



*Dimension Bid (M) Sdn Bhd*

**PRESSURE CONTROL EQUIPMENT TRAINING**

**CRITICAL MODULE : PCE-QU**

**MODULE ID : EL-004-C**

**MODULE TITLE : QUICK UNIONS**

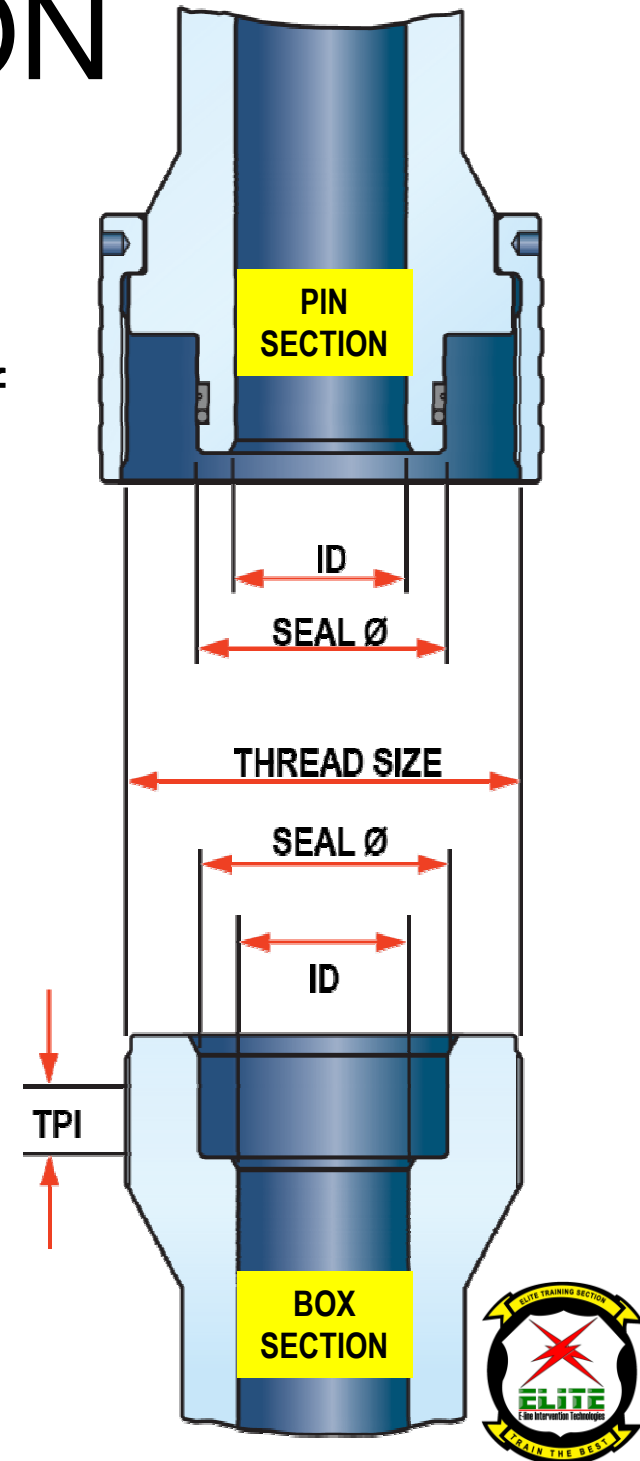


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# INTRODUCTION

- PCE string components are connected to each other with Quick Unions (QU).
- QU are self aligning due to the profile of the box and pin section.
- The seal is made by an internal O-Ring on the pin end sealing in the box end of the union – **Not by the threads.**
- The two ends are kept together by a knurled collar resting on a shoulder on the pin end, and screwing onto the external thread on the box end.
- ACME threads are used.



# QUICK UNION : BOX CONNECTION



# ADVANTAGES USING QU

- Unlike metal to metal seal (EUE), with this configuration the threaded connection **does not need to be made-up tight to energise the O-ring.**
- The collars can be made-up and undone by hand **easily** and **quickly** if the **mating pieces are well aligned.**
- There is **no need to use a spanner** on these connections to make them up tightly. A gentle tap should be enough to avoid the collar from backing-off

# QU TYPES

- There are **THREE** commonly used families of QU:
- **Bowen QU (Code B)**
- **Otis Quick Unions (Code O)**
- **Elmar Quick Unions (Code E)**
- The three unions' families are not compatible.
- Do not try to connect different QU without proper x-over / adapter.
- The threads might be damaged if different QU is force to mate together.

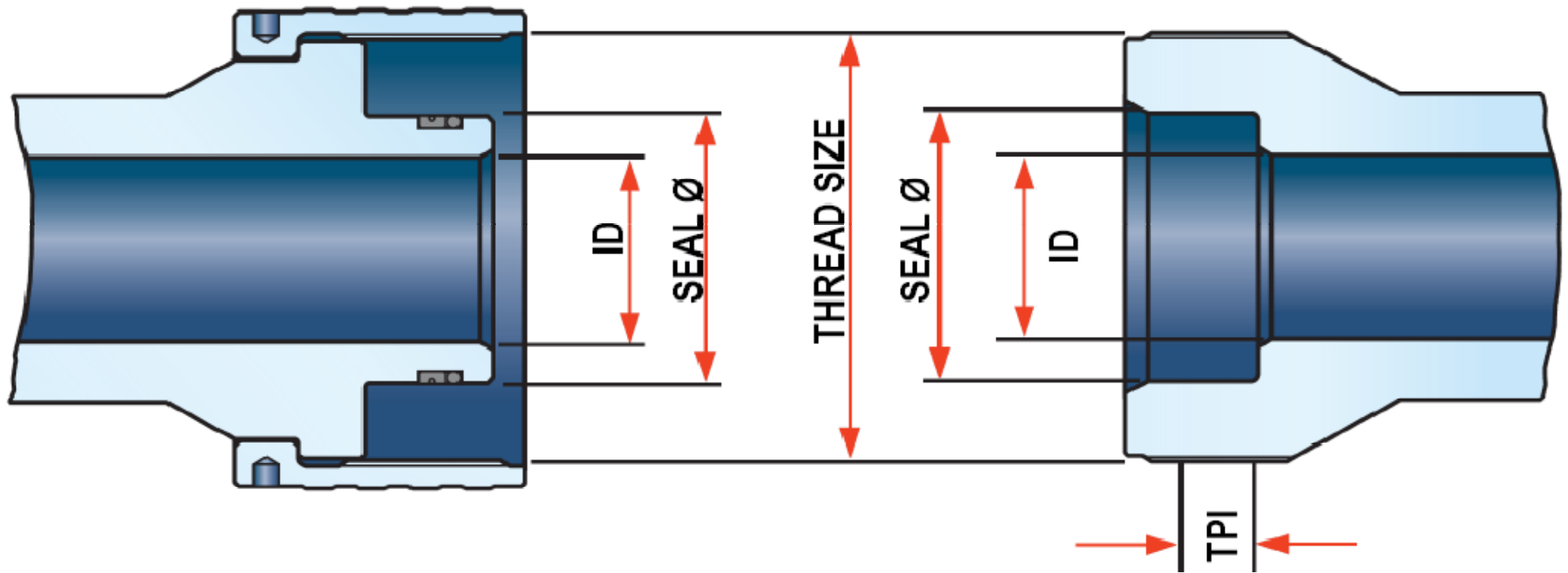
# HOW TO IDENTIFY QU

- A quick union is defined by;
  1. **Its style:** Bowen/Otis/Elmar
  2. Its **ACME thread diameter** in inches
  3. **The thread pitch in Threads per Inch (TPI).** Some connections use Double Start Threads (DL, sometimes also identified as “x2”)
  4. Its seal diameter in inches, to the thousandth.

Example:

- **BOWEN 5.5”- 4DL - 4.375”** connection is a Bowen connection with a 5.5”
- ACME thread, 4 Threads Per Inch, double start, with a seal diameter of 4.375 inches. It can be used for 3” ID equipment rated 10K psi, Standard service or 5K psi, H2S service.

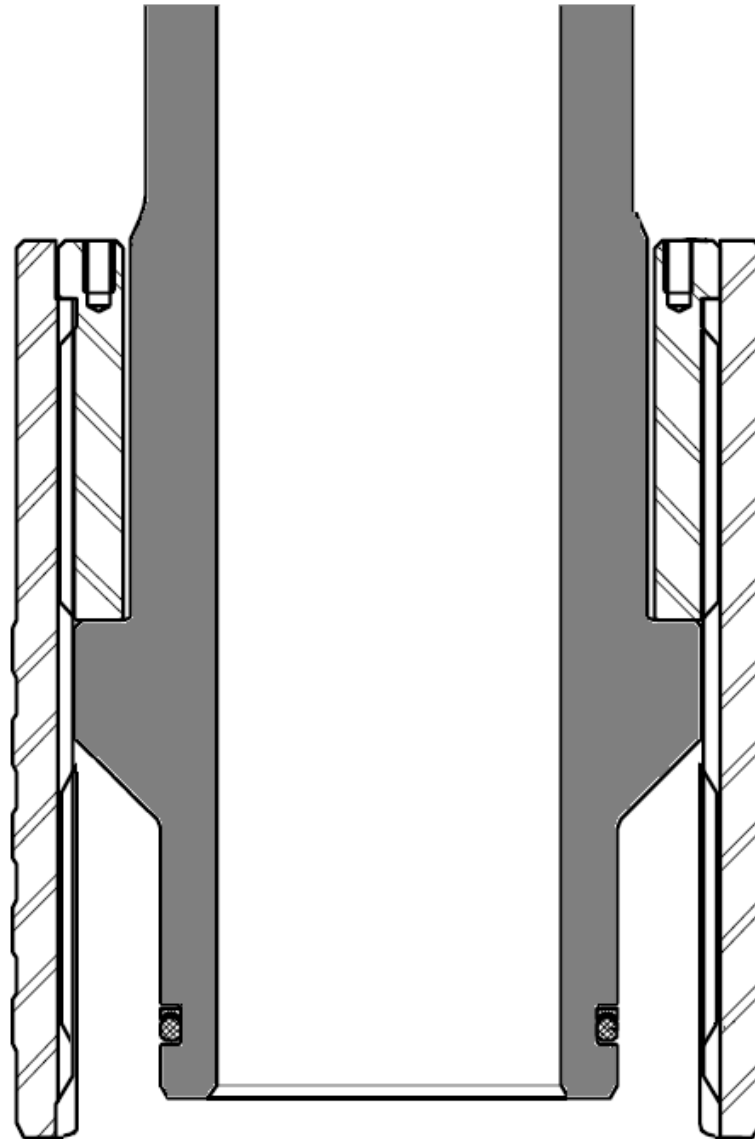
# HOW TO IDENTIFY QU...cont



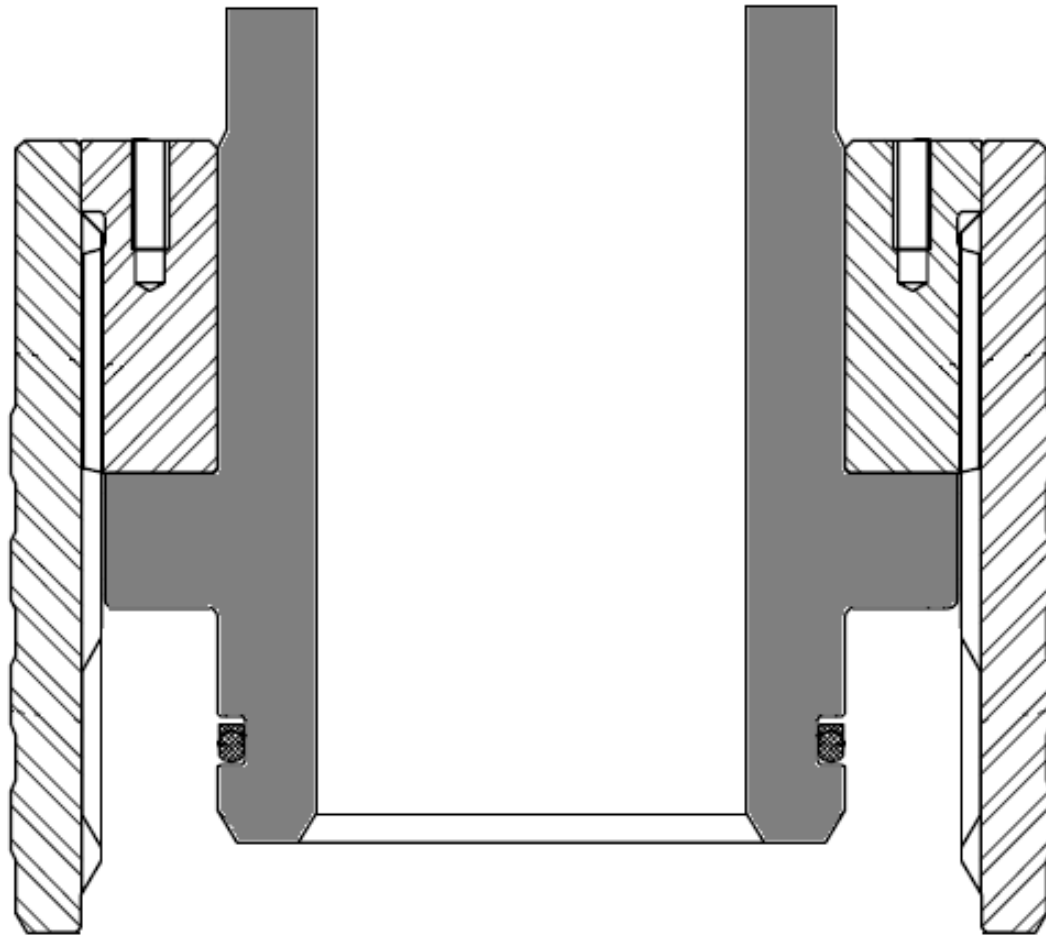
# INSPECTION BEFORE USE

- **First of all, the connection type should match !**
- Inspected to ensure that they are clean and corrosion-free.
- QU O-rings should be in good condition. A small amount of grease on these areas will assist assembly.
- At assembly, ensure unions are properly made up hand tight.
- Lubricators should be lifted using an appropriate lifting bail or lifting clamp, where this is available.

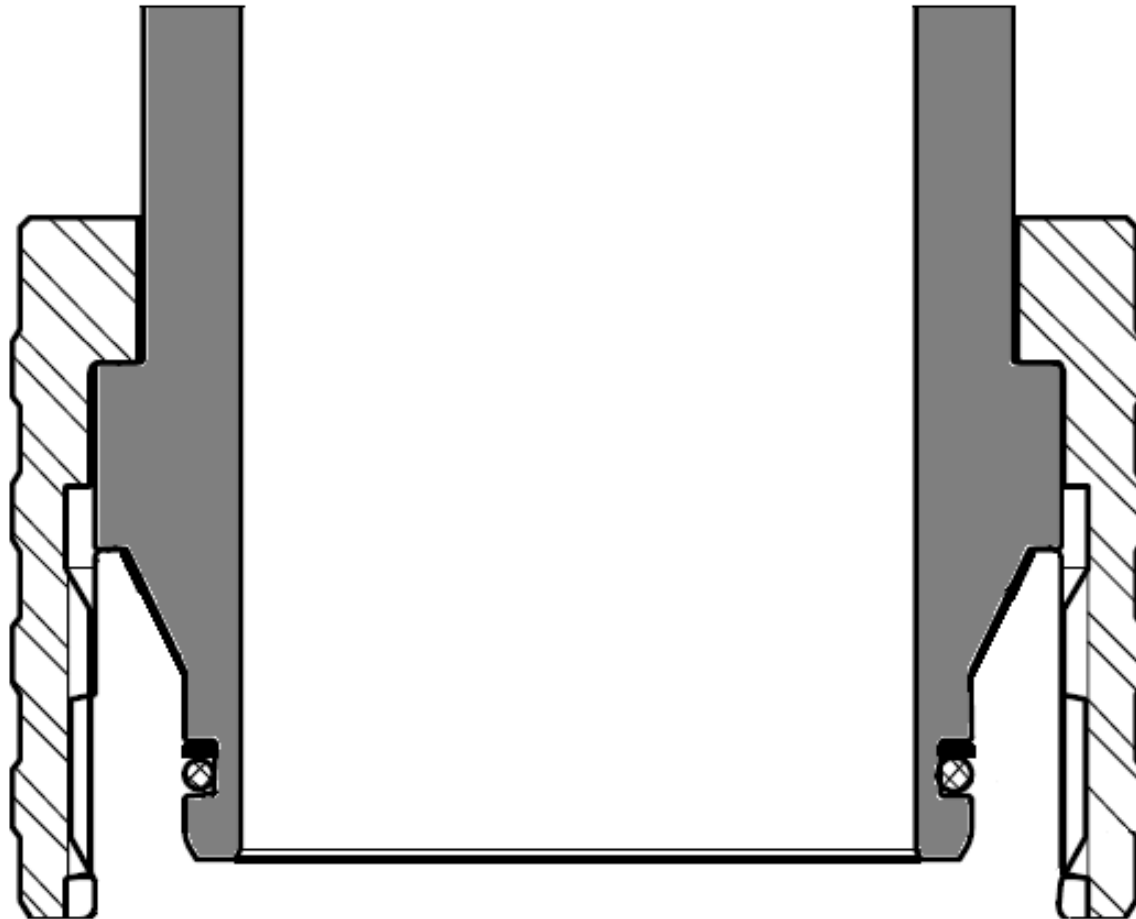
# OTIS QU PROFILE



# BOWEN QU PROFILE

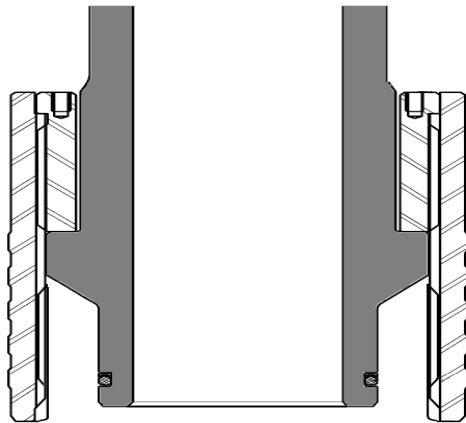


# ELMAR QU PROFILE

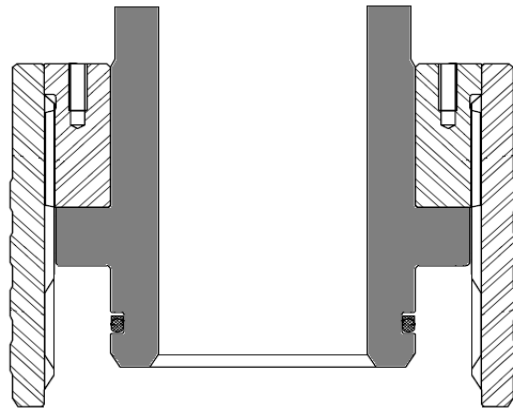


# OTIS, BOWEN AND ELMAR COMPARISON

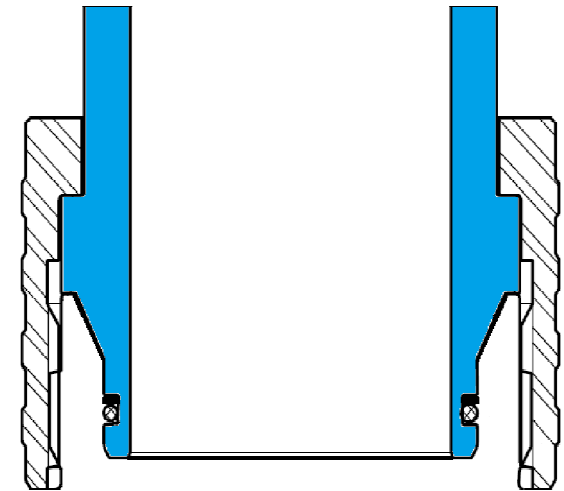
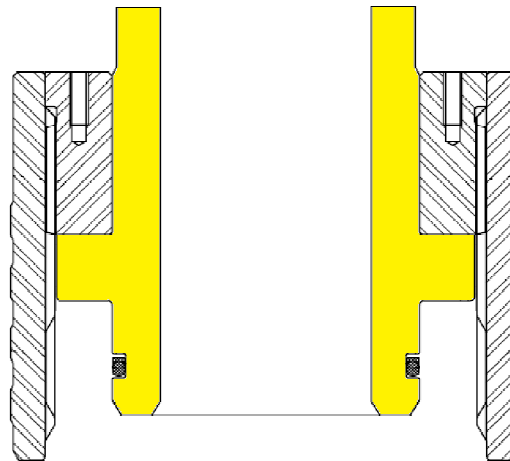
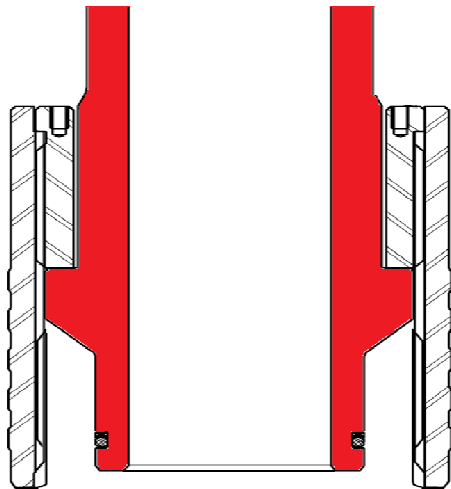
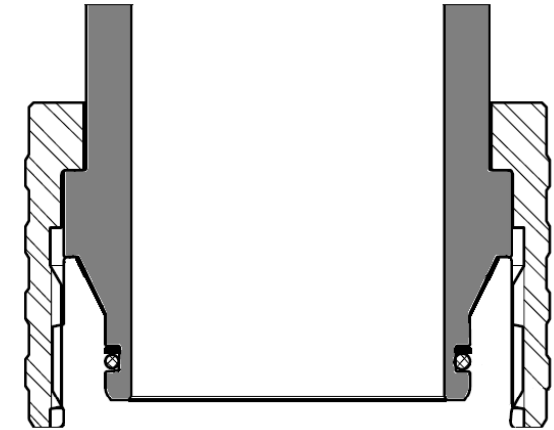
OTIS QU



BOWEN QU



ELMAR QU



# OTIS QUICK UNION TYPE CONNECTIONS

## OTIS QUICK UNION TYPE CONNECTIONS

ASEP Elmar Code	Thread Size	TPI	Seal Dia	Nominal ID	Working Pressure	Service	O-Ring	BU-Ring	BU-Ring Retainer
O01	5	4	3.500	3.00	5K	STD	L-870310	N/A	N/A
O02	5 3/4	4	4.000	3.00	10K	H2S	L-870490	L-873680	N/A
O03	6 1/4	4	4.000	2.50	15K	H2S	L-870490	L-974353	L-873260
O04	6 1/2	4	4.750	4.00	10K	STD	L-870540	L-873720	N/A
O05	6 1/2	4	5.188	4.00	5K	STD	L-873140	N/A	N/A
O06	7 1/2	4	5.500	3.00	15K	H2S	L-870580	L-974602	L-876260
O07	8 1/4	4	6.188	5.00	5K	H2S	L-870710	N/A	N/A
O08	8 3/8	4	5.250	4.00	10K	H2S	L-875560	L-875570	N/A
O09	8 3/4	4	7.500	6.38	5K	STD	L-870720	N/A	N/A
O10	9	4	6.750	5.00	10K	H2S	L-870850	L-876160	N/A
O11	9 1/2	4	6.250	4.00	15K	H2S	L-872560	L-977411	L-871005
O12	9 1/2	4	8.000	6.38	5K	H2S	L-873120	N/A	N/A
O13	11 1/2	4	8.250	6.38	10K	H2S	L-876060	L-876070	N/A
O14	12	4	10.313	9.00	5K	H2S	L-872440	N/A	N/A
O15	12 1/4	4	7.000	5.00	15K	H2S	L-875810	L-982000	L-873150
O16	5	4	3.500	3.00	5K	H2S	L-870310	N/A	N/A
O17	6 1/2	4	4.750	4.00	5K	H2S	L-870540	N/A	N/A
O18	7 1/2	4	5.500	4.50	10K	H2S	L-870580	L-873760	N/A
O19	6 1/2	4	4.750	3.00	10K	H2S	L-870540	L-873720	N/A
O20	5	4	3.500	2.50	15K	STD	L-870460	L-976083	L-875640
O21	5	4	3.500	3.00	10K	STD	L-870310	L-873570	N/A
O22	8 1/4	4	6.188	5.12	10K	H2S	L-870710	L-875001	N/A
O23	6	4	4.875	4.00	5K	H2S	L-870550	N/A	N/A

# BOWEN QUICK UNION TYPE CONNECTIONS

## BOWEN QUICK UNION TYPE CONNECTIONS

ASEP Elmar Code	Thread Size	TPI	Seal Dia	Nominal ID	Working Pressure	Service	O-Ring	BU-Ring	BU-Ring Retainer
B01	4 3/4	4	3.750	3.00	5K	H2S	L-870470	N/A	N/A
B02	6 5/16	4	4.375	3.00	10K	H2S	L-870520	L-873700	N/A
B03	6 5/16	4	3.750	2.50	15K	H2S	L-870470	L-974535	L-873170
B04	5 1/2	4x2	4.375	3.00	5K	H2S	L-870520	N/A	N/A
B06	7	5	4.375	3.00	15K	H2S	L-870520	L-974603	L-873260
B07	8 1/4	4x2	6.000	4.00	10K	H2S	L-870690	L-875340	N/A
B08	7	5	5.250	4.00	5K	H2S	L-875560	N/A	N/A
B09	8 1/4	4x2	6.750	5.50	5K	H2S	L-870850	N/A	N/A
B10	9 5/32	4x2	6.750	5.50	10K	H2S	L-870850	L-876160	N/A
B11	9 7/8	4x2	8.000	6.38	5K	H2S	L-873120	N/A	N/A
B12	4 3/4	4	3.750	3.00	10K	STD	L-870470	L-873660	N/A
B13	5 1/2	4x2	4.375	3.00	10K	STD	L-870520	L-873700	N/A
B14	4 1/16	4	3.000	2.00	5K	H2S	L-870430	N/A	N/A
B15	10 5/8	4	7.500	5.63	10K	H2S	L-870720	L-870021	N/A
B16	4 1/2	4	3.000	2.00	10K	H2S	L-870430	L-873630	N/A
B17	8 7/8	4x2	6.500	5.00	10K	STD	L-873280	L-875540	N/A
B18	13	4	9.500	7.06	10K	H2S	L-874008	L-874009	N/A
B19	8 7/8	4x2	5.500	4.00	15K	H2S	L-873270	L-980815	L-871029
B20	6	4x2	4.875	3.38	5K	H2S	L-870550	N/A	N/A

# ELMAR QUICK UNION TYPE CONNECTIONS

ASEP Elmar Code	Thread Size	TPI	Seal Dia	Nominal ID	Working Pressure	Service	O-Ring	BU-Ring	BU-Ring Retainer
E04	6 3/4	4	5.375	4.892	5K	STD	L-870610	N/A	N/A
E05	9	4	7.500	6.765	5K	STD	L-870660	N/A	N/A
E06	4 3/4	4	3.750	3.00	10K	H2S	L-870470	L-873660	N/A
E07	8 1/2	4	7.250	6.765	3K	STD	L-870840	N/A	N/A
E08	8 3/4	4	6.500	5.00	10K	H2S	L-870630	L-873790	N/A
E09	4 3/4	4x2	3.750	3.00	10K	H2S	L-870470	L-873660	N/A
E12	6 1/8	4x2	4.750	4.06	10K	H2S	L-870540	L-873720	N/A
E13	3 3/4	8	2.500	-	10K	H2S	L-875630	L-872700	N/A
E14	9	4	7.500	6.625	5K	H2S	L-870660	N/A	N/A
E16	6 3/4	4	5.375	4.892	5K	H2S	L-870610	N/A	N/A
E21	9 3/8	4	7.750	6.67	5K	H2S	L-870006	N/A	N/A
E22	6 7/8	4	5.625	4.892	5K	H2S	L-870590	N/A	N/A
E30	9 1/2	4	5.500	4.06	20K	H2S	L-8701008706	L-9701008692	L-871029
E32	7 7/8	4x2	6.125	5.125	10K	H2S	L-873040	L-872080	N/A