

Product Information

4/29/2009

Installation and Operation Issues with Internal Valves

With the NFPA 58 – 2011 Compliance requirements about one year away and with the increased use of internal valves, there are a few things that should be considered before installing internal valves in new or retrofit applications. The following will address some of the issues.

Half vs. Full Coupling

Be sure to determine whether the coupling is a half or full coupling into which the internal valve will be installed. The excess flow rate for a full coupling is less than for a half coupling and could cause premature closure of the valve.

Valve Installation

The A3212R, A3212RT, A3213A, and 3213T Series can be installed in either half or full couplings. However, the couplings will affect the closing rate of the excess flow feature of the valve. See closing flow information listed in the table below.

Part Number	Configuration	Inlet Connection M. NPT	Outlet Connection F. NPT	Closing Flow (GPM) Propane			
				Half Coupling		Full Coupling	
				LP-Gas	NH3	LP-Gas	NH3
A3212R105	Straight	2"	2"	105	95	65	59
A3212R175				175	158	100	90
A3212R250				250	225	130	117
A3212RT105	"T" Design			105	95	65	59
A3212RT175				175	158	100	90
A3212RT250				250	225	130	117
A3213A150	Straight	3"	3"	150	135	125	113
A3213A200				200	180	160	144
A3213A300				300	270	250	225
A3213A400				400	360	325	293
A3213T150	"T" Design			150	135	125	113
A3213T200				200	180	160	144
A3213T300				300	270	250	225
A3213T400				400	360	325	293

Standpipes Inside the Tank and Attached to the Coupling

If an internal valve is installed into a tank coupling that has a standpipe, the fill rate will be greatly reduced and may cause damage to the valve if the standpipe diameter is not equal to or greater to the dimensions called out on the charts below. Due to lack of clearance between the poppet of the internal valve and the inside diameter of some standpipes, the resulting restriction can cause excessive vibration to the inlet piping and internal valve. In these cases, the use of a back check valve installed with a manual shutoff valve and/or ESV valve (6010, 6016, 6024) installed in the inlet piping is a better alternative.

**StandPipe Application
for Internal Valves**

Standpipes			
	A Pipe Size	B Reducer	C Length (min)
A3209 Series (1 1/4" MNPT)	2"	2" x 1 1/4"	8"
A3212 Series (2" MNPT)	3"	3" x 2"	12"
A3213 Series (3" MNPT)	5"	5" x 3"	14"
A3217 Series (3" Flange)	6"	6" x 3"	14"
A3219 Series (4" Flange)	8"	8" x 4"	14"

Pipeline Application for Internal Valves

PipeLine Application for Internal Valves

In-Line Piping Connections		
Screwed Internal Valve	D (min)	Pipe (min)
A3209 Series (1 1/4" MNPT)	8"	2" Sched. 80
A3212 Series (2" MNPT)	12"	3" Sched. 80
A3213 Series (3" MNPT)	14"	5" Sched. 80

In-Line Piping Connections			
E 300 lbs ANSI RF Flange	F Pipe Size	G Reducer	H Length (min)
A3217 Series (3")	6"	6" x 3"	14"
A3219 Series (4")	8"	8" x 4"	14"