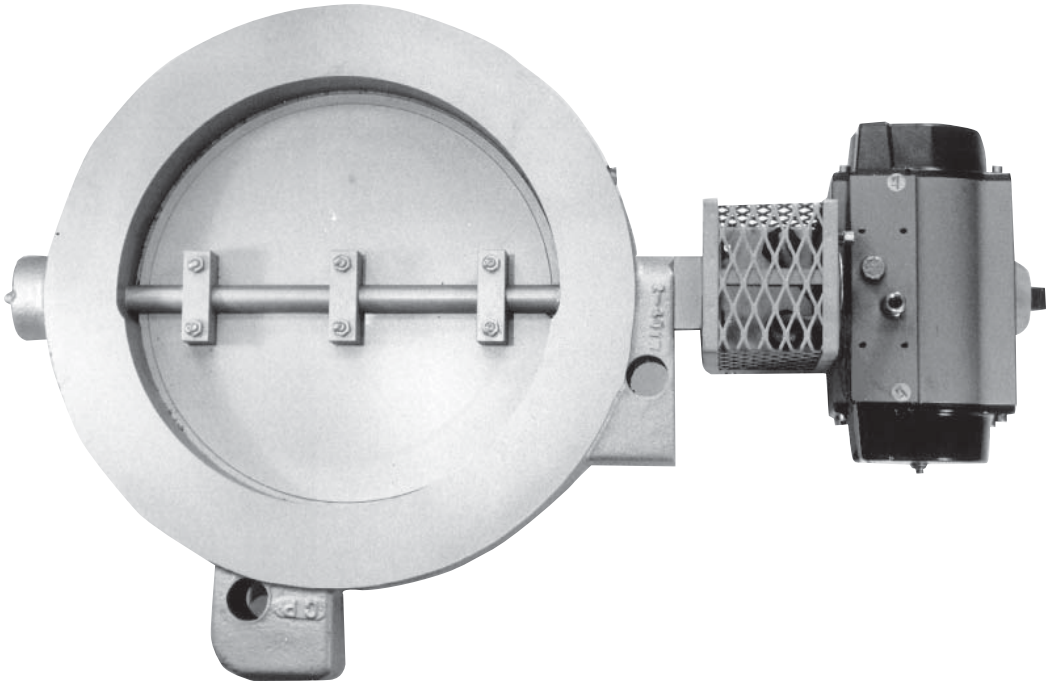
Bulletin 1177D

North American 1177D Cycle Valves for Air and Exhaust



Valve must be mounted with shaft in horizontal position.

The 1177D Butterfly Valves are primarily used on the TwinBed Reclamation Systems. The design of the system requires two burners to operate as a pair, one burner firing while its twin is exhausting. Two valves per burner are required. One valve is installed in the air piping to the burner and the other is installed in the exhaust piping to the burner. As one burner fires with air valve open and exhaust valve closed, its twin exhausts with air valve closed and exhaust valve open. Every 20 seconds the valves cycle to the opposite position thus switching which burner fires and which exhausts.

The 1177D Valve is a wafer butterfly valve which is pneumatically operated by a rack and pinion actuator. Actuator air pressure forces the pistons apart and compresses the springs. The linear travel of the piston is converted to a rotation of the drive shaft by the rack to pinion connection, thus opening the valve when pressure is applied to port 'A' (IN). A spring return closes the valve when air pressure is removed. An inlet snubber in port 'A' slows the valve response, preventing the disc from slamming against the internal stops. A small filter is in the actuator exhaust, port 'B'.

A proximity switch to indicate that the valve is in the closed position is required on all valves for TwinBed applications. The switch is required on the exhaust valves to assure that the burner is not exhausting at the same time it is firing which would result in a rich condition. The switch is required on the air valves to assure that the exhausting burner's air valve is closed to prevent a rich condition on the firing burner. A second switch is available for open indication, as an option.

The closed indicator switch is specified by a sufix after 1177D code number for pipe size, e.g. 1177D-8-LC. To order both the open and closed indicator switches, use suffix LL in place of LC. Other options include LO for open indication and LW for those special applications where no switches are required. The LW option will be supplied with the switch mounting bracket for the capability of adding switches at a later date.

CAPACITIES

Valve designation	Size inches	C_v	Capacity, scfh air at 1"wc drop	Leak rate in closed position w/16 osi drop at 70 F
1177D-6	3	387	16,700	330
1177D-7	4	697	30,000	360
1177D-8	6	1,509	65,000	780
1177D-9	8	3,135	135,000	1,350
1177D-10	10	5,179	223,000	2,230
1177D-12	12	7,431	320,000	3,200
1177D-14	14	9,289	400,000	3,700
1177D-16	16	12,308	530,000	4,200

SERVICE SPECIFICATIONS

Compressed air operating pressure: 60 to 70 psi clean and dry
Max. operating pressure: 120 psi
Actuator volume for 2½" - 8" valves: 24.2 $in.^3$
Actuator volume for 10" and 12" valves: 55.8 $in.^3$
Combustion air or exhaust gas max. operating pressure: 2 psi
Combustion air or exhaust gas max. differential: 1 psi
Exhaust gas max temp.: 800 deg F
Max. ambient temp.: actuator 176 deg F
Min. ambient temp.: actuator -4 deg F
Max. ambient temp.: position indicator switch 212 deg F
Min. ambient temp.: position indicator switch -13 deg F
Actuator cycle rating: 1,000,000 (closed to open to closed)
Electrical switch:

- Operating Voltage: 20-250 VAC (50/60 Hz) / 10-300 VDC
- Rated Operational Current (AC/DC): ≤ 400mA / ≤ 300mA
- Residual Current: ≤ 1.7mA
- Output Function: 2 when normally open
- Switching Status Indicator: Red LED
- Rated Operating Distance: 8mm = .315"
- Cable Length: 2.0m = 6.56′
- Protection Degree: IP67

VALVE MATERIAL

BODY - Heat Resistant C.I.
SHAFT - 316 SST
DISC - 316 SST
DISC CLAMP - 316 SST
DISC NUTS AND BOLTS - 304 SST

For Dimensions, see Dimensions 1177D
For Trouble-Shooting, see Trouble-Shooting 1177D
For Installation, Operation, and Maintenance Instructions, see Installation 1177D
For Spare Parts, see Spare Parts 1177D
For Conversion Kit Instructions, see Conversion/Replacement Kits 1177D

WARNING: Situations dangerous to personnel and property may exist with the operation and maintenance of any combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., are inherent with any combustion application. Parts of this product may exceed 160F in operation and present a contact hazard. Fives North American Combustion, Inc. urges compliance with National Safety Standards and Insurance Underwriters' recommendations, and care in operation.

fives ultimate machines ultimate factory

CONTACT US:
Fives North American Combustion, Inc.
4455 East 71st Street - Cleveland, OH 44105 - USA
Tel: +1 216 271 6000 - Fax: +1 216 373 4237
Email: fna.sales@fivesgroup.com

www.fivesgroup.com