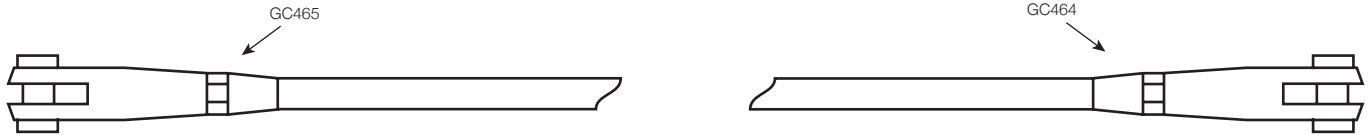




Grade 450 Stainless Bar System

The standard form of tendon comprises a bar with a left and right hand threaded fork at opposite ends. Once installed the tendon can be adjusted in length by turning the bar. The forks are locked into position by tightening the tapered locking nuts using a 'C' pin spanner. The special tapered locking nuts also hide excessive bar threads. Spanner flats can be added at the end of the bars to aid rotation. If required, this must be specified at the time of ordering.



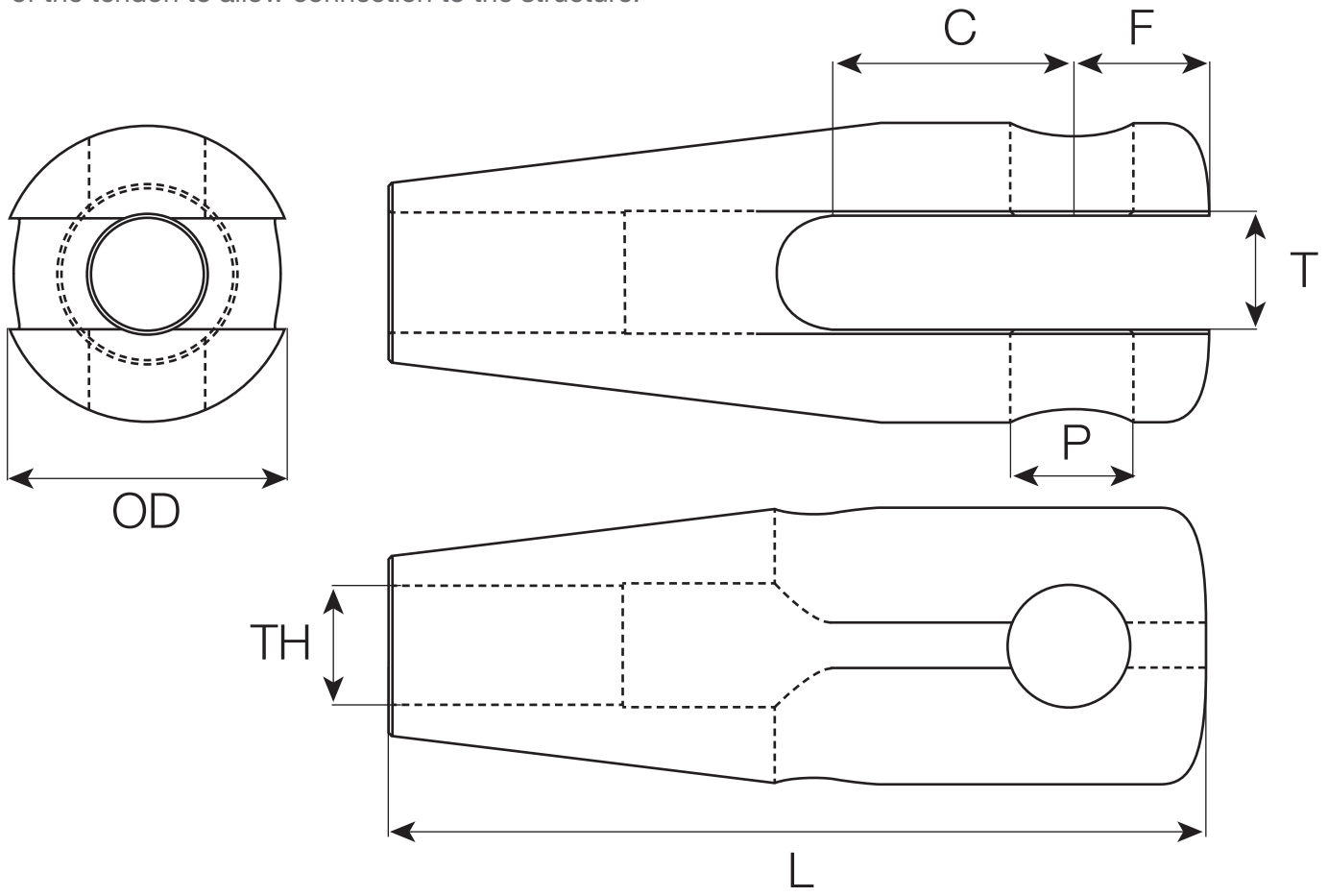
Our tie bars are manufactured from a high quality grade 316 stainless steel. Threads are rolled to BS3643 and are available from M10 to M39 in lengths up to 6m. Longer lengths are available by using bar couplers. Sizes above M39 are also available – please contact us for details. Forks and pins are manufactured from a Duplex grade of stainless steel which offers higher corrosion resistance and mechanical properties than grade 316. All fittings are finished to an N4 standard (240 grit satin). Bars are produced to a bright drawn finish.

Mechanical Properties

		M10	M12	M16	M20	M24	M27	M30	M33	M36	M39
Yield load (design load)	kN	26.1	37.8	70.7	110.3	158.9	206.6	252.6	312.3	367.7	439.2
Ultimate load (break load)	kN	40.6	58.8	109.9	171.5	247.1	321.3	392.7	485.8	571.9	683.2
Nominal bar diameter	mm	8.9	10.8	14.6	18.2	21.9	25.0	27.5	30.5	33.3	36.0
Stress area	mm ²	58	84	157	245	353	459	561	694	817	976
Yield stress	N/mm ²	450	450	450	450	450	450	450	450	450	450
Ultimate stress	N/mm ²	700	700	700	700	700	700	700	700	700	700
Maximum single bar length	m	6	6	6	6	6	6	6	6	6	6
Weight/m (kg)		491	720	1,300	2,100	2,900	3,890	4,700	5,750	7,000	8,300
Bar specification	SBS450 bars manufactured from stainless steel grade 316 EN10088 1.4401/4										
Thread specification	Rolled metric threads to BS3643										

Fork Ends

Left and right hand threaded forks are used at the end of the tendon to allow connection to the structure.



GC464/465 Forks (GC464 right hand thread, GC465 left hand thread)

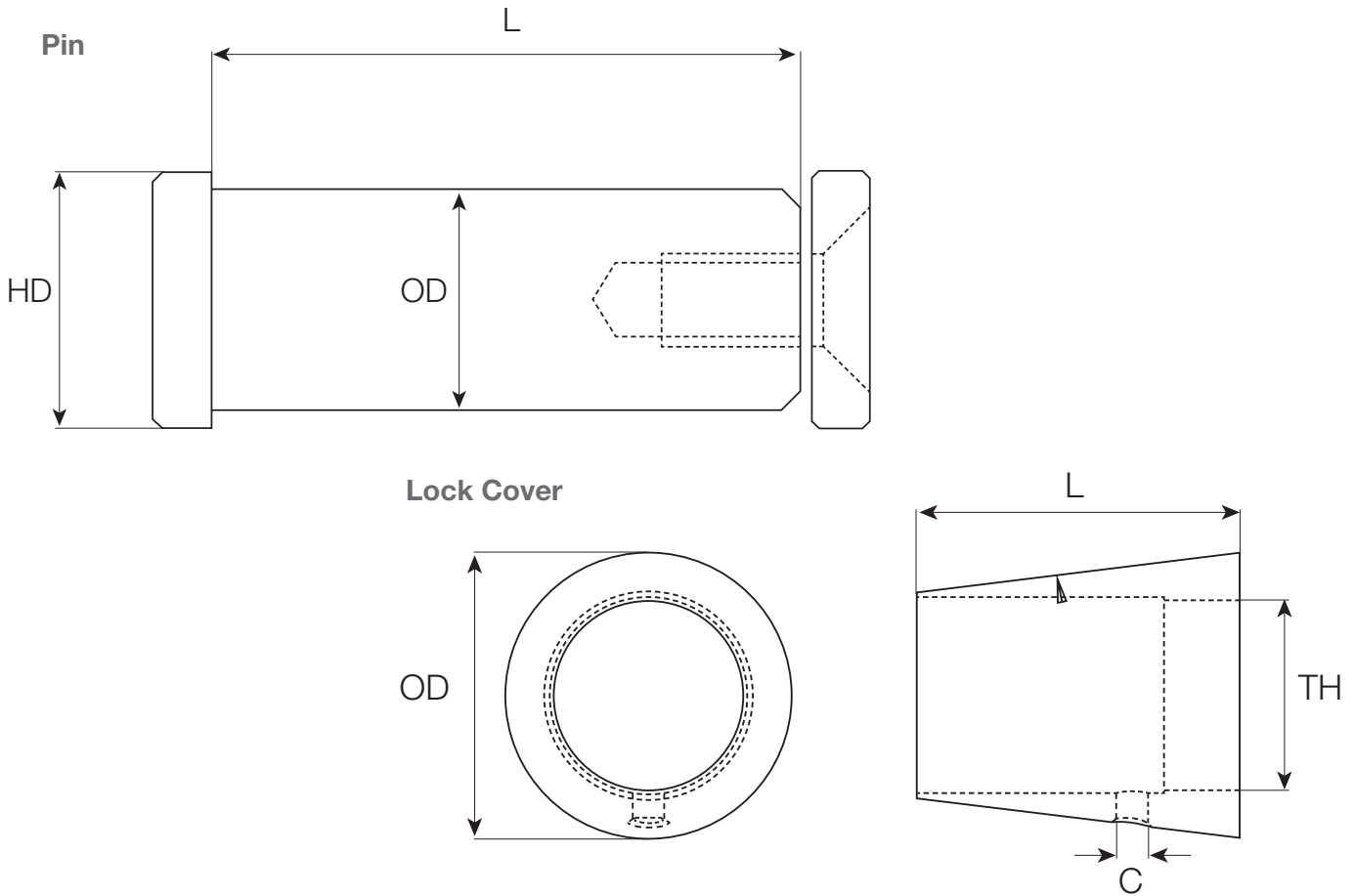
		M10	M12	M16	M20	M24	M27	M30	M33	M36	M39
Yield Load (design load)	kN	26.1	37.8	70.7	110.3	158.9	206.6	252.6	312.3	367.7	439.2
Ultimate Load	kN	40.6	58.8	109.9	171.5	247.1	321.3	392.7	485.8	571.9	683.2
Fork length	L	68.7	82.8	109.9	137.5	165.6	185.9	206.5	227.3	247.4	268.7
Diameter	OD	25.0	32.0	40.0	50.0	60.0	70.0	75.0	80.0	90.0	100.0
Jaw gap	T	10.0	12.0	15.0	19.0	24.0	26.0	29.0	32.0	34.0	38.0
Pin	P	10.0	12.0	16.0	20.0	24.0	27.0	30.0	33.0	36.0	39.0
Projection	F	11.2	13.8	18.4	23.0	27.6	31.1	34.5	38.0	41.4	44.9
Jaw depth	C	20.0	24.0	32.0	40.0	48.0	54.0	60.0	66.0	72.0	78.0
Adjustment per fork +/-		10.0	12.0	16.0	20.0	24.0	27.0	30.0	33.0	36.0	39.0
Weight (g)		115	230	475	910	1,500	2,400	3,100	3,800	5,300	6,400

all dimensions in mm

○ Pins & Tapered Nuts

Double headed pins are supplied with the forks. The cap is attached using a countersunk socket screw and tightened using a standard Allen key.

The tapered locking nut (lock cover) hides bar threads thus providing a clean cosmetic appearance.
 NOTE: If the forks are at maximum extension then half a diameter of thread will be visible after the taper nut has been fully tightened.

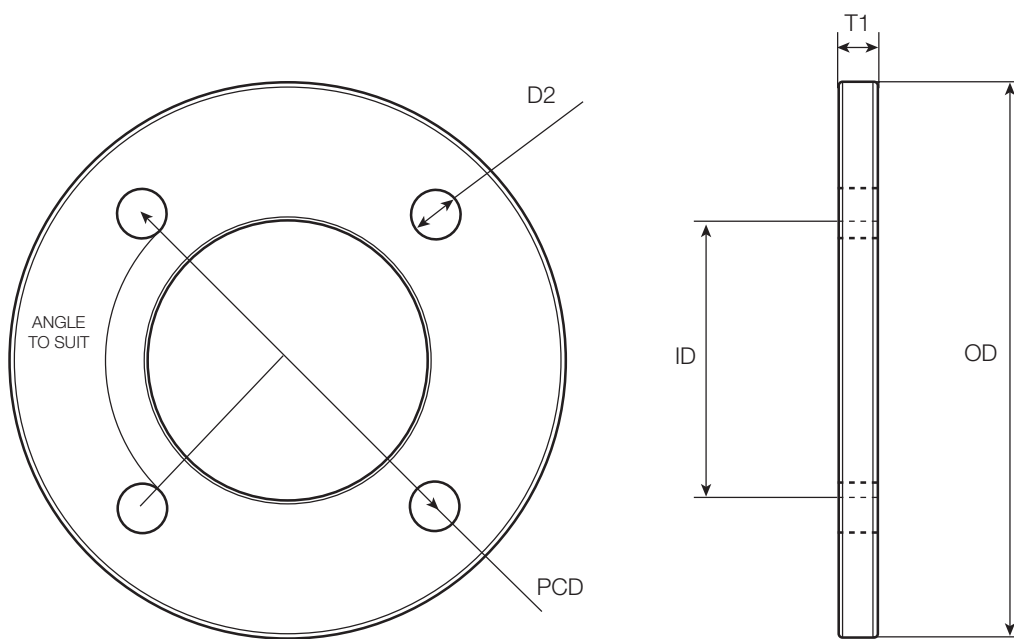
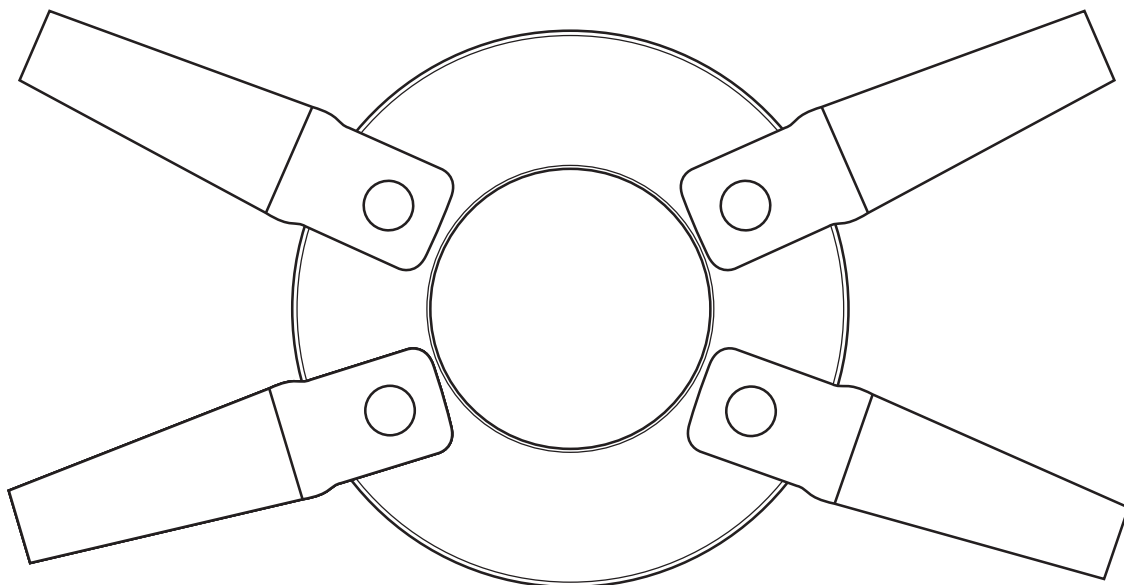


		M10	M12	M16	M20	M24	M27	M30	M33	M36	M39
Pin diameter	OD	10.0	12.0	16.0	20.0	24.0	27.0	30.0	33.0	36.0	39.0
Pin body length	L	25.0	32.0	40.0	50.0	60.0	70.0	75.0	80.0	90.0	100.0
End cap diameter	HD	12.7	14.0	19.0	24.0	28.0	32.0	35.0	38.0	42.0	45.0
Lockcover diameter	OD	15.0	19.0	25.0	30.0	36.0	42.0	45.0	48.0	54.0	60.0
Lockcover length	L	17.0	20.4	27.2	34.0	40.8	45.9	51.0	56.1	61.2	66.3
C pin spanner size	C	3.5	3.5	3.5	3.5	4.0	4.0	4.0	5.0	5.0	5.0

all dimensions in mm

Central Connection Discs

Where tendons cross in a braced bay, a central connection disc can be used. Tendons are usually fork to fork type but where greater adjustment or a pre-tension is required, fork-turnbuckle-fork can be used.



GC506 Central Connection Discs

		M10	M12	M16	M20	M24	M27	M30	M33	M36	M39
Thickness	T1	8	10	12	15	20	22	25	28	30	32
Overall diameter	OD	120	145	185	245	285	320	350	385	420	455
Central hole	ID	40	50	60	70	80	90	100	110	120	130
Pin hole diameter	D2	11	13	17	21	25	28	31	34	37	40
Pin centre diameter	PCD	90	110	140	180	210	235	260	285	310	345

all dimensions in mm

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