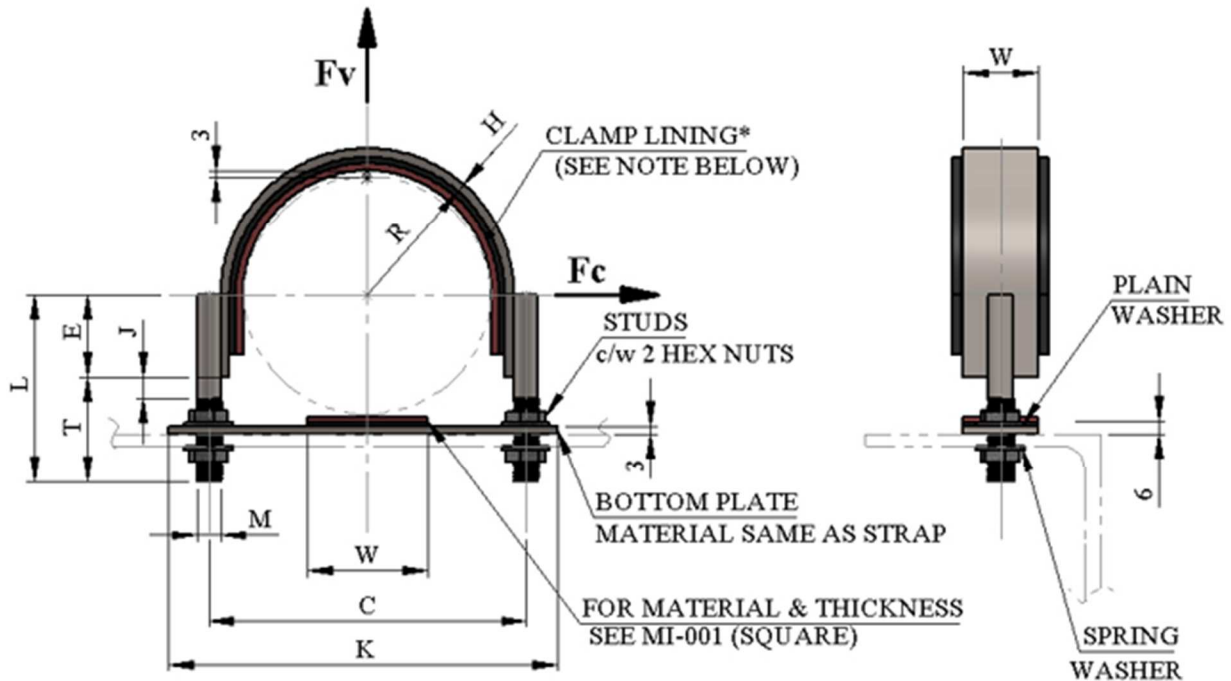


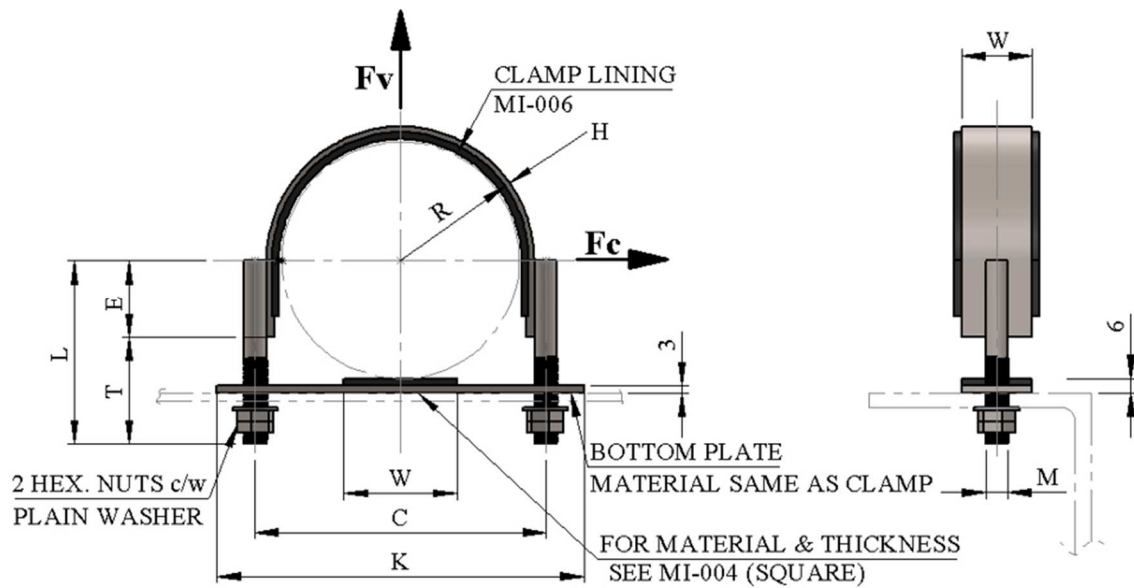
8	U-STRAP	
8.1	<p>T-PC-001 U- STRAP FOR CS , SS & ALLOY LINES DN 50 – 600 mm / NPS 2” – 24” (NON GRIP)</p> 	<p>8.4 T-PC-004 HEAVY DUTY U-STRAP FOR CS, SS & ALLOY LINES DN 50 – DN 200 mm / 2” – 8” (GRIP)</p> 
8.2	<p>T-PC-002 U- STRAP FOR CS , SS & ALLOY LINES DN 50 – 200 mm / NPS 2” – 8” (GRIP)</p> 	<p>8.5 T-PC-005 HEAVY DUTY U-STRAP WITH KNEE PLATE FOR CS, SS & ALLOY LINES DN 50 – DN 600 mm / 2” – 24” (NON- GRIP)</p> 
8.3	<p>T-PC-003 HEAVY DUTY U-STRAP FOR CS, SS & ALLOY LINES DN 50 – DN 600 mm / 2” – 24” (NON - GRIP)</p> 	

8.1 U- STRAP FOR CS , SS & ALLOY LINES
DN 50 – 600 mm / NPS 2” – 24” (NON GRIP)
PC-001


TYPICAL PART NUMBER	AVAILABLE MATERIAL SHORT CODE	STD DETAIL TEMPERATURE LIMITATION	
		MAX. DESIGN TEMP	MIN. DESIGN TEMP.
T-PC-001-(DN)-SS	SS	150 °C	(-) 46 °C
T-PC-001-(DN)-CS	CS	150 °C	(-) 46 °C

TYPE	LINE SIZE			U- STRAP DIMENSION					STUD BOLT SIZE					MAX. LOADS (kN)				WEIGHTS (in kg)	
	DN (mm)	NPS in (inch)	NPS in (mm)	C	H	K	R	W	E	J	L	M	T	Fv	Fe	Fv	Fe	SS	CS
T-PC-001-0050	DN 50	2"	60.3	92	6	130	35	50	20	1	80	10	60	9.6	2.1	16	3.5	1.0	1.0
T-PC-001-0080	DN 80	3"	88.9	124	6	165	50	50	25	5	95	12	70	14.4	1.8	24	3	1.5	1.5
T-PC-001-0100	DN 100	4"	114.3	148	6	190	62	50	30	10	115	12	85	14.4	1.5	24	2.5	1.8	1.8
T-PC-001-0125	DN 125	5"	141.3	176	6	225	76	50	35	20	130	12	95	14.4	1.2	24	2	2.1	2.1
T-PC-001-0150	DN 150	6"	168.3	206	6	260	89	50	55	10	155	16	100	27	1.5	45	2.5	3.4	3.4
T-PC-001-0200	DN 200	8"	219.1	260	6	310	116	50	80	10	180	16	100	27	1.2	45	2	4.2	4.1
T-PC-001-0250	DN 250	10"	273	326	10	380	143	60	100	15	210	20	110	42	2.4	70	4	8.3	8.1
T-PC-001-0300	DN 300	12"	323.8	376	10	430	168	60	130	10	245	20	115	42	2.1	70	3.5	9.7	9.5
T-PC-001-0350	DN 350	14"	355.6	408	10	460	184	60	145	10	260	20	115	42	1.8	70	3	10.4	10.2
T-PC-001-0400	DN 400	16"	406.4	462	12	515	209	70	170	10	285	20	115	42	2.4	70	4	13.7	13.5
T-PC-001-0450	DN 450	18"	457.2	518	12	575	235	70	190	15	320	24	130	61.2	2.7	102	4.5	18.4	18.0
T-PC-001-0500	DN 500	20"	508	568	12	625	260	70	215	15	345	24	130	61.2	2.4	102	4	20.0	19.7
T-PC-001-0600	DN 600	24"	609.6	670	12	730	311	100	255	25	400	24	145	61.2	2.4	102	4	28.3	27.8

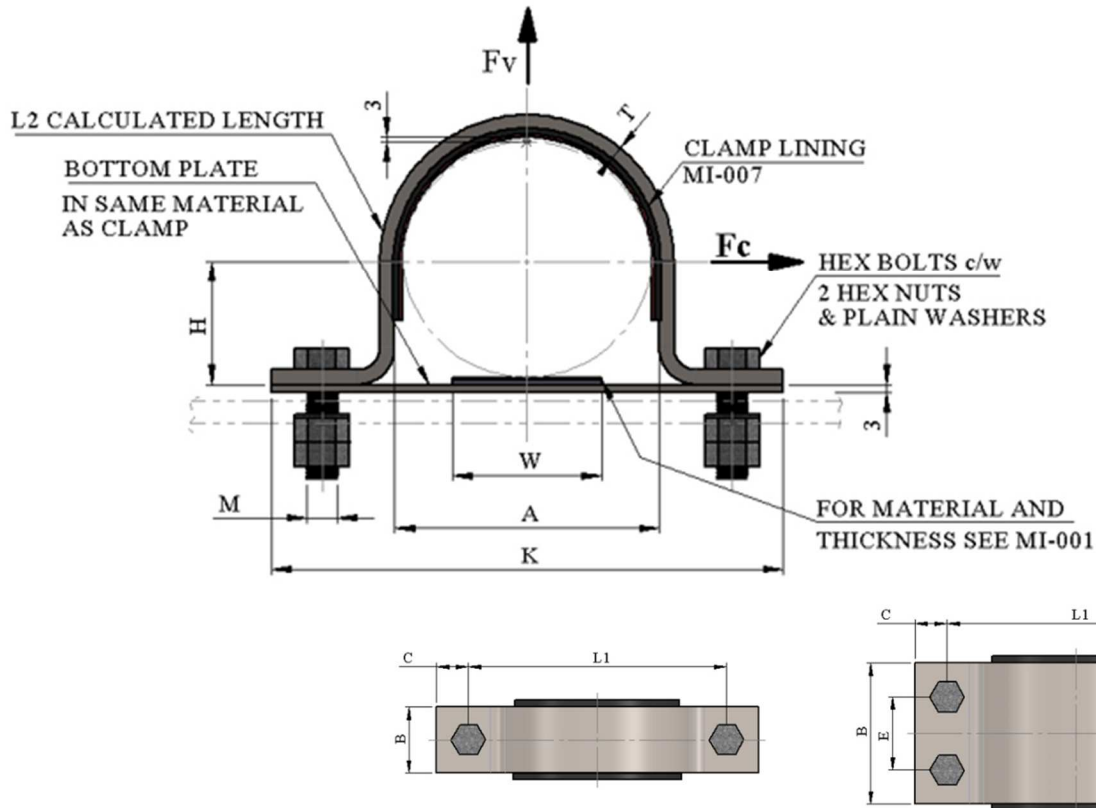
All welds to be a = 0.7 x WT , but max 4 mm.
 *Straps PC-001-0300 and above sizes should be used on vertical lines only.
 Max. loads in kN "Fv" and "Fc" are non-concurrent loads.
 Lining either MI-007 (CS and SS clamp) or MI-008 (SS clamp only).
 Bolt hole dia = Bolt dia (M) + 2mm.

**8.2 U- STRAP FOR CS , SS & ALLOY LINES
DN 50 – 200 mm / NPS 2” – 8” (GRIP)**
PC-002


TYPICAL PART NUMBER	AVAILABLE MATERIAL SHORT CODE	STD DETAIL TEMPERATURE LIMITATION	
		MAX. DESIGN TEMP	MIN. DESIGN TEMP.
T-PC-002-(DN)-SS	SS	150 °C	(-) 46 °C
T-PC-002-(DN)-CS	CS	150 °C	(-) 46 °C

TYPE	LINE SIZE			U- STRAP DIMENSION					STUD BOLT SIZE				MAX. LOADS (kN)				WEIGHTS (in kg)	
													Stainless steel		Carbon Steel			
	DN (mm)	NPS in (inch)	NPS in (mm)	C	H	K	R	W	E	L	M	T	Fv	Fc	Fv	Fc	SS	CS
T-PC-002-0050	DN 50	2"	60.3	92	6	130	35	50	20	80	10	60	9.6	2.1	16	3.5	1.33	1.30
T-PC-002-0080	DN 80	3"	88.9	124	6	165	50	50	25	95	12	70	14.4	1.8	24	3	1.86	1.83
T-PC-002-0100	DN 100	4"	114.3	148	6	190	62	50	30	115	12	85	14.4	1.5	24	2.5	2.22	2.18
T-PC-002-0125	DN 125	5"	141.3	176	6	225	76	50	35	130	12	95	14.4	1.2	24	2	2.55	2.51
T-PC-002-0150	DN 150	6"	168.3	206	6	260	89	50	55	155	16	100	27	1.5	45	2.5	3.93	3.86
T-PC-002-0200	DN 200	8"	219.1	260	6	310	116	50	80	180	16	100	27	1.2	45	2	4.63	4.55

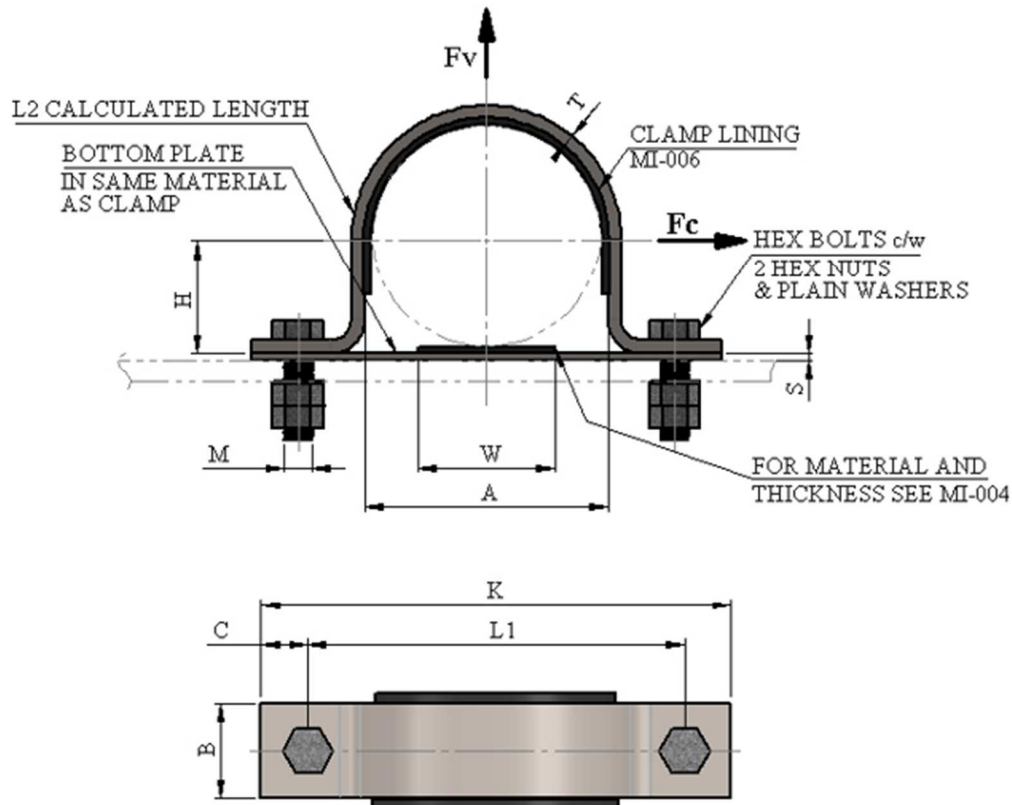
All welds to be a = 0.7 x WT, but max 4 mm.
 Max. loads in kN "Fv" and "Fc" are non-concurrent loads.
 Grip U – Straps can be used as Line stop in both horizontal and vertical direction on :
 - Non critical lines DN50 , 80 and 100 (NPS 2" , 3" & 4") with max. axial load of 2.5 kN.
 - Critical lines with max. axial load of 1 kN.
 Bolt hole dia = Bolt dia (M) + 2mm.

8.3 HEAVY DUTY U-STRAP FOR CS, SS & ALLOY LINES
DN 50 – DN 600 mm / 2” – 24” (NON - GRIP)
PC-003


TYPICAL PART NUMBER	AVAILABLE MATERIAL SHORT CODE	STD DETAIL TEMPERATURE LIMITATION	
		MAX. DESIGN TEMP	MIN. DESIGN TEMP.
T-PC-003-(DN)-SS	SS	150 °C	(-) 46 °C
T-PC-003-(DN)-CS	CS	150 °C	(-) 46 °C

TYPE	LINE SIZE			CLAMP & BOTTOM PLATE DIMENSION									BOLT INFO.		MAX. LOADS (kN)				WEIGHT (in kg)	
	DN (mm)	NPS in (inch)	NPS in (mm)	A	B	C	E	H	K	L1	L2	T	W	SIZE M	No off	SS		CS		
																Fv	Fc	Fv		Fc
T-PC-003-0050	DN 50	2"	60.3	70	40	22	-	36	166	122	270	5	50	M12 x 50	2	2.1	3.6	3.5	6	0.9
T-PC-003-0080	DN 80	3"	88.9	99	50	28	-	51	235	180	385	8	50	M16 x 70	2	5.8	7.5	8	12.5	1.9
T-PC-003-0100	DN 100	4"	114.3	124	50	28	-	63	260	206	479	8	50	M16 x 70	2	3.9	7.2	6.5	12	2.1
T-PC-003-0125	DN 125	5"	141.3	150	50	28	-	79	290	233	514	8	50	M16 x 70	2	3	7.2	5	12	2.4
T-PC-003-0150	DN 150	6"	168.3	178	70	34	-	90	345	278	617	10	50	M20 x 80	2	6	13.2	10	22	3.5
T-PC-003-0200	DN 200	8"	219.1	229	70	34	-	116	425	358	719	15	50	M20 x 80	2	10.5	23.1	17.5	38.5	5.7
T-PC-003-0250	DN 250	10"	273	283	150	70	78	140	565	426	995	15	70	M20 x 80	4	18.9	45	31.5	75	10.2
T-PC-003-0300	DN 300	12"	323.8	334	150	70	78	165	620	476	1107	15	70	M20 x 80	4	16.2	45	27	75	11.4
T-PC-003-0350	DN 350	14"	355.6	366	150	70	78	181	650	508	1221	15	70	M24 x 100	4	14.7	45	24.5	75	13.0
T-PC-003-0400	DN 400	16"	406.4	417	200	88	110	206	770	594	1405	20	80	M24 x 100	4	30.6	85.8	51	143	20.9
T-PC-003-0450	DN 450	18"	457.2	468	200	88	110	231	820	645	1535	20	80	M24 x 100	4	27.3	85.8	45.5	143	22.6
T-PC-003-0500	DN 500	20"	508	518	200	88	110	257	870	696	1707	20	80	M24 x 100	4	24.6	85.2	41	142	24.3
T-PC-003-0600	DN 600	24"	609.6	620	200	88	110	308	975	798	2029	20	100	M24 x 100	4	20.4	85.2	34	142	34.3

*Strap PC-003-0300 and above sizes should be used on vertical lines only.
 Max. loads in kN "Fv" and "Fc" are non-concurrent loads.
 Bolt hole dia = up to and including 24= Bolt dia (M) + 2mm ; above 24 = Bolt dia (M) + 3mm.
 Std. type includes all bolts (fully threaded) , plain washers and double nuts . Bolts to have a minimum overlength of 3 threads.

8.4 HEAVY DUTY U-STRAP FOR CS, SS & ALLOY LINES
DN 50 – DN 600 mm / 2” – 8” (GRIP)
PC-004


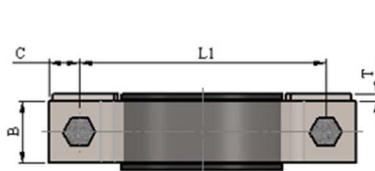
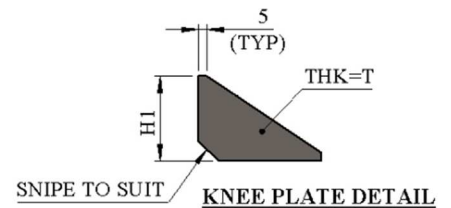
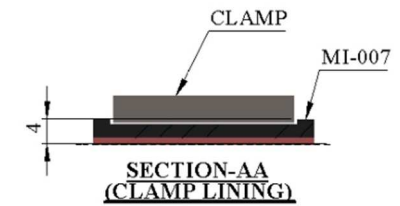
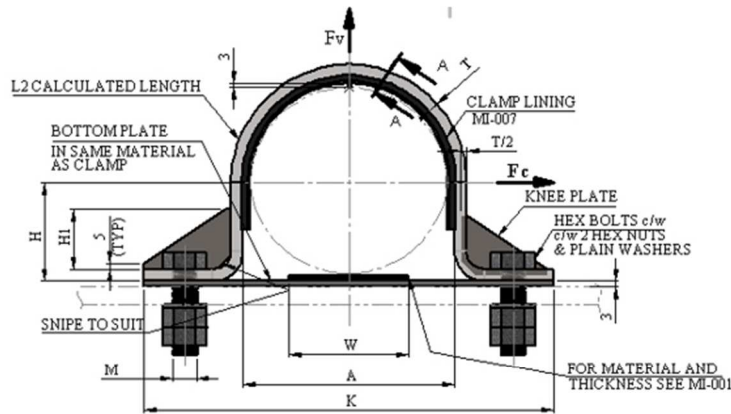
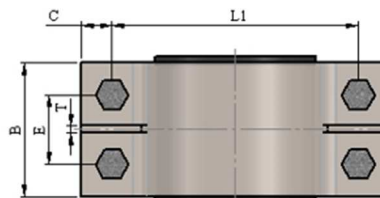
TYPICAL PART NUMBER	AVAILABLE MATERIAL SHORT CODE	STD DETAIL TEMPERATURE LIMITATION	
		MAX. DESIGN TEMP	MIN. DESIGN TEMP.
T-PC-004-(DN)-SS	SS	150 °C	(-) 46 °C
T-PC-004-(DN)-CS	CS	150 °C	(-) 46 °C

TYPE	LINE SIZE			CLAMP & BOTTOM PLATE DIMENSION										BOLT INFO.		MAX. LOADS (kN)				WEIGHT (in kg)
	DN (mm)	NPS in (inch)	NPS in (mm)	A	B	C	H	K	L1	L2	S	T	W	SIZE M	No. off	SS		CS		
																Fv	Fc	Fv	Fc	
T-PC-004-0050	DN 50	2"	60.3	70	40	22	30	164	120	261	3	5	50	M12 x 50	2	2.1	3.6	3.5	6	0.93
T-PC-004-0080	DN 80	3"	88.9	99	50	28	45	235	178	376	3	8	50	M16 x 70	2	5.8	7.5	8	12.5	1.67
T-PC-004-0100	DN 100	4"	114.3	124	50	28	56	260	204	468	4	8	50	M16 x 70	2	3.9	7.2	6.5	12	1.90
T-PC-004-0125	DN 125	5"	141.3	150	50	28	72	290	231	503	4	8	50	M16 x 70	2	3	7.2	5	12	2.18
T-PC-004-0150	DN 150	6"	168.3	178	70	34	83	344	276	606	4	10	50	M20 x 80	2	6	13.2	10	22	3.00
T-PC-004-0200	DN 200	8"	219.1	229	70	34	109	425	356	708	4	15	50	M20 x 80	2	10.5	23.1	17.5	38.5	5.18

Max. loads in kN "Fv" and "Fc" are non-concurrent loads.

Bolt hole dia = Bolt dia (M) + 2mm.

Std. type includes all bolts (fully threaded) , plain washers and double nuts . Bolts to have a minimum overlength of 3 threads.

8.5 HEAVY DUTY U-STRAP WITH KNEE PLATE FOR CS, SS & ALLOY LINES
DN 50 – DN 600 mm / 2” – 24” (NON- GRIP)
PC-005

FOR SIZE DN50 TO DN200

FOR PIPE SIZE DN250 ABOVE

TYPICAL PART NUMBER	AVAILABLE MATERIAL SHORT CODE	STD DETAIL TEMPERATURE LIMITATION	
		MAX. DESIGN TEMP	MIN. DESIGN TEMP.
T-PC-005-(DN)-SS	SS	150 °C	(-) 46 °C
T-PC-005-(DN)-LD	LD	150 °C	(-) 46 °C

TYPE	LINE SIZE		CLAMP & BOTTOM PLATE DIMENSION										BOLT INFO.		MAX. LOADS (kN)				WEIGHT (in kg)	
	DN (mm)	NPS in (mm)	A	B	C	E	H	H1	K	L1	L2	T	W	SIZE M	N o . o f f	SS		CS		
																Fc	Fv	Fc		Fv
T-PC-005-0050	DN 50	60.3	70	40	22	-	36	40	166	122	270	5	50	M12 x 50	2	5	7.5	10	15	1.0
T-PC-005-0080	DN 80	88.9	99	50	28	-	51	50	235	180	385	8	50	M16 x 70	2	7.5	14.5	15	30	1.8
T-PC-005-0100	DN 100	114.3	124	50	28	-	63	50	260	206	479	8	50	M16 x 70	2	7.5	14.5	15	30	2.1
T-PC-005-0125	DN 125	141.3	150	50	28	-	79	50	290	233	514	8	50	M16 x 70	2	7.5	14.5	15	30	2.4
T-PC-005-0150	DN 150	168.3	178	70	34	-	90	70	345	278	617	10	50	M20 x 80	2	18	46	36	92	3.4
T-PC-005-0200	DN 200	219.1	229	70	34	-	116	90	425	358	719	15	50	M20 x 80	2	18	46	36	92	5.9
T-PC-005-0250	DN 250	273	283	150	70	78	140	150	565	426	995	15	70	M20 x 80	4	48	117	72	184	11.9
T-PC-005-0300	DN 300	323.8	334	150	70	78	165	150	620	476	1107	15	70	M20 x 80	4	48	117	72	184	13.6
T-PC-005-0350	DN 350	355.6	366	150	70	78	181	150	650	508	1221	15	70	M24 x 100	4	97	220	135	300	14.7
T-PC-005-0400	DN 400	406.4	417	200	88	110	206	150	770	594	1405	20	80	M24 x 100	4	97	220	135	300	25.5
T-PC-005-0450	DN 450	457.2	468	200	88	110	231	150	820	645	1535	20	80	M24 x 100	4	97	220	135	300	28.1
T-PC-005-0500	DN 500	508	518	200	88	110	257	150	870	696	1707	20	80	M24 x 100	4	97	220	135	300	30.7
T-PC-005-0600	DN 600	609.6	620	200	88	110	308	150	975	798	2029	20	100	M24 x 100	4	97	220	135	300	42.7

*Straps PC-005-0300 and above sizes should be used on vertical lines only.
 Max. loads in kN "Fv" and "Fc" are non-concurrent loads.
 For ALS (Blast) with Lean Duplex (LD) material a maximum load factor of 1.35 can be used.
 Bolt hole dia = up to and including 24= Bolt dia (M) + 2mm : Above 24 = Bolt dia (M) + 3mm.
 Std. type includes all bolts (fully threaded) , plain washers and double nuts . Bolts to have a minimum overlength of 3 threads.