
**CATALOG FOR WOODCO USA® Brand
MANUFACTURED EQUIPMENT**

Supplement 4

**HAMMER WING UNION ADAPTERS
(Weco Type Hammer Wing Unions, to API and Other End Connectors)**

This catalog supplement provides detailed information about Hammer Wing Union Connected Adapters manufactured by WOODCO USA. You will find the equipment Illustrated by Combination of Connectors on page 9.



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1.0 General

WOODCO USA offers supplements to general catalogs in order to provide more detailed information about specific equipment.

1.1 Purpose

WOODCO USA intends this supplement to communicate the design, material, and advantages of WOODCO USA Weco Type Hammer Wing Union Connectors combined with connectors specified in API Spec 6A and other industry standards.

1.2 Application

Hammer Wing Union adapters joined to API Spec. 6A flanges and other connectors so as to allow operators and service companies to use safe interchangeable equipment when making service equipment attachment to well heads or Christmas Trees.

1.3 Specification

API Spec 6A, has previously mentioned, but provided no dimensional information about Other End Connectors (O.E.C.). WOODCO USA manufactures Hammer Wing Union Adapters to meet API Spec 6A design requirements. If adapters have connectors with different working pressures, designs shall assume allowable stresses based on the lowest rated connector.

Buyers may specify API Spec 6A PSL levels.

1.4 Reference Standards

API Spec 6A
API Spec 16A

1.5 Material

All WOODCO USA Hammer Wing Union Adapters shall meet API Spec 6A material requirements using 75K strength for both Male and Female Subs for Sour Service rated equipment.

Flanges, Bodies, and Hammer Wing Union Sub Materials Classes

AA-General Service Carbon or low alloy steel

DD-Sour Service a Carbon or low alloy steel b

- a As defined by NACE Standard MR0175 /ISO 15156.
- b In compliance with NACE Standard MR0175 /ISO 15156.

Standard Service

When standard service Hammer Wing Union Adapters are specified, they shall utilize AA Class steel in strength specified to meet the allowed stresses of the equipment at test pressure, determined by the lowest pressure connector of the adapter.

Sour Service

For Sour Service, Hammer Wing Union Subs shall meet the requirements of 75K DD Class material.

Hammer Union Wing Nuts and their Retainers need not be considered as Sour Service exposed components, and shall utilize steel strength specified to meet the stresses of the equipment (test) pressure.

Exception: All parts of Figure Number 2202 Hammer Wing Unions, subject to stress under pressure, shall utilize DD Class, 75K strength material (Subs, Nut, and Retainers).

1.6 Service Temperature

API Spec 6A specifies a range of service temperatures designated by alphabetic letters. Hammer Wing Union connection adapters have no internal moving parts so that they may be simply classified. The following API 6A temperature classifications apply.

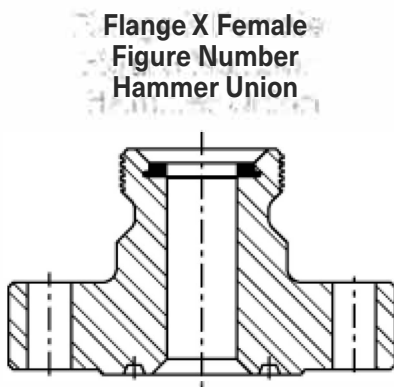
Temperature Classification *	Operating Range (Degrees Fahrenheit [°F])	
	Min.	Max.
P	-20	to 180
U	0	to 250

*WOODCO USA routinely offers Hammer Wing Union connection adapters in the combined temperature rating of: P-U -20° F to 250 F.

Operators may specify other temperature rating requirements as needed.

1.7 Design

Illustration of a common union connected adapter.



WOODCO USA Hammer Wing Union adapters meeting API Spec 6A for Flanges and API Spec 16A requirements for Clamp Hub connections shall have all metal to metal seals with elastomeric secondary seal on the Hammer Wing Union. All Hammer Wing Union connected equipment having male Hammer Wing Union connections shall have nuts that may be removed. All male Hammer Wing Union blanking plugs with Wing Nuts attached shall have a secondary retainer ring to keep the Hammer Wing Nut attached to the plug when disconnected. See Fig. 7 on page 8. Design stress allowables shall meet API Spec. 6A requirements.

1.8 Quality

WOODCO USA defines "Product Quality" as conformance to specified requirements. We select suppliers on the basis of their ability to provide materials, products and/or services which conform to WOODCO USA, API, and industry specifications.

All individual product units must pass inspections during and after production, and each unit which has a body portion shall receive a hydrostatic body test.

1.9 Supplemental Requirements

Customers should specify any stainless steel or "CRA" inlay of ring grooves.

Buyers should clearly define, at the time of order, any other requirements which exceed or differ from API Spec 6A.

2.0 Equipment

2.1 Figure Number Hammer Wing Unions Assembly Nomenclature

Typical "02" Category Figure Number Hammer Union Assemblies

Fig. 1, Removable Nut Union Assembly Components

Pressure Containing

- 1. Male Union Half
- 2. Elastomer Seal
- 3. Female Union Half

Pressure Retaining

- 4. Nut Retaining Segments
- 5. Wing Nut*

Misc. Necessary for assembly

- 6. Segment Retainer Ring

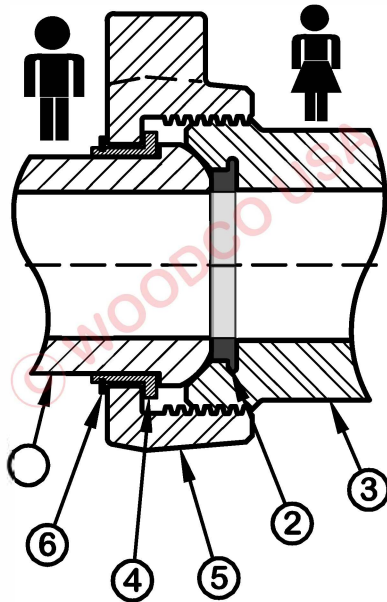


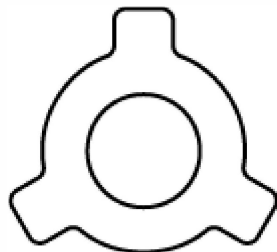
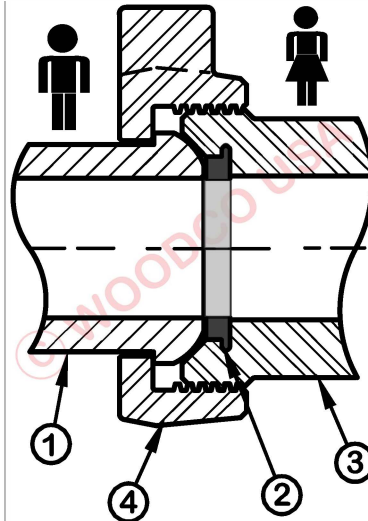
Fig. 2, Non-removable Nut Union Assembly Components

Pressure Containing

- 1. Male Union Half
- 2. Elastomer Seal
- 3. Female Union Half

Pressure Retaining

- 4. Wing Nut



*** Alternate View of Wing Nut**

A Wing Nut used to connect Hammer Union halves has protrusions located around its outside diameter that provide a means to achieve final tightening of the connection by striking the wing protrusions with a hammer. The connection may be loosened by striking the wing in the opposite direction. Always wear Safety Glasses when striking Union Wing Nuts.

When Figure Number Hammer Unions have the designation "Sour Gas" or "Sour Service", pressure containing steel components have controlled maximum hardness of 22 Rockwell C (equivalent to 237 HBW). Figure Number Hammer Unions having figure numbers ending in "02" all use an elastomer seal with a basic square cross-section having a circumferential protrusion to retain the seal in its cavity when the union is disconnected. Elastomer seals for "Sour Service" shall consist of Viton or HSN. Seal rings for 15,000 psi and higher working pressure shall have molded in anti-extrusion rings. These anti-extrusion rings, shall consist of brass or 316 stainless steel.

2.0 Equipment (Continued)

2.1.2 Figure Number Hammer Wing Unions Made-up Assembly Appearance

Typical "02" Category Figure Number Hammer Union Assemblies,

Fig. 3, Removable Nut Union Assembly Appearance

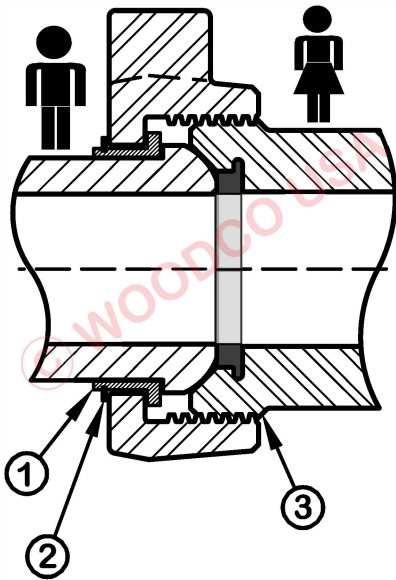
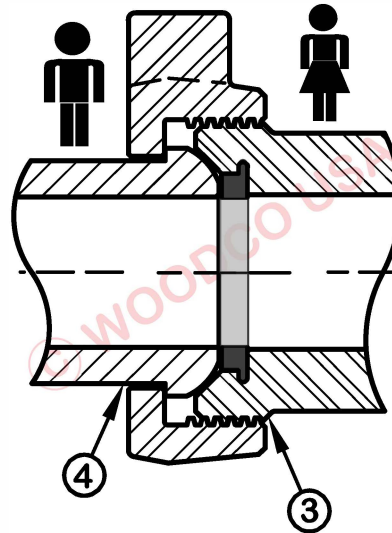


Fig. 4, Non-removable Nut Union Assembly Appearance



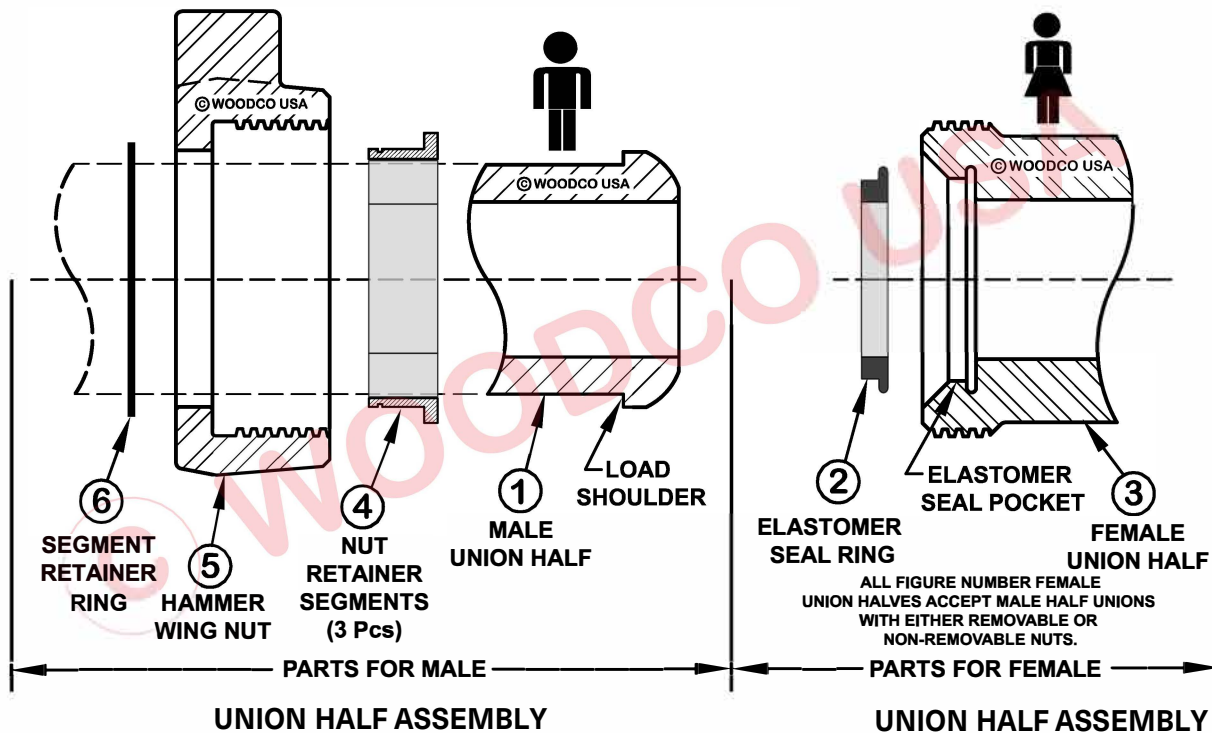
Made-up Figure Number Hammer Unions have specific appearance indicators when all components have been matched and assembled correctly.

1. For Removable Nut Type Male Union Halves, the Nut Retaining Segments should fit closely around the neck of the Male Union Half (1).
2. For Removable Nut Type Male Union Halves, the Nut should fit closely around the Nut Retaining Segments (2), and secured in the assembly by a spiral retainer ring.
3. For both Removable Nut and Non-Removable Nut types, the tightened Nut should just cover all but the last run-out of the threads on the Female Half Union. The Nut should not run over or past the run-out of threads on the Female Half Union.
4. For Non-removable Nut Type Male Union Halves, the Nut should fit closely around the neck of the Male Union Half (4).

2.0 Equipment (Continued)

2.2 Order of assembly for a Removable Nut Figure Number Hammer Wing Union

Fig. 5, Figure Number Union with Removable Nut, Assembly
 (Typical for Male Union Halves Made Integral with Equipment)



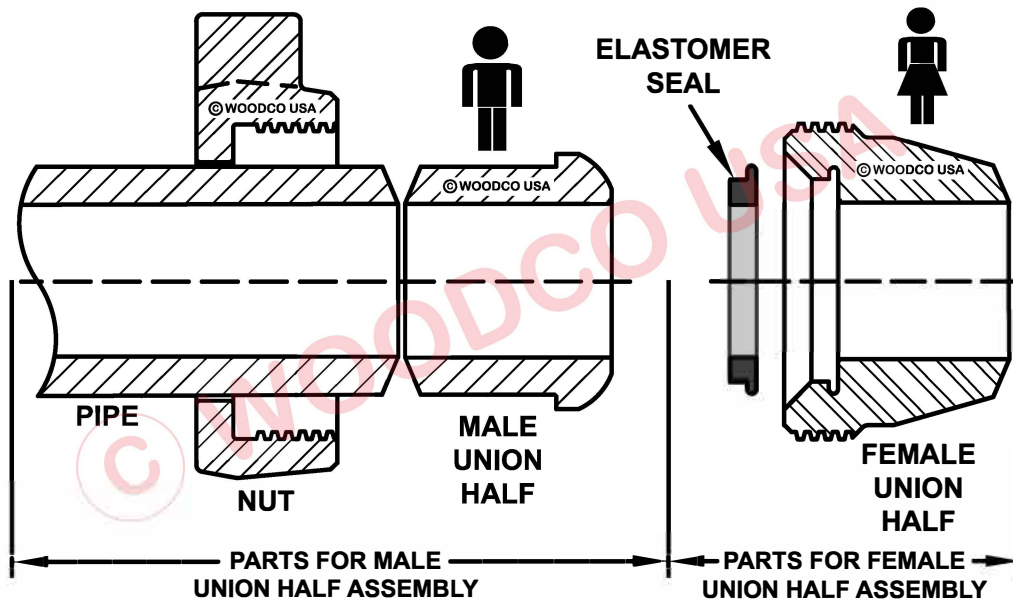
- Clean and generously lubricate all parts, all over any areas that will contact directly.
- Unassembled Male Half(1). Usually already made integral with an equipment unit, or weld neck.
 (Make sure nut and male sub are marked with the same working pressure).
- Segment Retainer Ring(6). Install onto male half union first and slide it back on the neck.
- Hammer Wing Nut(5). Install onto male half union second and slide it back on the neck.
- Nut Retainer Segments(4). Install them around the neck of the male half union against the load shoulder, (male union neck must be completely surrounded, never omit a segment, never mix segments from different sets).
- Hammer Wing Nut (5). Slide the hammer wing nut over and onto the nut retainer segments and slide the assembled nut and segments against the male half load soulder.
- Retainer Ring(6). Install the retainer ring into the groove provided in the retainer segments.
- Elastomer Seal(2). Install the seal into the well lubricated seal pocket in the female half union face.

For a cross-section view of made-up Figure Number Hammer Union, see page 5 and 6 of this catalog.

2.0 Equipment (Continued)

2.3 Order of Assembly of a Non-Removable Nut Hammer Wing Union

Fig. 6, Figure Union with Non-Removable Nut, Assembly
(Typical for Weld Neck, Threaded and Blind Male Half Unions)

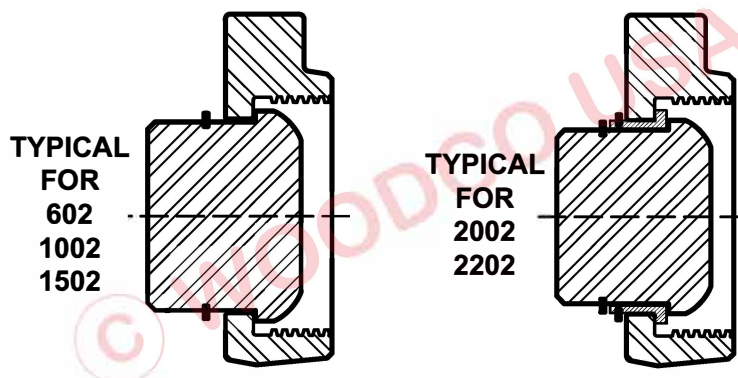


Before joining Male Half Union utilizing a Non-Removable Nut, the nut must be passed over the pipe or equipment neck with the internal threads facing out toward the Male Union half load shoulder.

The Male Union Half may then be attached to the pipe or equipment by threads or welding.

Elastomer Seal(2). Install the seal into the well lubricated seal pocket in the Female Half Union face.

Fig. 7, Blind Male Union Halves with Retainer Ring Shown



2.0 Equipment (Continued)

2.4 Figure Number Hammer Union Combinations

Fig. 8, Examples of Hammer Union Connection Adapters*

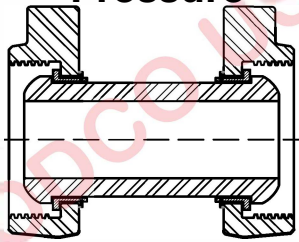
**Male End X Male End
 Same Size and
 Pressure**

Specify Union
 Adapter as
 MaleXMale

Specify Union
 Nominal Sizes

Specify Union
 Fig. No's

Specify
 Sour or
 Standard
 Service



Removable Nut Assemblies
 must be used on male half
 unions made integral to
 equipment that prevents
 installing Non-Removable
 Nuts

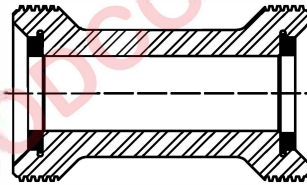
**Female End X Female
 End Same Size and
 Pressure**

Specify Union
 Adapter as
 FemaleXFemale

Specify Union
 Nominal Sizes

Specify Union
 Fig. No's

Specify
 Sour or Standard
 Service



**Male End X Male End
 Size and/or Pressure Change**

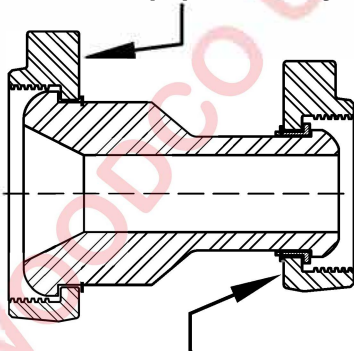
Non-Removable Nut on
 equipment manufactured
 with such a design as to
 allow the Nut I.D. to pass
 over the equipment body.

Specify Union
 Adapter as
 MaleXMale

Specify Union
 Nominal Sizes

Specify Union
 Fig. No's

Specify
 Sour or
 Standard
 Service



Removable Nut Assemblies
 must be used on male half
 unions made integral to
 equipment that prevents
 installing Non-Removable
 Nuts

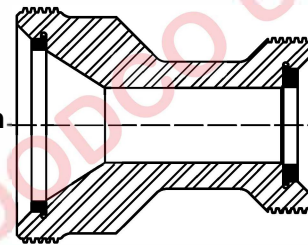
**Female End X Female
 End Size and/or Pressure
 Change**

Specify Union
 Adapter as
 FemaleXFemale

Specify Union
 Nominal Sizes

Specify Union
 Fig. No's

Specify
 Sour or Standard
 Service

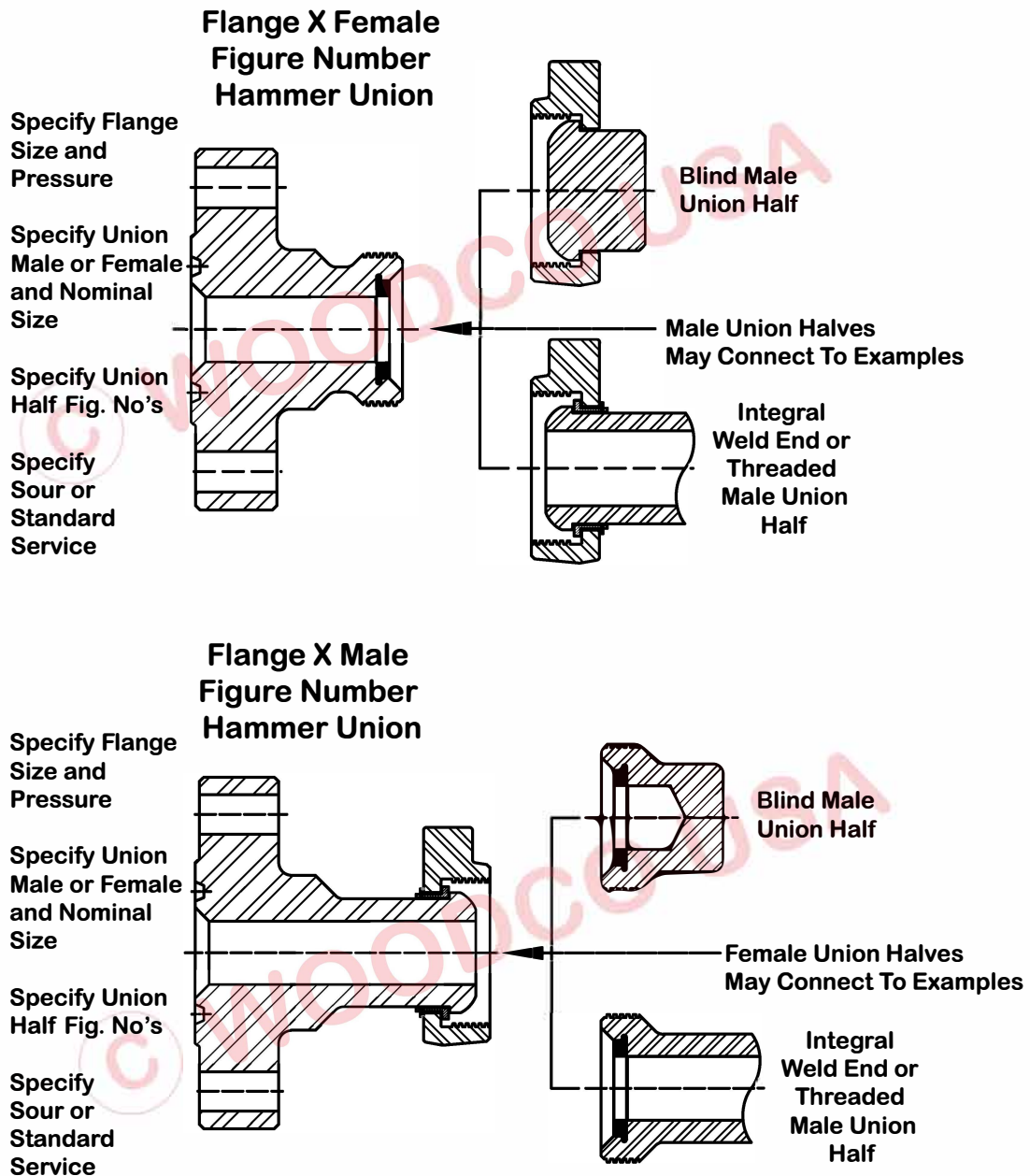


*How to identify, describe and specify.

2.0 Equipment (Continued)

2.4 Figure Number Hammer Unions

**Fig. 9, Examples of Flange X Hammer Union Connection Adapters*
(Clamp Hub or Other End Connectors may Substitute for Flanges)**

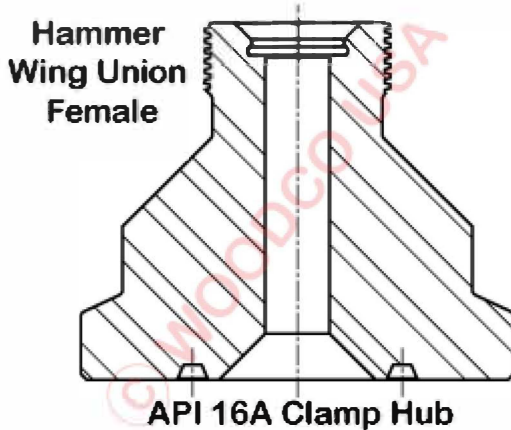
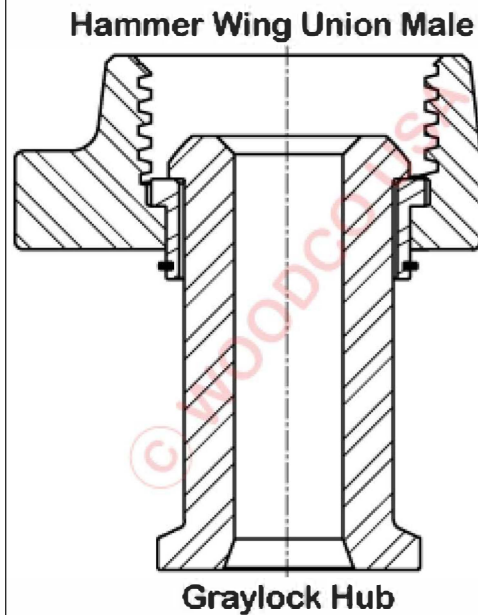
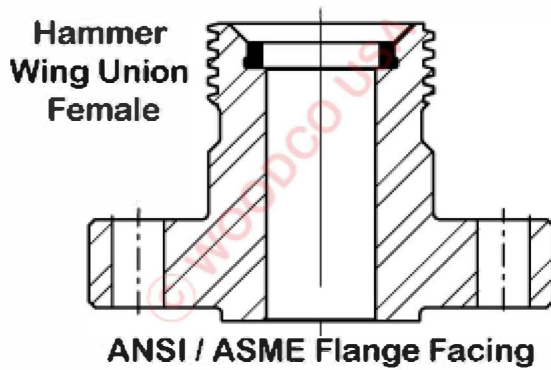
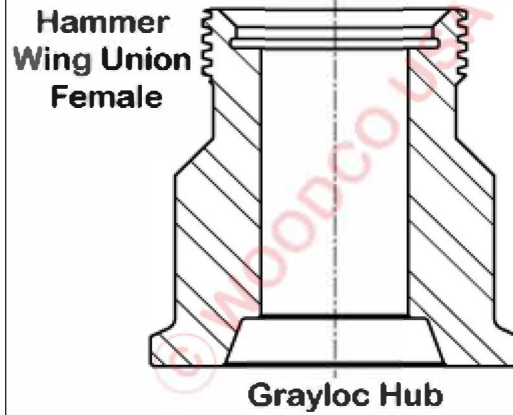
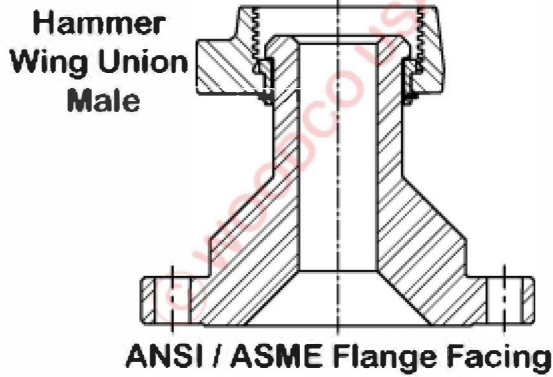


*How to identify, describe and specify.

2.0 Equipment (Continued)

2.4 Figure Number Hammer Wing Union Adapter Combinations

Fig.10, Examples of Hammer Union Connection Adapters*

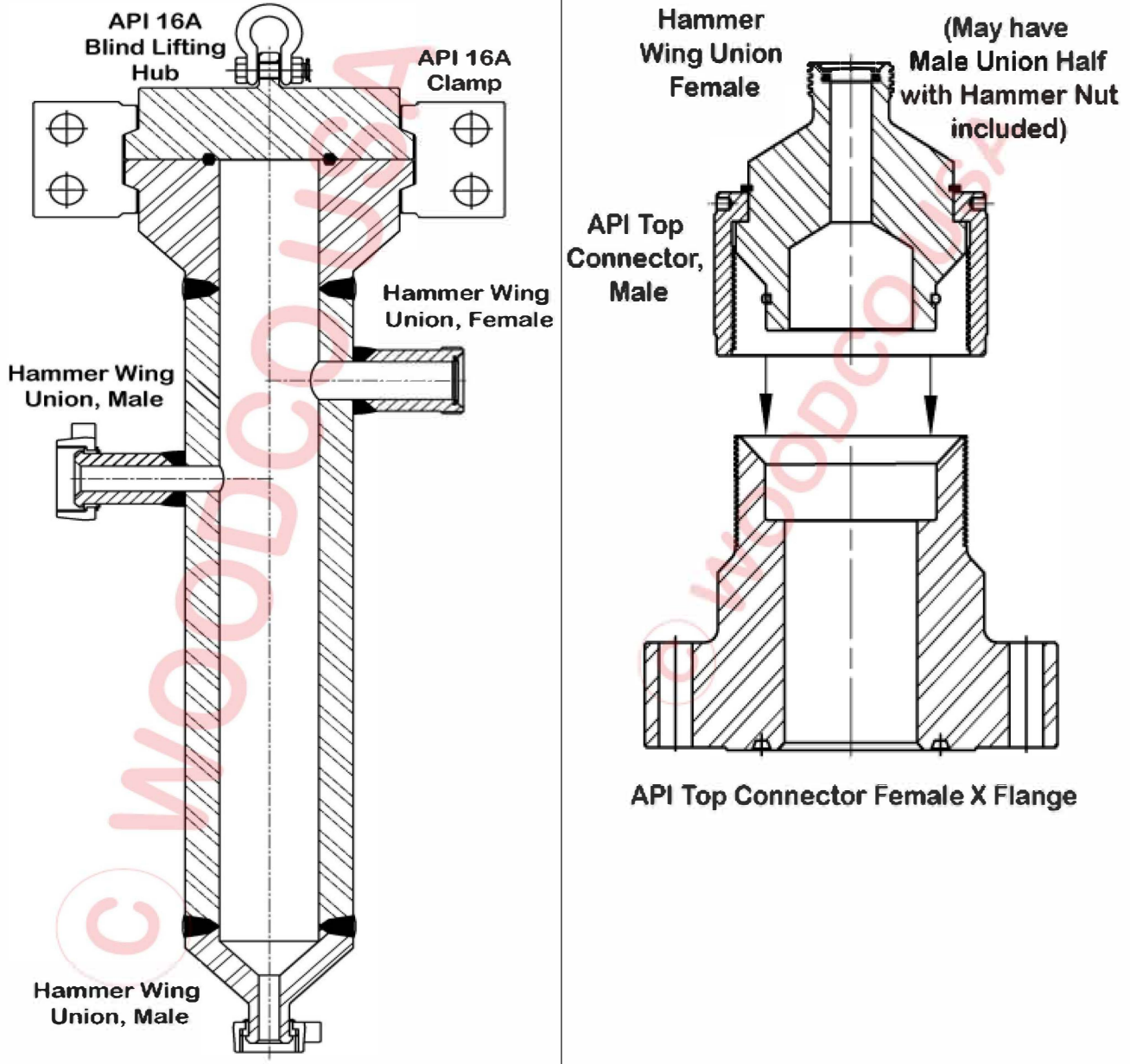


*How to identify, describe and specify.

2.0 Equipment (Continued)

2.4 Figure Number Hammer Wing Union Adapter Combinations

Fig. 10, Examples of Hammer Union Connection Adapters*



*How to identify, describe and specify.