

VECTOR

Techlok Clamp Connector

POCKET GUIDE

ASSEMBLY PROCEDURE

INSPECT COMPONENTS PRIOR TO ASSEMBLY

Hub and sealing seating surfaces must be clean and free from foreign matter. Damage to hub seats and seal lips is not acceptable, and should be rectified before assembly.



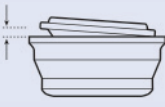
LUBRICATE

Usually sealings are coated which acts as lubricant during make-up. If required light oil or MoS2 spray can be used on hub sealing surface but not on sealing. Take care that no solid particles are present in the lubricant.



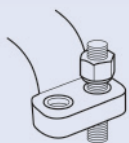
CHECK SEALING STANDOFF

The sealing should rock slightly against hub face. Stand-off dimensions given below in inches.



ASSEMBLE COMPONENTS

Install sealing into the hubs, and assemble clamps around the hubs. Lubricant applied to the hub/clamp contact area will aid assembly.



The studbolts should be

fitted ensuring that

spherically faced nuts

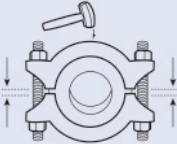
locate into spherical

seats of the clamps. Lubrication of nut faces

and bolt threads is recommended.

TIGHTEN BOLTS IN UNIFORM MANNER

Bolting should be tightened to keep spacing between clamp halves approximately equal. Clamp segments should be



shocked with suitable soft-faced hammer to aid assembly. Always re-tighten bolts after shocking to the torque/preload values given below.

ALIGN HUBS

Hubs should be aligned so that sealing can be installed between hubs. **DO NOT** attempt to correct badly mis-aligned piping by clamping force alone; piping pulling forces should only be released when clamp is fully assembled. Complete Techlok make up requires two conditions.

1) Hubs must be completely face to face with the rib of the sealing where standard hubs are used and completely face to face with each other where recessed hubs are used.

2) Bolts are made up to the correct torque.

DISASSEMBLY PROCEDURE

DE-PRESSURISE THE LINE

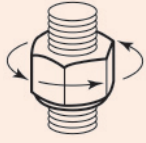
Always check, never take it for granted that the line has been de-pressurised.



Proceed with caution in case seepage has caused pressure to build up again.

SLACKEN NUTS BUT DO NOT REMOVE THE NUTS FROM THE BOLTS - THEN SLACKEN CLAMP SEGMENTS

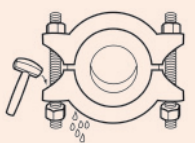
Gradually run the nuts back along the bolts until just loose. If clamp segments remain bound onto hubs, then BOTH segments must be



slackened by hitting the inner face of the clamp lugs with a suitable soft-faced hammer.

REPEAT SLACKENING PROCEDURE

Re-loosen nuts and re-slacken BOTH clamp segments until the maximum nut travel shown below is reached.



This should release sealing contact and any residual pressure will then be released through, with the joint.

CHECK CLAMPS ARE SLACK AND FREE TO ROTATE AND/OR ROCK ABOUT HUBS

Do not proceed

until discharge

ceases ensure that

hubs are apart,

sealing is free to

move AND clamps

are slack, free to

rotate or rock.

NOTE - If pressure

is still in the line, the

sealing might remain

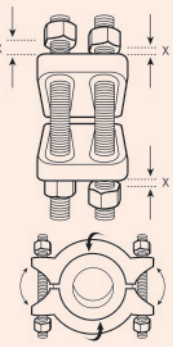
seated, making the

joint tight even though

it is part dis-assembled. **ONLY** when all components are loose and clamps are free to move can dis-assembly be completed. If the components are not free to move **DO NOT**

CONTINUE - contact your supervisor.

X = Nut travel at end of bolt
2X = Total nut travel from assembled position



ALWAYS ASK YOURSELF - WHAT IF ?...

- What if, the connection is still under pressure, am I or others in danger, and if so how?
- What if, there is still gas or fluid in the line?
- What if, the sling snaps?
- What if, the load swings in my direction?
- What if, the piping springs upon release? (Piping spring may also prevent free rotation of clamps around the hubs).

TECHLOK CLAMP CONNECTOR

Clamp Size	Standard Bolt Dia	Basic Bolt Preload (Note 1, 3)		Basic Bolt Torque Lubricated $\mu=0.1$ (Note 1, 2, 3)		Notes	2X	
		ins	Lbf KN	Ft-lbs	Nm		ins	mm
Standard Clamp Series								
1in	0.500	2844	12.7	17	23	4	0.2	5
1 1/2in	0.625	4766	21.2	35	48	4, 5	0.2	6
2in	0.750	6516	29.0	55	75	4, 5	0.2	6
3in	0.750	7476	33.3	65	88	4, 5	0.3	8
4in	0.875	9946	44.2	100	136	4, 5	0.4	10
5in	1.000	13986	62.2	160	217	4, 5	0.6	14
6in	1.125	16032	71.3	210	285	4, 5	1.0	24
8in	1.250	20887	92.9	300	407	4, 5	1.1	27
Light Duty Series								
L14in	1.625	39727	177	700	949	4	1.3	33
L16in	1.750	42084	187	800	1085	4	1.3	33
L18in	1.875	54288	241	1100	1492	4	1.3	33
L20in	2.000	58073	258	1250	1695	4	1.3	34
L24in	2.250	74880	333	1800	2440	4	1.6	39
Heavy Duty Series								
H2in	0.875	9946	44.2	100	136	4, 5	0.2	6
H3in	0.875	11931	53.1	120	163	4, 5	0.3	8
H4in	1.000	12240	54.4	140	190	4, 5	0.4	11
H8in	1.375	25599	114	390	529	4, 5	0.9	24
H10in	1.625	39722	177	700	949	4, 5	1.2	32
H12in	1.750	47340	211	900	1220	4, 5	1.5	37
H14in	1.875	59208	263	1200	1627	4, 5	1.5	39
H16in	2.250	83204	370	2000	2711	4, 5	1.6	40
H18in	2.250	83204	370	2000	2711	4, 5	1.7	42
H20in	2.250	89448	398	2150	2915	4, 5	1.7	43
H22in	2.250	89448	398	2150	2915	4, 5	1.7	43
H24in	2.250	93608	416	2250	3051	4, 5	1.8	45
H26in	2.500	103590	461	2750	3728	4, 5	1.8	45

- Notes:
1. This is the basic minimum torque/preload value. Use for typically 900lb systems and below, blind closures and Stainless Steel clamps.
 2. Different friction coefficients will require the torque values to be adjusted. Check with Lubricant manufacturer.
 3. Exceeding the stated torque/preload values may cause distortions in the Clamp/Hub. If these torques do not achieve correct make-up (i.e. unable to correct mis-alignment), then seek assistance as other measures may be needed to assist with the assembly.
 4. Factor torque by 1.5 for mis-aligned piping and/or 1500lb systems and above. Suitable only for Carbon, Duplex and Low Alloy Steel Clamps with B7 or equivalent bolts.
 5. Factor torque by 2.0 for extreme mis-aligned piping and/or 2500lb (and 5000psi) systems and above. Suitable only for Low Alloy Steel Clamps with Grade B7 bolts or equivalent.

SEALING STANDOFF

Sealing	Nominal Standoff 'Canted'	Min 'Canted' for Re-use	Sealing	Nominal Standoff 'Canted'	Min 'Canted' for Re-use	Sealing	Nominal Standoff 'Canted'	Min 'Canted' for Re-use
4	0.018	0.006	56	0.053	0.026	122	0.155	0.078
5	0.018	0.006	62	0.092	0.046	124	0.152	0.076
7	0.021	0.007	64	0.096	0.048	130	0.167	0.083
11	0.025	0.009	67	0.096	0.048	134	0.167	0.083
12	0.025	0.009	72	0.099	0.050	137	0.163	0.081
13	0.025	0.009	76	0.103	0.052	140	0.167	0.083
14	0.024	0.008	82	0.107	0.053	144	0.193	0.096
16	0.024	0.009	84	0.111	0.055	152	0.189	0.095
20	0.023	0.011	87	0.114	0.057	160	0.193	0.096
23	0.025	0.013	91	0.118	0.059	170	0.200	0.100
25	0.028	0.014	92	0.118	0.059	180	0.207	0.104
27	0.032	0.016	94	0.122	0.061	185	0.219	0.109
31	0.031	0.015	97	0.129	0.065	192	0.230	0.115
34	0.036	0.018	102	0.129	0.065	200	0.234	0.117
40	0.039	0.019	106	0.137	0.068	210	0.224	0.112
42	0.042	0.021	112	0.144	0.072	220	0.254	0.127
46	0.050	0.025	116	0.148	0.074	225	0.261	0.130
52	0.050	0.025	120	0.155	0.078	232	0.272	0.136

CROSS REFERENCE TABLES

STANDARD CLAMP SERIES

Clamp Size	GR Standard Sizes	GR Optional Sizes
1in	1GR	
1 1/2in	1.5GR	
2in	2GR	
3in	3GR	
4in	4GR	
5in	5GR	E
6in	6GR	F, XF
8in	8GR	X8GR

LIGHT DUTY SERIES

L14in	X14GR	
L16in	X16GR	
L18in	X18GR	
L20in	X20GR	
L24in	X24GR	

HEAVY DUTY CLAMP SERIES

H2in	B	
H3in	C	
H4in	D	
H8in	G	XG
H10in	10H	X10H
H12in	12M	X12M
H14in	P	
H16in	S	
H18in		
H20in	U	
H22in	V	
H24in	W	
H26in	Y	

Techlok designation uses "in" to denote nominal size in inches as opposed to "GR" which denotes comparable products.

All data contained herein may be subject to change without notice.