I&M No. V_9948 Rev. AH

Pipe Thread and Flange Adapters for Combustion Valve Train Normally Closed Operation - ¾", 1", 1¼", 1½", 2", 2" HF, 2½", or 3" NPT/Rp Thread or ISO/ANSI Flange Fuel Gas Service

⚠ WARNING IMPROPER SELECTION OR USE OF ASCO™ PRODUCTS AND RELATED ITEMS OFFERED CAN CAUSE DEATH, SERIOUS INJURY, OR PROPERTY DAMAGE. THIS DOCUMENT AND OTHER INFORMATION FROM ASCO ITS SUBSIDIARIES AND AUTHORIZED DISTRIBUTORS PROVIDE PRODUCT OPTIONS FOR FURTHER INVESTIGATION BY USERS HAVING TECHNICAL EXPERTISE. IT IS IMPORTANT THAT YOU ANALYZE ALL ASPECTS OF THE APPLICATION AND REVIEW THE INFORMATION CONCERNING THE PRODUCT. DUE TO THE VARIETY OF OPERATING CONDITIONS AND APPLICATIONS FOR THESE PRODUCTS, THE USER, THROUGH ANALYSIS AND TESTING, IS SOLELY RESPONSIBLE FOR MAKING THE FINAL SELECTION OF THE PRODUCTS AND ASSURING THAT ALL PERFORMANCE, SAFETY, AND WARNING REQUIREMENTS OF THE APPLICATION ARE MET.

⚠ WARNING To reduce the risk of death, serious injury, or property damage:

- **Personnel installing, maintaining, or operating this equipment must be qualified and follow these instructions. See also separate solenoid installation & maintenance instructions. Keep this document.**
- **Before installing or maintaining the valve, turn off electrical power, depressurize valve, extinguish all open flames and avoid any type of sparking or ignition. Vent hazardous or combustible fluid to a safe area.**

***NOTICE* READ THE INSTRUCTIONS BEFORE USAGE. This control must be installed in conformity with applying approvals.**

***NOTICE* See separate installation and maintenance instructions I&M V_9947 for _158A Series Actuator Valve for information on: Installation, Temperature Limitations, Piping, Cause of Improper Operation, etc.**

Product Verification

Check nameplate for correct catalog number, pressure, voltage, frequency, and service to align with intended application. Installation and valve maintenance to be performed by qualified personnel. Never apply incompatible fluids or exceed pressure rating of the valve. Contact ASCO through the website below or your supplier for more information about this valve or other valve options if this valve is not suitable for your application.

Description

Adapter kits are required to join the _158A series valves to piping. Kit Numbers shown in Table 1 contain all the necessary parts for the mounting to pipe of the valves installed in a combustion train.

Table 1. Inlet / Outlet Pipe Thread Adapter Kits

Nominal Pipe Size (inches)	DN Pipe Size	Kit Number			
		Threaded		Flange**	
		NPT	Rp	ANSI (ASME B16.5)	ISO (EN 1092-4)
¾	20	M200687	M200688	-	-
1	25	M200685	M200686	-	-
1 ¼	32	M200683	M200684	-	-
1 ½	40	M200681	M200682	-	-
2	50	M200679	M200680	-	-
2 HF*	50	M200836	M200694	M200872	M200875
2 ½	65	M200835	M200692	M200873	M200876
3	80	M200834	M200690	M200874	M200877

NOTES:

- HF* = High Flow, to be used with large bodies
- Pairing valves with adaptor kits not listed on the table above nullifies EN-161 conformance.

** UL & CSA Certifications do not apply to constructions with ISO flanges and CE certifications do not apply to constructions with ANSI flanges.

Operation

Normally Closed: _158A Series valve is a normally closed, push-to-open valve. It is open when the valve stem is depressed by a P159A or B Series Actuator. An internal return spring closes the valve when the actuator is retracted by its own internal return spring.

Positioning: _158A Series valves can be mounted in any position.

Piping

Connect piping to thread or flange adapters according to markings on the flange body. If thread adapter is used, apply pipe compound sparingly to male pipe threads only. If applied to pipe thread adapter threads, the compound may enter the valve and cause operational difficulty. The use of a filter at the inlet pipe is highly recommended.

⚠ WARNING It is necessary to avoid pipe strain by properly supporting and aligning piping.

When tightening the pipe or flange bolts, do not use the valve or actuator as a lever. Locate wrenches on the valve body, pipe thread adapter's hexagonal section or piping as close as possible to the pipe joint. The valve train assembly must be checked for external leakage at piping connections and at gasket (O-ring) seal face after installation. (See Figure 1 & 3).

Installation

1. Inspect the supplied O-rings, pipe thread, or flange adapters and valve to ensure that they are undamaged and free from nicks or cuts. If any damage is present on the sealing surfaces of the above components, do not use these components as external leakage may result. Please contact ASCO for parts replacement.
2. When installing pipe thread or flange adapters in a valve train, pipe supports and clamps should be loosened to allow pipe nipples to move freely during the installation process to prevent binding. Once assembly is complete, pipe supports and clamps should be re-secured. External leakage testing should be performed once all valves, hardware, and pipes are re-secured.
3. Measure the end-to-end length of the valve being installed in the application including the inlet and outlet pipe thread, or flange adapters. The distance between pipe

nipple ends or flanges must equal the entire length of the valve, plus the pipe thread or flange adapters, minus the required length for the pipe nipple engagement in the thread adapters, if they are used. Space pipe nipple ends accordingly.

4. Sparingly apply pipe sealant to the pipe nipple threads if threaded adapters are used. If applied to pipe adapter threads, the compound may enter the valve and cause operational difficulty. If strainer is to be installed/replaced, install prior to adapter installation.
5. Sparingly apply the specified gasket lubricant or equivalent to the o-ring according to Table 2. Install o-rings in upstream thread adapter and valve outlet adapter. O-ring should be pressed into groove as shown in Figure 2.
6. Install upstream pipe adapter onto upstream pipe nipple or flange, and torque pipe or flange screws to wrench tight engagement so that the adapter bolt pattern is in a corresponding orientation with the required valve orientation. If threaded adapter is used, use hex profile of adapter to apply torque with wrench. Consult valve Installation and Maintenance Instructions for allowable orientations.
7. Install downstream adapter in respect to the orientation of the upstream adapter bolt pattern. If threaded adapter is used, the downstream adapter should be torqued to hand-tight engagement until the valve is installed.
8. Noting valve flow direction, install valve between the upstream and downstream adapters while ensuring that the o-rings are properly seated in the upstream adapter and in the outlet adapter. It may be necessary to spread the installed adapters to be able to gain adequate clearance to install the valve. Install the required hardware in Figure 1 & 3 in the upstream adapter to valve inlet only and make hand tight. Torque hardware in an alternating manner to the specified torque requirement based on hardware size (See Table 2).
9. With the valve in place, torque outlet thread adapter (if used) wrench tight and continue to tighten until threaded holes of the downstream valve and downstream adapter are aligned. Ensure that exterior edges of the valve and adapter are parallel and flush to one another. Install the required hardware and torque in a crisscross manner to the specified torque requirement based on hardware size.

⚠ WARNING **Locate wrenches on the valve body, thread to adapter hexagonal section or piping as close as possible to the pipe joint. Do not use the valve or actuator as lever.**

10. Valve and adapter must be checked for external leakage at all connection points after installation with seam test or with equipment for detecting external leakage.

Table 2. Torque and Lubrication Chart

Catalog Number	(Adapter Reference Nominal Pipe Size (inches))	DN (mm)	Body Type	Torque Value	
				Inch-pounds	Newton-meters
_158A_00X_X__00	(¾, 1, 1¼, 1½, 2)	(20, 25, 32, 40, 50)	Medium	11.8 ± 1.1 ft-lb	16 ± 1.6 N-m
_158A_11X_X__00	(¾)	(20)			
_158A_12X_X__00	(1)	(25)			
_158A_130X_X_00	(1¼)	(32)			
_158A_14X_X__00	(1½)	(40)			
_158A_16X_X__00	(2)	(50)			
_158A_01X_X__00	(2½, 3, 2 HF*)	(65, 80, 50)	Large	25 ± 2.5 ft-lb	34 ± 3.4 N-m
_158A_18X_X__00	(2½)	(65)			
_158A_20X_X__00	(3)	(80)			
_158A_36X_X__00	(2 HF*)	(50)			
Lubrication			**Parts to be lubricated**		
Xiameter® PMX 200 Silicone Fluid or equivalent high-grade silicon fluid.			Gasket (O-ring) between valves or between valve and thread adapter.		

NOTE: HF* = High Flow

Valve Service or Replacement

⚠ WARNING **To reduce the risk of death, serious injury, or property damage. Before installing or maintaining the valve, turn off electrical power, depressurize valve, extinguish all open flames and avoid any type of sparking or ignition. Vent hazardous or combustible fluid to a safe area.**

To service or replace the valve, loosen pipe supports and clamps to allow pipe nipples to move freely and to prevent binding. Remove hardware and remove valve from between adapters. Once adapters are installed, they do not need to be removed and reinstalled when removing the valve for service or replacement, ASCO strongly recommends replacing the o-ring seals and hardware with the spare o-rings and strainers available in kits identified in this Installation and Maintenance Instruction sheet on Tables 1 & 3. O-ring and hardware installation steps should be followed from the steps above.

Table 3. O-Ring and Strainer Replacement Kits

Body Type (Adapter Reference Pipe Size)	O-Ring Kit #	Strainer Kit #
Medium (¾ - 2)	M200832	M200830
Large (2 HF* - 3)	M200833	M200831

NOTE: HF* = High Flow

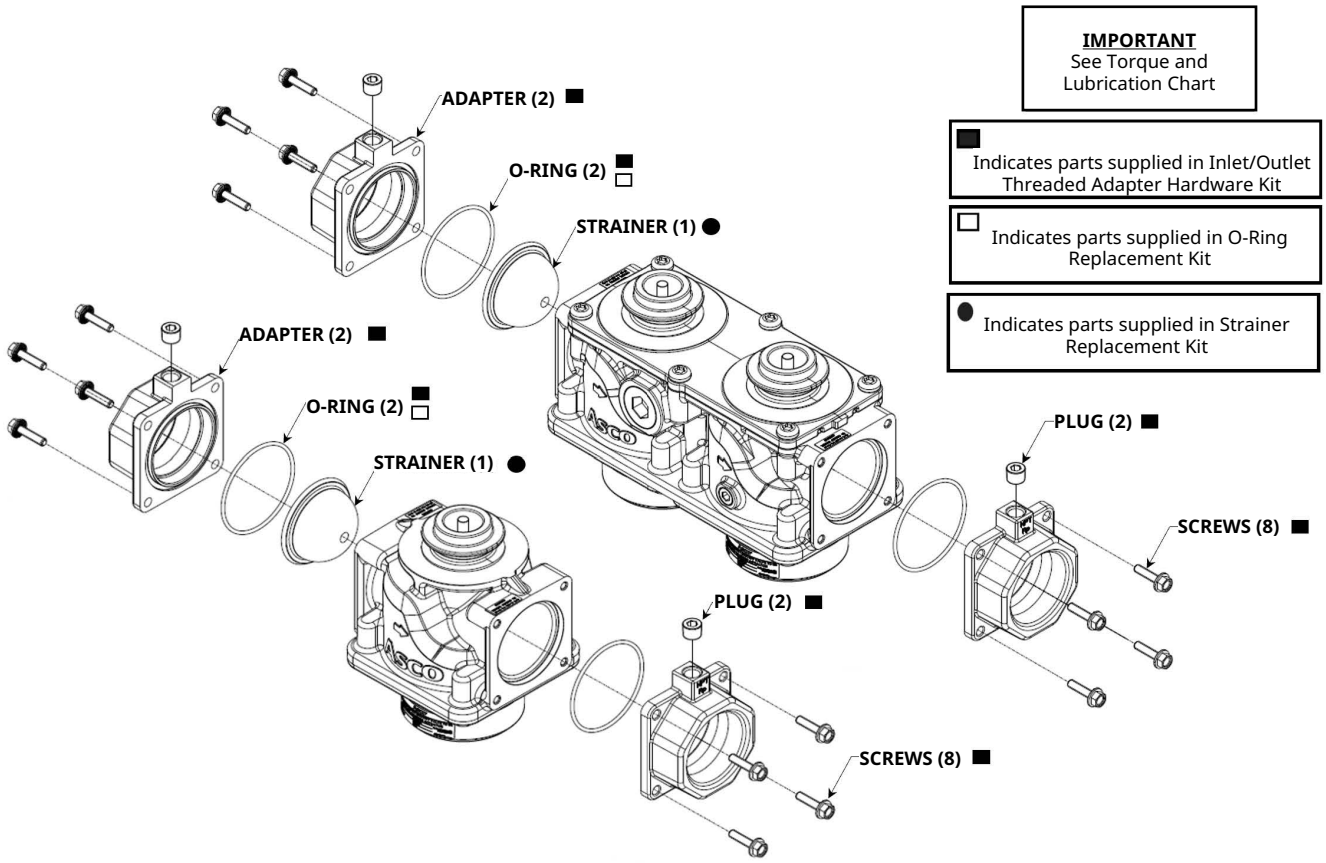


Figure 1. Inlet/Outlet Pipe Threaded Adaptor Hardware Kits

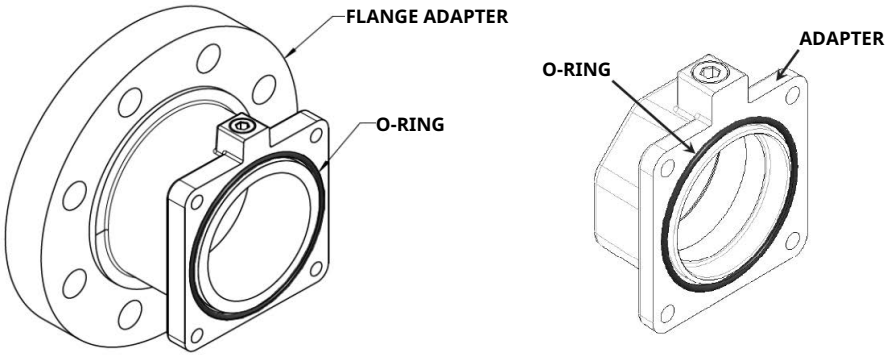


Figure 2. View of Adapter and O-ring Assembly Showing Proper Installation of Gasket

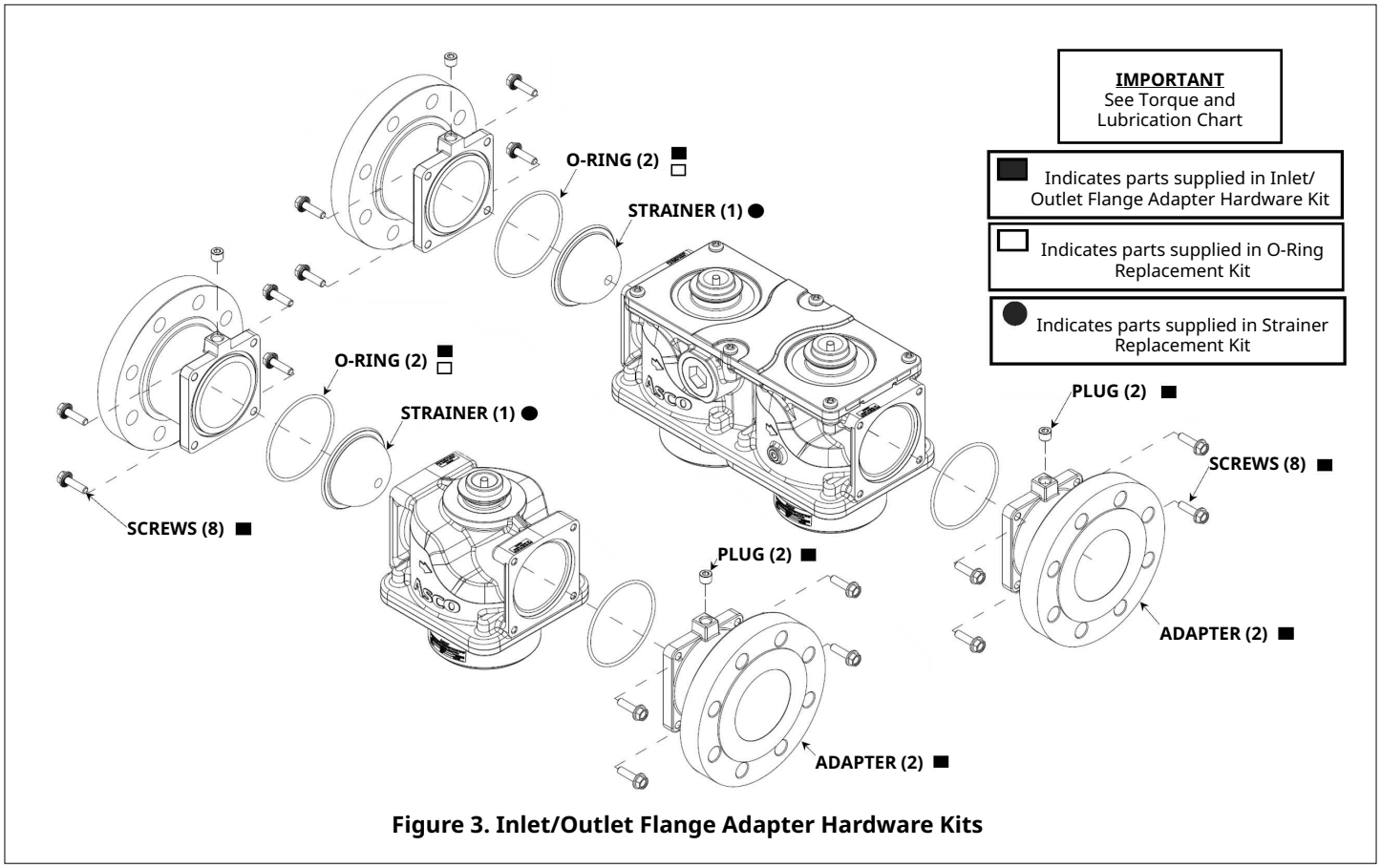


Figure 3. Inlet/Outlet Flange Adapter Hardware Kits

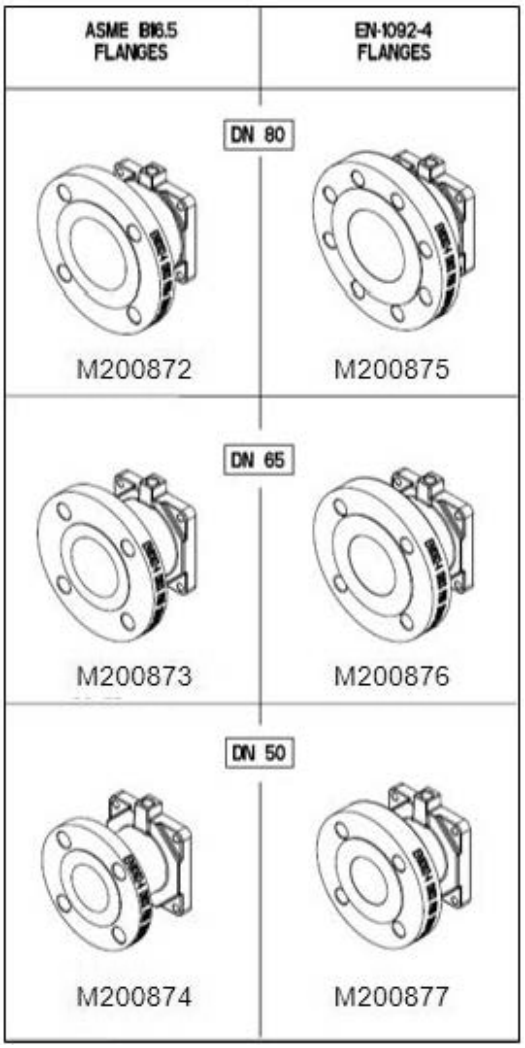


Figure 4. Flange Adapter Offerings

Availability, design and specifications are subject to change without notice.
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