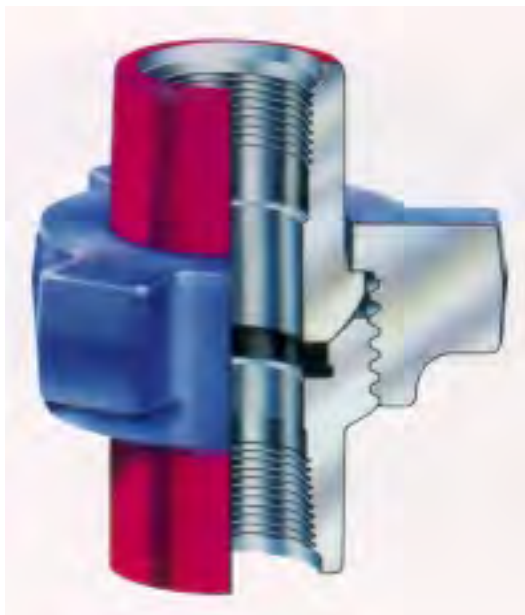


Weco Style Hammer Unions



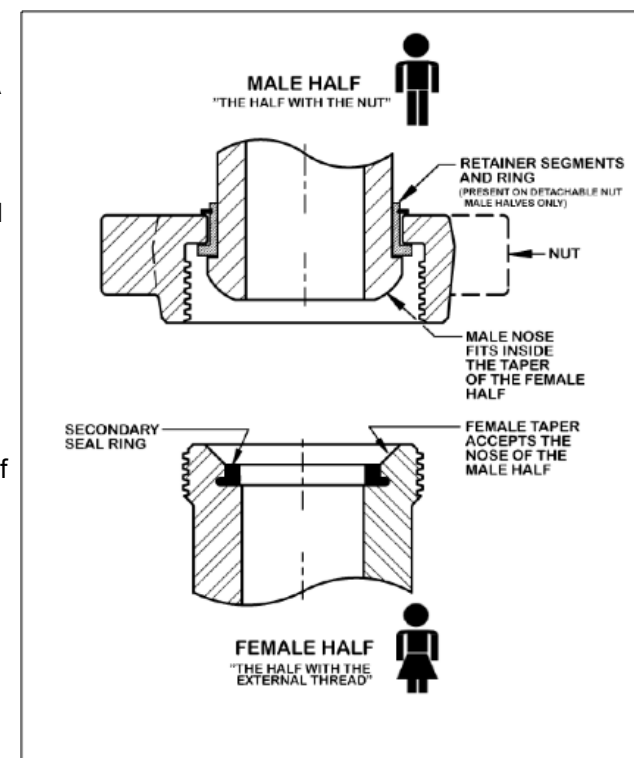
MisMatched Unions have caused fatal accidents !

HOW TO IDENTIFY A MALE AND/OR FEMALE HALF OF A FIGURE NUMBER 602, 1002, 1502, 2002, OR 2202 HAMMER WING UNION:

The female half has an external thread (commonly recognised as a male thread). The male half has a nut with an internal thread (commonly recognised as a female thread). See illustration on right hand side.

The nose of the male union half fits into the inward taper of the female union half. The nut secured to the male union half screws onto the external threads of the female union half to achieve connection of the two halves, and striking the wings of the nut with a hammer provides the force to tighten the connection to achieve a seal.

Firm close contact of the male union half nose with the taper of the female union half provides a primary metal to metal seal. Most unions have a secondary elastomeric seal as a backup to the primary seal.



We stock a complete line of Hammer Unions (wing unions) from Fig 100 thru Fig 1502 in NACE, H2S 1" to 10", weld and screwed ends, API licensed manufacturer, sold in Australia for over 20 years to all majors. We stock standard and sour H2S specification. See our oilfield products catalogue at our website. www.globalsupplyline.com.au

DISCLAIMER: -

This is a general overview. Information provided should not be used to make your operational or design decision. We accept no liability or responsibility for the information and do not guarantee it's correctness.

Weco Style Hammer Unions

... what are they? ... who makes them?

- ... connectors for temporary pipe and flow lines installations.
- FMC acquired the original Weco company, in the 1950s.
- The design is old, and manufactured by many companies.
- ... used in steel and chemical plants, on marine dredging vessels, in strip mines, and in the oil industry.
- ... more than a dozen design variations;
... designated by
the nominal pipe diameter and a 'Fig' number

i.e. 2" 1502.



Weco Style Hammer Unions

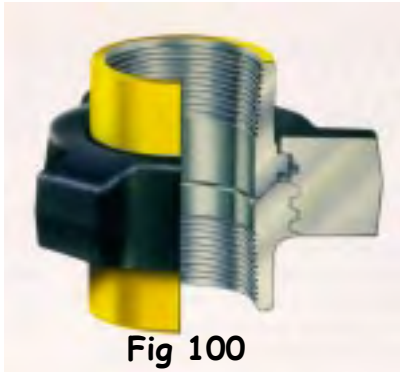


Fig 100
1000 psi
2" to 8"

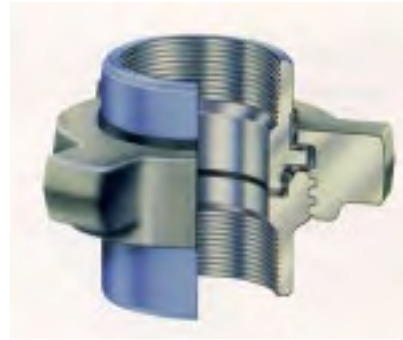


Fig 211
2000 psi
1" to 4"

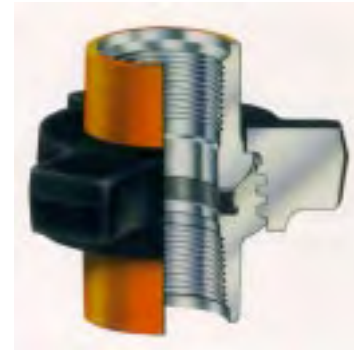


Fig 602
6000 psi
1" to 4"

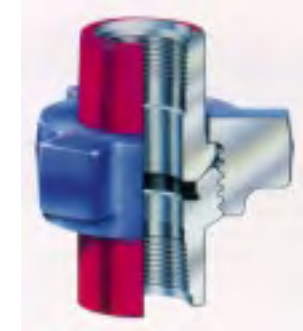


Fig 1502
15,000 psi
1" to 4"

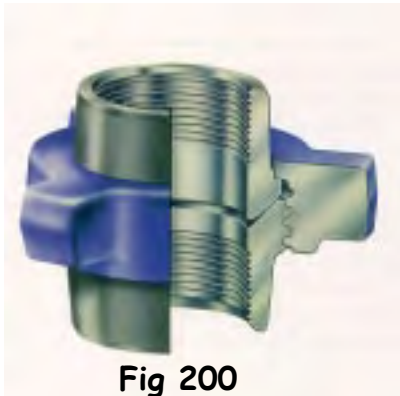


Fig 200
2000 psi
1" to 4"



Fig 400
2500 to 4000 psi
2" to 12"

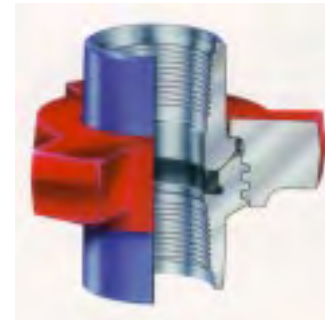


Fig 1002
10,000 psi
1" to 6"

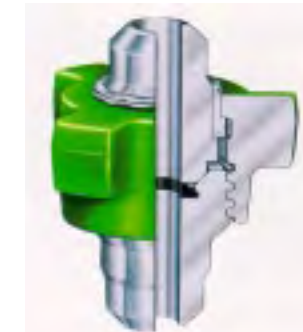


Fig 2002
20,000 psi
2" or 3"

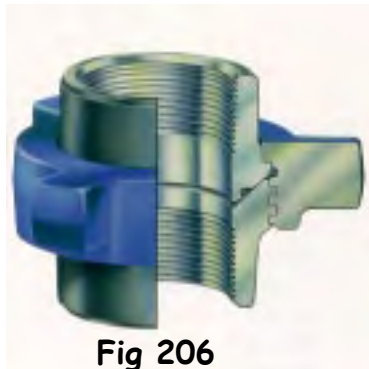


Fig 206
2000 psi
1" to 10"

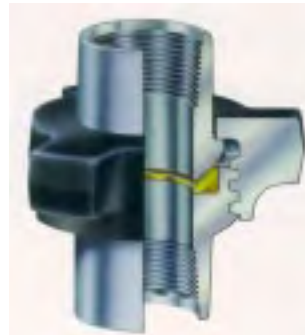


Fig 600
6000 psi
1" to 4"



Fig 1003
10,000 psi
2" to 5"

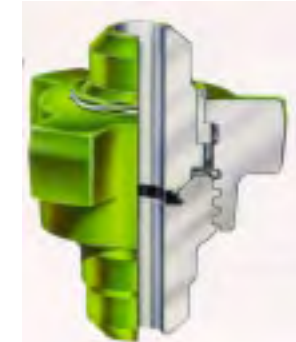
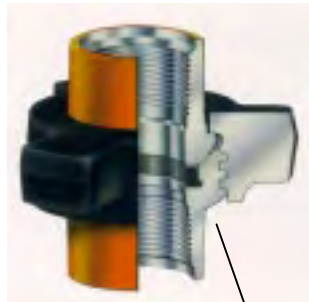


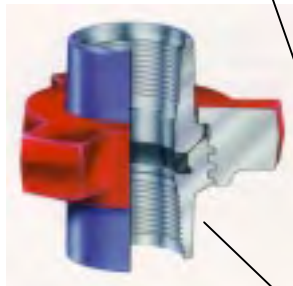
Fig 2202
15,000 psi - H₂S
2" to 3"

The First Hazard

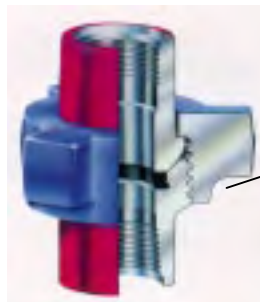
A 2" 1502 Wing Nut will make up to a 2" 602 or 1002 thread half but will fail ... **explosively**.



602



1002



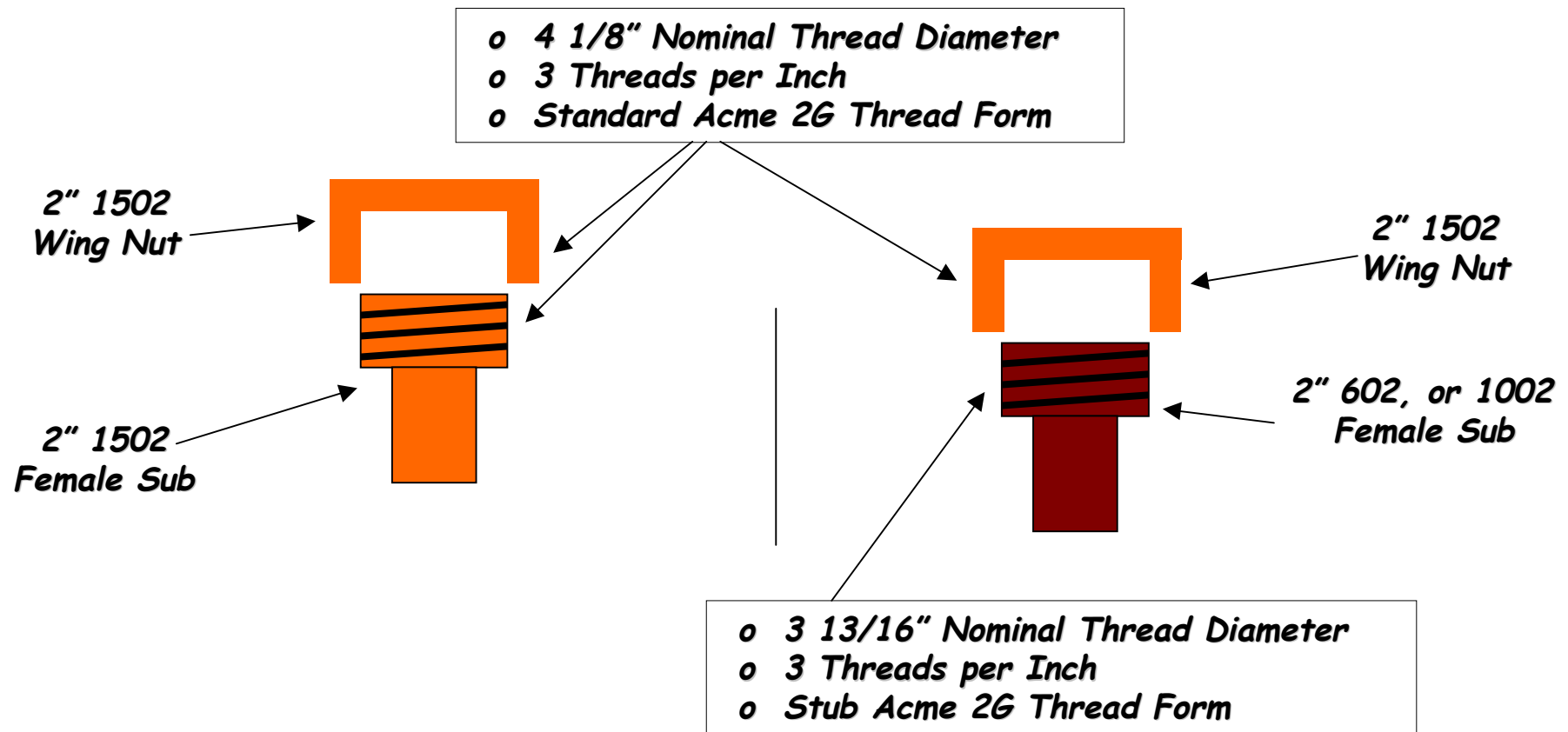
1502

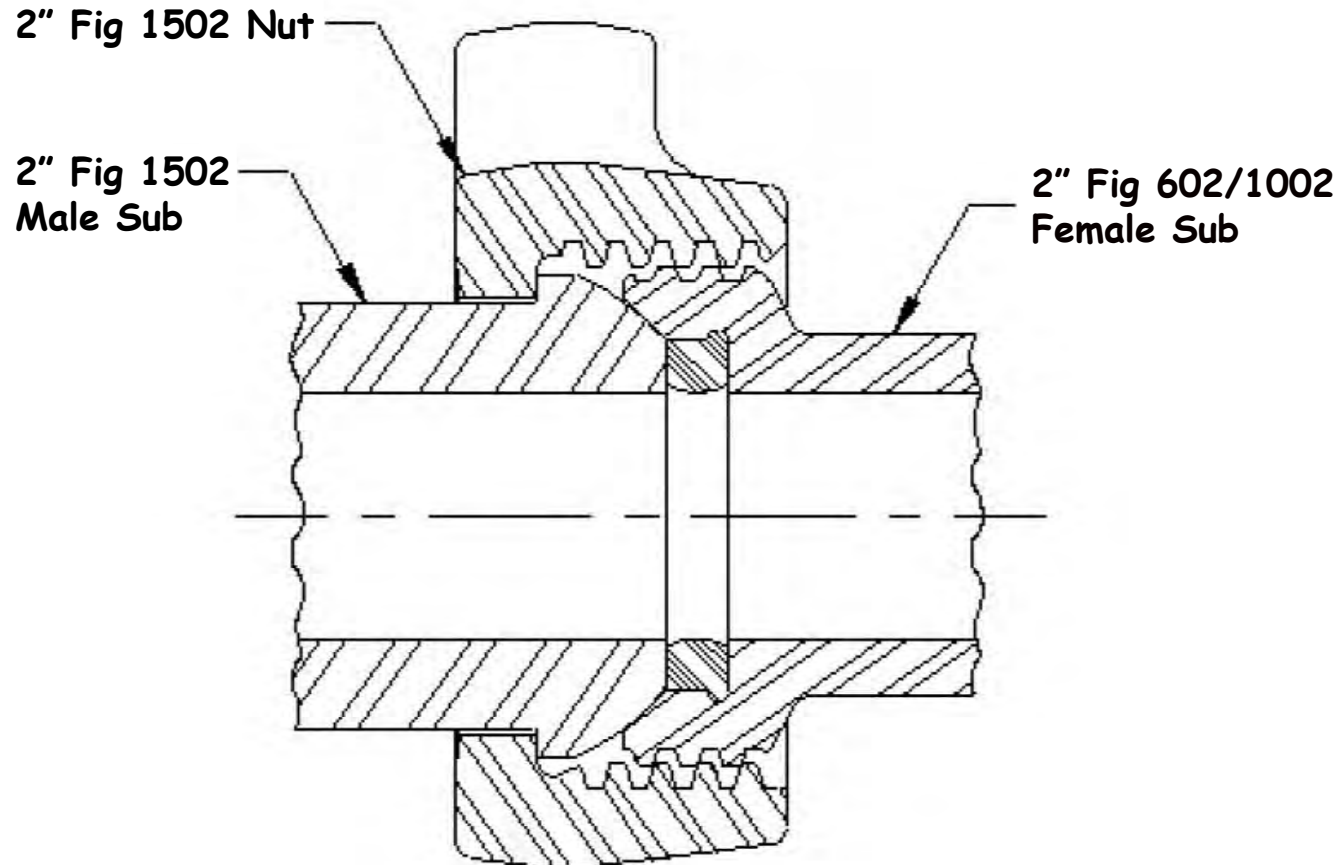
Series (Figure)	Standard Working Pressure	Nominal Pipe Sizes (dia - inches)
100	1,000	2, 2½, 3, 4, 6, 8
200	2,000	1, 1¼, 1½, 2, 2½, 3, 4
206	2,000	1, 1¼, 1½, 2, 2½, 3, 4, 6, 8, 10
207	2,000	3, 4, 6, 8, 10
211	2,000	1, 1¼, 1½, 2, 2½, 3, 4
400	2,500	5, 6, 8, 10, 12
400	4,000	2, 2½, 3, 4
600	6,000	1, 1½, 2, 2½, 3, 4
602	6,000	1, 1¼, 1½, 2, 2½, 3, 4
1002	10,000	1, 1¼, 1½, 2, 2½, 3, 4, 5, 6
1003	10,000	2, 3, 4, 5
1502	15,000	1, 1½, 2, 2½, 3, 4
2002	20,000	2, 3
2202	15,000	2, 2½, 3

**Potentially Fatal
Combinations**

The First Hazard

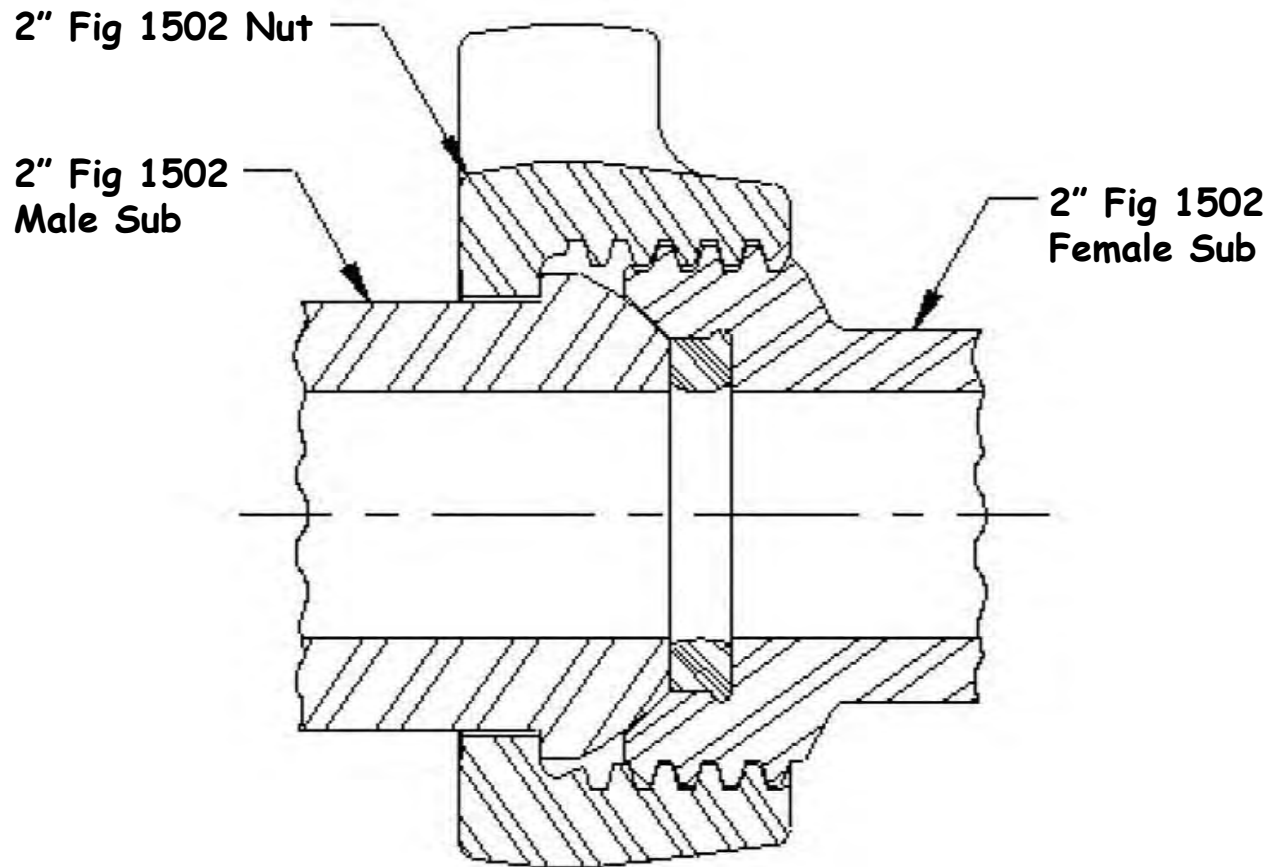
A 2" 1502 Wing Nut will make up to a 2" 602 or 1002 thread half and will hold some pressure ! However ...
... it will fail **explosively**.





Incorrect Combination

2" 602 Thread Half (Female Sub with 2" 502 Wing Nut (Male Sub)

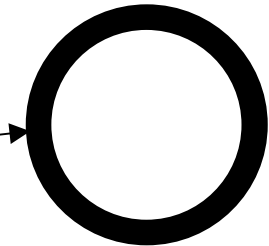


Correct Combination
2" 1502 on both sides

Prevention

*When there is uncertainty ...
(Connecting to other companies equipment)*

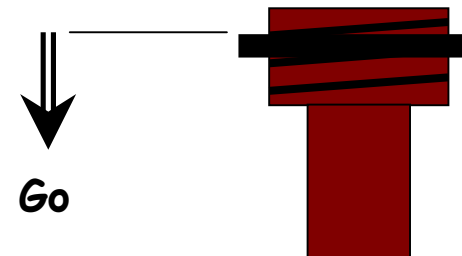
*Use the Go No-Go Gage to be sure you have
a 1502 Thread Half (Female Sub)*



Order from Global Supply Line Pty Ltd
Dowell - p/n 47990000
(Wood machine)



2" 1502

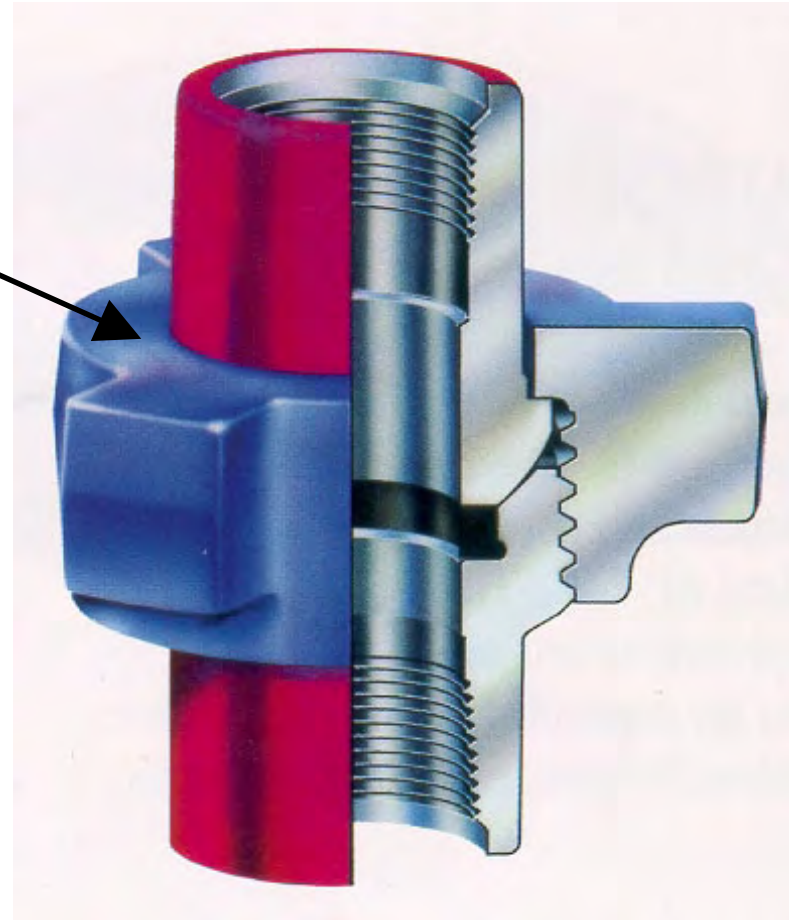


2" 602/1002

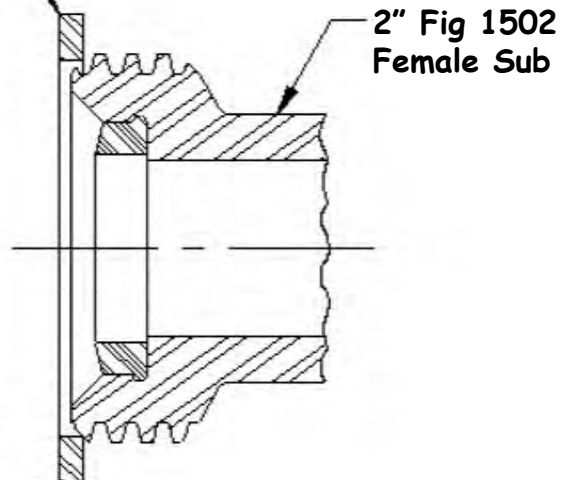
Note:- Isolate any old "Guiberson" Unions in your plant as this style may not safely interchange with major brands

Prevention

Find the Identification Markings (2" 1502) on the Wing Nut ... Here

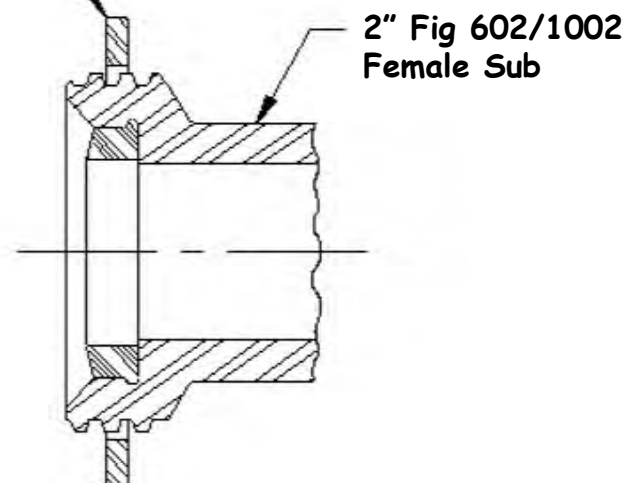


2" Union Gauge Ring
P/N 477990000



Acceptable
Union Gauge Ring will not go over threads

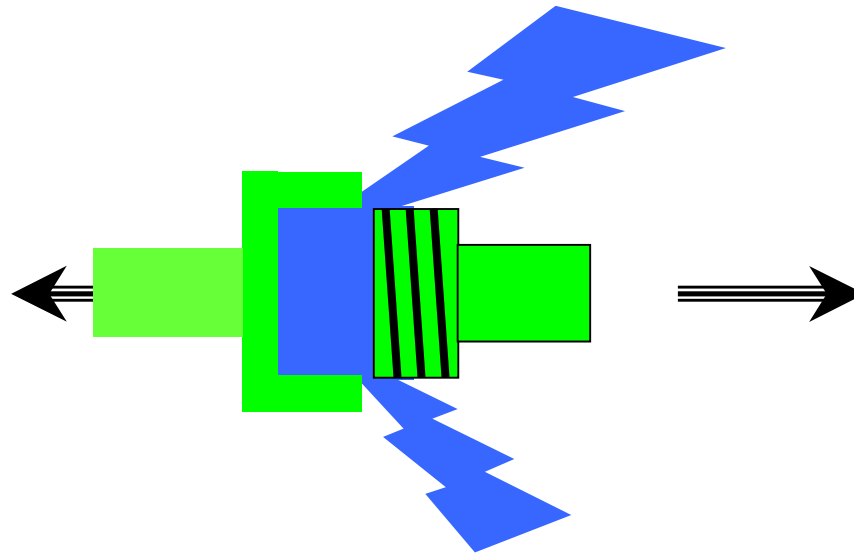
2" Union Gauge Ring
P/N 477990000



Unacceptable
Union Gauge Ring will go over threads

The Second Hazard

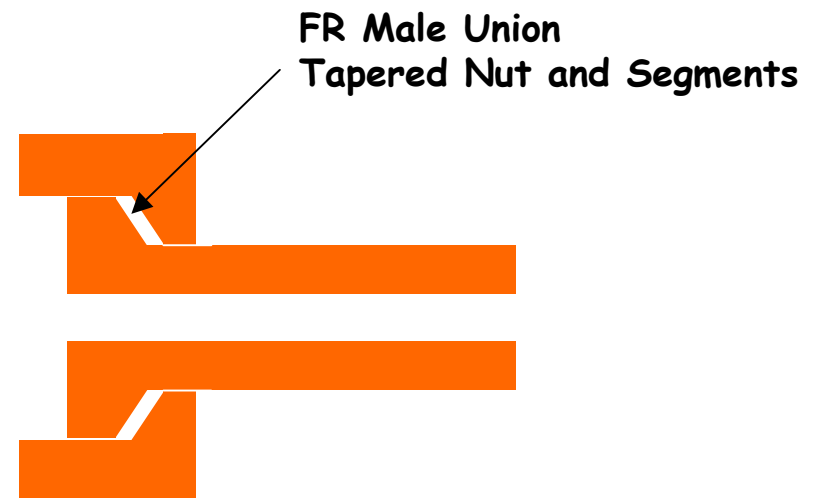
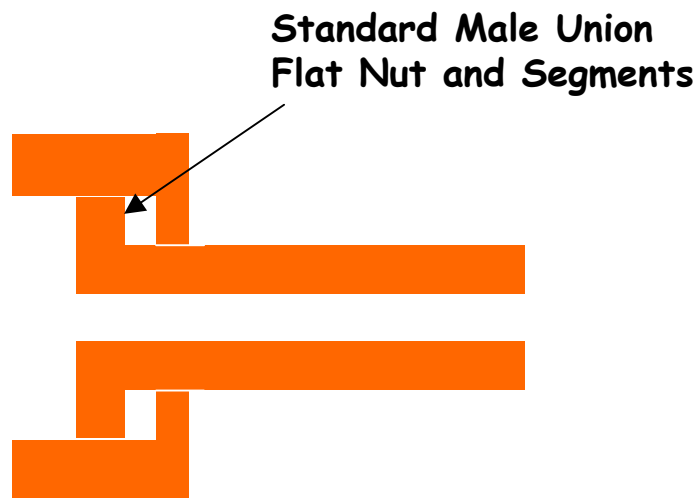
Off brand unions may not hold rated pressure.



Use only High Quality Brand Unions
from reputable supplier

The Fourth Hazard - The FR Male Union

- Since 1995 most brands offer a Fatigue Resistant Male Union
- FR Components will fit on Non FR assemblies
- Mixed assemblies may fail below the rated pressure.



Do not mix FR and Non FR Male Union Parts.

This 1998 IADC Safety Alert followed a fatal accident on a drilling rig in the USA Gulf of Mexico.



ALERT 98-1

Safety Alert

High Pressure Lines and Hammer Unions

A drill crew was drilling ahead when a third party pressure sensor attached to the stand pipe stopped working. The sensor was made up to the standpipe with a size "602" hammer union rated at 6,000 psi working pressure. The crew removed the faulty sensor and replaced it. The hammer union on the new pressure sensor had a size "1502" wing nut rated to 15,000 psi. The "1502" female threads in the wing nut appeared completely made up to the "602" male threads coming off the standpipe.

The mud pumps were engaged and drilling operations resumed. As the mud pump pressure increased, no leaks were detected. Then, at approximately 2,000 psi, the pressure sensor and "1502" wing nut were blown off the standpipe. Fortunately, no one was struck by the projectile or the ensuing stream of drilling fluid. Approximately one barrel of oil-based mud was sprayed on the rig floor before the mud pumps were secured and the standpipe was isolated.

The mishap was considered an environmental incident and a significant near miss, which could have resulted in serious injury or death.

After investigating the incident, operator offered the following suggestions:

1. Only unions with like threads should be made up. Although mismatched threads may appear made up (as they did in this case), only a portion of the threads are engaged and the union will fail under pressure.
2. Both halves of the union should have the same pressure rating.
3. All pressure lines should be inspected to ensure there are no mismatched unions.

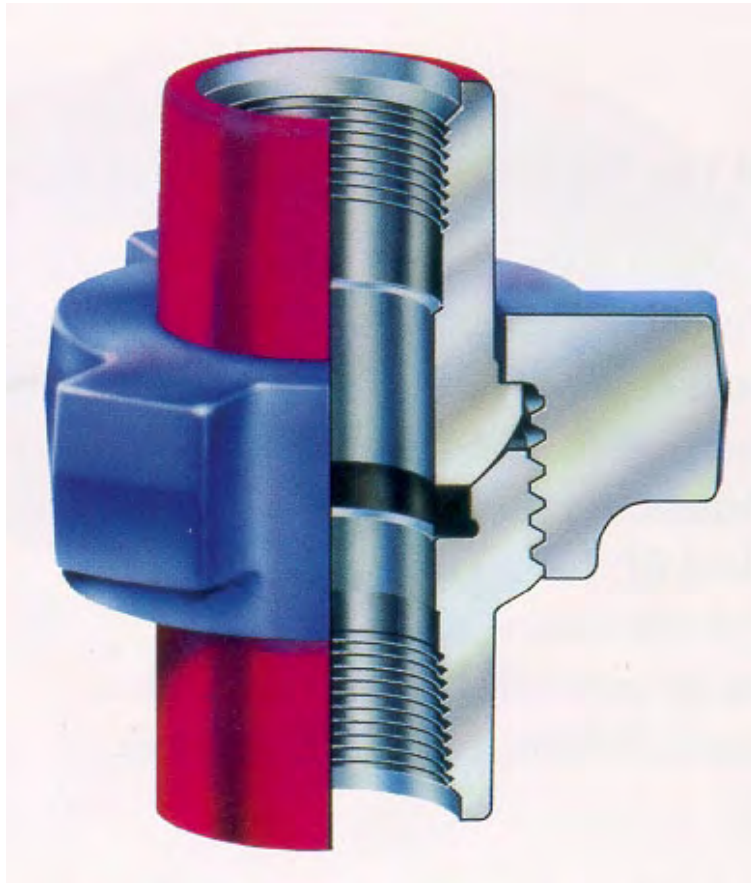
This material is presented for information purposes only. Managers & supervisors should evaluate this information to determine if it can be applied to their own situations and practices.

From : <http://iadc.org/alerts/sa98-1.htm>

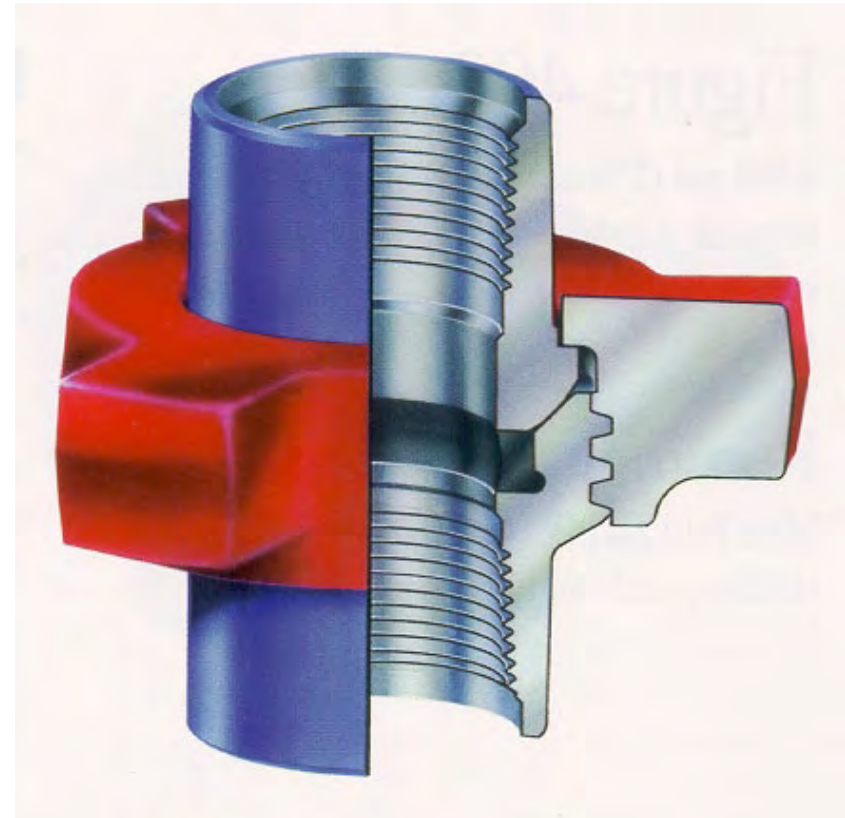
Weco Style Unions - Variations

Series	Pressure Rating				Nominal Pipe Sizes
	Standard Working	Service Test	Sour Gas Working	Service Test	
100	1,000	1,500	NA	NA	2, 2½, 3, 4, 6, 8
200	2,000	3,000	NA	NA	1, 1¼, 1½, 2, 2½, 3, 4
206	2,000	3,000	NA	NA	1, 1¼, 1½, 2, 2½, 3, 4, 6, 8, 10
207	2,000	3,000	NA	NA	3, 4, 6, 8, 10
211	2,000	3,000	NA	NA	1, 1¼, 1½, 2, 2½, 3, 4
400	2,500	3,750	2,500	3,750	5, 6, 8, 10, 12
400	4,000	6,000	4,500	6,000	2, 2½, 3, 4
600	6,000	9,000	NA	NA	1, 1½, 2, 2½, 3, 4
602	6,000	9,000	6,000	9,000	1, 1¼, 1½, 2, 2½, 3, 4
1002	10,000	15,000	7,500	12,000	1, 1¼, 1½, 2, 2½, 3, 4, 5, 6
1003	10,000	15,000	7,500	12,000	2, 3, 4, 5
1502	15,000	22,500	10,000	15,000	1, 1½, 2, 2½, 3, 4
2002	20,000	30,000	NA	NA	2, 3
2202	NA	NA	15,000	22,500	2, 2½, 3

Look Alikes - Weco Style 1502 & 1002

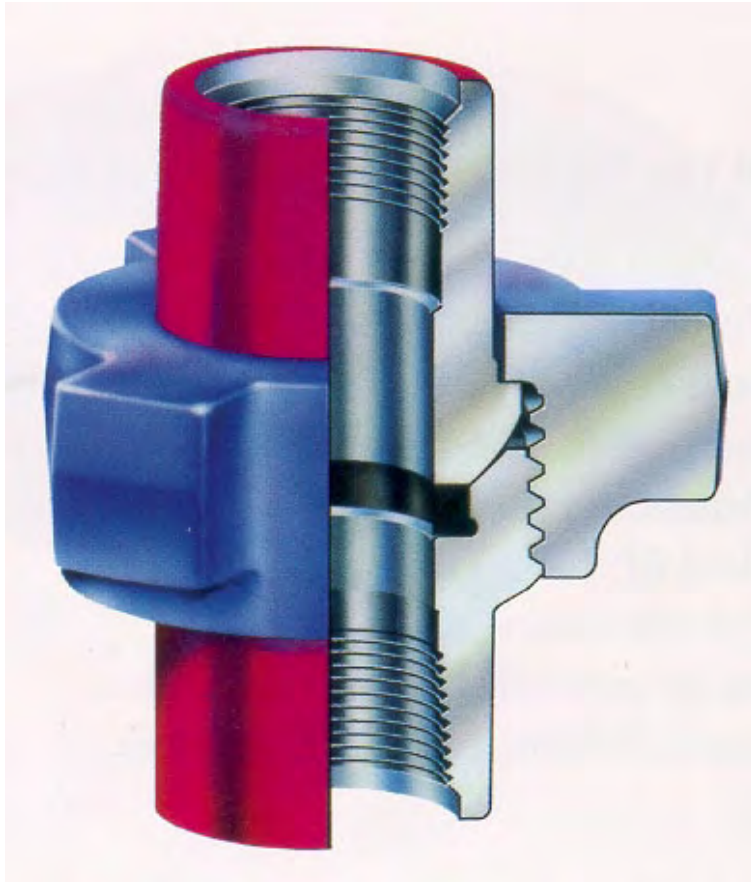


**Weco Style 1502
Hammer Union Assembly**

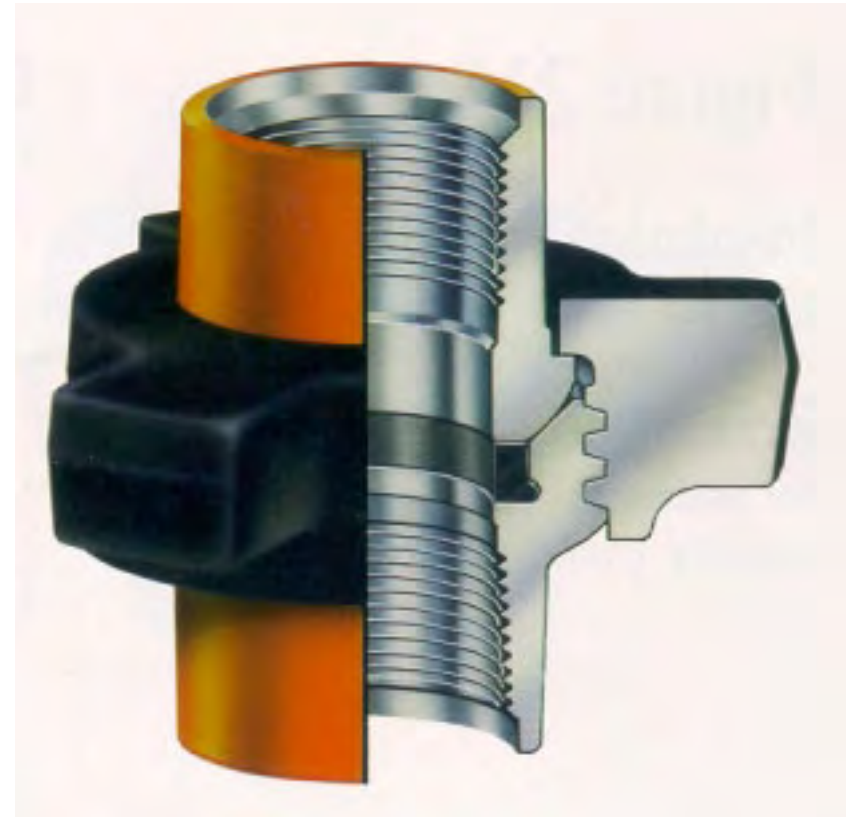


**Weco Style 1002
Hammer Union Assembly**

Look Alikes - Weco 1502 vs 602

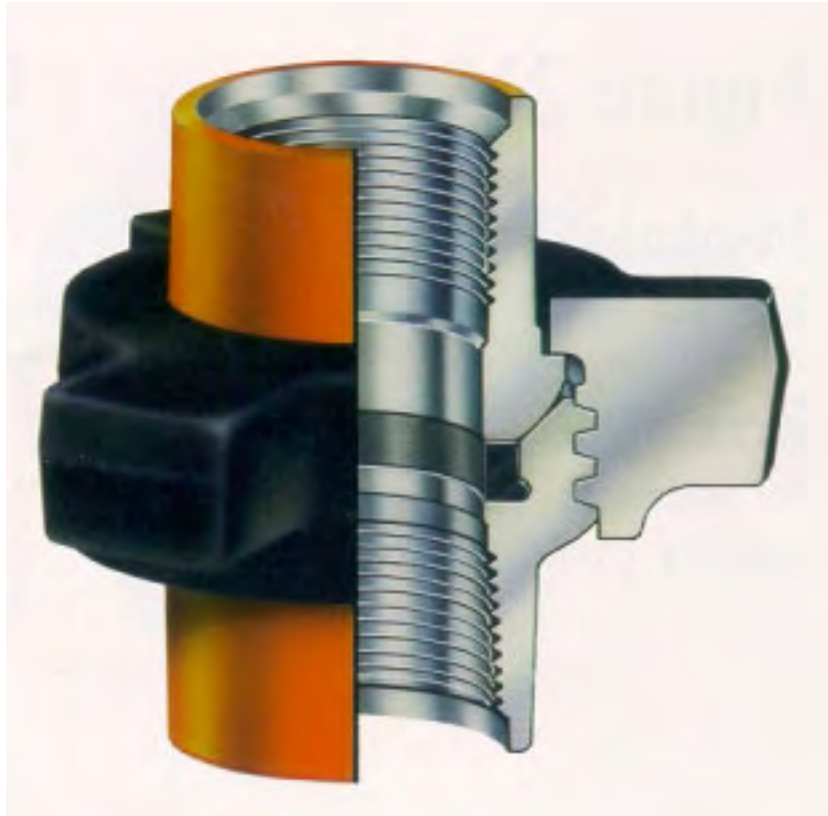


**Weco 1502
Hammer Union Assembly**

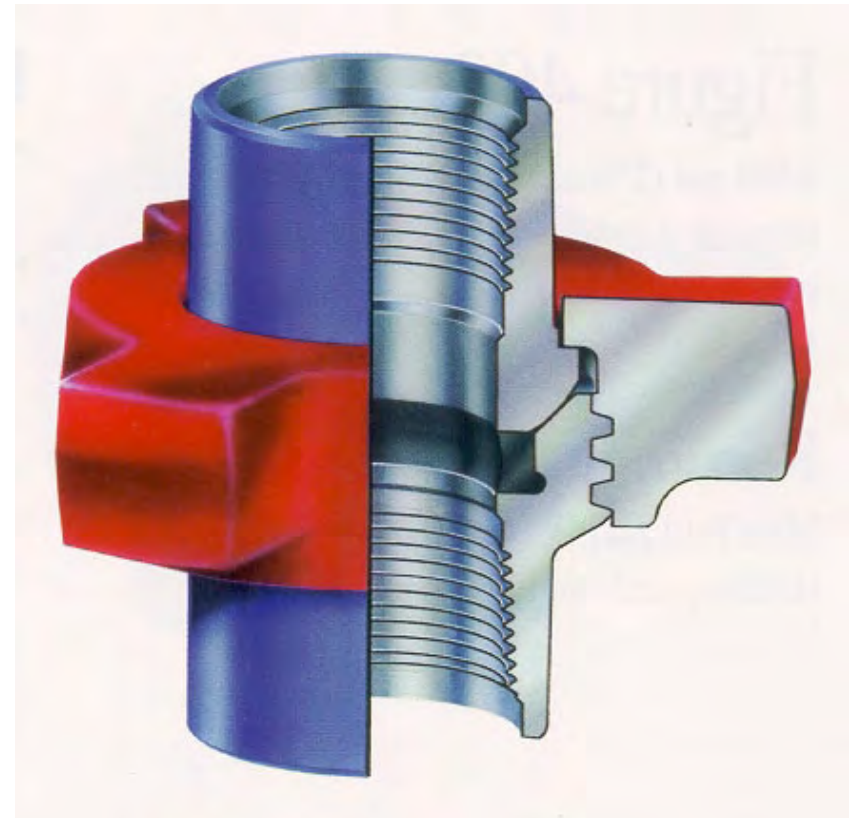


**Weco 602
Hammer Union Assembly**

Look Alikes - Weco Style 602 & 1002



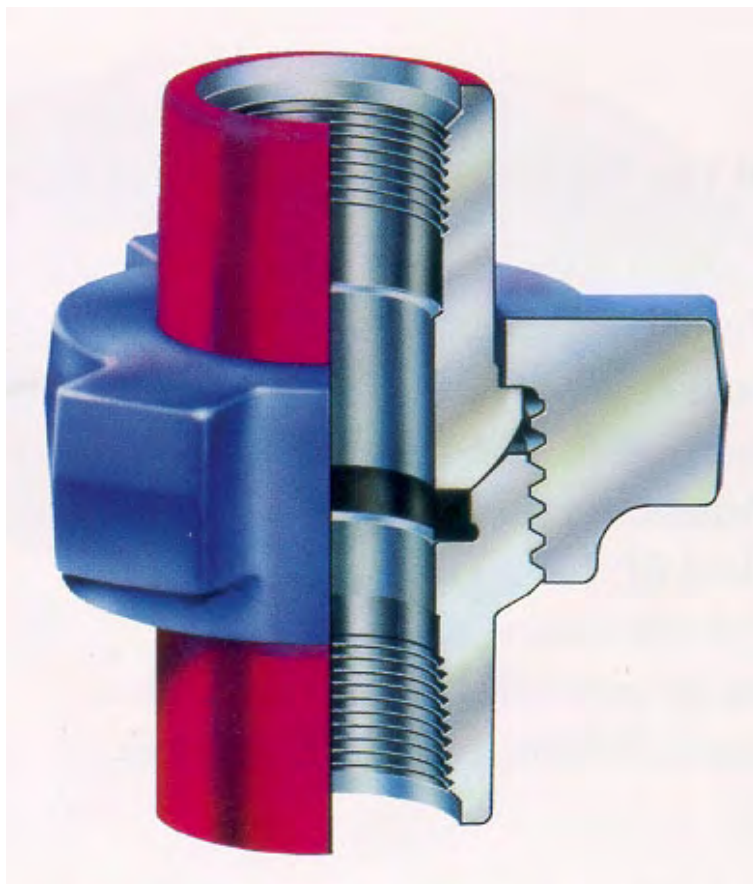
**Weco Style 602
Hammer Union Assembly**



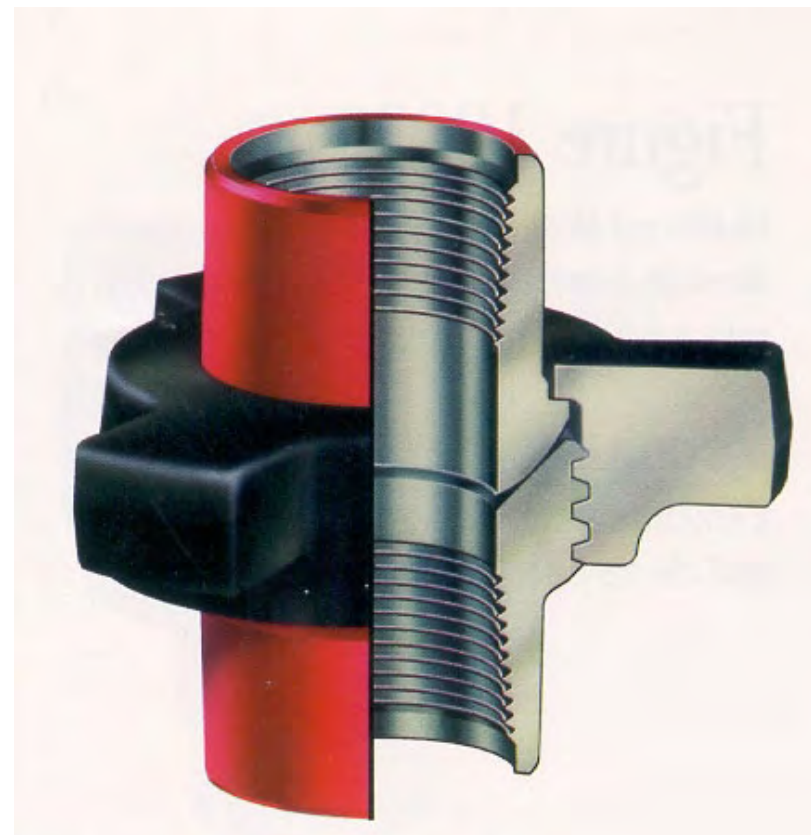
**Weco Style 1002
Hammer Union Assembly**

Look Alikes - Weco Style 1502 vs 402

A 2" 1502 Wing Nut will, also, attach to a 2" 402 Thread Half.



**Weco Style 1502
Hammer Union Assembly**



**Weco Style 400
Hammer Union Assembly**

We stock a complete line of Hammer Unions (wing unions) from Fig 100 thru Fig 1502 in NACE, H2S 1" to 10", weld and screwed ends, API licensed manufacturer, sold in Australia for over 20 years to all majors. We stock standard and sour H2S specification. See our oilfield products catalogue at our website. www.globalsupplyline.com.au