



Streamlining of Production Process Brochure

CIE & G S



Streamlining of Production Process

Streamlining of Production Process Products supplied by CIE&GS are high end quality and API certified flow iron components which exceeds API STD including plug valves, pup joints, swivel joints, hammer unions, adjustable chokes, and manifold assemblies. Manufactured according to API 6A, API 6D, and API 16C and holds an ISO 9000 certification. Products are dimensionally identical to most competitive flow iron products.

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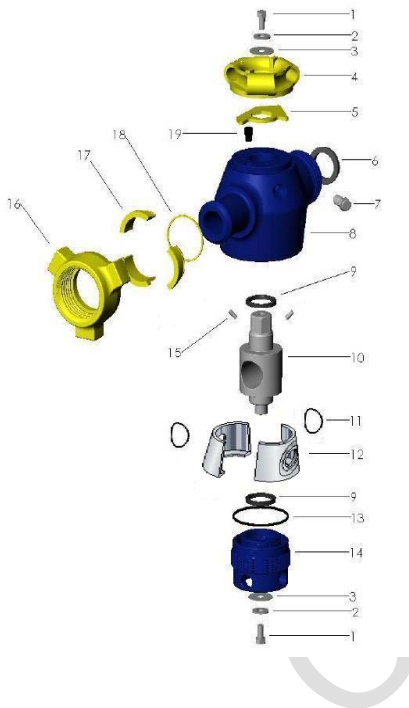
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PLUG VALVE



- * Standard and H2S Service upto 15,000 psi
- * Rugged Construction with Forged Alloy Steel Body
- * Reliable Performance at high working pressure
- * Bottom Entry design, Easy Maintenance
- * Valve Parts are Interchangeable with most major designs
- * 100% Hydrostatic Test according to API 6A
- * Each valve is serialized and MTR is available at any time.
- * Suitable for variety of high pressure applications such as fracturing, cementing, acidizing and others,etc.



No.	Part Name	Material			
		STD	P/N	H2S	P/N
1	Cap Screw	A574	PPCS	A574	PPCS
2	Washer	CS	PPWS1	CS	PPWS1
3	Washer	CS	PPWS2	CS	PPWS2
4	Lever Adapter	CS	PPLA	CS	PPLA
5	Stop Collar	CS	PPSC	CS	PPSC
6	Resilient Sealing	NBR	PPRSS	Viton	PPRSH
7	Grease Fitting	CS+plating	PPGF	CS+plating	PPGF
8	Body	AISI 4140	PPBD	AISI 4140	PPBD
9	Plug Seal	NBR	PPPSS	Viton	PPPSSH
10	Plug	AISI 4140	PPPLS	316 SS	PPPLH
11	Insert O-Ring	NBR	PPIOS	Viton	PPIOH
12	Insert	Ductile Iron	PPIS	Al-Br	PPISH
13	Adjusting Nut O-Ring	NBR	PPAOS	Viton	PPAOH
14	Adjusting Nut	AISI 4140	PPAN	AISI 4140	PPAN
15	Roll Pin	CS	PPRP	CS	PPRP
16	Wing Nut	AISI 4140	PPWN	AISI 4140	PPWN
17	Segment	CS	PPSG	CS	PPSG
18	Nut Retainer Ring	CS	PPRR	CS	PPRR
19	Stop Bolt	A574	PPSB	A574	PPSB

Recommended Repair Kit



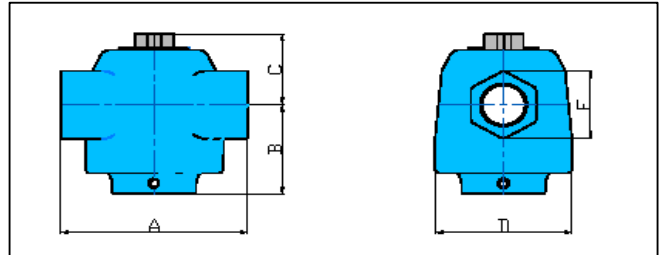
No.	Part Name	Material		Q"ty/set
		STD	H2S	
9	Plug Seal	NBR	Viton	2
10	Plug	AISI 4140	316 SS	1
11	Insert O-Ring	NBR	Viton	2
12	Insert	Ductile Iron	Al-Br	1(2 pc)
13	Adjusting Nut O-Ring	NBR	Viton	1

PLUG VALVE



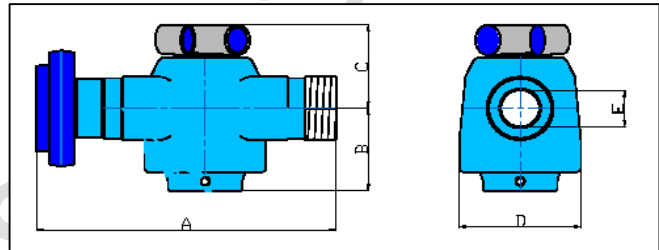
Line Pipe Thread

2"x1", 2"x2", 3"x3", Lever
CWP 10,000 psi
Test Pressure 15,000 psi
Standard Service



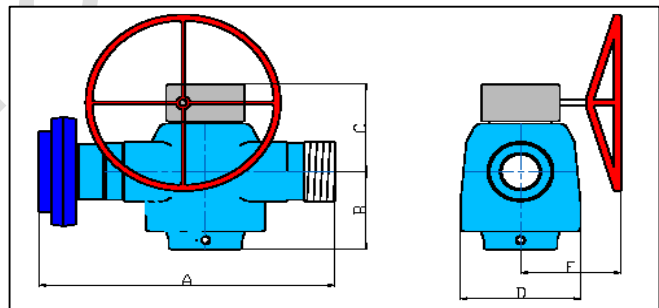
Union End Connection

2"x1", 2"x2", 3"x3", Lever
Integral 1502 Union MxF
CWP 15,000 psi
Test Pressure 22,500 psi
Standard and H2S Service



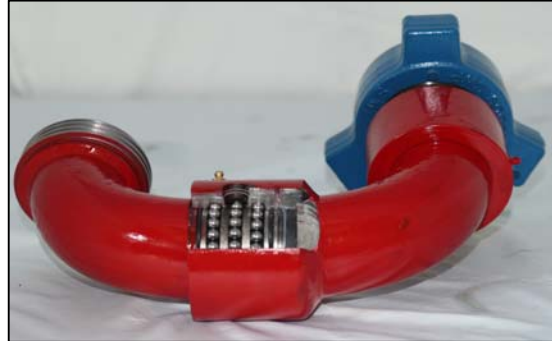
Union End Connection

3"x3" Gear Operated
Integral 1502 Union MxF
CWP 15,000 psi
Test Pressure 22,500 psi
Standard and H2S Service

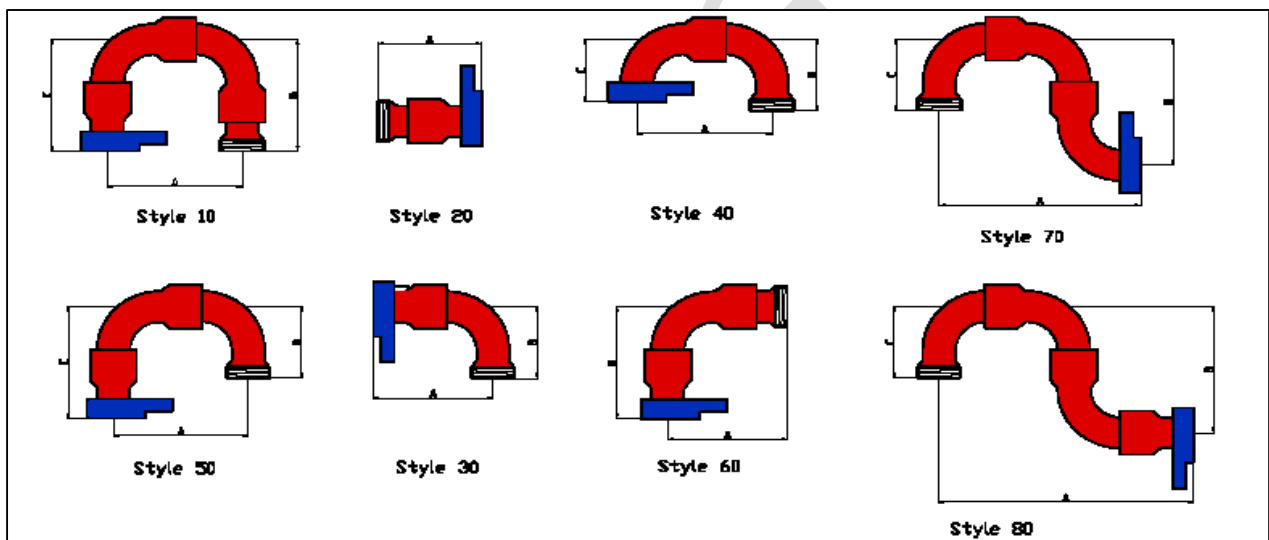


Size	End Conn	Service	Working	Test	Oper type	Dimensions					WT (lb)	Part No.
			Pressure	Pressure		A	B	C	D	E		
2 x 1	LP Thread	Standard	10,000	15,000	Lever	9.00	4.69	4.56	4.90	3.50	28	PV1T10SL
	1502 MxF	Standard	15,000	22,500		10.60	4.69	4.56	4.90	0.94	50	PV1H15SL
		H2S	10,000	15,000								PV1H10HL
2 x 2	LP Thread	Standard	10,000	15,000	Lever	8.50	5.42	5.26	6.84	3.81	65	PV2T10SL
	1502 MxF	Standard	15,000	22,500		13.90	5.42	5.26	6.84	1.75	95	PV2H15SL
		H2S	10,000	15,000								PV2H10HL
3 x 3	1502 MxF	Standard	15,000	22,500	Lever	17.00	7.20	5.68	9.61	2.62	206	PV3H15SL
		H2S	10,000	15,000								PV3H10HL
	1502 MxF	Standard	15,000	22,500	Gear	17.00	7.20	8.36	9.61	15.06	240	PV3H15SG
		H2S	10,000	15,000								PV3H10HG

SWIVEL JOINT - Long Radius

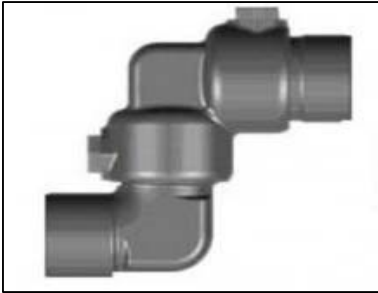


- * Standard and H2S service(NACE MR 0175) upto CWP 15,000 psi
- * Forged Alloy Steel Elbows with Heat Treatment
- * Rod Seals Sealing for Smooth Dynamic Operation at High Pressure
- * All Styles available in nominal size 2" and 3" with 1502 Union Ends
- * For High Pressure Applications - Fracturing, Cementing and Circulating Hoses, Acidizing, Choke and Kill Lines and Test Lines,etc.
- * Each product is serialized and pressure tested at 1.5 times NSCWP. MTR and Test Report are available at any time.

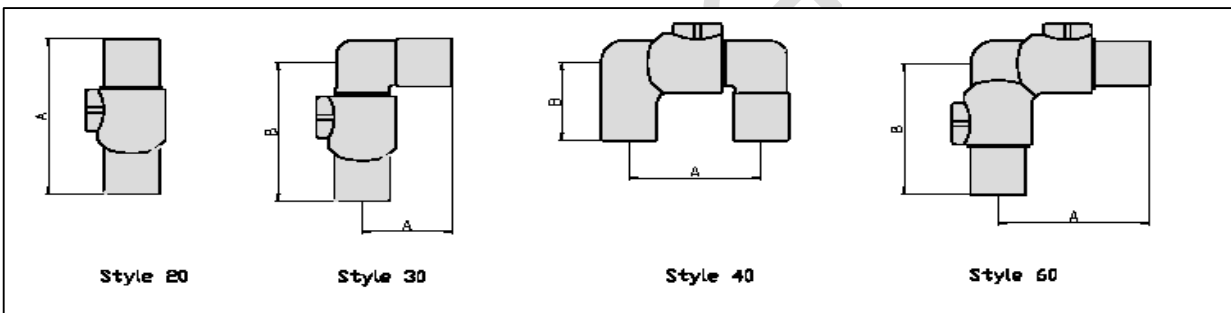
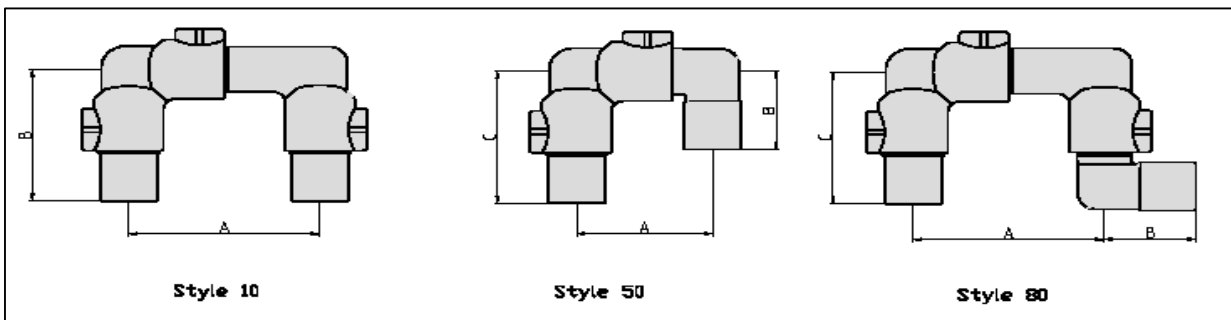


Style	End Connection	2"					3"				
		A	B	C	WT(lb)	Part No.	A	B	C	WT(lb)	Part No.
10	1502 M x F	10.7	10.9	10.9	61	SL21015A	16.4	14.5	14.4	129	SL31015A
	1502 M x M	10.7	10.9	10.9	70	SL21015B	16.4	14.4	14.4	143	SL31015B
20	1502 M x F	11.15			37	SL22015A	12.6			52	SL32015A
30	1502 M x F	10.9	5.5		46	SL23015A	14.4	7.9		68	SL33015A
40	1502 M x F	10.7	5.5	5.5	50	SL24015A					
50	1502 M x F	10.74	5.5	10.92	56	SL25015A	16.4	7.9	14.4	107	SL35015A
	1502 M x M	10.74	7.28	10.92	60	SL25015B					
60	1502 M x F	11	11		48	SL26015A	14.5	14.5		91	SL36015A
70	1502 M x F	16.23		5.5	60	SL27015A					

SWIVEL JOINT - Short Radius

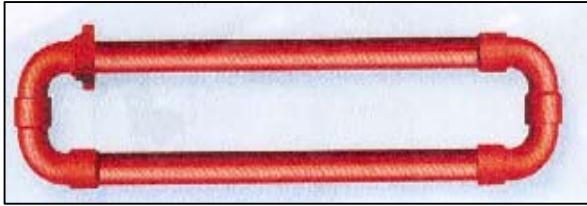


- * 2" and 3" upto CWP 6,000 psi with API Line Pipe Threads
- * Suitable for Water Lines, Cementing and Circulating Hoses, Mud Lines, Choke and Kill Lines and Test Lines, etc.
- * Female Thread End Connection



Style	2"					3"				
	A	B	C	WT	Part No.	A	B	C	WT	Part No.
10	5.88	5.84		33	SS2106T	7.94	8.62		71	SS3106T
20	6.66			12	SS2206T	9.12			25	SS3206T
30	4.03	5.84		15	SS2306T	4.62	9.44		37	SS3306T
40	5.88	4.03		19.5	SS2406T	8.75	4.62		38	SS3406T
50	5.88	4.03		27	SS2506T	7.94	4.62	8.62	53	SS3506T
60	5.84	5.84		20	SS2606T	8.62			48	SS3606T
80	5.88	4.62	5.84	38	SS2806T	7.94	5.56	9.44	77	SS3806T

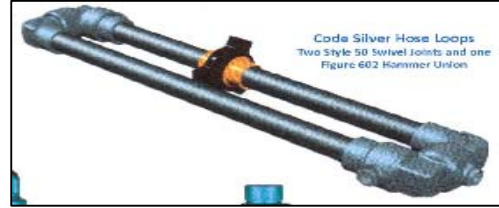
CEMENTING and CIRCULATING HOSES



10,000 p & 15,000 psi Hose

* 2" and 3" Sizes up to CWP 15,000 psi

* Suitable for Cementing and Circulating lines, Water lines, Well Testing lines, etc.



6,000 psi Hose

Size	CWP	Swivel Joint Styles	Conn.	Length/Weight(lb)		Part No.
				10 ft	12 ft	
2"	6,000 psi	Short Radius style 50/style 50	Threaded	115	179	CH206T10/CH206T12
	10,000 psi	Long Radius style 50/ style 50	Threaded	140	148	CH210T10/CH210T12
	15,000 psi	Long Radius style 50/ style 10	Integral	162	183	CH215T10/CH215T12
3"	6,000 psi	Short Radius style 50/style 50	Threaded	210	232	CH306T10/CH306T12
	15,000 psi	Long Radius style 50/ style 10	Integral	298		CH206T10

PUP JOINT



* 2" and 3" Sizes up to CWP 15,000 psi

* 4" sizes are available upon request



Figure 1502 NPS

15,000 psi for Standard Service, 10,000 psi for H2S Service

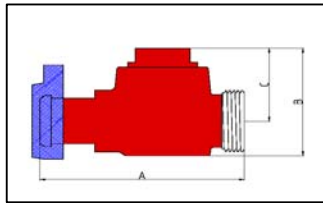
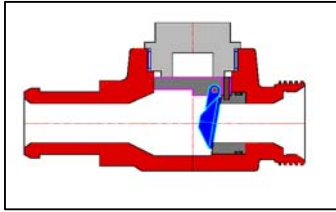
Size	Union End	CWP	Length/Weight(lb)						
2"	1502 MxF	15,000 psi	1 ft	15"	18"	2 ft	3 ft	4 ft	5 ft
			19	22	26.5	30	37	44	51
	Part No.		PJ2N15A1	PJ2N15A1.2	PJ2N15A1.5	PJ2N15A2	PJ2N15A3	PJ2N15A4	PJ2N15A5
	1502 MxF	15,000 psi	6 ft	8 ft	10 ft	12 ft	15 ft	20 ft	
			58	72	86	100	121	156	
	Part No.		PJ2N15A6	PJ2N15A8	PJ2N15A10	PJ2N15A12	PJ2N15A15	PJ2N15A20	
3"	1502 MxF	15,000 psi	1 ft	15"	18"	2 ft	3 ft	4 ft	5 ft
						56	70	84	99
	Part No.		PJ3N15A1	PJ3N15A1.2	PJ3N15A1.5	PJ3N15A2	PJ3N15A3	PJ3N15A4	PJ3N15A5
	1502 MxF	15,000 psi	6 ft	8 ft	10 ft	12 ft	15 ft	20 ft	
			113	142	170	199	243	313	
	Part No.		PJ3N15A6	PJ3N15A8	PJ3N15A10	PJ3N15A12	PJ3N15A15	PJ3N15A20	

Figure 1502 INTEGRAL

15,000 psi for Standard Service, 10,000 psi for H2S Service

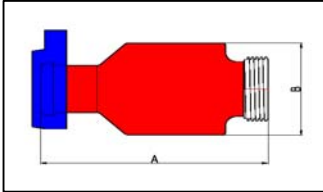
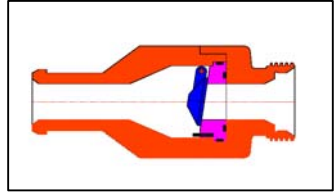
Size	Union End	CWP	Length/Weight(lb)						
2"	1502 MxF	15,000 psi	3 ft	4 ft	5 ft	6 ft	8 ft	10 ft	
			40	49	58	67	85	102	
	Part No.		PJ2T15A3	PJ2T15A4	PJ2T15A5	PJ2T15A6	PJ2T15A8	PJ2T15A10	
3"	1502 MxF	15,000 psi	3 ft	4 ft	5 ft	6 ft	8 ft		
	Part No.		PJ3T15A3	PJ3T15A4	PJ3T15A5	PJ3T15A6	PJ3T15A8		

CHECK VALVES - Flowback Protection



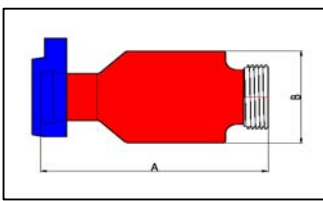
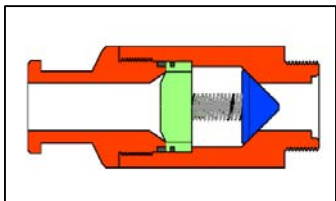
Top Entry Check Valve

2" and 3", 1502 Union Ends MxF
Fast and easy repair for the services such as Fracturing, Testing, Acidizing, Cementing and Circulating, Stimulation and other well services, etc.



Swing Check Valve

2" and 3", 1502 Union Ends MxF
Unrestricted full bore flow for the services such as slick water, sand and cement, etc.

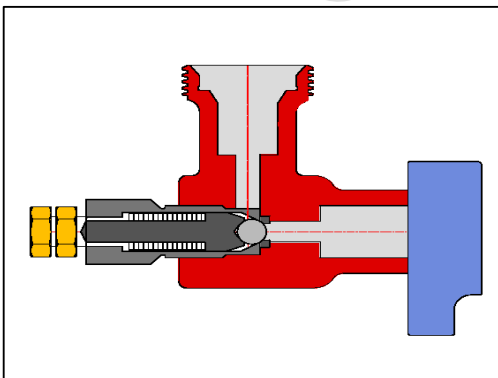


Dart Check Valve

2" and 3", 1502 Union Ends MxF
Spring loaded design for the service from 0 psi upto 15,000 psi applications such as Fracturing, Cementing, Acidizing and Well Kill, etc.

Item	Size	CWP	A	B	C	WT(lb)	Part Number
Top Entry Check Valve	3"	15,000 psi	15.67	9.55	6.48	118	CV3T15H
Swing Check Valve	2"	15,000 psi	14.04	7		84	CV2S15H
	3"	15,000 psi	15.67	8.12		122	CV3S15H
Dart Check Valve	2"	15,000 psi	14.04	9.5		80	CV2D15H
	3"	15,000 psi	15.67	10.7		115	CV3D15H

PRESSURE RELIEF VALVE



SMI emergency relief valves provide over-pressure protection for treating irons, pressure vessels, pumps and other equipments under high pressure operation.

2" and 3", 1502 Union Ends MxF
Operation pressure ranges from 150 psi to 15,000 psi.

Size	End Conn.	Pressure Range	Part Number
2"	1502 MxF	150 psi ~ 15,000 psi	PRV215A
3"	1502 MxF	150 psi ~ 15,000 psi	PRV315A

INTEGRAL FITTINGS



Elbow



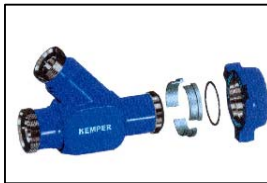
Long Radius Elbow



Tee



Cross



Lateral



Crossover



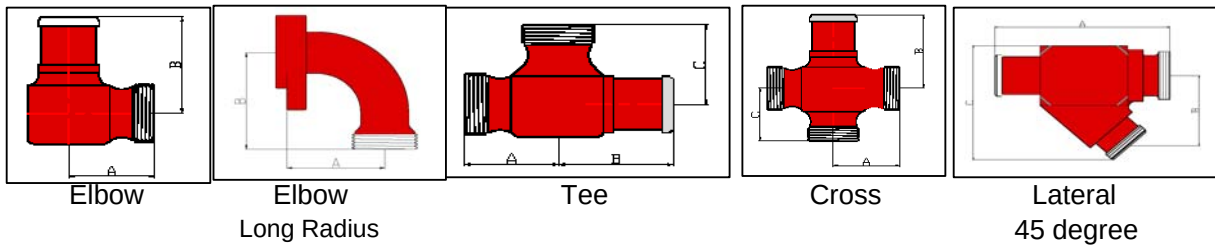
Swage

Wide range of fittings from Elbows to Swages with integral 1502 union ends

Standard CWP 15,000 psi/TP 22,500 psi and H2S service CWP 10,000 psi/TP 15,000 psi

Size	Elbow			Long Radius Elbow			Tee			Cross		
	End Conn.	Wt.	P/N	End Conn.	Wt.	P/N	End Conn.	Wt.	P/N	End Conn.	Wt.	P/N
2"	MxF	34	E2S15HA	MxF	27	E2L15HA	FxMxF	42	T215HA	FxFxMxF	49	CR215HA
	MxM	43	E2S15HB				FxMxM	53	T215HB	FxFxMxM	60	CR215HB
							MxMxM	64	T215HC	FxMxMxM	70	CR215HC
										MxMxMxM	81	CR215HD
3"	MxF	102	E3S15HA	MxF	51	E3L15HA	FxMxF	128	T315HA	FxFxMxF	178	CR315HA
	MxM	121	E3S15HB				FxMxM	142	T315HB	FxFxMxM	183	CR315HB
							MxMxM	156	T315HC	FxMxMxM	197	CR315HC
										MxMxMxM	211	CR315HD
Lateral			4 F1002 x 4 M1002 x 3 F1502					195 lb		L410F410M315F45		
Crossover						Swage						
Size, End Conn.				Wt(lb)	Part No.		Size, End Conn.			Wt(lb)	Part No.	
1" 1502 M x 2" 1502 F				14	CO115M215F		2" 1502 F x 2" LPT			10	SW215F2LT	
2" 1502 M x 1" 1502 F				17	CO215M115F		2" 1502 F x 2 3/8" EUE 8RD			10	SW215F2.3E8	
2" 1502 M x 2" 1502 F				21	CO215M215F		2" 1502 F x 2 7/8" EUE 8RD			10	SW215F2.8E8	
2" 1502 M x 3" 1502 F				23	CO215M315F		2" 1502 F x 3" LPT			13	SW215F3LT	
3" 1502 M x 2" 1502 F				32	CO315M215F		3" 1502 F x 2" LPT			11	SW315F2LT	
3" 1502 M x 3" 1502 F				34	CO315M315F		3" 1502 F x 2 3/8" EUE 8RD			12	SW315F2.3E8	
2" 1502 F x 1" 1502 F				13	CO215F115F		3" 1502 F x 2 7/8" EUE 8RD			13	SW315F2.8E8	
2" 1502 F x 2" 1502 F				19	CO215F215F		3" 1502 F x 3" LPT			15	SW315F3LT	
3" 1502 F x 2" 1502 F				20	CO315F215F		2" 1502 M x 2" LPT			18	SW215M2LT	
3" 1502 F x 3" 1502 F				23	CO315F315F		2" 1502 M x 2 3/8" EUE 8RD			18	SW215M2.3E8	
2" 1502 M x 1" 1502 M				25	CO215M115M		2" 1502 M x 2 7/8" EUE 8RD			19	SW215M2.8E8	
2" 1502 M x 2" 1502 M				27	CO215M115M		3" 1502 M x 2 3/8" EUE 8RD			29	SW315M2.3E8	
3" 1502 M x 2" 1502 M				39	CO315M215M		3" 1502 M x 2 7/8" EUE 8RD			30	SW315M2.8E8	
3" 1502 M x 3" 1502 M				46	CO315M315M		3" 1502 M x 3" LPT			32	SW315M3LT	

INTEGRAL FITTINGS

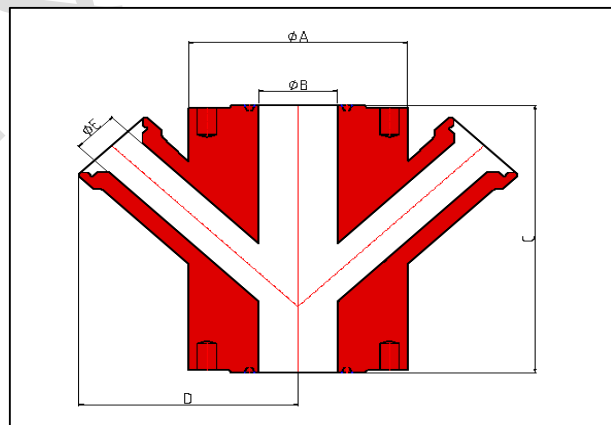


Item	End Conn.	Size	A	B	Item	End Conn.	Size	A	B	C
Elbow	1502 MxF	2"	5	7	Tee	1502 FxMxF	2"	5	7	5
		3"	8	8			3"	8	8	8
Elbow Long Radius	1502 MxF	2"	7.16	5.5	Cross	1502 FxFxFxM	2"	5	7	7
		3"	10	7.95			3"	8	8	8

Item	Size/End Connection	A	B	C
Lateral 45 degree	4" 1002 Female x 4" 1002 Male x 3" 1502 Female	19.6	9.3	15.04

* Other pressure classes and sizes are available upon request.

FRAC ADAPTER(GOAT HEAD'



5 1/8" and 7 1/16" with Four 4" 1002 Female Inlets.

CWP 10,000 psi, Tested at 15,000 psi

Compact but Rigid Design and Structure

Hard faced on critical area

Item	End Connection	A	B	C	D	E	WT(lb)	P/N
5 1/8"	Body : 10,000psi 5 1/8" Flanged Inlets : 4" 1002 Female	14.06	5.125	20	14.17	3.07	870	G510F4H
7 1/16"	Body : 10,000psi 7 1/16" Flanged Inlets : 4" 1002 Female	18.88	7.063	22	16.54	3.07	1,700	G710F4H

HAMMER UNIONS

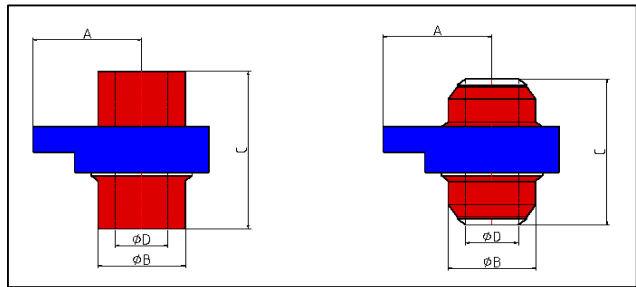
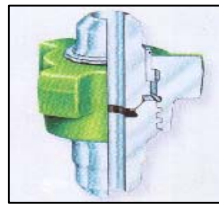
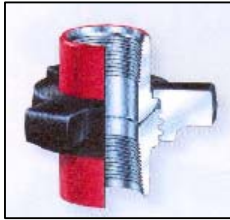
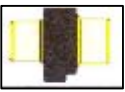
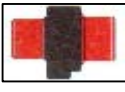
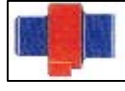
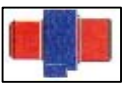
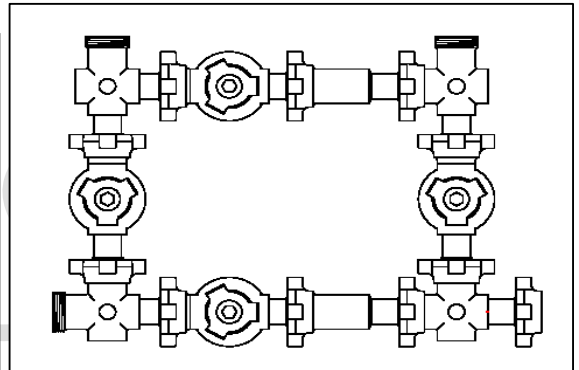
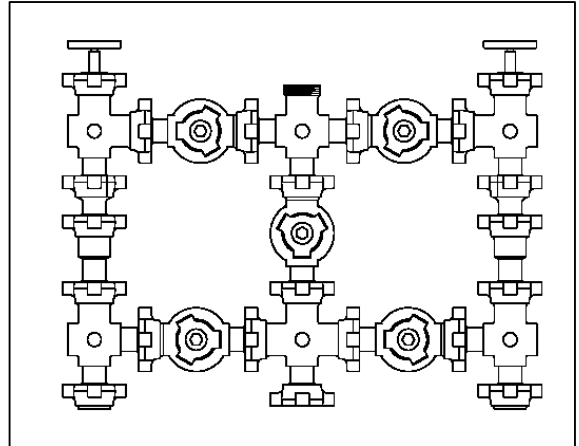
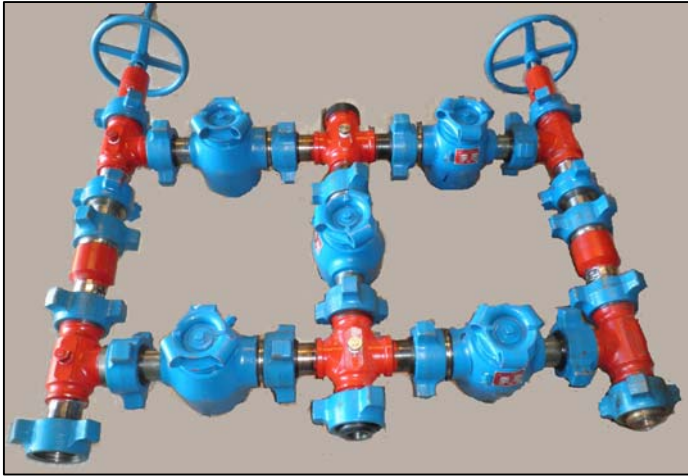


Fig No.,Color, Material	Service & Pressure	Dim WT.	1"		2"		3"		4"		6"	
			THD	BW	THD	BW	THD	BW	THD	BW	THD	BW
100  Sub : DCI Nut : CSF	STD WP:1,000 TP:1,500	A			2 29/32		4		4 23/64		6 57/64	
		B			2 53/64		4 1/16		5 13/64		7 13/32	
		C			3 5/8		4 7/8		5 3/4		6 23/32	
		D			2 5/32		3 13/64		4 3/16		6 9/32	
		WT.			5.73		14.2		20.63		45.06	
		P/N			H2T100		H3T100		H4T100		H6T100	
200  Sub : CSF Nut : CSF	STD WP:2,000 TP:3,000	A	1 29/32		2 7/8	2 7/8	4	4	4 17/32	4 17/32	6 1/4	6 1/4
		B	1 19/32		2 53/64	2 3/8	4 1/16	3 1/2	5 13/64	4 1/2	7 1/2	6 5/8
		C	2 19/32		3 9/16	3 17/64	4 35/64	4 41/64	4 15/16	5	6 21/32	6 1/4
	H2S WP:2,000 TP:3,000	D	1 1/8		2 5/32	2 5/64	3 13/64	3 5/64	4 3/16	4 1/32	6 9/32	6 5/64
		WT.	1.90		5.8		14.4		19.3		43.3	
		P/N	H1T200		H2T200	H2B200	H3T200	H3B200	H4T200	H4B200	H6T200	H6B200
400  Sub : CSF Nut : CSF	STD WP:4,000 TP:6,000	A			3 3/8		4 11/64		5			
		B			3 1/64		4 3/16		5 13/64			
		C			5 17/64		6 7/32		8 3/16			
	H2S WP:4,000 TP:6,000	D			2 5/32		3 3/16		4 11/64			
		WT.			11.2		20.2		31			
		P/N			H2T402		H3T402		H4T402			
602  Sub : ASF Nut : CSF	STD WP:6,000 TP:9,000	A	2 1/4	2 1/4	3 17/32	3 17/32	4 1/2	4 1/2	5 5/16	5 5/16		
		B	1 3/4	1 5/16	3	2 25/64	4 1/4	3 1/2	5 5/16	4 1/2		
		C	3 17/32	3 17/32	5 1/4	5 1/16	6 1/4	5 7/16	8 7/32	5 43/64		
	H2S WP:6,000 TP:9,000	D	1 7/64	19/32	2 1/16	1 1/2	3 3/16	3 5/64	4 1/64	3 5/32		
		WT.	3.8		12.6	13.9	25	26.4	37	35		
		P/N	H1T602	H1B602	H2T602	H2B602	H3T602	H3B602	H4T602	H4B602		
1,002  Sub : ASF Nut : ASF	STD WP:10,000 TP:15,000	A	2 1/4	2 29/32	3 17/32	3 17/32	4 1/2	4 1/2	5 5/16	5 5/16		
		B	1 3/4	2 53/64	3	2 25/64	4 1/4	3 1/2	5 5/16	4 1/2		
		C	3 17/32	2 29/32	5 1/4	5 1/16	6 1/4	5 7/16	8 7/32	5 43/64		
	H2S WP:7,500 TP:12,000	D	1 7/64	2 53/64	2 1/16	1 15/16	3 3/16	3 5/64	4 1/64	3 53/64		
		WT.	3.8		12.6	12.7	25.8	26.8	36.6	35		
		P/N	H1T1002	H1B1002	H2T1002	H2B1002	H3T1002	H3B1002	H4T1002	H4B1002		
1,502  Sub : ASF Nut : ASF	STD WP:15,000 TP:22,500	A	3 1/16	3 1/16	3 47/64	3 47/64	4 1/2	4 1/2	6 5/64	6 5/64		
		B	2 3/16	1 21/64	3 11/64	2 25/64	4 13/32	3 1/2	5 3/4	4 1/2		
		C	4 21/64	4 23/64	7 1/32	6 1/4	7 5/8	5 1/4	8 1/2	8 1/2		
	H2S WP:10,000 TP:15,000	D	1 7/64	3/7	2 1/16	1 1/2	3 3/16	2 9/32	4 1/64	3 11/64		
		WT.	9.5		19.5	20	33.4	30.6	73.8	78.1		
		P/N	H1T1502	H1B1502	H2T1502	H2B1502	H3T1502	H3B1502	H4T1502	H4B1502		

MANIFOLD



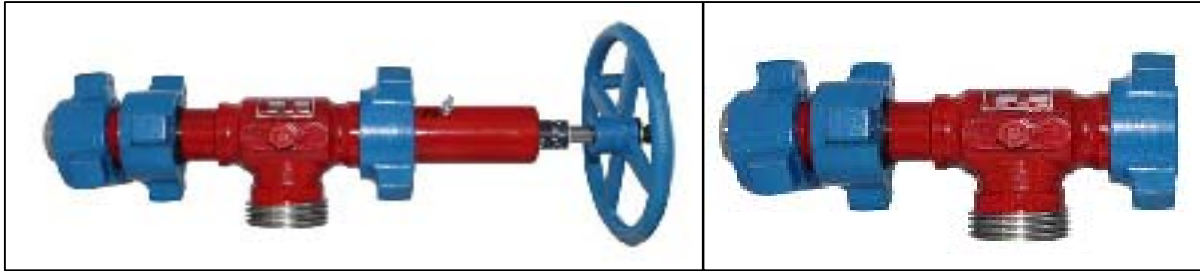
2" and 3" systems up to 15,000 psi

Cement Manifolds
Flowback Manifolds
Choke Manifolds
Well Testing Manifolds
Choke and Kill Manifolds

SMI Manifolds are designed and manufactured to customers requirements.
SMI can supply Manifold and it's components at very competitive prices in a wide range of sizes and configurations.

- * Pressure Tested Assembly
- * Individually Pressure Tested Fittings and Valves
- * Full Material Traceability
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- * All API 6A Material class available
- * Temperature Rating P to U
- * Third Party Approval and Ccertificates on Design and Manufacturing available
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CHOKES



ADJUSTABLE CHOKE

POSITIVE CHOKE

* Forged Alloy Steel Body, Stainless and Tungsten Carbide parts.

* Suitable for a broad range of applications including Wellheads, Production Manifolds, Well Testing, Steam Injection, Choke and Kill Manifolds and Well Clean operations, etc.

Type	Size	Use	CWP	Test Pressure	End Connection		Orifice	Wt.(lb)	Part Number
					Inlet	Outlet			
Adjustable	2"	Std	15000 psi	22500 psi	1502 F	1502 M	3/4", 1"	98	AC215S75/100
Adjustable	2"	H2S	10000 psi	15000 psi	1502 F	1502 M	3/4", 1"	98	AC215H75/100
Adjustable	3"	Std	15000 psi	22500 psi	1502 F	1502 M	1", 2"	162	AC315S100/200
Adjustable	3"	H2S	10000 psi	15000 psi	1502 F	1502 M	1", 2"	162	AC310H100/200
Positive	2"	Std	15000 psi	22500 psi	1502 F	1502 M	3/4", 1"	58	PC215S75/100
Positive	2"	H2S	10000 psi	15000 psi	1502 F	1502 M	3/4", 1"	58	PC210H75/100
Positive	3"	Std	15000 psi	22500 psi	1502 F	1502 M	1", 2"	96	PC315S100/200
Positive	3"	H2S	10000 psi	15000 psi	1502 F	1502 M	1", 2"	96	PC310H100/200

Choke Replacement Parts



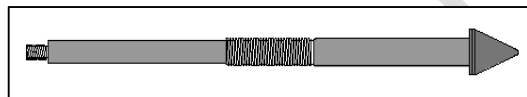
2" 1502 Choke Stem



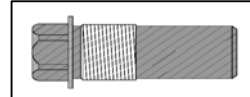
2" 1502 Choke Seat



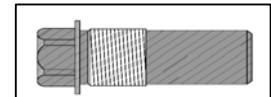
2" 1502 Choke Bean



3" 1502 Choke Stem



3" 1502 Choke Seat



3" 1502 Choke Bean

Other Components for Manifold



Blast Joint



Choke Saver



Tee MxFxM



Cross MxMxMxF

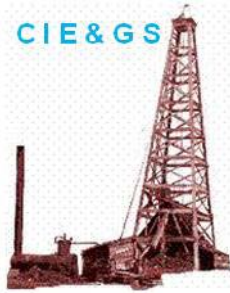


Cross FxFxFxM

Blast Joint			
Size	End Connection	Wt(lb)	Part No.
2"	1502 MxF	30	BJ215A
3"	1502 MxF	87	BJ315A

Choke Saver			
Size	End Connection	Wt(lb)	Part No.
2"	1502 MxF	18	CS215A
3"	1502 MxF	49	CS315A

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