

Tooth Plate Timber Connectors

Single and double sided Tooth Plate Connectors are for improving bolt performance in timber.

Timber Connectors are easily installed devices for improving the efficiency of timber structures. They increase the joint strength, reduce the size of members required for a given load and simplify fabrication and erection. The use of connectors in timber structures can make it possible to develop the full allowable load of the members connected and in some circumstances, make a joint stronger than the members themselves.

- Available in a variety of diameters with various hole sizes.
- Available in galvanised and stainless steel.

SPECIFICATION

- Type C6 & Type C7 according to EN 912:2011.
- Galvanised steel EN 10346 DX51D Z275 or grade 1.4301 austenitic stainless steel to EN 10088-2.
- Manufactured to EN 14545:2008.
- Factory Production Control assessed and audited by BM TRADA CE scheme for Construction Products Notification Body No. 1224.

INSTALLATION

- Use appropriate fixings.
- Always ensure that compatible corrosion resistant fixings are used, i.e. do not use galvanised fixings with stainless steel products or vice versa.

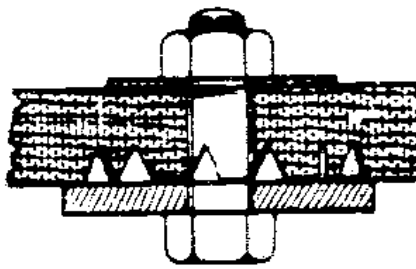
ASSEMBLY OF JOINTS

- Drill holes in timber 1.5mm larger than diameter of bolt. Assemble components and tighten nut to embed connector. If timber is dense or there are more than three connectors on the same bolt use special high-tensile steel bolt and 6mm large washers (for embedding only). After tightening remove special bolt and 6mm washers and insert permanent bolt and 3mm washers.
- For demountable structures use two single-sided connectors back-to-back.
- Tightening nut embeds connector.

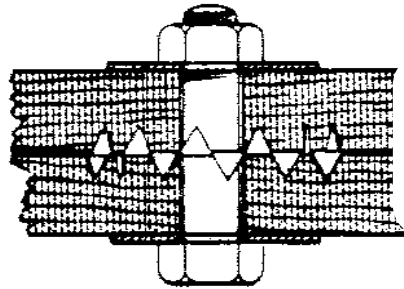
EMBEDDING AND THE COMPLETED JOINT

In a completed joint it is recognised that there may be a space between adjacent members equal to the thickness of the centre plate of the connector. Whilst it is important that the teeth should be fully embedded, it is equally important that the nuts should not be over-tightened to such an extent that the washers become cupped and embed themselves in the timber.





Timber to metal joint with TCSS



Timber to timber joint with TCDS

Minimum Timber Dimensions for TECO MAF

Diameter of connectors (mm)	38	51	63	76
Minimum actual size of member for connector on one side (mm)	16 x 50	16 x 63	16 x 76	16 x 89
Minimum actual size of member for connector on both sides (mm)	32 x 50	32 x 63	32 x 76	32 x 89

TECO MAF Circular Toothed-Plate Timber Connectors

Diameter of connectors (mm)	38	51	63	76
Edge Distance (centre of bolt to edge of member)	25	32	37	44
End Distance (centre of bolt to end of member)	83	89	95	102
Spacing (centres of bolts parallel to grain)	57	76	95	114
Spacing (centres of bolts perpendicular to grain)	51	64	76	89

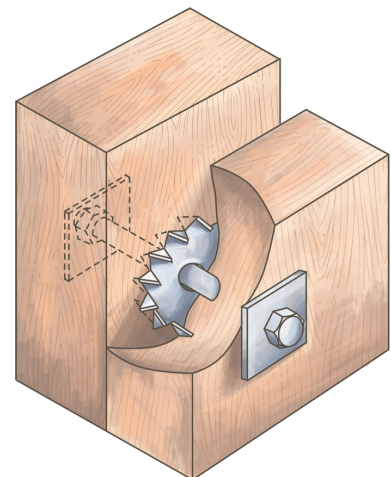
GROUPS OF CONNECTORS

Generally the load value of groups of connectors is the total of the recommended loads for the individual connectors but this may be subject to adjustment in special circumstances.

The figures in the table are based on the use of one TECO Timber Connector and one M12 diameter hex-rd-hex bolt (except the 38mm diameter connector which is M10) and two 3mm thick washers to the dimensions below.

For loads please refer to the relevant TECO Declaration of Performance or phone TECO for assistance.

Connectors	Square Washers
	All 3mm thick
38mm	38mm
51mm	38mm
63mm	50mm
76mm	63mm



Code	Product	Product Dimensions		Box Qty.
		Diameter (mm)	Hole size	
Pre Galvanised Mild Steel				
DOUBLE SIDED				
TCDS38	TC Double Sided	38	M12	250
TCDS38M10	TC Double Sided	38	M10	250
TCDS50	TC Double Sided	50	M12	100
TCDS50M10	TC Double Sided	50	M10	100
TCDS50M16	TC Double Sided	50	M16	-
TCDS63	TC Double Sided	63	M12	100
TCDS63M10	TC Double Sided	63	M10	100
TCDS63M16	TC Double Sided	63	M16	100
TCDS76	TC Double Sided	76	M12	75
TCDS76M16	TC Double Sided	76	M16	75
SINGLE SIDED				
TCSS38	TC Single Sided	38	M12	250
TCSS38M10	TC Single Sided	38	M10	250
TCSS50	TC Single Sided	50	M12	100
TCSS50M10	TC Single Sided	50	M10	100
TCSS50M16	TC Single Sided	50	M16	100
TCSS63	TC Single Sided	63	M12	100
TCSS63M10	TC Single Sided	63	M10	100
TCSS63M16	TC Single Sided	63	M16	100
TCSS76	TC Single Sided	76	M12	100
TCSS76M16	TC Single Sided	76	M16	100
Stainless Steel				
DOUBLE SIDED				
TCDSS50	TC Double Sided	50	M12	-
TCDSS63	TC Double Sided	63	M12	-
TCDSS76	TC Double Sided	76	M12	-
SINGLE SIDED				
TCSSS50	TC Single Sided	50	M12	-
TCSSS63	TC Single Sided	63	M12	-
TCSSS76	TC Single Sided	76	M12	-

Split Ring Timber Connectors

Designed for heavy shear loads in timber to timber connections. The Split Ring with the bevelled inside and outside face makes it easier to insert in the pre-cut grooves and also gives greater load capacity.

The Ring is split across at one point, the split being in the form of a tongue and groove. The purpose of the tongue and groove is to provide for possible expansion or contraction of the timber. When the Ring is embedded in the timber, it can expand or contract with the wood, and thus at all times forms a tight and rigid connection. The Ring is sunk into the groove of one of the two facing members, and the other half into the groove of the other member, so that when the two members are joined face to face, the Ring is wholly embedded between them.

The connecting through bolt, which formerly carried the stress in timber joints, is relieved of this stress by the embedded Split Ring, the bolt principally serves the purpose of holding two members together. A special tool is available for cutting the grooves in the timber.

For loads please refer to the relevant TECO Declaration of Performance or contact TECO for assistance.

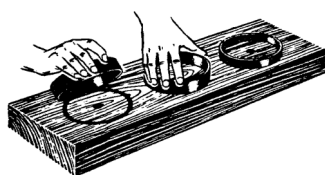
- Available in galvanised & stainless steel (stainless steel Split Rings may have parallel sides).

SPECIFICATION

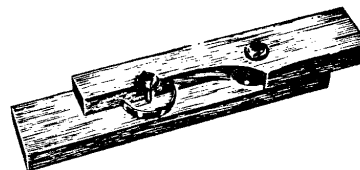
- Type 3 acc. to EN 912:2011.
- Electroplated zinc coating to ISO 2081 Fe/Zn 12c, hot dipped spun galvanised to EN ISO 1461:2009 or grade 1.4301 austenitic stainless steel.

INSTALLATION

- One or more bolt holes are bored in the timbers to be joined (the bolt hole being 1.5 mm above the bolt size).
- Circular grooves half of the depth of the ring parallel to its axis are cut in the contacting surfaces of the timbers, using special grooving tools with a pilot shank which centres in the bolt hole already bored.
- The Split-Ring is then placed in the groove in one timber, the other timber fitted over it, and the joint is drawn tightly together with the bolt which remains in the joint.
- Please see images below.



Place in position
then press



Cut away section
showing Split Ring in
assembled position.

Code	Product	Internal Dimensions (mm)	Box Qty.
Hot Dipped Spun Heavy Duty Galvanised			
SRTC64	Split Ring Connector (Galv)	64	100
SRTC102	Split Ring Connector (Galv)	102	50
Stainless Steel			
SRTCSS64	Split Ring Connector (St/St)	64	-
SRTCSS102	Split Ring Connector (St/St)	102	-

Shear Plate Timber Connectors

Specially designed for heavy shear loads in timber to steel connections, but may be used for demountable timber to timber connections. Shear Plates are placed in recesses cut in the timber and provide a flush surface without projections which facilitates transport. A special tool is available for cutting the recesses (or daps) in the timber. For shear loads please refer to the relevant TECO Declaration of Performance or contact TECO for assistance.

SPECIFICATION

- Holed for M20 bolt.
- 67mm Shear Plate available galvanised & stainless steel.
- Manufactured to EN 14545:2008.
- Factory Production Control assessed and audited by BM TRADA CE Scheme for Construction Products Notification Body No.1224.
- Electroplated zinc coating to ISO 2081 Fe/Zn 12c, hot dipped spun galvanised to EN ISO 1461:2009 or grade 1.4301 austenitic stainless steel.

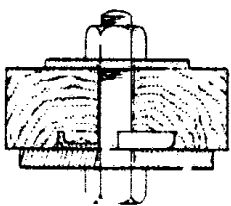
Type of Shear Plate:

67mm diameter - Type B2 according to EN 912:2011.

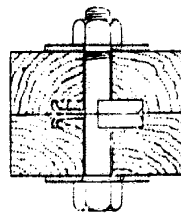
102mm diameter - Type B3 according to EN 912:2011.

INSTALLATION

- Use appropriate fixings.
- Always ensure that compatible corrosion resistant fixings are used, i.e. do not use galvanised fixings with stainless steel products or vice versa.
- See diagrams below.



Shear Plate connector unit for timber to metal joint



Two Shear Plates used back to back in a demountable connector unit



Code	Product	Product Dimensions		Box Qty.
		Diameter (mm)	Hole Size	
Hot Dipped Spun Heavy Duty Galvanised				
SPTCG67	Shear Plate Connector (Galv)	67	M20	100
SPTCG102	Shear Plate Connector (Galv)	102	M20	50
Stainless Steel				
SPTCSS67	Shear Plate Connector (St/St)	67	M20	-

Timber Connector Tools

Tools to cut precision grooves or recesses (daps) for Split Ring and Shear Plate Connectors. The tools consist of a pilot, cutting blades and a depth gauge and can be used with a standard portable drill or drill press. Spare cutter sets are sold separately.

SPECIFICATION

- Manufactured from tool steel.

INSTALLATION

- Use with a standard portable drill or drill press.
- Ensure depth gauges are set before installation.



Code	Product	Suitable for diameter (mm)	Pilot (mm)
SPLIT RING TOOLS			
TSR64	Split Ring 64mm Tool	64	12
TSR64C	Split Ring (Spare Cutter Set)	64	-
TSR102	Split Ring Tool	102	21.5
TSR102C	Split Ring (Spare Cutter Set)	102	-
SHEAR PLATE TOOLS			
TSP67	Shear Plate Tool	67	21.5
TSP67C	Shear Plate (Spare Cutter Set)	67	-
TSP102	Shear Plate Tool	102	21.5
TSP102C	Shear Plate (Spare Cutter Set)	102	-