



Rethink Thread Repair.
Think Recoil®



Watch the demo

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suttontools
world class cutting tools

Recoil® Bringing versatility to a range of applications

Recoil® threaded inserts, installation tooling, taps, gauges, and thread-repair kits accommodate manufacturing and aftermarket applications in the automotive, aerospace, electronics, ship building, defence, power-generation, and transportation industries. Offering a wide variety of sizes, materials, finishes, and coatings, Recoil® brand products are versatile enough to fit a broad range of applications. Manufactured in all popular thread forms, Recoil® inserts are engineered in accordance with stringent quality standards, including AS 9100, ISO 9001, TS 16949, Boeing Certification, Mil Spec, and others. Recoil® products have been proven to deliver superior performance, durability, and value.

How a Recoil® Insert Works

Recoil® inserts are rolled from high quality stainless steel wire with a diamond shaped cross section, wound to the shape of a spring thread. Once the insert is installed into a tapped hole, it provides a permanent and wear resistant thread in the parent material designed to be stronger than the original thread.

The inserts are greater in diameter than the corresponding tapped hole and compress as they are installed. This allows maximum surface contact area with the tapped thread, safely and permanently anchoring the inserts into place.

The insert's compensatory action shares the load over the entire bolt and hole, increasing holding or pull out strength. With a Recoil® insert in place, load and stress are more evenly distributed.



Typical thread problems:

- ✗ Poor flank contact between bolt & parent thread
- ✗ Unequal distribution of bolt load over engaged threads
- ✗ Failure of threaded components when loaded

Recoil® solutions:

- ✓ Greatly improved flank contact
- ✓ Equally distributed load over all tapped threads
- ✓ Reduced stress concentration for greater load bearing

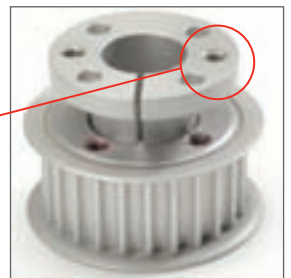
Where to use Recoil® Inserts

1 Original Equipment Manufacture

Recoil® offers innovative manufacturers the opportunity to design high quality products using lighter weight metals as well as standard materials.

Recoil® inserts can be used in aluminium and magnesium alloys, carbon fibres and other materials to achieve stronger and more reliable threads than the parent material alone. Recoil® brand inserts are widely used by manufacturers in a variety of markets including the following:

- Automotive
- Electronic
- Aerospace
- Ship Building
- Defence
- Power Generation
- Transport
- Manufacturing Equipment

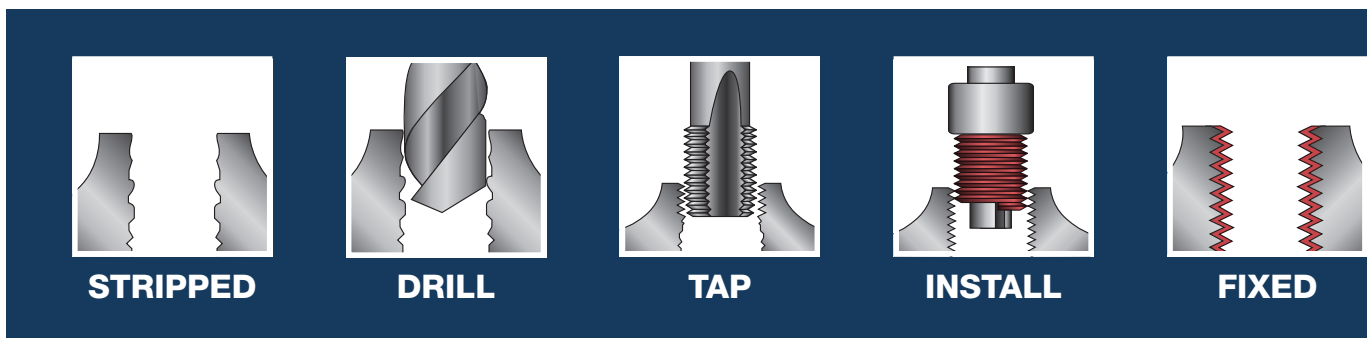


2 Repair

Wherever you encounter a damaged thread Recoil® provides:

- The quickest and simplest method of thread repair.
- A quality thread with superior holding power.
- The most cost-effective method of repair.
- A new thread in the original size.
- A thread generally stronger than the original.

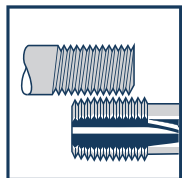
How to install Recoil® Inserts



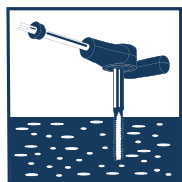
Instructions



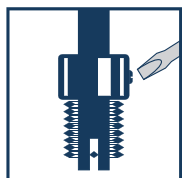
1 DRILL:
Drill to clear out the damaged thread with drill size as specified on kit (if necessary).



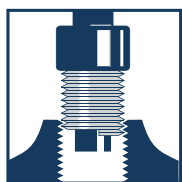
2 CHECK:
Ensure tap thread matches bolt.



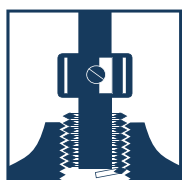
3 TAP HOLE:
Place tap into tap wrench or use the square drive in the installation tool provided*.
Tap hole to the required depth using correct procedures (if unsure contact your dealer).



4 SET TOOL:
Place insert on installation tool, positioning the adjustable top so that the insert tang is centred in the tang slot.



5 INSTALL:
Wind insert in with light downward pressure until 1/4 to 1/2 turn below the surface.



6 TANG REMOVAL:
Do not attempt to twist tang off with tool. Lift tool from tang, turn tool 90° and tap down sharply. Use tang break-off tool where supplied. For spark plug and large fine thread inserts, use long nose pliers to pull tang out.



Recoil® Products



Wire Thread Inserts

Recoil® helically wound wire thread inserts can be used to strengthen threads, giving applications a longer life. With a Recoil® insert installed, a more even distribution of load and stress can be achieved. Each insert sharing the load over the entire bolt and hole, improving holding or pull out resistance. Recoil® inserts are made of type 304 stainless steel wire rolled into a diamond shape cross-section.

Also available: Inconel, Nimonic 90, Nitronic 60, Phosphor Bronze and type 316 Stainless Steel.

Available depths: 1D, 1.5D, 2D, 2.5D, 3D



Stainless Steel

Carbon

Keyserts

Keyserts are designed to repair damaged threads or for use in original equipment, and provide easy installation and versatility. Featuring a key-locking action that prevents rotation due to vibration or torsion, commercial-grade Keyserts can be used in a wide range of materials and applications. Keyserts are available in carbon and stainless steel, and are supplied in thin wall and heavy duty styles.

Typical Applications

- Trucks, RV's
- Machinery, Small Engines
- Moulds, Tool and Die
- MRO Tasks

Note: Keyserts are not recommended for use in brittle materials, such as cast iron or plastic



Manual Installation Tool

The manual installation tool is the most practical and simple to use for general applications. This tool may be used to install 1D through to 3D length inserts. Featuring an adjustable collar to suit 1D - 3D inserts, and a square drive for tapping.



Manual Tang Break Tool

The Recoil® manual Magnetic Tang Break tool is suitable for low volume tang removal and is used for insert sizes up to M12 or 1/2". The magnet embedded in the tip allows for easy retrieval of the tang. For tang removal, simply insert the tool onto the tang, then push downward with a sharp blow.



Recoil® Thread Gauges

Recoil® gauges measure the tapped hole to ensure optimum insert performance once installed. Thread gauging is recommended wherever precision threads are required. If the finished tapped hole gauges satisfactorily, the installed insert will be within the thread tolerance.



Insert Extraction Tool

Should inserts need to be removed, the use of the Recoil® extraction tool is recommended. Extraction tools are simple and easy to use. As correct positioning will make the extraction easier, the tool should be turned 90° from the start of the coil allowing easy winding out of the insert. If the extraction tool is not gripping the insert, the edges can be resharpened.



STI tap



Pilot nose tap

Recoil® Insert Taps

Recoil® taps differ from standard taps dimensionally and only Recoil® Screw Thread Insert (STI) Taps are suitable for use with Recoil® wire thread inserts. They have a larger diameter but the same pitch as a standard tap in order to accommodate the wire insert.

Recoil® taps are available with taper, intermediate, and bottoming leads.

Also available:

- Pilot nose taps - For spark plug applications
- Machine taps - For high volume production

Recoil® Trade Series Kits



Thread Repair Kits

Everything you need for complete thread repair in one handy case. Trade Series Kits include only the best quality HSS taps which make them suitable for aluminium, magnesium, cast iron and most machinable steels.

Contents:

- HSS Drill Bit*
- HSS Intermediate STI Tap
- Thread Inserts
- Installation Tool
- Magnetic Tang Removal Tool*
- Installation instructions

*Included only on sizes M2-M12 & #2-1/2"



Spark Plug Kit

Spark Plug Kits contain special inserts for spark plug repair with metric thread forms and imperial length measurements including 3/8 and 3/4.

The Pilot Nose Taps have accurate self alignment, eliminating the need for drilling. This kit provides an inexpensive repair of spark plug ports without replacing cylinder heads and is available to repair spark plugs in diameters including M10, M12, M14 and M18.

Contents:

- HSS STI Pilot Nose Tap
 - Thread Inserts
 - Installation Tool
 - Easy to follow instructions
-



Range Kits

Recoil® Range Kits contain a selection of Recoils® most popular sizes. It provides you with an all-in-one workshop solution for multi-diameter thread repairs. It's ideal for garages and other workshops where thread repairs are often undertaken.

Contents:

- HSS Drill Bits
- HSS Intermediate STI Taps
- Thread Inserts
- Installation Tool
- Magnetic Tang Removal Tool
- Installation instructions

RECOIL MASTER THREAD REPAIR KIT

Rethink Thread Repair. Think Recoil®



Item #	Size	Pitch/TPI	Depth	Pack Qty	Multiple Order Qty	Item #	Size	Pitch/TPI	Depth	Pack Qty	Multiple Order Qty	Item #	Size	Pitch/TPI	Depth	Pack Qty	Multiple Order Qty	Item #	Size	Pitch/TPI	Lead/Depth	Pack Qty	Multiple Order Qty
Thread Repair Kits						Range Kits						Inserts						Taps					
RC35038	M3	0.5	1.5D	1	1	RC35004R	Metric M5,6, 8-1.25, 10-1.5, 12-1.75			1		RC27123	M12	1.5	1.5D	10	1	RC45055	M5	0.8	INTER	1	1
RC35048	M4	0.7	1.5D	1	1	RC35005R	Metric M6, 8-1.25, 10-1.5, 12-1.75, 16-2			1		RC07124	M12	1.5	2D	Bulk	100	RC45065	M6	1	INTER	1	1
RC35058	M5	0.8	1.5D	1	1	RC33004R	UNC 1/4, 5/16, 3/8, 7/16, 1/2			1		RC05122	M12	1.75	1D	Bulk	100	RC45085	M8	1.25	INTER	1	1
RC35068	M6	1	1.5D	1	1	RC34004R	UNF 1/4, 5/16, 3/8, 7/16, 1/2			1		RC05123	M12	1.75	1.5D	Bulk	100	RC45086	M8	1.25	BOT	1	1
RC35078	M7	1	1.5D	1	1	RC30004R	BSF 1/4, 5/16, 3/8, 7/16, 1/2			1		RC25123	M12	1.75	1.5D	10	1	RC45105	M10	1.5	INTER	1	1
RC37088	M8	1	1.5D	1	1	RC32004R	BSW 1/4, 5/16, 3/8, 7/16, 1/2			1		RC05124	M12	1.75	2D	Bulk	100	RC45106	M10	1.5	BOT	1	1
RC35088	M8	1.25	1.5D	1	1	RC3409620	Crank Kit 5-9/16 - 20 x 1/2 Left hand inserts 5-9/16-20 x 1/2 Right hand inserts			1		RC05124	M12	1.75	2D	Bulk	100	RC45125	M12	1.75	INTER	1	1
RC35098	M9	1.25	1.5D	1	1	RC38006R	Motorcycle Kit M6, 8-1.25, 10-1.25, 12-1.25PN, 14-1.25PN			1		RC28140	M14	1.25	3/4D	10	1	RC45126	M12	1.75	BOT	1	1
RC38108	M10	1	1.5D	1	1	Spark Plug Kits						RC08140	M14	1.25	3/4D	Bulk	100	RC45165	M16	2	INTER	1	1
RC37108	M10	1.25	1.5D	1	1	RC381082	13 pce Metric kit: M10-1 x 1.5D inserts, Installation Tool, Pilot Nose Tap and Magnetic Tang break Tool			1		RC27143	M14	1.5	1.5D	5	1	RC45166	M16	2	BOT	1	1
RC35108	M10	1.5	1.5D	1	1	RC381202	13 pce Metric kit: M12-1.25 x 1D & 1.5D inserts, Installation Tool, Pilot Nose Tap and Magnetic Tang break Tool			1		RC27163	M16	1.5	1.5D	5	1	RC48205	M20	1.5	INTER	1	1
RC37118	M11	1.25	1.5D	1	1	RC38140	13 pce Metric kit: M14-1.25 x 3/4 & 3/8 long inserts, Installation Tool, Pilot Nose Tap, plus extracting tool			1		RC05163	M16	2	1.5D	Bulk	50	RC45205	M20	2.5	INTER	1	1
RC35118	M11	1.5	1.5D	1	1	RC381482	14 pce Metric kit: M14-1.25 x 3/4 & 3/8 long inserts, Installation Tool, Pilot Nose Tap			1		RC25163	M16	2	1.5D	5	1	RC45206	M20	2.5	BOT	1	1
RC38128	M12	1.25	1.5D	1	1	RC38188	8 pce Metric kit: M18-1.5 x 1/2" long inserts, installation tool, plus Pilot Nose Tap			1		RC05164	M16	2	2D	Bulk	50	RC45245	M24	3	INTER	1	1
RC37128	M12	1.5	1.5D	1	1	RC38148	8 pce Metric kit: M14-1.25 x 9.5mm long, 12.7mm long & 19mm long inserts, M14-1.25 Plug Saver Tap & Expander			1		RC28183	M18	1.5	1.5D	5	1	RC43064	UNC 3/8	16	TAPER	1	1
RC35128	M12	1.75	1.5D	1	1	Inserts						RC05202	M20	2.5	1D	Bulk	25	RC43065	UNC 3/8	16	INTER	1	1
RC381481	M14	1.25	1.5D	1	1	RC2409020	9/16	20	1/2"D	1	1	RC05203	M20	2.5	1.5D	5	1	RC43066	UNC 3/8	16	BOT	1	1
RC37148	M14	1.5	1.5D	1	1	RC2409020LH	9/16 Left hand	20	1/2"D	1	1	RC05243	M24	3	1.5D	Bulk	25	RC43084	UNC 1/2	13	TAPER	1	1
RC35148	M14	2	1.5D	1	1	RC05032	M3	0.5	1D	Bulk	100	RC05243	M24	3	1.5D	Bulk	25	RC43085	UNC 1/2	13	INTER	1	1
RC37168	M16	1.5	1.5D	1	1	RC05033	M3	0.5	1.5D	Bulk	100	RC25203	M20	2.5	1.5D	5	1	RC43086	UNC 1/2	13	BOT	1	1
RC35168	M16	2	1.5D	1	1	RC05034	M3	0.5	2D	Bulk	100	RC05204	M20	2.5	2D	Bulk	25	RC43104	UNC 5/8	11	TAPER	1	1
RC381881	M18	1.5	1.5D	1	1	RC05042	M4	0.7	1D	Bulk	100	RC05204	M20	2.5	2D	Bulk	25	RC43124	UNC 3/4	10	TAPER	1	1
RC37188	M18	2	1.5D	1	1	RC05043	M4	0.7	1.5D	10	1	RC03062	UNC 3/8	16	1D	Bulk	100	Extraction Tool					
RC35188	M18	2.5	1.5D	1	1	RC05044	M4	0.7	2D	Bulk	100	RC03063	UNC 3/8	16	1.5D	Bulk	100	RC50003	M4-M24, UNC#6-1			1	1
RC38208	M20	1.5	1.5D	1	1	RC05052	M5	0.8	1D	Bulk	100	RC23063	UNC 3/8	16	1.5D	10	1	Thread Gauge					
RC37208	M20	2	1.5D	1	1	RC05053	M5	0.8	1.5D	Bulk	100	RC23073	UNC 7/16	14	1.5D	10	1	RC69000	METRIC / UNC			1	1
RC35208	M20	2.5	1.5D	1	1	RC05054	M5	0.8	2D	Bulk	100	RC03073	UNC 7/16	14	1.5D	10	1	Carbon Steel Heavy Duty Keyserts					
RC38220	M22	1.5	1.5D	1	1	RC05062	M6	1	1D	Bulk	100	RC03083	UNC 1/2	13	1.5D	Bulk	100	RC75082	M8	1.25	14	1	1
RC35220	M22	2.5	1.5D	1	1	RC05063	M6	1	1.5D	Bulk	100	RC23083	UNC 1/2	13	1.5D	10	1	RC75102	M10	1.5	16	1	1
RC38240	M24	1.5	1.5D	1	1	RC05064	M6	1	2D	Bulk	100	RC03103	UNC 5/8	11	1.5D	Bulk	50	RC75122	M12	1.75	18	1	1
RC37240	M24	2	1.5D	1	1	RC05066	M6	1	1D	Bulk	100	RC23103	UNC 5/8	11	1.5D	5	1	RC75162	M16	2	22	1	1
RC35240	M24	3	1.5D	1	1	RC05063	M6	1	1.5D	Bulk	100	RC03123	UNC 3/4	10	1.5D	Bulk	50	RC75202	M20	2.5	30	1	1
RC37300	M30	2	1.5D	1	1	RC05064	M6	1	2D	Bulk	100	RC23123	UNC 3/4	10	1.5D	5	1	Stainless Steel Heavy Duty Keyserts					
RC35300	M30	3.5	1.5D	1	1	RC05066	M6	1	1.5D	10	1	RC03143	UNC 7/8	9	1.5D	Bulk	25	RC75067	M6	1	12	1	1
RC33588	UNC #8	32	1.5D	1	1	RC05066	M6	1	2D	Bulk	100	RC23143	UNC 7/8	9	1.5D	3	1	RC75087	M8	1.25	14	1	1
RC33608	UNC #10	24	1.5D	1	1	RC05066	M6	1	1D	Bulk	100	RC23163	UNC 1"	8	1.5D	3	1	RC75107	M10	1.5	16	1	1
RC33628	UNC #12	24	1.5D	1	1	RC05066	M6	1	1.5D	10	1	RC24603	UNF #10	32	1.5D	10	1	RC75127	M12	1.75	18	1	1
RC33048	UNC 1/4	20	1.5D	1	1	RC05066	M6	1	1.5D	10	1	RC24043	UNF 1/4	28	1.5D	10	1	Carbon Steel Thin Wall Keyserts					
RC33058	UNC 5/16	18	1.5D	1	1	RC05066	M6	1	1.5D	10	1	RC24063	UNF 3/8	24	1.5D	10	1	RC75051	M5	0.8	8	1	1
RC33068	UNC 3/8	16	1.5D	1	1	RC05066	M6	1	2D	Bulk	100	RC24073	UNF 7/16	20	1.5D	10	1	RC75061	M6	1	10	1	1
RC33078	UNC 7/16	14	1.5D	1	1	RC05066	M6	1	1D	Bulk	100	RC24083	UNF 1/2	20	1.5D	10	1	RC75081	M8	1.25	12	1	1
RC33088	UNC 1/2	13	1.5D	1	1	RC05066	M6	1	1.5D	10	1	RC24093	UNF 9/16	18	1.5D	5	1	RC75101	M10	1.5	14	1	1
RC33098	UNC 9/16	12	1.5D	1	1	RC05066	M6	1	1.5D	10	1	RC24103	UNF 5/8	18	1.5D	5	1	RC75121	M12	1.75	16	1	1
RC33108	UNC 5/8	11	1.5D	1	1	RC05066	M6	1	1.5D	10	1	RC24123	UNF 3/4	16	1.5D	5	1	RC73041	UNC1/4	20	10	1	1
RC33128	UNC 3/4	10	1.5D	1	1	RC05066	M6	1	1.5D	10	1	Stainless Steel Thin Wall Keyserts											
RC33140	UNC 7/8	9	1.5D	1	1	RC05066	M6	1	2D	Bulk	100	RC24073	UNF 7/16	20	1.5D	10	1	RC75056	M5	0.8	8	1	1
RC33160	UNC 1"	8	1.5D	1	1	RC05066	M6	1	1D	Bulk	100	RC24083	UNF 1/2	20	1.5D	10	1	RC75066	M6	1	10	1	1
RC34608	UNF #10	32	1.5D	1	1	RC05082	M8	1.25	1D	Bulk	100	RC24093	UNF 9/16	18	1.5D	5	1	RC75086	M8	1.25	12	1	1
RC34048	UNF 1/4	28	1.5D	1	1	RC05083	M8	1.25	1.5D	Bulk	100	RC24103	UNF 5/8	18	1.5D	5	1	RC75106	M10	1.5	14	1	1
RC34058	UNF 5/16	24	1.5D	1	1	RC25083	M8	1.25	1.5D	10	1												
RC34068	UNF 3/8	24	1.5D	1	1	RC05084	M8	1.25	2D	Bulk	100												
RC34078	UNF 7/16	20	1.5D	1	1	RC25084	M8	1.25	2D	10	1												
RC34088	UNF 1/2	20	1.5D	1	1	RC27103	M10	1.25	1.5D	10	1												
RC34098	UNF 9/16	18	1.5D	1	1	RC05102	M10	1.5	1D	Bulk	100												
RC34108	UNF 5/8	18	1.5D	1	1	RC05103	M10	1.5	1.5D	Bulk	100												
RC34128	UNF 3/4	16	1.5D	1	1	RC25103	M10	1.5	1.5D	10	1												
RC31028	BSP 1/8	28	1.5D	1	1	RC05104	M10	1.5	2D	Bulk	100												
RC31048	BSP 1/4	19	1.5D	1	1	RC25104	M10	1.5	2D	10	1												
RC31068	BSP 3/8	19	1.5D	1	1	RC28123	M12	1.25	1.5D														