

American Completion Tools

Global Partners for Oilfield Equipment

Unions, Swivels, Treating Iron & Circulating Heads

American Completion Tools

American Completion Tools (ACT) is a joint venture, started by acquiring Allco Services Inc., at Burleson, Texas, to manufacture high quality oilfield equipment in the USA. In 2010, American Completion Tools, Houston, was set up to serve customers more closely the complete line of American Completion Tools products for stock-n-sale.

The Houston office with a warehouse helps in providing quality customer service to their clients by enabling prompt delivery, easy billing and after sales service. Since its inception, American Completion Tools has been providing high quality products worldwide to distributors and service companies.

At American Completion Tools, quality and customer service are given utmost importance.



Flow Product Division Office, at Houston



Houston, TX Office



Opening by March 2015, Plant at Houston



Burleson, TX Office

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Note: Elder, Baker, Alpha, Viton, Aflas, Otis, Go, and/or any other trade name mentioned in this catalogue are for reference purpose only.

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HAMMER UNIONS



General

ACT manufactures Hammer Unions from raw materials in the form of forgings or castings, in accordance with service requirements in sizes 1 to 12", with ratings up to 20,000 psi cold working pressure. Unions for sour gas service are manufactured in accordance with NACE MR-01-75 & API RP-14E.

Interchangeability

ACT's Hammer Unions are interchangeable with WECO or other manufacturers adhering to the industry standards.

Thread Gauging

Acme thread and line pipe threads are gauged by standard plug & ring gauges.

Sealing Design

The conical and spherical surfaces of the female and male subs respectively; form an effective metal-to-metal seal in case of low pressure services.

For medium pressure mostly; an 'O' ring is provided in the male sub; in addition to the metal to metal seal. For high pressure, a lip type seal ring is provided for primary seal in the female sub. The seal protects the secondary metal to metal seal from corrosion and limits fluid flow turbulence. For sour service applications, viton seals are provided.

Coating

As a special case ACT can also provide Unions with zinc galvanized coating. Unions are also supplied with special materials such as stainless steel, SS-304, SS-316, Duplex etc.

Quality Control

ACT unions are manufactured using modern manufacturing techniques to attain first class workmanship and dimensional control. Correctly chosen raw materials for a particular service together with correct heat-treatment process are used to ensure better service and longer life in extreme conditions.

Notes

1. Line pipe threads in Fig-1002, Fig-1502 for pipe diameters above 4" are not recommended for sour service application.
2. For Fig-1003, 4" & 5" sizes are rated at 7500 PSI cold working pressure and 12000 PSI test pressure.
3. Sour gas service unions are painted OLIVE GREEN and stamped NACE.
4. For other types of threading like casing, tubing or NPS thread seal configuration, consult factory.

HAMMER UNIONS

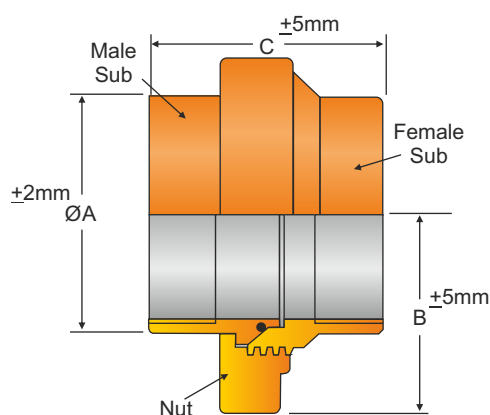
Quick Reference Table

The following table giving figures of unions, end connections and pressure rating is given for quick reference.

Union Fig.	End Connections	Pressure Rating (PSI)			
		Standard Service		Sour Service	
		C.W.P.	T.P.	C.W.P.	T.P.
50	LINE PIPE	500	750	-	-
100	LINE PIPE	1000	1500	-	-
200	LINE PIPE /BUTT WELD	2000	3000	-	-
206	LINE PIPE /BUTT WELD	2000	3000	-	-
207	LINE PIPE /BUTT WELD	2000	3000	-	-
211	LINE PIPE	2000	3000	-	-
400	LINE PIPE /BUTT WELD	2500	3750	2500	3750
400	LINE PIPE /BUTT WELD	4000	6000	4000	6000
600	LINE PIPE /BUTT WELD	6000	9000	-	-
602	LINE PIPE /BUTT WELD /NPTS	6000	9000	6000	9000
1002	LINE PIPE /BUTT WELD /NPTS	10000	15000	7500	12000
1003	LINE PIPE /BUTT WELD	10000	15000	7500	12000
1004	LINE PIPE /BUTT WELD	10000	15000	7500	12000
1502	LINE PIPE /BUTT WELD /NPTS	15000	22500	10000	15000
2002	BUTT WELD	20000	30000	-	-
2202	BUTT WELD	-	-	15000	22500

Fig 50. Orange Nut - Orange Subs

These low pressure and suction unions of Fig-50 are made from carbon steel. The nut and O-ring are common in both sizes. Available in 4" or 5" sizes in threaded & socket welded connection. These unions are suitable for 500 psi wp.



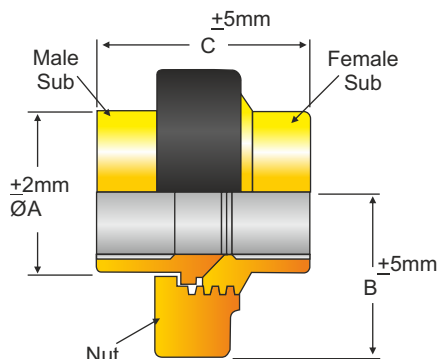
500 psi CWP (Fig. - 50)

Size (Inch)	A		B		C				ACME (TPI)	Union		Weight	
					Threaded		Socket Welded End			Threaded		Socket Welded End	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm		lbsf	kgf	lbsf	kgf
4"	6.0	152.5	5.07	129.0	6.15	156.21	4.12	104.64	3MOD	28.0	12.7	27.0	12.24
5"	6.0	152.5	5.07	129.0	5.77	146.74	4.12	104.64	3MOD	23.0	10.43	21.5	9.75

HAMMER UNIONS

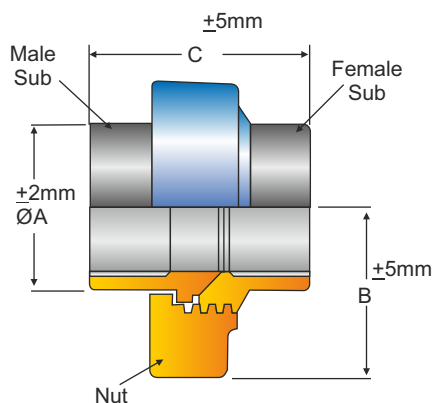
Fig 100. Black Nut - Yellow Subs

These low pressure unions are ideal for manifold and applications where CWP does not exceed 1,000 psi



1,000 psi CWP (Fig. - 100)

SIZE (INCH)	A		B		C		ACME (TPI)	UNION	
	INCH	MM	INCH	MM	INCH	MM		LBSF	KGF
1	1.60	40.5	1.95	50	2.57	65	6STD	1.75	0.79
2	2.74	69.5	2.91	74	3.66	93	3MOD	5.73	2.60
2 1/2	3.30	84	3.81	97	4.29	109	3MOD	9.47	4.30
3	4.09	104	4.09	104	4.88	124	3MOD	1.33	6.05
4	5.19	132	5.00	127	5.78	136	3MOD	19.84	9.00
5	6.37	162	5.75	146	6.03	153	4STD	33.00	15.0
6	7.36	187	6.92	176	6.71	170.5	3STD	46.0	20.90
8	9.52	242	8.00	203	7.20	183	3STD	61.72	28.0



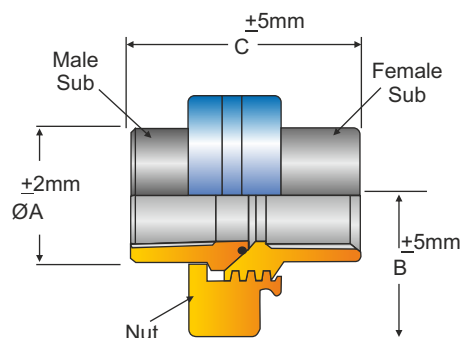
2,000 psi CWP (Fig. - 200)

Fig 200. Blue Nut - Grey Subs

These unions are best suited for medium pressure ranges involving air, water, oil & gas service for cold working pressure upto 2,000 psi (For dimensions see Fig-206). Upto 4" no O-ring is used on the male sub. Beyond 4" size, an O-ring is used on the male sub for sealing.

Fig 206. Blue Nut - Grey Subs

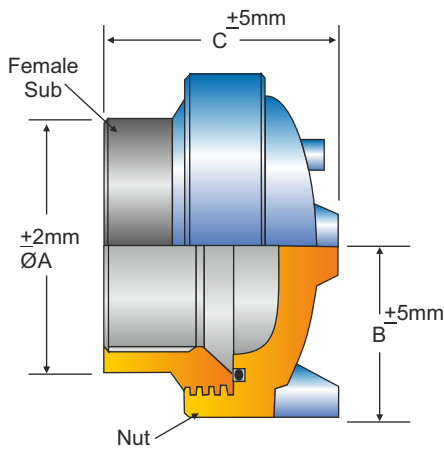
These unions have an additional O-ring on the spherical surface of the male sub providing a leak proof seal. All dimensions of Fig- 200 & Fig-206 are identical.



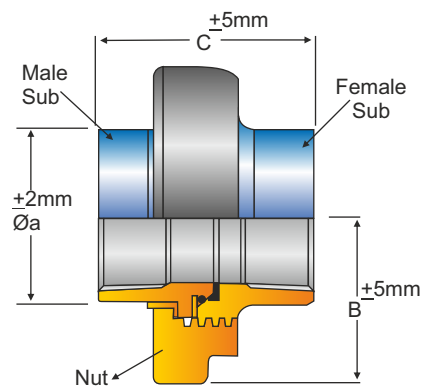
2,000 psi CWP (Fig. - 206)

SIZE (INCH)	A		B		C		ACME (TPI)	UNION	
	INCH	MM	INCH	MM	INCH	MM		LBSF	KGF
1	1.59	40.5	1.96	50	2.55	65	6STD	1.76	0.80
1 1/4"	2.00	51	2.11	53.6	2.79	71	6STD	2.20	1.00
1 1/2"	2.28	58	2.52	64	2.73	69.5	6STD	2.42	1.10
2	2.79	71	2.91	74	3.54	90	4STD	5.00	2.30
2 1/2	3.30	84	3.87	98.5	4.25	108	4STD	9.25	4.20
3	4.17	106	3.89	99	4.52	115	4STD	13.67	6.20
4	5.23	133	4.52	115	4.96	126	3MOD	18.52	8.40
5	6.32	162	5.75	146	6.03	153	4STD	33.0	15.0
6	7.50	190.5	6.06	154	6.65	169	3STD	42.50	19.30
8	9.56	243	7.18	182.5	7.15	181.5	3STD	61.70	28.0
10	11.49	292	9.01	220.7	9.09	231	3STD	90.39	41.00

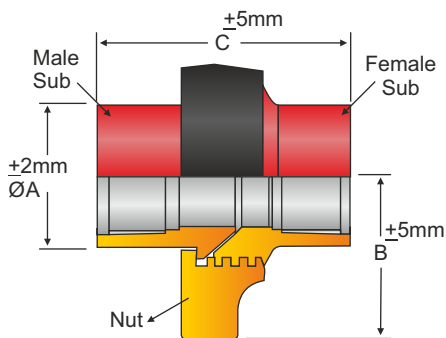
HAMMER UNIONS



2,000 psi CWP (Fig. - 207)



2,000 psi CWP (Fig. - 211)



4,000 psi CWP (Fig. - 400)

Fig 207. Blue Cap - Grey Subs

These banking unions have a resilient O-ring in the blanking cap to provide an efficient and leak-proof seal suitable for 2,000 psi CWP.

Size (inch)	A		B		C		ACME (TPI)	Union	
	inch	mm	inch	mm	inch	mm		lbsf	kgf
3	4.09	104	2.91	74	3.74	95	4STD	10.36	4.70
4	5.15	131	3.58	91	4.33	110	3MOD	16.30	7.40
6	7.55	192	5.00	127	5.90	150	3STD	38.13	17.30
8	9.60	245	6.10	155	6.10	220	3STD	70.76	32.10
10	11.53	293	7.16	182	7.16	248	3STD	96.11	43.60

Fig. 211. Blue Subs - Grey Nut

These unions protect against electrolytic action. There is no metal - to - metal contact between the subs. A resilient seal ring in the female sub provides additional sealing and protection from corrosion. Suitable for 2,000 psi CWP.

Size (inch)	A		B		C		ACME (TPI)	Union	
	inch	mm	inch	mm	inch	mm		lbsf	kgf
1	1.57	40	2.09	53	2.72	69	6STD	2.20	1.00
1 1/4"	2.20	56	2.43	62	3.00	76	6STD	3.70	1.68
1 1/2"	2.20	56	2.43	62	3.00	76	6STD	3.20	1.45
2	2.84	72.2	3.07	78	3.49	88.8	4STD	6.40	2.90
2 1/2	3.38	86	3.67	93	4.13	105	4STD	9.70	4.40
3	4.09	104	3.96	101	4.45	113	4STD	15.80	7.16
4	5.12	130	4.68	119	4.84	123	3MOD	18.40	8.34
6	7.56	192	7.25	184	7.21	183	3STD	43.50	19.60
8	9.62	244	8.75	222	9.12	232	3STD	65.50	29.50

Fig 400. Black Nut - Red Subs

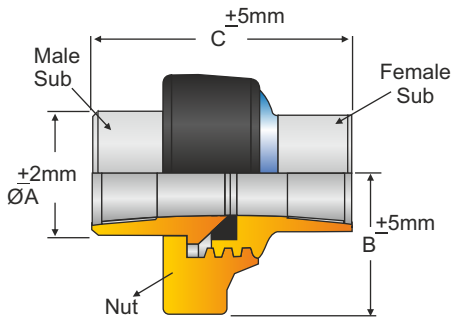
These unions are rigid in design and have all the three parts made of steel forgings. These unions are best suited for manifold and line connections. Unions from 3 inch through 8 inch sizes have O-rings for primary sealing. From 5" to 12" sizes, C.W.P. is 2,500 psi

Size (inch)	A		B		C		ACME (TPI)	Union	
	inch	mm	inch	mm	inch	mm		lbsf	kgf
1	1.75	44.5	2.28	58.0	3.54	90.0	3STD	3.0	1.35
2	3.06	76.8	3.44	87.5	5.24	133	3STD	11.00	5.00
2 1/2	3.54	90	4.17	106	6.18	157	3STD	16.3	7.40
3	4.19	106.6	4.29	109	6.18	157	3STD	19.40	8.80
4	5.23	133	4.74	120.5	8.25	209.7	3STD	28	12.70
5	6.26	159	5.63	143	10.47	266	3STD	48.5	22.0
5 1/2	6.29	160	5.78	147	10.43	265	3STD	48.0	21.80
6	7.75	197	6.52	165.6	11.02	280	3STD	75.0	34.0
7	7.75	198	6.62	168	11.03	280	3STD	61	27.70
8	9.59	243.5	7.71	196	11.42	290	3STD	94.13	42.70
10	11.75	298.4	9.60	244	11.29	287	3STD	121.2	55.0
12	13.98	355	10.62	270	11.02	280	3STD	158.7	72.0

HAMMER UNIONS

Fig. 600. Silver Subs - Black Nut

These unions have wide range of applications including steam service and line connections. These unions are provided with a bronze seat in the female for the effective sealing and prevention of rust formation. Suitable for 6,000 psi CWP.

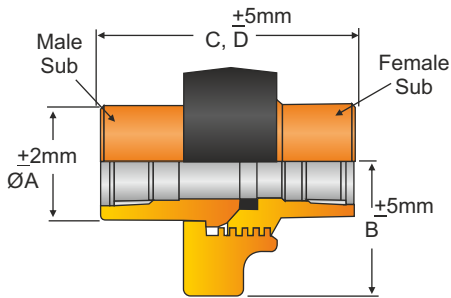


6,000 psi CWP (Fig - 600)

SIZE (INCH)	A		B		C		ACME (TPI)	UNION WEIGHT	
	INCH	MM	INCH	MM	INCH	MM		LBSF	KGF
1	1.75	44.5	2.26	57.5	3.58	91	6STD	3.52	1.6
1 1/2	2.55	65	3.07	78	4.92	125	4STD	9.26	4.20
2	3.07	78	3.70	94	6.42	163	2STD	15.43	7.00
2 1/2	3.54	90	4.17	106	7.52	191	2STD	20.28	9.20
3	4.25	108	4.54	115.5	8.72	221.5	2STD	27.23	12.40
4	5.27	134	5.19	132	10.04	255	2STD	40.0	18.10

Fig 602. Orange Subs - Black Nut

These unions are recommended for manifold and line connections truck mounting and in-mud services. This union has resilient lip-type seal for positive sealing and also protects secondary metal - to metal seal. Suitable for 6,000 psi

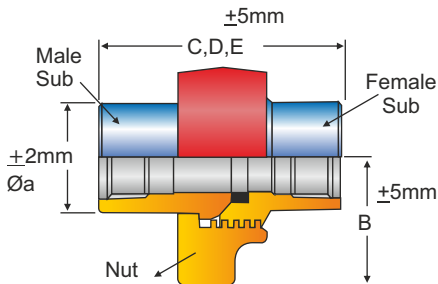


6,000 psi CWP (Fig - 602)

SIZE	A		B		C		BUTT WELDED END D		ACME (TPI)	UNION WEIGHT	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM		LBSF	KGF
1	1.75	44.5	2.28	58	3.50	89	3.50	89	6STD	3.30	1.5
1 1/4	2.60	66	3.23	82	4.88	124	4.88	124	4STD	11.00	5.0
1 1/2	2.56	65	3.06	77.8	4.88	124	4.88	124	4STD	9.7	4.4
2	3.07	78	3.81	97	5.25	133.5	5.28	133.5	3MOD	12.12	5.5
2 1/2	3.51	89.1	3.75	95.5	6.24	158.5	5.59	142	3MOD	15.87	7.2
3	4.25	108	4.52	115	6.22	158	5.62	143	3MOD	20.94	9.5
4	5.27	134	5.04	128	8.23	209	5.67	144	3MOD	30.86	14.0

Fig 1002. Blue Subs - Red Nut

These unions are designed for high pressure systems like choke and kill lines, cementing, acidizing, testing and truck mounted system. This union has a lip-type seal made of nitrile rubber and subs made of alloy steel, suitable for 10,000 psi



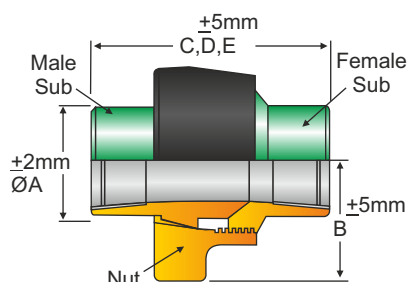
10,000 psi CWP (Fig - 1002)

SIZE	A		B		C		BUTT WELDED END				ACME	UNION WEIGHT	
							D		E				
	INCH	MM	INCH	MM	INCH	MM	SCH-160	SCH-XXS	(TPI)	LBSF		KGF	
1	1.75	44.5	2.28	58	3.50	89	3.50	89	3.50	89	6STD	3.5	1.6
1 1/4	2.60	66	2.95	75	4.88	124	4.88	124	4.88	124	4STD	9.7	4.4
1 1/2	2.55	65	3.18	81	4.88	124	4.88	124	4.88	124	4STD	9.25	4.2
2	3.07	78	3.81	97	5.25	133.5	5.28	133.5	5.28	133.5	3MOD	12.12	5.5
2 1/2	3.46	88	3.78	96	6.18	157	6.18	157	6.18	157	4STD	16.0	7.0
2 1/2(EUE)	3.81	97	4.00	100	5.51	140	-	-	-	-	4STD	17.8	8.1
3	4.25	108	4.52	115	6.22	158	5.51	140	5.51	140	4STD	22.26	10.1
4	5.27	134	5.04	128	8.23	209	5.67	144	5.67	144	4STD	33.0	15.0
5	5.55	141	6.10	155	6.22	158	6.22	158	6.22	158	3STD	56.0	25.4
6	6.62	168.3	6.81	173	6.57	167	6.57	167	6.57	167	3STD	79.8	36.2

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Fig 1003. Green Subs - Black Nut

These unions have a ball seat incorporating a primary O-ring seal with a metal secondary seal which assures perfect sealing in misalignment position. The degree of misalignment upto 2" size is 4° and beyond 2" size it is 7 1/2°. This union is ideally suited for use on high pressure lines. Available in 10,000 psi with end threaded or butt-welded for welding.

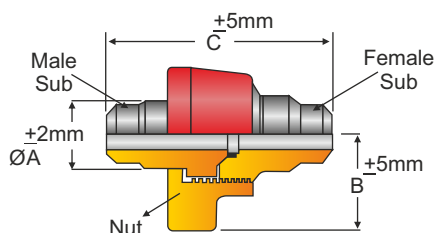


10,000 psi CWP (Fig - 1003)

Size	A		B		C		Beveled Ends				ACME	Union Weight	
							D		E				
	(Inch)	Inch	mm	Inch	mm	Inch	mm	Sch-160	Inch	mm		Sch-xxs	(TPI)
1	1.77	45	2.36	60	5.0	127	5.0	127	5.0	127	4STD	5.0	2.3
2	3.00	76	3.86	98	4.80	122	4.80	122	4.80	122	4STD	12.6	5.7
3	4.29	109	4.96	126	9.17	233	8.82	224	9.17	233	4STD	44.5	20.0
4	5.43	138	5.74	146	10.94	278	10.78	274	10.98	279	4STD	73.0	32.8
5	5.62	143	6.74	146	-	-	10.78	274	10.98	279	4STD	73.0	32.8

Fig 1004. Red Nut - Grey Subs

These unions use lip type seal ring end. Here, faces of male and female subs are perfectly square. These are available in 5" & 6" butt weld sizes.



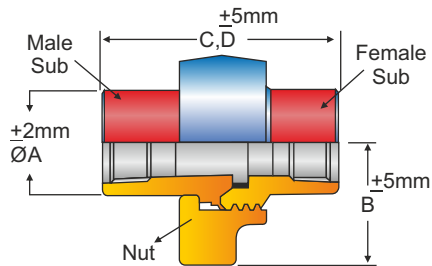
10,000 psi CWP (Fig - 1004)

Size (Inch)	A		B		C		ACME (TPI)	Union Weight	
	Inch	mm	Inch	mm	BUTT WELDED ENDS			lbsf	kgf
					Inch	mm			
5	6.30	160.0	6.50	165.1	8.15	207.0	-	86	39
6	7.40	189.0	7.2	182.8	9.50	241.3	-	142	64

HAMMER UNIONS

Fig 1502. Blue Nut - Red Subs

These unions are widely used in cementing, manifold and other services wherein extra high pressures of 15,000 psi CWP are encountered. These unions are provided with replaceable seal ring.

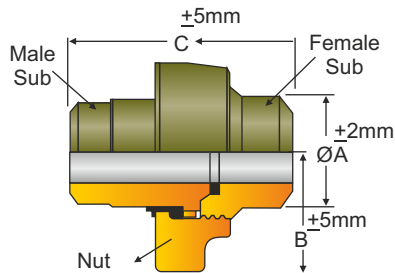


15,000 psi CWP (Fig - 1502)

Size (Inch)	A		B		C		D		ACME (TPI)	Union Weight	
	Inch	mm	Inch	mm	Inch	mm	BEVELED ENDS			lbsf	kgf
							Inch	mm			
1	2.18	55.5	2.75	70	4.33	110	4.33	110	3.5STD	8.5	3.8
1.1 / 2	2.96	75.2	3.48	88.5	5.39	137	5.39	137	3.5STD	12.8	5.7
2	3.22	82	3.86	98	7.03	178.5	6.30	160	3STD	20.3	9.2
2.1 / 2	3.74	95.2	3.96	100.6	7.28	185	7.08	180	3STD	23.0	10.3
3	4.45	113	4.53	115	7.67	195	5.28	134	3.5STD	29.5	13.3
4	5.75	146.1	6.00	152.2	8.54	217	10.55	268	3MOD	76.5	34.4
5	6.45	164	6.53	166	-	-	9.0	230	3.5STD	96	43
6	7.48	190	7.2	183	-	-	9.8	249	3.5STD	148	67

Fig 2002. Green Nut - Grey Subs

These unions are provided with replacement lip-type seal and are recommended for choke and kill lines, cementing, acidizing and testing services for pressure up to 20,000 psi CWP.



20,000 psi CWP (Fig. - 2002)
15,000 psi CWP (Fig. - 2202)

Fig 2202. (H2S) - Olive Green

These unions are specially designed for sour gas service in accordance with NACE Std. MR-01-75 and API Std. RP-14E for pressure up to 15,000 psi CWP. Dimensions identical with Fig-2002 above.

Size (Inch)	A		B		C		ACME (TPI)		Union Weight	
	Inch	mm	Inch	mm	Inch	mm	Fig. Fig.		lbsf	kgf
							2002	2202		
2	2.5	63.5	3.75	95.2	7.44	189	4	5	22.6	10.1
3	5.38	136.7	6.00	152	10.51	267	4	5	49.0	22.2
4	5.5	139.7	6.00	152	8.65	220	-	5	77.5	35.1
5	6.12	155.4	6.55	166	10.9	277	-	5	112.0	50.8
6	7.75	197.0	7.30	185	13.20	335	-	-	169.0	76.7

NOTE:

1. ACT 2", Fig-2202 is interchangeable with Fig-2" 2052/2252 & 2 1/2" 2052/2252 of other reputed makes.
2. Dimension 'A' will vary depending upon size of weld preparation.

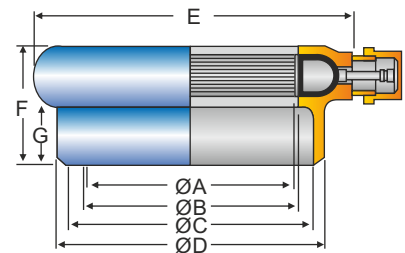
AIR - UNIONS

ACT's AIR-UNIONS are designed for 150 PSI maximum line pressure.

Features

- Air inflates tube to seal around pipe
- Fast and easy make up without close alignment
- Allows pipe expansion or misalignment (12°-15°) without breaking the seal
- No wrenches, bolts & nuts required
- Available in 4", 6", 8", 10", 12" 13", 16" sizes

NOTE: Line pressure = 150 PSI max. Tube pressure = Line pressure + 50 PSI = 150+50=200 PSI (max.)



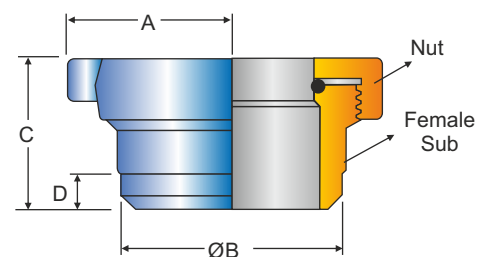
Air - Union

SIZE(IN)	4"		6"		8"		10"		12"		13"		16"	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM
A	4.60	117	6.75	172	8.75	222	10.95	277.5	12.95	329	13.66	347	16.30	414
B	4.60	117	6.93	177	8.93	228	11.14	283	13.12	333	13.78	350	16.41	417
C	5.08	129	8.00	203	10.12	258	12.12	307	13.38	337	15.43	392	17.40	442
D	5.56	141	8.62	223	10.75	279	12.75	324	14.02	358	16.02	407	18.03	458
E	6.62	168	10.5	263	12.25	313	14.50	370	16.50	419	17.24	438	19.84	504
F	3.12	79	4.00	102	4.00	102	4.25	108	4.25	107	4.40	112	4.29	109
G	1.50	38	2.00	51	2.00	51	2.00	51	2.00	51	2.04	52	2.04	52
TOTAL MISALIGNMENT DEGREE	6		14		14		14		14		14		14	
WEIGHT (LBSF)	7.25		17.5		21.75		26.00		30.00		34.5		38.8	
WEIGHT (KGF)	3.3		8.0		10.0		11.8		13.6		15.6		17.6	



ACT Mud Tank Unions

ACT manufactures and supplies unions for mud tanks, mud tank connecting lines and pump suction flanges. These are manufactured for a maximum line pressure of 150 PSI. The nitrile seal provides compressive seal, the cross-section of the seal designed to provide greater sealing surface. The union is designed to take a maximum of 7° misalignment on the pipe. Sizes which are catered for are 6", 8", 10", 12", 6", 8" and 10" sizes can be socket welded to pipe or butt welded to tubing. 12" size requires butt weld.



Mud Tank Union

	6"		8"		10"		12"							
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM
A (CLEARANCE RADIUS)	6.25	159	7.50	191	8.50	216	9.75	248	10.62	270	11.75	298	12.87	327
B (OUTSIDE DIAMETER)	7.88	200	9.88	251	11.88	302	14.00	356	16.0	406	18.0	457	20.0	507
C (END TO FACE)	4.38	111	4.38	111	4.52	115	4.52	115	4.68	119	4.85	123	4.72	120
D (SOCKET WELD DEPTH)	0.38	9.5	0.38	9.5	0.38	9.5	0.38	9.5	-	-	-	-	-	-
WEIGHT (LBSF)	22		31		37		50		-		-		-	
WEIGHT (KGF)	10		14		16.8		22.7		-		-		-	

NOTE:

Material is steel casting.

CEMENTING AND CIRCULATING HOSES

General Description

Introduction

ACT'S Cementing & Circulating Hoses are manufactured in various sizes (from 1" to 6") and in various configurations to meet virtually all the needs of the Oil Industry. These can handle a wide variety of fluids at cold working pressure up to 20,000 PSI. These hoses are made in steel to meet ASTM/AISI standards, are rugged, fold up easily and quickly for transportation. These are specially heat treated to get the desired hardness to suit various applications. Even sizes beyond 4" can be supplied to meet customer requirement.



Service Applications

These hoses are recommended for service in Low Pressure Lines, High & Extra High Pressure Lines, Discharge Lines, Water Lines, Well Testing Lines, Cementing & Circulating Lines, Temporary Flow Lines and Extra Pressure Abrasive Applications.

Swivel Joint Connections

ACT'S hoses feature ACT'S Swivel Joints which provide flexibility, maximize flow characteristics and absorb shock vibrations.

Wing Unions

ACT'S wing unions end connections provided in the cementing hoses ensure pressure tight and fast make up and quick break-out without threading, welding or special connections.

Sour Gas Service

ACT'S cementing hoses are available in various sizes and configurations for sour gas service as per NACE standards MR-01-75 and API standard RP-14E up to cold working pressure of 15000 PSI.

Method of Construction

These hoses can be manufactured as either threaded or integral or welded constructions or with NPS end connections.

Standard Lengths of Hoses

Following standard lengths are available. These lengths are fully extended lengths of the unfolded hoses:

Threaded Hose - 12 feet

NPS Hose - 12 feet

Welded Hose - 12 feet

Integral Hose - 12 feet

Other lengths can also be provided on request. ACT'S hoses are also available in half section configuration. In this case, stated length will be half of the length of comparable full length section. The loop can be divided into various sections depending upon the number of unions in the loop. The loop is generally in 4 & 2 sections.

Swivel Joint Styles

ACT'S Swivel Joints can be manufactured equivalent to style 10, 20, 30, 40, 50, 60, 70, 80 & 100. Normally the most used styles in various applications are style 50 and style 10 but ACT'S can cater to any style to meet customer requirements.

Pressure Ratings

Hoses with following ratings are available as given in the table below.

Interchangeability

ACT'S Hammer Unions or end connections are interchangeable with the unions and connections of all the major manufacturers of these products in the world.

CEMENTING AND CIRCULATING HOSES

CEMENTING & CIRCULATING HOSES SWIVEL JOINTS	COLOUR CODE	SERVICE	CONSTRUCTIONS DETAILS				NOMINAL SIZE (INCHES)								CWP (PSI)	UNION FIGURE
			THREADED	NPS	INTEGRAL	WELDED	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"		
SHORT SWEEP SWIVEL JOINT (1", 1 1/2", 2", 2 1/2", 3", 4" 5", 6")	OLIVE GREEN	SOUR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100 PSI TO 6000PSI	FIG-602
	YELLOW/SILVER	STD	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100 PSI TO 6000PSI	FIG-602
	BLACK	STD	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10000 PSI	FIG-1002
	OLIVE GREEN	SOUR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10000 PSI	FIG-1502
	BROWN	STD	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6000 PSI TO 7500 PSI	FIG-602 OR FIG-1002
LONG SWEEP SWIVEL JOINT (1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6")	OLIVE GREEN	SOUR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6000 PSI TO 7500 PSI	FIG-602 OR FIG-1002
	BLACK	STD	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10000 PSI	FIG-1002 OR FIG-1502
	OLIVE GREEN	SOUR	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15000 PSI	FIG-2202 OR FIG-1502
	RED	STD	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15000 PSI	FIG-1502
	LIGHT BLUE	STD	–	–	✓	–	–	–	✓	–	✓	✓	–	–	20000 PSI	FIG-2002

ACT's typical steel Cementing & Circulating Hoses (1" to 6") are shown below with their model numbers. These hoses have either Threaded ends or NPS or Integral or Welded ends.

Model Number indicates:

- Type of Sweep i.e. Long Sweep or Short Sweep (i.e. LS or SS)
- Style of Swivel Joints used (i.e. Style 10, Style 50 or Style 10 & Style 50 both & numbers of swivel joints i.e.1 or 2)
- Numbers of Unions used (i.e. 1, 2 or 4 etc.)
- Type of end connection i.e. Threaded (T), NPS (N), Integral (I) or Welded (W)

Example: Model Number PLSCCH-50-2-4U-1 indicates

- PLSCCH** : ACT Long Sweep Cementing & Circulating Hose
- 50-2** : Style 50 Swivel Joint, 2 Numbers
- 4U** : 4 Numbers of Union
- I** : Integral Union End Connection



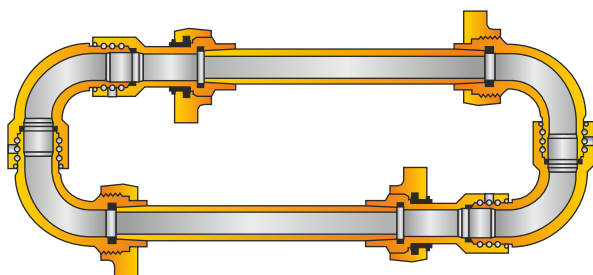
CEMENTING AND CIRCULATING HOSES

1. NPS ENDS

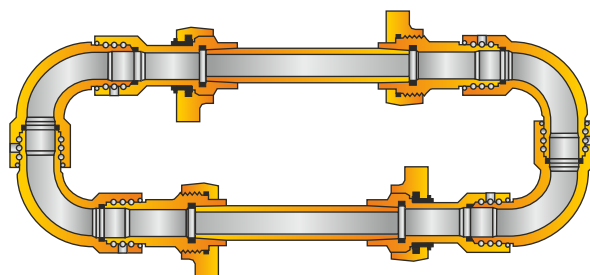
UNION	4 NOS.	4 NOS.	4 NOS.	4 NOS.
SWIVEL JOINT UNION END	STYLE-50 (2 NOS.)	STYLE- 10 (2 NOS.)	STYLE-50 (2 NOS.)	STYLE- 10 (2 NOS.)
MODEL NUMBER	PLSCCH-50-2-4U-N	PLSCCH-10-2-4U-N	PSSCH-50-2-4U-N	PSSCH-10-2-4U-N

CONFIGURATION OF NPS END MODELS

Model Number: PLSCCH-50-2-4U-N



Model Number: PLSCCH-10-2-4U-N

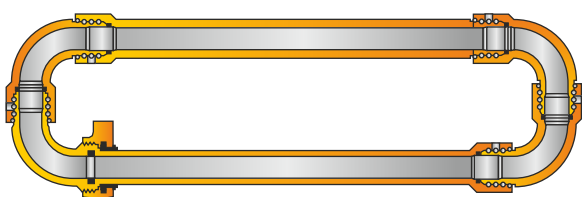


2. INTEGRAL UNION ENDS

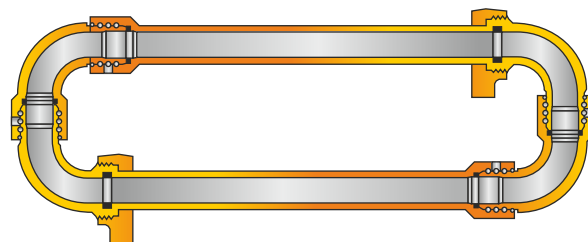
UNION	1 NO.	2 NOS.	2 NOS.	1 NO.
SWIVEL JOINT	STYLE-50 (1 NO)	STYLE- 50 (2 NOS.)	STYLE-10 (2 NOS.)	STYLE-10 (2 NOS.)
(UNION ENDS)	STYLE- 10 (1 NO)			
MODEL NUMBER	PLSCCH-50-1-10-1-1U-I	PLSCCH-50-2-2U-I	PLSCCH-10-2-2U-I	PLSCCH-10-2-1U-I

CONFIGURATION OF INTEGRAL UNION END MODELS

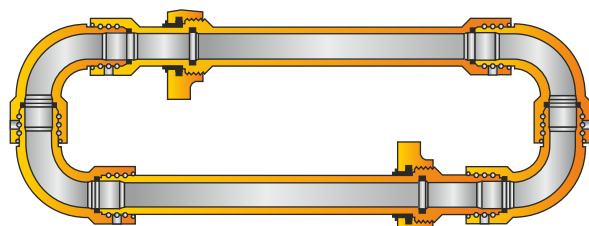
Model Number: PLSCCH-50-1-10-1-1U-I



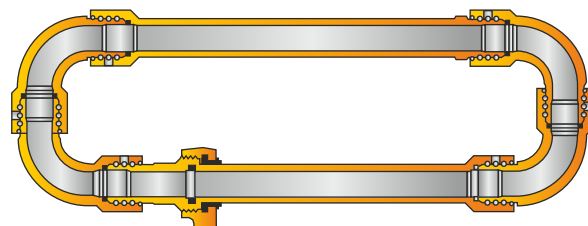
Model Number: PLSCCH-50-2-2U-I



MODEL NUMBER: PLSCCH-10-2-2U-I



MODEL NUMBER: PLSCCH-10-2-1U-I



SWIVEL JOINTS

Products Description

Swivel Joints (1" to 6") are manufactured both for standard service & sour service. Long Sweep Swivel Joints are designed generally from 6,000 PSI CWP to 20,000 PSI CWP, both for standard and sour service, and ensure better flow characteristics. Smooth and round bore design keeps pressure drop low and minimizes turbulence.

LONG SWEEP SOUR SERVICE SWIVEL JOINTS are manufactured in accordance with National Association of Corrosion Engineers (NACE) standard, MR-01-75 (Latest) and the American Petroleum Institute's (API) standard RP-14E.

ACT Swivel Joints have following features

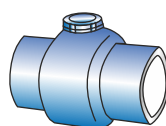
- Swivel Joints are made from carbon steel and low alloy steel and are specially heat treated for controlled hardness
- All union ends are interchangeable with other manufacturers adhering to industry standards. All Long Sweep Swivel Joints-Jar- sour service have union ends of corresponding pressure rating
- Swivel Joints for sour service are provided with snap rings to assure high load bearing capacity
- These Swivel Joints are provided with dual packing arrangement. Primary seal with stainless steel anti-extrusion ring and an additional O-ring between ball races and primary seal is provided, which acts as a secondary seal. When leakage occurs, it is diverted through the leak detection port. A leak at this port indicates the necessity of primary seal replacement
- The grease retainer is self-relieving to prevent pressure accumulation in the ball race chamber if leakage occurs through the secondary packing

ACT's Swivel Joints bearings assure long and dependable service. These bearings are either dual race or tri race ball bearings and are matched to load capacity and service conditions. All ball races are either carburized and hardened or use snap ring in stainless steel.

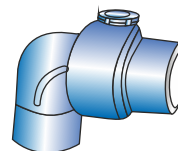
Style of Swivel Joints

ACT manufactures all styles of Swivel Joints to suit various service conditions and installations. These are style 10, 20, 30, 40, 50, 60, 70 and 80, as described below:

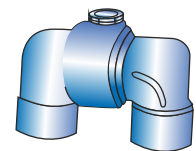
1. STYLE 10
Three Swivels with two elbows
2. STYLE 20
Single Swivel coupling
3. STYLE 30
Single Swivel with one elbow
4. STYLE 40
Single Swivel with two elbows
5. STYLE 50
Two Swivels with two elbows
6. STYLE 60
Two Swivels with one elbow
7. STYLE 70
Two Swivels with three elbows
8. STYLE 80
Three Swivels with three elbows



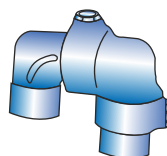
Style 20



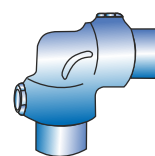
Style 30



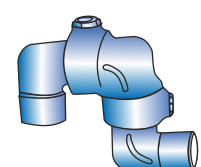
Style 40



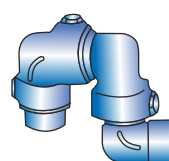
Style 50



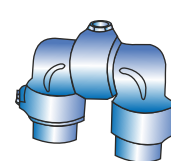
Style 60



Style 70



Style 80



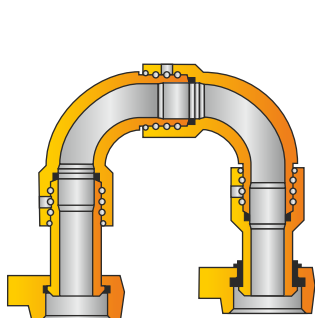
Style 10



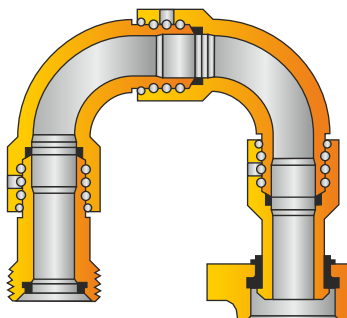
Sizes of Swivel Joints

ACT manufactures size 1" to 6" for normal application. ACT can also manufacture higher/lower sizes if required by customer.

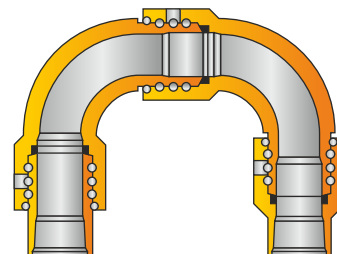
SWIVEL JOINTS



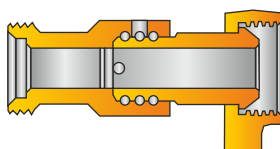
Style - 10 Long Sweep Swivel Joint
End Connection: Union (MxM)
Fig. 602 / 1002 / 1502
Model: PLSSJ - 10MM



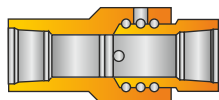
Style - 10 Long Sweep Swivel Joint
End Connection: Union (MxF)
Fig. 602 / 1002 / 1502
Model: PLSSJ - 10MF



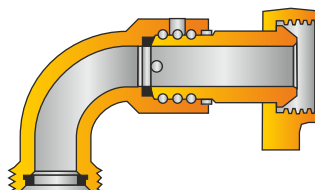
Style - 10 Long Sweep Swivel Joint
End Connection: Threaded
Model: PLSSJ - 10T



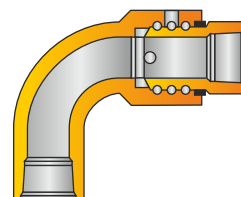
Style - 20 Long Sweep Swivel Joint
End Connection: Union (MxF)
Fig. 602 / 1002 / 1502
Model: PLSSJ - 20MF



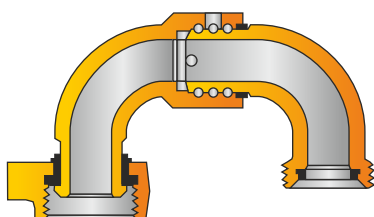
Style - 20 Long Sweep Swivel Joint
End Connection: Threaded
Model: PLSSJ - 20T



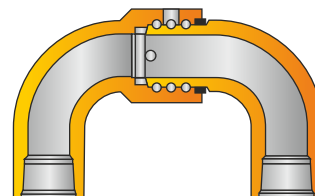
Style - 30 Long Sweep Swivel Joint
End Connection: Union (MxF)
Fig. 602 / 1002 / 1502
Model: PLSSJ - 30MF



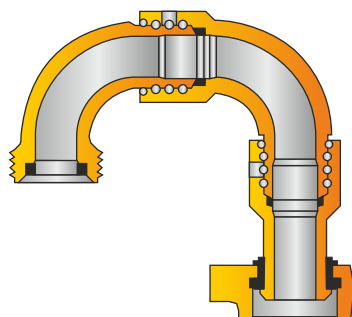
Style - 30 Long Sweep Swivel Joint
End Connection: Threaded
Model: PLSSJ - 30T



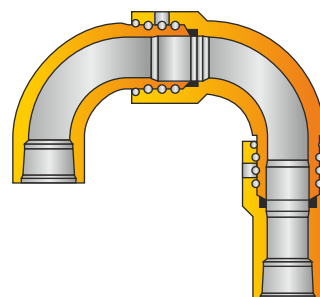
Style - 40 Long Sweep Swivel Joint
End Connection: Union (MxF) Fig. 602 / 1002 / 1502
Model: PLSSJ - 40MF



Style - 40 Long Sweep Swivel Joint
End Connection: Threaded
Model: PLSSJ - 40T

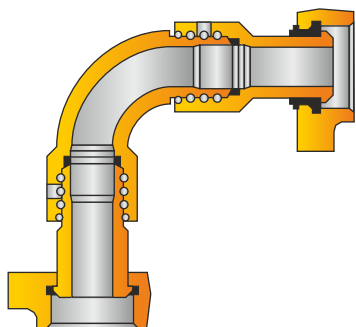


Style - 50 Long Sweep Swivel Joint
End Connection: Union (MxF) Fig. 602 / 1002 / 1502
Model: PLSSJ - 50MF

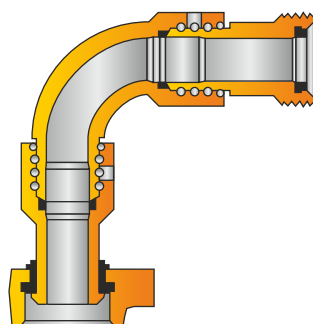


Style - 50 Long Sweep Swivel Joint
End Connection: Threaded
Model: PLSSJ - 50T

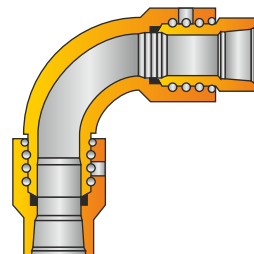
SWIVEL JOINTS



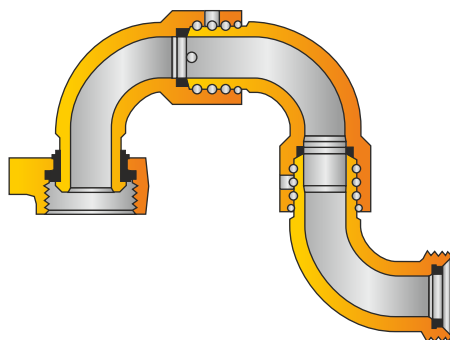
Style - 60 Long Sweep Swivel Joint
End Connection: Union (MxM)
Fig. 602 / 1002 / 1502
Model: PLSSJ - 60MM



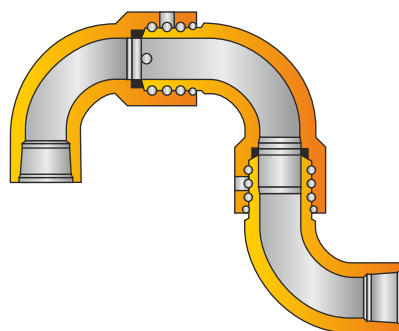
Style - 60 Long Sweep Swivel Joint
End Connection: Union (MxF)
Fig. 602 / 1002 / 1502
Model: PLSSJ - 60MF



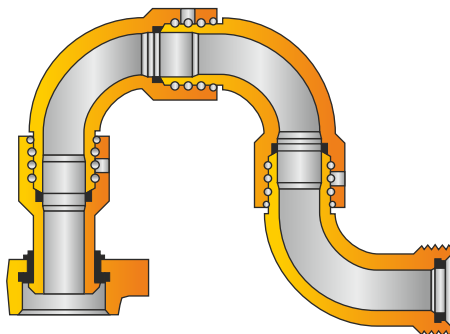
Style - 60 Long Sweep Swivel Joint
End Connection: Threaded
Model: PLSSJ - 60T



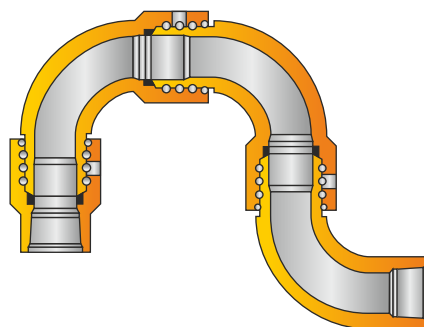
Style - 70 Long Sweep Swivel Joint
End Connection: Union (MxF) Fig. 602 / 1002 / 1502
Model: PLSSJ - 70MF



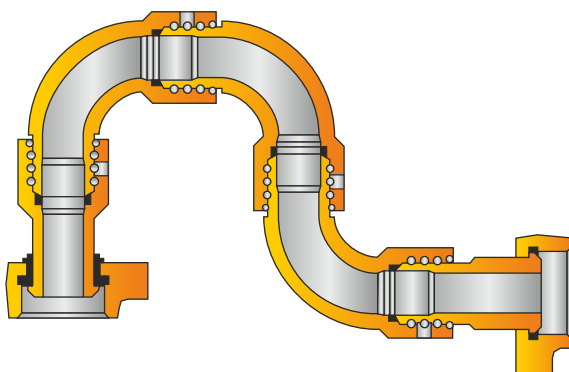
Style - 70 Long Sweep Swivel Joint
End Connection: Threaded
Model: PLSSJ - 70T



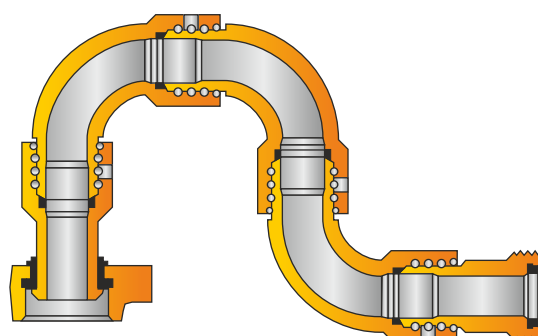
Style - 80 Long Sweep Swivel Joint
End Connection: Union (MxF) Fig. 602 / 1002 / 1502
Model: PLSSJ - 80MF



Style - 80 Long Sweep Swivel Joint
End Connection: Threaded
Model: PLSSJ - 80T



Style - 100 Long Sweep Swivel Joint
End Connection: Union (MxM) Fig. 602 / 1002 / 1502
Model: PLSSJ - 100MM



Style - 100 Long Sweep Swivel Joint
End Connection: Union (MxF) Fig. 602 / 1002 / 1502
Model: PLSSJ - 100MF

TREATING IRONS

Treating Irons

ACT'S one piece Treating Iron comprises an integral ACT'S wing union end connection which eliminates, welds and threads. Available in lengths up to 20 feet. The materials are carbon steel and alloy steel and are light weight. This integral treating iron is capable of handling a variety of fluids at cold working pressure of 15000 psi. ACT'S treating irons are also available for sour service up to a CWP of 10,000 PSI & in other lengths if required.

Recommended Service

These are suitable for High Pressure Discharge Lines, Temporary Flow Lines, Auxiliary Flow Lines, Well Testing Lines, Water Lines, Choke and Kill Lines and Abrasive Applications.

Salient Benefits

Since there are no welds and threads, ACT'S treating irons provide an uniform bore of greater flow capacity and improved flow characteristics. ACT'S design allows for uniform heat treating of the entire joint for better structural qualities. Nut can be detached for easy disassembly if replacement becomes necessary. For this only a circlip has to be removed.

End Connections

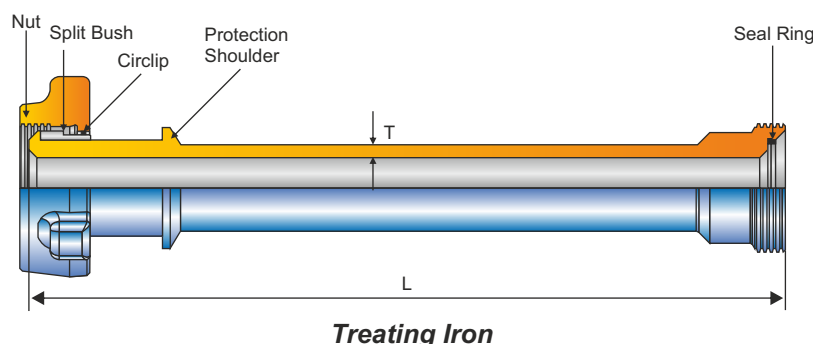
End connections can be provided for Fig-206, Fig-602, Fig-1002 and Fig-1502 or any other figure required by the customer.

NOTE: ACT can also provide welded & threaded 2", 3" & 4" NPST type treating iron if required by the customer.



DIMENSIONAL REFERENCE CHART																	
SIZE (IN)	1"		1- 1/2"		2"		2- 1/2"		3"		4"		5"		6"		8"
FIGURE	602	1502	602	1502	602	1502	602	1502	602	1502	602	1502	1002	1502	1002	1502	900
WORKING PRESSURE (PSI)	6000	15000	6000	15000	6000	15000	6000	15000	6000	15000	6000	15000	10000	15000	10000	15000	2500
TEST PRESSURE (PSI)	9000	22500	9000	22500	9000	22500	9000	22500	9000	22500	9000	22500	15000	22500	15000	22500	3750
WALL (T) MM	6.35	9.09	7.14	10.16	8.74	13	7.14	14.02	7.62	15.24	13.49	17.11	15.87	19.05	18.26	21.94	14.15
INCH	0.250	0.358	0.281	0.400	0.344	0.511	0.281	0.552	0.300	0.600	0.531	0.674	0.625	0.750	0.719	0.864	0.557
APPROX WT. PIPE:																	
LBSF /FT	2.84	3.66	4.86	6.41	6.28	9.03	8.0	11.81	10.25	18.58	22.51	28.65	32.96	38.55	45.35	53.16	49.00
KGF /M	4.24	5.45	7.25	9.56	9.36	13.44	14.92	20.39	15.27	27.68	33.54	42.65	49.04	57.36	67.48	79.10	72.92
H UNION;																	
LBSF	3.30	8.50	9.70	12.80	12.12	20.30	15.87	23.00	20.94	29.50	30.66	76.50	56.00	99.00	79.80	155.00	94.13
KGF	1.50	3.80	4.40	5.70	5.50	9.20	7.20	10.30	9.50	13.30	14.00	34.40	25.40	44.90	36.19	70.30	42.69
LENGTH L (FEET)	2', 3', 4', 5', 6', 7', 8', 9', 10', 12', 15', 20'																

NOTE: Other lengths, Figures, Pressure Rating, Butt Weld and Integral Connections are also available on customer's request.



INTEGRAL UNION CONNECTIONS

ACT manufactures a quality line of high pressure Integral/Fabricated Union connections with unions in various configurations and sizes from 1" to 6" and in pressure ratings up to 20,000 PSI CWP. These items are manufactured from high strength alloy steel forgings and fully heat treated under controlled conditions to assure uniform quality throughout. Available in combinations male by male, male by female to suit virtually any installation. The type of connections that ACT manufactures are:

- a. Cross, Elbows, Tees and Wyes.
- b. 45° and 60° Laterals
- c. Crow's Foot
- d. Goat Head.

Recommended Service

High Pressure Discharge Lines, Auxiliary Flow Lines, Temporary Flow Lines, Cementing and Circulating Lines, Well Testing Lines and other High Pressure applications.



90° Elbow



90° Y



Cross



T - Conn



Lateral 45° & 60°



Crow's Foot



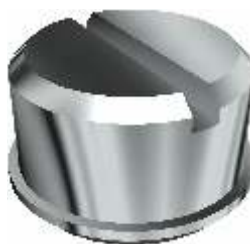
Goat Head

Bull Plugs, Gauge Bull Plugs and Lifting Bull Plugs

ACT's bull plugs are available in sizes 1" to 6" male and female models and with pressure ratings up to 15000 PSI CWP.



**Female Plug
With Autoclave Connection**



Male Plug



**Hammer Union
Male Blind & Female Welded
C/W SS Chain & Rod**

CHANGEOVER / CROSSOVER ADAPTERS

ACT's changeover/crossover adapters are manufactured in different sizes and threads, types male to male, female to female, female to male configurations with sizes varying from 1" to 4" and in pressure ratings from 1000 PSI to 20000 PSI CWP.

Swages

ACT manufactures Integral Swages with unions male and female to pipe and tubing threads, in different sizes 1" to 4" and thread configurations, in pressure ratings from 6000 PSI to 15000 PSI CWP. These are made to highest quality standards to provide trouble free service to users.

Precautions

1. Do not expose standard service products to sour gas fluid
2. Pressure ratings given are for temperatures between -20°F to 100°F. For services above 100°F consult factory
3. Excessive hammering force should not be used for tightening Hammer Unions
4. For using Hammer Unions below freezing temperatures, correct safety precautions should be taken
5. Hammer Unions under pressure should not be struck otherwise failure may occur causing personnel injury or death

Integral Female Adapter Flanges

We manufacture these adapter flanges of various sizes commencing from 1 13/16" onwards and various flanges pressure ratings with Integral Hammer Union ends.



Female To Tubing Thread



Male To Tubing Thread



Double Wing (Male)



Double Thread (Female)



***Thread To Wing
(Male To Female)***



***Integral Female
Adapter Flange***

INTEGRAL / WELDED UNION END FITTINGS (FIG-602, 1002, 1502)

Size: 1" To 6" Up To W.P. 15,000 PSI, T.P. 22,500 PSI For Standard & Sour Service



*Corner Joint (Integral),
(Split Bush Type)*



*Straight Pipe With Corner
Bend (Integral Or Welded)*



*Corner Joint
(Integral Or Welded)*



Straight Pipe (Integral Or Welded)

**Block Type Fittings (Welded & Studded Flanged Type)
(Up To 30,000 PSI Test Pressure In Any Size)**



**Manifold Fittings (Threaded, Butt Welded & Socket Welded)
(Up To 10,000 PSI Test Pressure, Sizes: 2", 3", 4", & 5")**



Long Sweep Elbow 90°



Long Sweep Tee



Long Sweep Full Flow Tee



*Standpipe
Gooseneck 180°*



Lateral 45° & 60°



*Standpipe Gooseneck
160°
With Top Outlet*



Full Flow Cross

NOTE: For other sizes, pressures and services, consult factory.

CIRCULATING HEAD

Description

ACT Circulating Head basically consists of

- i. Tee (having swivels at two ends & female line pipe connection at the upper end)
- ii. 45° angle connection with male line pipe thread for Circulating Hose at one end & Swivel for Tee on the other
- iii. Lower adapter connection having one end is suitable for Connecting Tubing, Casing, Drill Pipe, or Tool Joints and other end is Swivel for Tee



At 6,000 PSI test pressure rotating in both vertical & horizontal planes is possible through the provision of Swivel in Tee and this head is supplied with an opening (female line pipe thread) in the top through which wire line instruments may be run. It is compact & light in weight and thus an ideal standby tool. Circulating Head with other types of connections and other pressure ratings can also be supplied as per customer's request, either with this type of design or with any other type of design.

Application

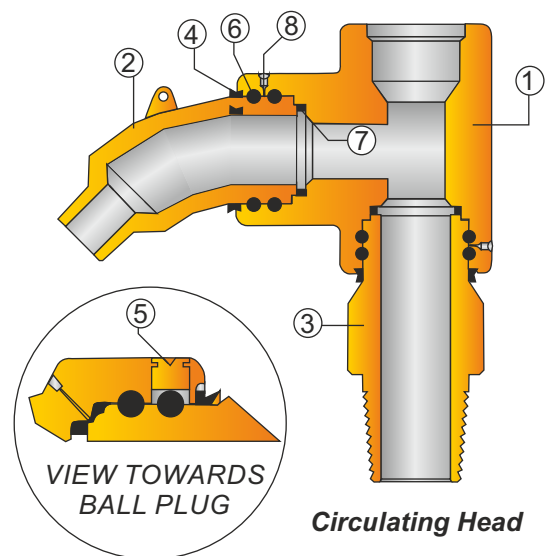
Helps to eliminate stuck drill pipe by making it possible to maintain pressure and circulation in the hole and to rotate drill pipe with the rotary table while conducting wireline coring operations, fishing jobs or directional testing.

How to Order

When order please specify:

1. Pipe Size
2. Pressure Rating (i.e. working & test pressure)
3. Type of Connection i.e. - Upper Connection in Tee (Male or Female line Pipe Threads)
 - Lower Connection (Pin & Box) for Tubing, Casing, Drill Pipe & Tool Joint
 - Circulating Hose Connections (Male or Female Line Pipe Threads)

ITEM NO.	DESCRIPTION	QTY.
1.	TEE	1
2.	45 ANGLE ELBOW	1
3.	LOWER ADAPTOR	1
4.	GREASE RETAINER	2
5.	BALL PLUG	4
6.	BALLS	4 SETS
7.	SEAL & METAL SEAL	2
8.	GREASING SCREW	2



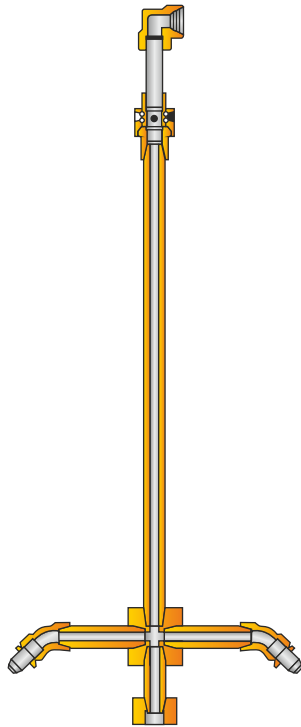
MUD GUN

ACT mud mixing guns are simple in design. All turning takes place on double rows of steel balls in flame hardened races. There is nothing to tighten or adjust. Flow is unrestricted and pressure drop is minimum. ACT mud mixing guns are of 3 types:

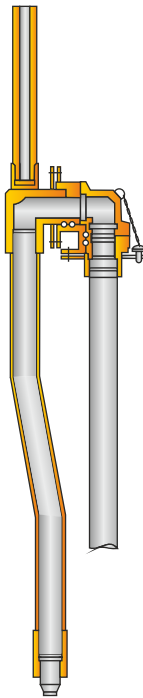
1. Spinner/ Pivot Type

2. Non Spin Type

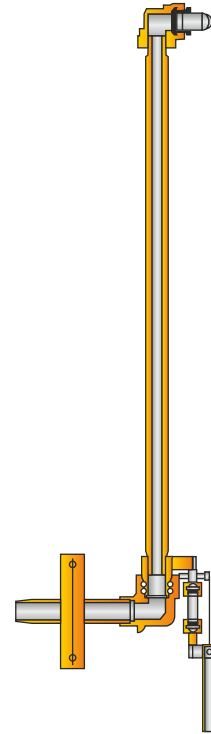
3. Bottom Type



Spinner / Pivot Type



Non Spin Type



Bottom Type

Spinner/Pivot Type

The Spinner/Pivot Type mud gun is designed for use in tanks where the utmost in constant agitation is desired. The nozzles are set at an angle and the pressure in the line imparts a spinning motion which is accommodated by style 20 high pressure Swivel Joints. Furnished in any desired length as specified in order.

Size : 2", 3", 4" **Pressure :** Up to 5,000 PSI

Non Spin Type

The Non Spin Type mud gun is designed for mixing large volumes of mud in the top of the tank or pit and also for transferring mud from one tank to another tank.

A Non Spin mud gun cannot spin because centrifugal force is neutralized by the offset of the barrel of the gun. Perforated flanges and locking pins permit locking of gun in any position.

Size : 2", 3", 4" **Pressure :** Up to 5,000 PSI

Bottom Type

The Bottom Type mud gun is designed for use where large size metal tanks are employed as mud pits.

It is simple in construction, easy to install and easy to operate.

Size : 2", 3", 4" **Pressure :** Up to 5,000 PSI

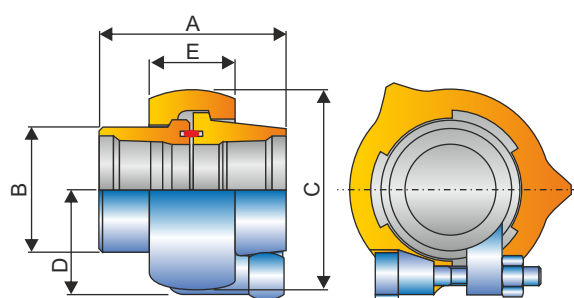
NOTE: 1. Discharge nozzles in all mud guns are equipped with tungsten carbide insert.

2. Other sizes & pressure ratings are also available on request.

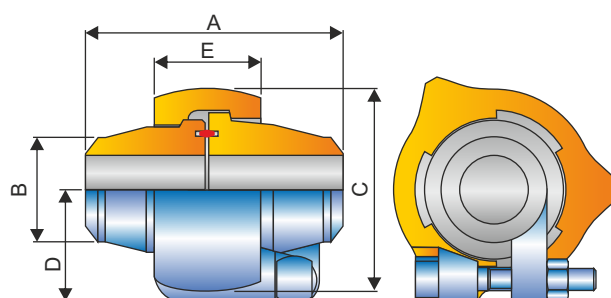
UNIBOLT COUPLINGS

ACT Unibolt Couplings are the high pressure, compact and light weight alternative to API or ANSI flanges. The connection is made up by means of the interlocking helical shelf design. Unibolt Couplings ensure superior reliability and provide a higher degree of safety than conventional threads or flanges due to the greater amount of metal under shear load.

A metal seal ring provides a strong seal between male and female sub of the unibolt coupling. The nut slips over male sub and the helical shelves in the nut wedge against external helical shelves of female sub when rotated. The T-head bolt is then tightened and the helix angle of the shelves multiplies the bolt force, exerting a tremendous force on the seal ring. Since the helix angle is self-locking, the bolt is under no stress after the initial tightening.



Threaded End



Butt Weld End

DIMENSIONAL DATA (INCHES), 3000 LB / 5000 LB WP THREADED					
NOM. SIZE	DIMENSION				
	A	B	C	D	E
1	3.27/32	1.5/8	3.3/8	2.1/8	1.5/8
2	5.1/8	2.7/8	5.3/8	3.1/8	2.7/16
2.1/2	6.1/4	3.3/8	6.1/8	3.5/8	2.7/8
3	6.1/4	4.3/16	6.3/4	4.1/16	2.7/8
4	8.3/8	5.1/2	8.11/16	5.3/16	3.1/2
5	10.6/16	6.1/2	10.1/2	6.1/8	4.1/16

DIMENSIONAL DATA (INCHES), 3000 LB / 5000 LB / 10,000 LB 15,000 LB WP BUTT WELD					
NOM. SIZE	DIMENSION				
	A	B	C	D	E
1	4.23/32	1.315	3.3/8	2.1/8	1.5/8
2	6.1/8	2.3/8	5.3/8	3.1/8	2.7/16
2.1/2	7	2.7/8	6.1/8	3.5/8	2.7/8
3	7.5/8	3.1/2	6.3/4	4.1/16	2.7/8
4	9.9/16	4.1/2	8.11/16	5.3/16	3.1/2
3000 LB CWP					
*5	10.5/16	5.5/8	10.1/2	6.1/8	4.1/16
*6	9.1/2	6.5/8	10.1/2	6.1/8	4.1/16
5000 LB CWP					
*5	11.5/8	5.9/16	11.9/16	6.5/8	5
*6	11.5/8	6.5/8	11.9/16	6.5/8	5
10,000 LB WP					
2	7.1/8	2.3/8	5.3/16	3.13/32	2.3/4
2.1/2	7.3/8	2.7/8	5.5/16	3.13/32	2.3/4
3	8.5/8	3.1/2	6.11/16	4.7/32	3.9/16
4	11.1/2	4.1/2	8.7/8	5.11/16	4.1/2
5	16.1/4	5.9/16	12.5/16	7.1/4	6.1/2
15,000 LB WP					
2.1/2	7.5/16	2.7/8	5.13/16	3.1/2	2.7/8

* These sizes require two bolts

TUBING / CASING, COUPLINGS

Produced from prime API Monogrammed Seamless tubing or casing in API grade, coupling can be standard coupling, special clearance coupling, special bevel coupling, pup joint or connector. Couplings are phosphated to avoid galling. Seal Ring and Uni-flow Coupling can also be provided upon request.

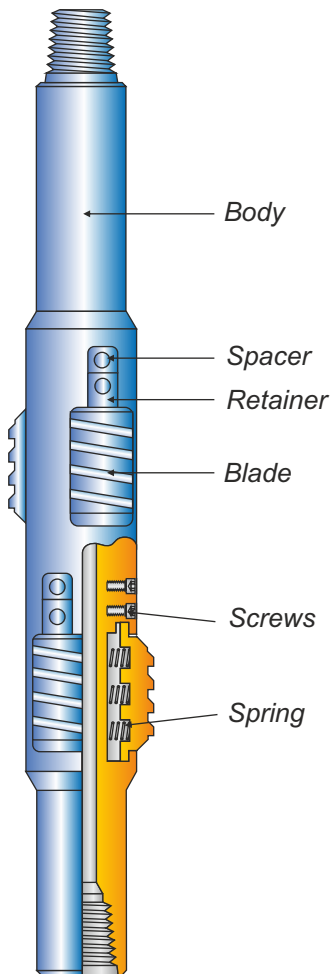
Technical Index for External-Upset Coupling - Dimensions, Tolerances and Masses										
	Size ^a	Outside Diameter					Max. bearing face diameter Bf		Mass kg	
Type	Outside Diameter D mm	Regular & special bevel w b mm	Special clearance w c c mm	Minimum Length NL mm	Diameter of recess Q mm	Width of bearing face, regular b mm	Special bevel mm	Special Clearance mm	Regular	Special clearance
1	2	3	4	5	6	7	8	9	10	11
1.050	26.67	42.16		82.55	35.00	2.38	37.80		0.38	
1.315	33.40	48.26		88.90	38.89	2.38	42.77		0.57	
1.660	42.16	55.88		95.25	47.63	3.18	50.95		0.68	
1.900	48.26	63.50		98.42	54.76	3.18	58.34		0.84	
2 3/8	60.32	77.80	73.91	123.82	67.46	3.97	71.83	69.90	1.55	1.07
2 7/8	73.02	93.17	87.88	133.35	80.16	5.56	85.88	83.24	2.40	1.55
3 1/2	88.90	114.30	106.17	146.05	96.85	6.35	104.78	100.71	4.10	2.38
4	101.6	127.00		152.40	109.55	6.35	117.48		4.82	
4 1/2	114.3	141.30		158.75	122.25	6.35	130.96		6.06	

MECHANICAL PROPERTIES OF COUPLINGS AS PER API 5CT:									
GRADE	TYPE	YIELD STRENGTH Mpa		YIELD STRENGTH Ksi		TENSILE STRENGTH		HARDNESS Max.	TOTAL ELONGATION UNDER LOADING %
		Min.	Max.	Min.	Max.	Mpa	Ksi	HRC	
J55	-	379	552	55	80	517	75	-	0.5
K55	-	379	552	55	80	655	95	-	0.5
N80	1	552	758	80	110	689	100	-	0.5
N80	Q	552	758	80	110	689	100	-	0.5
L80	1	552	655	80	95	655	95	23	0.5
P110	-	758	758	110	140	862	125	-	0.6

- Couplings can be supplied at very reasonable prices container load basis.
- ACT can supply 6/8 containers load of couplings per month.
- To order Tubing/Casing couplings, please specify the size & grade of the couplings.
- These couplings are supplied with API-6A monogramme.



CASING SCRAPER



FEATURES

- Made from high quality low alloy steel.
- Fully heat treated to give max. strength and hardness.
- Can withstand rough use and is rugged to give long life. Scraping edge is designed to be effective in full circumference clean out.
- Precision machined blades to fit casing profile.
- Available with API Monogram.
- Blades are properly tapered to the tool body to minimize the possibility of the scraper hanging up inside the casing.
- Blades are left handed to facilitate scraper rotation.

FUNCTIONAL PURPOSE

The Casing Scraper is used for removing the stuck mud cement embedded bullets, perforation burrs, rust, mill scale, paraffin and similar unwanted material from the inside wall of the Casing.

OPERATIONAL HIGHLIGHTS

For removal of the Cement Sheath the Scraper should be installed between the Drill Bit and the Drill Collar so that both the drilling out and the sheath removal can be accomplished at the same time. It is a good practice to maintain circulation while these operations are being conducted. For removal of perforation burrs and bullets, the scraper is installed pin up on the first joint of the drill pipe with an old three cone rock bit installed in the box end of the scraper.

SPECIFICATIONS					
CASING		SCRAPER ASSY.	STD. CONN.	TOOL BASIC	TOOL
O.D.	WT.(T&C)	PART NUMBER	A.P.I. REG.	O.D.	I.D.
4.1/2	9.5-18.8	4045080	2-3/8	3.250	3/4
5	11.5-18	4050080		3.936	
5.1/2	13-23	4055081	2-7/8	4.410	1
7	17-38	4070082		5.375	1-1/2
7.5/8	17-39	4075882	3-1/2	5.500	
9.5/8	32-53	4095883	4-1/2	7.250	2
10.3/4	32.7-55.5	4010784	6-5/8	9.510	2-1/4
13.3/8	48-72	4013384			

NOTE: Other sizes/ end connections are available upon request.

TERMS & CONDITIONS OF SALE

Note: These Terms & Conditions of Sales control the rights and responsibilities of the parties in connection with goods and/or services sold to any customer or purchaser of goods or service hereunder (hereinafter, "Buyer") by American Completion Tools Inc. and its affiliates (individually and/or collectively "Seller"). Please read this document carefully because of its significant legal consequences.

1. ACCEPTANCE: Acceptance by Seller of Buyer's order or proposal is expressly made conditional on assent to these Terms & Conditions of Sales, either by written acknowledgment or by conduct by Buyer that recognizes the existence and controlling nature of these Terms & Conditions of Sales.

2. FORM OF CONTRACT AND NO WAIVER: Seller will not be deemed to have accepted any proposal or sales order through course of dealing, performance, implied consent, or waiver specifically, but without limitation, Seller's (i) supplying products or performing services in response to Buyer's purchase order or proposal, and/or (ii) failing to complain of Buyer's noncompliance with these Terms & Conditions of Sales or the presence of any conflicting terms and condition in any other purchase order or similar document and/or (iii) accepting payment for products or services, shall not be construed as acceptance of any terms and conditions proposed by Buyer. No attempted modification by Buyers of these Terms & Conditions of Sales will be effective against Seller unless expressly in a writing signed by Seller's competent authority with the express authority of Seller to make such agreements.

3. CONFLICTING PROVISION VOID: Seller hereby objects to and rejects any terms & conditions included in Buyer's purchase order or other writing or modification that conflict with these Terms & Conditions of Sales. Any inconsistent terms and conditions contained in Buyer's purchase order, terms & conditions, or any other writing that represents Buyer's offer are not a part of the agreement between Seller and Buyer and shall have no effect.

4. PAYMENT: Payment terms are net cash thirty (30) days from the date of Seller's invoice. Seller at its sole discretion reserves the right to require progress payments or payment in advance. If payment is not made when due the unpaid balance will be subject to a finance charge of 1½% of the unpaid balance per month or at the highest interest rate allowed by law, whichever is less. The amount of finance charges will be added to the balance owed to Seller. If Buyer fails to pay any invoice when due, or if the financial condition or credit of Buyer becomes unsatisfactory to Seller, Seller, at its sole discretion and without affecting any other lawful remedy, may change the terms of payment or suspend work and further deliveries, or both, until Buyer provides security or other assurance of performance as demanded by Seller. In the event Seller institutes legal or collection action against Buyer for non-payment, Buyer shall be liable to Seller for all reasonable costs and attorney's fees incurred by Seller in connection therewith. In the event of a dispute between Seller and Buyer regarding any separate sale(s), purchase(s), project(s), or service(s), Buyer shall not be entitled to withhold payments due to Seller as a setoff for claims based on separate sale(s), purchase(s), project(s), or service(s).

5. LIMITED WARRANTY: Subject to limitations contained below, Seller warrants that services performed by Seller will be free from defects in workmanship under normal care and use until the expiration of the applicable warranty periods hereafter set forth said services are warranted for a period of ninety (90) days from the date of services. If Buyer discovers any warranty defects and notifies Seller thereof in writing and during the applicable warranty period, Seller shall at its sole discretion, promptly correct any errors that are found by the Seller in the services or refund the purchase price of the defective services. All replacements or repairs necessitated by inadequate maintenance, normal wear and usage, unsuitable environmental conditions, accident, misuse, or by improper installation, modification, repair, storage, or handling or any other cause not the fault of Seller, are not covered by this limited warranty, and shall be at Buyer's expense. Seller shall not be obligated to pay any costs or charges incurred by Buyer or any other party except as may be agreed upon in writing and in advance by an authorized representative of Seller. All cost of transportation and time and expenses of Seller's personnel for site travel and diagnosis under this warranty clause will be borne by Buyer. Warranty services rendered during the warranty period shall be warranted for the remainder of the original warranty period. This limited warranty is the sole warranty made by Seller and can be amended only in writing signed by an authorized representative of Seller.

OTHER THAN AS EXPRESSED ABOVE, THERE ARE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, AT LAW, BY CONTRACT, OR OTHERWISE, AS TO THE MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, OR ANY OTHER MATTER WITH RESPECT TO ANY OF THE GOODS OR SERVICE.

6. LIMITATION OF REMEDY AND LIABILITY: In no event, regardless of the form of the claim or cause of action (including but not limited to claims based in contract, patent or trademark infringement, negligence, strict liability, other tort, or otherwise), shall Seller's liability to Buyer and/or its affiliates exceed the contract price. The parties agree that in no event shall either party's liability to the other and/or their affiliates extend to include incidental, consequential, punitive or exemplary damages. The term "consequential damages" shall include, but not be limited to, lost or deferred production, loss of anticipated profits, loss of use, loss of revenue, and cost of capital.

7. DELIVERY: Seller's obligation is to deliver the goods F.O.B. Seller's warehouse, place of manufacture, or other place from which the goods are actually shipped within the U.S.A., at which point risk of loss shall pass to Buyer. Freight will be prepaid and added to invoice unless otherwise agreed to by Seller in writing. Delivery dates give to Buyer in any manner are approximate. Seller will not be liable for failure to make delivery or delay in making delivery that directly or indirectly results from or is contributed to by any cause beyond Seller's reasonable control, including but not limited to fire, flood or other acts of God, strikes or other labor disagreements, accidents, acts or requirements of government or civil authorities, riot, war, embargo, shortages of labor, material or energy, delay in transportation, failure or delay by subcontractors or suppliers, or necessary changes in production or shipment schedules. In the event of such delay, Seller, at its sole discretion, will have the right to apportion supplies among its customers, including Buyer, in any manner that Seller determines, and any delivery date will be postponed for a period of time equal to the delay. If shipments are held at Seller's premises at request of Buyer, invoices will be rendered for all completed goods as though actually shipped, and Buyer will also pay Seller for all extra expenses incurred.

8. CANCELLATION BY BUYER: Buyer may cancel its order, or any part of it, by sending written notice of cancellation to Seller and by paying Seller a reasonable cancellation fee. The reasonable cancellation fee will be determined by Seller and will reflect, among other factors: the expenses already incurred, other commitments made by Seller, sales and administrative overheads, and profits. Goods may not be returned without Seller's prior written consent. Restocking charges may be assessed at the sole discretion of Seller.

9. PRICES: Unless otherwise specified by Seller, Seller's prices for the goods or services shall remain in effect for thirty (30) days from the date of Seller's quotation or acceptance of the order for the goods, whichever occurs first, provided an unconditional, complete authorization for the immediate procurement and shipment of the goods pursuant to Seller's standard invoicing procedures is received and accepted by the Seller from the Buyer within such time period. After such thirty (30) days period, Seller shall have the right to revise the price of the goods or services up to Seller's price in effect for the goods at the time the order is released by Buyer and Seller prior to shipment. The price for any Resale Goods or Services shall be Seller's price in effect at the time of shipment to Buyer.

10. INSTALLATION: All goods shall be installed by and at the expense of the Buyer.

11. TAXES: Buyer is responsible for any taxes, charges or other fees presently or subsequently imposed by any law, order, regulation or ordinance of the Federal, State or municipal governments for production sale, use, transportation, delivery or servicing of the products sold hereby. The foregoing shall not apply to taxes based upon Seller's net income.

12. ASSIGNMENT: Buyer shall not (by operation of law or otherwise) assign its rights or delegate its performance hereunder without the prior written consent of Seller, and any attempted assignment or delegation without such consent shall be void.

13. GOVERNING LAW: All sales shall be governed by and construed for all purpose, including without limitation, Seller's obligations or liabilities respecting its products, according to the laws of the State of Texas.

14. ENTIRE AGREEMENT: These Terms & Conditions of Sale (and any of Seller's purchase or work orders in connection therewith) constitute a complete and exclusive statement of the agreement between Seller and Buyer. There are no understandings, agreements or representations, express or implied, not specified in the Agreement. These Terms & Conditions of Sale control over any conflicting provision in any purchase or work order issued by Buyer. There are no other promises, conditions, understandings, representations or warranties. All provisions are severable, and if any of these Terms & Conditions of Sales are found by a court of competent jurisdiction to be unenforceable, then the Terms & Conditions of Sale shall be deemed modified only to the extent necessary to make them enforceable.

15. CREDIT BALANCES: Buyer agrees that any credit balances issued will be applied within one (1) year of its issuance. IF NOT APPLIED OR REQUESTED WITHIN ONE (1) YEAR, ANY BALANCE REMAINING WILL BE SUBJECT TO CANCELLATION, AND SELLER SHALL HAVE NO FURTHER LIABILITY.

16. GENERAL PROVISION: (a) No action, regardless of form, arising out of transactions under the Agreement, may be brought by either party more than two (2) years after the cause of action has accrued. (b) UNLESS OTHERWISE SPECIFICALLY PROVIDED IN SELLER'S QUOTATION, GOODS AND SERVICES HEREUNDER ARE NOT INTENDED FOR USE IN ANY NUCLEAR OR NUCLEAR RELATED APPLICATIONS. Buyer (i) accepts Goods and Services in accordance with the restriction set forth in the immediately preceding sentence, (ii) agrees to communicate such restriction in writing to any and all subsequent purchasers or users and (iii) agrees to defend, indemnify and hold harmless Seller from any and all claims, losses, liabilities, suits, judgments and damages, including incidental and consequential damages, arising from use of Goods and Services in any nuclear or nuclear related applications, whether the cause of action be based in tort, contract or otherwise, including allegations that the Seller's liability is based on negligence or strict liability. (c) The 1980 United Nation Convention on Contracts for the International Sale of Goods does not apply to this Agreement. (d) Seller specifically objects to the application of any Federal Acquisition Regulation ("FAR") provision or clause to the Agreement.



American Completion Tools

American Completion Tools (Flow Line Products Division)

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Upcoming Plant at Houston by, March 2015:

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