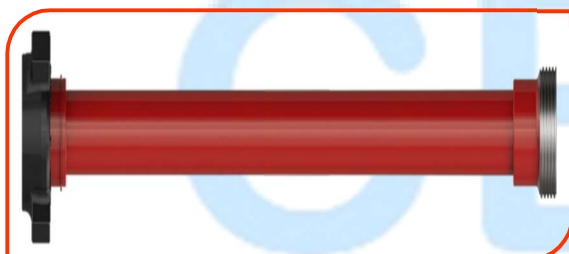
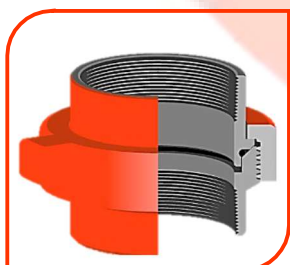




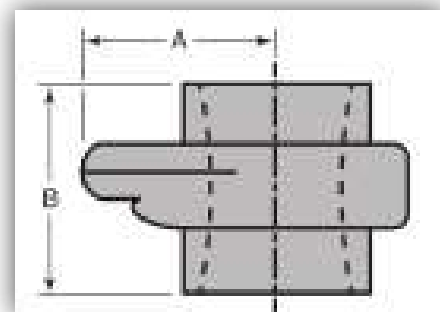
# CANNY ENGINEERING SERVICES

Manufacturer and supplier of Oilfield Products & Engineering Equipment's



# HAMMER UNIONS

- Hammer union range in size from 1" to 12".
- Manufactured by Steel forgings using appropriate materials to specific pressure ratings.
- Hammer Union Nut have three lugs.
- Low temperature application with suitable impact value testing.
- Components of the same size and figure number are interchangeable with OEM.
- Full traceability documentation for each component.
- Unions are available in a choice of end connections. API line pipe threads are standard, Butt weld ends and socket weld ends can be provided.
- H2S service is available and all H2S service conforms to the latest NACE MR 0175.



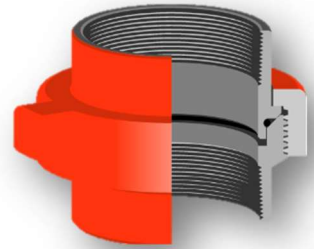
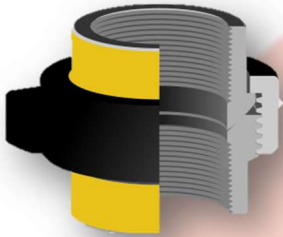
## Hammer Union Quick Reference Chart

FIGURE NUMBER	ASSEMBLY KEY	PRESSURE RATING				NOMINAL PIPE SIZES (Inch / mm)											
		STANDARD		SOUR SERVICE		1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"	8"	10"	12"
		CWP	HYD. TEST	CWP	HYD. TEST	25	30	40	50	65	80	100	125	150	200	250	300
50		500	750	NA	NA	T/B	T/B					T/B	T/B				
100		1000	1500	NA	NA				T/B	T/B	T/B	T/B	T/B	T/B	T/B		
200		2000	3000	2000	3000	T/B	T/B	T/B	T/B	T/B	T/B	T/B	T/B	T/B	T/B	T/B	
206		2000	3000	2000	3000	T/B	T/B	T/B	T/B	T/B	T/B	T/B	T/B	T/B	T/B	T/B	
207		2000	3000	2000	3000						T/B	T/B		T/B			
211		2000	3000	NA	NA				T		T						
300		2000	3000	NA	NA	T	T		T	T							
400		4000	6000	4000	6000				T/B		T/B	T/B	T/B	T/B	T/B		T/B
602		6000	9000	6000	9000	T/B	T/B	T/B	T/B		T/B	T/B					
1002		10000	15000	7500	11250	T/B	T/B	T/B	T/B		T/B	T/B	T/B	T/B			
1003		10000	15000	7500	11250				T/B		T/B	T/B	B				
1004		10000	15000	7500	11250							B	B				
1502		15000	22500	10000	15000	T/B		T/B	T/B		T/B	T/B	T/B	T/B			
2002		20000	30000	NA	NA				B		B						
2202		NA	NA	15000	22500				B		B	B					
6666		6000	9000	NA	NA			T	T								

T = Threaded Ends, B = Butt Welded

**FIGURE 50****Red Nut, Red Subs**

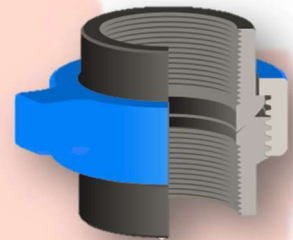
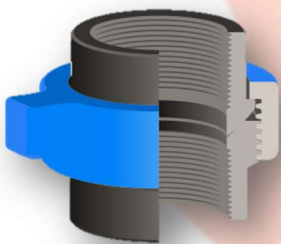
- Recommended for Air, Water, Oil, or gas service.
- working pressure – 500 PSI for std. service.
- Available end Connections: - Threaded and Socket weld,

**FIGURE 100****Black Nut, Yellow Subs**

- Recommended for Low pressure Manifold lines, Air, Water or Gas Applications.
- Manifold & general service.
- Metal to metal sealing surface
- Available in both threaded and butt weld ends

**FIGURE 200****Blue Nut, Grey Subs**

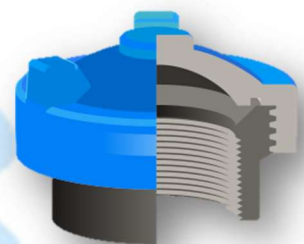
- Cold working pressure – 2,000 PSI
- Recommended for Oil, Water and Gas Applications.
- Metal to metal sealing surface.
- Available in both threaded and butt weld ends.

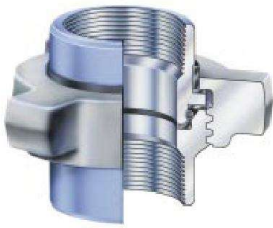
**FIGURE 206****Blue Nut, Grey Subs**

- Cold working pressure – 2,000 PSI.
- Recommended for Oil, water, and gas applications in corrosive environment.
- Secondary seal (O-Ring) to provide an additional sealing.
- Cup and cone provide “zero clearance against extrusion”.
- Available in threaded & butt weld
- All sizes available in sour service

**FIGURE 207****Blue Nut, Grey Sub**

- Cold working pressure – 2,000 PSI
- Used to blanking the end of line- ‘O’ ring cap provides leak-free seal.
- Connection cap can be tapped for pressure gauge or valve.
- Available in both threaded and butt weld ends
- Interchangeable with figure 200 and 206 unions

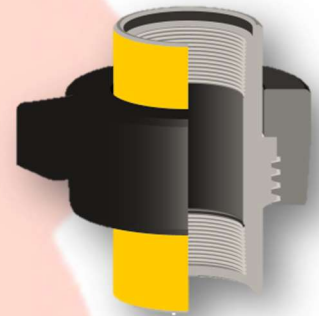


**FIGURE 211****Gary Nut, Blue Subs**

- Cold working pressure – 2,000 PSI
- No metal-to-metal contact between the subs
- Laminated insulating rings provide 35 million Ohms resistance across the union. O-ring in male sub provides a positive primary seal.
- Resilient seal ring in female sub provides secondary protection from corrosion.
- Available in threaded ends

**FIGURE 300****Grey Nut, Yellow Subs**

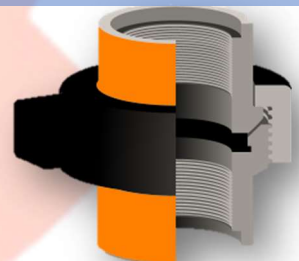
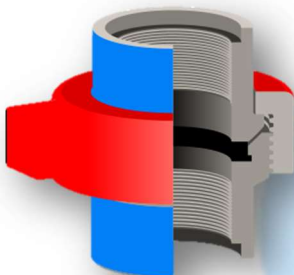
- Cold working pressure – 2,000 PSI
- 'Flat face' design facilitates straight breakout of connected components such as valve or fittings for repair or inspection.
- Available in threaded ends
- ½" Union is Zinc Plated and Grey in colour.

**FIGURE 400****Black Nut, Red Subs**

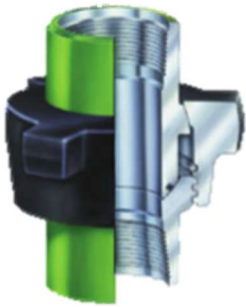
- 2" to 4" sizes CWP is 4,000PSI.
- 6" to 12" size CWP is 2,500PSI.
- Mainly used for manifold pumping and mud pumping.
- Available in both threaded and butt weld ends.
- 3" through 12" sizes have O-ring for primary seal.

**FIGURE 602****Black Nut. Orange Subs**

- Cold working pressure – 6,000 PSI
- Used in Oil, Water, Gas and Mud Application.
- Lip type elastomer seal provide primary sealing.
- Usage in manifold and mud service.
- Available in both threaded and butt weld ends.

**FIGURE 1002****Red Nut, Blue Subs**

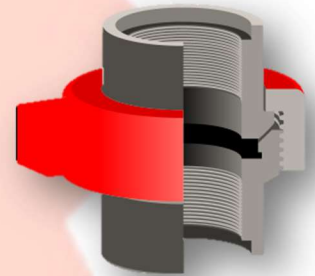
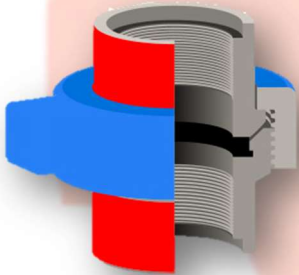
- Cold working pressure – 10,000 PSI.
- Used in High Pressure application for choke lines, kill lines, cementing and acidizing.
- Replaceable lip type elastomer seal Provide primary sealing up to 4".
- 5" and 6" are 7,500 PSI for standard service.
- 5" and 6" are 5,000 PSI for sour service.
- Available in both threaded and butt weld ends.
- 6" unions are only available in butt weld for sour service.

**FIGURE 1003****Black Nut, Green Sub**

- Cold working pressure – 10,000 PSI
- Misaligning unions are used in high pressure applications where the lines are not aligned.
- 5" and 6" are 7,500 PSI for standard service
- 5" and 6" are 5,000 PSI for sour service
- 5" unions are available in butt weld ends only.
- Available in both threaded and butt weld ends
- Replaceable O-ring on male sub provides primary sealing.

**FIGURE 1004****Red Nut, Grey Subs**

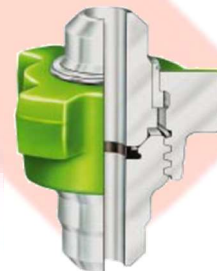
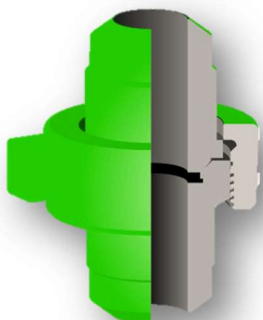
- Cold working pressure – 10,000 PSI 5" to 6" sizes
- Available in forged steel for butt weld connections
- Schedule XXH
- Available in threaded & butt weld ends
- Face of male & female subs is perfectly square.
- Provided with lip type seal ring.

**FIGURE 1502****Blue Nut, Red Subs**

- Cold working pressure – 15,000 PSI
- Used mainly in Choke/Kill Lines, Cementing, acidizing.
- Available in threaded, Butt weld and non-pressure thread sealing ends.

**FIGURE 2002****Green Nut, Grey Subs**

- Cold working pressure – 20,000 PSI.
- Available in butt weld end connections.
- Provided with lip type seal ring.
- Used in high pressure applications.

**FIGURE 2202****Green Nut, Green Subs**

- Cold working pressure – 15,000 PSI.
- Used in sour gas services.
- Lip type rubber seal with ss anti extrusion ring.
- Confirm to NACE MR-01-75 standards.
- Available in Butt Weld only

## Mud Tank Seal Union-150 PSI CWP



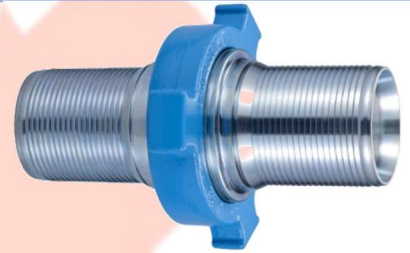
- Recommended for Mud tanks, mud tank connection lines, and pump suction flanges.
- Nitrile seal provides a compression seal.
- Elongated cross-section of seal ring ensures greater sealing surface when in contact with the pipe.
- Accepts up to 7° pipe misalignments.
- 6, 8 and 10" sizes require butt-weld.

**Sizes- 3", 4", 6", 8", 10", 12", 14", 16".**

## Frac Subs/Hose Union / Suction Hose Union's

**500 PSI (34 bar) Maximum Line Pressure, 4", 5" & 6" size**

- We manufacture a range of suction-hose and Frac Tank Unions in 4", 6" and 8"
- Size in pressure ranging from 500 to 1,000 PSI CWP.



## PUP JOINTS

### Integral Pup Joints

- Integral Pup joints are made of high-quality alloy steel, integrally constructed, forged ended, and features seamless upset construction. Detachable wing union end connections enable fast, easy make-up and break-out of temporary flow lines.
- Pup joints are hydrostatically tested at 1.5 times the rated cold working pressure.
- Available from 2" to 3" sizes, lengths for pup joints range from 1 foot to 12 feet.
- Cold Working pressure 10000 PSI for H2S service and 15,000 psi for Standard Service.



### NPST Pup Joints

- NPST Pup joints are made of high-quality seamless pipeline with male and female detachable Hammer Unions.
- Available from 2" to 3" sizes, lengths for pup joints range from 2 foot to 20 feet.
- Cold Working pressure 10000 PSI for H2S service and 15,000 psi for Standard Service.

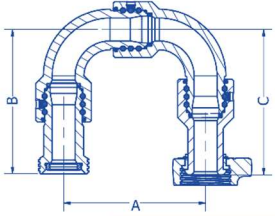


# SWIVEL JOINT

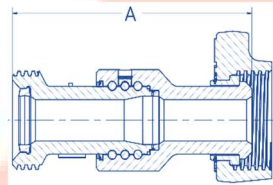
## Long Radius Swivel Joint

Available in sizes 2" & 3" up to 15,000 PSI

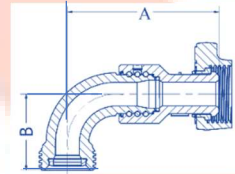
- Long Sweep Joints have long radius elbows for better flow characteristics.
- Recommended for high pressure applications.
- Field repairable and easy to use.
- Available in both union and threaded ends.



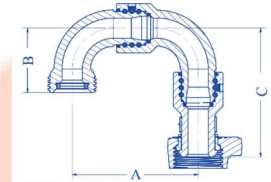
STYLE 10 MXF



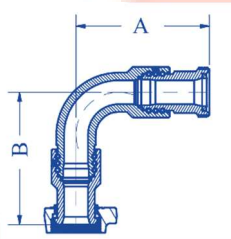
STYLE 20 MXF



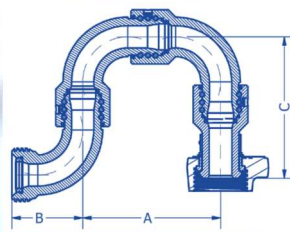
STYLE 30 MXF



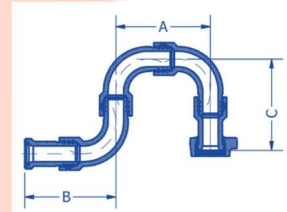
STYLE 50 MXF



STYLE 60 MXF



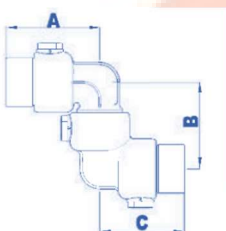
STYLE 80 MXF



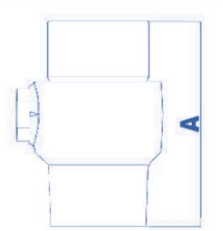
STYLE 100 MXF

## Short Radius Swivel Joint

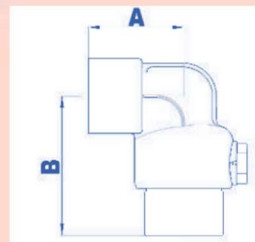
- Smooth rotation without sacrificing strength and integrity of steel.
- Superior hardened ball races ensure uniform surface hardness and depth for longer life under severe thrust and radial loading
- Standard Swivel Joints are provided with API line pipe threads.
- Other end connections are available on request.
- Material meets the requirements of the ASTM / ANSI Standards.



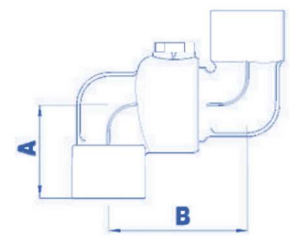
STYLE 10



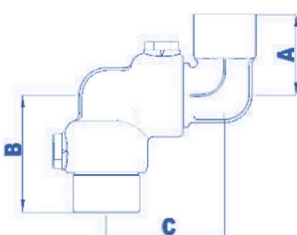
STYLE 20



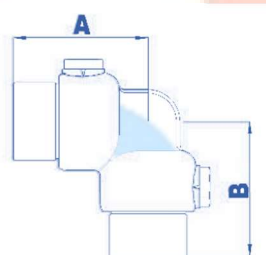
STYLE 30



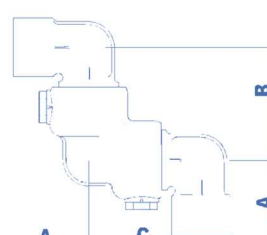
STYLE 40



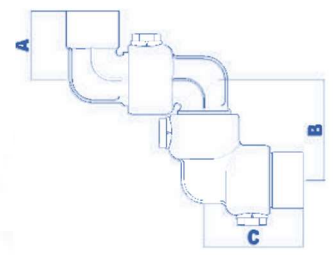
STYLE 50



STYLE 60



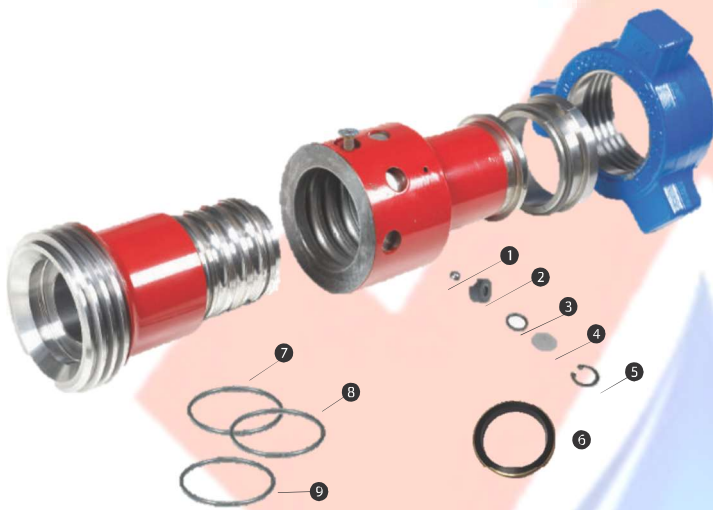
STYLE 70



STYLE 80

# REPAIR KIT - SWIVEL JOINT

## Long Radius Swivel Joint



No	Part Description	Qty	
		2"	3"
1	Ball	72	93
2	Ball Plug	3	3
3	Ball Plug O-ring	3	3
4	Ball Plug Cover	3	3
5	Snap Ring	3	3
6	Pressure Seal	1	1
7	Grease O-ring(B)	1	1
8	Grease O-ring(M)	1	1

## Short Radius Swivel Joint

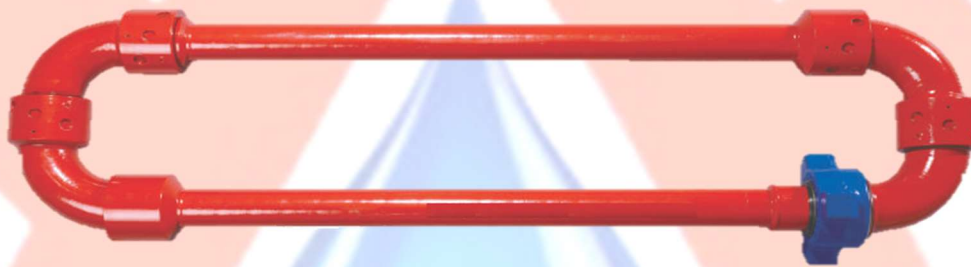


No.	Item	Qty.
1	O-ring	1
2	Pressure Seal	1
3	Ball	52
4	Nipple Nut O-ring	1
5	Nipple Nut	1
6	Grease Fitting	1

## STEEL HOSE LOOPS

High pressure steel hoses incorporate swivel joints of forged steel with superior quality hardened ball races and high-pressure type packing units.

- Available in 2" and 3" of nominal pipe sizes in Standard and Sour Service...
- Suitable for Cementing Lines, Water Lines, Well Testing Lines etc.
- One wing union and one each style 50 and style 10 swivel joints with integral wing union ends.
- Four wing unions and two style 50 or style 10 swivel joints with integral wing union ends.
- Long Radius Steel hoses are suitable for pressures up to 15,000 psi.
- Short Radius steel hoses are suitable for pressures up to 6,000 psi.



**Long Radius Steel Hoses**

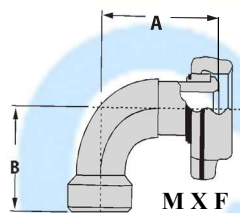


**Short Radius Steel**

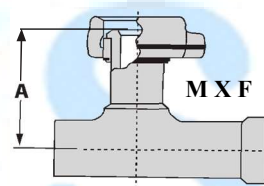
## INTERGRAL FITTINGS



**Long sweep Elbows**



**Long sweep Elbows**



**Elbow**

## CROSSOVERS

Adapters and Crossover are available in high quality forged construction with threaded, integral & Welded hammer lug union end connection. Also available in different configurations on customer request.



## FLANGES

Manufacturer of various types of Flanges and pipe fittings required in the oilfield, Petrochemical and different processes industries, Precision matching and unparalleled dedication to quality excellence which has kept us in the fore front of oil industry. We also manufactured adapters flanges which are available in various bore sizes and with quick union connection compatible, Flange /Adapters are supplied for standard or H2S service and working pressure up to 15,000 PSI.



**Threaded Flange**



**Adapter Flange**



**Blind Flange**



**Weld neck Flange**

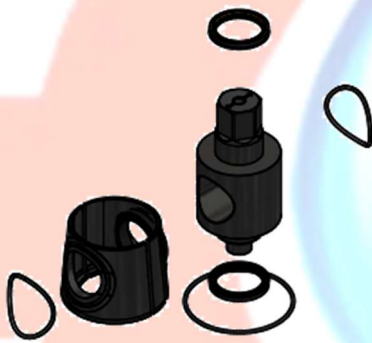
## PLUG VALVE

- Standard service is used up to 15,000psi and tested at 22,500psi.
- H2S service is used up to 10,000psi and tested at 15,000psi.
- Valve Parts are Interchangeable with most major designs
- Suitable for variety of high-pressure applications such as fracturing, cementing, acidizing etc.



Plug Valves are a lubricated, tapered seal, quarter-turn plug valve for rapid full open or close operation. The valve cavity is tapered to ensure uniform seating of the sealing inserts, providing a reliable seal at the full range of pressures. CES Plug Valves are presently offered in 2" x 1", 2" x 2" and 3" x 3" configurations with Fig. 1502 Hammer unions ends. CES Plug valves can be offered specifically with the end connections or combinations to suit the specific field application.

### Plug Valve Repair Kit Composition



BILL OF MATERIAL		
No.	Description	Qty.
1	Plug Seal	2
2	Plug	1
3	Insert	2
4	Insert O-ring	2
5	Adjusting Nut O-ring	1

## ADJUSTABLE CHOKE MANIFOLD

CES manufacture a range of Manifolds for applications like choke & kill lines, standpipe, and high-pressure pumping in sizes up to 4-1/16" and pressures up to 15,000 PSI. Customized manifolds to specific requirements can be ordered.



• 5 Valve Manifold ,

9 Valve Manifold

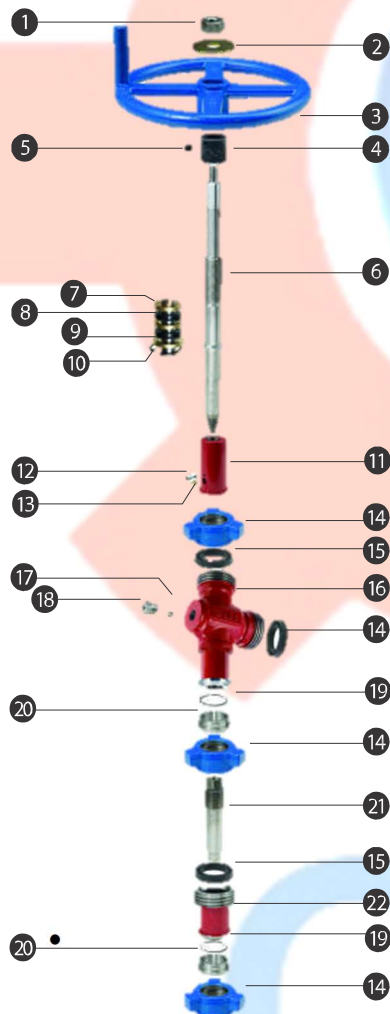
# CHOKE

Adjustable and positive choke tees are primarily used in choke manifolds, flow thru manifolds and test manifolds. Various forged-body configurations are available in 2-inch and 3-inch sizes, for up to 15000 psi cold working pressure. These Adjustable and Positive Chokes are also available in sour gas configuration.



## Adjustable Choke

- 2" and 3" Fig 1502 MXF with 3/4", 1" and 2" Orifice
- Standard and H2S Service are used up to CWP 15,000 psi, tested at 22,500 psi Hammer Union end connection.
- Forged alloy steel body, stainless steel 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



### BILL OF MATERIAL

No.	Description	Qty.
1	Stem	1
2	Washer	1
3	Hand Wheel	1
4	Indicator	1
5	Lock Screw	1
6	Choke Stem	1
*7	Stem Guide	2
*8	Stem	2
*9	Junk	1
*10	Snap	1
11	Choke Bonnet	1
12	Thumb Screw	1
13	Grease Fitting	1
14	Wing	3
15	Lip Seal	2
16	Choke Body	1
17	Plug	1
18	Stem	1
19	Retainer Ring	2
20	Segment	6
21	Choke Seat	1
22	Choke Saver	1

\* Included in Repair kit

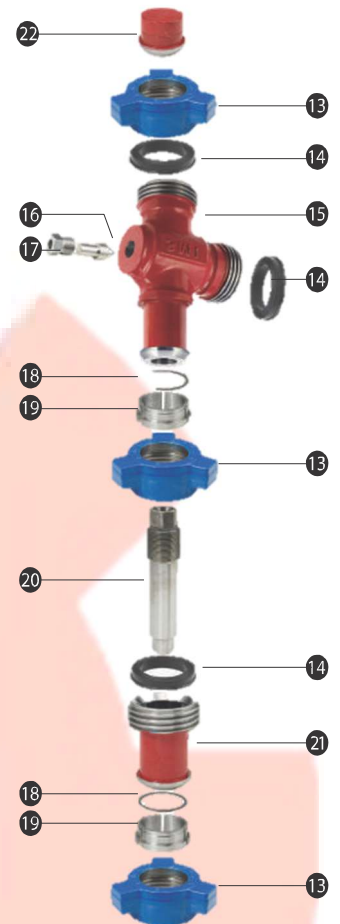
## Positive Choke

- 2" and 3" Fig 1502 M x F with 3/4", 1", and 2" Orifice
- Standard and H2S Service are used up to CWP 15,000 psi, Tested at 22,500psi.
- Hammer Union End Connection
- Forged alloy steel body, stainless steel, 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.

BILL OF MATERIAL		
No.	Description	Qty.
13	Wing Nut	3
14	Lip Seal	2
15	Choke Body	1
16	Plug Stem	1
17	Stem Cap	1
18	Retainer Ring	2
19	Segment	2
*20	Choke Bean	1
21	Choke Saver	1
22	Blind Male Sub	1

\*Included in repair kit



## CHOKE SEAT AND STEM

A choke is used to control the flow of fluids and is usually mounted on or close to the Christmas tree. High pressure gas/oil, with abrasive sand minerals pass through these chokes at high-speed causing a rapid wear. CES Bean Chokes have steel housings which may be nitride and are lined with Tungsten Carbide or Zirconia Ceramic inserts, to protect them from corrosive, erosive and abrasive wear.

These are mated with a precise diameter seat that forms the choke, through which all the abrasive/ corrosive fluids must pass. Beans are available in complete range of sizes (4/64 to 128/64) generally identified by the choke diameter stated in 64th of an inch. CES offers Tungsten Carbide / Zirconia lined choke beans & Tungsten Carbide stems for the above makes, other custom designed flanged positive chokes, threaded adjustable chokes & stems/ seats.





#### Choke Bean Available Sizes

Sr. No.	Type	Orifice Size
1	Internal Hex	4/64" to 48/64"
2	External Hex	49/64" to 64/64"



API MATERIAL CLASS	Body	Bonnet	Choke Trim (Stem, Seat, Bean)
AA & BB General Service	Alloy steel	Alloy steel	Stainless steel or stainless steel and tungsten carbide
CC Non-Sour, High CO <sub>2</sub>	Stainless steel	Stainless steel	Stainless steel or stainless steel and tungsten carbide
DD & EE- 0.5 Sour, Low CO <sub>2</sub> †	Alloy steel	Alloy steel	Stainless steel and tungsten carbide
FF - 0.5 Sour, High CO <sub>2</sub> †c	Stainless steel	Stainless steel	Stainless steel and tungsten carbide
HH High H <sub>2</sub> S, High CO <sub>2</sub> †	Corrosion resistant alloy	Corrosion resistant alloy	Corrosion resistant alloy and tungsten carbide

\*In compliance with NACE Standard MR-01-75

## PIPE NIPPLES

#### Specification: -

- **Material:** -  
-Carbon steel Seamless steel Pipe conforms to ASTM A 106 GR. B.  
-Stainless steel Pipe conforms to ASTM/ASME A182.
- **Dimensions:** -Seamless Steel Nipple Design / Dimensions conform to ASTM A733. Contact CES for exact dimensional information.
- **Threading:** -NPT Threads on Nipples conform to ASME B1.20.1
- **Marking:** -Manufacturer's Symbol, Material Grade, heat code
- Standard length of pipe nipples as per below table, contact CES for custom length.



# BULL PLUGS & SWAGE NIPPLES

## Specification: -

- **Material:** - Carbon Steel / alloy steel / Stainless steel.
- **Threading:** - Line Pipe – API 5B, NPT – ASME B1.20.1 as applicable
- **Weld Bevel:** ASME B16.9.
- **Dimensions:** -MSS SP-95
- **Marking:** - Manufacturer's Symbol, Material Grade, heat code
- **NACE MR-01-75** – as applicable
- **Coating:** -Zinc Electroplating / paint as applicable



# Couplings, Hex Plugs & Bushings

## Specification: -

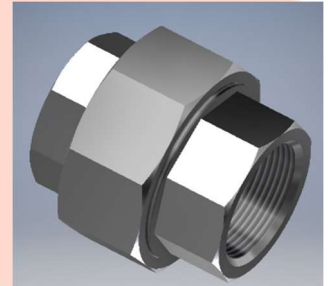
- **Material:** - Carbon Steel / alloy steel / Stainless steel.
- **Threading:** - NPT – ASME B1.20.1 as applicable
- **Dimensions:** -ASME B16.11
- **Marking:** - Manufacturer's Symbol, Material Grade, heat code



# Hex Unions (Threaded / Socket Head)

## Specification: -

- **Material:** - Carbon Steel / alloy steel / Stainless steel.
- **Threading:** - NPT – ASME B1.20.1 as applicable
- **Dimensions:** -ASME B16.11
- **Marking:** - Manufacturer's Symbol, Material Grade, heat code
- **Pressure:** - 3000 PSI



# High Pressure Grease fitting / Bonnet Grease fittings

## Specification: -

- **Material:** - Carbon Steel / alloy steel / Stainless steel.
- **Threading:** - NPT – ASME B1.20.1 as applicable
- **Dimensions:** -ASME B16.11
- **Marking:** - Manufacturer's Symbol, Material Grade, heat code
- **Pressure:** - 10000 PSI, 15000 PSI,
- **Application:** -Plug valve, Gate valve



# STUD BOLTING

- **Stud Bolt:** -Used in high pressure bolting situations for pipeline, drilling, petroleum / petrochemical refining, and general industry for sealing and flange connections **all-thread, Double-end stud, tap-end stud, and stud bolts.**
- **All-thread studs (Continuous thread):** - All-thread studs bolt is a continuous threaded stud with 2 heavy hex nuts,
- **Double-end studs:** -Double end studs are equal thread lengths on both ends used for flange bolting.
- **Tap-end studs:** -Tap end studs are long thread at one end short thread on other end, short end thread called Tap-end threads, tightened in tapped holes,
- **Hex Bolts:** -bolt with Hex head used for general purpose.
- **Material Specification:** -as per API 20E latest edition.
  - ASTM A 193 Gr. B7, B7M
  - ASTM A194 Gr. 2H, 2HM, 7, 7M,
  - ASTM A320 Gr, L7, L7M
- **Dimensions & Threading:**
  - ASME B1.1 – UN/ UNR
  - ASME B18.31.2 - Studs
  - ASME B18.2.2 - Nuts
  - ASME B18.2.1 – Bolts
- **Our Capability:**
  - Quality control: - Quality control requirements compliance as per API 20E controlled material procurement, material identification, dimensional inspection, Hardness, UT, MP, Thread gauging, equipment calibration, final marking, and traceability, sampling, heat-treatment, chemical testing, physical testing.
  - Production: - cutting, turning, drilling, threading (External, Internal), coating (Phosphating, Xylan),
  - Marking and packing: - customer specific marking & seaworthy wooden box packing to ensure threads safety.
- **QMS: -ISO 9001:2015**
  - Inspection report using calibrated equipment's.
  - Work test certificate as per EN10204 – 3.1
  - All test results provided on certificates from NABL accredited labs.





# CANNY ENGINEERING SERVICES

Manufacturer and supplier of oilfield & Engineering Equipment's

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