

# Precision THREAD

helical thread inserts



**A quick, easy solution that saves you time & money**

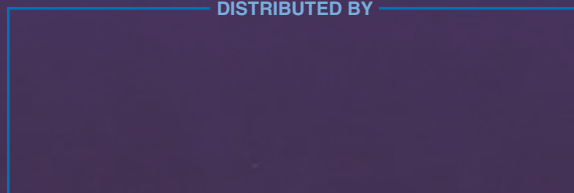
**CHRISLYNN**

HELICAL

INSERTS

**PRECISION**

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## Materials Available

- 18-8 Stainless (Standard)
- Phosphor Bronze
- X 750 Inconel
- 316 Stainless



Precision thread helical inserts meet or exceed most applicable specifications, including: MS 122076 series, 124651 series, 21208, 21209, 33537, Mil-1-8846 and Mil-F-5577.

## Precision Thread Helical Inserts

The Precision insert system was devised as a simple method of repairing stripped or damaged threads in any metal or valuable parts. Inserts are also used in new products such as die castings or plastics, where excessive stress on threads could cause damage or failure.

Precision inserts are helical coils of diamond shaped 18-8 stainless steel wire which meets or exceeds AMS-7245 specification. Inserts are sized to provide a precisely controlled interference fit in an oversized tapped hole. The tap used

for this purpose is the same pitch as the original thread, but has a larger diameter. When the insert is installed, the hole is returned to its original size.

Because the insert provides an enlarged bearing area, the restored fastening is stronger than the original. It is also more durable, since the stainless steel thread is generally tougher than the original material. Precision inserts are corrosion resistant and their 22-microinch or better surface finish provides a smooth-running, wear-resistant fastening.



## Why Precision Thread Helical Inserts?

Precision inserts are used when alternate methods of repairing a threaded hole are inconvenient, impractical or impossible. The Precision system is much easier than plugging a damaged hole with weld bead, redrilling and tapping. It's usually more practical than using an oversized bolt.

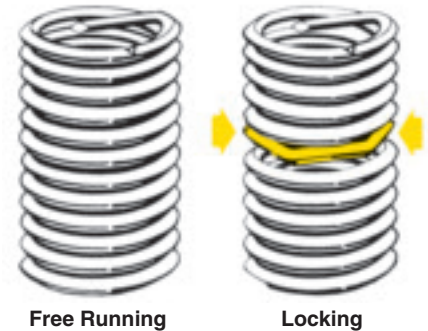


Compensation effect corrects angle and pitch error

Replacement of the entire damaged part could well be impossible as well as costly and time-consuming.

While the Precision insert offers an expedient solution to an immediate problem, its benefits don't end there. Almost all threaded fasteners contain minor errors in pitch of threaded form which tend to concentrate the load on some threads. The free coils of the helical thread insert can flex to accommodate form and pitch variations, thus distributing the load most efficiently over all threads.

Precision inserts are made in all standard thread sizes and in two basic types...free-running and locking. The locking type features a crimped turn which provides an exceptionally strong grip on the mating bolt. Locking inserts can be used to eliminate the need for lock washers or other locking devices.



The design is particularly recommended for applications which require a constant locking torque.

The Precision system is supplied with easy-to-use tooling which facilitates installation in almost any location. The taps, inserts and tools are interchangeable with other helical insert systems.

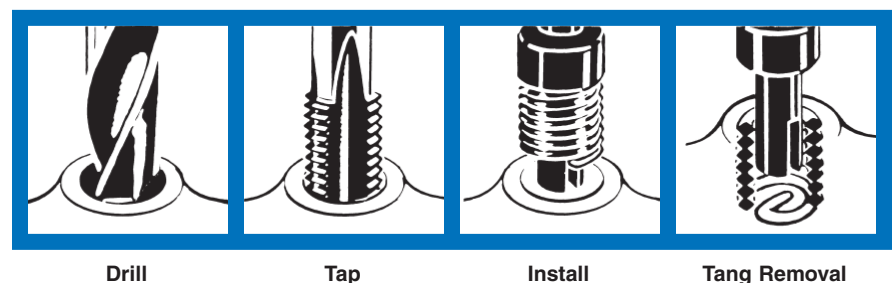
## Simple Installation

The first step in creating a new, stronger thread is cleaning up the original, damaged threads. This is done with a standard drill, the size of which is indicated on the Precision package. The hole is then tapped with an oversize (STI)\* tap provided in each kit. Kits do not include drills. Drills are available through your Precision Helical Thread Insert distributor. The free diameter of the Precision insert is larger than the new threaded hole, but it is easily "wound" into place with the inserting tool provided.

Once in place, the insert tends to spring back to its original diameter, giving it a

very strong grip in the hole. Finally, the driving tang is broken off by tapping downward with the end of the inserting

tool. If necessary, inserts can be removed, using one of the extracting tools shown on page eight of this brochure.



## Thread Repair Sets

*NOTE: All kits contain tap, tool, and inserts. Drills not included.*



Master Range Kit



Single Repair Kit

### AMERICAN

	Mini Kits			Order No.
UNC	6-32	8-32	10-24	87902
UNF	6-40	8-36	10-32	87903
UNC	1/4-20	5/16-18	3/8-16	87900
UNF	1/4-28	5/16-24	3/8-24	87901

### METRIC

	Mini Kits			Order No.
M4x.7	M5x.8	M6x1		87905
M6x1	M8x1	M10x1		87906
M8x1.25	M10x1.5	M12x1.75		87907

	Master Kits			Order No.
UNC	1/4-20	5/16-18		87910
3/8-16	7/16-14	1/2-13		
UNF	1/4-28	5/16-24		87911
3/8-24	7/16-20	1/2-20		

	Master Kits			Order No.
COARSE	M5x.8	M6x1		87915
M8x.1.25	M10x1.5	M12x1.75		
FINE	M8x1	M10x1		87916
M10x.1.25	M11x1	M12x1.5		

	Big Boy Kits			Order No.
UNC	5/8-11	3/4-10	7/8-9	87912
UNF	5/8-18	3/4-16	7/8-14	87913

	Big Boy Kits			Order No.
M14x2	M16x2	M18x2.5		87917
M14x1.5	M16x1.5	M18x1.5		87918



Total Kit - Combination

	Total Kit American	Order No.
WITHOUT LOCK		87923
WITH LOCK		87925

Contains:

- 1 - 87910 Master Kit
- 1 - 87911 Master Kit
- 1 - 87912 Big Boy Kit
- 1 - 87913 Big Boy Kit

	Total Kit Metric	Order No.
WITHOUT LOCK		87927
WITH LOCK		87929

Contains:

- 1 - 87915 Master Kit
- 1 - 87916 Master Kit
- 1 - 87917 Big Boy Kit
- 1 - 87918 Big Boy Kit

	Total Kit Combination	Order No.
WITHOUT LOCK		87920
WITH LOCK		87924

Contains:

- 1 - 87910 Master Kit
- 1 - 87911 Master Kit
- 1 - 87915 Master Kit
- 1 - 87916 Master Kit

# Single-Size Repair Kits

*NOTE: All kits contain tap, tool, and inserts. Drills not included.*

## UNC

Size	Single Size Kit	Inserts Per Kit	REPLACEMENT PARTS			
			HSS Tap	Insert Package	Installation Tool	Drill Size
2 - 56	82100	12	86100	83100	87000	3/32
3 - 48	82102	12	86102	83102	87002	3/64
4 - 40	82104	12	86104	83104	87004	3/16
5 - 40	82106	12	86106	83106	87006	1/8
6 - 32	82108	12	86108	83108	87008	3/16
8 - 32	82110	12	86110	83110	87010	1/4
10 - 24	82112	12	86112	83112	87012	5/16
12 - 24	82114	12	86114	83114	87014	3/8
1/4 - 20	82116	12	86116	83116	87016	7/16
5/16 - 18	82118	10	86118	83118	87018	1/2
3/8 - 16	82120	10	86120	83120	87020	5/8
7/16 - 14	82122	6	86122	83122	87022	3/4
1/2 - 13	82124	6	86124	83124	87024	7/8
1/2 - 12	82125	6	86125	83125	87024	1
9/16 - 12	82127	6	86127	83127	87027	1 1/8
5/8 - 11	82129	6	86129	83129	87029	1 1/4
3/4 - 10	82131	4	86131	83131	87031	1 3/8
7/8 - 9	82133	4	86133	83133	87033	1 1/2
1 - 8	82135	4	86135	83135	87035	1 3/4
1 1/8 - 7	82138	4	86138	83138	87038	2
1 1/4 - 7	82140	4	86140	83140	87040	2 1/8
1 3/8 - 6	82142	4	86142	83142	87041	2 1/4
1 1/2 - 6	82144	4	86144	83144	87043	2 3/8

## METRIC - COARSE

Size	Single Size Kit	Inserts Per Kit	REPLACEMENT PARTS			
			HSS Tap	Insert Package	Installation Tool	Drill Size
M2x0.4	82150	12	86150	83150	87050	45
M2.2x0.45	82151	12	86151	83151	87000	42
M2.5x0.45	82152	12	86152	83152	87003	37
M3x0.5	82153	12	86153	83153	87053	1/8
M3.5x0.6	82154	12	86154	83154	87054	27
M4x0.7	82155	12	86155	83155	87010	11/64
M5x0.8	82156	12	86156	83156	87013	13/64
M6x1	82157	12	86157	83157	87016	1/4
M7x1	82158	12	86158	83158	87018	9/32
M8x1.25	82160	10	86160	83160	87019	21/64
M9x1.25	82162	10	86162	83162	87020	3/8
M10x1.5	82165	10	86165	83165	87021	13/32
M11x1.5	82168	6	86168	83168	87022	29/64
M12x1.75	82171	6	86171	83171	87024	31/64
M14x2	82173	6	86173	83173	87027	37/64
M16x2	82175	6	86175	83175	87029	21/32
M18x2.5	82178	5	86178	83178	87031	47/64
M20x2.5	82181	5	86181	83181	87032	13/16
M22x2.5	82184	4	86184	83184	87033	57/64
M24x3	82187	4	86187	83187	87035	31/32

## UNF

Size	Single Size Kit	Inserts Per Kit	REPLACEMENT PARTS			
			HSS Tap	Insert Package	Installation Tool	Drill Size
3 - 56	82103	12	86103	83103	87003	37
4 - 48	82105	12	86105	83105	87005	31
6 - 40	82109	12	86109	83109	87009	25
8 - 36	82111	12	86111	83111	87010	17
10 - 32	82113	12	86113	83113	87013	13/64
1/4 - 28	82117	12	86117	83117	87016	17/64
5/16 - 24	82119	10	86119	83119	87019	21/64
3/8 - 24	82121	10	86121	83121	87021	25/64
7/16 - 20	82123	6	86123	83123	87024	29/64
1/2 - 20	82126	6	86126	83126	87027	33/64
9/16 - 18	82128	6	86128	83128	87029	37/64
5/8 - 18	82130	6	86130	83130	87031	41/64
3/4 - 16	82132	4	86132	83132	87032	49/64
7/8 - 14	82134	4	86134	83134	87035	57/64
1 - 12	82136	4	86136	83136	87038	1 1/64
1 - 14	82137	4	86137	83137	87038	1 1/64
1 1/8 - 12	82139	4	86139	83139	87039	1 5/32
1 1/4 - 12	82141	4	86141	83141	87041	1 9/32
1 3/8 - 12	82143	4	86143	83143	87043	1 13/32
1 1/2 - 12	82145	4	86145	83145	87044	1 17/32

## METRIC - FINE

Size	Single Size Kit	Inserts Per Kit	REPLACEMENT PARTS			
			HSS Tap	Insert Package	Installation Tool	Drill Size
M8x1	82159	10	86159	83159	87019	21/64
M9x1	82161	10	86161	83161	87020	3/8
M10x1	82163	10	86163	83163	87022	13/32
M10x1.25	82164	10	86164	83164	87021	13/32
M11x1	82166	6	86166	83166	87024	7/16
M11x1.25	82167	6	86167	83167	87024	29/64
M12x1.25	82169	6	86169	83169	87024	31/64
M12x1.5	82170	6	86170	83170	87024	31/64
M14x1.5	82172	6	86172	83172	87027	9/16
M16x1.5	82174	6	86174	83174	87031	21/32
M18x1.5	82176	5	86176	83176	87032	23/32
M18x2	82177	5	86177	83177	87031	23/32
M20x1.5	82179	5	86179	83179	87033	13/16
M20x2	82180	5	86180	83180	87033	13/16
M22x1.5	82182	4	86182	83182	87035	57/64
M22x2	82183	4	86183	83183	87035	57/64
M24x1.5	82185	4	86185	83185	87038	31/32
M24x2	82186	4	86186	83186	87035	31/32
M26x1.5	82187X	4	86187X	83187X	87038	13/64
M27x1.5	82188	4	86188	83188	87038	15/64
M27x2	82189	4	86189	83189	87038	13/32
M27x3	82190	4	86190	83190	87038	13/32

All kits and insert packages contain inserts that are 1 1/2 times the diameter of the insert.

# Giant Metric



NOTE: All kits contain tap, tool, and inserts. Drills not included.

## KITS

Thread Size	Kit Number	Insert Quantity
M28x1.5	82191	4
M30x1.5	82192	4
M30x2	82193	4
M30x3.5	82194	4
M33x2	82195	4
M33x3.5	82196	4
M34x1.5	82197	4
M36x1.5	82198	4
M36x2	82199	4
M36x3	82200	4
M36x4	82201	4
M39x4	82202	4
M42x3	82206	4
M42x4.5	82203	4
M45x4.5	82204	2
M48x3	82209	2
M52x3	82210	2
M52x5	82215	2
M54x3	82211	2
M56x4	82208	2
M64x3	82213	2
M64x4	82212	2

## REPLACEMENT PARTS

Insert Part Number	Tool Part Number	Tap Part Number	Drill Part Number	Drill Size
83191	87039	86191	81090	1 <sup>1</sup> / <sub>8</sub>
83192	87040	86192	81092	1 <sup>13</sup> / <sub>64</sub>
83193	87040	86193	81092	1 <sup>13</sup> / <sub>64</sub>
83194	87039	86194	81094	1 <sup>7</sup> / <sub>32</sub>
83195	87041	86195	81095	1 <sup>21</sup> / <sub>64</sub>
83196	87041	86196	81096	1 <sup>11</sup> / <sub>32</sub>
83197	87043	86197	81097	1 <sup>23</sup> / <sub>64</sub>
83198	87043	86198	81098	1 <sup>7</sup> / <sub>16</sub>
83199	87045	86199	81098	1 <sup>7</sup> / <sub>16</sub>
83200	87043	86200	81099	1 <sup>29</sup> / <sub>64</sub>
83201	87042	86201	81060	1 <sup>15</sup> / <sub>32</sub>
83202	87044	86202	N/A	1 <sup>37</sup> / <sub>64</sub>
83206	87046	86206	81061	1 <sup>11</sup> / <sub>16</sub>
83203	87046	86203	81061	1 <sup>11</sup> / <sub>16</sub>
83204	87047	86204	81062	1 <sup>13</sup> / <sub>16</sub>
83209	87048	86209	81062	1 <sup>15</sup> / <sub>16</sub>
83210	87309	86210	81210	2 <sup>3</sup> / <sub>32</sub>
83215	87309	86215	81215	2 <sup>3</sup> / <sub>32</sub>
83211	87309	86211	81211	2 <sup>5</sup> / <sub>32</sub>
83208	87310	86208	81208	2 <sup>1</sup> / <sub>4</sub>
83213	87312	86213	81213	2 <sup>9</sup> / <sub>16</sub>
83212	87312	86212	81212	2 <sup>9</sup> / <sub>16</sub>

# Giant "8" Pitch



Thread Size	Kit Number	Insert Quantity
1 <sup>1</sup> / <sub>8</sub> -8	82301	4
1 <sup>1</sup> / <sub>4</sub> -8	82302	4
1 <sup>3</sup> / <sub>8</sub> -8	82303	4
1 <sup>1</sup> / <sub>2</sub> -8	82304	2
1 <sup>5</sup> / <sub>8</sub> -8	82305	2
1 <sup>3</sup> / <sub>4</sub> -8	82306	2
1 <sup>7</sup> / <sub>8</sub> -8	82307	2
2-8	82308	2
2 <sup>1</sup> / <sub>8</sub> -8	82309	2
2 <sup>1</sup> / <sub>4</sub> -8	82310	2
2 <sup>3</sup> / <sub>8</sub> -8	82311	2
2 <sup>1</sup> / <sub>2</sub> -8	82312	2
2 <sup>5</sup> / <sub>8</sub> -8	82313	2
2 <sup>3</sup> / <sub>4</sub> -8	82314	2
2 <sup>7</sup> / <sub>8</sub> -8	82315	2
3-8	82316	1
3 <sup>1</sup> / <sub>8</sub> -8	82317	1
3 <sup>1</sup> / <sub>4</sub> -8	82318	1
3 <sup>3</sup> / <sub>8</sub> -8	82319	1
3 <sup>1</sup> / <sub>2</sub> -8	82320	1

Insert Part Number	Tool Part Number	Tap Part Number	Drill Part Number	Drill Size
83301	87301	86301	81101	1 <sup>9</sup> / <sub>64</sub>
83302	87302	86302	81086	1 <sup>1</sup> / <sub>4</sub>
83303	87303	86303	81103	1 <sup>3</sup> / <sub>8</sub>
83304	87304	86304	81104	1 <sup>1</sup> / <sub>2</sub>
83305	87305	86305	NA	1 <sup>5</sup> / <sub>8</sub>
83306	87306	86306	NA	1 <sup>3</sup> / <sub>4</sub>
83307	87307	86307	NA	1 <sup>7</sup> / <sub>8</sub>
83308	87308	86308	NA	2
83309	87309	86309	NA	2 <sup>1</sup> / <sub>8</sub>
83310	87310	86310	NA	2 <sup>1</sup> / <sub>4</sub>
83311	87311	86311	NA	2 <sup>3</sup> / <sub>8</sub>
83312	87312	86312	NA	2 <sup>1</sup> / <sub>2</sub>
83313	87313	86313	NA	2 <sup>5</sup> / <sub>8</sub>
83314	87314	86314	NA	2 <sup>3</sup> / <sub>4</sub>
83315	87315	86315	NA	2 <sup>7</sup> / <sub>8</sub>
83316	87316	86316	NA	3
83317	87317	86317	NA	3 <sup>1</sup> / <sub>8</sub>
83318	87318	86318	NA	3 <sup>1</sup> / <sub>4</sub>
83319	87319	86319	NA	3 <sup>3</sup> / <sub>8</sub>
83320	87320	86320	NA	3 <sup>1</sup> / <sub>2</sub>



### UNC KITS - LEFT

Thread Size	Kit Number	Insert Quantity
1/4-20	82116LH	8
5/16-18	82118LH	8
3/8-16	82120LH	8
7/16-14	82122LH	6
1/2-13	82124LH	6
5/8-11	82129LH	4
3/4-10	82131LH	4
7/8-9	82133LH	4
1-8	82135LH	4

### UNF KITS - LEFT

Thread Size	Kit Number	Insert Quantity
1/4-28	82117LH	8
5/16-24	82119LH	8
3/8-24	82121LH	8
7/16-20	82123LH	6
1/2-20	82126LH	6
5/8-18	82130LH	4
3/4-16	82132LH	4
7/8-14	82134LH	4
1-14	82137LH	4

### METRIC KITS - LEFT

Thread Size	Kit Number	Insert Quantity
M6x1	82157LH	10
M8x1	82159LH	10
M8x1.25	82160LH	10
M10x1.25	82164LH	8
M10x1.5	82165LH	8
M12x1.25	82169LH	8
M12x1.75	82171LH	8
M14x1.5	82172LH	8
M14x2	82173LH	8
M16x1.5	82174LH	6
M16x2	82175LH	6
M18x1.5	82176LH	6
M18x2.5	82178LH	6
M20x1.5	82179LH	4
M20x2.5	82181LH	4
M22x1.5	82182LH	4
M24x2	82186LH	2
M24x3	82187LH	2

### REPLACEMENT PARTS

Insert Part Number	Tool Part Number	Tap Part Number	Drill Part Number	Drill Size
83116LH	87116LH	86116LH	81016	17/64
83118LH	87118LH	86118LH	81018	21/64
83120LH	87120LH	86120LH	81020	25/64
83122LH	87122LH	86122LH	81022	29/64
83124LH	87124LH	86124LH	81024	17/32
83129LH	87129LH	86129LH	81080	21/32
83131LH	87131LH	86131LH	81032	25/32
83133LH	87133LH	86133LH	81033	29/32
83135LH	87135LH	86135LH	81035	11/32

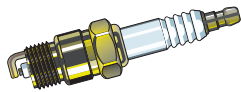
### REPLACEMENT PARTS

Insert Part Number	Tool Part Number	Tap Part Number	Drill Part Number	Drill Size
83117LH	87117LH	86117LH	81016	17/64
83119LH	87119LH	86119LH	81018	21/64
83121LH	87121LH	86121LH	81020	25/64
83123LH	87123LH	86123LH	81022	29/64
83126LH	87126LH	86126LH	81021	33/64
83130LH	87130LH	86130LH	81025	41/64
83132LH	87132LH	86132LH	81027	49/64
83134LH	87134LH	86134LH	81034	57/64
83137LH	87137LH	86137LH	81036	11/64

### REPLACEMENT PARTS

Insert Part Number	Tool Part Number	Tap Part Number	Drill Part Number	Drill Size
83157LH	87116LH	86157LH	81064	1/4
83159LH	87119LH	86159LH	81018	21/64
83160LH	87119LH	86160LH	81018	21/64
83164LH	87121LH	86164LH	81072	13/32
83165LH	87121LH	86165LH	81072	13/32
83169LH	87124LH	86169LH	81076	31/64
83171LH	87124LH	86171LH	81076	31/64
83172LH	87127LH	86172LH	81077	9/16
83173LH	87127LH	86173LH	81023	37/64
83174LH	87131LH	86174LH	81080	21/32
83175LH	87129LH	86175LH	81080	21/32
83176LH	87132LH	86176LH	81081	23/32
83178LH	87131LH	86178LH	81082	47/64
83179LH	87133LH	86179LH	81085	13/16
83181LH	87132LH	86181LH	81085	13/16
83182LH	87135LH	86182LH	81034	57/64
83186LH	87135LH	86186LH	81093	31/32
83187LH	87135LH	86187LH	81093	31/32

# Spark Plug



## INSERT KITS

Thread Size	Kit Number	Insert Quantity	Insert Length
10x1	88001	6	1/2
12x1.25	88003	6	1/2
		6	3/4
14x1.25	88006	6	3/8
		NOT INCLUDED	7/16
		6	1/2
18x1.5	88011	6	3/4
		6	1/2
7/8-18	88013	6	1/2
		6	5/8

## REPLACEMENT PARTS

Insert Package Number	Tool Part Number	Tap Part Number	Drill Part Number	Drill Size
88032	87021	88020	81072	13/32
88034	87024	88021	81076	31/64
88036				
88046	87027	88022	81077	9/16
88047				
88048				
88050				
88051	87032	88023	81081	23/32
88056	87033	88024	81034	57/64
88058				

# N.P.T. Pipe Thread



## INSERT KITS

Thread Size	Kit Number	Insert Quantity
1/8-27	88210	8
1/4-18	88212	8
3/8-18	88214	8
1/2-14	88216	6
3/4-14	88218	6

## REPLACEMENT PARTS

Insert Package Number	Tool Part Number	Tap Part Number	Drill Part Number	Drill Size
88230	87022	88220	81049	3/8
88232	87027	88222	81021	33/64
88234	87029	88224	81080	21/32
88236	87031	88226	81085	13/16
88238	87035	88228	81036	11/64

# British Insert Kits



## BSW

Thread Size	Kit Number	Insert Quantity
1/8-40	82710	12
3/16-24	82712	12
1/4-20	82716	12
5/16-18	82718	10
3/8-16	82720	10
7/16-14	82722	6
1/2-12	82724	6
5/8-11	82729	6
3/4-10	82731	4
7/8-9	82733	4
1-8	82735	4

## BSF

Thread Size	Kit Number	Insert Quantity
1/4-26	82617	12
5/16-22	82619	10
3/8-20	82621	10
7/16-18	82623	6
1/2-16	82626	6
5/8-14	82630	6
3/4-12	82632	4
7/8-11	82634	4
1-10	82636	4

## BSP PIPE

Thread Size	Kit Number	Insert Quantity
1/8-28	88310	12
1/4-19	88311	12
3/8-19	88312	10
1/2-14	88313	6
5/8-14	88314	6
3/4-14	88315	4
7/8-14	88316	4
1-11	88317	4



Call For Replacement Parts

## Also Available:

ROCK SOLID



E-Z FIX



WOOD & PLASTICS

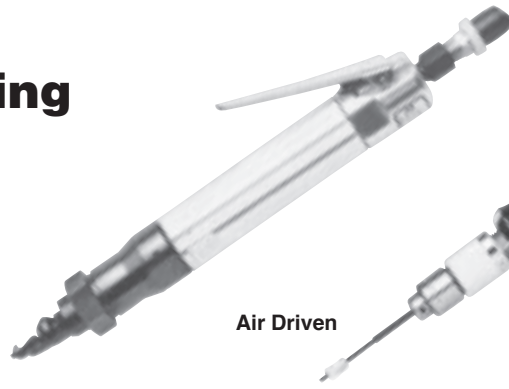
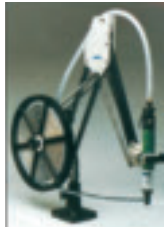


Call For Pricing



Call For Pricing

# Strip Feed Inserts & Tooling



Air Driven



Electrically Driven



Combo Tool



Prewinder



Extractor



STI Taps



STI Gages

## ? Does Your Maintenance Dept. Have All The Tools For...

# BREAKDOWNS



### Stock the TOTAL KITS For Thread Repair

**16 to 20 sets/cabinet**



**EACH SET CONTAINS:  
1 HSS STI TAP  
1 INSTALL TOOL  
1 TUBE OF INSERTS**

**#87920** 1/4 - 20 to 1/2 - 13 Coarse  
1/4 - 28 to 1/2 - 20 Fine  
M5 to M12 Coarse  
M8 to M12 Fine

Combination  
American/Metric  
20 Sets

**Note: Drills may be added on request**

**#87923** 1/4 - 20 to 7/8 - 9  
1/4 - 28 to 7/8 - 14

All American  
16 Sets

**Cabinet Locks Are Available See Page 3**

**#87927** M5 to M18 Coarse  
M8 to M18 Fine

All Metric  
16 Sets