

TYLOK[®]

FITTINGS & VALVES



CBC-LOK[®]

CS-LOK[®]

TUBE FITTINGS

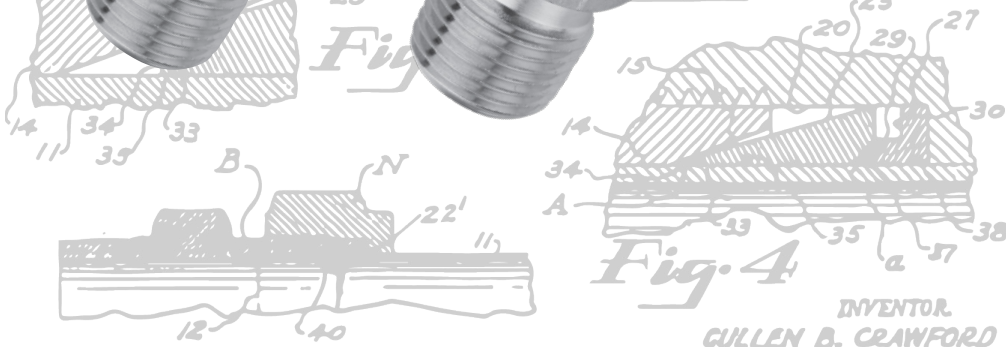
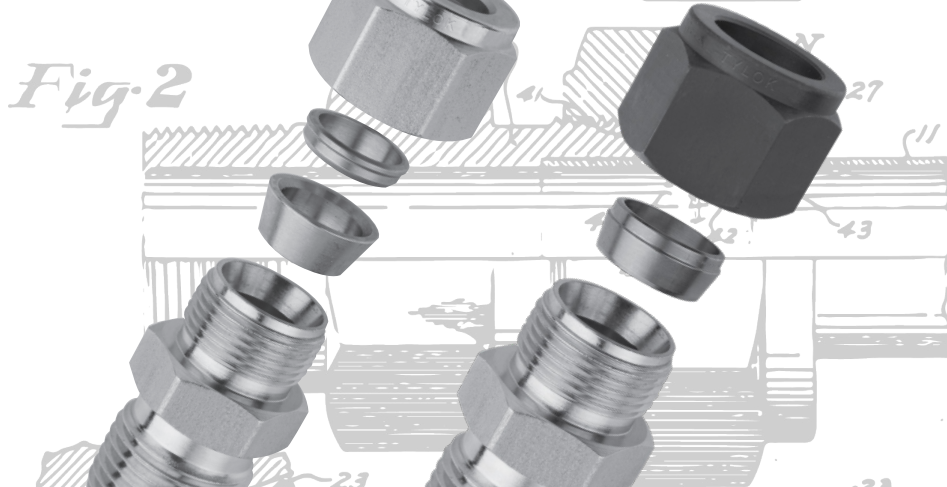
Oct. 18, 1949.

C. B. CRAWFORD

2,484,815

TUBE COUPLING

Filed Aug. 18, 1947



INVENTOR
 CULLEN B. CRAWFORD
 BY *Jay, Colrick & Jay*
 ATTORNEYS

REGISTRATIONS & TYPE APPROVALS



Canadian Registration



CREATION OF AN INDUSTRY

In the mid 1940's, Cullen Crawford developed and patented the original flareless fitting (nut & double ferrule system), making it easier and more efficient to make tubing connections. Based on this innovation, he founded the Crawford Fitting Company, creating an industry for compression fittings.

At Tylok, our mission is total customer satisfaction with both products & services. Our knowledgeable staff is readily available to answer questions and respond in a timely manner. We continue to develop new products that expand the Tylok brand. If you have a unique product need, Tylok would like to be your engineered-solutions provider.

INTRODUCTION



CBC-LOK® Tube Fittings are fully interchangeable with Swagelok® & Parker A-Lok®. Although it is always recommended to use all CBC-Lok® components intermixing CBC-Lok® bodies and/or components parts with that of other manufacturers will not adversely affect sealing ability. CBC-Lok® Tube Fittings are made to strict quality control standards. CBC-Lok® Tube Fittings are proudly made in the U.S.A.



CS-Lok® Tube Fittings are fully interchangeable with Parker CPI™. Although it is always recommended to use all CS-Lok® components, intermixing CS-Lok® bodies and/or component parts with those of other manufacturers will not adversely affect sealing ability. CS-Lok® Tube Fittings are made strict quality control standards. CS-Lok® Tube Fittings are proudly made in the U.S.A.

OPERATION

CBC-Lok® Tube Fittings are comprised of four components: Body, Front Ferrule (Collet), Rear Ferrule (Collet) & Nut. A leak-proof seal is obtained through proper ferrule action as the ferrules are tightened onto the tubing via axial thrust provided by the nut. The front ferrule provides the leak-proof seal, when the nut & ferrules are properly drawn up the specified number of turns. The rear ferrule grips the tubing preventing pull-off. The stainless steel nuts are silver plated and dry film lubricant is applied, reducing torque and ensuring proper sealing.

CS-Lok® Tube Fittings are comprised of three components: Body, Single Ferrule (Collet), & Nut. A leak-proof seal is obtained through proper ferrule action as the ferrules are tightened onto the tubing via axial thrust provided by the nut. The ferrule provides the leak-proof seal, when the nut & ferrule are properly drawn up the specified number of turns. The stainless steel nuts have molybdenum disulfide coating, reducing torque and ensuring proper sealing.

TY-COR™ PROCESS

Ty-Cor™ refers to the treatment that diffuses carbon into the surface of the stainless steel, thereby increasing the surface hardness without affecting the quality of the metal treated. In fact, when AISI 316 stainless steel is treated, the corrosion resistance is equal to or better than non-treated 316 stainless steel. The increase in corrosion resistance to pitting and stress corrosion is very pronounced in media that contain chlorides (e.g., sea water, bleach, HCl, etc.). The Ty-Cor™ process applied to the rear ferrule also helps eliminate galling and ensures proper sealing on the tube end make-ups.

FEATURES

CBC-Lok® Tube Fittings

- Double ferrule swaging action
- Total component interchangeability
- Heat Code traceable
- ASTM material construction

CS-Lok® Tube Fittings

- Single ferrule swaging action
- Total component interchangeability
- Heat Code traceable
- ASTM material construction

The quality system complies with the international standard ISO 9001. Tylok strives to continuously improve the effectiveness of the Quality Management System by each member within the organization.



Tylok has received the Certificate of Type Approval from the American Bureau of Shipping (ABS). The following Part Families are ABS approved:

- DFC - Female Connector,
DMC - Male Connector, DU - Union, DELU - Elbow Union,
DME - Male Elbow, and DTTT - Union Tee.

Table of Contents



DATANF SATANF

Adapter Tube
to AN Flare

9



DATPF SATPF

Adapter Tube
to Female Pipe

10



DATPM SATPM

Adapter Tube
to Male Flare

11



DBHA SBHA

Bulkhead
Adapter

12



DBHFP SBHFP

Bulkhead Female
Pipe Connector

13



DBHMP SBHMP

Bulkhead Male
Pipe Connector

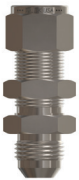
14



DBHU SBHU

Bulkhead
Union

15



DBUANF SBUANF

Bulkhead to
AN Flare Union

16



DCAP SCAP

Cap

17



DF PLUG SF PLUG

Fitting
Plug

18



DFC SFC

Female
Connector

19



DMC SMC

Male
Connector

20-21



DMC-ORS SMC-ORS

O-Ring Straight
Thread Male
Connector

22



DMC-ORT SMC-ORT

O-Ring Tapered
Thread Male
Connector

23



DMC-STB SMC-STB

Straight Thread
Boss Male
Connector

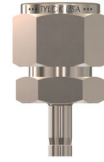
25



DPCU SPCU

Port Connector
Union

26



DRATT STRATT

Reducer Adapter
Tube to Tube

27



DRPC SRPC

Reducing Port
Connector

28



DRU SRU

Reducing
Union

29



DTBW STBW

Tube to Butt
Weld Connector

30



DTSW STSW

Tube to Socket
Weld Connector

31



DU SU

Union

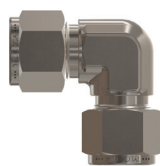
32



DUANF SUANF

Tube to AN
Flare Union

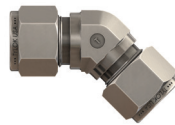
33



DELU SELU

Union
Elbow

34



DELU45 SELU45

Union 45°
Elbow

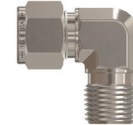
35



DFE SFE

Female
Elbow

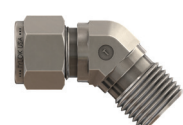
36



DME SME

Male
Elbow

37



DME45 SME45

Male 45°
Elbow

38

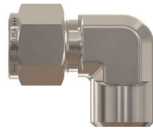
Table of Contents



**DTBWE
STBWE**

Tube to Butt
Weld Elbow

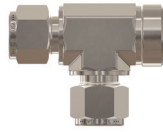
39



**DTSWE
STSWE**

Tube to Socket
Weld Elbow

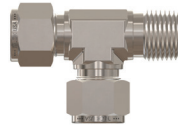
40



**DTFT
STFT**

Female Run
Tee

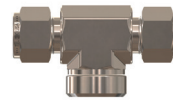
41



**DTMT
STMT**

Male Run
Tee

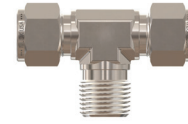
42



**DTTF
STTF**

Female Branch
Tee

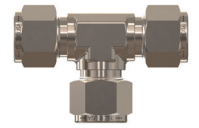
43



**DTTM
STTM**

Male Branch
Tee

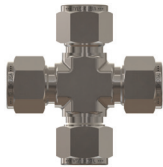
44



**DTTT
STTT**

Union
Tee

45-46



**DCR
SCR**

Union
Cross

47



TI

Barbed
Insert

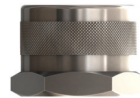
48



**DN
SN**

Nut

49



**DKN
SKN**

Knurled
Nut

50



DFC

Front Collet
(Ferrule)

51



DRC

Rear Collet
(Ferrule)

51



SC

Single Collet
(Ferrule)

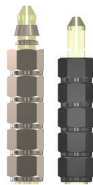
51



**DCSET
SCSET**

Collet Sets

52



**DNCSET
SNCSET**

Nut Collet Sets

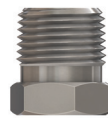
52



DGG

Gap
Gage

53



1MDF

Mud
Dauber

54

**TYLOK
PRODUCTS**

55

**INSTALLATION
INSTRUCTIONS**

56

**TUBING
SELECTION
AND
PREPARATION**

57

**SAFETY
AND
QUALITY**

58

**TECHNICAL
DATA**

59

**MATERIAL
SPECIFICATIONS**

60

**TUBE
INSERTION
CHART**

61

**LEAK
DETECTOR**

62

How to Order

CBC/CS-Lok[®]

CBC-Lok[®]/CS-Lok[®] Tube Fittings are ordered as listed in this catalog by inserting the material code before the part number. CBC-Lok[®]/CS-Lok[®] Tube Fittings can be identified through the part number as to material, tube size, configuration, and thread connection. The part number describes a complete fitting assembly.

The size nomenclature to describe a tee fitting is from left (1) to right (2) and down (3).

Special Configurations available upon request.

Example: A Stainless Steel Female Run Tee, 3/8" Tube Size to 1/4" Female Pipe to 3/8" Tube is designated as follows:

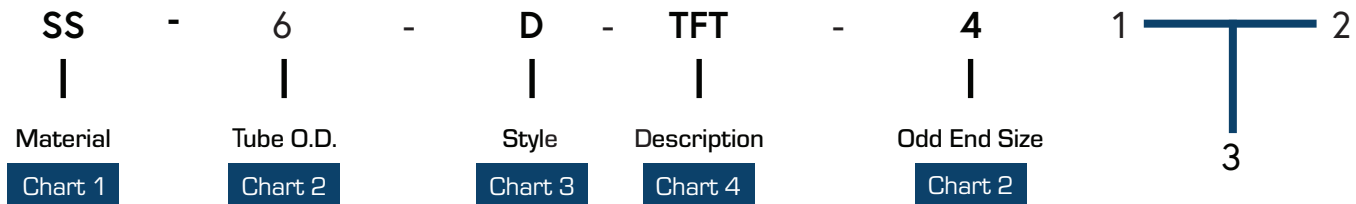


CHART 1 - MATERIAL	
B	Brass
SS	Stainless Steel
S	Steel

CHART 3 - STYLE	
D	CBC-Lok [®]
S	CS-Lok [®]

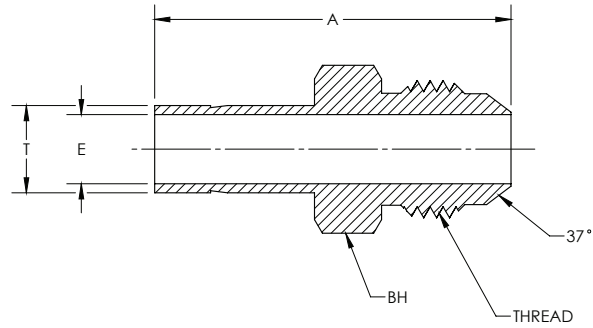
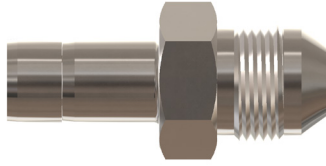
CHART 2 - TUBE O.D./THREAD SIZES				
DESIGNATOR	TUBE OR HOSE OD (INCHES)	PIPE THREAD (NPT)	AN /STB TUBE SIZE (INCHES)	PIPE THREAD BSPP/BSPT
1	1/16	1/16 - 27		1/16 - 28
2	1/8	1/8 - 27	5/16-24	1/8 - 28
3	3/16			
4	1/4	1/4 - 18	7/16-20	1/4 - 19
5	5/16			
6	3/8	3/8 - 18	9/16-18	3/8 - 19
8	1/2	1/2 - 14	3/4-16	1/2 - 14
10	5/8			
12	3/4	3/4 - 14	1-1/16-12	3/4 - 14
14	7/8			
16	1	1 - 11 1/2	1-5/16-12	1 - 11

CHART 4 - DESCRIPTION	
ATANF	Adapter Tube to AN Flare
ATPF	Adapter Tube to Female Pipe
ATPM	Adapter Tube to Male Pipe
BHA	Bulkhead Adapter
BHFP	Bulkhead Female Pipe Connector
BHMP	Bulkhead Male Pipe Connector
BHU	Bulkhead Union
BUANF	Bulkhead to AN Flare Union
CAP	Cap
F PLUG	Fitting Plug
FC	Female Connector
MC	Male Connector
MC-ORS	O Ring Straight Thread Male Connector
MC-ORT	O Ring Pipe Thread Male Connector
MC-STB	Straight Thread Boss Male Connector
PCU	Port Connector Union
RATT	Reducer Adapter Tube to Tube
RPC	Reducing Port Connector
DRU	Reducing Union

CHART 4 - DESCRIPTION	
TBW	Tube to Butt Weld Connector
TSW	Tube to Socket Weld Connector
U	Union
UANF	Tube to AN Flare Union
ELU	Union Elbow
ELU45	Union 45° Elbow
FE	Female Elbow
ME45	Male 45° Elbow
ME	Male Elbow
TBWE	Tube to Butt Weld Elbow
TSWE	Tube to Socket Weld Elbow
TFT	Female Run Tee
TMT	Male Run Tee
TTF	Female Branch Tee
TTM	Male Branch Tee
TTT	Union Tee
CR	Union Cross
N	Nut
KN	Knurled Nut

DATANF

Adapter Tube to AN Flare

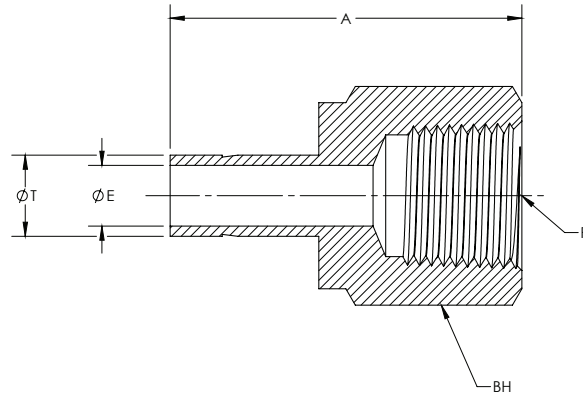
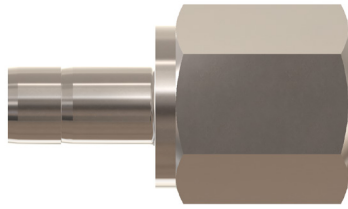


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	THREAD	A	E THRU HOLE	BH BODY HEX
4-DATANF-4	4-TA-1-4AN	-	-	1/4	7/16-20 UNJF	1.49	0.17	1/2
6-DATANF-4	6-TA-1-4AN	-	-	3/8	7/16-20 UNJF	1.67	0.17	1/2
6-DATANF-6	6-TA-1-6AN	-	-	3/8	9/16-18 UNJF	1.67	0.27	5/8
8-DATANF-8	8-TA-1-8AN	-	-	1/2	3/4-16 UNJF	2.08	0.38	13/16
12-DATANF-12	12-TA-1-12AN	-	-	3/4	1-1/16-12 UNJ	2.33	0.58	1 1/8
16-DATANF-16	16-TA-1-16AN	-	-	1	1-5/16-12 UNJ	2.74	0.80	1 3/8

NOTE: Dimensions subject to change, to be used for reference only.

DATPF/SATPF

Adapter Tube to Female Pipe

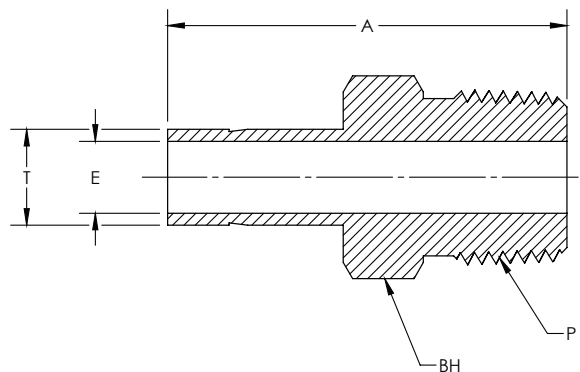
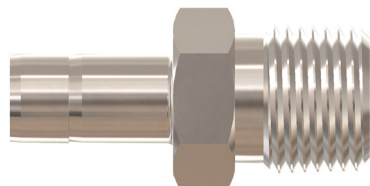


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	P PIPE END NPT	A	E THRU HOLE	BH BODY HEX
2-DATPF-2	2-TA-7-2	2FA2N	2-SATPF-2	2-2 T2HG	1/8	1/8	1.37	9/16
2-DATPF-4	2-TA-7-4	2FA4N	2-SATPF-4	2-4 T2HG	1/8	1/4	1.52	3/4
4-DATPF-2	4-TA-7-2	4FA2N	4-SATPF-2	4-2 T2HG	1/4	1/8	1.39	9/16
4-DATPF-4	4-TA-7-4	4FA4N	4-SATPF-4	4-4 T2HG	1/4	1/4	1.55	3/4
4-DATPF-6	4-TA-7-6	4FA6N	4-SATPF-6	4-6 T2HG	1/4	3/8	1.64	7/8
4-DATPF-8	4-TA-7-8	4FA8N	4-SATPF-8	4-8 T2HG	1/4	1/2	1.89	1 1/16
6-DATPF-2	6-TA-7-2	6FA2N	6-SATPF-2	6-2 T2HG	3/8	1/8	1.53	9/16
6-DATPF-4	6-TA-7-4	6FA4N	6-SATPF-4	6-4 T2HG	3/8	1/4	1.69	3/4
6-DATPF-6	6-TA-7-6	6FA6N	6-SATPF-6	6-6 T2HG	3/8	3/8	1.77	7/8
6-DATPF-8	6-TA-7-8	6FA8N	6-SATPF-8	6-8 T2HG	3/8	1/2	1.98	1 1/16
8-DATPF-4	8-TA-7-4	8FA4N	8-SATPF-4	8-4 T2HG	1/2	1/4	1.89	3/4
8-DATPF-6	8-TA-7-6	8FA6N	8-SATPF-6	8-6 T2HG	1/2	3/8	2.03	7/8
8-DATPF-8	8-TA-7-8	8FA8N	8-SATPF-8	8-8 T2HG	1/2	1/2	2.27	1 1/16
8-DATPF-12	8-TA-7-12	-	8-SATPF-12	-	1/2	3/4	2.27	1 5/16
10-DATPF-8	10-TA-7-8	10FA8N	10-SATPF-8	10-8 T2HG	5/8	1/2	2.24	1 1/16
12-DATPF-8	12-TA-7-8	12FA8N	12-SATPF-8	12-8 T2HG	3/4	1/2	2.24	1 1/16
12-DATPF-12	12-TA-7-12	12FA12N	12-SATPF-12	12-12 T2HG	3/4	3/4	2.30	1 5/16
16-DATPF-12	16-TA-7-12	16FA12N	16-SATPF-12	16-12 T2HG	1	3/4	2.61	1 5/16
16-DATPF-16	16-TA-7-16	16FA16N	16-SATPF-16	16-16 T2HG	1	1	2.66	1 5/8

NOTE: Dimensions subject to change, to be used for reference only.

DATPM/SATPM

Adapter Tube to Male Pipe

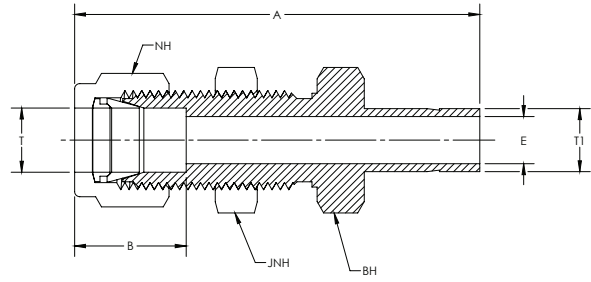
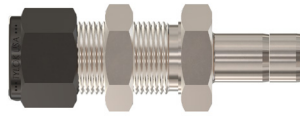
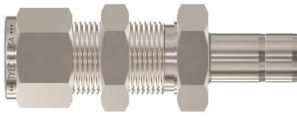


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	P PIPE END NPT	A	E THRU HOLE	BH BODY HEX	
2-DATPM-2	2-TA-1-2	2MA2N	2-SATPM-2	2-2 T2HF	1/8	1/8	1.29	0.09	7/16
2-DATPM-4	2-TA-1-4	2MA4N	2-SATPM-4	2-4 T2HF	1/8	1/4	1.51	0.09	9/16
4-DATPM-2	4-TA-1-2	4MA2N	4-SATPM-2	4-2 T2HF	1/4	1/8	1.33	0.17	7/16
4-DATPM-4	4-TA-1-4	4MA4N	4-SATPM-4	4-4 T2HF	1/4	1/4	1.55	0.17	9/16
4-DATPM-6	4-TA-1-6	4MA6N	4-SATPM-6	4-6 T2HF	1/4	3/8	1.58	0.17	11/16
4-DATPM-8	4-TA-1-8	4MA8N	4-SATPM-8	4-8 T2HF	1/4	1/2	1.80	0.17	7/8
5-DATPM-4	5-TA-1-4	5MA4N	5-SATPM-4	5-4 T2HF	5/16	1/4	1.61	0.25	9/16
6-DATPM-2	6-TA-1-2	6MA2N	6-SATPM-2	6-2 T2HF	3/8	1/8	1.48	0.19	7/16
6-DATPM-4	6-TA-1-4	6MA4N	6-SATPM-4	6-4 T2HF	3/8	1/4	1.69	0.27	9/16
6-DATPM-6	6-TA-1-6	6MA6N	6-SATPM-6	6-6 T2HF	3/8	1/8	1.70	0.27	11/16
6-DATPM-8	6-TA-1-8	6MA8N	6-SATPM-8	6-8 T2HF	3/8	1/2	1.92	0.27	7/8
8-DATPM-4	8-TA-1-4	8MA4N	8-SATPM-4	8-4 T2HF	1/2	1/4	1.92	0.28	9/16
8-DATPM-6	8-TA-1-6	8MA6N	8-SATPM-6	8-6 T2HF	1/2	3/8	1.95	0.38	11/16
8-DATPM-8	8-TA-1-8	8MA8N	8-SATPM-8	8-8 T2HF	1/2	1/2	2.17	0.38	7/8
8-DATPM-12	8-TA-1-12	-	8-SATPM-12	8-12 T2HF	1/2	3/4	2.17	0.38	1 1/16
10-DATPM-6	-	-	10-SATPM-6	-	5/8	3/8	1.99	0.38	11/16
10-DATPM-8	10-TA-1-8	10MA8N	10-SATPM-8	10-8 T2HF	5/8	1/2	2.21	0.47	7/8
12-DATPM-8	12-TA-1-8	12MA8N	12-SATPM-8	12-8 T2HF	3/4	1/2	2.21	0.47	7/8
12-DATPM-12	12-TA-1-12	12MA12N	12-SATPM-12	12-12 T2HF	3/4	3/4	2.21	0.58	1 1/16
12-DATPM-16	12-TA-1-16	12MA16N	12-SATPM-16	12-16 T2HF	3/4	1	2.52	0.59	1 3/8
14-DATPM-8	-	-	14-SATPM-8	-	7/8	1/2	2.21	0.47	15/16
16-DATPM-12	16-TA-1-12	16MA12N	16-SATPM-12	16-12 T2HF	1	3/4	2.52	0.63	1 1/16
16-DATPM-16	16-TA-1-16	16MA16N	16-SATPM-16	16-16 T2HF	1	1	2.83	0.80	1 3/8

NOTE: Dimensions subject to change, to be used for reference only.

DBHA/SBHA

Bulkhead Adapter

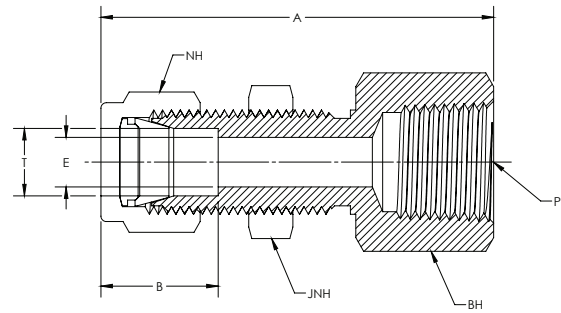
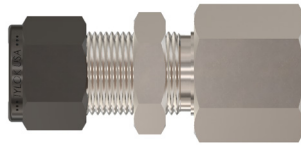
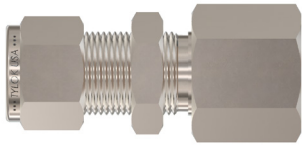


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	T1 TUBE O.D.	A	B	E THRU HOLE	JNH JAM NUT HEX	NH NUT HEX	BH BODY HEX	PANEL HOLE	
4-DBHA-4	400-R1-4	4TUBC4	4-SBHA-4	4-4 T2H2BZ	1/4	1/4	2.27	0.61	0.17	5/8	9/16	5/8	29/64
6-DBHA-6	600-R1-6	6TUBC6	6-SBHA-6	6-6 T2H2BZ	3/8	3/8	2.56	0.67	0.27	3/4	11/16	3/4	37/64
8-DBHA-8	810-R1-8	8TUBC8	8-SBHA-8	8-8 T2H2BZ	1/2	1/2	3.04	0.90	0.90	15/16	7/8	15/16	49/64

NOTE: Dimensions subject to change, to be used for reference only.

DBHFP/SBHFP

Bulkhead Female Pipe Connector

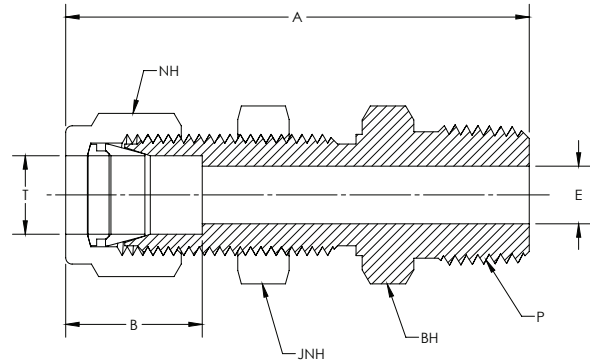
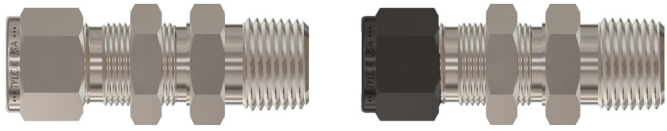


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH		T TUBE O.D.	P PIPE END NPT	A	B	E THRU HOLE	JNH JAM NUT HEX	NH NUT HEX	BH BODY HEX	PANEL HOLE
2-DBHFP-2	200-71-2	2FBC2N	2-SBHFP-2	2-2 GH2BZ		1/8	1/8	1.77	0.52	0.09	1/2	7/16	9/16	21/64
4-DBHFP-2	400-71-2	4FBC2N	4-SBHFP-2	4-2 GH2BZ		1/4	1/8	1.85	0.61	0.19	5/8	9/16	5/8	29/64
4-DBHFP-4	400-71-4	4FBC4N	4-SBHFP-4	4-4 GH2BZ		1/4	1/4	2.04	0.61	0.19	5/8	9/16	3/4	29/64
5-DBHFP-2	-	5FBC2N	5-SBHFP-2	5-2 GH2BZ		5/16	1/8	1.96	0.65	0.25	11/16	5/8	11/16	33/64
6-DBHFP-4	600-71-4	6FBC4N	6-SBHFP-4	6-4 GH2BZ		3/8	1/4	2.17	0.67	0.28	3/4	11/16	3/4	37/64
6-DBHFP-6	600-71-6	-	6-SBHFP-6	-		3/8	3/8	2.23	0.67	0.28	3/4	11/16	7/8	37/64
8-DBHFP-6	810-71-6	8FBC6N	8-SBHFP-6	8-6 GH2BZ		1/2	3/8	2.43	0.90	0.41	15/16	7/8	15/16	49/64
8-DBHFP-8	810-71-8	8FBC8N	8-SBHFP-8	8-8 GH2BZ		1/2	1/2	2.62	0.90	0.41	15/16	7/8	11/16	49/64
10-DBHFP-8	-	10FBC8N	10-SBHFP-8	10-8 GH2BZ		5/8	1/2	2.65	0.96	0.50	11/16	1	11/16	57/64
16-DBHFP-16	1610-71-16	16FBC16N	16-SBHFP-16	16-16 GH2BZ		1	1	3.68	1.24	0.88	1 5/8	1 1/2	1 5/8	1 21/64

NOTE: Dimensions subject to change, to be used for reference only.

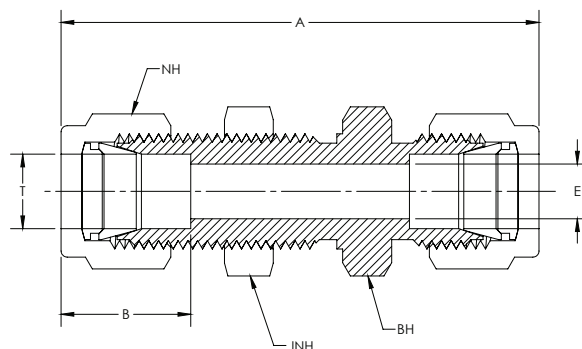
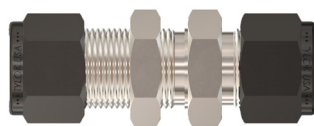
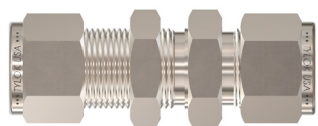
DBHMP/SBHMP

Bulkhead Male Pipe Connector



CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	P PIPE END NPT	A	B	E THRU HOLE	JNH JAM NUT HEX	NH NUT HEX	BH BODY HEX	PANEL HOLE
2-DBHMP-2	200-11-2	2MBC2N	2-SBHMP-2	2-2 FH2BZ	1/8	1/8	1.83	0.52	0.09	1/2	7/16	1/2	21/64
4-DBHMP-2	400-11-2	4MBC2N	4-SBHMP-2	4-2 FH2BZ	1/4	1/8	1.95	0.61	0.19	5/8	9/16	5/8	29/64
4-DBHMP-4	400-11-4	4MBC4N	4-SBHMP-4	4-4 FH2BZ	1/4	1/4	2.13	0.61	0.19	5/8	9/16	5/8	29/64
4-DBHMP-6	-	4MBC6N	4-SBHMP-6	4-6 FH2BZ	1/4	3/8	2.17	0.61	0.19	5/8	9/16	11/16	29/64
6-DBHMP-4	600-11-4	6MBC4N	6-SBHMP-4	6-4 FH2BZ	3/8	1/4	2.26	0.67	0.28	3/4	11/16	3/4	37/64
6-DBHMP-6	600-11-6	6MBC6N	6-SBHMP-6	6-6 FH2BZ	3/8	3/8	2.26	0.67	0.28	3/4	11/16	3/4	37/64
6-DBHMP-8	600-11-8	6MBC8N	6-SBHMP-8	6-8 FH2BZ	3/8	1/2	2.51	0.67	0.28	3/4	11/16	7/8	37/64
8-DBHMP-4	810-11-4	8MBC4N	8-SBHMP-4	8-4 FH2BZ	1/2	1/4	2.49	0.90	0.28	15/16	7/8	15/16	49/64
8-DBHMP-6	810-11-6	8MBC6N	8-SBHMP-6	8-6 FH2BZ	1/2	3/8	2.49	0.90	0.38	15/16	7/8	15/16	49/64
8-DBHMP-8	810-11-8	8MBC8N	8-SBHMP-8	8-8 FH2BZ	1/2	1/2	2.71	0.90	0.41	15/16	7/8	15/16	49/64
12-DBHMP-16			12-SBHMP-12		3/4	1	3.26	0.63	0.63	1 3/16	1 1/8	1 3/8	1 1/4

NOTE: Dimensions subject to change, to be used for reference only.

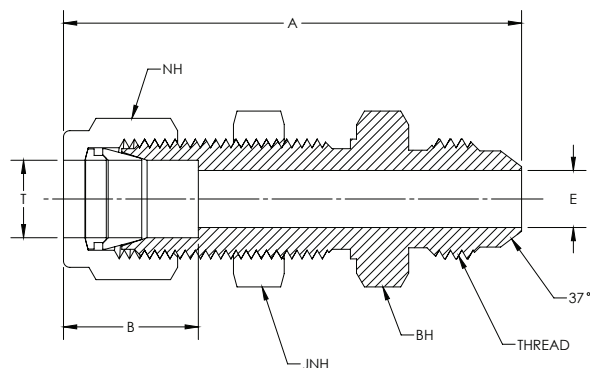
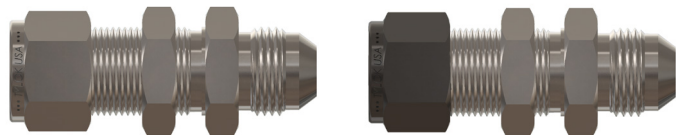


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH		T TUBE O.D.	A	B	E THRU HOLE	JNH JAM NUT HEX	NH NUT HEX	BH BODY HEX	PANEL HOLE
1-DBHU-1	100-61	1BC1	1-SBHU-1	1-1 WBZ	1/16	1.25	0.34	0.05	5/16	5/16	5/16	13/64	
2-DBHU-2	200-61	2BC2	2-SBHU-2	2-2 WBZ	1/8	2.03	0.52	0.09	1/2	7/16	1/2	21/64	
3-DBHU-3	300-61	3BC3	3-SBHU-3	3-3 WBZ	3/16	2.11	0.54	0.13	9/16	1/2	9/16	25/64	
4-DBHU-4	400-61	4BC4	4-SBHU-4	4-4 WBZ	1/4	2.27	0.61	0.19	5/8	9/16	5/8	29/64	
5-DBHU-5	500-61	5BC5	5-SBHU-5	5-5 WBZ	5/16	2.42	0.65	0.25	11/16	5/8	11/16	33/64	
6-DBHU-6	600-61	6BC6	6-SBHU-6	6-6 WBZ	3/8	2.46	0.67	0.28	3/4	11/16	3/4	37/64	
8-DBHU-8	810-61	8BC8	8-SBHU-8	8-8 WBZ	1/2	2.80	0.90	0.41	15/16	7/8	15/16	49/64	
10-DBHU-10	1010-61	10BC10	10-SBHU-10	10-10 WBZ	5/8	2.86	0.96	0.50	11/16	1	11/16	57/64	
12-DBHU-12	1210-61	12BC12	12-SBHU-12	12-12 WBZ	3/4	3.11	0.96	0.63	1 3/16	1 1/8	1 3/16	1 1/64	
16-DBHU-16	1610-61	16BC16	16-SBHU-16	16-16 WBZ	1	3.80	1.24	0.88	1 5/8	1 1/2	1 5/8	1 21/64	

NOTE: Dimensions subject to change, to be used for reference only.

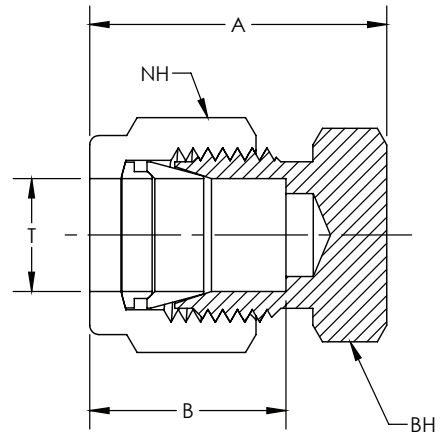
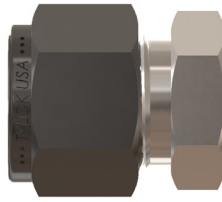
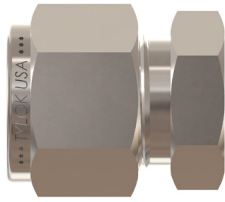
DBUANF/SBUANF

Bulkhead to AN Flare Union



CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	THREAD	A	B	E THRU HOLE	JNH JAM NUT HEX	NH NUT HEX	BH BODY HEX	PANEL HOLE
4-DBUANF-4	400-61-4AN	4XABC4	4-SBUANF-4	4-4 XH2BZ	1/4	7/16-20	2.12	0.61	0.17	5/8	9/16	5/8	29/64
6-DBUANF-6	600-61-6AN	6XABC6	6-SBUANF-6	6-6 XH2BZ	3/8	9/16-18	2.26	0.67	0.28	3/4	11/16	3/4	37/64
8-DBUANF-8	810-61-8AN	8XABC8	8-SBUANF-8	8-8 XH2BZ	1/2	3/4-16	2.59	0.90	0.39	15/16	7/8	15/16	49/64
12-DBUANF-12	1210-61-12AN	12XABC12	12-SBUANF-12	12-12 XH2BZ	3/4	1-1/16-12	3.12	0.96	0.61	1 3/16	1 1/8	1 3/16	1 1/64
16-DBUANF-16	1610-61-16AN	16XABC16	16-SBUANF-16	16-16 XH2BZ	1	1-5/6-12	3.65	1.24	0.85	1 5/8	1 1/2	1 5/8	1 21/64

NOTE: Dimensions subject to change, to be used for reference only.

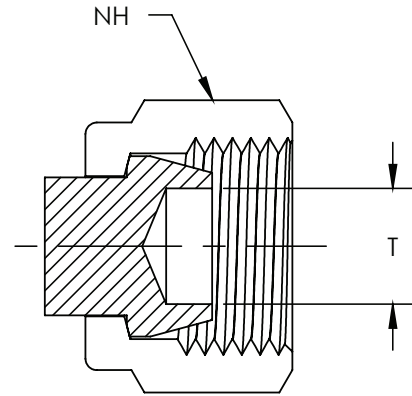


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH		T TUBE O.D.	A	B	NH NUT HEX	BH BODY HEX
1-DCAP	100-C	1BLEN1	1-SCAP	1 PNBZ	1/16	0.59	0.34	5/16	5/16	
2-DCAP	200-C	2BLEN2	2-SCAP	2 PNBZ	1/8	0.80	0.52	7/16	7/16	
3-DCAP	300-C	3BLEN3	3-SCAP	3 PNBZ	3/16	0.84	0.54	1/2	7/16	
4-DCAP	400-C	4BLEN4	4-SCAP	4 PNBZ	1/4	0.92	0.61	9/16	1/2	
5-DCAP	500-C	5BLEN5	5-SCAP	5 PNBZ	5/16	0.98	0.65	5/8	9/16	
6-DCAP	600-C	6BLEN6	6-SCAP	6 PNBZ	3/8	1.01	0.67	11/16	5/8	
8-DCAP	810-C	8BLEN8	8-SCAP	8 PNBZ	1/2	1.15	0.90	7/8	13/16	
10-DCAP	1010-C	10BLEN10	10-SCAP	10 PNBZ	5/8	1.18	0.96	1	15/16	
12-DCAP	1210-C	12BLEN12	12-SCAP	12 PNBZ	3/4	1.24	0.96	1 1/8	1 1/16	
14-DCAP	1410-C	14BLEN14	14-SCAP	14 PNBZ	7/8	1.33	1.02	1 1/4	1 3/16	
16-DCAP	1610-C	16BLEN16	16-SCAP	16 PNBZ	1	1.52	1.24	1 1/2	1 3/8	

NOTE: Dimensions subject to change, to be used for reference only.

DF PLUG/SF PLUG

Fitting Plug

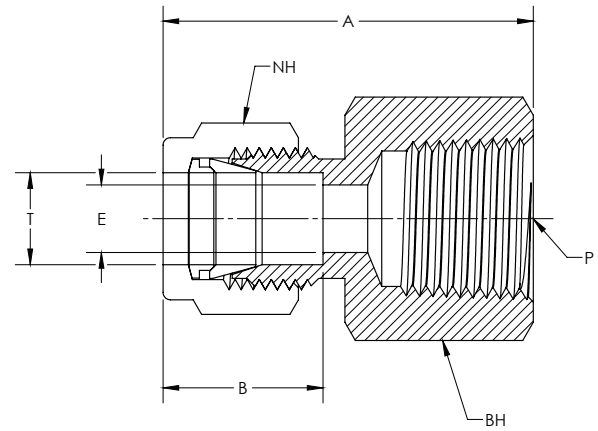
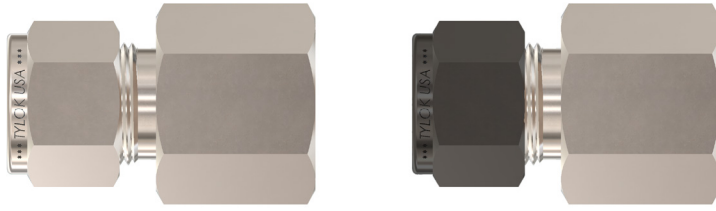


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH		T TUBE O.D.	NH NUT HEX
1-DF PLUG	100-P	1BLP1	1-SF PLUG	1 FNZ	1/16	5/16	
2-DF PLUG	200-P	2BLP2	2-SF PLUG	2 FNZ	1/8	7/16	
3-DF PLUG	300-P	3BLP3	3-SF PLUG	3 FNZ	3/16	1/2	
4-DF PLUG	400-P	4BLP4	4-SF PLUG	4 FNZ	1/4	9/16	
5-DF PLUG	500-P	5BLP5	5-SF PLUG	5 FNZ	5/16	5/8	
6-DF PLUG	600-P	6BLP6	6-SF PLUG	6 FNZ	3/8	11/16	
8-DF PLUG	810-P	8BLP8	8-SF PLUG	8 FNZ	1/2	7/8	
10-DF PLUG	1010-P	10BLP10	10-SF PLUG	10 FNZ	5/8	1	
12-DF PLUG	1210-P	12BLP12	12-SF PLUG	12 FNZ	3/4	1 1/8	
14-DF PLUG	1410-P	14BLP14	14-SF PLUG	14 FNZ	7/8	1 1/4	
16-DF PLUG	1610-P	16BLP16	16-SF PLUG	16 FNZ	1	1 1/2	

NOTE: Dimensions subject to change, to be used for reference only.

DFC/SFC

Female Connector

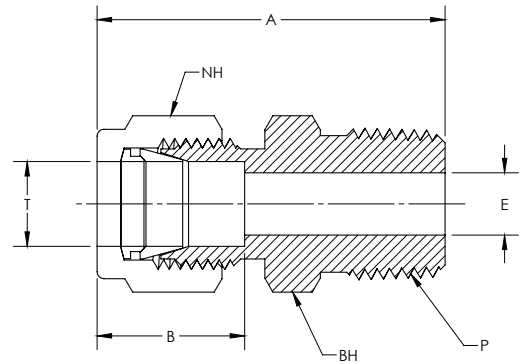
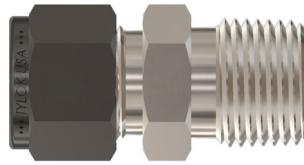
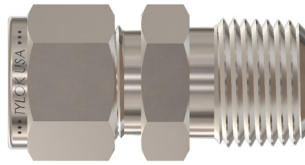


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	P PIPE END NPT	A	B	E THRU HOLE	NH NUT HEX	BH BODY HEX	
2-DFC-2	200-7-2	2FSC2N	2-SFC-2	2-2 GBZ	1/8	1/8	1.14	0.52	0.09	7/16	9/16
2-DFC-4	200-7-4	2FSC4N	2-SFC-4	2-4 GBZ	1/8	1/4	1.33	0.52	0.09	7/16	3/4
2-DFC-6	-	-	2-SFC-6	-	1/8	3/8	1.39	0.52	0.09	7/16	7/8
3-DFC-2	300-7-2	3FSC2N	3-SFC-2	3-2 GBZ	3/16	1/8	1.16	0.54	0.13	1/2	9/16
3-DFC-4	3FSC4N	-	3-SFC-4	3-4 GBZ	3/16	1/4	1.35	0.54	0.13	1/2	3/4
4-DFC-2	400-7-2	4FSC2N	4-SFC-2	4-2 GBZ	1/4	1/8	1.23	0.61	0.19	9/16	9/16
4-DFC-4	400-7-4	4FSC4N	4-SFC-4	4-4 GBZ	1/4	1/4	1.42	0.61	0.19	9/16	3/4
4-DFC-6	400-7-6	4FSC6N	4-SFC-6	4-6 GBZ	1/4	3/8	1.48	0.61	0.19	9/16	7/8
4-DFC-8	400-7-8	4FSC8N	4-SFC-8	4-8 GBZ	1/4	1/2	1.67	0.61	0.19	9/16	1 1/16
5-DFC-2	500-7-2	5FSC2N	5-SFC-2	5-2 GBZ	5/16	1/8	1.27	0.65	0.25	5/8	9/16
5-DFC-4	500-7-4	5FSC4N	5-SFC-4	5-4 GBZ	5/16	1/4	1.46	0.65	0.25	5/8	3/4
5-DFC-6	5FSC6N	-	5-SFC-6	5-6 GBZ	5/16	3/8	1.52	0.65	0.25	5/8	7/8
5-DFC-8	-	-	5-SFC-8	-	5/16	1/2	1.71	0.65	0.25	5/8	1 1/16
6-DFC-2	600-7-2	6FSC2N	6-SFC-2	6-2 GBZ	3/8	1/8	1.29	0.67	0.28	11/16	5/8
6-DFC-4	600-7-4	6FSC4N	6-SFC-4	6-4 GBZ	3/8	1/4	1.48	0.67	0.28	11/16	3/4
6-DFC-6	600-7-6	6FSC6N	6-SFC-6	6-6 GBZ	3/8	3/8	1.54	0.67	0.28	11/16	7/8
6-DFC-8	600-7-8	6FSC8N	6-SFC-8	6-8 GBZ	3/8	1/2	1.73	0.67	0.28	11/16	1 1/16
6-DFC-12	600-7-12	6FSC12N	6-SFC-12	6-12 GBZ	3/8	3/4	1.89	0.67	0.28	11/16	1 5/16
8-DFC-4	810-7-4	8FSC4N	8-SFC-4	8-4 GBZ	1/2	1/4	1.59	0.90	0.41	7/8	13/16
8-DFC-6	810-7-6	8FSC6N	8-SFC-6	8-6 GBZ	1/2	3/8	1.65	0.90	0.41	7/8	7/8
8-DFC-8	810-7-8	8FSC8N	8-SFC-8	8-8 GBZ	1/2	1/2	1.84	0.90	0.41	7/8	1 1/16
8-DFC-12	810-7-12	8FSC12N	8-SFC-12	8-12 GBZ	1/2	3/4	1.90	0.90	0.41	7/8	1 5/16
8-DFC-16	810-7-16	-	8-SFC-16	-	1/2	1	2.27	0.90	0.41	7/8	1 5/8
10-DFC-4	-	-	10-SFC-4	-	5/8	1/4	1.80	0.96	0.44	1	15/16
10-DFC-6	1010-7-6	10FSC6N	10-SFC-6	10-6 GBZ	5/8	3/8	1.65	0.96	0.50	1	15/16
10-DFC-8	1010-7-8	10FSC8N	10-SFC-8	10-8 GBZ	5/8	1/2	1.83	0.96	0.50	1	1 1/16
10-DFC-12	1010-7-12	10FSC12N	10-SFC-12	10-12 GBZ	5/8	3/4	1.90	0.96	0.50	1	1 5/16
12-DFC-6	1210-7-6	-	12-SFC-6	-	3/4	3/8	1.67	0.96	0.56	1 1/8	1 1/16
12-DFC-8	1210-7-8	12FSC8N	12-SFC-8	12-8 GBZ	3/4	1/2	1.84	0.96	0.63	1 1/8	1 1/16
12-DFC-12	1210-7-12	12FSC12N	12-SFC-12	12-12 GBZ	3/4	3/4	1.90	0.96	0.63	1 1/8	1 5/16
12-DFC-16	1210-7-16	-	12-SFC-16	-	3/4	1	2.28	0.96	0.63	1 1/8	1 5/8
14-DFC-8	-	-	14-SFC-8	-	7/8	1/2	1.83	1.02	0.70	1 1/4	1 3/16
14-DFC-12	1410-7-12	14FSC12N	14-SFC-12	14-12 GBZ	7/8	3/4	1.96	1.02	0.72	1 1/4	1 3/8
16-DFC-6	-	-	16-SFC-6	-	1	3/8	2.15	1.24	0.56	1 1/2	1 3/8
16-DFC-8	1610-7-8	-	16-SFC-8	-	1	1/2	2.15	1.24	0.70	1 1/2	1 3/8
16-DFC-12	1610-7-12	16FSC12N	16-SFC-12	16-12 GBZ	1	3/4	2.12	1.24	0.88	1 1/2	1 3/8
16-DFC-16	1610-7-16	16FSC16N	16-SFC-16	16-16 GBZ	1	1	2.46	1.24	0.88	1 1/2	1 5/8

NOTE: Dimensions subject to change, to be used for reference only.

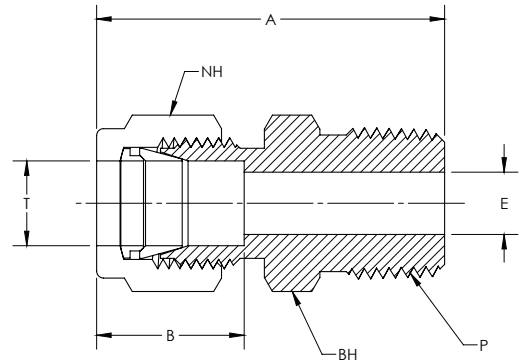
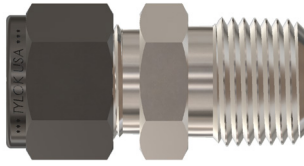
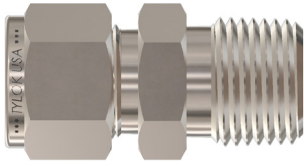
DMC/SMC

Male Connector



CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	P PIPE END NPT	A	B	E THRU HOLE	NH NUT HEX	BH BODY HEX	
1-DMC-1	100-1-1	1MSC1N	1-SMC-1	1-1 FBZ	1/16	1/16	0.95	0.34	0.05	5/16	5/16
1-DMC-2	100-1-2	1MSC2N	1-SMC-2	1-2 FBZ	1/16	1/8	1.03	0.34	0.05	5/16	7/16
2-DMC-1	200-1-1	2MSC1N	2-SMC-1	2-1 FBZ	1/8	1/16	1.17	0.52	0.09	7/16	7/16
2-DMC-2	200-1-2	2MSC2N	2-SMC-2	2-2 FBZ	1/8	1/8	1.20	0.52	0.09	7/16	7/16
2-DMC-4	200-1-3	2MSC4N	2-SMC-4	2-4 FBZ	1/8	1/4	1.41	0.52	0.09	7/16	9/16
2-DMC-6	200-1-6	2MSC6N	2-SMC-6	2-6 FBZ	1/8	3/8	1.42	0.52	0.09	7/16	11/16
2-DMC-8	200-1-8	2MSC8N	2-SMC-8	2-8 FBZ	1/8	1/2	1.67	0.52	0.09	7/16	7/8
3-DMC-2	300-1-2	3MSC2N	3-SMC-2	3-2 FBZ	3/16	1/8	1.23	0.54	0.13	1/2	7/16
3-DMC-4	300-1-4	3MSC4N	3-SMC-4	3-4 FBZ	3/16	1/4	1.43	0.54	0.13	1/2	9/16
4-DMC-1	400-1-1	4MSC1N	4-SMC-1	4-1 FBZ	1/4	1/16	1.29	0.61	0.13	9/16	1/2
4-DMC-2	400-1-2	4MSC2N	4-SMC-2	4-2 FBZ	1/4	1/8	1.29	0.61	0.19	9/16	1/2
4-DMC-4	400-1-4	4MSC4N	4-SMC-4	4-4 FBZ	1/4	1/4	1.49	0.61	0.19	9/16	9/16
4-DMC-6	400-1-6	4MSC6N	4-SMC-6	4-6 FBZ	1/4	3/8	1.51	0.61	0.19	9/16	11/16
4-DMC-8	400-1-8	4MSC8N	4-SMC-8	4-8 FBZ	1/4	1/2	1.76	0.61	0.19	9/16	7/8
4-DMC-12	400-1-12	4MSC12N	4-SMC-12	4-12 FBZ	1/4	3/4	1.82	0.61	0.19	9/16	1 1/16
5-DMC-2	500-1-2	5MSC2N	5-SMC-2	5-2 FBZ	5/16	1/8	1.35	0.65	0.19	5/8	9/16
5-DMC-4	500-1-4	5MSC4N	5-SMC-4	5-4 FBZ	5/16	1/4	1.54	0.65	0.25	5/8	9/16
5-DMC-6	500-1-6	5MSC6N	5-SMC-6	5-6 FBZ	5/16	3/8	1.56	0.65	0.25	5/8	11/16
5-DMC-8	500-1-8	5MSC8N	5-SMC-8	5-8 FBZ	5/16	1/2	1.77	0.65	0.25	5/8	7/8
6-DMC-2	600-1-2	6MSC2N	6-SMC-2	6-2 FBZ	3/8	1/8	1.39	0.67	0.19	11/16	5/8
6-DMC-4	600-1-4	6MSC4N	6-SMC-4	6-4 FBZ	3/8	1/4	1.57	0.67	0.28	11/16	5/8
6-DMC-6	600-1-6	6MSC6N	6-SMC-6	6-6 FBZ	3/8	3/8	1.57	0.67	0.28	11/16	11/16
6-DMC-8	600-1-8	6MSC8N	6-SMC-8	6-8 FBZ	3/8	1/2	1.83	0.67	0.28	11/16	7/8
6-DMC-12	600-1-12	6MSC12N	6-SMC-12	6-12 FBZ	3/8	3/4	1.89	0.67	0.28	11/16	1 1/16
6-DMC-16	600-1-16	-	6-SMC-16	-	3/8	1	2.14	0.67	0.28	11/16	1 3/8
8-DMC-2	810-1-2	8MSC2N	8-SMC-2	8-2 FBZ	1/2	1/8	1.52	0.90	0.19	7/8	13/16
8-DMC-4	810-1-4	8MSC4N	8-SMC-4	8-4 FBZ	1/2	1/4	1.71	0.90	0.28	7/8	13/16
8-DMC-6	810-1-6	8MSC6N	8-SMC-6	8-6 FBZ	1/2	3/8	1.71	0.90	0.38	7/8	13/16
8-DMC-8	810-1-8	8MSC8N	8-SMC-8	8-8 FBZ	1/2	1/2	1.93	0.90	0.41	7/8	7/8
8-DMC-12	810-1-12	8MSC12N	8-SMC-12	8-12 FBZ	1/2	3/4	1.99	0.90	0.41	7/8	1 1/16
8-DMC-16	810-1-16	8MSC16N	8-SMC-16	8-16 FBZ	1/2	1	2.26	0.90	0.41	7/8	1 3/8

NOTE: Dimensions subject to change, to be used for reference only.

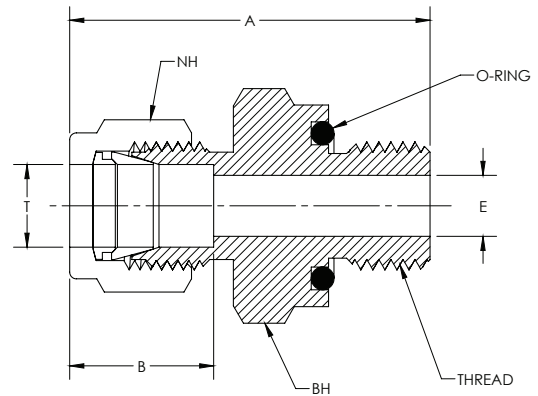
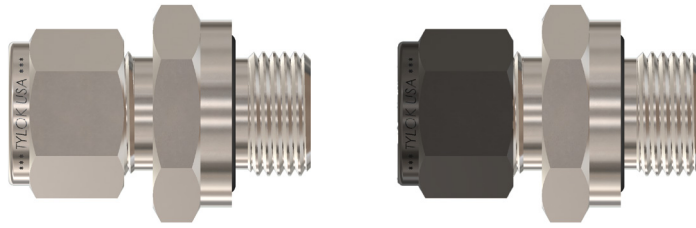


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH		T TUBE O.D.	P PIPE END NPT	A	B	E THRU HOLE	NH NUT HEX	BH BODY HEX
10-DMC-4	1010-1-4	-	10-SMC-4	-		5/8	1/4	1.74	0.96	0.28	1	15/16
10-DMC-6	1010-1-6	10MSC6N	10-SMC-6	10-6 FBZ		5/8	3/8	1.74	0.96	0.38	1	15/16
10-DMC-8	1010-1-8	10MSC8N	10-SMC-8	10-8 FBZ		5/8	1/2	1.93	0.96	0.47	1	15/16
10-DMC-12	1010-1-12	10MSC12N	10-SMC-12	10-12 FBZ		5/8	3/4	1.99	0.96	0.50	1	1 1/16
12-DMC-4	1210-1-4	-	12-SMC-4	-		3/4	1/4	1.81	0.96	0.28	1 1/8	1 1/16
12-DMC-6	1210-1-6	-	12-SMC-6	-		3/4	3/8	1.81	0.96	0.38	1 1/8	1 1/16
12-DMC-8	1210-1-8	12MSC8N	12-SMC-8	12-8 FBZ		3/4	1/2	1.99	0.96	0.47	1 1/8	1 1/16
12-DMC-12	1210-1-12	12MSC12N	12-SMC-12	12-12 FBZ		3/4	3/4	1.99	0.96	0.63	1 1/8	1 1/16
12-DMC-16	1210-1-16	12MSC16N	12-SMC-16	12-16 FBZ		3/4	1	2.26	0.96	0.63	1 1/8	1 3/8
14-DMC-6	-	-	14-SMC-6	-		7/8	3/8	1.80	1.02	0.38	1 1/4	1 3/16
14-DMC-8	1410-1-8	-	14-SMC-8	-		7/8	1/2	1.99	1.02	0.47	1 1/4	1 3/16
14-DMC-12	1410-1-12	14MSC12N	14-SMC-12	14-12 FBZ		7/8	3/4	1.99	1.02	0.63	1 1/4	1 3/16
14-DMC-16	1410-1-16	14MSC16N	14-SMC-16	14-16 FBZ		7/8	1	2.26	1.02	0.72	1 1/4	1 3/8
16-DMC-8	1610-1-8	16MSC8N	16-SMC-8	16-8 FBZ		1	1/2	2.27	1.24	0.47	1 1/2	1 3/8
16-DMC-12	1610-1-12	16MSC12N	16-SMC-12	16-12 FBZ		1	3/4	2.27	1.24	0.63	1 1/2	1 3/8
16-DMC-16	1610-1-16	16MSC16N	16-SMC-16	16-16 FBZ		1	1	2.46	1.24	0.88	1 1/2	1 3/8

NOTE: Dimensions subject to change, to be used for reference only.

DMC-ORS/SMC-ORS

O-Ring Straight Thread Male Connector

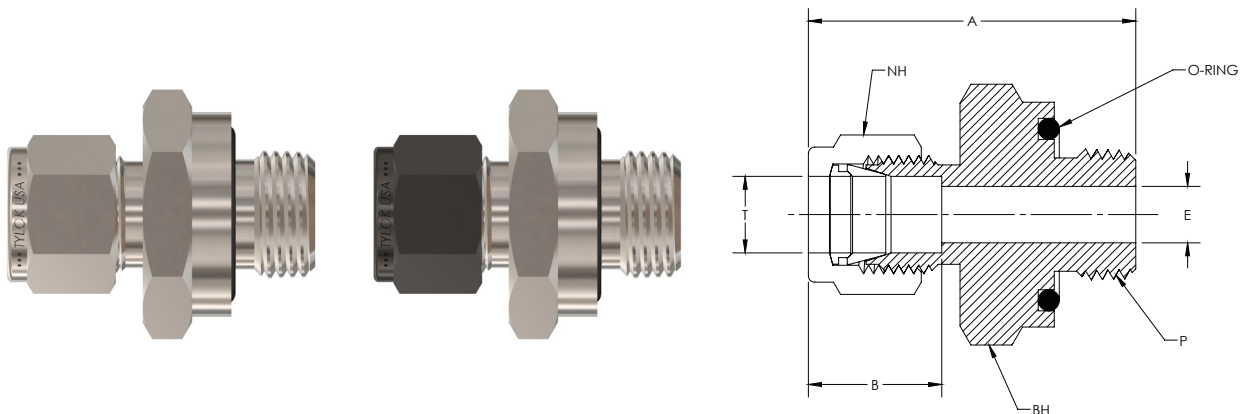


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	THREAD	A	B	E THRU HOLE	NH NUT HEX	BH BODY HEX	O-RING
2-DMC-ORS	200-1-OR2	M2SC2	2-SMC-ORS	2-2 ZHBA5	1/8	5/16-24	1.30	0.52	0.09	7/16	9/16	AS-011
4-DMC-ORS	400-1-OR4	M2SC4	4-SMC-ORS	4-4 ZHBA5	1/4	7/16-20	1.51	0.61	0.19	9/16	3/4	AS-111
6-DMC-ORS	600-1-OR6	M2SC6	6-SMC-ORS	6-6 ZHBA5	3/8	9/16-18	1.67	0.67	0.28	11/16	15/16	AS-113
8-DMC-ORS	810-1-OR8	M2SC8	8-SMC-ORS	8-8 ZHBA5	1/2	3/4-16	1.80	0.90	0.41	7/8	1 1/8	AS-116
12-DMC-ORS	1210-1-OR	12M2SC12	12-SMC-ORS	12-12 ZHBA5	3/4	1-1/16-12	2.06	0.96	0.63	1 1/8	1 1/2	AS-215
16-DMC-ORS	1610-1-OR	16M2SC16	16-SMC-ORS	16-16 ZHBA5	1	1-5/16-12	2.30	1.24	0.88	1 1/2	1 3/4	AS-219

NOTE: Dimensions subject to change, to be used for reference only.
Standard O-Ring material is Buna-N, 70 durometer.

DMC-ORT/SMC-ORT

O-Ring Tapered Thread Male Connector

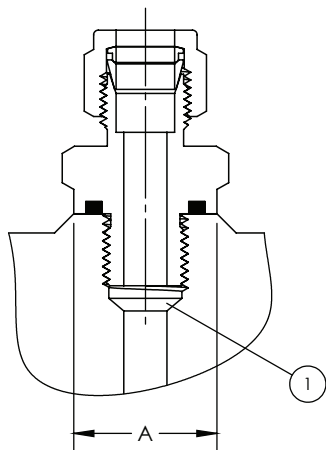


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	P PIPE END NPT	A	B	E THRU HOLE	NH NUT HEX	BH BODY HEX	O-RING	
4-DMC-2-ORT	400-1-2-OR	4M3SC2	4-SMC-2-ORT	4-2 ZHBF5	1/4	1/8	1.38	0.61	0.19	9/16	3/4	AS-111
4-DMC-4-ORT	400-1-4-OR	4M3SC4	4-SMC-4-ORT	4-4 ZHBF5	1/4	1/4	1.51	0.61	0.19	9/16	15/16	AS-113
6-DMC-6-ORT	600-1-6-OR	6M3SC6	6-SMC-6-ORT	6-6 ZHBF5	3/8	3/8	1.64	0.67	0.28	11/16	1 1/8	AS-116
6-DMC-8-ORT	600-1-8-OR	6M3SC8	6-SMC-8-ORT	6-8 ZHBF5	3/8	1/2	1.86	0.67	0.28	11/16	1 5/16	AS-212
8-DMC-4-ORT	-	8M3SC4	8-SMC-4-ORT	8-4 ZHBF5	1/2	1/4	1.68	0.90	0.28	7/8	15/16	AS-113
8-DMC-8-ORT	810-1-8-OR	8M3SC8	8-SMC-8-ORT	8-8 ZHBF5	1/2	1/2	1.96	0.90	0.41	7/8	1 5/16	AS-212

NOTE: Dimensions subject to change, to be used for reference only.

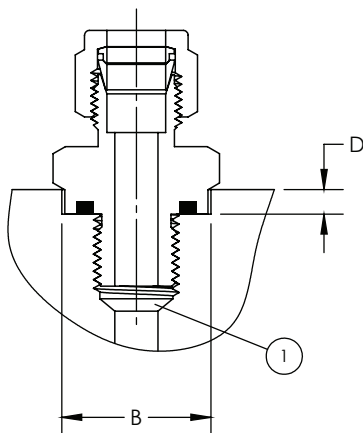
MOUNTING DIMENSIONS

for ORS/ORT Fittings



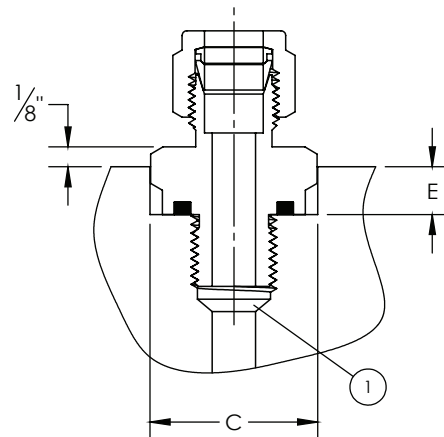
RAISED SURFACE

Minimum diameter is larger than the O-Ring sealing diameter to prevent O-Ring extrusion.



RECESSED HOLE (SHOULDER CLEARANCE)

Minimum diameter allows clearance for round shoulder of fitting into recess.



RECESSED HOLE (HEX CLEARANCE)

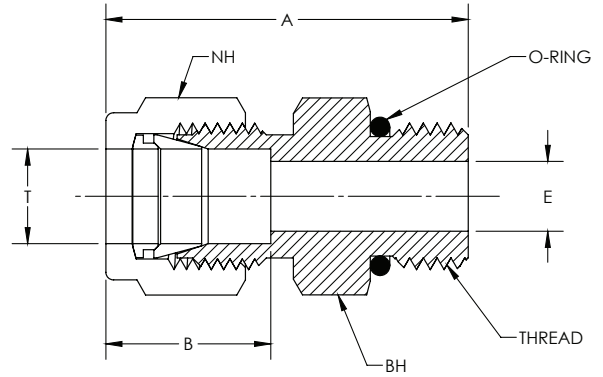
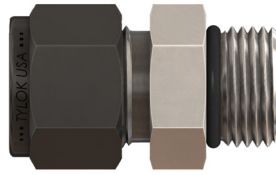
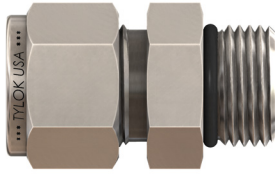
Minimum diameter allows clearance for hex of fitting into recess.

Thread Size	NPT Size	A Min Dia	B Min Dia	C Min Dia	D Max Depth	E Max Depth
5/16-24	-	0.50	0.59	0.66	0.09	0.16
5/16-24	-	0.50	0.59	0.66	0.09	0.22
-	1/8	0.69	0.78	0.88	0.16	0.28
3/8-24	-	0.56	0.66	0.75	0.09	0.22
7/16-20	-	0.69	0.78	0.88	0.16	0.28
-	1/8	0.69	0.78	0.88	0.16	0.28
-	1/4	0.87	0.97	1.09	0.16	0.31
1/2-20	-	0.75	0.91	1.03	0.16	0.31
9/16-18	-	0.81	0.97	1.09	0.16	0.31
-	1/4	0.87	0.97	1.09	0.16	0.31
-	3/8	1.00	1.16	1.31	0.16	0.34
-	1/2	1.22	1.34	1.53	0.22	0.44
3/4-16	-	1.00	1.16	1.31	0.16	0.34
-	1/2	1.22	1.34	1.53	0.22	0.44
1-1/16-12	-	1.41	1.53	1.75	0.22	0.50
1-5/16-12	-	1.69	1.78	2.03	0.22	0.56

1 Allow clearance for (1) full thread.

DMC-STB/SMC-STB

Straight Thread Boss Male Connector

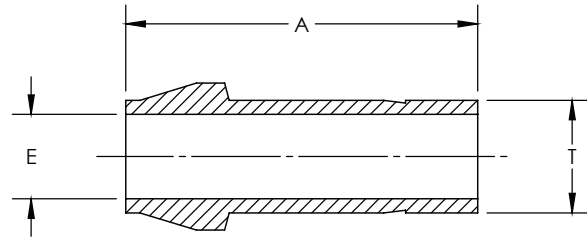


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	THREAD	A	B	E THRU HOLE	NH NUT HEX	BH BODY HEX	O-RING
4-DMC-4-STB	400-1-4ST	4M1SC4	4-SMC-4-STB	4-4 ZHBA	1/4	7/16-20	1.34	0.61	0.17	9/16	9/16	AS-904
6-DMC-4-STB	600-1-4ST	6M1SC4	6-SMC-4-STB	6-4 ZHBA	3/8	7/16-20	1.40	0.67	0.17	11/16	5/8	AS-904
6-DMC-6-STB	600-1-6ST	6M1SC6	6-SMC-6-STB	6-6 ZHBA	3/8	9/16-18	1.47	0.67	0.30	11/16	11/16	AS-906
8-DMC-6-STB	810-1-6ST	8M1SC6	8-SMC-6-STB	8-6 ZHBA	1/2	9/16-18	1.54	0.90	0.30	7/8	13/16	AS-906
8-DMC-8-STB	810-1-8ST	8M1SC8	8-SMC-8-STB	8-8 ZHBA	1/2	3/4-16	1.65	0.90	0.39	7/8	7/8	AS-908
12-DMC-12-STB	1210-1-12ST	12M1SC12	12-SMC-12-STB	12-12 ZHBA	3/4	1-1/16-12	1.93	0.96	0.61	1 1/8	1 1/4	AS-912
16-DMC-16-STB	1610-1-16ST	16M1SC16	16-SMC-16-STB	16-16 ZHBA	1	1-5/16-12	2.15	1.24	0.85	1 1/2	1 1/2	AS-916

NOTE: Dimensions subject to change, to be used for reference only.
 Adapts to J1926/1 and ISO 11926-1 Straight Thread Boss.
 Standard O-Ring material is FKM, 90 durometer.

DPCU/SPCU

Port Connector Union

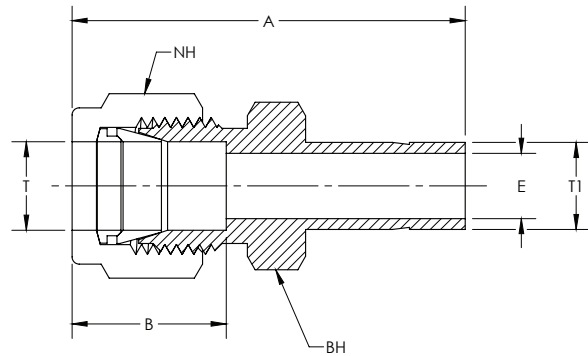
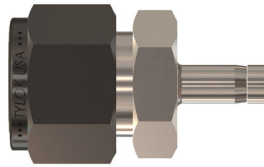
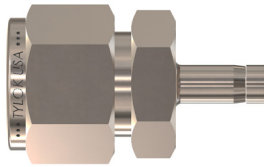


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH		T TUBE O.D.	A	E THRU HOLE
2-DPCU	U201-PC	2PC2	2-SPCU	2-2 ZPC		1/8	1.08	0.08
4-DPCU	401-PC	4PC4	4-SPCU	4-4 ZPC		1/4	1.13	0.17
6-DPCU	601-PC	6PC6	6-SPCU	6-6 ZPC		3/8	1.28	0.27
8-DPCU	811-PC	8PC8	8-SPCU	8-8 ZPC		1/2	1.69	0.38
12-DPCU	1211-PC	12PC12	12-SPCU	12-12 ZPC		3/4	1.75	0.58
16-DPCU	1611-PC	16PC16	16-SPCU	16-16 ZPC		1	2.10	0.80

NOTE: Dimensions subject to change, to be used for reference only.

DRATT/SRATT

Reducer Adapter Tube to Tube

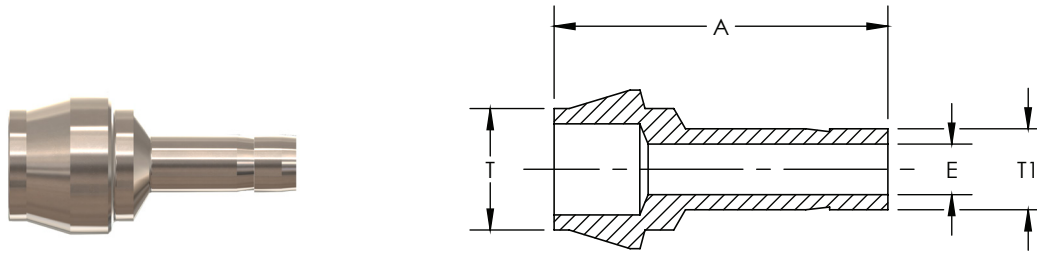


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH		T TUBE O.D.	T1 TUBE O.D.	A	B	E THRU HOLE	NH NUT HEX	BH BODY HEX
1-DRATT-2	100-R-2	2TUR1	1-SRATT-2	2-1 TRBZ	1/16	1/8	1.29	0.34	0.05	5/16	5/16	
2-DRATT-1	200-R-1	1TUR2	2-SRATT-1	1-2 TRBZ	1/8	1/16	1.24	0.52	0.03	7/16	7/16	
2-DRATT-2	200-R-2	2TUR2	2-SRATT-2	2-2 TRBZ	1/8	1/8	1.46	0.52	0.08	7/16	7/16	
2-DRATT-4	200-R-4	4TUR2	2-SRATT-4	4-2 TRBZ	1/8	1/4	1.50	0.52	0.09	7/16	7/16	
2-DRATT-6	200-R-6	6TUR2	2-SRATT-6	6-2 TRBZ	1/8	3/8	1.63	0.52	0.09	7/16	7/16	
4-DRATT-2	400-R-2	2TUR4	4-SRATT-2	2-4 TRBZ	1/4	1/8	1.58	0.61	0.08	9/16	1/2	
4-DRATT-4	400-R-4	4TUR4	4-SRATT-4	4-4 TRBZ	1/4	1/4	1.62	0.61	0.17	9/16	1/2	
4-DRATT-6	400-R-6	6TUR4	4-SRATT-6	6-4 TRBZ	1/4	3/8	1.74	0.61	0.19	9/16	1/2	
4-DRATT-8	400-R-8	8TUR4	4-SRATT-8	8-4 TRBZ	1/4	1/2	1.99	0.61	0.19	9/16	9/16	
5-DRATT-6	500-R-6	6TUR5	5-SRATT-6	6-5 TRBZ	5/16	3/8	1.81	0.65	0.25	5/8	9/16	
6-DRATT-4	600-R-4	4TUR6	6-SRATT-4	4-6 TRBZ	3/8	1/4	1.71	0.67	0.17	11/16	5/8	
6-DRATT-6	600-R-6	6TUR6	6-SRATT-6	6-6 TRBZ	3/8	3/8	1.84	0.67	0.27	11/16	5/8	
6-DRATT-8	600-R-8	8TUR6	6-SRATT-8	8-6 TRBZ	3/8	1/2	2.09	0.67	0.28	11/16	5/8	
6-DRATT-10	600-R-10	10TUR6	6-SRATT-10	10-6 TRBZ	3/8	5/8	2.13	0.67	0.28	11/16	11/16	
6-DRATT-12	600-R-12	12TUR6	6-SRATT-12	12-6 TRBZ	3/8	3/4	2.13	0.67	0.28	11/16	13/16	
8-DRATT-4	810-R-4	4TUR8	8-SRATT-4	4-8 TRBZ	1/2	1/4	1.85	0.90	0.17	7/8	13/16	
8-DRATT-6	810-R-6	6TUR8	8-SRATT-6	6-8 TRBZ	1/2	3/8	1.98	0.90	0.27	7/8	13/16	
8-DRATT-8	810-R-8	-	8-SRATT-8	-	1/2	1/2	2.23	0.90	0.38	7/8	13/16	
8-DRATT-10	810-R-10	10TUR8	8-SRATT-10	10-8 TRBZ	1/2	5/8	2.26	0.90	0.41	7/8	13/16	
8-DRATT-12	810-R-12	12TUR8	8-SRATT-12	12-8 TRBZ	1/2	3/4	2.26	0.90	0.41	7/8	13/16	
8-DRATT-14	-	-	8-SRATT-14	-	1/2	7/8	2.30	0.90	0.41	7/8	15/16	
8-DRATT-16	810-R-16	16TUR8	8-SRATT-16	16-8 TRBZ	1/2	1	2.57	0.90	0.41	7/8	1 1/16	
10-DRATT-12	1010-R-12	12TUR10	10-SRATT-12	12-10 TRBZ	5/8	3/4	2.29	0.96	0.50	1	15/16	
10-DRATT-14	1010-R-14	14TUR10	10-SRATT-14	14-10 TRBZ	5/8	7/8	2.30	0.96	0.50	1	15/16	
12-DRATT-8	1210-R-8	8TUR12	12-SRATT-8	8-12 TRBZ	3/4	1/2	2.32	0.96	0.38	1 1/8	1 1/16	
12-DRATT-16	1210-R-16	16TUR12	12-SRATT-16	16-12 TRBZ	3/4	1	2.67	0.96	0.63	1 1/8	1 1/16	
14-DRATT-16	-	-	14-SRATT-16	-	7/8	1	2.67	1.02	0.72	1 1/4	1 3/16	
16-DRATT-16	-	-	16-SRATT-16	-	1	1	2.95	1.24	0.80	1 1/2	1 3/8	

NOTE: Dimensions subject to change, to be used for reference only.

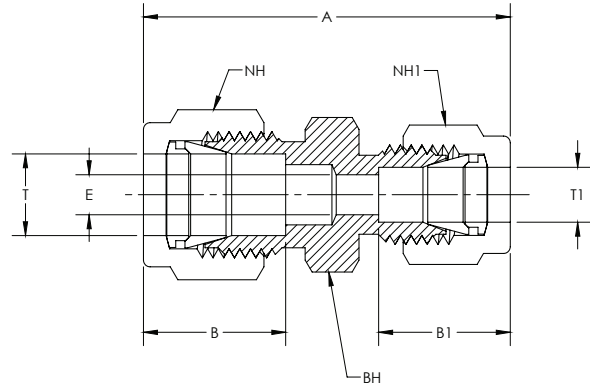
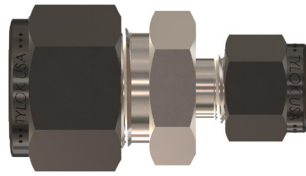
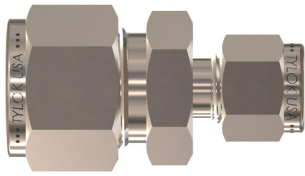
DRPC/SRPC

Reducing Port Connector



CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	T1 TUBE O.D.	A	E THRU HOLE
4-DRPC-2	401-PC-2 2PC4	4-SRPC-2	2-4 ZPC	1/4	1/8	1.08	0.08
6-DRPC-4	601-PC-4 4PC6	6-SRPC-4	4-6 ZPC	3/8	1/4	1.12	0.17
8-DRPC-4	811-PC-4 4PC8	8-SRPC-4	4-8 ZPC	1/2	1/4	1.32	0.17
8-DRPC-6	811-PC-6 6PC8	8-SRPC-6	6-8 ZPC	1/2	3/8	1.43	0.27
12-DRPC-8	1211-PC-8 8PC12	12-SRPC-8	8-12 ZPC	3/4	1/2	1.71	0.38

NOTE: Dimensions subject to change, to be used for reference only.

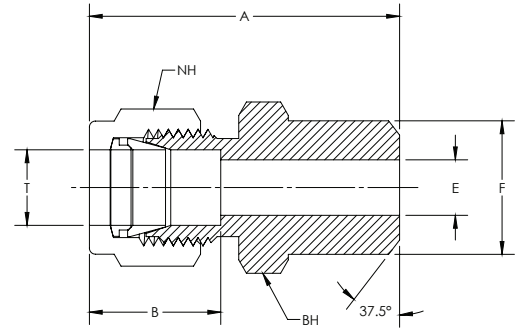
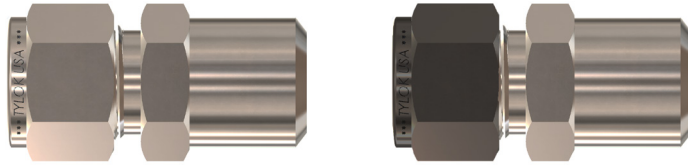


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH		T TUBE O.D.	T1 TUBE O.D.	A	B	B1	E THRU HOLE	NH NUT HEX	NH1 NUT HEX	BH BODY HEX
2-DRU-1	200-6-1	2RU1	2-SRU-1	2-1 HBZ	1/8	1/16	1.23	0.52	0.34	0.05	7/16	5/16	7/16	
4-DRU-1	400-6-1	4RU1	4-SRU-1	4-1 HBZ	1/4	1/16	1.35	0.61	0.34	0.05	9/16	5/16	1/2	
4-DRU-2	400-6-2	4RU2	4-SRU-2	4-2 HBZ	1/4	1/8	1.52	0.61	0.52	0.09	9/16	7/16	1/2	
4-DRU-3	400-6-3	4RU3	4-SRU-3	4-3 HBZ	1/4	3/16	1.55	0.61	0.54	0.13	9/16	1/2	1/2	
5-DRU-2	500-6-2	5RU2	5-SRU-2	5-2 HBZ	5/16	1/8	1.59	0.65	0.52	0.09	5/8	7/16	9/16	
5-DRU-4	500-6-4	5RU4	5-SRU-4	5-4 HBZ	5/16	1/4	1.68	0.65	0.61	0.19	5/8	9/16	9/16	
6-DRU-1	600-6-1	6RU1	6-SRU-1	6-1 HBZ	3/8	1/16	1.45	0.67	0.34	0.05	11/16	5/16	5/8	
6-DRU-2	600-6-2	6RU2	6-SRU-2	6-2 HBZ	3/8	1/8	1.62	0.67	0.52	0.09	11/16	7/16	5/8	
6-DRU-4	600-6-4	6RU4	6-SRU-4	6-4 HBZ	3/8	1/4	1.71	0.67	0.61	0.19	11/16	9/16	5/8	
6-DRU-5	600-6-5	6RU5	6-SRU-5	6-5 HBZ	3/8	5/16	1.76	0.67	0.65	0.25	11/16	5/8	5/8	
8-DRU-2	810-6-2	8RU2	8-SRU-2	8-2 HBZ	1/2	1/8	1.79	0.90	0.52	0.09	7/8	7/16	13/16	
8-DRU-4	810-6-4	8RU4	8-SRU-4	8-4 HBZ	1/2	1/4	1.85	0.90	0.61	0.19	7/8	9/16	13/16	
8-DRU-6	810-6-6	8RU6	8-SRU-6	8-6 HBZ	1/2	3/8	1.91	0.90	0.67	0.28	7/8	11/16	13/16	
10-DRU-6	1010-6-6	10RU6	10-SRU-6	10-6 HBZ	5/8	3/8	1.94	0.96	0.67	0.28	1	11/16	15/16	
10-DRU-8	1010-6-8	10RU8	10-SRU-8	10-8 HBZ	5/8	1/2	2.05	0.96	0.90	0.41	1	7/8	15/16	
12-DRU-4	1210-6-4	12RU4	12-SRU-4	12-4 HBZ	3/4	1/4	1.94	0.96	0.61	0.19	1 1/8	9/16	1 1/16	
12-DRU-6	1210-6-6	12RU6	12-SRU-6	12-6 HBZ	3/4	3/8	2.01	0.96	0.67	0.28	1 1/8	11/16	1 1/16	
12-DRU-8	1210-6-8	12RU8	12-SRU-8	12-8 HBZ	3/4	1/2	2.11	0.96	0.90	0.41	1 1/8	7/8	1 1/16	
12-DRU-10	1210-6-10	12RU10	12-SRU-10	12-10 HBZ	3/4	5/8	2.11	0.96	0.96	0.50	1 1/8	1	1 1/16	
16-DRU-8	1610-6-8	16RU8	16-SRU-8	16-8 HBZ	1	1/2	2.48	1.24	0.90	0.41	1 1/2	7/8	1 3/8	
16-DRU-12	1610-6-12	16RU12	16-SRU-12	16-12 HBZ	1	3/4	2.49	1.24	0.96	0.63	1 1/2	1 1/8	1 3/8	

NOTE: Dimensions subject to change, to be used for reference only.

DTBW/STBW

Tube to Pipe Butt Weld Connector

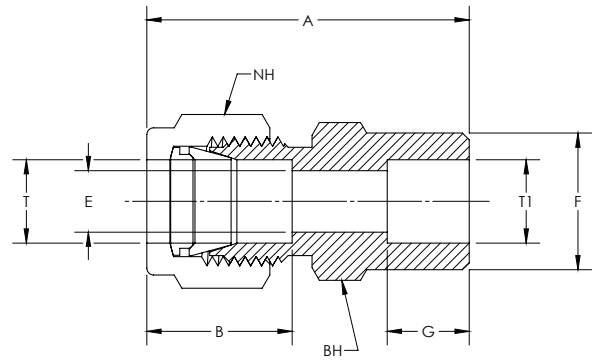
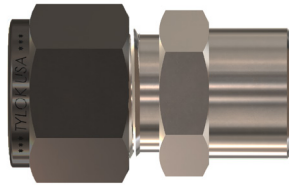
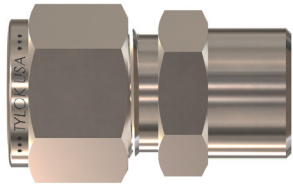


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH		T TUBE O.D.	PIPE WELD SIZE	A	B	E THRU HOLE	F	NH1 NUT HEX	BH BODY HEX
4-DTBW-4	400-1-4W	4-1/4 ZHLW2	4-STBW-4	4-1/4 ZHBW2	1/4	1/4	1.48	0.61	0.19	0.54	9/16	9/16	
6-DTBW-4	600-1-4W	6-1/4 ZHLW2	6-STBW-4	6-1/4 ZHBW2	3/8	1/4	1.58	0.67	0.28	0.54	11/16	5/8	
6-DTBW-6	600-1-6W	6-3/8 ZHLW2	6-STBW-6	6-3/8 ZHBW2	3/8	3/8	1.58	0.67	0.28	0.68	11/16	3/4	
6-DTBW-8	600-1-8W	6-1/2 ZHLW2	6-STBW-8	6-1/2 ZHBW2	3/8	1/2	1.83	0.67	0.28	0.84	11/16	7/8	
8-DTBW-6	810-1-6W	8-3/8 ZHLW2	8-STBW-6	8-3/8 ZHBW2	1/2	3/8	1.71	0.90	0.41	0.68	7/8	13/16	
8-DTBW-8	810-1-8W	8-1/2 ZHLW2	8-STBW-8	8-1/2 ZHBW2	1/2	1/2	1.93	0.90	0.41	0.84	7/8	7/8	
8-DTBW-16	810-1-16W	-	8-STBW-16	-	1/2	1	2.18	0.90	0.41	1.32	7/8	1 3/8	
12-DTBW-12	1210-1-12W	12-3/4 ZHLW2	12-STBW-12	12-3/4 ZHBW2	3/4	3/4	1.99	0.96	0.63	1.05	1 1/8	1 1/16	
16-DTBW-12	1610-1-12W	-	16-STBW-12	-	1	3/4	2.24	1.24	0.63	1.05	1 1/2	1 3/8	
16-DTBW-16	1610-1-16W	16-1-ZHLW2	16-STBW-16	16-1-ZHBW2	1	1	2.46	1.24	0.88	1.32	1 1/2	1 3/8	

NOTE: Dimensions subject to change, to be used for reference only.
 Wall Thickness at weld end is based on schedule 80 pipe.
 *Fittings may have a larger ID on weld end.

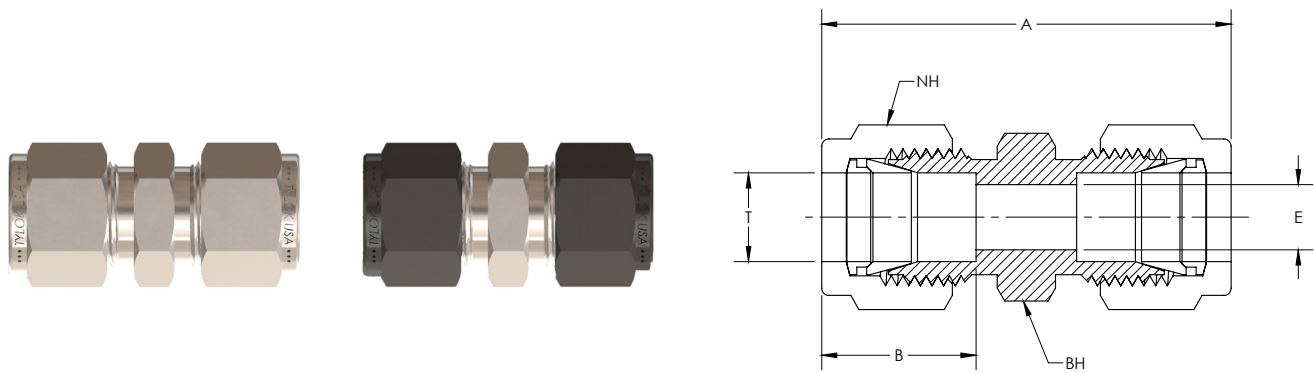
DTSW/STSW

Tube to Tube Socket Weld Connector



CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH		T TUBE O.D.	T1 TUBE O.D.	A	B	E THRU HOLE	F	G	NH1 NUT HEX	BH BODY HEX
4-DTSW-4	400-6-4W	4-4 ZHLW	4-STSW-4	4-4 ZHBW	1/4	1/4	1.32	0.61	0.19	0.48	0.28	9/16	1/2	
8-DTSW-8	810-6-8W	8-8 ZHLW	8-STSW-8	8-8 ZHBW	1/2	1/2	1.62	0.90	0.41	0.73	0.38	7/8	13/16	
12-DTSW-12	1210-6-12W1	2-12 ZHLW	12-STSW-12	12-12 ZHBW	3/4	3/4	1.71	0.96	0.63	1.04	0.44	1 1/8	1 1/16	
16-DTSW-16	1610-6-16W1	6-16 ZHLW	16-STSW-16	16-16 ZHBW	1	1	2.09	1.24	0.88	1.36	0.62	1 1/2	1 3/8	

NOTE: Dimensions subject to change, to be used for reference only.

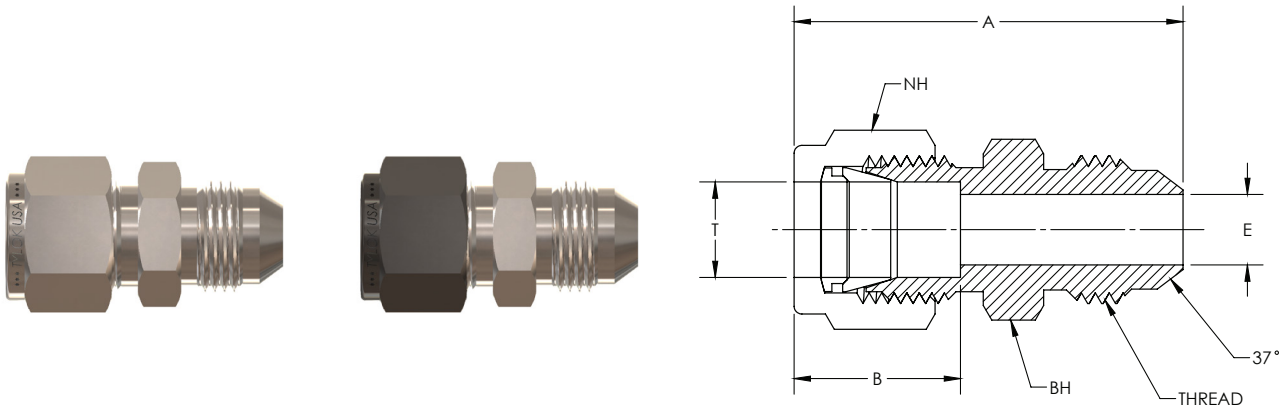


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	A	B	E THRU HOLE	NH NUT HEX	BH BODY HEX	
1-DU	100-6	1SC1	1-SU	1-1 HBZ	1/16	1.00	0.34	0.05	5/16	5/16
2-DU	200-6	2SC2	2-SU	2-2 HBZ	1/8	1.41	0.52	0.09	7/16	7/16
3-DU	300-6	3SC3	3-SU	3-3 HBZ	3/16	1.47	0.54	0.13	1/2	7/16
4-DU	400-6	4SC4	4-SU	4-4 HBZ	1/4	1.61	0.61	0.19	9/16	1/2
5-DU	500-6	5SC5	5-SU	5-5 HBZ	5/16	1.72	0.65	0.25	5/8	9/16
6-DU	600-6	6SC6	6-SU	6-6 HBZ	3/8	1.78	0.67	0.28	11/16	5/8
8-DU	810-6	8SC8	8-SU	8-8 HBZ	1/2	2.02	0.90	0.41	7/8	13/16
10-DU	1010-6	10SC10	10-SU	10-10 HBZ	5/8	2.04	0.96	0.50	1	15/16
12-DU	1210-6	12SC12	12-SU	12-12 HBZ	3/4	2.11	0.96	0.63	1 1/8	1 1/16
14-DU	1410-6	14SC14	14-SU	14-14 HBZ	7/8	2.17	1.02	0.72	1 1/4	1 3/16
16-DU	1610-6	16SC16	16-SU	16-16 HBZ	1	2.58	1.24	0.88	1 1/2	1 3/8

NOTE: Dimensions subject to change, to be used for reference only.

DUANF/SUANF

Tube to AN Flare Union

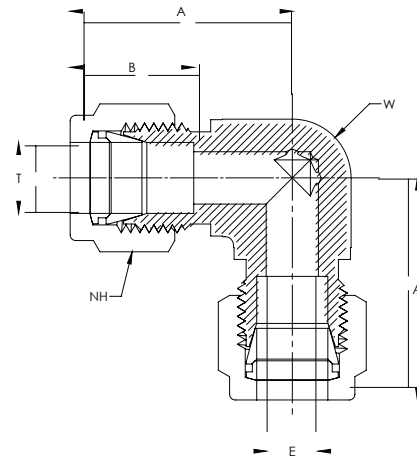


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	THREAD	A	B	E THRU HOLE	NH NUT HEX	BH BODY HEX
2-DUANF-2	2XASC2	2-SUANF-2	2-2 XHBZ	1/8	5/16-24 UNJF	1.25	0.52	0.06	7/16	7/16
2-DUANF-4	4XASC2	2-SUANF-4	4-2 XHBZ	1/8	7/16-20 UNJF	1.39	0.52	0.09	7/16	1/2
4-DUANF-4	4XASC4	4-SUANF-4	4-4 XHBZ	1/4	7/16-20 UNJF	1.48	0.61	0.17	9/16	1/2
5-DUANF-5	5XASC5	5-SUANF-5	5-5 XHBZ	5/16	1/2-20 UNJF	1.53	0.65	0.23	5/8	9/16
5-DUANF-6	-	5-SUANF-6	-	5/16	9/16-18 UNJF	1.54	0.65	0.25	5/8	5/8
6-DUANF-4	4XASC6	6-SUANF-4	4-6 XHBZ	3/8	7/16-20 UNJF	1.56	0.67	0.17	11/16	5/8
6-DUANF-6	6XASC6	6-SUANF-6	6-6 XHBZ	3/8	9/16-18 UNJF	1.56	0.67	0.30	11/16	5/8
8-DUANF-8	8XASC8	8-SUANF-8	8-8 XHBZ	1/2	3/4-16 UNJF	1.80	0.90	0.39	7/8	13/16
10-DUANF-10	10XASC10	10-SUANF-10	10-10 XHBZ	5/8	7/8-14 UNJF	1.93	0.96	0.48	1	15/16
12-DUANF-12	12XASC12	12-SUANF-12	12-12 XHBZ	3/4	1-1/16-12 UNJ	2.10	0.96	0.61	1 1/8	1 1/8
16-DUANF-16	16XASC16	16-SUANF-16	16-16 XHBZ	1	1-5/16-12 UNJ	2.43	1.24	0.85	1 1/2	1 3/8

NOTE: Dimensions subject to change, to be used for reference only.

DELU/SELU

Union Elbow

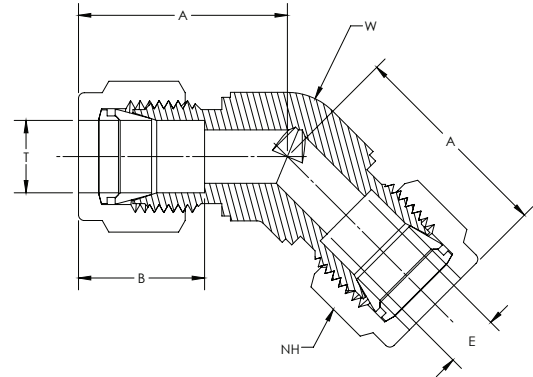
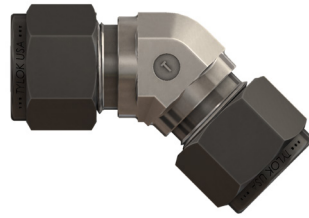
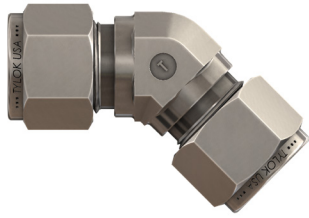


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	A	B	E THRU HOLE	NH NUT HEX	W WRENCH FLAT
1-DELU-1	100-9 1EE1	1-SELU-1	1-1 EBZ	1/16	0.80	0.34	0.05	5/16	1/2
2-DELU-2	200-9 2EE2	2-SELU-2	2-2 EBZ	1/8	0.98	0.52	0.09	7/16	1/2
3-DELU-3	300-9 3EE3	3-SELU-3	3-3 EBZ	3/16	1.00	0.54	0.13	1/2	1/2
4-DELU-4	400-9 4EE4	4-SELU-4	4-4 EBZ	1/4	1.06	0.61	0.19	9/16	1/2
5-DELU-5	500-9 5EE5	5-SELU-5	5-5 EBZ	5/16	1.18	0.65	0.25	5/8	5/8
6-DELU-6	600-9 6EE6	6-SELU-6	6-6 EBZ	3/8	1.20	0.67	0.28	11/16	5/8
8-DELU-8	810-9 8EE8	8-SELU-8	8-8 EBZ	1/2	1.42	0.90	0.41	7/8	13/16
10-DELU-10	1010-9 10EE10	10-SELU-10	10-10 EBZ	5/8	1.50	0.96	0.50	1	15/16
12-DELU-12	1210-9 12EE12	12-SELU-12	12-12 EBZ	3/4	1.57	0.96	0.63	1 1/8	1 1/16
14-DELU-14	1410-9 14EE14	14-SELU-14	14-14 EBZ	7/8	1.76	1.02	0.72	1 1/4	1 3/8
16-DELU-16	1610-9 16EE16	16-SELU-16	16-16 EBZ	1	1.95	1.24	0.88	1 1/2	1 3/8

NOTE: Dimensions subject to change, to be used for reference only.

DELU45/SELU45

Union 45° Elbow

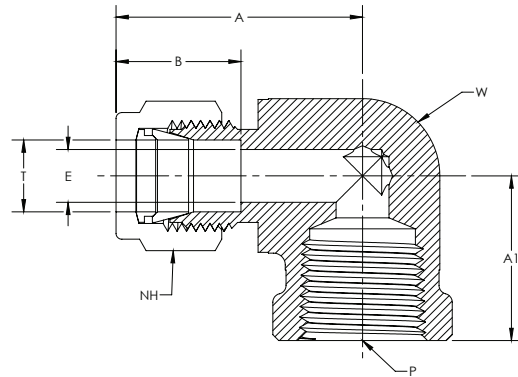
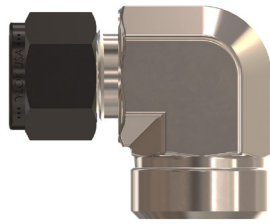
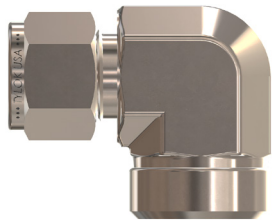


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	A	B	E THRU HOLE	NH NUT HEX	W WRENCH FLAT
4-DELU45-4	400-95	4-SELU45-4	-	1/4	0.97	0.61	0.19	9/16	1/2
6-DELU45-6	-	6-SELU45-6	-	3/8	1.11	0.67	0.28	11/16	5/8
8-DELU45-8	810-95	8-SELU45-8	-	1/2	1.26	0.90	0.41	7/8	13/16
12-DELU45-12		12-SELU45-12		3/4	1.33	0.96	0.63	1 1/8	1 1/16

NOTE: Dimensions subject to change, to be used for reference only.

DFE/SFE

Female Elbow

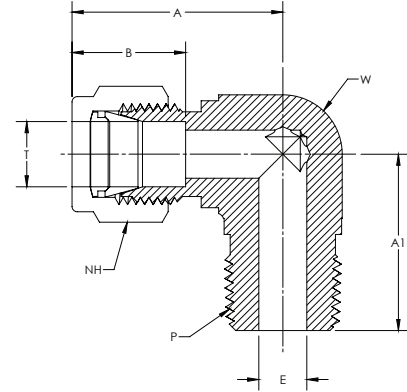
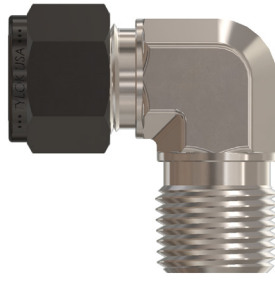
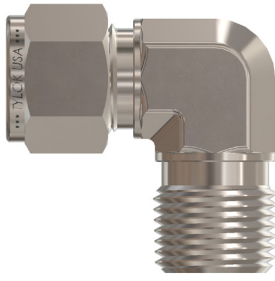


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	P PIPE END NPT	A	A1	B	E THRU HOLE	NH NUT HEX	W WRENCH FLAT
2-DFE-2	200-8-2 2FEL2N	2-SFE-2	2-2 DBZ	1/8	1/8	0.98	0.75	0.52	0.09	7/16	1/2
B-2-DFE-2	200-8-2 2FEL2N	B-2-SFE-2	2-2 DBZ	1/8	1/8	1.05	0.75	0.52	0.09	7/16	5/8
2-DFE-4	200-8-4 2FEL4N	2-SFE-4	2-4 DBZ	1/8	1/4	1.09	0.88	0.52	0.09	7/16	11/16
B-2-DFE-4	200-8-4 2FEL4N	B-2-SFE-4	2-4 DBZ	1/8	1/4	1.16	0.88	0.52	0.09	7/16	13/16
4-DFE-2	400-8-2 4FEL2N	4-SFE-2	4-2 DBZ	1/4	1/8	1.06	0.75	0.61	0.19	9/16	1/2
B-4-DFE-2	400-8-2 4FEL2N	B-4-SFE-2	4-2 DBZ	1/4	1/8	1.14	0.75	0.61	0.19	9/16	5/8
4-DFE-4	400-8-4 4FEL4N	4-SFE-4	4-4 DBZ	1/4	1/4	1.17	0.88	0.61	0.19	9/16	11/16
B-4-DFE-4	400-8-4 4FEL4N	B-4-SFE-4	4-4 DBZ	1/4	1/4	1.25	0.88	0.61	0.19	9/16	13/16
4-DFE-6	400-8-6 4FEL6N	4-SFE-6	4-6 DBZ	1/4	3/8	1.25	0.88	0.61	0.19	9/16	13/16
4-DFE-8	400-8-8 4FEL8N	4-SFE-8	4-8 DBZ	1/4	1/2	1.40	1.13	0.61	0.19	9/16	1 1/16
5-DFE-2	500-8-2 5FEL2N	5-SFE-2	5-2 DBZ	5/16	1/8	1.18	0.75	0.65	0.25	5/8	5/8
5-DFE-4	500-8-4 5FEL4N	5-SFE-4	5-4 DBZ	5/16	1/4	1.22	0.88	0.65	0.25	5/8	11/16
B-5-DFE-4	500-8-4 5FEL4N	B-5-SFE-4	5-4 DBZ	5/16	1/4	1.30	0.88	0.65	0.25	5/8	13/16
6-DFE-2	600-8-2 6FEL2N	6-SFE-2	6-2 DBZ	3/8	1/8	1.20	0.75	0.67	0.28	11/16	5/8
6-DFE-4	600-8-4 6FEL4N	6-SFE-4	6-4 DBZ	3/8	1/4	1.24	0.88	0.67	0.28	11/16	11/16
B-6-DFE-4	600-8-4 6FEL4N	B-6-SFE-4	6-4 DBZ	3/8	1/4	1.32	0.88	0.67	0.28	11/16	13/16
6-DFE-6	600-8-6 6FEL6N	6-SFE-6	6-6 DBZ	3/8	3/8	1.32	0.88	0.67	0.28	11/16	13/16
6-DFE-8	600-8-8 6FEL8N	6-SFE-8	6-8 DBZ	3/8	1/2	1.47	1.13	0.67	0.28	11/16	1 1/16
8-DFE-2	-	8-SFE-2	8-2 DBZ	1/2	1/8	1.42	0.88	0.90	0.33	7/8	13/16
8-DFE-4	810-8-4 8FEL4N	8-SFE-4	8-4 DBZ	1/2	1/4	1.42	0.88	0.90	0.41	7/8	13/16
8-DFE-6	810-8-6 8FEL6N	8-SFE-6	8-6 DBZ	1/2	3/8	1.42	0.88	0.90	0.41	7/8	13/16
8-DFE-8	810-8-8 8FEL8N	8-SFE-8	8-8 DBZ	1/2	1/2	1.57	1.13	0.90	0.41	7/8	1 1/16
8-DFE-12	810-8-12	8-SFE-12	8-12 DBZ	1/2	3/4	1.76	1.25	0.90	0.41	7/8	1 3/8
10-DFE-6	1010-8-6 10FEL6N	10-SFE-6	10-6 DBZ	5/8	3/8	1.50	0.88	0.96	0.50	1	15/16
10-DFE-8	1010-8-8 10FEL8N	10-SFE-8	10-8 DBZ	5/8	1/2	1.57	1.13	0.96	0.50	1	1 1/16
12-DFE-8	1210-8-8 12FEL8N	12-SFE-8	12-8 DBZ	3/4	1/2	1.57	1.13	0.96	0.63	1 1/8	1 1/16
12-DFE-12	1210-8-12 12FEL12N	12-SFE-12	12-12 DBZ	3/4	3/4	1.76	1.25	0.96	0.63	1 1/8	1 3/8
14-DFE-12	1410-8-12 14FEL12N	14-SFE-12	14-12 DBZ	7/8	3/4	1.76	1.25	1.02	0.72	1 1/4	1 3/8
16-DFE-16	1610-8-16 16FEL16N	16-SFE-16	16-16 DBZ	1	1	2.12	1.50	1.24	0.88	1 1/2	1 5/8

NOTE: Dimensions subject to change, to be used for reference only.

DME/SME

Male Elbow

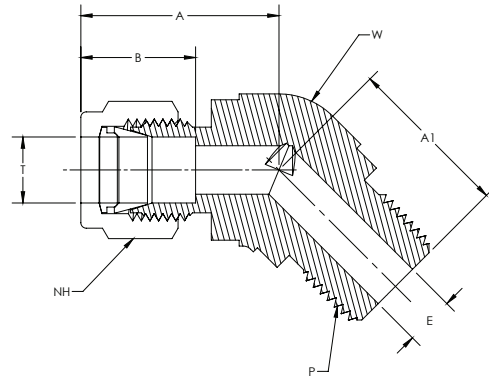
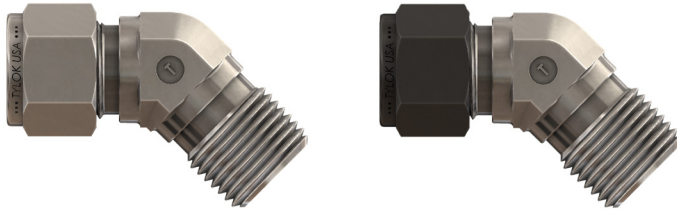


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	P PIPE END NPT	A	A1	B	E THRU HOLE	NH NUT HEX	W WRENCH FLAT	
1-DME-1	100-2-1	1MSEL1N	1-SME-1	1-1 CBZ	1/16	1/16	0.80	0.74	0.34	0.05	5/16	1/2
1-DME-2	100-2-2	1MSEL2N	1-SME-2	1-2 CBZ	1/16	1/8	0.80	0.74	0.34	0.05	5/16	1/2
2-DME-1	200-2-1	2MSEL1N	2-SME-1	2-1 CBZ	1/8	1/16	0.98	0.74	0.52	0.09	7/16	1/2
2-DME-2	200-2-2	2MSEL2N	2-SME-2	2-2 CBZ	1/8	1/8	0.98	0.74	0.52	0.09	7/16	1/2
2-DME-4	200-2-4	2MSEL4N	2-SME-4	2-4 CBZ	1/8	1/4	0.98	0.93	0.52	0.09	7/16	1/2
B-2-DME-4	200-2-4	2MSEL4N	B-2-SME-4	2-4 CBZ	1/8	1/4	1.05	1.00	0.52	0.09	7/16	5/8
2-DME-6	200-2-6	-	2-SME-6	-	1/8	3/8	1.09	1.03	0.52	0.09	7/16	11/16
B-2-DME-6	200-2-6	-	B-2-SME-6	-	1/8	3/8	1.16	1.11	0.52	0.09	7/16	13/16
3-DME-2	300-2-2	3MSEL2N	3-SME-2	3-2 CBZ	3/16	1/8	1.00	0.74	0.54	0.13	1/2	1/2
3-DME-4	300-2-4	3MSEL4N	3-SME-4	3-4 CBZ	3/16	1/4	1.00	0.93	0.54	0.13	1/2	1/2
B-3-DME-4	300-2-4	3MSEL4N	B-3-SME-4	3-4 CBZ	3/16	1/4	1.07	1.00	0.54	0.13	1/2	5/8
4-DME-1	400-2-1	4MSEL1N	4-SME-1	4-1 CBZ	1/4	1/16	1.06	0.74	0.61	0.13	9/16	1/2
4-DME-2	400-2-2	4MSEL2N	4-SME-2	4-2 CBZ	1/4	1/8	1.06	0.74	0.61	0.19	9/16	1/2
4-DME-4	400-2-4	4MSEL4N	4-SME-4	4-4 CBZ	1/4	1/4	1.06	0.93	0.61	0.19	9/16	1/2
B-4-DME-4	400-2-4	4MSEL4N	B-4-SME-4	4-4 CBZ	1/4	1/4	1.14	1.00	0.61	0.19	9/16	5/8
4-DME-6	400-2-6	4MSEL6N	4-SME-6	4-6 CBZ	1/4	3/8	1.17	1.03	0.61	0.19	9/16	11/16
B-4-DME-6	400-2-6	4MSEL6N	B-4-SME-6	4-6 CBZ	1/4	3/8	1.25	1.11	0.61	0.19	9/16	13/16
4-DME-8	400-2-8	4MSEL8N	4-SME-8	4-8 CBZ	1/4	1/2	1.25	1.30	0.61	0.19	9/16	13/16
4-DME-12	400-2-12	-	4-SME-12	-	1/4	3/4	1.40	1.45	0.61	0.19	9/16	1 1/16
5-DME-2	500-2-2	5MSEL2N	5-SME-2	5-2 CBZ	5/16	1/8	1.18	0.82	0.65	0.19	5/8	5/8
5-DME-4	500-2-4	5MSEL4N	5-SME-4	5-4 CBZ	5/16	1/4	1.18	1.00	0.65	0.25	5/8	5/8
5-DME-6	500-2-6	-	5-SME-6	-	5/16	3/8	1.22	1.03	0.65	0.25	5/8	11/16
B-5-DME-6	500-2-6	-	B-5-SME-6	-	5/16	3/8	1.30	1.11	0.65	0.25	5/8	13/16
6-DME-2	600-2-2	6MSEL2N	6-SME-2	6-2 CBZ	3/8	1/8	1.20	0.82	0.67	0.19	11/16	5/8
6-DME-4	600-2-4	6MSEL4N	6-SME-4	6-4 CBZ	3/8	1/4	1.20	1.00	0.67	0.28	11/16	5/8
6-DME-6	600-2-6	6MSEL6N	6-SME-6	6-6 CBZ	3/8	3/8	1.24	1.03	0.67	0.28	11/16	11/16
B-6-DME-6	600-2-6	6MSEL6N	B-6-SME-6	6-6 CBZ	3/8	3/8	1.32	1.11	0.67	0.28	11/16	13/16
6-DME-8	600-2-8	6MSEL8N	6-SME-8	6-8 CBZ	3/8	1/2	1.32	1.30	0.67	0.28	11/16	13/16
6-DME-12	600-2-12	6MSEL12N	6-SME-12	6-12 CBZ	3/8	3/4	1.47	1.45	0.67	0.28	11/16	1 1/16
8-DME-2	810-2-2	-	8-SME-2	-	1/2	1/8	1.42	0.92	0.90	0.19	7/8	13/16
8-DME-4	810-2-4	8MSEL4N	8-SME-4	8-4 CBZ	1/2	1/4	1.42	1.11	0.90	0.28	7/8	13/16
8-DME-6	810-2-6	8MSEL6N	8-SME-6	8-6 CBZ	1/2	3/8	1.42	1.11	0.90	0.38	7/8	13/16
8-DME-8	810-2-8	8MSEL8N	8-SME-8	8-8 CBZ	1/2	1/2	1.42	1.30	0.90	0.41	7/8	13/16
8-DME-12	810-2-12	8MSEL12N	8-SME-12	8-12 CBZ	1/2	3/4	1.57	1.45	0.90	0.41	7/8	1 1/16
8-DME-16	810-2-16	-	8-SME-16	-	1/2	1	1.76	1.83	0.90	0.41	7/8	1 3/8
10-DME-4	-	-	10-SME-4	-	5/8	1/4	1.50	1.19	0.96	0.28	1	15/16
10-DME-6	1010-2-6	10MSEL6N	10-SME-6	10-6 CBZ	5/8	3/8	1.50	1.19	0.96	0.38	1	15/16
10-DME-8	1010-2-8	10MSEL8N	10-SME-8	10-8 CBZ	5/8	1/2	1.50	1.38	0.96	0.47	1	15/16
10-DME-12	1010-2-12	10MSEL12N	10-SME-12	10-12 CBZ	5/8	3/4	1.57	1.45	0.96	0.50	1	1 1/16
12-DME-4	-	-	12-SME-4	-	3/4	1/4	1.57	1.25	0.96	0.28	1 1/8	1 1/16
12-DME-6	-	-	12-SME-6	-	3/4	3/8	1.57	1.25	0.96	0.38	1 1/8	1 1/16
12-DME-8	1210-2-8	12MSEL8N	12-SME-8	12-8 CBZ	3/4	1/2	1.57	1.45	0.96	0.47	1 1/8	1 1/16
12-DME-12	1210-2-12	12MSEL12N	12-SME-12	12-12 CBZ	3/4	3/4	1.57	1.45	0.96	0.63	1 1/8	1 1/16
12-DME-16	1210-2-16	-	12-SME-16	-	3/4	1	1.76	1.83	0.96	0.63	1 1/8	1 3/8
14-DME-8	-	-	14-SME-8	-	7/8	1/2	1.76	1.64	1.02	0.47	1 1/4	1 3/8
14-DME-12	1410-2-12	14MSEL12N	14-SME-12	14-12 CBZ	7/8	3/4	1.76	1.64	1.02	0.63	1 1/4	1 3/8
16-DME-8	-	-	16-SME-8	-	1	1/2	1.95	1.64	1.24	0.47	1 1/2	1 3/8
16-DME-12	1610-2-12	16MSEL12N	16-SME-12	16-12 CBZ	1	3/4	1.95	1.64	1.24	0.63	1 1/2	1 3/8
16-DME-16	1610-2-16	16MSEL16N	16-SME-16	16-16 CBZ	1	1	1.95	1.83	1.24	0.88	1 1/2	1 3/8

NOTE: Dimensions subject to change, to be used for reference only.

DME45/SME45

Male 45° Elbow

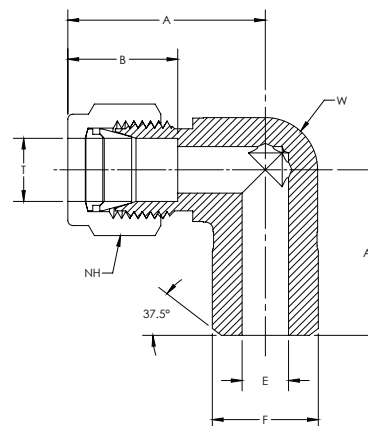
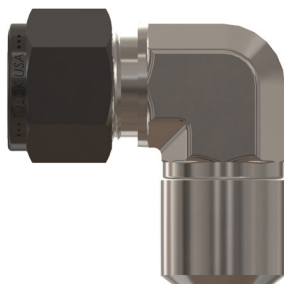
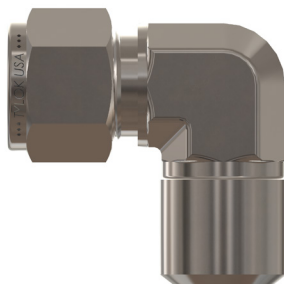


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	P PIPE END NPT	A	A1	B	E THRU HOLE	NH NUT HEX	W WRENCH FLAT
4-DME45-2	400-5-2 4MVEL2N	4-SME45-2	4-2 VBZ	1/4	1/8	0.97	0.65	0.61	0.19	9/16	1/2
4-DME45-4	400-5-4 4MVEL4N	4-SME45-4	4-4 VBZ	1/4	1/4	0.97	0.83	0.61	0.19	9/16	1/2
6-DME45-4	600-5-4 6MVEL4N	6-SME45-4	6-4 VBZ	3/8	1/4	1.11	0.90	0.67	0.28	11/16	5/8
6-DME45-6	600-5-6 6MVEL6N	6-SME45-6	6-6 VBZ	3/8	3/8	1.15	0.95	0.67	0.28	11/16	13/16
8-DME45-8	810-5-8 -	8-SME45-8	-	1/2	1/2	1.26	1.14	0.90	0.41	7/8	13/16

NOTE: Dimensions subject to change, to be used for reference only.

DTBWE/STBWE

Tube to Pipe Butt Weld Elbow

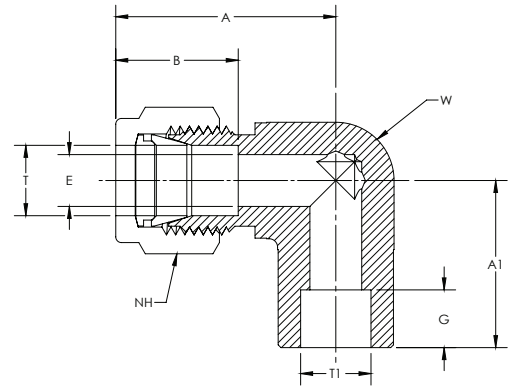
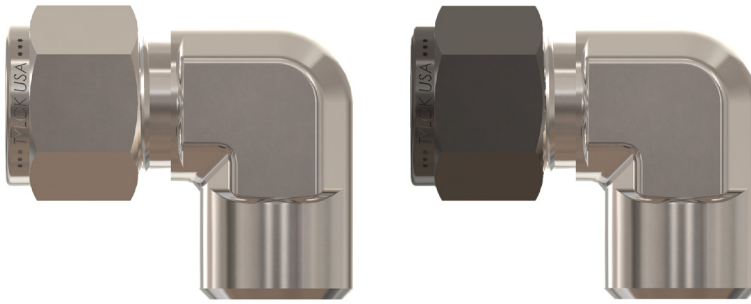


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH		T TUBE O.D.	P PIPE END NPT	A	A1	B	E THRU HOLE	F	NH1 NUT HEX	W WRENCH FLAT
6-DTBWE-4	600-2-4W	6-1/4 ZELW2	6-STBWE-4	6-1/4 ZEBW2	3/8	1/4	1.20	1.00	0.67	0.28	0.54	11/16	5/8	
8-DTBWE-8	810-2-8W	8-1/2 ZELW2	8-STBWE-8	8-1/2 ZEBW2	1/2	1/2	1.42	1.31	0.90	0.41	0.84	7/8	13/16	
12-DTBWE-12	1210-2-12W	12-3/4 ZELW2	12-STBWE-12	12-3/4 ZEBW2	3/4	3/4	1.57	1.48	0.96	0.63	1.05	1 1/8	1 1/16	

NOTE: Dimensions subject to change, to be used for reference only.
 Wall Thickness at weld end is based on schedule 80 pipe.
 *Fittings may have a larger ID on weld end

DTSWE/STSWE

Tube to Tube Socket Weld Elbow

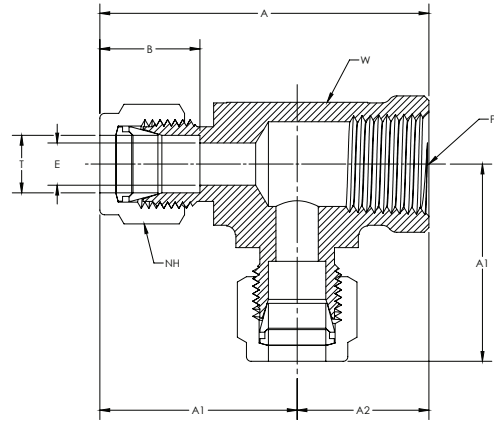
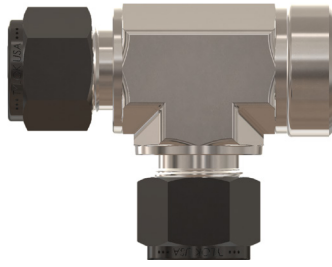
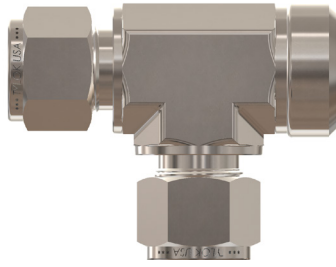


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	T1 TUBE O.D.	A	A1	B	E THRU HOLE	G	NH1 NUT HEX	W WRENCH FLAT
6-DTSWE-6	600-9-6W 6-6 ZELW	6-STSWWE-6	6-6 ZEBW	3/8	3/8	1.20	0.91	0.67	0.28	0.31	11/16	5/8

NOTE: Dimensions subject to change, to be used for reference only.

DTFT/STFT

Female Run Tee

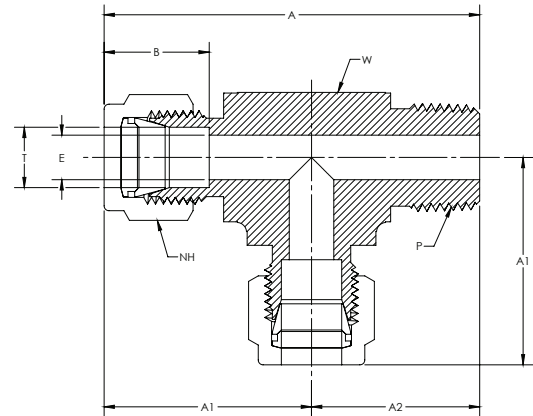
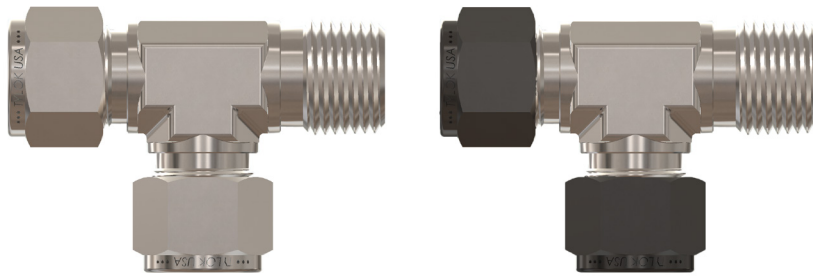


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	P PIPE END NPT	A	A1	A2	B	E THRU HOLE	NH NUT HEX	W WRENCH FLAT
2-DTFT-2	200-3TFT	2FRT2N	2-STFT-2	2-2-2 MBZ	1/8	1/8	1.80	1.05	0.75	0.52	0.09	7/16	5/8
4-DTFT-2	400-3TFT	4FRT2N	4-STFT-2	4-2-4 MBZ	1/4	1/8	1.89	1.14	0.75	0.61	0.19	9/16	5/8
4-DTFT-4	400-3-4TFT	4FRT4N	4-STFT-4	4-4-4 MBZ	1/4	1/4	2.13	1.25	0.88	0.61	0.19	9/16	13/16
6-DTFT-4	600-3TFT	6FRT4N	6-STFT-4	6-4-6 MBZ	3/8	1/4	2.19	1.32	0.88	0.67	0.28	11/16	13/16
6-DTFT-6	600-3-3TFT	-	6-STFT-6	-	3/8	3/8	2.19	1.32	0.88	0.67	0.28	11/16	13/16
B-6-DTFT-6	600-3-3TFT	-	B-6-STFT-6	-	3/8	3/8	2.30	1.43	0.88	0.67	0.28	11/16	1
8-DTFT-4	-	8FRT4N	8-STFT-4	8-4-8 MBZ	1/2	1/4	2.30	1.42	0.88	0.90	0.41	7/8	13/16
8-DTFT-6	810-3TFT	8FRT6N	8-STFT-6	8-6-8 MBZ	1/2	3/8	2.30	1.42	0.88	0.90	0.41	7/8	13/16
B-8-DTFT-6	810-3TFT	8FRT6N	B-8-STFT-6	8-6-8 MBZ	1/2	3/8	2.57	1.57	1.00	0.90	0.41	7/8	1 1/16
8-DTFT-8	810-3-3TFT	8FRT8N	8-STFT-8	8-8-8 MBZ	1/2	1/2	2.70	1.57	1.13	0.90	0.41	7/8	1 1/16
10-DTFT-8	-	10FRT8N	10-STFT-8	10-8-10 MBZ	5/8	1/2	2.69	1.57	1.13	0.96	0.50	1	1 1/16
12-DTFT-12	1210-3TFT	12FRT12N	12-STFT-12	12-12-12 MBZ	3/4	3/4	3.01	1.76	1.25	0.96	0.63	1 1/8	1 3/8
16-DTFT-12	1610-3-12TFT	16FRT12N	16-STFT-12	16-12-16 MBZ	1	3/4	3.20	1.95	1.25	1.24	0.88	1 1/2	1 3/8
16-DTFT-16	1610-3TFT	16FRT16N	16-STFT-16	16-16-16 MBZ	1	1	3.62	2.12	1.50	1.24	0.88	1 1/2	1 5/8

NOTE: Dimensions subject to change, to be used for reference only.

DTMT/STMT

Male Run Tee

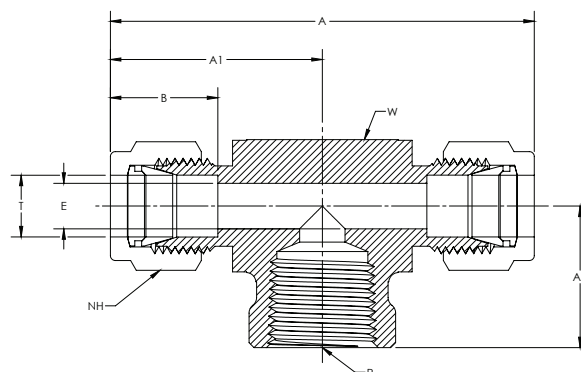
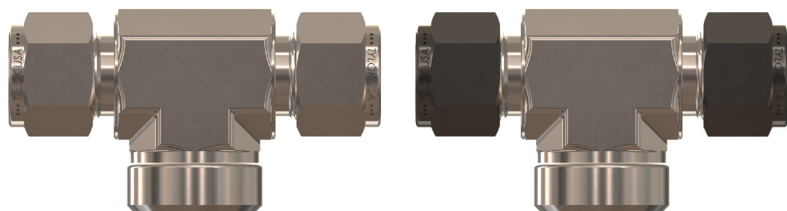


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	P PIPE END NPT	A	A1	A2	B	E THRU HOLE	NH NUT HEX	W WRENCH FLAT
2-DTMT-2	200-3TMT	2MRT2N	2-STMT-2	2-2-2 RBZ	1/8	1/8	1.72	0.98	0.74	0.52	0.09	7/16	1/2
2-DTMT-4	200-3-4TMT	2MRT4N	2-STMT-4	2-4-2 RBZ	1/8	1/4	1.99	1.05	0.94	0.52	0.09	7/16	5/8
4-DTMT-2	400-3TMT	4MRT2N	4-STMT-2	4-2-4 RBZ	1/4	1/8	1.81	1.06	0.74	0.61	0.19	9/16	1/2
4-DTMT-4	400-3-4TMT	4MRT4N	4-STMT-4	4-4-4 RBZ	1/4	1/4	2.08	1.14	0.94	0.61	0.19	9/16	5/8
5-DTMT-2	500-3TMT	5MRT2N	5-STMT-2	5-2-5 RBZ	5/16	1/8	2.01	1.19	0.82	0.65	0.19	5/8	5/8
6-DTMT-4	600-3TMT	6MRT4N	6-STMT-4	6-4-6 RBZ	3/8	1/4	2.15	1.21	0.94	0.67	0.28	11/16	5/8
6-DTMT-6	600-3-6TMT	6MRT6N	6-STMT-6	6-6-6 RBZ	3/8	3/8	2.38	1.32	1.06	0.67	0.28	11/16	13/16
8-DTMT-6	810-3TMT	8MRT6N	8-STMT-6	8-6-8 RBZ	1/2	3/8	2.48	1.42	1.06	0.90	0.41	7/8	13/16
8-DTMT-8	810-3-8TMT	8MRT8N	8-STMT-8	8-8-8 RBZ	1/2	1/2	2.72	1.42	1.30	0.90	0.41	7/8	13/16
B-8-DTMT-8	810-3-8TMT	8MRT8N	B-8-STMT-8	8-8-8 RBZ	1/2	1/2	2.95	1.57	1.38	0.90	0.41	7/8	1 1/16
10-DTMT-8	1010-3TMT	10MRT8N	10-STMT-8	10-8-10 RBZ	5/8	1/2	2.94	1.57	1.38	0.96	0.47	1	1 1/16
12-DTMT-12	1210-3TMT	12MRT12N	12-STMT-12	12-12-12 RBZ	3/4	3/4	2.95	1.57	1.38	0.93	0.63	1 1/8	1 1/16
14-DTMT-6	-	-	14-STMT-6	-	7/8	3/8	3.21	1.76	1.45	1.02	0.38	1 1/4	1 3/8
14-DTMT-8	-	-	14-STMT-8	-	7/8	1/2	3.26	1.76	1.50	1.02	0.47	1 1/4	1 3/8

NOTE: Dimensions subject to change, to be used for reference only.

DTTF/STTF

Female Branch Tee

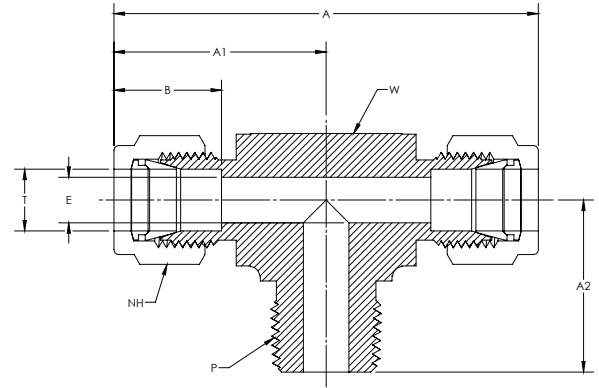
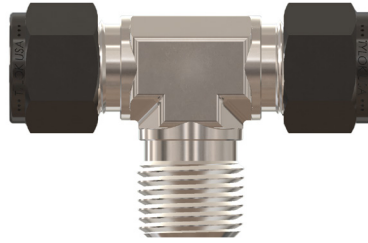
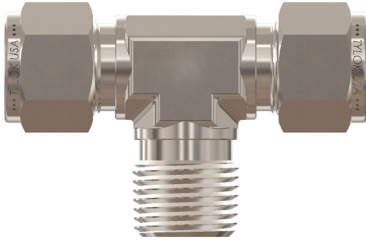


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	P PIPE END NPT	A	A1	A2	B	E THRU HOLE	NH NUT HEX	W WRENCH FLAT
2-DTTF-2	200-3TTF	2FBT2N	2-STTF-2	2-2-2 OBZ	1/8	1/8	2.11	1.05	0.75	0.52	0.09	7/16	5/8
4-DTTF-2	400-3TTF	4FBT2N	4-STTF-2	4-4-2 OBZ	1/4	1/8	2.29	1.14	0.75	0.61	0.19	9/16	5/8
4-DTTF-4	400-3-4TTF	4FBT4N	4-STTF-4	4-4-4 OBZ	1/4	1/4	2.51	1.25	0.88	0.61	0.19	9/16	13/16
4-DTTF-6	-	-	4-STTF-6	-	1/4	3/8	2.51	1.25	0.88	0.61	0.19	9/16	13/16
4-DTTF-8	-	-	4-STTF-8	-	1/4	1/2	2.80	1.40	1.13	0.61	0.19	9/16	1 1/16
6-DTTF-4	600-3TTF	6FBT4N	6-STTF-4	6-6-4 OBZ	3/8	1/4	2.63	1.32	0.88	0.67	0.28	11/16	13/16
6-DTTF-6	600-3-6TTF	-	6-STTF-6	-	3/8	3/8	2.63	1.32	0.88	0.67	0.28	11/16	13/16
8-DTTF-4	810-3-4TTF	8FBT4N	8-STTF-4	8-8-4 OBZ	1/2	1/4	2.84	1.42	0.88	0.90	0.41	7/8	13/16
8-DTTF-6	810-3TTF	8FBT6N	8-STTF-6	8-8-6 OBZ	1/2	3/8	2.84	1.42	0.88	0.90	0.41	7/8	13/16
B-8-DTTF-6	810-3TTF	8FBT6N	B-8-STTF-6	8-8-6 OBZ	1/2	3/8	3.14	1.57	1.13	0.90	0.41	7/8	1 1/16
8-DTTF-8	810-3-8TTF	8FBT8N	8-STTF-8	8-8-8 OBZ	1/2	1/2	3.14	1.57	1.13	0.90	0.41	7/8	1 1/16
10-DTTF-8	1010-3TTF	10FBT8N	10-STTF-8	10-10-8 OBZ	5/8	1/2	3.14	1.57	1.13	0.96	0.50	1	1 1/16
12-DTTF-12	1210-3TTF	12FBT12N	12-STTF-12	12-12-12 OBZ	3/4	3/4	3.52	1.76	1.25	0.96	0.63	1 1/8	1 3/8
14-DTTF-6	-	-	14-STTF-6	-	7/8	3/8	3.51	1.76	1.25	1.02	0.56	1 1/4	1 3/8
14-DTTF-12	-	14BFT12N	14-STTF-12	14-14-12 OBZ	7/8	3/4	3.51	1.76	1.25	1.02	0.72	1 1/4	1 3/8
16-DTTF-12	1610-3-12TTF	16BFT12N	16-STTF-12	16-16-12 OBZ	1	3/4	3.89	1.95	1.25	1.24	0.88	1 1/2	1 3/8
16-DTTF-16	1610-3TTF	16BFT16N	16-STTF-16	16-16-16 OBZ	1	1	4.23	2.12	1.50	1.24	0.88	1 1/2	1 5/8

NOTE: Dimensions subject to change, to be used for reference only.

DTTM/STTM

Male Branch Tee

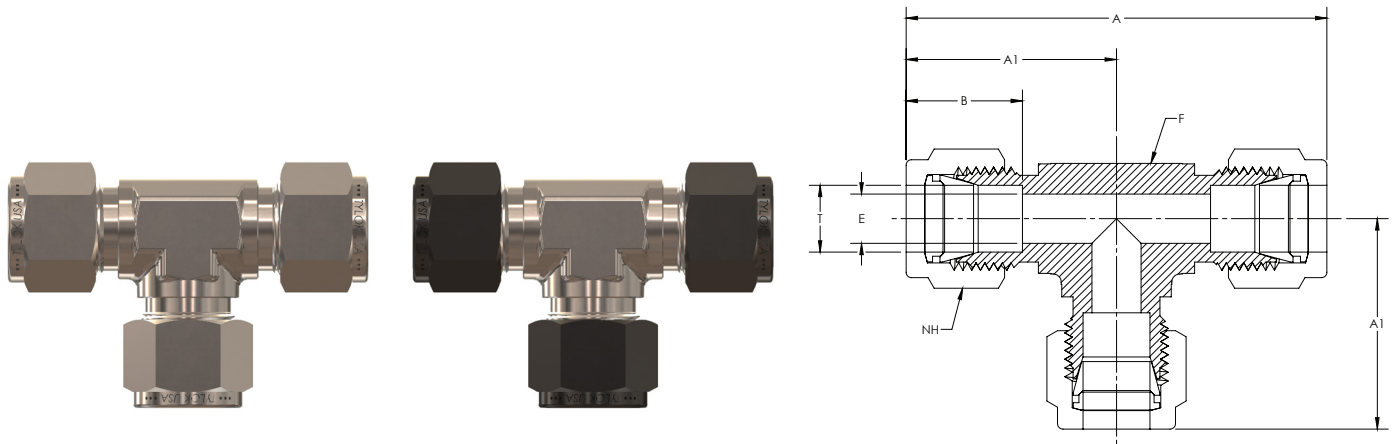


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	P PIPE END NPT	A	A1	A2	B	E THRU HOLE	NH NUT HEX	W WRENCH FLAT	
2-DTTM-2	200-3TTM	2MBT2N	2-STTM-2	2-2-2 SBZ	1/8	1/8	1.95	0.98	0.74	0.52	0.09	7/16	1/2
2-DTTM-4	200-3-4TTM	2MBT4N	2-STTM-4	2-2-4 SBZ	1/8	1/4	2.11	1.05	0.94	0.52	0.09	7/16	5/8
3-DTTM-2	300-3TTM	3MBT2N	3-STTM-2	3-3-2 SBZ	3/16	1/8	2.00	1.00	0.74	0.54	0.13	1/2	1/2
4-DTTM-2	400-3TTM	4MBT2N	4-STTM-2	4-4-2 SBZ	1/4	1/8	2.13	1.06	0.74	0.61	0.19	9/16	1/2
4-DTTM-4	400-3-4TTM	4MBT4N	4-STTM-4	4-4-4 SBZ	1/4	1/4	2.29	1.14	0.94	0.61	0.19	9/16	5/8
5-DTTM-2	500-3TTM	5MBT2N	5-STTM-2	5-5-2 SBZ	5/16	1/8	2.38	1.19	0.82	0.65	0.19	5/8	5/8
5-DTTM-4	-	5MBT4N	5-STTM-4	5-5-4 SBZ	5/16	1/4	2.38	1.19	0.94	0.65	0.25	5/8	5/8
6-DTTM-4	600-3TTM	6MBT4N	6-STTM-4	6-6-4 SBZ	3/8	1/4	2.42	1.21	0.94	0.67	0.28	11/16	5/8
6-DTTM-6	600-3-6TTM	6MBT6N	6-STTM-6	6-6-6 SBZ	3/8	3/8	2.63	1.32	1.06	0.67	0.28	11/16	13/16
8-DTTM-4	810-3-4TTM	-	8-STTM-4	-	1/2	1/4	2.84	1.42	1.11	0.90	0.28	7/8	13/16
8-DTTM-6	810-3TTM	8MBT6N	8-STTM-6	8-8-6 SBZ	1/2	3/8	2.84	1.42	1.11	0.90	0.38	7/8	13/16
B-8-DTTM-6	810-3TTM	8MBT6N	B-8-STTM-6	8-8-6 SBZ	1/2	3/8	2.84	1.42	1.06	0.90	0.38	7/8	13/16
8-DTTM-8	810-3-8TTM	8MBT8N	8-STTM-8	8-8-8 SBZ	1/2	1/2	2.84	1.42	1.30	0.90	0.41	7/8	13/16
B-8-DTTM-8	810-3-8TTM	8MBT8N	B-8-STTM-8	8-8-8 SBZ	1/2	1/2	3.14	1.57	1.38	0.90	0.41	7/8	1 1/16
10-DTTM-8	1010-3TTM	10MBT8N	10-STTM-8	10-10-8 SBZ	5/8	1/2	3.14	1.57	1.38	0.96	0.47	1	1 1/16
12-DTTM-12	1210-3TTM	12MBT12N	12-STTM-12	12-12-12 SBZ	3/4	3/4	3.14	1.57	1.38	0.96	0.63	1 1/8	1 1/16

NOTE: Dimensions subject to change, to be used for reference only.

DTTT/STTT

Union Tee

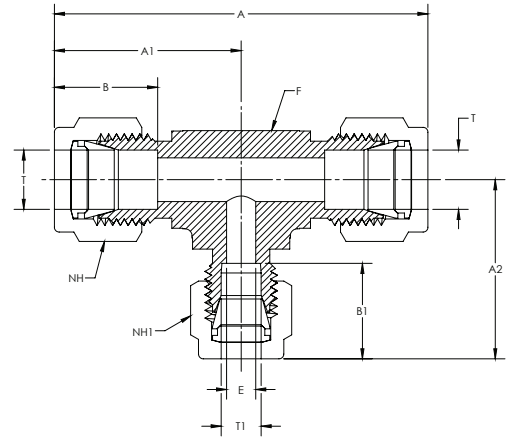
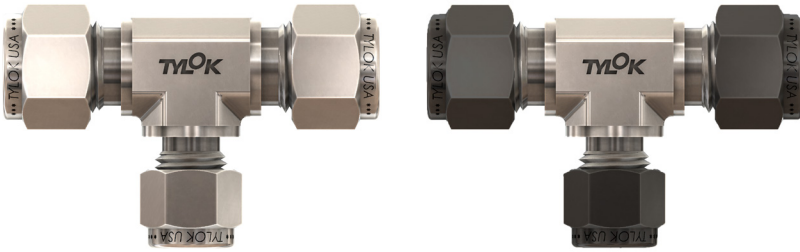


CBC PART NUMBER	INTERCHANGES WITH		CS PART NUMBER	INTERCHANGES WITH		T TUBE O.D.						E THRU HOLE	NH NUT HEX	NH1 NUT HEX	W WRENCH FLAT
							A	A1	A2	B	B1				
1-DTTT-1	100-3	1ET1	1-STTT-1	1-1-1 JBZ	1/16	1.61	0.80	-	0.34	-	0.05	5/16	-	1/2	
2-DTTT-2	200-3	2ET2	2-STTT-2	2-2-2 JBZ	1/8	1.95	0.98	-	0.52	-	0.09	7/16	-	1/2	
3-DTTT-3	300-3	3ET3	3-STTT-3	3-3-3 JBZ	3/16	2.00	1.00	-	0.54	-	0.13	1/2	-	1/2	
4-DTTT-4	400-3	4ET4	4-STTT-4	4-4-4 JBZ	1/4	2.13	1.06	-	0.61	-	0.19	9/16	-	1/2	
5-DTTT-5	500-3	5ET5	5-STTT-5	5-5-5 JBZ	5/16	2.38	1.19	-	0.65	-	0.25	5/8	-	5/8	
6-DTTT-6	600-3	6ET6	6-STTT-6	6-6-6 JBZ	3/8	2.42	1.21	-	0.67	-	0.28	11/16	-	5/8	
8-DTTT-8	810-3	8ET8	8-STTT-8	8-8-8 JBZ	1/2	2.84	1.42	-	0.90	-	0.41	7/8	-	13/16	
10-DTTT-10	1010-3	10ET10	10-STTT-10	10-10-10 JBZ	5/8	3.14	1.57	-	0.96	-	0.50	1	-	1 1/16	
12-DTTT-12	1210-3	12ET12	12-STTT-12	12-12-12 JBZ	3/4	3.14	1.57	-	0.96	-	0.63	1 1/8	-	1 1/16	
14-DTTT-14	1410-3	14ET14	14-STTT-14	14-14-14 JBZ	7/8	3.51	1.76	-	1.02	-	0.72	1 1/4	-	1 3/8	
16-DTTT-16	1610-3	16ET16	16-STTT-16	16-16-16 JBZ	1	3.89	1.95	-	1.24	-	0.88	1 1/2	-	1 3/8	

NOTE: Dimensions subject to change, to be used for reference only.

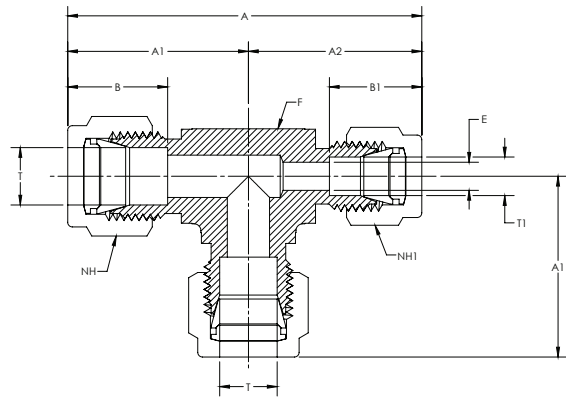
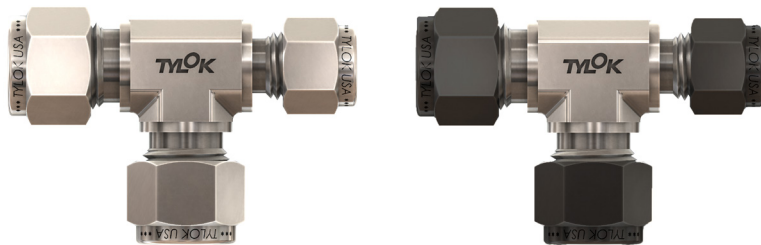
DTTT/STTT

Reducing Branch Tee, Reducing Run Tee



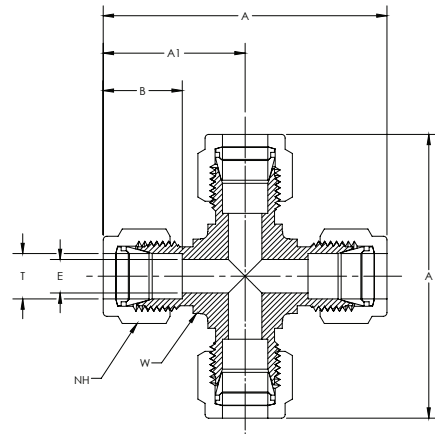
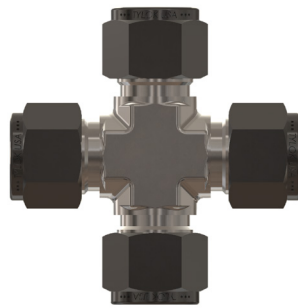
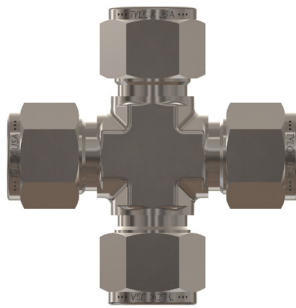
CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	T1 TUBE O.D.	A	A1	A2	B	B1	E THRU HOLE	NH NUT HEX	NH1 NUT HEX	W WRENCH FLAT
4-DTTT-4-2	400-3-4-2 4-4-2 JLZ	4-STTT-4-2	4-4-2 JBZ	1/4	1/8	2.13	1.06	0.98	0.61	0.52	0.19	9/16	7/16	1/2
6-DTTT-6-4	600-3-6-4 6-6-4 JLZ	6-STTT-6-4	6-6-4 JBZ	3/8	1/4	2.42	1.21	1.14	0.67	0.61	0.19	11/16	9/16	5/8
8-DTTT-8-4	810-3-8-4 8-8-4 JLZ	8-STTT-8-4	8-8-4 JBZ	1/2	1/4	2.84	1.42	1.25	0.90	0.61	0.19	7/8	9/16	13/16
8-DTTT-8-6	810-3-8-6 8-8-6 JLZ	8-STTT-8-6	8-8-6 JBZ	1/2	3/8	2.84	1.42	1.32	0.90	0.67	0.28	7/8	11/16	13/16
12-DTTT-12-6	1210-3-12-6 12-12-6 JLZ	12-STTT-12-6	12-12-6 JBZ	3/4	3/8	3.14	1.57	1.47	0.96	0.67	0.28	1 1/8	11/16	1 1/16
12-DTTT-12-8	1210-3-12-8 12-12-8 JLZ	12-STTT-12-8	12-12-8 JBZ	3/4	1/2	3.14	1.57	1.57	0.96	0.90	0.41	1 1/8	7/8	1 1/16
16-DTTT-16-4	1610-3-16-4 16-16-4 JLZ	16-STTT-16-4	16-16-4 JBZ	1	1/4	3.89	1.95	1.59	1.24	0.61	0.19	1 1/2	9/16	1 3/8
16-DTTT-16-6	1610-3-16-6 16-16-6 JLZ	16-STTT-16-6	16-16-6 JBZ	1	3/8	3.89	1.95	1.65	1.24	0.67	0.28	1 1/2	11/16	1 3/8
16-DTTT-16-8	1610-3-16-8 16-16-8 JLZ	16-STTT-16-8	16-16-8 JBZ	1	1/2	3.89	1.95	1.76	1.24	0.90	0.41	1 1/2	7/8	1 3/8
16-DTTT-16-12	1610-3-16-12 16-16-12 JLZ	16-STTT-16-12	16-16-12 JBZ	1	3/4	3.89	1.95	1.58	1.24	0.96	0.63	1 1/2	1 1/8	1 3/8

NOTE: Dimensions subject to change, to be used for reference only.



CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	T1 TUBE O.D.	A	A1	A2	B	B1	E THRU HOLE	NH NUT HEX	NH1 NUT HEX	W WRENCH FLAT
6-DTTT-4-6	600-3-4-6 6-4-6 JLZ	6-STTT-4-6	6-4-6 JBZ	3/8	1/4	2.35	1.21	1.14	0.67	0.61	0.19	11/16	9/16	5/8
6-DTTT-6-8	600-3-6-8 -	6-STTT-6-8	-	3/8	1/2	2.63	1.32	1.42	0.67	0.90	0.28	11/16	7/8	13/16

NOTE: Dimensions subject to change, to be used for reference only.

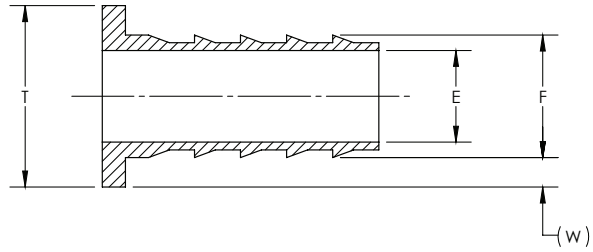
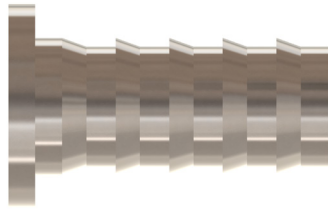


CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	A	A1	B	E THRU HOLE	NH NUT HEX	W WRENCH FLAT
2-DCR	200-4 2ECR2	2-SCR	2 KBZ	1/8	1.84	0.92	0.52	0.09	7/16	1/2
4-DCR	400-4 4ECR4	4-SCR	4 KBZ	1/4	2.11	1.06	0.61	0.19	9/16	1/2
B-4-DCR	400-4 4ECR4	B-4-SCR	4 KBZ	1/4	2.33	1.17	0.61	0.19	9/16	5/8
6-DCR	600-4 6ECR6	6-SCR	6 KBZ	3/8	2.40	1.20	0.67	0.28	11/16	5/8
8-DCR	810-4 8ECR8	8-SCR	8 KBZ	1/2	2.83	1.41	0.90	0.41	7/8	13/16
12-DCR	1210-4 12ECR12	12-SCR	12 KBZ	3/4	3.14	1.57	0.96	0.63	1 1/8	1 1/16

NOTE: Dimensions subject to change, to be used for reference only.

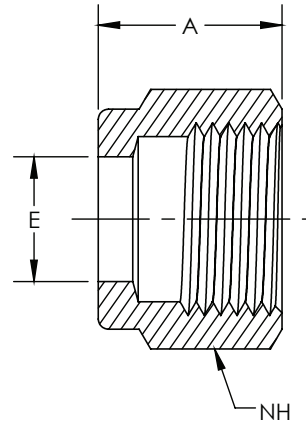
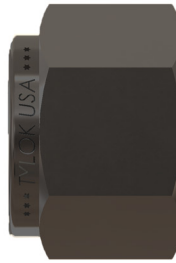
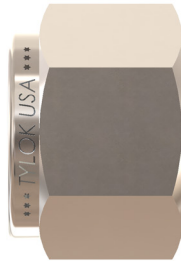
TI

Tubing Insert



CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	E THRU HOLE	W REF	F TUBE ID
3-TI-2	305-2	-	-	3/16	0.09	0.031	1/8
4-TI-206	-	-	-	1/4	0.16	0.022	0.206
4-TI-3	405-3	-	-	1/4	0.14	0.031	3/16
4-TI-170	405-170	-	-	1/4	0.11	0.040	0.17
4-TI-2	405-2	-	-	1/4	0.09	0.062	1/8
5-TI-4	505-4	-	-	5/16	0.19	0.031	1/4
5-TI-3	505-3	-	-	5/16	0.13	0.062	3/16
5-TI-2	505-2	-	-	5/16	0.09	0.094	1/8
6-TI-277	605-277	-	-	3/8	0.22	0.049	0.277
6-TI-4	605-4	-	-	3/8	0.19	0.062	1/4
6-TI-3	605-3	-	-	3/8	0.13	0.094	3/16
8-TI-6	815-6	-	-	1/2	0.31	0.062	3/8
8-TI-4	815-4	-	-	1/2	0.19	0.125	1/4
10-TI-8	1015-8	-	-	5/8	0.44	0.062	1/2
10-TI-6	1015-6	-	-	5/8	0.31	0.125	3/8
12-TI-10	1215-10	-	-	3/4	0.56	0.062	5/8
12-TI-8	1215-8	-	-	3/4	0.44	0.125	1/2
16-TI-12	1615-12	-	-	1	0.69	0.125	3/4

NOTE: Dimensions subject to change, to be used for reference only.



CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	A	NH NUT HEX
DN-1	102-1 1NU1	SN-1	1 BZ	1/16	0.31	5/16
DN-2	202-1 2NU2	SN-2	2 BZ	1/8	0.47	7/16
DN-3	302-1 3NU3	SN-3	3 BZ	3/16	0.47	1/2
DN-4	402-1 4NU4	SN-4	4 BZ	1/4	0.50	9/16
DN-5	502-1 5NU5	SN-5	5 BZ	5/16	0.53	5/8
DN-6	602-1 6NU6	SN-6	6 BZ	3/8	0.56	11/16
DN-8	812-1 8NU8	SN-8	8 BZ	1/2	0.69	7/8
DN-10	1012-1 10NU10	SN-10	10 BZ	5/8	0.69	1
DN-12	1212-1 12NU12	SN-12	12 BZ	3/4	0.69	1 1/8
DN-14	1412-1 14NU14	SN-14	14 BZ	7/8	0.69	1 1/4
DN-16	1612-1 16NU16	SN-16	16 BZ	1	0.81	1 1/2

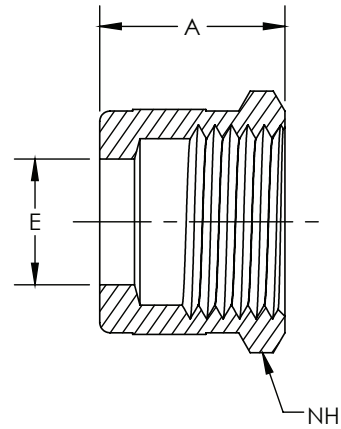
NOTE: Dimensions subject to change, to be used for reference only.

Tylok CS-Lok® nuts are coated with moldisulfide for reduced galling and lower installation torque.

Tylok CBC-Lok® nuts are silver etched on the inside and coated with a proprietary ??? to reduce galling and lower installation torque.

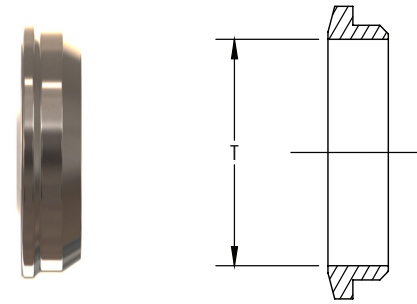
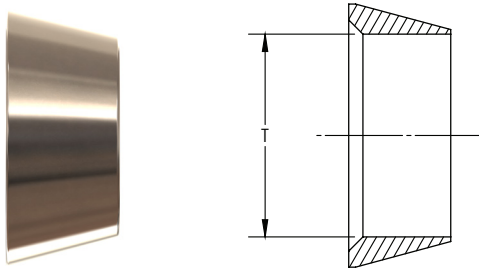
DKN/SKN

Knurled Nut



CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.	A	NH NUT HEX
DKN-1	102-1K 1 BZP	SKN-1	1 BZP	1/16	0.31	5/16
DKN-2	202-1K 2 BZP	SKN-2	2 BZP	1/8	0.47	7/16
DKN-3	302-1K 3 BZP	SKN-3	3 BZP	3/16	0.47	1/2
DKN-4	402-1K 4 BZP	SKN-4	4 BZP	1/4	0.50	9/16
DKN-5	502-1K 5 BZP	SKN-5	5 BZP	5/16	0.53	5/8
DKN-6	602-1K 6 BZP	SKN-6	6 BZP	3/8	0.56	11/16
DKN-8	812-1K 8 BZP	SKN-8	8 BZP	1/2	0.69	7/8
DKN-10	1012-1K 10 BZP	SKN-10	10 BZP	5/8	0.69	1
DKN-12	1212-1K -	SKN-12	-	3/4	0.69	1 1/8
DKN-14	1412-1K -	SKN-14	-	7/8	0.69	1 1/4
DKN-16	1612-1K -	SKN-16	-	1	0.81	1 1/2

NOTE: Dimensions subject to change, to be used for reference only.

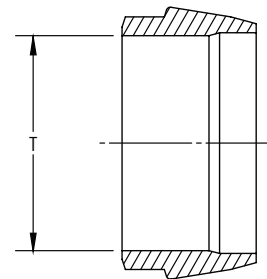
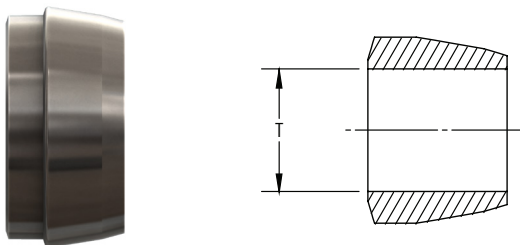


CBC PART NUMBER	INTERCHANGES WITH	T TUBE O.D.
DFC-1	103-1 1FF1	1/16
DFC-2	203-1 2FF2	1/8
DFC-3	303-1 3FF3	3/16
DFC-4	403-1 4FF4	1/4
DFC-5	503-1 5FF5	5/16
DFC-6	603-1 6FF6	3/8
DFC-8	813-1 8FF8	1/2
DFC-10	1013-1 10FF10	5/8
DFC-12	1213-1 12FF12	3/4
DFC-14	1413-1 14FF14	7/8
DFC-16	1613-1 16FF16	1

CBC PART NUMBER	INTERCHANGES WITH	T TUBE O.D.
DRC-1	104-1 1BF1	1/16
DRC-2	204-1 2BF2	1/8
DRC-3	304-1 3BF3	3/16
DRC-4	404-1 4BF4	1/4
DRC-5	504-1 5BF5	5/16
DRC-6	604-1 6BF6	3/8
DRC-8	814-1 8BF8	1/2
DRC-10	1014-1 10BF10	5/8
DRC-12	1214-1 12BF12	3/4
DRC-14	1414-1 14BF14	7/8
DRC-16	1614-1 16BF16	1

NOTE: Dimensions subject to change, to be used for reference only.

NOTE: Dimensions subject to change, to be used for reference only.



CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.
SC-1	1 TZ	1/16
SC-2	2 TZ	1/8
SC-3	3 TZ	3/16
SC-4	4 TZ	1/4
SC-5	5 TZ	5/16
SC-6	6 TZ	3/8
SC-8	8 TZ	1/2
SC-10	10 TZ	5/8
SC-12	12 TZ	3/4
SC-14	14 TZ	7/8
SC-16	16 TZ	1

COMPONENT REPLACEMENT PARTS

Collet sets and Nut/Collet sets make for easy storage and handling of nuts and collets. CBC-Lok® & CS-Lok® components are precision made and should be handled with care. The components can be ordered on an arbor, which aids in careful handling and prevents them from coming off. Pinch the end of the arbor to release the components.

NOTE: Dimensions subject to change, to be used for reference only.

COLLET /NUT & COLLET SETS



CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.
DCSET-4-10	400-SET 4 ALOK-*-SET	SCSET-4-10	4-CPI-*-SET	1/4
DCSET-6-10	600-SET 6 ALOK-*-SET	SCSET-6-10	6-CPI-*-SET	3/8
DCSET-8-10	810-SET 8 ALOK-*-SET	SCSET-8-10	8-CPI-*-SET	1/2
DCSET-12-10	- 12 ALOK-*-SET	SCSET-12-10	12-CPI-*-SET	3/4
DCSET-16-10	- 16 ALOK-*-SET	SCSET-16-10	16-CPI-*-SET	1

NOTE: Dimensions subject to change, to be used for reference only.



CBC PART NUMBER	INTERCHANGES WITH	CS PART NUMBER	INTERCHANGES WITH	T TUBE O.D.
DNCSET-4-5	400-NFSET -	SNCSET-4-5	-	1/4
DNCSET-6-5	600-NFSET -	SNCSET-6-5	-	3/8
DNCSET-8-5	810-NFSET -	SNCSET-8-5	-	1/2
DNCSET-12-5	- -	SNCSET-12-5	-	3/4
DNCSET-16-5	- -	SNCSET-16-5	-	1

NOTE: Dimensions subject to change, to be used for reference only.

COMPONENT REPLACEMENT PARTS

Collet sets and Nut/Collet sets make for easy storage and handling of nuts and collets. CBC-Lok® & CS-Lok® components are precision made and should be handled with care. The components can be ordered on an arbor, which aids in careful handling and prevents them from coming off. Pinch the end of the arbor to release the components.

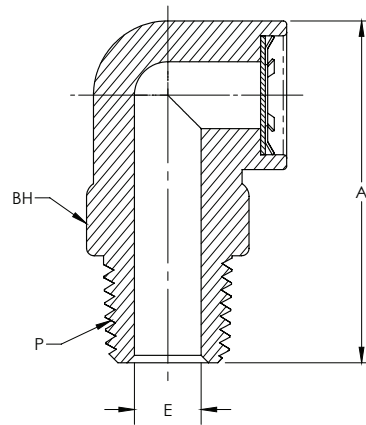
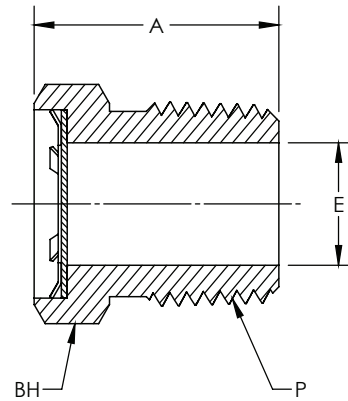
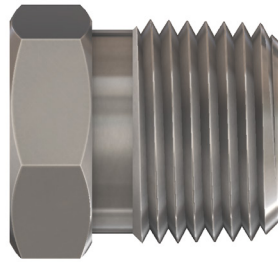


CBC PART NUMBER	T TUBE O.D.
1-DGG	1/16
2-DGG	1/8
3-DGG	3/16
4-DGG	1/4
5-DGG	5/16
6-DGG	3/8
8-DGG	1/2
10-DGG	5/8
12-DGG	3/4
14-DGG	7/8
16-DGG	1
468-DGG	1/4, 3/8, 1/2 6 mm, 12 mm

NOTE: Dimensions subject to change, to be used for reference only.

1MDF

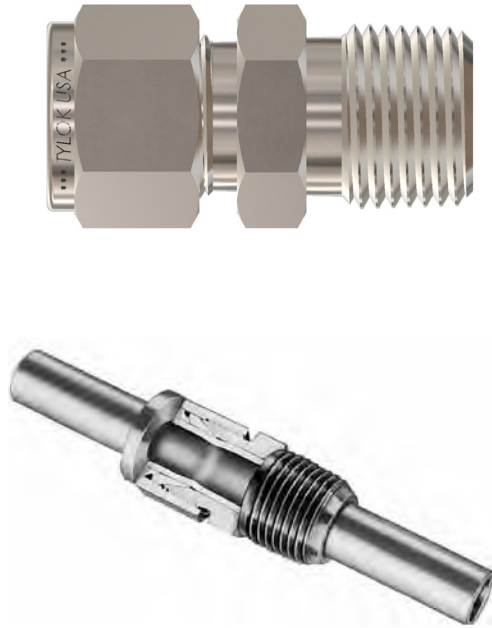
Mud Dauber



CBC PART NUMBER	INTERCHANGES WITH		PIPE WELD SIZE	A	E THRU HOLE	BH BODY HEX
4-1MDF	MD-42	MDF	1/4	.81	.28	9/16
6-1MDF	MD-66	MDF	3/8	.81	.41	11/16
8-1MDF	MD-88	MDF	1/2	1.03	.50	7/8
PP-4-2MDF	-	-	1/4	1.44	.28	5/8
PP-6-2MDF	-	-	3/8	1.44	.28	11/16

NOTE: Dimensions subject to change, to be used for reference only.

- Tylok Mud Daubers, also known as Vent Protector fittings, protect open ends of tubing, instruments, outlet vents and exhaust lines.
- Each Vent Protector has a 300 series stainless steel 40-mesh wire screen to prevent obstructive foreign objects, such as insects, from entering and clogging a system.
- Straight Vent Protectors are available in either Stainless Steel or Brass. Add an SS or B in front of part number to specify the desired material.
- Angled Vent Protectors are available in Polypropylene (PP) only.



THERMOCOUPLE BORE THROUGH

A Thermocouple Connector can be furnished already bored through for an additional charge.

When Ordering:

1. Select required size male connector.
See DMC/SMC pages for a listing of available Male Connectors.
2. Add the letters "BT" to designate bore through. Example: 4-DMC-2-BT


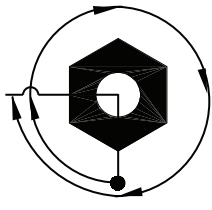
SIZE	DE-RATING FACTOR
Up to 1/2" (Size 8)	0.75
1/2"-3/4" (Size 8 thru 12)	0.50
7/8" - 1" (Size 14 and 16)	0.25

NOTE: Multiply tube pressure rating (see Suggested Allowable Working Pressure tables) by de-rating factor to determine safe working pressure.

INSTALLATION INSTRUCTIONS

CBC-LOK[®]/CS-LOK[®] INSTALLATION INSTRUCTIONS

CBC-Lok[®]/CS-Lok[®] Tube Fittings come completely assembled & ready for use, no disassembly required. Although there are some general guidelines to follow, no special preparation of the tubing is necessary. In overhead applications, Tylok recommends using a Pre-Set Tool.

SIZE	TIGHTEN # TURN(S)		
1	1/16"	3/4	Size #1 thru #3  Finger tight plus 3/4 turn
2	1/8"		
3	3/16"		
4	1/4"	1-1/4	Size #4 thru #16  Finger tight plus 1-1/4 turn
5	5/16"		
6	3/8"		
8	1/2"		
10	5/8"		
12	3/4"		
14	7/8"		
16	1"		

NOTE: DF Plugs, -NF (Nut & Ferrule Pre-Assembles) require only 1/4 turn make-up.



Simply insert the tubing into the assembly, making sure the tubing seats firmly against the shoulder of the body and the nut is finger tight. High pressure applications and high safety-factor systems: Further tighten the nut until the tube will not turn by hand or move axially in the fitting.



Tighten nut with wrench the additional number of turns indicated above, while holding the fitting body with a second wrench.



TO REMOVE TUBE & RE-CONNECT TUBE FITTING

Mark the location of the nut with reference to the body before disassembly. For assembly, re-insert the tubing into the body until it is seated. With proper size wrench, re-tighten nut to original location by realigning previous marks. A noticeable amount of torque will develop when the nut is turned to original position. Next, rotate the nut slightly past original position to fully re-set the seal. Back off the nut until it is clear of the body and remove the tubing from the fitting.

CBC-LOK® TUBING SELECTION & PREPARATION

Proper selection of tubing is key to the performance of the fitting. When selecting the proper wall thickness and material, all tubing should be compatible with the process fluid, temperature, application, flow, and system pressure.

For proper sealing, it is recommended that tubing and fitting be of like material to allow for positive sealing (i.e., stainless on stainless, brass on copper, steel on steel). Galvanic corrosion could occur if the tubing and fitting are not of like material, with the exception of a brass fitting on copper tubing.

When using stainless steel tubing, Tylok recommends using Type 304 or 316 fully annealed, seamless or welded redrawn meeting ASTM A213, ASTM A269 or equivalent, with a suggested maximum hardness of 80 Rb.

For copper tubing, Tylok suggests using soft annealed, seamless tubing per ASTM B75 or equivalent. Copper water tube type K or L, soft annealed (Temper O) per ASTM B88 can also be used.

When using carbon steel, all tubing should be fully annealed and conform to ASTM A-179, or equivalent, with a maximum hardness of 72 Rb.

In general, all tubing should be free of nicks, scratches, or imperfections of any kind and should be suitable for bending. Tubing that does not easily go through fitting components should not be used. It is recommended that the charts be used for tube selection. Ideally, the tube end should be cut square so that when it bottoms out inside the fitting, an extra seal is provided. Avoid installing contaminated tubing into your system. For elevated temperatures, see Tube Pressure Derating Factors at Elevated Temperatures Chart.

CBC-Lok®/CS-Lok® Tube Fitting swage the tubing to achieve sealing. Thin wall tubing (wall thickness with working pressures highlighted in reverse text in the charts) is not recommended for Gas Service. See "Gas Service" on page 58.

When using tubing of a thinner or thicker wall than shown, it is always recommended that you consult with your local Distributor or contact Tylok International directly if there is any doubt of selecting tubing.

It is the responsibility of the Engineer to refer to the technical pages in this catalog to ensure selection of the proper tubing material, tubing compatibility with the fitting, media and tubing wall thickness.

Values in reverse text are not recommended for Gas Service.

Note: Tables, calculated to the right, are suggested maximum working pressure ratings, in accordance with ASME B31.3, but should be used for reference only. Tylok International Inc., is not responsible for its accuracy nor designs using these figures.

Following the stated recommendations will result in a safe application, free of leaks. The entire system must be considered when selecting the tube. Tylok tube fittings are designed to work to the tubing pressure ratings found in the charts below.

SUGGESTED ALLOWABLE WORKING PRESSURE TABLES (psig)

STAINLESS STEEL								
Tube Size O.D.	Tube Wall Thickness (inches)							
	.028	.035	.049	.065	.083	.095	.109	.120
1/8"	8500	10900						
3/16"	5400	7000	10200					
1/4"	4000	5100	7500	10200				
5/16"		4000	5800	8000				
3/8"		3300	4800	6500				
1/2"		2600	3700	5100	6700			
5/8"			2900	4000	5200	6000		
3/4"			2400	3300	4200	4900	5800	
7/8"			2000	2800	3600	4200	4800	
1"				2400	3100	3600	4200	4700

75,000 PSI Tensile

Note: For welded and drawn tubing, a derating factor must be utilized. For double welded tube, multiply the above pressure rating by .85; and for single welded tube by .80 (ASME B31.3).

CARBON STEEL								
Tube Size O.D.	Tube Wall Thickness (inches)							
	.028	.035	.049	.065	.083	.095	.109	.120
1/8"	8000	10200						
3/16"	5100	6600	9600					
1/4"	3700	4800	7000	9600				
5/16"		3700	5500	7500				
3/8"		3100	4500	6200				
1/2"		2300	3200	4500	5900			
5/8"			2600	3500	4600	5300		
3/4"			2100	2900	3700	4300	5100	
7/8"			1800	2400	3200	3700	4300	
1"			1500	2100	2700	3200	3700	4100

COPPER								
Tube Size O.D.	Tube Wall Thickness (inches)							
	.028	.035	.049	.065	.083	.095	.109	.120
1/8"	2700	3600						
3/16"	1800	2300	3400					
1/4"	1300	1600	2500	3500				
5/16"		1300	1900	2700				
3/8"		1000	1600	2200				
1/2"		800	1100	1600	2100			
5/8"			900	1200	1600	1900		
3/4"			700	1000	1300	1500	1800	
7/8"			600	800	1100	1300	1500	
1"			500	700	900	1100	1300	1500

SAFETY & QUALITY

Gas Service

GAS SERVICE

Extra care must be taken when tubing is used in gas service applications. Small gas molecules easily escape through minute leak paths; therefore, the tubing must be free of nicks, scratches and imperfections of any kind. When using large diameter tubing, the possibility of surface defects is increased further due to greater surface area. It is strongly recommended that the heavier wall thickness be selected. Penetration of the ferrules on thin wall tubing or soft material may not offer enough radial resistance for sealing.

Values in reverse text are not recommended for Gas Service.

GAP GAGE

Gap Gage can be purchased to ensure the Installer and Inspector that the nut has been properly tightened.



When fitting is properly tightened, gap gage should not fit between nut and shoulder of body.

PRECAUTIONS FOR WELD END

CBC-Lok®/CS-Lok® Tube Fittings with weld ends offer the same positive sealing as all other Tylok fittings. Welding could deform the assembly, making pull ups or disassembly difficult. Some precautions should be taken:

- Remove the nut & ferrules from the fitting.
- It is important that the fitting threads and sealing surfaces be protected from weld splatter.
- A heat sink should be used to dissipate heat.
- Ensure alignment by track welding symmetrically.
- Once welded, remove the weld splatter protection and reassemble nut & ferrules on fitting.

SAFETY GUIDELINES

- Never connect, disconnect or remake a fitting with pressure in the system
- Make sure all fittings are properly installed, reference Installation Instructions - page 56, before pressurizing the system.
- Tubing material should be softer than fitting material
- Tylok recommends using only Tylok replacement parts
- Although the fittings will hold to the pressure rating of the tubing, it is not recommended to go beyond this rating. Elongation could occur in the tubing, shrinking the wall thickness and causing potential harm to anyone in the area.
- Always use proper thread lubricants and sealants on tapered pipe threads.
- If process fluids are toxic and/or hazardous, exercise extra caution
- Never bleed a system by loosening a fitting
- For proper sealing it is recommended that the tubing and fitting be of like material

QUALITY CONTROL

All components are manufactured & inspected to meet strict quality control standards in each phase of production. All employees are thoroughly trained to follow procedures, in accordance with the ISO 9001 Quality Standard, to ensure a quality product from the start of each job through completion.

PIPE THREAD SPECIFICATIONS

Tylok Pipe Fittings are manufactured from materials meeting applicable ASTM or ASME specifications, with pipe threads which meet or exceed ANSI B1.20.1 requirements. Strict quality control procedures are followed throughout production to provide the finest possible product.

Materials: Brass • 316 Stainless Steel • Steel

These charts are to be used as a guide only and are based on normal wall thicknesses, used for the various sizes. These ratings may vary widely from effects such as the proper use of sealants, size of stock, temperature, corrosion factors, etc. Therefore, Tylok International, Inc. assumes no responsibility for its accuracy in any individual design.

Pressure ratings for Tylok tube fittings that have differing end connection styles shall use the lowest of the pressure rating.

TUBE PRESSURE DERATING FACTORS ELEVATED TEMPERATURES

The table lists de-rating factors that must be considered in applications above that of ambient temperatures.

Example:

Type 316 Stainless Steel 1/4" O.D.x.0.49" wall at 800°F is 7,500 PSI x .79 = 5,925 psig.

Therefore, the suggested allowable working pressure for 316 Stainless Steel (1/4" O.D. with .049" tube wall) at 800°F is 5,925 psig.

Suggested Maximum Operating Pressures for Pipe Threads (psig)				
NPT Size	316 SS & Carbon Steel		Brass	
	Male	Female	Male	Female
1/16"	11000	6700	5500	3300
1/8"	10000	6500	5000	3200
1/4"	8000	6600	4000	3300
3/8"	7800	5300	3900	2600
1/2"	7700	4900	3800	2400
3/4"	7300	4600	3600	2300
1"	5300	4400	2600	2200

Tylok Instrumentation Fittings are rated at the following temperatures:	
316 Stainless	-325°F to 1000°F (-198°C to 648°C)
Brass	-40°F to 400°F (-40°C to 204°C)
Steel	-65°F to 375°F (-54°C to 190°C)

Consideration should be given to maximize temperature ratings if fittings and/or tubing are coated or plated.

TEMPERATURES		TUBING MATERIAL		
°F	°C	Carbon Steel	304 SS	316 SS
200	93	0.95	1.00	1.00
300	149	0.90	1.00	1.00
400	204	0.87*	0.93	0.96
500	260		0.87	0.89
600	316		0.82	0.85
700	371		0.8	0.81
800	427		0.76	0.79
900	482		0.73	0.77
1000	538		0.69	0.76

*Based on 375°F (190°C) max

TEMPERATURES		TUBING MATERIAL
°F	°C	Copper
100	38	1.00
150	66	0.85
200	93	0.80
250	121	0.80
300	149	0.78
350	177	0.66
400	204	0.50

MATERIAL SPECIFICATIONS

Pre-setting Tool

HEAT TRACEABILITY

Tylok® Tube Fittings are completely heat code traceable back to the original mill heat from which they were made. Starting with the original billet, the mill creates a certificate that completely describes the chemical & physical makeup. For any one of the four components (body, front ferrule, rear ferrule, nut), the material certifications can be provided. Call Tylok and provided the heat code stamp marked on the part itself, along the part number to obtain the certificate.

RAW MATERIAL SPECIFICATIONS

FITTING MATERIAL	BAR STOCK	FORGING	TUBING SPECIFICATION *
Brass	ASTM B16 Alloy 360 ASTM B453 Alloy 345	ASTM B124 Alloy 377	ASTM B75 Copper (Temper O)
Stainless Steel	ASTM A276 ASME SA479 Type 316-SS	ASME SA-182 Type 316-SS	ASTM A213 ASTM A269
Steel	ASTM A108		ASTM A179

*Reference Tubing Selection & Preparation

TYLOK PRE-SET TOOL

The CBC-Lok®/CS-lok® product line offers a Pre-Set Tool when fittings need to be installed in hard to reach places. The Pre-Set Tool is designed to be used in any tabletop vise. After tightening the nut the specified number of turns, as stated in the included installation instructions, loosen the nut from the Pre-Set Tool. Once the ferrules have swaged into the tubing surface, the assembly is ready for installation. When ordering the CBC-Lok®/CS-Lok® Pre-Set Tool, reference the part number in the chart. The Pre-Set Tool is hardened for maximum durability. The Pre-Set Tool can be used repeatedly to set the ferrules onto the tubing for easy installation.



PART NUMBER	TUBE SIZE
1-DPST	1/16"
2-DPST	1/8"
3-DPST	3/16"
4-DPST	1/4"
5-DPST	5/16"
6-DPST	3/8"
8-DPST	1/2"
10-DPST	5/8"
12-DPST	3/4"
14-DPST	7/8"
16-DPST	1"



Place Pre-Set Tool in a vice and tighten nut specified number of turns.



Back nut off of Pre-Set Tool. Notice the ferrules have swaged into the tubing. Now take tubing to installation area.

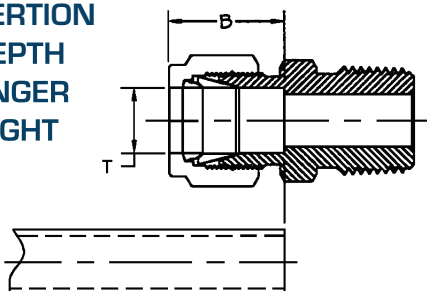
TUBE INSERTION CHART

Applications

TUBE INSERTION CHART

For pre-cutting tubing to length, the following chart shows the additional length inside the fitting assembly.

**TUBE
INSERTION
DEPTH
FINGER
TIGHT**



TUBE SIZE	T TUBE OD	B INSERTION DEPTH
1	1/16	0.34
2	1/8	0.52
3	3/16	0.54
4	1/4	0.61
5	5/16	0.65
6	3/8	0.67
8	1/2	0.90
10	5/8	0.96
12	3/4	0.96
14	7/8	1.02
16	1	1.24

NOTE: Dimensions subject to change, to be used for reference only.

TUBING-GENERAL APPLICATIONS

Tylok Tube Fittings are designed to perform in a variety of applications that demand high performance. The CBC-Lok® & CS-Lok® product lines have been engineered to provide optimal performance. However, tubing should always be considered as an important factor in the design stages of any system. Below is a table that describes some general uses for different types of materials. The table is provided as an reference to the Engineer in the design process. Tylok suggests the use of seamless, fully annealed tubing. Welded tubing may be used with Tylok fittings. However, due to the manufacturing of welded tubing, variables may be encountered. The media flowing through the tubing must be compatible with the tubing itself. It is always a good rule to use like tubing material on like fitting material. If this format is not followed, the ferrules may have difficulty penetrating the tubing, adversely affecting the sealing ability addition, dissimilar materials in contact may be sensitive to galvanic corrosion. Tylok recommends ordering tubing material to meet ASTM specifications to ensure that it will be dimensionally, physically, and chemically within precise limits. (See Raw Materials Specifications charts on page 60).

TUBING MATERIAL	GENERAL APPLICATIONS
Carbon Steel	Air Lines, High Pressure, High Temperature, Oil, Air, Specialty Chemicals, Hydraulic Gases
Copper	Low Temperature, Low Pressure Water, Oil, Air, Pneumatic Controls, Lube Lines
Stainless Steel	High Pressure, High Temperature, Nitrogen, Helium, Flammable Gases, Hydraulic, Gases, generally corrosive media

NOTICE

In designing a system incorporating tube fittings and valves, it is the designer's or user's obligation & responsibility to determine the appropriate fittings and valves to be used for each application and to insure proper installation and maintenance.

LIMITED WARRANTY

Tylok Fittings and Valves are warranted solely against defects in material & workmanship in the performance of the specific functions for which they are designed, as set forth in the published specifications for the life of the product. Should any fitting & valve or its component fail due to a defect in material or workmanship, Tylok will replace said fitting & valve without charge upon return of the failed part and evidence of its failure being due to materials or workmanship.

The Warranty above set forth is the only warranty applicable to Tylok products, and is in lieu of any and all other warranties either expressed or implied, including any warranty of merchantability or fitness. Tylok's sole responsibility or liability as a result of any loss or damage due to failure shall be to replace the failed part or fitting & valve, and it shall bear no liability for any incidental or consequential damages to person or property.

Tylok Liquid Leak Detectors

- Tylok Liquid Leak Detector detect gas leaks in hard-to-reach areas.
- Safe for oxygen systems
- Sustainable bubble action works even on very small leaks and vertical surfaces
- Flexible tube extends for hard-to-reach areas
- Formulas dries clean, without staining

Part Number	Container Size	Pull Out Tube Length
LEAK DETECTOR-8oz	8 fl oz. (236ml)	12 inch (30.48cm)
LEAK DETECTOR-Gal	1 Gallon	
LEAK DETECTOR COOL-8oz	8 fl oz. (236ml)	12 inch (30.48cm)
LEAK DETECTOR COOL-Gal	1 Gallon	



TYLOK LIQUID LEAK DETECTOR

- Temperature rating: Can be used over a temperature range of 27° to 200°F (-2 to 93°C).

Specifications: Meets the performance requirements of:

- MIL-PRF-25567 Leak Detector Compound, Oxygen Systems, Type I, 1 to 70°C (33 to 158°F)
- NFPA 52 Section 6-12.2 Leak Testing Compressed Natural Gas Vehicular Fuel System
- EPA Part 60, Appendix A, Method 21, Section 4.3.3 Alternative Screening Procedures Using Soap Solutions
- Nontoxic, noncorrosive, nonflammable



TYLOK LOW TEMPERATURE LIQUID LEAK DETECTOR

- Temperature rating: Can be used over a temperature range of -65° to 200°F (-54 to 93°C).

Specifications: Meets the performance requirements of:

- MIL-PRF-25567 Leak Detector Compound, Oxygen Systems, Type II, -54° to 1°C (-65 to 33°F)
- NFPA 52 Section 6-12.2 Leak Testing Compressed Natural Gas Vehicular Fuel System
- EPA Part 60, Appendix A, Method 21, Section 4.3.3 Alternative Screening Procedures Using Soap Solutions
- Noncorrosive, nonflammable



TYLOBE™ THREAD LUBRICANT

Tylobe™ is an anti-gall compound to be used on stainless steel, steel and nickel-based alloys. Temperature range to 500°F. Not recommended for plastic and aluminum products.

Tylobe™ is made from distilled water with inert ingredients and contains no silicones, heavy metals, chlorine or sulfur. Safe for oxygen applications.

For a complete list of ingredients, request an MSDS to be sure of its compatibility with your installation. Available in 8 oz. plastic bottles.

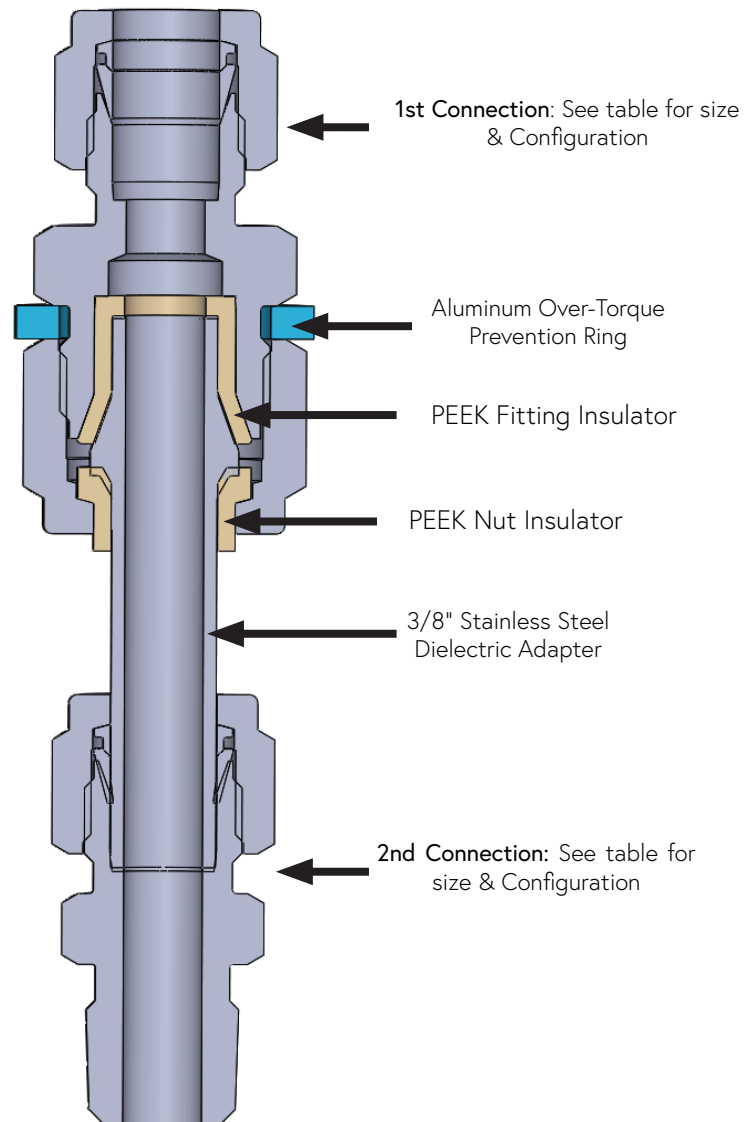
Tylok Dielectric Fittings are insulated connections used to protect sensitive electrical components from electrical current potentially carried through tubing systems.

Typical Application - Gas Transmission

A typical application for a dielectric fitting is in the transmission of natural gas. The dielectric fitting insulates electric current flow that results from Current Cathodic Protection systems, static electricity, ground currents, stray currents from instruments, etc.

Features

- Dielectric Strength $\times 10^7$ Ohms at 10 VDC
- Voltage Breakdown resistance 4000 VDC
- Blow-out Proof Stem
- Stainless Steel Construction
- PEEK Insulators
- Over-torque Prevention Ring
- Pressure Rating:
 - 5000 psi (344 bar) at 100°F (37°C)
- Temperature Rating:
 - 40°F (-40°C) to 200°F (93°C)
- Size Range
 - 3/8", 1/4", 1/2"
- End Connections
 - Tylok Tube End straight or elbow
 - Male NPT straight or elbow
 - Female NPT straight or elbow



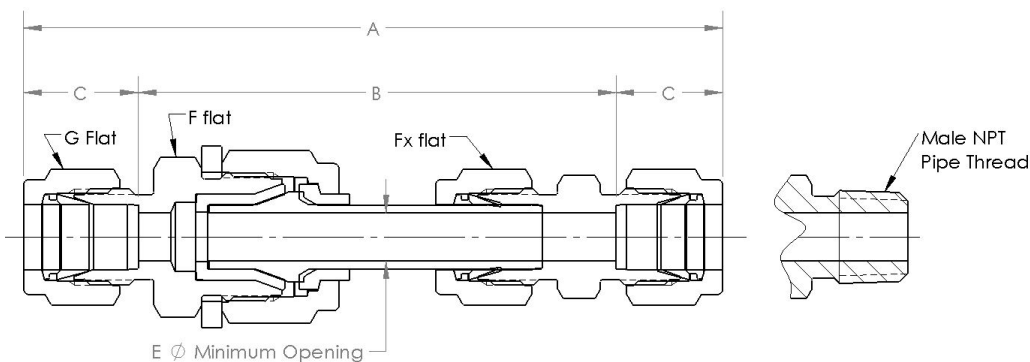
Configuration shown above: SS-6-DMC-4-DE

Dielectric Fitting

Ordering Information

Material	1st Connection Size	Fitting Configuration	2nd Connection Size	Dielectric Identifier	Description
SS-	4 = 1/4" 6 = 3/8" 8 = 1/2"	-DU- -DRU- -DRU-	4 = 1/4" 6 = 3/8" 8 = 1/2"	-DE	Tylok Tube End Straight
SS-	4, 6, 8	-DELU-	4, 6, 8	-DE	Tube End Elbow
SS-	4, 6, 8	-DMC-	4, 6, 8	-DE	MNPT Straight
SS-	4, 6, 8	-DME-	4, 6, 8	-DE	MNPT Elbow
SS-	4, 6, 8	-DFC-	4, 6, 8	-DE	FNPT Straight
SS-	4, 6, 8	-DFE-	4, 6, 8	-DE	FNPT Elbow

For Single Ferrule, CS-Lok, change the "D" in the configuration section to "S"



End Connection			Ordering Number	Dimensions, Inches															
Inlet / Outlet	Tube Size	Pipe Size		A	B	C	E	F	Fx	G									
CBC-Lok	1/4"	-	SS-4-DU-4-DE	4.02	2.80	0.61	0.28	0.81	0.69	0.56									
	3/8"	-	SS-6-DU-6-DE	4.14	2.80	0.67				0.69									
	1/2"	-	SS-8-DU-8-DE	4.38	2.58	0.90				0.88									
CBC-Lok / Male NPT	1/4"	1/4"	SS-4-DMC-4-DE	3.93	N/A	N/A				0.28	0.81	0.69	0.56						
	3/8"	1/4"	SS-6-DMC-4-DE	3.99									0.69						
	3/8"	3/8"	SS-6-DMC-6-DE	3.99									0.69						
	1/2"	3/8"	SS-8-DMC-6-DE	4.09									0.88						
CS-Lok	1/4"	-	SS-4-SU-4-DE	4.02	2.80	0.61							0.28	0.81	0.69	0.56			
	3/8"	-	SS-6-SU-6-DE	4.09	2.80	0.67										0.69			
	1/2"	-	SS-8-SU-8-DE	4.38	2.58	0.90										0.88			
CS-Lok / Male NPT	1/4"	1/4"	SS-4-SMC-4-DE	3.93	N/A	N/A										0.28	0.81	0.69	0.56
	3/8"	1/4"	SS-6-SMC-4-DE	3.99															0.69
	3/8"	3/8"	SS-6-SMC-6-DE	3.99			0.69												
	1/2"	3/8"	SS-8-SMC-6-DE	4.09			0.88												