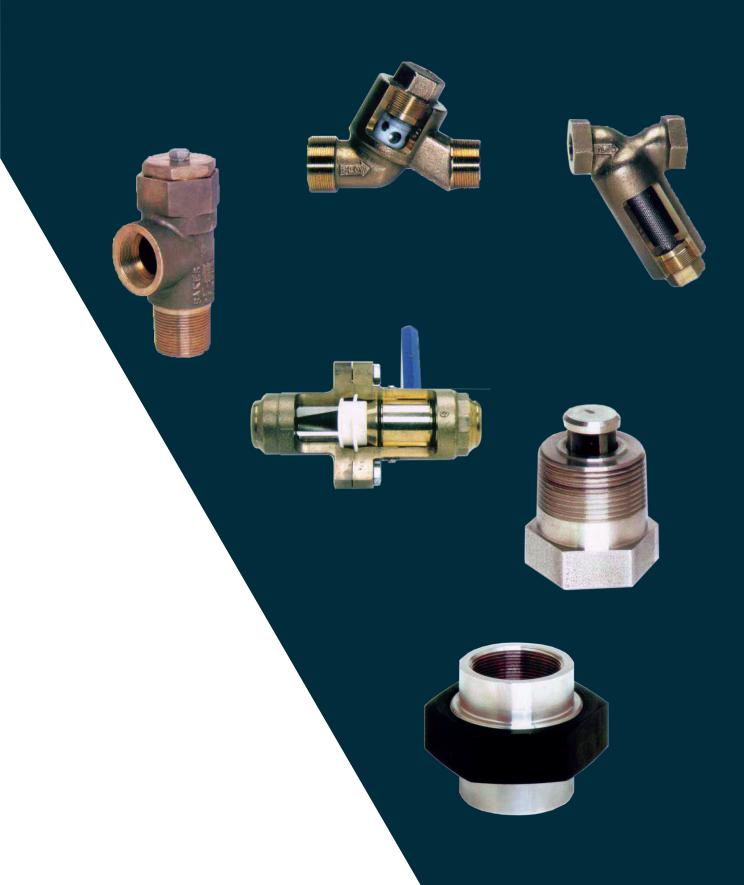


Production Products



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Injection Tee

Introduction

The Injection Tee is designed for water or CO2 injection. The bottom threads directly into a master valve and the top thread allows the use of a nipple and swab valve. The tee is full bore and has an FNPT inlet that accepts the Forum Gravity Ball Check or the Forum In-Line Check Valve. The bonnet cap is tapped for a 1/2" NPT gauge or needle valve.

Sizes

2-3/8" x 1-1/2" or 2-3/8" x 2" 2-7/8" x 1-1/2" or 2-7/8" x 2"

Connections

Inlet: FNPT
Outlet: EUE Pin

Materials

Body: ASTM B148 Grade 955D Aluminum Bronze or

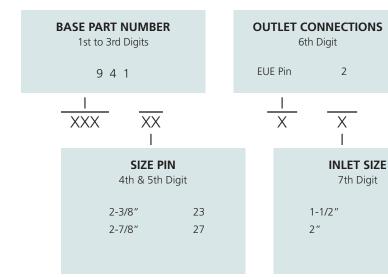
CF8M (316) Stainless Steel

O-Ring: 90 Durometer A Peroxide Cured Nitrile

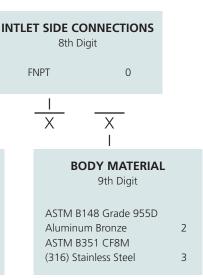
Pressure Ratings

ANSI 600 1480 psi Working Pressure 2225 psi Test Pressure
ANSI 900/1500 3705 psi Working Pressure 5575 psi Test Pressure

Product Number Scheme



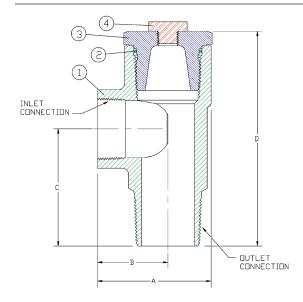




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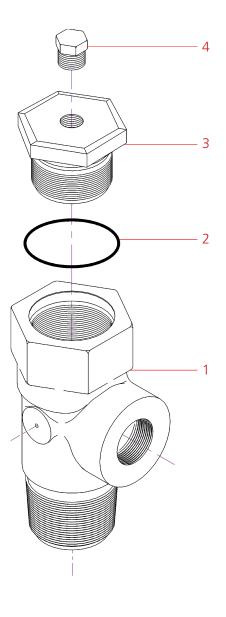
27

Description	Dim A	Dim B	Dim C	Dim D	Inlet Dim	Outlet Dim	W.P. (psi)	Temp (°F) Rating
2-3/8" Injection Tee	4-7/16"	2-3/4"	4-9/16"	8-5/16"	1-1/2" NPT 2" NPT	2-3/8" EUE	3,705	-20°F to +250°F
2-7/8" Injection Tee	5-1/8"	2-3/4"	4-7/16"	9-9/16"	1-1/2" NPT 2" NPT	2-73/8" EUE	3,705	-20°F to +250°F



	Descript	ion	2-3/8" x 1-1/2"	2-3/8" x 2"
1	Body	Aluminum Bronze	051936260 10 lbs	051943660 7 lbs
		Stainless Steel	051936280 11 lbs	051943680 8 lbs
2	O-Ring	90 DPC Nitrile	WWB229P40 0.1 lbs	WWB229P40 0.1 lbs
3	Bonnet	Aluminum Bronze	051936360 3 lbs	051943360 3 lbs
		Stainless Steel	051936380 3 lbs	051943380 3 lbs
4	Pipe Plug	1/2"	051936260 1 lbs	051943660 1 lbs

	Descript	ion	2-7/8" x 1-1/2"	2-7/8" x 2"
1	Body	Aluminum Bronze Stainless Steel	051945260 18 lbs O/A	051945360 13 lbs O/A
2	O-Ring	90 DPC Nitrile	WWB336P40 0.1 lbs	WWB336P40 0.1 lbs
3	Bonnet	Aluminum Bronze Stainless Steel	051945460 4 lbs O/A	051945460 4 lbs O/A
4	Pipe Plug	1/2"	WWS110HSS 1 lbs	WWS110HSS 1 lbs



O-Ring Union

Introduction

The Forum O-Ring Union is used for ease of constructing injection assemblies and removing or changing out any part of an assembly without dismantling the entire installation.

Sizes

1", 1-1/2" and 2"

Connection

FNPT or Socket Weld

Materials

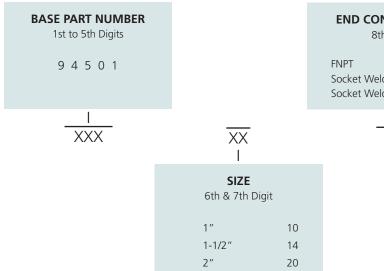
Body: 316 Stainless Steel or 316 L Stainless Steel O-Ring: 90 Durometer A Peroxide Cured Nitrile

Nut: Steel with QPQ Coating

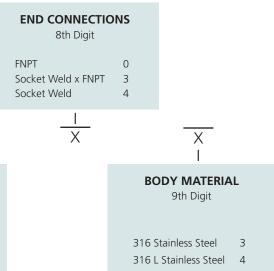
Maximum Working Pressure

3705 psi Working Pressure

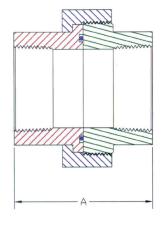
Product Number Scheme

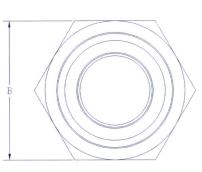


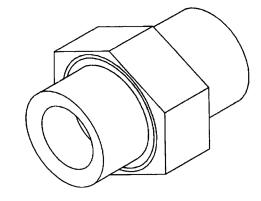




Description	Dim A	Dim B	W.P. (psi)	Temp (°F) Rating
1" NPT	2-5/8"	2-1/2"	3,705	-20°F to +250°F
1-1/2" NPT	3"	3-1/2"	3,705	-20°F to +250°F
2" NPT	3-13/32"	4"	3,705	-20°F to +250°F

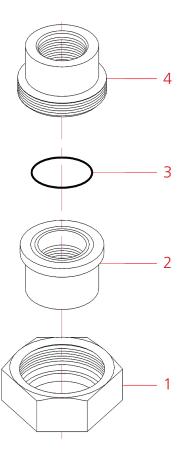






	Descrip	tion	1″	1-1/2"	2"
1	Body	316 SS	051939808 1 lbs	051940108 2 lbs	051940108 2 lbs
		316 L SS FNPT	051939809 1 lbs	051940109 2 lbs	051940109 2 lbs
		316 LSS Socket Weld	051974009 1 lbs	O/A	O/A
2	O-Ring	90 DPC Nitrile	051940000 1 lbs	051940300 2 lbs	051940600 2 lbs
3	Bonnet	316 SS	051939908 1 lbs	051940208 1 lbs	051940508 1 lbs
		316 L SS FNPT	051939909 1 lbs	051940209 1 lbs	051940509 1 lbs
		316 LSS Socket Weld	051974009 1 lbs	O/A	O/A
4	Pipe Plug	1/2"	WWB125P40 0.1 lbs	WWB226P40 0.1 lbs	WWB230P40 0.1 lbs

O/A - On Application



"Y" Strainer

Introduction

The Forum "Y" Strainer is designed for waterflood injection with emphasis on easy removal of working fluid debris. Installed upstream of the flow meter, debris is trapped in a filter screen and can be removed through an easy-access blowdown port in the "Y" strainer body. The cap threads are sealed with an o-ring so they are non-wetted.

Sizes

1" and 2"

Connection

FNPT

Socket Weld

ANSI 900/1500 RTJ (Ring Type Joint) Flanged End ANSI 900/1500 RF (Raised Face) Flanged End

Materials

Body: ASTM B148 Grade 955D Aluminum Bronze or

CF8M (316 L) Stainless Steel

Strainer Screens: 316 Stainless Steel

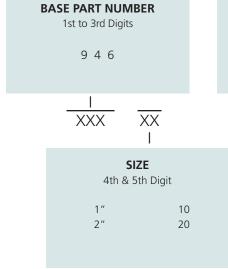
1" has .045" diameter holes, 225 per square inch and is 36% open 2" has .063" diameter holes, 144 per square inch and is 45% open

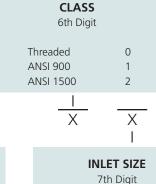
O-Rings: 90 Durometer A Peroxide Cured Nitrile



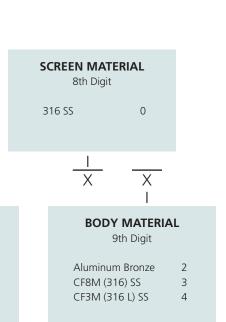
ANSI 900 2220 psi Working Pressure 3350 psi Test Pressure
ANSI 1500 3705 psi Working Pressure 5575 psi Test Pressure

Assembly Product Number Scheme



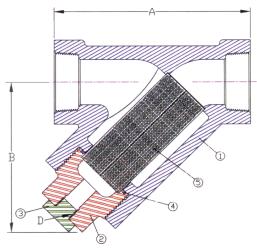


I	
INLET SIZE 7th Digit	
FNPT RTJ Flanged RT Flanged Socket Weld	0 3 4 5



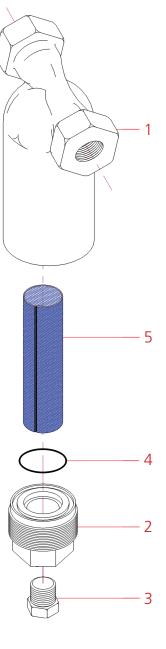


Description	Connection	Dim A	Dim B	Dim D	Inlet Dim	Outlet Dim	W.P. (psi)	Temp (°F) Rating
1" Y-Strainer	NPT RF/RTJ	4-7/8" 10"	6-1/2"	1/2"	1" NPT or RF/RTJ	1" NPT or RF/RTJ	3,705	-20°F to +250°F
2" Y-Strainer	NPT RF/RTJ	8" 13"	6-1/4"	1/2"	2" NPT or RF/RTJ	2" NPT or RF/RTJ	3,705	-20°F to +250°F



Strainer - Screen Info						
Description	# Holes/In	% Open				
1" Y-Strainer	225	36				
2" Y-Strainer	144	45				

Des	scription			1"	2"
1 Bod	y MPT End				
		Aluminum Bronze		051934660 7 lbs	051945560 17 lbs
		Stainless Steel		051934680 8 lbs	051945580 18 lbs
Fl	anged End	Aluminum Bronze	RF	N/A	051948060 26 lbs
			RTJ	N/A	051947960 26 lbs
		Stainless Steel	RF	051967780 12 lbs	051947960 28 lbs
			RTF	O/A	051947980 28 lbs
Si	ocket Weld	316 L Stainless Steel		051958581 9 lbs	O/A
2 Bon	net	Aluminum Bronze		051934760 2 lbs	051945760 3 lbs
		Stainless Steel		051934780 2 lbs	051945780 3 lbs
3 Pipe	Plug1/2"			WWS110HSS 1 lbs	WWS110HSS 1 lbs
4 O-R	ing	90 DPC Nitrile		WWB223P40 0.1 lbs	WWB228P40 0.1 lbs
5 Scre	en	316 Stainless Steel		051934808 1 lbs	051945608 1 lbs



N/A - Not Available; O/A - On Application

Gravity Ball Check

Introduction

The Forum Gravity Ball Check is designed for waterflood injection. The valve stops flow from the tubing if the pressure is higher than the injection line. The Delrin cage prevents the ball from contacting the body for long life. The ball and cage can be replaced while inline. The cap threads are not subjected to the line flow or corrosion because they are sealed by an o-ring.

Sizes

1" and 2"

Note: The ball check size is dictated by the amount of fluid to be injected, usually the same size as the turbine meter.

Connection

Inlet: MNPT

FNPT Union

Socket Weld Union MNPT (Union and Nipple)

Outlet: MNPT

Materials

Body and Bonnet: ASTM B148 Grade 955D Aluminum Bronze or

ASTM A351 CF8M (316) Stainless Steel

Cage: Delrin

Ball: Standard: 440 Stainless Steel

*Optional: 316 or 329 Stainless Steel

Union: 316 L Stainless Steel

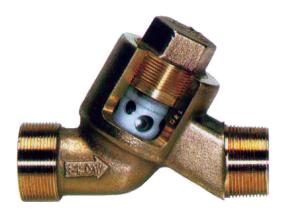
O-Ring: 90 Durometer A Peroxide Cured Nitrile

Union Nut: Steel with QPQ Coating

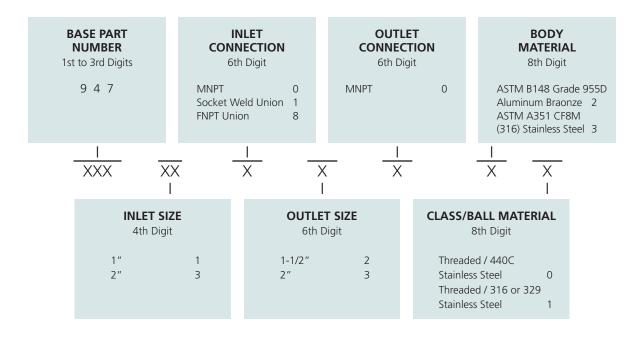
*Trim for corrosive service

Pressure Rating

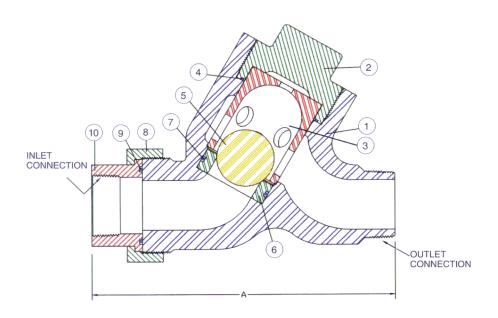
3705 psi Working Pressure 5575 psi Test Pressure



Assembly Product Number Scheme



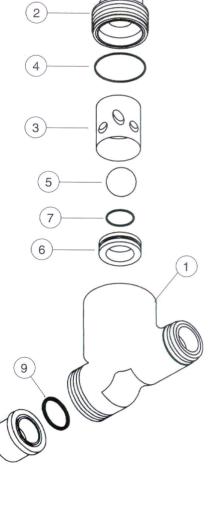
Gravity Ball Check



Description	Dim A	Inlet Dim	Outlet Dim	W.P. (psi)	Temp (°F) Rating
1" Gravity Ball Check	7-11/16"	1" NPT	1-1/2" NPT	3,705	-20°F to +250°F
2" Gravity Ball Check	10-1/2"	2" NPT	2" NPT	3,705	-20°F to +250°F

Description			1"	2"
1 Body FMPT Union	N MANDT			
FIVIPT Unior	Aluminum Bronze		051944060	051944160
			5 lb	16 lb
	Stainless Steel		O/A	O/A
MNPT Pin (l	Jnion Nipple) x MNPT			
	Aluminum Bronze		O/A	051946360 16 lb
	316 L Stainless Steel		O/A	O/A
2 Bonnet	Aluminum Bronze		051935860 1 lb	051946460 4 lb
	Stainless Steel		O/A	O/A
3 Cage	Delrin		051935900 1 lb	051946500 4 lb
4 O-Ring	90 DPC Nitrile		WWB223P40 0. 1 lb	WWB150P40 0.1 lb
5 Ball	440 Stainless Steel		051936001 1 lb	051946601 2 lb
	316/329 Stainless Steel		051936000 1 lb	051946600 2 lb
6 Ball Seat			051936100 1 lb	051946700 2 lb
7 O-Ring	90 DPC		WWB216P40 0.1 lb	WWB229P40 0.1 lb
8 Union Nut Stee	el with QPQ Coating	051940000 1 lb	051940600 1 lb	
9 O-Ring	90 DPC Nitrile		WWB125P40 0.1 lb	WWB150P40 0.1 lb
10 Adapter	316 SS NPT Socket Wels 316 L SS	8 9	05193990X 8.5 lb	051940508 1.3 lb





In-Line Choke

Introduction

The Forum In-Line Choke is designed specifically for controlling gas and liquid flowline rates. Water and CO2 systems are designed to control the rate of fluid injection. The stellite sleeve absorbs the cavitation and pitting action of the fluid as it takes the pressure drop. The sleeve design allows the thickest material around the disc holes and is funnel-shaped to direct the flow back into the center of the piping.

Sizes

1" and 2"

Connection

Threaded
ANSI 600 and 900/1500 Flanged
Union x Socket Weld
Union x Union

Materials

Body: ASTM A216 WCB Steel or

ASTM B148 Aluminum Bronze Grade 955D Alloy or

CF8M (316) Stainless Steel or CF8M (316 L) Stainless Steel

Disc: Ceramic Al2O3 for applications to 400 psi

Zirconia ZrO2 for applications above 600 psi

Body Seals: Type 1, Grade 1 PTFE Fluorocarbon

Rotator Seals: 90 Durometer A Peroxide Cured Nitrile O-Ring

with Type 1, Grade PTFE Fluorocarbon Back-up ring

Disc Pins: Monel
Wearsleeve: Stellite 6B

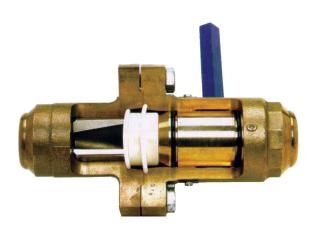
Actuation

Available upon request

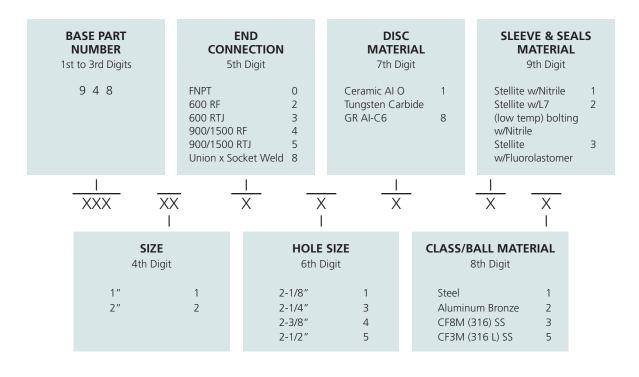
Pressure Rating

FNPT 3705 psi Working Pressure 5575 psi Test Pressure ANSI 600 1480 psi Working Pressure 2225 psi Test Pressure ANSI 900/1500 3705 psi Working Pressure 5575 psi Test Pressure

NOTE: The Top Entry Choke is also available. See you BTE brochure for more details.

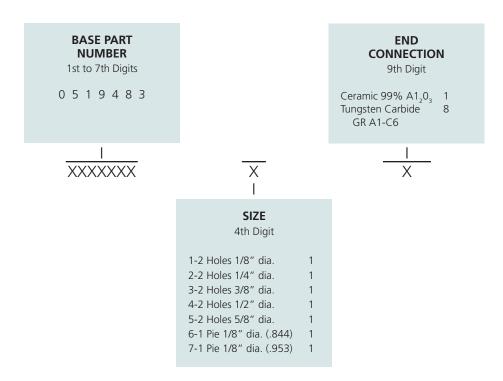


Assembly Product Number Scheme

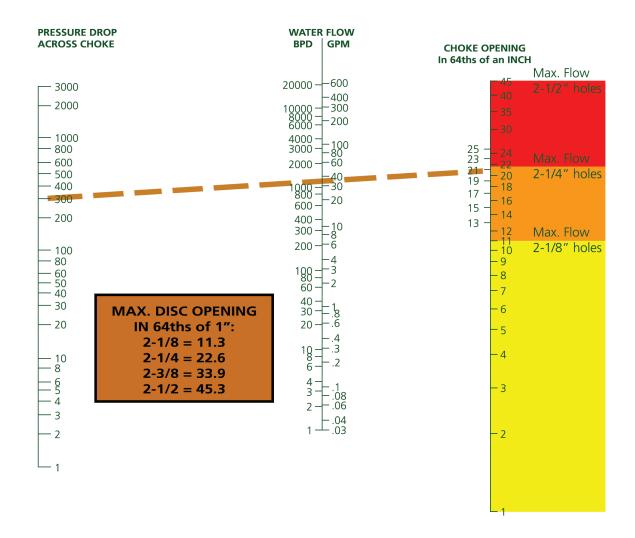


In-Line Choke

Repair Kit Product Number Scheme



Flow Chart

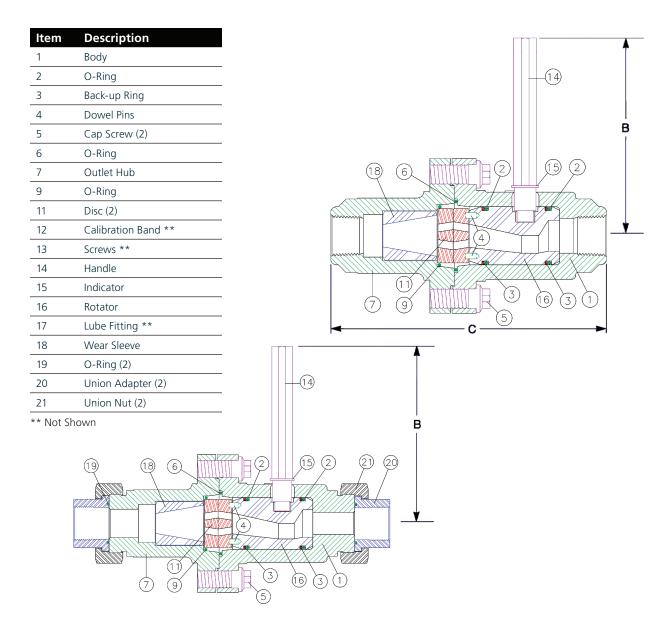


DIRECTIONS: Use a straight edge and select estimated pressure drop and desired flow. Read the Choke Opening in 64th of an inch. Specify the smallest Disc Opening that will handle the flow.

EXAMPLE: 35 GPM or 1200 BPD at 300 P is 21/64; use disc with 2-1/4" holes.

FOR MAXIMUM CHOKE LIFE USE THE SMALLEST DISC THAT WILL FLOW THE REQUIRED AMOUNT OF FLUID.

In-Line Choke - Treaded & Union End

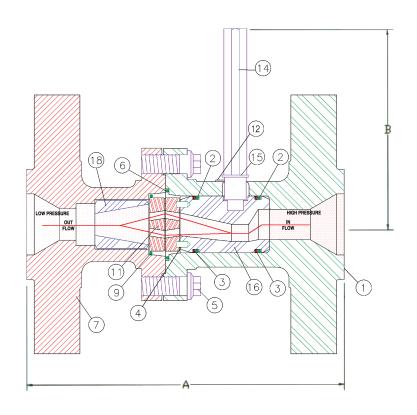


Description	Dim A	Dim B	Dim C	Connection	W.P. (psi)	Temp (°F) Rating
1" In-Line Choke	11-7/16"	6-9/16"	8-7/8"	NPT	3,705	-20°F to +250°F
2" In-Line Choke	12-9/16"	6-9/16"	10"	NPT	3,705	-20°F to +250°F

In-Line Choke - Flanged End

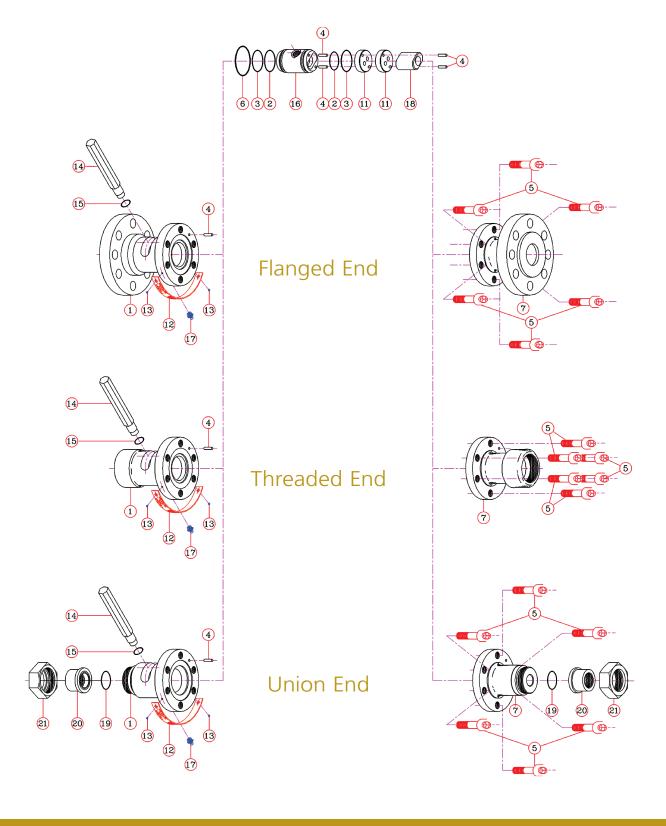
Item	Description
1	Body
2	O-Ring
3	Back-up Ring
4	Dowel Pins, Disc
5	Cap Screw (2)
6	O-Ring
7	Outlet Hub
9	O-Ring
11	Disc (2)
12	Calibration Band
13	Screws **
14	Handle
15	Indicator
16	Rotator
17	Lube Fitting **
18	Wear Sleeve

^{**} Not Shown



Description	Dim A	Dim B	Connection	W.P. (psi)	Temp (°F) Rating
1" In-Line Choke	10-1/2"	6-9/16"	400/600 RF 900/1500 RF	1,480 3,705	-20°F to +250°F
2" In-Line Choke	10-5/8"	6-9/16"	400/600 RTJ 900/1500 RTJ	1,480 3,705	-20°F to +250°F

In-Line Choke - Parts Illustration



	Description			1"	2"		Description	n			1"	2"
1	Body					10	Disc					
	Threaded	Steel Aluminum Bronze Stainless Steel	2 6 8	0519371X0 7 lb	0519373X0 8 lb			Ceramic	.125	1/8"	051938322 0.3 oz	051938322 0.3 oz
	Union End	Steel Aluminum Bronze	2	0519372X0 8 lb	O/A				.250	1/4"	051938324 0.3 oz	051938324 0.3 oz
	Flanged	Stainless Steel	8						.375	3/8"	051938326 0.3 oz	051938326 0.3 oz
	RF ANSI 600	Steel Aluminum Bronze	2 6	O/A	0519374X0 12 lb				.500	1/2"	051938328 0.3 oz	051938328 0.3 oz
	RTJ ANSI 600	Stainless Steel Steel	8 2	O/A	0519460X0			Tungsten Carbide	.125	1/8"	051938342 0.3 oz	051938342 0.3 oz
		Aluminum Bronze Stainless Steel	6 8		12 lb				.250	1/4"	051938344 0.3 oz	051938344 0.3 oz
	RF ANSI 1500	Steel Aluminum Bronze	2 6	O/A	0519375X0 20 lb				.375	3/8"	051938346 0.3 oz	051938346 0.3 oz
	RTJ ANSI 1500		8 2	O/A	0519458X0				.500	1/2"	051938348 0.3 oz	051938348 0.3 oz
		Aluminum Bronze Stainless Steel	6 8		20 lb	12	Calibration Ban	nd	.125	1/8"	051938402	051938402
2	O-Ring	90 DPC Nitrile		WWB223P40 0.1 lb	WWB223P40 0.1 lb				.250	1/4"	0.3 oz 051938404 0.3 oz	0.3 oz 051938404 0.3 oz
3	Back-up Ring	Teflon®		WWD223T10 0.1 lb	WWD223T10 0.1 lb				.375	3/8"	051938406 0.3 oz	051938406 0.3 oz
4	Dowel Pin	Monel		WWLA060HH 0.1 lb	WWLA060HH 0.1 lb				.500	1/2"	051938408 0.3 oz	051938408 0.3 oz
5	Cap Screw			WWG31H1H6 0.1 lb	WWG31H1H6 0.1 lb	13	Screw				WWGG0618F 0.3 oz	WWGG0618F 0.3 oz
6	O-Ring	Teflon®		WWB227T10 0.1 lb	WWB227T10 0.1 lb	14	Handle				051938500 1 lb	051938500 1 lb
7	Hub Assembly Threaded	Steel Aluminum Bronze	2	0519379X1 7 lb	0519381X1 8 lb	15	Indicator	Truarc Ring			WWC510075 0.1 oz	WWC510075 0.1 oz
	Union End	Stainless Steel Steel Aluminum Bronze	8 2 6	0519380X1	O/A	16	Rotator	Steel Aluminum Bronze Stainless Steel		2 6 8	0519386X0 2 lb	0519386X0 2 lb
	Flanged	Stainless Steel	8	O/A	0519376X1 12 lb	17	Lube Fitting				WWW00C000 1 lb	WWW00C000 1 lb
	RF ANSI 600	Steel Aluminum Bronze	2	O/A	0519461X1 12 lb	18	Wear Sleeve				W51938201 1 lb	W51938201 1 lb
	RTJ ANSI 600	Stainless Steel Steel	8	O/A	0519377X1	19	O-Ring	90 DPC			WWB125P40 0.1 lb	WWB125P40 0.1 lb
		Aluminum Bronze	6		20 lb	20	Union Adapter	316 SS		8		
	DE ANCI 1EOO	Stainless Steel	8		0E104E0V1			316 L SS NPT		9	05193990X	05193990X
	RF ANSI 1500	Steel Aluminum Bronze Stainless Steel	2 6 8		0519459X1 20 lb			316 L SS Socket Weld			1 lb 051957909 1 lb	1 lb O/A
	RTJ ANSI 1500		2			21	Union Nut	Steel with QPQ Coating			051940000 1 lb	051940600 2 lb
9	O-Ring	Stainless Steel	8	WWB224T10 0.1 lb	WWB224T10 0.1 lb	O/A Not	e: Redress Kit fo	on or 1" and 2" On-Line Cl or 1" and 2" On-Line Cl			•	

In-Line Check Valve

Introduction

The Forum In-Line Check Valve is an economical design for use with our Forum Injection Tee. The valve stops flow from the tubing if the tubing pressure is higher than the injection line. This spring-loaded, center-disc-type check valve has an MNPT outlet that threads into the Injection Tee inlet with an FNPT valve inlet.

Sizes

1-1/2" x 1" 2" x 1"

Connection

Inlet: FNPT Outlet: MNPT

Materials

Bushing: 316 Stainless Steel

Retainer: CF8M (316) Stainless Steel

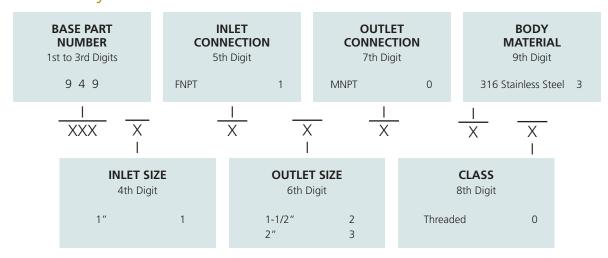
Spring: 316 Stainless Steel Disc: 316 Stainless Steel

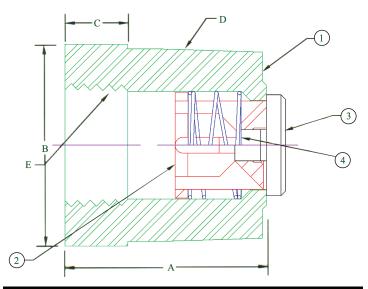


Maximum Working Pressure

3000 psi Working Pressure

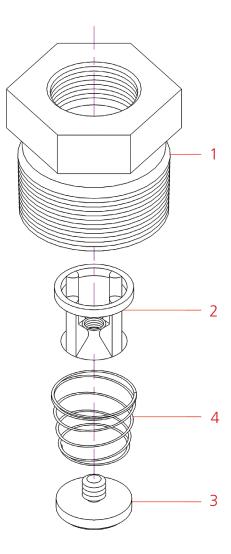
Assembly Product Number Scheme



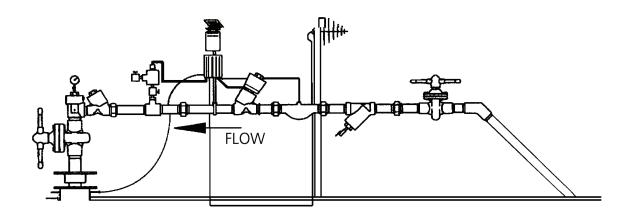


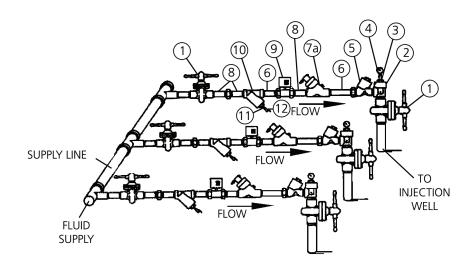
Dimension/Size	1-1/2" x 1"	2" x 1"		
А	2"	2"		
В	2" Hex	2-1/2"		
С	5/8"	5/8"		
D	1-1/2" NPT Pin	2" NPT Pin		
E	1" NPT Box	1" NPT Box		

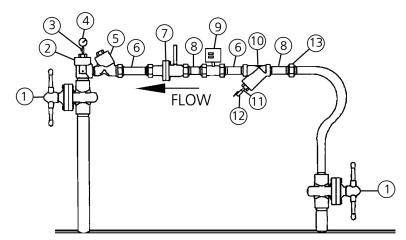
	Dimension	1-1/2" x 1"	2" x 1"
1	Bushing		
	316 Stainless Steel	051951708 1 lb	051974708 2 lb
2	Retainer		
	CF8M (316) Stainless Steel	051951980 0.3 lb	051951980 0.3 lb
3	Disc		
	316 Stainless Steel	051951808 1 lb	051951808 1 lb
4	Spring		
	316 Stainless Steel	051952000 0.3 lb	051952000 0.3 lb

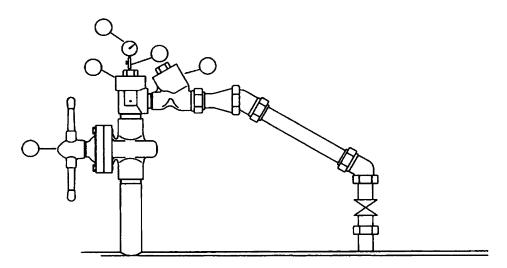


Typical Injection Assemblies









Item	Description
1	EUE BTC Gate Valve
2	EUE Injection TEE
3	Needle Valve
4	Gauge
5	Gravity Ball Check
6	SCH 80 Pipe Nipple
7	In-Line Choke

Item	Description		
7a	BTE Forum Top Entry Choke		
8	SCH80 Pipe Nipple		
9	316 SS Meter, 5000 psi		
10	"Y" Strainer		
11	SCH80 316SS Pipe Nipple		
12	316 SS Ball Valve		
13	316 L SS Union		

Notes

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Our goal is to become the leading provider of mission critical oilfield products and related services in terms of customer satisfaction, safety and financial performance.

Our experienced management team and employees are dedicated to solving our customers' problems. We invest in long term relationships and cooperate on product development with our clients, we consider them our partners.

Our Core Values

No one gets hurt

The safety of our employees and customers is our first priority coupled with a healthy respect for the environment.

Integrity

In everything we do, in every interaction, both internally and externally, we strive to operate with the utmost integrity and mutual respect.

Customer focused

Our products enhance our customer's performance and we listen to their needs and work with them to solve their challenges.

Good place to work

We are committed to creating a workplace that fosters innovation, teamwork and pride. Every team member is integral to our success and is treated equally and fairly.

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