TO 95% OF C.P.  
OPERATING TEMP.  
-65° TO +250°F  
SEAL MATERIAL BUNA N  
SPRING MATERIAL SST. 302 OR 304  
SUITABLE FOR AIR,  
NITROGEN, HYDRAULIC OIL

CIRCLE SEAL PRECISION VALVES PARADISE, CALIFORNIA	SCALE	PIO-635
	NONE	

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Non-destructive testing, such as individual flow test, testing with fluids other than compressed air or hydraulic oil, hydrostatic testing, x-ray, dye penetrant are not normal to our production processing, but are available at extra costs.