G200 Series Back Check Valves

WARNING

Failure to follow these instructions or to properly install and maintain this equipment could result in an explosion and/or fire causing property damage and personal injury or death.

Fisher® equipment must be installed, operated, and maintained in accordance with federal, state, and local codes and manufacturer's instructions. The installation in most states must also comply with NFPA No. 58 or ANSI K61.1 standards.

Only personnel trained in the proper procedures, codes, standards, and regulations of the applicable industrial service should install and service this equipment.

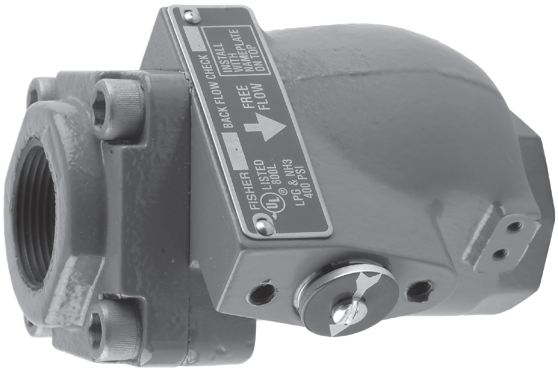

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***Figure 1**. Type G201 Back Check Valve with Flow Indicator Arrow*

Introduction

Scope of the Manual

This instruction manual covers installation and maintenance for Fisher® G200 Series Back check Valves used in LP-Gas and anhydrous ammonia bulk plant transfer area vapor and liquid lines.

The Type G201 is identical to the G200 Series but has a built-in flow indicator.

Description

Back check valves allow flow in only one direction and are normally closed. When flow in the direction of the arrow starts, the valve poppet opens. When flow stops or reverses, the valve poppet closes. Back check valves are installed on stationary storage tanks and vapor or liquid transfer lines. The valves are frequently used in conjunction with globe and angle valves.

The soft-seated construction gives tight shutoff. Piping can be blown down easily for maintenance or repair without experiencing leakage.

Specifications

CAUTION

If the valve is to be used in service other than LP-Gas or anhydrous ammonia, contact the factory to determine if the valve materials are suitable for the particular service.

Installation

CAUTION

Flow through the Back check valve must be in the same direction as the flow arrow stamped on the valve nameplate.

D450038T012

Specifications

SEAT CONSTRUCTION	CONTAINER OR INLET CONNECTION	OUTLET CONNECTION	WATER FLOW CAPACITY, GPM (L/MIN) AT 10 PSIG (0,69 bar) DIFFERENTIAL PRESSURE	TYPE NUMBER	
				Ductile Iron	
				Without Flow Indicator	With Flow Indicator
Soft Seat	1-1/4 FNPT	1-1/4 FNPT	160 (606)	G200-10	G201-10
	2 FNPT	2 FNPT	250 (946)	G200-16	G201-16
	3 FNPT	3 FNPT	750 (2839)	G200-24	G201-24

Maximum Operating Pressure
400 psig (27,6 bar) WOG

Temperature Capabilities
-40° to 160°F (-40° to 71°C)

Manually operate the Back check valve's poppet before installation to assure parts were not damaged in shipment or blocked with dirt or foreign material.

Use pipe dope on the male threads of the pipeline. Polytetrafluoroethylene (PTFE) tape or PTFE pipe dope compound is recommended for the male threads of the larger valves such as the NPS 2 and 3 (DN 50 and 80) sizes.

Make certain flow is in the direction of the arrow on the nameplate (flow entering from the flanged end of the valve). Type G200s prevent flow from the other direction.

If installed in horizontal piping, the valve should be positioned with the nameplate at the top. If installed in vertical piping, the flanged end of the unit should be pointed down to assist the spring in closing the poppet.

Because no breakoff fitting can protect unsupported piping from damage, the piping containing the valve must be adequately anchored to protect against physical damage.

Test the valve for proper operation after installation and before placing the system into full service. To make the test, pressure the system through the back check valve and then bleed pressure from the valve inlet piping. Rapid pressure build-up indicates that the valve has malfunctioned.

Maintenance and Repair

CAUTION

Do not use a G200 Series valve that leaks, fails to work properly, or that has damaged or missing parts.

Prompt repairs should be made by a properly trained serviceman because a malfunctioning valve can create a hazard, such as an explosion, fire, freeze burns, asphyxiation, or the uncontrolled release of product.

Annually test the valve for proper operation.

Before performing any maintenance, bleed off all upstream and downstream pressure.

To replace the seat disk (key 16, Figure 2), remove the end flange (key 2) and pull out the seat ring (key 3). The seat disk (key 16) can then be removed from the seat ring (key 3) and replaced.

To replace the shaft seal X-ring (key 22) in Type G201 units, first remove the screw (key 24) holding the flow indicator (key 23). Hold the shaft (key 20) in place with a 1/8-inch (3,2 mm) diameter pin while unscrewing the plug (key 19). By holding the shaft (key 20), the valve's internal parts are kept from becoming disengaged. Once the plug (key 20) is removed, the X-ring (key 22) can be replaced, or an entire new plug assembly can be installed.

After any repair work, test the valve for leakage and proper operation.

WARNING

Trained personnel should test the back check valve in a safe location. To ensure that the valve is still functional, back check closure should be checked annually if there is no other regularly scheduled test program.

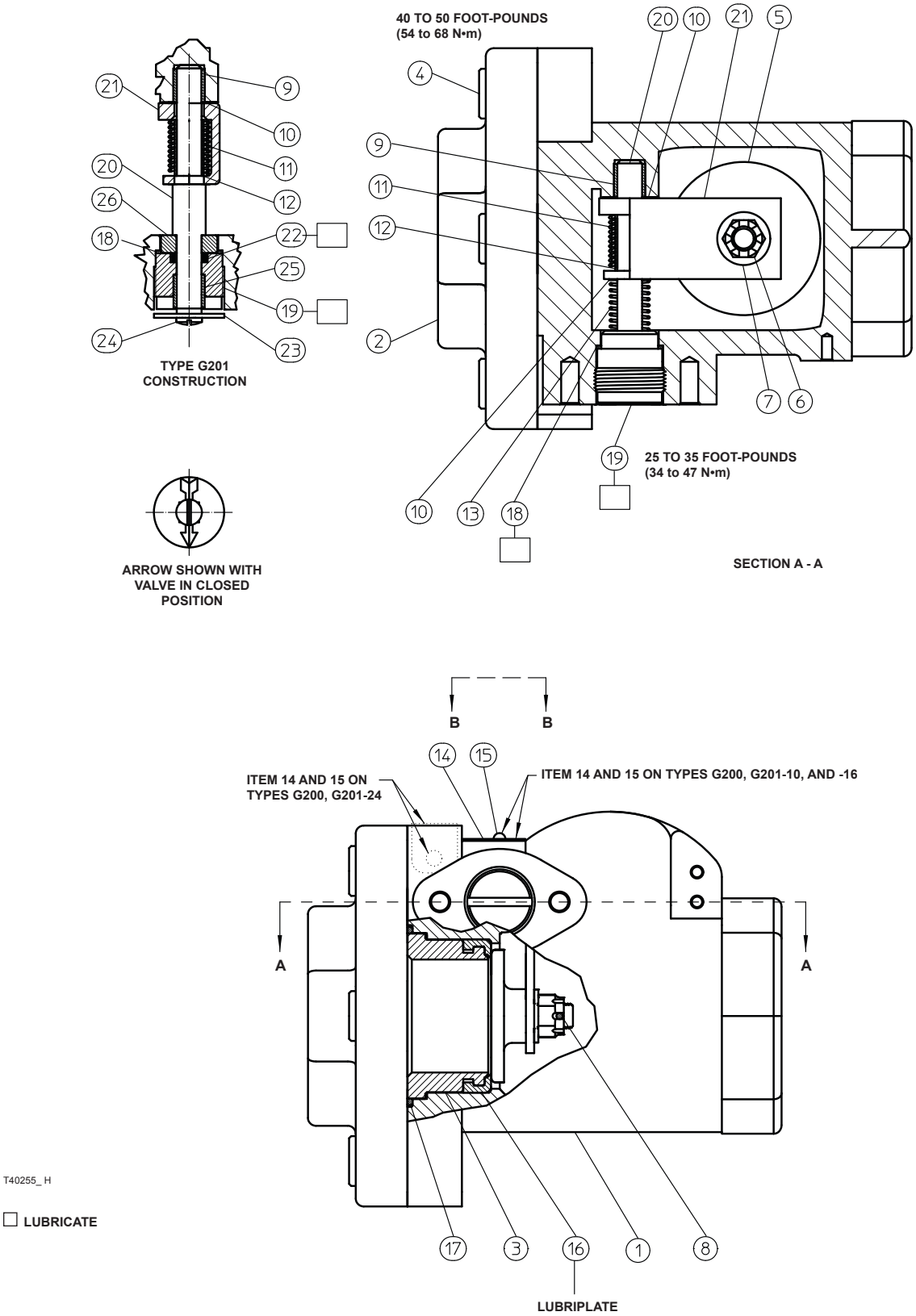

Figure 2. *G200 Series Assemblies*

Parts List

Key	Description	Part Number
1	Body, Ductile iron	
	NPS 1-1/4	T40333X0012
	NPS 2	T40245T0012
	NPS 3	T80171T0012
2	Flange, Ductile iron	
	NPS 1-1/4	T20681T0012
	NPS 2	T12783T0012
	NPS 3	T20699T0012
3*	Seat Ring, Stainless steel	
	1-1/4-inch (32 mm)	T12857T0012
	2-inch (51 mm)	T12548T0012
	3-inch (76 mm)	T12887T0012
4	Cap Screw	
	Types G200/G201 - 10 and -16 (4 required)	
	NPS 1-1/4	T12864T0012
	NPS 2	1E760432992
	NPS 3	- - - - - - - - - - -
	Types G200/G201 -24 (8 required)	
	NPS 1-1/4	- - - - - - - - - - -
	NPS 2	- - - - - - - - - - -
	NPS 3	1E761499012
5	Poppet, 303 Stainless steel	
	NPS 1-1/4	T12882T0012
	NPS 2	T12550T0012
	NPS 3	T12952T0012
6	Nut, Stainless steel/Carbon steel	
	NPS 1-1/4	T12929T0012
	NPS 2 and 3	T12930T0012
7	Washer, Steel	
	NPS 1-1/4	T12861T0012
	NPS 2 and 3	T12780T0012
8	Pin, 18-8 Stainless steel	
	NPS 1-1/4	T1241338992
	NPS 2 and 3	T12933T0012
9	Bushing	
	NPS 1-1/4, 2, and 3	T12551T0012
10	Slip Disk, Nylon (PA)	
	Type G200	T12781T0012
	Type G201	T12781T0012
11	Spring, 302 Stainless steel	
	NPS 1-1/4	T12883T0012
	NPS 2	T12785T0012
	NPS 3	T12953T0012
12	Tube, 302/304 Stainless steel	
	NPS 1-1/4	T12880T0012
	NPS 2	T12544T0012
	NPS 3	T12954T0012
13	Spring (Type G200 only), 302 Stainless steel	
	NPS 1-1/4 and 2	T1188637022
	NPS 3	T1153537022
14	Nameplate	Not Orderable
15	Drive Screw (2 required), 18-8 Stainless steel	1A368228982
16*	Disk, Nitrile (NBR)	
	NPS 1-1/4	T12858T0012
	NPS 2	T12547T0012
	NPS 3	T12891T0012
17*	O-ring, Nitrile (NBR)	
	NPS 1-1/4	10A3800X032
	NPS 2	1H8762X0022
	NPS 3	T12759T0012
18*	Gasket, Aluminum	
	NPS 1-1/4, 2, and 3	T12782T0012
19	Pipe Plug, 303 Stainless steel	
	Type G200	T12554T0012
	Type G201	T12557T0012
20	Shaft, 303 Stainless steel	
	Type G200	
	NPS 1-1/4	T12881T0012
	NPS 2	T12553T0012
	NPS 3	T12955T0012
	Type G201	
	NPS 1-1/4	T12254T0012
	NPS 2	T12749T0012
	NPS 3	T12956T0012
21	Lever, Stainless steel	
	NPS 1-1/4	T12835T0012
	NPS 2	T12674T0012
	NPS 3	T20701T0012
22*	X-Ring (Type G201 only)	
	NPS 1-1/4, 2, and 3	T12786T0012
23	Indicator (Type G201 only), Aluminum	
	NPS 1-1/4, 2, and 3	T12787T0012
24	Screw (Type G201 only), Carbon steel-plate	
	NPS 1-1/4, 2, and 3	1U205528982
25	Bushing (Type G201 only)	
	NPS 1-1/4, 2, and 3	T12551T0012
26	Spacer (Type G201 only), Aluminum	T12827T0012

*Recommended spare part

LP-Gas Equipment

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