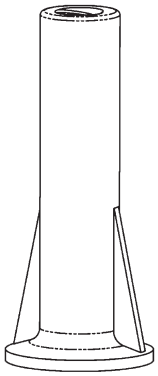
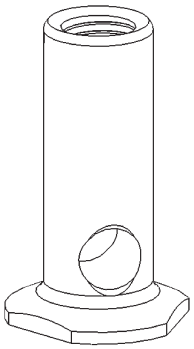
Threaded Inserts & Accessories

THREADED INSERTS

Reid™ threaded inserts are designed for casting into concrete and provide fixing points for attachments and structural members to be bolted directly to the concrete structure.



Reidbar™ Threaded Inserts (RBTI)



Reid™ Metric Threaded Inserts (TIM)

FEATURES

- **Reidbar™ Threaded Inserts (RBTI)** – provide full Reidbar™ strength starters when installed at Effective Depth (h_e) in concrete of 25 MPa or better. Refer to the Reidbar™ Design Guide (2004) for more detailed information.
- **Reid™ Metric Threaded Inserts (TIM)** – Machined from solid, bright drawn steel bar with cross hole near base to accept reinforcing steel for heavy duty and structural applications. Inserts are threaded to ISO metric standards.

BENEFITS

- Easy and simple to use.
- Versatile, provide a wide variety of fixings.
- Reliable, slip-free anchorages.
- Resist dynamic loads.
- May be used in the tension zones of concrete.
- May be used for precast and in-situ construction.
- Plastic nailing and glue on plates simplify installation. Nailing plates protect the threads and can be removed just before the inserts are to be used. This minimises the risk of fouling the threads.
- Good resistance to high temperatures.

FINISHES

RBTI – Plain Cast or Galvanized.

TIM – Supplied with gold passivated zinc coating. Hot dip galvanised and AISI type 316 inserts are available in the TIM series inserts.

SYSTEM ASSESSORIES

Threaded Insert Chair supports all styles of threaded inserts from M10 to RB20 in panel thick nesses of 125, 150, 175, 200mm. Inserts are attached to the chair using a standard plastic nail plate.

Nail on Plates for locating inserts onto formwork

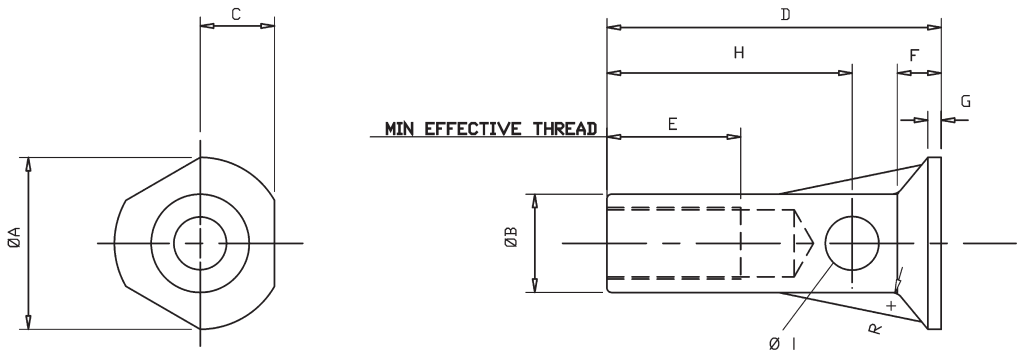
Glue on Plates for locating inserts onto dust free formwork surfaces using adhesive tabs.

Reidbar™ – Threaded reinforcing bar.

Metric Threaded Rod – Grade 4.6 mild steel bar or galvanised studs.

Threaded Inserts & Accessories

REID™ THREADED INSERTS - NOMINAL DIMENSIONS (mm)											
	A	B	C	D	E	F	G	H	I	Thread / Pitch	Gusset
Reid™ Metric Threaded Inserts											
TIM10x40	25	16	10.6	40	14	4	4	25	9	M10 x 1.5P	NA
TIM12x50	28	17	11	50	20	4.5	4.5	37	9	M12 x 1.75P	NA
TIM16x75	39	22	16.6	75	30	10	3	55	12	M16 x 2P	NA
TIM20x75	53	30	14	75	30	10	5	55	14	M20 x 2.5P	NA
TIM20x120	50	30	NA	118	47	10	3	NA	NA	M20 x 2.5P	YES
TIM24x100	60	38	26	100	45	10	5	76	20	M24 x 3P	NA
Reidbar™ Threaded Inserts											
RB12TI	38	22	16.6	100	45	10	3	NA	NA	RB12	NA
RBA16TI	50	30	NA	118	47	10	3	NA	NA	RB16	YES
RB20TI	64	35	NA	148	55	10	3	NA	NA	RB20	YES
RB25TI	80	43	NA	191	78	10	3	NA	NA	RB25	YES



Dimensions given in the tables above may vary slighly due to changes in design or manufacturing processes.

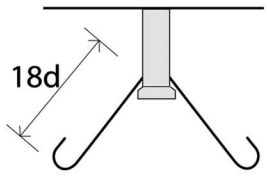
Threaded Inserts & Accessories

MINIMUM ULTIMATE STRENGTH OF REID™ THREADED INSERTS

Product Code	Thread	Effective Embedment Depth-h_e (mm)	Minimum Ultimate Tensile Strength of Insert Note 1, 2, 3 & 4 (kN)	Characteristic Capacity in 25 MPa Concrete			
				Tension Without Bar - Note 2, 3, 4 (kN)	Shear Note 2, 4, 5 (kN) Edge Distance		Bar Dia x Length (mm)
Reid™ Metric Threaded Inserts							
TIM10x40	M10	48	30	17	11	15	NA See Note 7
TIM12x50	M12	58	37	22	16	22	
TIM16x75	M16	83	60	64	32	45	
TIM20x75	M20	83	148	64	39	55	
TIM24x100	M24	108	220	98	65	92	
Reidbar™ Inserts							
RB12TI	RB12	108	83	98	39	55	NA
RBA16TI	RB16	126	173	133	60	85	
RB20TI	RB20	153	230	204	93	131	
RB25TI	RB25	199	347	332	149	211	

Notes

1. Minimum edge distance $=1.5h_e$. Minimum distance to other inserts $= 3h_e$ otherwise reduction factors will need to be applied.
2. Design strength of the connection is the lower of: (a) insert strength, (b) bolt / bar strength, (c) concrete cone capacity with reductions for edge and centre distance effects and cracked section if applicable. Refer to Reid Design Guide (2004) and Reid™ Construction Sytems Ltd for further information.
3. If thickness is less than $2h_e$ then the flexure capacity of the concrete section should be checked.
4. Design capacity for concrete cone pullout and shear may be obtained by mutliplying the characteristic capacity by: a) A materials factor Ø = 0.6, b) 0.7 for cracked concrete, c) Redution factors for edge distance and centre spacing as applicable.
5. Based on distance to free edge of 10 times and 20 times the nominal bolt/bar diameter and concrete thickness of $2h_e$.
6. For design capacity apply appropriate material factor (steel Ø = 0.8).
7. Using a Hanger Bar through the hole can increase the capacity of the insert under normal conditions. (See Note 2 above). Use a grade 300E bar bent down at 45 degrees each side of the insert and extended into the concrete 18 bar diameters with a 180 degree hook each end. The capacity expected from the bar should be 17, 27 and 39kN for 8, 10 and 12mm diameter bars respectively, with out any reductions for edge distances or spacings.



Metric Stud / Bolts and Reidbar™ – Minimum Ultimate Strengths (kN) (Refer Note 6)

Stud / Bolt Size Minimum breaking loads (N^{tf} & V^f)	Grade 4.6		Grade 8.8	
	Tension	Shear	Tension	Shear
M10	23.2	14.3	46.4	26
M12	33.7	20.8	67.4	38
M16	62.8	38.9	125	72
M20	98.0	60.7	203	117
M24	141.0	87.4	293	168

Reidbar™ Minimum ultimate strength	Grade 500E	
RB12	65	40.3
RBA16	115.5	71.7
RB20	180.6	112
RB25	282.3	175

Threaded Inserts & Accessories

INSTALLATION

- Either insert a positioning bolt through the mould wall or boxing and thread the insert onto the bolt until flush with the wall, or thread the insert onto a nail on plate and fix this to the mould.
- Pass a rebar of the correct diameter and length through the cross-hole in the insert and tie to the reinforcement to prevent it moving during pouring and vibration of the concrete.
- When the concrete has cured remove the bolt and mould. If a nailing plate has been used leave it screwed into the insert until immediately before use to help protect the threads.

LIMITATIONS

- Not to be used for lifting. Use the Reid™ Swiftlift™ system for lifting points!
- Depends on the load capacity required (see load table overleaf) or the diameter of the fixing bolt selected.
- Remember the practical aspect: small diameter inserts are much more prone to fouling and thread damage than larger inserts. For most applications it is preferable to use inserts of M10 or greater.

ACCESSORIES

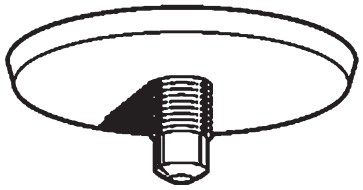
NAIL ON (NP) & GLUE ON (GP) PLATES

Nail and Glue On Plates position the insert on the formwork and are used to prevent concrete from entering the threaded inserts during casting. Both Metric and Reidbar styles are available.

Product Code	Nominal Diameter (mm)	Reidbar	TIMS	TITS
NP12 or GP12	12		√	√
NP16 or GP16	16		√	√
NP20 or GP20	24		√	√
NP24 or GP24	24		√	
NP12RB	12	√		
NP16RB	16	√		
NP20RB	20	√		
NP25RB	25	√		

M10 size is not available due to limitations of plastic strength.

All plates are 8mm effective thickness when screwed into the fitting and have a maximum diameter of 63mm.



ADJUSTABLE BAR CHAIR FOR REIDBAR™ THREADED INSERT (TICHAIR)

TICHAIR support chairs will fit all theaded inserts up to and including RB20 and comes as an adjustable height kit. The TICHAIR kit includes the chair, 3 base legs and stool to fit 125mm, 150mm, 175mm and 200mm thick casting depths.

A Nail or Glue On Plate (sold separately) is used to lock the insert into the chair and prevent material from contaminating the thread while concrete is placed.