TRISERT®
DOUBLE ENDED
REDUCED HEADED
REGULAR HEADED
ADVANCED

In line with our philosophy of continuous product development, Tappex have expanded the range of Trisert self-tapping inserts, which have the unique feature of enabling cold installation into most grades of plastic and composite materials.

The range includes three primary designs: Double Ended, Reduced Headed and Regular Headed variants, to solve most application problems in thermoset and thermoplastic grades including the latest engineering plastic alloys. The concept of the Trisert design is to provide a reliable and efficient post-mould production process, where the installation torque can be controlled and monitored for increased reliability. As the internal thread is used to install the Trisert, every insert is therefore automatically checked in the moulding for the existence of a good thread. See Page 22 for details of installation procedures.

The Trisert design has three equidistant cutting flutes plus three shallow flutes on the central section of the thread form to provide balanced cutting and reduced installation torque. Compared to other designs where a cross- slot is used as the cutting feature, the Trisert provides a stronger insert body, which for smaller insert diameters is critical to modern engineering requirements. This slot-less design also allows pull-through applications, without any increased assembly torque problems.

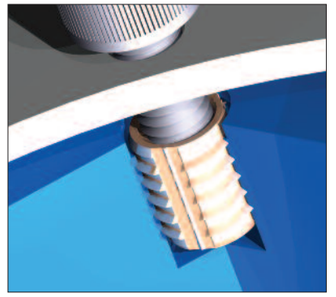
DOUBLE ENDED
Available in three lengths - short, regular and long - the Double Ended Trisert has a lead on both ends and can therefore be installed either way up, significantly simplifying the installation procedure. For high volume applications in particular, the double ended version facilitates the design of simple bowl fed mechanisms for automatic installation equipment, thus reducing tooling costs.

REDUCED HEADED
The Reduced Headed Trisert allows higher tightening torques because of its increased bearing surface, which also provides more support to softer mating components. The head diameter is designed to exactly fit the counter bore in the moulded hole and thus provides a neat flush fit finish, where required.

REGULAR HEADED
The Regular Headed Trisert is particularly suitable where there is a large or slotted clearance hole in the mating component, and is also designed for pull-through applications or where the insert head is required to sit proud of the boss surface.

TRISERT ADVANCED
This range has been developed specifically for thermoset and advanced plastic alloys, where the hardness of the material demands a larger hole dimension and less interference, so the external profile of the Trisert has to be more carefully controlled during manufacture.

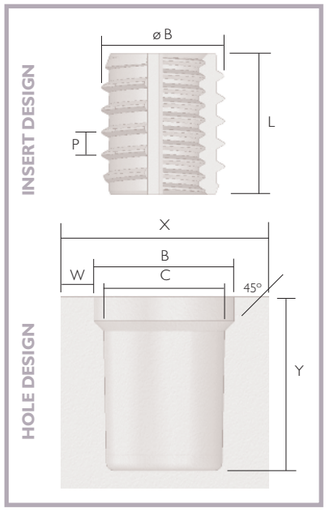
DOUBLE ENDED



A self-tapping, double ended insert available in short, regular and long lengths in a range of thread sizes from M2 to M10.

Product Features
The Double Ended Trisert has a lead on both ends significantly simplifying the installation process and requiring less operator skill. The combination of the three cutting flutes and the coarse external thread form increases the radial and pull-out performance making the Double Ended Trisert ideal for use in thermoplastics where there is a gap, or gasket or 'O' ring, between the mating parts. It can also be used in a pull-through mode with the appropriate stepped Hole Design.

An additional full range of part numbers is available for use in thermoset materials such as melamine, phenolic and composites, and other critical engineering plastic alloys, where the external thread form has to be more closely controlled. See page 7.



DOUBLE ENDED

SIZE	PITCH INTERNAL	PITCH EXTERNAL **P**	DIAMETER EXTERNAL **B**	LENGTH **L**	HOLE DIAMETER **C**	HOLE DEPTH **Y**	BOSS DIAMETER **X**	WALL THICKNESS **W**	PART NO.s **THERMO PLASTIC**
M2	0.40	0.79	3.50	4.00	3.1 - 3.3	4.4	5.8	1.25	145M2
M2	0.40	0.79	3.50	4.80	3.1 - 3.3	5.3	5.8	1.25	136M2
M2.5	0.45	1.06	4.33	4.00	3.8 - 4.1	4.4	7.2	1.55	145M2.5
M2.5	0.45	1.06	4.33	5.25	3.8 - 4.1	5.8	7.2	1.55	136M2.5
M2.5	0.45	1.06	4.33	6.25	3.8 - 4.1	6.9	7.2	1.55	137M2.5
M3	0.50	1.06	4.73	4.00	4.1 - 4.4	4.4	7.7	1.65	145M3
M3	0.50	1.06	4.73	5.25	4.1 - 4.4	5.8	7.7	1.65	136M3
M3	0.50	1.06	4.73	6.25	4.1 - 4.4	6.9	7.7	1.65	137M3
M3.5	0.60	1.15	5.52	5.00	5.0 - 5.3	5.5	9.3	2.00	145M3.5
M3.5	0.60	1.15	5.52	6.20	5.0 - 5.3	6.9	9.3	2.00	136M3.5
M3.5	0.60	1.15	5.52	7.30	5.0 - 5.3	8.1	9.3	2.00	137M3.5
M4	0.70	1.27	6.31	5.60	5.8 - 6.1	6.2	10.7	2.30	145M4
M4	0.70	1.27	6.31	7.10	5.8 - 6.1	7.9	10.7	2.30	136M4
M4	0.70	1.27	6.31	8.40	5.8 - 6.1	9.3	10.7	2.30	137M4
M5	0.80	1.41	7.50	6.40	6.9 - 7.2	7.1	12.6	2.70	145M5
M5	0.80	1.41	7.50	8.40	6.9 - 7.2	9.3	12.6	2.70	136M5
M5	0.80	1.41	7.50	10.00	6.9 - 7.2	11.0	12.6	2.70	137M5
M6	1.00	1.59	8.69	7.90	8.0 - 8.4	8.7	14.7	3.15	145M6
M6	1.00	1.59	8.69	9.80	8.0 - 8.4	10.8	14.7	3.15	136M6
M6	1.00	1.59	8.69	12.00	8.0 - 8.4	13.2	14.7	3.15	137M6
M8	1.25	1.95	11.06	9.50	10.1 - 10.6	10.5	18.6	4.00	145M8
M8	1.25	1.95	11.06	12.40	10.1 - 10.6	13.7	18.6	4.00	136M8
M10	1.50	1.95	13.95	12.00	13.0 - 13.5	13.2	23.7	5.10	145M10
M10	1.50	1.95	13.95	16.00	13.0 - 13.5	17.6	23.7	5.10	136M10

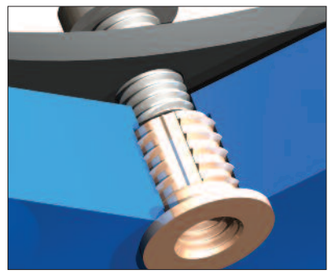
MATERIAL: Brass - to BS EN 12164 CW 614N This material is RoHS compliant

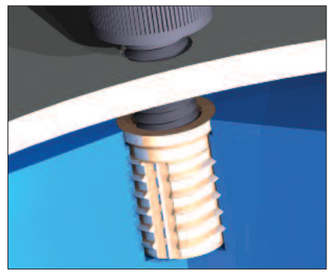
NOTE - all dimensions in mm

HOLE DIAMETER TOLERENCE INFORMATION
The information given under hole diameter 'C' are suggested dimensions for a range of grades of materials and applications.

DETAILED HOLE INFORMATION IS AVAILABLE FOR SPECIFIC APPLICATIONS AND MATERIALS
Information given under the hole design section above is intended to indicate approximate dimensional requirements for satisfactory installation of the insert, it is not intended for production tooling.

REDUCED / REGULAR HEADED



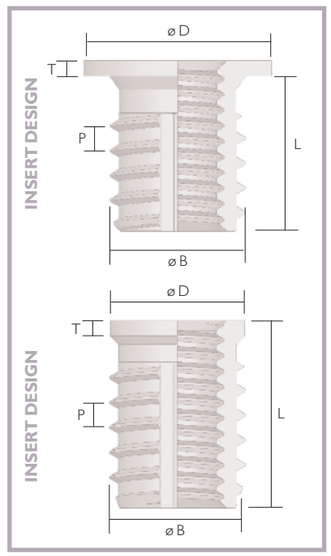


Self-tapping, headed inserts available in regular and long lengths in a range of thread sizes from M2.5 to M10.

Product Features

The Reduced and Regular Headed Triserts allow greater tightening torques because of their increased bearing surface, which also provide more support to softer mating components. The difference in head diameters are designed to give the optimum cost effective solution for a particular application. The larger Regular Headed versions are particularly suitable where there is a large or slotted clearance hole in the mating component, or where the insert head is required to sit proud on top of a boss section. For maximum performance they can be used in a suitable pull-through application.

An additional full range of part numbers is available for use in thermoset materials such as melamine, phenolic and composites, and other critical engineering plastic alloys, where the external thread form has to be more closely controlled. See page 7.



For hole design see page 5

REGULAR HEADED

SIZE	PITCH INTERNAL	PITCH EXTERNAL P	DIA. EXTERNAL B	LENGTH L	HEAD THICKNESS T	HEAD DIAMETER D	HOLE DIAMETER C	HOLE DEPTH Y	BOSS DIAMETER X	WALL THICKNESS W	PART NO.s THERMO PLASTIC
M2.5	0.45	1.06	4.33	4.00	0.60	6.35	3.8 - 4.1	4.4	7.2	1.55	345M2.5
M2.5	0.45	1.06	4.33	5.25	0.60	6.35	3.8 - 4.1	5.8	7.2	1.55	336M2.5
M3	0.50	1.06	4.73	4.00	0.75	7.10	4.1 - 4.4	4.4	7.7	1.65	345M3
M3	0.50	1.06	4.73	5.25	0.75	7.10	4.1 - 4.4	5.8	7.7	1.65	336M3
M3.5	0.60	1.15	5.52	5.00	0.75	8.30	5.0 - 5.3	5.5	9.3	2.00	345M3.5
M3.5	0.60	1.15	5.52	6.20	0.75	8.30	5.0 - 5.3	6.9	9.3	2.00	336M3.5
M4	0.70	1.27	6.31	5.60	0.75	8.70	5.8 - 6.1	6.2	10.7	2.30	345M4
M4	0.70	1.27	6.31	7.10	0.75	8.70	5.8 - 6.1	7.9	10.7	2.30	336M4
M5	0.80	1.41	7.50	6.40	0.90	11.10	6.9 - 7.2	7.1	12.6	2.70	345M5
M5	0.80	1.41	7.50	8.40	0.90	11.10	6.9 - 7.2	9.3	12.6	2.70	336M5
M6	1.00	1.59	8.69	7.90	1.00	12.00	8.0 - 8.4	8.7	14.7	3.15	345M6
M6	1.00	1.59	8.69	9.80	1.00	12.00	8.0 - 8.4	10.8	14.7	3.15	336M6
M8	1.25	1.95	11.06	7.50	1.25	14.30	10.1 - 10.6	8.3	18.6	4.00	345M8-02
M8	1.25	1.95	11.06	12.40	1.25	14.30	10.1 - 10.6	13.7	18.6	4.00	336M8
M10	1.50	1.95	13.95	12.00	1.50	18.00	13.0 - 13.5	13.2	23.7	5.10	345M10
M10	1.50	1.95	13.95	16.00	1.50	18.00	13.0 - 13.5	17.6	23.7	5.10	336M10

MATERIAL: Brass - to BS EN 12164 CW 614N This material is RoHS compliant

NOTE - all dimensions in mm

REDUCED HEADED

SIZE	PITCH INTERNAL	PITCH EXTERNAL P	DIA. EXTERNAL B	LENGTH L	HEAD THICKNESS T	HEAD DIAMETER D	HOLE DIAMETER C	HOLE DEPTH Y	BOSS DIAMETER X	WALL THICKNESS W	PART NO.s THERMO PLASTIC
M3	0.50	1.06	4.73	6.25	0.75	4.70	4.1 - 4.4	6.9	7.7	1.65	237M3
M4	0.70	1.27	6.31	8.40	0.80	6.30	5.8 - 6.1	9.3	10.7	2.30	237M4
M5	0.80	1.41	7.50	10.00	0.80	7.50	6.9 - 7.2	11.0	12.6	2.70	237M5
M6	1.00	1.59	8.69	7.90	0.90	8.60	8.0 - 8.4	8.7	14.7	3.15	245M6
M6	1.00	1.59	8.69	12.00	0.90	8.60	8.0 - 8.4	13.2	14.7	3.15	237M6
M8	1.25	1.95	11.06	14.00	1.00	11.10	10.1 - 10.6	15.6	18.6	4.00	237M8

MATERIAL: Brass - to BS EN 12164 CW 614N This material is RoHS compliant

NOTE - all dimensions in mm

HOLE DIAMETER TOLERENCE INFORMATION
The information given under hole diameter 'C' are suggested dimensions for a range of grades of materials and applications.

DETAILED HOLE INFORMATION IS AVAILABLE FOR SPECIFIC APPLICATIONS AND MATERIALS
Information given under the hole design section above is intended to indicate approximate dimensional requirements for satisfactory installation of the insert, it is not intended for production tooling.

TRISERT® ADVANCED

The unique Trisert self-tapping range of inserts is also available in an advanced engineered range for critical plastics and all thermoset materials .

Advanced Features

The closely controlled external thread allows effective cutting in hard urea, melamine and phenolic materials without cracking or moulding damage. The unique cutting form combined with the perfect symmetry of design significantly improves the performance of the insert in hard plastics.

The Trisert, with its solid cylindrical design, provides significant cost savings allowing a brass insert to be used in critical environments where previously a more expensive slotted steel insert option may have been necessary.

Hole Design

The Advanced Trisert may be specified in high performance applications. Due to the varying mechanical characteristics of thermoset materials precise hole size specification is imperative. Detailed hole dimensions must therefore be specified for each particular application.

DOUBLE ENDED

PART NO.s THERMOPLASTIC	THERMOSET
145M2	**139M2**
136M2	**138M2**
145M2.5	**139M2.5**
136M2.5	**138M2.5**
137M2.5	**170M2.5**
145M3	**139M3**
136M3	**138M3**
137M3	**170M3**
145M3.5	**139M3.5**
136M3.5	**138M3.5**
137M3.5	**170M3.5**
145M4	**139M4**
136M4	**138M4**
137M4	**170M4**
145M5	**139M5**
136M5	**138M5**
137M5	**170M5**
145M6	**139M6**
136M6	**138M6**
137M6	**170M6**
145M8	**139M8**
136M8	**138M8**
145M10	**139M10**
136M10	**138M10**

REGULAR HEADED

PART NO.s THERMOPLASTIC	THERMOSET
345M2.5	**339M2.5**
336M2.5	**338M2.5**
345M3	**339M3**
336M3	**338M3**
345M3.5	**339M3.5**
336M3.5	**338M3.5**
345M4	**339M4**
336M4	**338M4**
345M5	**339M5**
336M5	**338M5**
345M6	**339M6**
336M6	**338M6**
345M8-02	**339M8-02**
336M8	**338M8**
345M10	**339M10**
336M10	**338M10**

REDUCED HEADED

PART NO.s THERMOPLASTIC	THERMOSET
237M3	**270M3**
237M4	**270M4**
237M5	**270M5**
245M6	**239M6**
237M6	**270M6**
237M8	**270M8**

TAPPEX TRISERT® ADVANCED FOR THERMOSET PLASTICS
For thermoset applications use equivalent part numbers in **bold** above to specify advanced Triserts. Please refer to pages 5 & 6 for relevant details, **except hole dimensions**.

MATERIAL: Brass - to BS EN 12164 CW 614N This material is RoHS compliant

NOTE - all dimensions in mm

DETAILED HOLE INFORMATION IS AVAILABLE FOR SPECIFIC APPLICATIONS AND MATERIALS