



HeliCoil®

Thread technology for high-strength fastenings
Simple – fast – long-lasting

 **Armstrong
Precision
Components Ltd.**

A **BÖLLHOFF** Group Company



TECHNICAL DATA & TOOLING

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HELICOIL® thread technology

The system

Thread inserts create high-strength fastenings in low-strength metal materials and have been well established in the market for over 50 years. These stainless steel thread inserts are formed into flexible spirals of proven quality wire with a rhombic profile. After installation, the tang can be broken off at the notch (predetermined breaking point) to allow through hole threads.



The versions

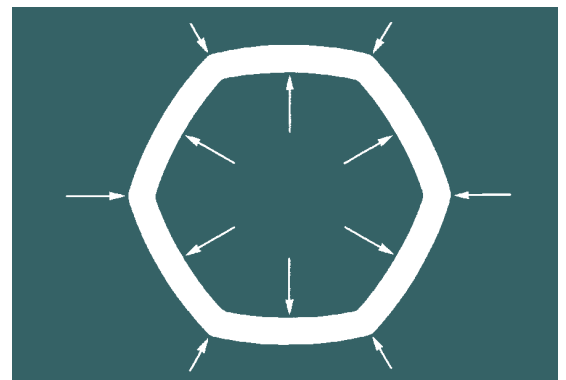
HELICOIL® thread inserts are available in two versions: HELICOIL® free running and HELICOIL® screwlock. Both versions have an optimal design. Like a screw, the thread insert is simply screwed in with an installation tool. HELICOIL® inserts are manufactured from high tensile stainless steel wire that has been formed into a diamond section to exacting dimensional standards.

■ HELICOIL® free running

Every thread of the precision-formed, rhombic profile is free running. The result is an internal thread true to gauge that can be used on both sides. The dimensional stability of the ISO thread complies with DIN 13 6H and for special requirements with 4H.

■ HELICOIL® screwlock

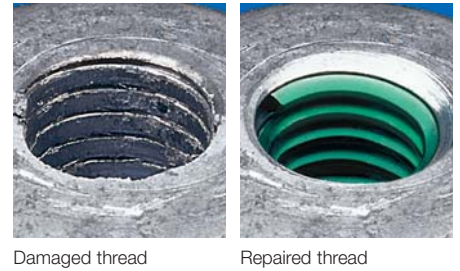
The HELICOIL® screwlock bears the same benefits regarding threads as the HELICOIL® free running insert. Additionally an integrated screw clamping area serves as a screw-lock. Locking of the screw is achieved by one or several polygonal-shaped threads that clamp the flanks of the bolt. The result is a flexible and resilient frictional locking. The achieved clamping torques are comparable with DIN 267 Part 15, ISO 2320 or can also be adapted to your individual application.



HELICOIL® thread technology

The applications

HELICOIL® inserts ensure high-strength threads transferring forces from flank to flank into the holding thread. This is a system of high reliability for which German and international industrial property rights have been filed and which is available worldwide. HELICOIL® provides thread inserts produced according to consistent material and quality specifications. This technology is the basis of national, aeronautical and military standards. Many leading large-scale users base their manufacturing standards on this system.



■ Structural component

Wherever low-strength materials (**e.g. aluminium, magnesium alloys and fibre-reinforced plastics**) are used, HELICOIL® is indispensable for thread reinforcement. This applies particularly to the aerospace industry, mechanical and plant engineering, the automotive industry and electrical and medical engineering. Thread reinforcement prevents wear of the threaded hole – even after frequent use.

HELICOIL® allows **miniaturisation** and **lightweight** construction in the development of serial parts. The required strength is provided by thread reinforcement with HELICOIL®.

■ Rejects recovery and thread repair

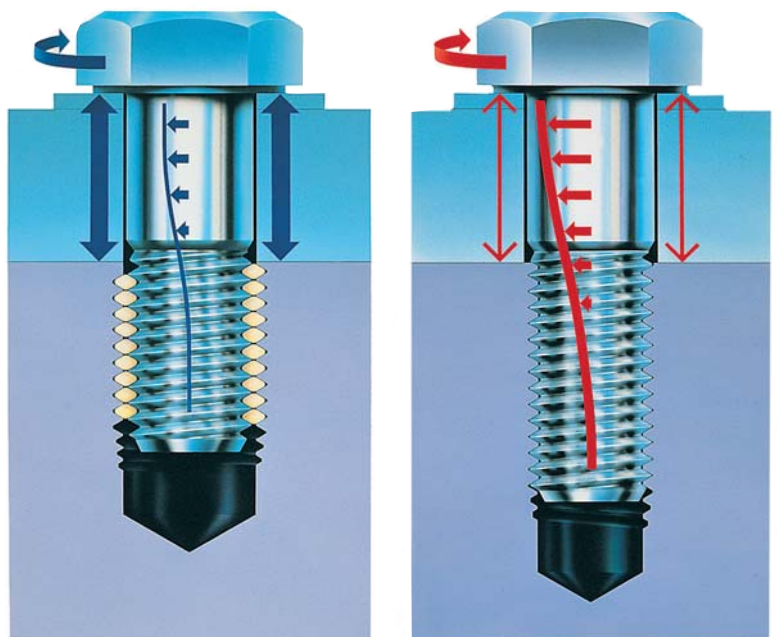
HELICOIL® thread inserts are internationally approved for the economical and permanent repair of damaged and worn out threads.

Apart from repair of valuable individual components, the possibility to return and salvage large volume components which have been rejected due to faults in the thread production is of major importance.

The advantages

■ Wear resistance

HELICOIL® thread inserts are made of austenitic chrome-nickel steel (minimum tensile strength of 1,400 N/mm²). The rolled thread has a high surface quality. This ensures a high-strength, wear-resistant thread with reduced friction torque. This also leads to an improved utilisation of the yield point of high-strength bolts. Torsion stress is considerably reduced compared to tapped threads.

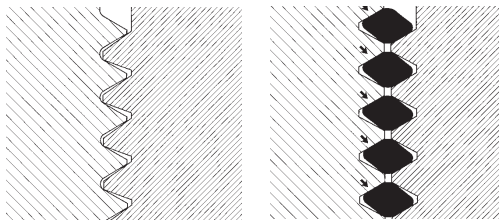


HELICOIL® thread technology

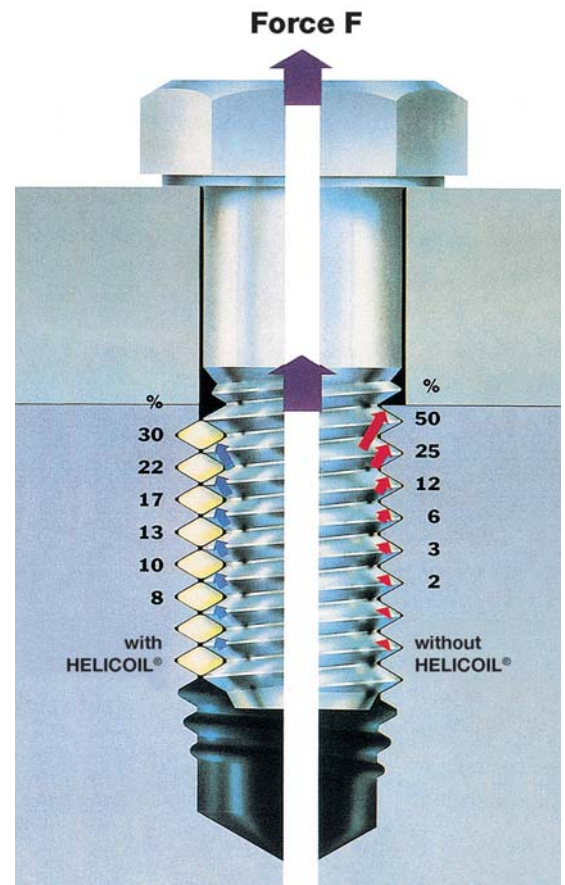
The advantages

Strength

The flexible characteristics of the HELICOIL® thread insert ensure even load and stress distribution and consequent optimum flank contact. Deficiencies in pitch and angle are balanced out over the entire length of the thread insert. With this, an optimum force transmission from bolt to threaded hole is achieved. The quality of screwed connection is considerably increased — for static as well as for dynamic operating loads.



The improved distribution of preload-force increases the fatigue strength of dynamically loaded bolts. This is why HELICOIL® inserts are also used for high-strength holding materials, e.g. steel or cast iron alloys.



Resistance to corrosion and thermal effects

The basic material of HELICOIL® ensures that bolts do not seize under normal environmental influences. For thermally highly stressed bolted connections, HELICOIL® thread inserts of nickel alloy based materials with and without coating are available. Elasticity and spring force are constant even under high temperatures. If materials which are susceptible to corrosion, such as magnesium are used, HELICOIL® utilises a special hard-coated version of high strength aluminium. Contact corrosion can therefore be ruled out.



Insert Material & Surface Treatment

INSERT MATERIAL



For equivalent specifications see p21

18-8 Stainless Steel

Standard, general purpose material.
For use as original equipment or thread repair.
Stocked in most sizes.



Nimonic 90

High temperature applications up to 650°C Free Running or 500°C Screw Lock



Inconel X750

High temperature applications up to 550°C Free Running or 500°C Screw Lock



Zeron 100

Super duplex stainless steel has superior corrosion and stress cracking resistance.
Essential requirements in the petrochem, fertiliser & mining industries



Phosphor Bronze

Salt water applications.
Non-magnetic
Excellent electrical conductivity



Other Material

Continuous improvement programmes are researching new materials in the development of Helicoil® for special applications. In particular, Helicoil® Screw Lock in high temperature locations and special material for the Food and Pharmaceutical industries where stainless steel screws are used.

SURFACE TREATMENT

Cadmium Plating

Specifications
DEF STAN 03-19
QQ-P-416
Previously **DTD904**

Provides high corrosion resistance and lubrication to prevent galling.
Suitable up to 250°C

Colour: Iridescent yellow

Silver Plating

Specifications
DEF STAN 03-9
BS2816:1989
Previously **DTD939**

To reduce galling of threads at high temperatures.

Colour: Silver white

Zinc Plating

Specifications
DEF STAN 03-20
Previously **DTD903**

Provides corrosion resistance as an alternative to Cadmium.

Colour: Iridescent yellow

Cadmium Plate & Olive Drab

Specifications
QQ-P-416

As specified on US military specs such as NASM21209.

Colour: Olive Drab

Dry Film Lubricated

Specifications
MIL-L-8937

Additional lubrication in high friction applications.

Recommended for use with Screw Lock inserts.

Colour: Grey

ArmaGuard

Prevents galvanic corrosion between insert and parent material.

Eliminates the need for zinc primers.

Improves installation productivity.

Colour: Glossy Black

Examples of application for **HELICOIL®** thread inserts

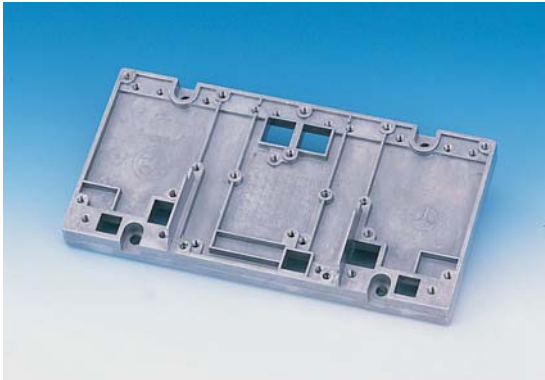
Automotive, aerospace industry



Steering gear casings
of aluminium

- Gear box housing of magnesium alloys
- Thread reinforcement for oil drain plugs
- Exhaust systems
- Satellite technology
- Aeroplane engines
- Repeated Assembly
- Maintenance and repair

Electronics, sheet metal, plastic



Mounting plate for electrical
components of die-cast
aluminium

- Lamps
- Electrical appliances
- Drill hammer

Machines and plant



Mechanical engineering
console Material: G-AlSi9 Mg

- Printing presses
- High-temperature areas
- Translation threads (adjusting screws)
- Repeated screwings
- Maintenance and repair

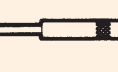
Further examples of application



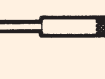
Oil drain hole of a car oil
sump of aluminium. Thread
reinforcement with **HELICOIL®**

UNC

Unified Tooling

THREAD SIZE	HELICOIL TAPS					HELICOIL GAUGES		INSERTING TOOL		TANG BREAK OFF		AUTO TANG BREAK OFF		EXTRACTION TOOL
	Rough	Finish	Bottom	SP Flute	SP Point									
														
	Class 2B		Class 3B		FR	SL	FR	SL	FR	SL				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2-56	02CRU	02CPB	02CBB	02CS	02CSB	1440-02	1688-02	ST551		TB0-50		ATB-50		
3-48	03CRU	03CPB	03CBB	03CS	03CSB	1440-03	1688-03	528-03		TB0-51		ATB-50		
4-40	04CRU	04CPB	04CBB	04CS	04CSB	1440-04	1688-04	ST1104	ST1104	TB0-51	TB0-50	ATB-51		1227-06
5-40	05CRU	05CPB	05CBB	05CS	05CSB	1440-05	1688-05	528-05	3551-05	TB0-52	TB0-52	ATB-51		1227-06
6-32	06CRU	06CPB	06CBB	06CS	06CSB	1440-06	1688-06	ST1103	ST1103	TB0-52	TB0-52	ATB-52		1227-06
8-32	2CRU	2CPB	2CBB	2CS	2CSB	1440-2	1688-2	ST980	ST980	TB0-54	TB0-53	ATB-53		1227-06
10-24	3CRU	3CPB	3CBB	3CS	3CSB	1440-3	1688-3	ST1101	ST1101	TB0-70	TB0-54	ATB-54		1227-6
12-24	1CRU	1CPB	1CBB	1CS	1CSB	1440-1	1688-1	528-1	3551-1	TB0-55	TB0-55	ATB-54		1227-6
1/4-20	4CRU	4CPB	4CBB	4CS	4CSB	1440-4	1688-4	528-4	3551-4	TB0-56	TB0-71	ATB-55		1227-6
5/16-18	5CRU	5CPB	5CBB	5CS	5CSB	1440-5	1688-5	528-5	3551-5	TB0-57	TB0-57	ATB-57		1227-6
3/8-16	6CRU	6CPB	6CBB	6CS	6CSB	1440-6	1688-6	528-6	3551-6	TB0-60	TB0-59	ATB-59		1227-6
7/16-14	7CRU	7CPB	7CBB	7CS	7CSB	1440-7	1688-7	528-7	3551-7	TB0-65	TB0-63	ATB-63		1227-16
1/2-13	8CRU	8CPB	8CBB	8CS	8CSB	1440-8	1688-8	528-8	3551-8	TB0-68	TB0-67	ATB-67		1227-16
9/16-12	9CRU	9CPB	9CBB	9CS	9CSB	1440-9	1688-9	528-9	528-9	1195-9	1195-9			1227-16
5/8-11	10CRU	10CPB	10CBB	10CS	10CSB	1440-10	1688-10	528-10	528-10	1195-10	1195-10			1227-16
3/4-10	12CRU	12CPB	12CBB	12CS	12CSB	1440-12	1688-12	528-12	528-12	1195-12	1195-12			1227-16
7/8-9	14CRU	14CPB	14CBB	14CS	14CSB	1440-14	1688-14	CIH-14		1195-14	USE PLIERS			1227-16
1-8	16CRU	16CPB	16CBB	16CS	16CSB	1440-16	1688-16	CIH-16		1195-16	USE PLIERS			1227-16
1-1/8-7	18CRU	18CPB	18CBB	18CS	18CSB	1440-18	1688-18	CIH-18		USE PLIERS	USE PLIERS			1227-24
1-1/4-7	20CRU	20CPB	20CBB	20CS	20CSB	1440-20	1688-20	CIH-20		USE PLIERS	USE PLIERS			1227-24
1-3/8-6	22CRU	22CPB	22CBB	22CS	22CSB	1440-22	1688-22	CIH-22		USE PLIERS	USE PLIERS			1227-24
1-1/2-6	24CRU	24CPB	24CBB	24CS	24CSB	1440-24	1688-24	CIH-24		USE PLIERS	USE PLIERS			1227-24

UNF

THREAD SIZE	HELICOIL TAPS					HELICOIL GAUGES		INSERTING TOOL		TANG BREAK OFF		AUTO TANG BREAK OFF		EXTRACTION TOOL
	Rough	Finish	Bottom	SP Flute	SP Point									
														
	Class 2B		Class 3B		FR	SL	FR	SL	FR	SL				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2-64	02FRU	02FPB	02FBB	02FS	02FSB	1441-02	1694-02	ST1307	ST1307	TB0-50	TB0-50	ATB-50		1227-06
3-56	03FRU	03FPB	03FBB	03FS	03FSB	1441-03	1694-03	ST1312	ST1312	TB0-51	TB0-51	ATB-50		1227-06
4-48	04FRU	04FPB	04FBB	04FS	04FSB	1441-04	1694-04	9863-04	9863-04	TB0-52	TB0-52	ATB-51		1227-06
5-44	05FRU	05FPB	05FBB	05FS	05FSB	1441-05	1694-05	9863-05	9863-05	TB0-52	TB0-52	ATB-51		1227-06
6-40	06FRU	06FPB	06FBB	06FS	06FSB	1441-06	1694-06	9863-06	9863-06	TB0-53	TB0-52	ATB-52		1227-06
8-36	2FRU	2FPB	2FBB	2FS	2FSB	1441-2	1694-2	9863-2	9863-2	TB0-54	TB0-53	ATB-53		1227-06
10-32	3FRU	3FPB	3FBB	3FS	3FSB	1441-3	1694-3	9863-3	9863-3	TB0-55	TB0-54	ATB-54		1227-6
1/4-28	4FRU	4FPB	4FBB	4FS	4FSB	1441-4	1694-4	9863-4	9863-4	TB0-56	TB0-71	ATB-55		1227-6
5/16-24	5FRU	5FPB	5FBB	5FS	5FSB	1441-5	1694-5	9863-5	9863-5	TB0-58	TB0-57	ATB-58		1227-6
3/8-24	6FRU	6FPB	6FBB	6FS	6FSB	1441-6	1694-6	9863-6	9863-6	TB0-60	TB0-60	ATB-60		1227-6
7/16-20	7FRU	7FPB	7FBB	7FS	7FSB	1441-7	1694-7	9863-7	9863-7	TB0-69	TB0-64	ATB-64		1227-16
1/2-20	8FRU	8FPB	8FBB	8FS	8FSB	1441-8	1694-8	9863-8	9863-8	TB0-66	TB0-66	ATB-66		1227-16
9/16-18	9FRU	9FPB	9FBB	9FS	9FSB	1441-9	1694-9	535-9	535-9	1196-9	1196-9			1227-16
5/8-18	10FRU	10FPB	10FBB	10FS	10FSB	1441-10	1694-10	535-10	535-10	1196-10	1196-10			1227-16
3/4-16	12FRU	12FPB	12FBB	12FS	12FSB	1441-12	1694-12	535-12	535-12	1196-12	1196-12			1227-16
7/8-14	14FRU	14FPB	14FBB	14FS	14FSB	1441-14	1694-14	535-14	535-14	1196-14	USE PLIERS			1227-16
1-12	96FRU	96FPB	96FBB	96FSB	96FSB	1441-161	1694-161	535-161	535-161	1196-161	USE PLIERS			1227-16
1-1/8-12	18FRU	18FPB	18FBB	18FBB	18FSB	1441-18	1694-18	535-18	535-18	USE PLIERS	USE PLIERS			1227-24
1-1/4-12	20FRU	20FPB	20FBB	20FBB	20FSB	1441-20	1694-20	535-20	535-20	USE PLIERS	USE PLIERS			1227-24
1-3/8-12	22FRU	22FPB	22FBB	22FBB	22FSB	1441-22	1694-22	535-22	535-22	USE PLIERS	USE PLIERS			1227-24
1-1/2-12	24FRU	24FPB	24FBB	24FBB	24FSB	1441-24	1694-24	535-24	535-24	USE PLIERS	USE PLIERS			1227-24

For Drilling & Tapping Data See Page 15

BSW

Insert Data

THREAD SIZE	FR PART NUMBER	SL PART NUMBER	INSERT LENGTH					FREE O/DIA.		NO. FREE COILS					PREVAILING TORQUE	
			1D	1.5D	2D	2.5D	3D	MIN	MAX	1D	1.5D	2D	2.5D	3D	MAX	MIN
1	2	3	4	5	6	7	8			11	12	13	14	15	16	17
1/8-40	1255-2	2455-2	0.125	0.188	0.250	0.313	0.375	0.157	0.172	3.250	5.500	7.75	10.125	12.375	-	-
3/16-24	1255-3	2455-3	0.188	0.281	0.375	0.469	0.563	0.240	0.255	2.937	5.062	7.187	9.312	11.437	-	-
1/4-20	1255-4	2455-4	0.250	0.375	0.500	0.625	0.750	0.314	0.330	3.437	5.812	8.187	10.625	13.000	-	-
5/16-18	1255-5	2455-5	0.313	0.469	0.625	0.781	0.938	0.385	0.400	4.062	6.75	9.437	12.062	14.75	-	-
3/8-16	1255-6	2455-6	0.375	0.563	0.750	0.938	1.125	0.457	0.472	4.375	7.187	10.062	12.875	15.75	-	-
7/16-14	1255-7	2455-7	0.438	0.656	0.875	1.094	1.313	0.532	0.552	4.375	7.375	10.250	13.125	16.063	-	-
1/2-12	1255-8	2455-8	0.500	0.750	1.000	1.250	1.500	0.610	0.630	4.312	7.187	10.000	13.000	16.687	-	-
9/16-12	1255-9	2455-9	0.563	0.844	1.125	1.406	1.688	0.675	0.695	5.062	8.25	11.437	14.687	17.875	-	-
5/8-11	1255-10	2455-10	0.625	0.938	1.250	1.563	1.875	0.747	0.767	5.25	8.562	11.875	15.125	18.437	-	-
11/16-11	1255-11	2455-11	0.688	1.031	1.375	1.719	2.063	0.811	0.831	5.938	9.563	13.188	16.750	20.375	-	-
3/4-10	1255-12	2455-12	0.750	1.125	1.500	1.875	2.250	0.886	0.906	5.875	9.500	13.062	16.625	20.250	-	-
7/8-9	1255-14	2455-14	0.875	1.313	1.750	2.188	2.625	1.027	1.052	6.25	10.000	13.750	17.562	21.312	-	-
1-8	1255-16	2455-16	1.000	1.500	2.000	2.500	3.000	1.172	1.197	6.375	10.187	14.000	17.812	21.75	-	-
1-1/8-7	1255-18	2455-18	1.125	1.688	2.250	2.813		1.321	1.356	6.25	10.000	13.750	17.500		-	-
1-1/4-7	1255-20	2455-20	1.250	1.875	2.500	3.125		1.449	1.484	7.125	11.250	15.375	19.625		-	-
1-1/2-6	1255-24	2455-24	1.500	2.250	3.000	3.750		1.734	1.774	7.250	11.312	15.875	20.187		-	-

BSF

THREAD SIZE	FR PART NUMBER	SL PART NUMBER	INSERT LENGTH					FREE O/DIA.		NO. FREE COILS					PREVAILING TORQUE	
			1D	1.5D	2D	2.5D	3D	MIN	MAX	1D	1.5D	2D	2.5D	3D	MAX	MIN
1	2	3	4	5	6	7	8			11	12	13	14	15	16	17
3/16-32	1261-3	2461-3	0.188	0.281	0.375	0.469	0.563	0.238	0.253	4.000	6.687	9.312	12.000	14.688	-	-
7/32-28	1261-35	2461-35	0.219	0.328	0.438	0.547	0.656	0.277	0.292	4.188	6.875	9.625	12.375	15.063	-	-
1/4-26	1261-4	2461-4	0.250	0.375	0.500	0.625	0.750	0.314	0.329	4.500	7.437	10.312	13.250	16.125	-	-
9/32-26	1261-45	2461-45	0.281	0.422	0.563	0.703	0.844	0.348	0.363	5.250	8.562	11.813	15.125	18.375	-	-
5/16-22	1261-5	2461-5	0.313	0.469	0.625	0.781	0.938	0.389	0.404	4.875	8.000	11.062	14.187	17.312	-	-
3/8-20	1261-6	2461-6	0.375	0.563	0.750	0.938	1.125	0.462	0.477	5.500	8.875	12.25	15.625	19.062	-	-
7/16-18	1261-7	2461-7	0.438	0.656	0.875	1.094	1.313	0.536	0.555	5.812	9.375	12.937	16.500	20.062	-	-
1/2-16	1261-8	2461-8	0.500	0.750	1.000	1.250	1.500	0.611	0.631	5.937	9.562	13.187	16.812	20.437	-	-
9/16-16	1261-9	2461-9	0.563	0.844	1.056	1.406	1.688	0.679	0.699	7.625	10.937	15.000	19.125	23.188	-	-
5/8-14	1261-10	2461-10	0.625	0.938	1.250	1.563	1.875	0.756	0.776	6.625	10.625	14.625	18.562	22.562	-	-
11/16-14	1261-11	2461-11	0.688	1.031	1.375	1.719	2.063	0.824	0.844	7.438	11.812	16.188	20.625	25.000	-	-
3/4-12	1261-12	2461-12	0.750	1.125	1.500	1.875	2.250	0.905	0.925	6.875	11.000	15.062	19.187	23.25	-	-
13/16-12	1261-13	2461-13	0.813	1.219	1.625	2.031	2.438	0.972	0.992	7.563	12.000	16.500	20.938	25.375	-	-
7/8-11	1261-14	2461-14	0.875	1.313	1.750	2.188	2.625	1.048	1.073	7.437	11.812	16.250	20.625	25.000	-	-
1-10	1261-16	2461-16	1.000	1.500	2.000	2.500		1.194	1.219	7.812	12.375	16.937	21.500		-	-
1-1/8-9	1261-18	2461-18	1.056	1.688	2.071	2.813		1.341	1.366	7.937	12.562	17.187	21.812		-	-
1-1/4-9	1261-20	2461-20	1.250	1.875	2.500	3.125		1.476	1.501	8.937	14.125	19.250	24.437		-	-
1-3/8-8	1261-22	2461-22	1.375	2.063	2.750			1.627	1.657	8.688	13.750	18.625			-	-
1-1/2-8	1261-24	2461-24	1.500	2.250	3.000			1.762	1.792	9.625	15.125	20.625			-	-

INSERT TYPE

1255 BSW FR
2455 BSW SL
1191 BSF FR
2461 BSF SL

HOW TO ORDER

2455-4

MATERIAL

CN

CHOOSE FROM LIST

CN Stainless Steel
N90N Nimonic 90
TN Inconel X750
EN Nitronic 60
BN Phosphor Bronze

FINISH

Z

CHOOSE FROM LIST

BLANK

None
P Cadmium Plate
V Silver Plate
Z Zinc Plate
W Dry Film Lube

LENGTH

See above chart

x .375

ORDER CODE e.g

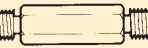
2455-4CNZ x .375
1/4BSW x 1.5D SL ZP

BSW

Tooling

THREAD SIZE	HELICOIL TAPS					HELICOIL GAUGES		INSERTING TOOL		TANG BREAK OFF		AUTO TANG BREAK OFF		EXTRACTION TOOL
	Rough	Finish	Bottom	SP Flute	SP Point									
														
						Medium Class	Close Class	FR	SL	FR	SL	FR	SL	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1/8-40	2WR	2WP	2WB	2WS	2WV	WGM-2		WIP-2	MWIP-2	TBO-52	TBO-52	ATB-52		1227-06
3/16-24	3WR	3WP	3WB	3WS	3WV	WGM-3		WIP-3	MWIP-3	TBO-54	TBO-54	ATB-54		1227-06
1/4-20	4WR	4WP	4WB	4WS	4WV	WGM-4	WGC-4	WIP-4	MWIP-4	TBO-71	TBO-71	ATB-55		1227-6
5/16-18	5WR	5WP	5WB	5WS	5WV	WGM-5	WGC-5	WIP-5	MWIP-5	TBO-57	TBO-57	ATB-57		1227-6
3/8-16	6WR	6WP	6WB	6WS	6WV	WGM-6	WGC-6	WIP-6	MWIP-6	TBO-59	TBO-59	ATB-59		1227-6
7/16-14	7WR	7WP	7WB	7WS	7WV	WGM-7	WGC-7	WIP-7	MWIP-7	TBO-63	TBO-63	ATB-63		1227-16
1/2-12	8WR	8WP	8WB	8WS	8WV	WGM-8	WGC-8	WIP-8	MWIP-8	TBO-69	TBO-69	ATB-69		1227-16
9/16-12	9WR	9WP	9WB			WGM-9	WGC-9	WIP-9	MWIP-9	WTB-9	WTB-9			1227-16
5/8-11	10WR	10WP	10WB			WGM-10	WGC-10	WIP-10	MWIP-10	WTB-10	WTB-10			1227-16
11/16-11	11WR	11WP	11WB			WGM-11	WCF-11	WIP-11	MWIP-11	WTB-11	WTB-11			1227-16
3/4-10	12WR	12WP	12WB			WGM-12	WGC-12	WIP-12	MWIP-12	WTB-12	WTB-12			1227-16
7/8-9	14WR	14WP	14WB			WGM-14	WGC-14	WIH-14		WTB-14	WTB-14			1227-16
1-8	16WR	16WP	16WB			WGM-16	WGC-16	WIH-16		WTB-16	WTB-16			1227-16
1-1/8-7	18WR	18WP	18WB			WGM-18	WCG-18	WIH-18		USE PLIERS	USE PLIERS			1227-24
1-1/4-7	20WR	20WP	20WB			WGM-20	WGC-20	WIH-20		USE PLIERS	USE PLIERS			1227-24
1-1/2-6	24WR	24WP	24WB			WGM-24	WGC-24	WIH-24		USE PLIERS	USE PLIERS			1227-24

BSF

NOMINAL THREAD SIZE	HELICOIL TAPS					HELICOIL GAUGES		INSERTING TOOL		TANG BREAK OFF		AUTO TANG BREAK OFF		EXTRACTION TOOL
	Rough	Finish	Bottom	SP Flute	SP Point									
														
						Medium Class	Close Class	FR	SL	FR	SL	FR	SL	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3/16-32	3XR	3XP	3XB	3XS	3XV	XGM-3		9864-3	9864-3	TBO-70	TBO-54	ATB-54		1227-6
7/32-28	35XR	35XP	35XB	35XS	35XV	XGM-35		9864-35	9864-35	TBO-55	TBO-55	ATB-54		1227-6
1/4-26	4XR	4XP	4XB	4XS	4XV	XGM-4		9864-4	9864-4	TBO-56	TBO-71	ATB-55		1227-6
9/32-26	45XR	45XP	45XB	45XS	45XV	XGM-45		9864-45	9864-45	XTB-45	TBO-56	ATB-55		1227-6
5/16-22	5XR	5XP	5XB	5XS	5XV	XGM-5	XGC-5	9864-5	9864-5	TBO-58	TBO-57	ATB-58		1227-6
3/8-20	6XR	6XP	6XB	6XS	6XV	XGM-6	XGC-6	9864-6	9864-6	TBO-60	TBO-59	ATB-60		1227-6
7/16-18	7XR	7XP	7XB	7XS	7XV	XGM-7	XGC-7	9864-7	9864-7	TBO-65	TBO-65	ATB-65		1227-16
1/2-16	8XR	8XP	8XB	8XS	8XV	XGM-8	XGC-8	9864-8	9864-8	TBO-68	TBO-68	ATB-68		1227-16
9/16-16	9XR	9XP	9XB	9XS	9XV	XGM-9	XGC-9	XIP-9	XIP-9	XTB-9	XTB-9			1227-16
5/8-14	10XR	10XP	10XB	10XS	10XV	XGM-10	XGC-10	XIP-10	XIP-10	XTB-10	XTB-10			1227-16
11/16-14	11XR	11XP	11XB	11XS	11XV	XGM-11	XGC-11	XIP-11	XIP-11	XTB-11	XTB-11			1227-16
3/4-12	12XR	12XP	12XB	12XS	12XV	XGM-12	XGC-12	XIP-12	XIP-12	XTB-12	XTB-12			1227-16
13/16-12	13XR	13XP	13XB	13XS	13XV	XGM-13	XGC-13	XIP-13	XIP-13	XTB-13	USE PLIERS			1227-16
7/8-11	14XR	14XP	14XB	14XS	14XV	XGM-14	XGC-14	XIP-14	XIP-14	XTB-14	USE PLIERS			1227-16
1-10	16XR	16XP	16XB	16XS	16XV	XGM-16	XGC-16	XIP-16	XIP-16	XTB-16	USE PLIERS			1227-16
1-1/8-9	18XR	18XP	18XB	18XS	18XV	XGM-18	XGC-18	XIP-18	XIP-18	USE PLIERS	USE PLIERS			1227-24
1-1/4-9	20XR	20XP	20XB	20XS	20XV	XGM-20	XGC-20	XIP-20	XIP-20	USE PLIERS	USE PLIERS			1227-24
1-3/8-8	22XR	22XP	22XB	22XS	22XV	XGM-22	XGC-22	XIP-22	XIP-22	USE PLIERS	USE PLIERS			1227-24
1-1/2-8	24XR	24XP	24XB	24XS	24XV	XGM-24	XGC-24	XIP-24	XIP-24	USE PLIERS	USE PLIERS			1227-24

For Drilling & Tapping Data See Page 15

G (BSPF)

Insert Data

THREAD SIZE	FR PART NUMBER	SL PART NUMBER	INSERT LENGTH					FREE O/DIA.		NO. FREE COILS					PREVAILING TORQUE	
			1D	1.5D	2D	2.5D	3D	MIN	MAX	1D	1.5D	2D	2.5D	3D	MAX	MIN
1	2	3	4	5	6	7	8			11	12	13	14	15	16	17
1/8-28	1325-2	-	0.125	0.188	0.250	0.313	0.375	0.454	0.474	1.813	3.438	5.000	6.563	8.125	-	-
1/4-19	1325-4	-	0.250	0.375	0.500	0.625	0.750	0.619	0.639	2.875	5.125	7.313	9.438	11.625	-	-
3/8-19	1325-6	-	0.375	0.563	0.750	0.938	1.125	0.768	0.788	5.188	8.375	11.688	14.875	18.125	-	-
1/2-14	1325-8	-	0.500	0.750	1.000	1.250	1.500	0.972	0.992	5.063	8.250	11.438	14.688	17.875	-	-
5/8-14	1325-10	-	0.625	0.938	1.250	1.563	1.875	1.055	1.075	6.688	10.688	14.688	18.688	22.813	-	-
3/4-14	1325-12	-	0.750	1.125	1.500	1.875		1.205	1.225	8.313	13.125	17.938	22.750		-	-
7/8-14	1325-14	-	0.875	1.313	1.750		2.625	1.365	1.385	9.875	15.500	21.125		32.500	-	-
1-11	1325-16	-	1.000	1.500	2.000			1.517	1.537	8.750	13.813	18.875			-	-
1-1/4-11	1325-20	-	1.250	1.875	2.500		3.750	1.885	1.905	11.313	17.625	23.938		36.688	-	-
1-1/2-11	1325-24	-	1.500	2.250	3.000		4.500	2.136	2.156	13.813	21.438	29.125		44.313	-	-

BA

THREAD SIZE	FR PART NUMBER	SL PART NUMBER	INSERT LENGTH					FREE O/DIA.		NO. FREE COILS					PREVAILING TORQUE	
			1D	1.5D	2D	2.5D	3D	MIN	MAX	1D	1.5D	2D	2.5D	3D	MAX	MIN
1	2	3	4	5	6	7	8			11	12	13	14	15	16	17
0BA	1331-0	2631-0	0.236	0.354	0.472	0.590	0.708	0.294	0.309	4.125	6.813	9.500	12.188	14.875	-	-
1BA	1331-1	2631-1	0.209	0.313	0.418	0.522	0.627	0.261	0.276	4.000	6.625	9.250	11.875	14.500	-	-
2BA	1331-2	2631-2	0.185	0.277	0.370	0.462	0.555	0.232	0.247	3.875	6.438	9.000	11.563	14.125	-	-
3BA	1331-3	2631-3	0.161	0.241	0.322	0.402	0.483	0.203	0.218	3.750	6.188	8.688	11.125	13.625	-	-
4BA	1331-4	2631-4	0.142	0.213	0.284	0.355	0.426	0.179	0.194	3.563	5.938	8.313	10.750	13.125	-	-
5BA	1331-5	2631-5	0.126	0.189	0.252	0.315	0.378	0.159	0.174	3.500	5.875	8.250	10.625	13.000	-	-
6BA	1331-6	2631-6	0.110	0.165	0.220	0.275	0.330	0.140	0.155	3.375	5.625	7.875	10.188	12.438	-	-

INSERT TYPE

1325 G (BSPF) FR
1331 BA FR
2631 BA SL

HOW TO ORDER

1325-4

MATERIAL

CN Stainless Steel
N90N Nimonic 90
TN Inconel X750
EN Nitronic 60
BN Phosphor Bronze

CN
CHOOSE FROM LIST

FINISH

BLANK None
P Cadmium Plate
V Silver Plate
Z Zinc Plate
W Dry Film Lube

N/A
CHOOSE FROM LIST

LENGTH

See above chart

x .375

ORDER CODE e.g

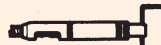
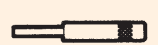
1325-4CN x .375
G1/4(BSPF) x 1.5D FR

G (BSPF)

Tooling

THREAD SIZE	HELICOIL TAPS					HELICOIL GAUGES		INSERTING TOOL		TANG BREAK OFF		AUTO TANG BREAK OFF		EXTRACT TOOL
	Rough	Finish	Bottom	SP Flute	SP Point									
														
	1	2	3	4	5	6	Medium Class	Close Class	FR	SL	FR	SL	FR	SL
1/8-28	2PR	2PP	2PB	2PS	2PV	PGM-2	-	PIP-2	-	USE PLIERS	USE PLIERS	-	-	1227-6
1/4-19	4PR	4PP	4PB	4PS	4PV	PGM-4	-	PIP-4	-	USE PLIERS	USE PLIERS	-	-	1227-16
3/8-19	6PR	6PP	6PB	6PS	6PV	PGM-6	-	PIP-6	-	USE PLIERS	USE PLIERS	-	-	1227-16
1/2-14	8PR	8PP	8PB	8PS	8PV	PGM-8	PGC-8	PIP-8	-	USE PLIERS	USE PLIERS	-	-	1227-16
5/8-14	10PR	10PP	10PB	10PS	10PV	PGM-10	PGC-10	PIP-10	-	USE PLIERS	USE PLIERS	-	-	1227-16
3/4-14	12PR	12PP	12PB	12PS	12PV	PGM-12	PGC-12	PIP-12	-	USE PLIERS	USE PLIERS	-	-	1227-24
7/8-14	14PR	14PP	14PB	14PS	14PV	PGM-14	PGC-14	PIP-14	-	USE PLIERS	USE PLIERS	-	-	1227-24
1-11	16PR	16PP	16PB	16PS	16PV	PGM-16	PGC-16	PIP-16	-	USE PLIERS	USE PLIERS	-	-	1227-24
1-1/4-11	20PR	20PP	20PB	20PS	20PV	PGM-20	PGC-20	PIP-20	-	USE PLIERS	USE PLIERS	-	-	1227-24
1-1/2-11	24PR	24PP	24PB	24PS	24PV	PGM-24	PGC-24	PIP-24	-	USE PLIERS	USE PLIERS	-	-	

BA

THREAD SIZE	HELICOIL TAPS					HELICOIL GAUGES		INSERTING TOOL		TANG BREAK OFF		AUTO TANG BREAK OFF		EXTRACT TOOL
	Rough	Finish	Bottom	SP Flute	SP Point									
														
	Std. Nut Fit		FR	SL	FR	SL	FR	SL						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0BA	0BAR	0BAP	0BAB	0BAS	0BV	0BAG	N/A	BAIP-0	MBAIP-0	TBO-71	TBO-71	-	-	1227-6
1BA	1BAR	1BAP	1BAB	1BAS	1BV	1BAG	N/A	BAIP-1	MBAIP-1	TBO-55	-	-	-	1227-6
2BA	2BAR	2BAP	2BAB	2BAS	2BV	2BAG	N/A	BAIP-2	MBAIP-2	TBO-70	TBO-54	ATB-54	-	1227-6
3BA	3BAR	3BAP	3BAB	3BAS	3BV	3BAG	N/A	BAIP-3	MBAIP-3	TBO-54	-	-	-	1227-06
4BA	4BAR	4BAP	4BAB	4BAS	4BV	4BAG	N/A	BAIP-4	MBAIP-4	TBO-53	TBO-53	ATB-53	-	1227-06
5BA	5BAR	5BAP	5BAB	5BAS	5BV	5BAG	N/A	BAIP-5	MBAIP-5	TBO-52	-	-	-	1227-06
6BA	6BAR	6BAP	6BAB	6BAS	6BV	6BAG	N/A	BAIP-6	MBAIP-6	TBO-51	TBO-51	ATB-52	-	1227-06

For Drilling & Tapping Data See Page 15

Tapped Hole Data

BSW		TAPPED HOLE				FITTED MINOR DIA.
		MINOR DIA. MAX - MIN	MAJOR DIA.	MED CLASS MAX - MIN	CLOSE CLASS MAX - MIN	
		A	B	C	C	
1/8-40	3.3MM	0.135 - 0.129	0.1548	0.1430 - 0.1410	NOT RECOMMENDED	0.0930
3/16-24	5MM	0.202 - 0.196	0.2365	0.2166 - 0.2142		0.1341
1/4-20	6.7MM	0.267 - 0.261	0.3087	0.2849 - 0.2820		0.1860
5/16-18	21/64	0.334 - 0.328	0.3777	0.3512 - 0.3480		0.2413
3/8-16	25/64	0.398 - 0.390	0.4483	0.4185 - 0.4150	0.4170 - 0.4150	0.2950
7/16-14	29/64	0.463 - 0.453	0.5212	0.4871 - 0.4833	0.4855 - 0.4833	0.3461
1/2-12	33/64	0.525 - 0.515	0.5973	0.5575 - 0.5533	0.5557 - 0.5533	0.3932
9/16-12	37/64	0.588 - 0.578	0.6600	0.6201 - 0.6158	0.6184 - 0.6158	0.4557
5/8-11	21/32	0.663 - 0.653	0.7312	0.6873 - 0.6832	0.6859 - 0.6832	0.5086
11/16-11	23/32	0.727 - 0.717	0.7938	0.7505 - 0.7457	0.7485 - 0.7457	0.5711
3/4-10	25/32	0.791 - 0.781	0.8669	0.8191 - 0.8141	0.8171 - 0.8141	0.6220
7/8-9	29/32	0.916 - 0.906	1.0048	0.9516 - 0.9462	0.9495 - 0.9462	0.7328
1-8	1-1/32	1.044 - 1.031	1.1457	1.0859 - 1.0801	1.0836 - 1.0801	0.8400
1-1/8-7	1-11/64	1.186 - 1.171	1.2912	1.2227 - 1.2165	1.2203 - 1.2165	0.9420
1-1/4-7	1-19/64	1.311 - 1.296	1.4163	1.3479 - 1.3415	1.3454 - 1.3415	1.0670
1-1/2-6	1-35/64	1.571 - 1.546	1.6936	1.6137 - 1.6067	1.6110 - 1.6067	1.2866

G (BSPF)		TAPPED HOLE				FITTED MINOR DIA.
		MINOR DIA. MAX - MIN	MAJOR DIA.	MED CLASS MAX - MIN	CLOSE CLASS MAX - MIN	
		A	B	C	C	
1/8-28	25/64	0.400 - 0.390	0.4258	0.4090 - 0.4058	NOT RECOMMENDED	0.3372
1/4-19	17/32	0.540 - 0.530	0.5803	0.5556 - 0.5517		0.4506
3/8-19	43/64	0.680 - 0.670	0.7184	0.6937 - 0.6897		0.5886
1/2-14	27/32	0.850 - 0.840	0.9092	0.8754 - 0.8708		0.7336
5/8-14	59/64	0.927 - 0.915	0.9863	0.9524 - 0.9478	0.9506 - 0.9478	0.8106
3/4-14	1-1/6	1.066 - 1.053	1.1255	1.0918 - 1.0868	1.0898 - 1.0868	0.9496
7/8-14	1-13/64	1.213 - 1.200	1.2735	1.2399 - 1.2348	1.2378 - 1.2348	1.0976
1-11	1-21/64	1.335 - 1.320	1.4158	1.3727 - 1.3673	1.3705 - 1.3673	1.1926
1-1/4-11	1-43/64	1.680 - 1.665	1.7571	1.7141 - 1.7083	1.7118 - 1.7083	1.5336
1-1/2-11	1-29/32	1.921 - 1.906	1.9893	1.9464 - 1.9403	1.9440 - 1.9403	1.7656

 Recommended for Screw Lock Insert applications.

BSF		TAPPED HOLE				FITTED MINOR DIA.
		MINOR DIA. MAX - MIN	MAJOR DIA.	MED CLASS MAX - MIN	CLOSE CLASS MAX - MIN	
		A	B	C	C	
3/16-32	4.9MM	0.198 - 0.192	0.2247	0.2098 - 0.2075	NOT RECOMMENDED	0.1475
7/32-28	5.8MM	0.231 - 0.225	0.2612	0.2442 - 0.2416		0.1730
1/4-26	6.6MM	0.264 - 0.257	0.2957	0.2774 - 0.2747		0.2008
9/32-26	7.4MM	0.295 - 0.288	0.3270	0.3088 - 0.3059		0.2320
5/16-22	8.3MM	0.330 - 0.323	0.3662	0.3447 - 0.3416	0.4751 - 0.4730	0.2543
3/8-20	9.8MM	0.392 - 0.385	0.4340	0.4104 - 0.4070		0.3110
7/16-18	29/64	0.458 - 0.450	0.5030	0.4767 - 0.4730		0.3663
1/2-16	33/64	0.522 - 0.513	0.5736	0.5440 - 0.5400	0.5423 - 0.5400	0.4200
9/16-16	37/64	0.586 - 0.577	0.6362	0.6067 - 0.6025	0.6049 - 0.6025	0.4825
5/8-14	41/64	0.649 - 0.640	0.7091	0.6752 - 0.6708	0.6734 - 0.6708	0.5336
11/16-14	45/64	0.713 - 0.703	0.7717	0.7379 - 0.7333	0.7360 - 0.7333	0.5961
3/4-12	49/64	0.775 - 0.765	0.8478	0.8082 - 0.8033	0.8062 - 0.8033	0.6432
13/16-12	53/64	0.838 - 0.828	0.9104	0.8708 - 0.8658	0.8688 - 0.8658	0.7057
7/8-11	57/64	0.900 - 0.890	0.9817	0.9384 - 0.9332	0.9364 - 0.9332	0.7586
1-10	1-1/32	1.044 - 1.031	1.1173	1.0697 - 1.0641	1.0675 - 1.0641	0.8720
1-1/8-9	1-5/32	1.170 - 1.156	1.2551	1.2021 - 1.1962	1.1998 - 1.1962	0.9828
1-1/4-9	1-9/32	1.295 - 1.281	1.3803	1.3274 - 1.3212	1.3250 - 1.3212	1.1078
1-3/8-8	1-13/32	1.420 - 1.406	1.5212	1.4616 - 1.4551	1.4591 - 1.4551	1.2150
1-1/2-8	1-17/32	1.545 - 1.531	1.6464	1.5868 - 1.5801	1.5843 - 1.5801	1.3400

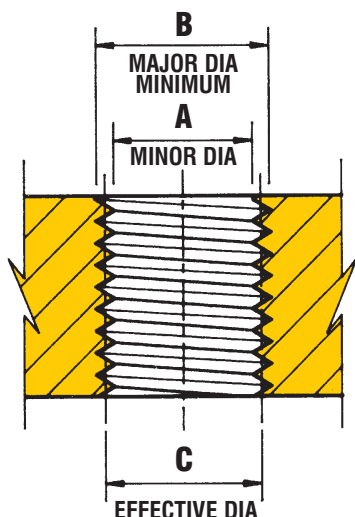
BA		TAPPED HOLE			FITTED MINOR DIA.
		MINOR DIA. MAX - MIN	MAJOR DIA.	STANDARD NUT FIT MAX - MIN	
		A	B	C	
0BA	6.2MM	0.246 - 0.241	0.2805	0.2645 - 0.2598	0.1890
1BA	5.5MM	0.22 - 0.213	0.2485	0.2342 - 0.2299	0.1661
2BA	4.9MM	0.196 - 0.191	0.2208	0.2079 - 0.2042	0.1468
3BA	4.3MM	0.171 - 0.166	0.1938	0.1821 - 0.1786	0.1268
4BA	3.8MM	0.152 - 0.147	0.1711	0.1605 - 0.1574	0.1106
5BA	3.3MM	0.135 - 0.129	0.1522	0.1426 - 0.1399	0.0980
6BA	2.9MM	0.116 - 0.113	0.1339	0.1252 - 0.1226	0.0850

TAPPED HOLE

Drilling and tapping procedures should follow good workshop practice at all times.

It is most important to adhere to the limits given for the drilled and tapped hole to achieve the class of fit required.

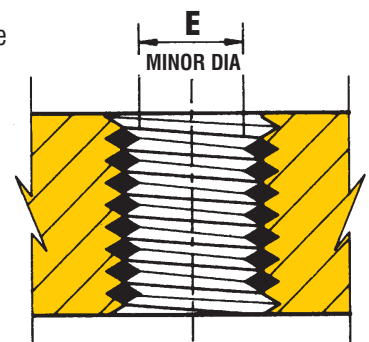
Minimum drilling and tapping depths are given in the tables.



INSERT (FITTED)

Helicoil when fitted will 'mimic' the class of fit of the tapped hole. It is important that the class of fit is checked with an **Helicoil** gauge before insertion.

For maximum performance, Tangs should be removed to permit full length thread engagement between insert and bolt. In Screw Lock applications this ensures full form thread engagement with the locking feature.



Chemical Composition & Related Materials

TABLE 1

18-8 STAINLESS STEEL DTD734	C	Si	Mn	Ni	Cr
	0.08 MAX	0.20 MIN 1.0 MAX	2.0 MAX	8.0 MIN 11.0 MAX	17.5 MAX 20.0 MAX
302 302S01	0.15 MAX	0.20 MIN 1.0 MAX	2.0 MAX	8.0 MIN 11.0 MAX	17.5 MAX 19.0 MAX
302S25	0.12 MAX	0.20 MIN 1.0 MAX	0.5 MIN 2.0 MAX	8.0 MIN 11.0 MAX	17.5 MAX 19.0 MAX
304 304S01	0.09 MAX	1.0 MAX	2.0 MAX	8.0 MIN 13.0 MAX	17.5 MAX 20.0 MAX
304S12	0.03 MAX	0.20 MIN 1.0 MAX	0.5 MIN 2.0 MAX	9.0 MIN 12.0 MAX	17.5 MAX 20.0 MAX
304S15	0.06 MAX	0.20 MIN 1.0 MAX	0.5 MIN 2.0 MAX	8.0 MIN 11.0 MAX	17.5 MAX 19.0 MAX
304S16	0.06 MAX	0.20 MIN 1.0 MAX	0.5 MIN 2.0 MAX	9.0 MIN 11.0 MAX	17.5 MAX 19.0 MAX

Material Specification

TABLE 2

SPECIFICATION	DESCRIPTION	RELATED SPECS.
DTD734	Stainless Steel	AISI302 / 304 AMS 7245 X5 Cr Ni 18 9
HR503	Nimonic 90	
X-750	Inconel X-750	AMS 7246
BS2783 Pb 103	Phosphor Bronze	
Nitronic 60	Nitronic 60	UNS S21800
Zeron 100	Zeron 100	UNS S32750

Temperature Ranges & Special Applications

TABLE 3

DTD734	Normal applications up to 425C
Cadmium & Zinc Plated	Up to 250C
Nimonic 90	Up to 500C (Screw Lock) Up to 650C (Free Running only)
Nitronic 60	Anti-gall for use with stainless steel screws.
Zeron 100	Resistance to corrosion in Petro-Chem Ind.

Recommended Thread Engagement

TABLE 4

Shear Strength of Parent Material MPa	PROPERTY CLASS of bolt to be used						
	4.8						
	4.6	5.8	6.6	8.8	10.9	12.9	14.9
Thread Engagement x Nominal Diameter							
70 - 90	2	2.5	2.5	-	-	-	-
100 - 149	1.5	1.5	2	3	-	-	-
150 - 199	1	1.5	1.5	2	2.5	3	-
200 - 249	1	1	1	1.5	2	2	2.5
250 - 299	1	1	1	1.5	1.5	2	2
300 - 349	1	1	1	1	1.5	1.5	2
350	1	1	1	1	1	1.5	1.5

Magnetism

Helicoil stainless steel inserts, due to cold working in the manufacturing process, have a slight magnetic signature. Tests conducted using a very sensitive gaussmeter (having nulled out the earths magnetic field) gave a residual field of 2 to 10 gauss.

Helicoil stainless steel inserts should be avoided in instruments which could be affected by magnetism.

For truly non-magnetic inserts use Nitronic 60 or Phosphor Bronze **Helicoil**.

Aerospace & Military Specifications

TABLE 5

AS4736 to 4748	BA/BSF/BSW/BSPF FR - Natural
AS4947 to 4959	BA/BSF/BSW/BSPF FR - Cadmium Plated
AS6733 to 3734	UNF FR - Natural
AS8455 to 8456	UNF/UNC FR - Cadmium Plated
AGS3600 to 3699	UNF/UNC SL - Cadmium Plated
AGS3700 to 3799	UNF SL - Silver Plated (HR503)
LN9039	Metric FR - Natural & Cadmium Plated
LN9499	Metric SL - Natural & Cadmium Plated
MA3279 to 3281	Metric FR - Natural, Dry Film & Cadmium
MA3329 to 3331	Metric SL - Natural, Dry Film & Cadmium
NASM122076 to 124850	UNF/UNC FR - Natural
NASM21209	UNF/UNC SL - Natural, Dry Film & Cadmium

Helicoil inserts supplied by Armstrong Precision Components against the above part numbers, conform to the Material, Mechanical and Chemical specifications, Product Dimensional criteria and post treatment finishes as specified in the associated product standard.

High Temperature Applications

Helicoil wire thread inserts for use in high temperature applications are available in NIMONIC 90 to recognised standards with S.B.A.C. qualifications in the following series.

To order Nimonic 90 **Helicoil** inserts to Aerospace standards quote the relevant AGS part no.

Helicoil Nimonic 90 Inserts

TABLE 6

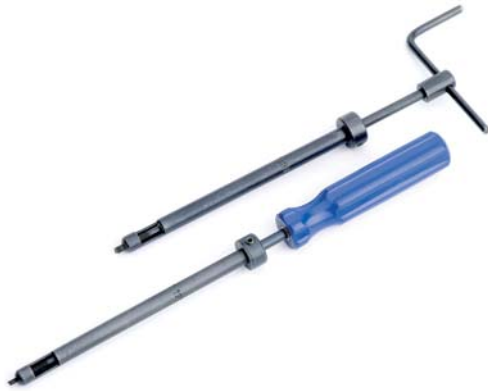
SIZE	1D	1.5D	2D	2.5D	3D
10-32	AGS3706	AGS3731	AGS3756	AGS3781	AGS3718
1/4-28	AGS3707	AGS3732	AGS3757	AGS3782	AGS3719
5/16-24	AGS3708	AGS3733	AGS3758	AGS3783	AGS3720
3/8-24	AGS3709	AGS3734	AGS3759	AGS3784	AGS3721
7/16-20	AGS3710	AGS3735	AGS3760	AGS3785	AGS3722
1/2-20	AGS3711	AGS3736	AGS3761	AGS3786	AGS3723
9/16-18	AGS3712				
5/8-18	AGS3713				

Specialised installation tooling detailed below **MUST** be used in order to achieve the performance specifications laid down by the S.B.A.C.

Helicoil Nimonic 90 Tooling

TABLE 7

SIZE	INSERT TOOL	T.B.O.	EXTRACTION TOOL
10-32	ST1062	3581-3(-3)	1227-6
1/4-28	ST1088	3581-4(-3)	1227-6
5/16-24	ST1089	3581-5(-3)	1227-6
3/8-24	ST1090	3581-6(-3)	1227-6
7/16-20	ST1091	3581-7(-3)	1227-16
1/2-20	ST1092	3581-8(-3)	1227-16
9/16-18	ST1130	1196-9(-3)	1227-16
5/8-18	ST1099	1196-10(-3)	1227-16



Slimline Inserting Tool

The Slimline Tool has been developed to overcome the problems of small inserts installed in confined spaces or close up to flanges.

The tool body, at 6.0mm diameter, allows the designer greater flexibility in the position of tapped holes, especially when space is at a premium.

The tool is produced with a threaded mandrel, which ensures that the Helicoil is installed correctly without cross threading.

The Slimline Tool is available in sizes up to M4 or 6-32UNC



Pre-wind Inserting Tool

A dedicated single size installation tool which supports the Helicoil in a chamber ready for pre-winding through the nozzle. Pre-winding reduces the insert diameter to that of the tapped hole ready for installation.

With the Helicoil wound flush with the end of the nozzle the insert is ready for installation. Place the tool squarely over the tapped hole and continue to wind the Helicoil into the component. Do not apply any forward pressure whilst installing as this may cause the insert to 'cross pitch'.



T Bar Inserting Tool

A threaded mandrel tool used for the installation of RD (Reduced Diameter) inserts without the need to pre-wind the Helicoil.

The added benefit offered with the threaded mandrel is that the insert is installed without the fear of 'cross pitching'. This is often a problem found with fine pitched inserts.

The RD insert is manufactured slightly larger than the tapped hole. The nose radius on the tang of the insert allows the first coil to engage with the start of tapped hole causing the additional pre-winding needed to install.



Universal Inserting Tool

The Universal Tool will accept a range of interchangeable Nozzles and Mandrels giving this tool the versatility needed for the Maintenance or Garage repair kit.

The mandrels screw into the extension bar and the nozzles locate in the body with a retaining nut securing it in place.

These tools are available in sizes from M5 to M12 and No.10 to 1/2" Unified.

There are also Spark Plug sizes for the Garage repair kit.

Refer to the Workshop Kit range for more details.

Gauges



Gauges are available in both 5H or 6H class of fits for Metric Threads, 2B or 3B for Unified Threads and close medium for Whitworth Threads.

Class of Fit of the finished assembly is dependant on the accuracy of the tapped hole. If the tapped hole gauges correctly it is not necessary to gauge the installed inserts.

After the Helicoil is installed, the Go Gauge occasionally does not enter freely. However the insert will always seat itself when the bolt or screw is installed and tightened.

Tang Break Off Tool



Removes the tang cleanly from the installed Helicoil.

The TBO is placed in the insert resting on the tang. A sharp blow with a hammer will break the tang off at the notch.

Auto Tang Break Off Tool



A faster and more efficient method of removing the Tang. The Automatic Tang Break Off Tool incorporates a spring loaded punch and thus reduces the task to a simple, one handed operation.

The tool is supplied complete with the interchangeable punches to accommodate varying lengths of the insert in any of the appropriate thread sizes. Full instructions for use and punch changing are included with every tool.

Extracting Tool



The Extracting Tool has a hardened gauge steel blade which is ground to dig into the top coil of the insert. Place the blade about 1/4 coil from the end of the insert and apply pressure. Rotate the tool anti-clockwise to remove the insert. Discard the insert and check the tapped hole for damage before fitting a new Helicoil.

Electric Installation Tool



For high volume, high speed installation of RD (Reduced Diameter) Free Running Helicoil inserts.

The Electric Tool with its Mandrel and Depth Stop will install the Helicoil to depth and reverse automatically with a single lever action.

Very high production rates can be achieved with proficient operators using this method.

Power Tool



Air Motor



Adaptor



Pre-winder



Mandrel



Spacer Set

METRIC

Power Tooling

NOMINAL THREAD SIZE		ADAPTOR	FRONT END ASSY		PRE-WINDER		MANDREL ASSY.	SPACER SET
			BULK	TAPE FEED	BULK	TAPE FEED		
M2.2 X 0.45	AIR MOTOR 719020020	719024036		719035902		719085807	719045907	
M2.5 X 0.45			719036730		719065926	719065914	719046690	719090200
M3 X 0.5				719036741	719066607	719066649	719046708	719082505
M3.5 X 0.6			719036776	719036750	719066706	719066710	719046770	719080400
M4 X 0.7				719036949	719066805	719066847	719046906	719082604
M5 X 0.8				719037160	719067001	719066900	719047102	719080905
M6 X 1.0			719037202	719038200	719067100	719067200	719047201	719081101
M8 X 1.0		719025033	719039950	719039307	719067420		719047610	719081408
M8 X 1.25			719037509	719037520	719067407	719067410	719047508	719081408
M10 X 1.25			719037720		719067720		719047706	719081606
M10 X 1.5			719037806		719067704		719047805	719081606
M12 X 1.25			719037901		719067901		719048001	719081804
M12 X 1.75			719038106		719068009		719048100	719081804

UNF

NOMINAL THREAD SIZE		ADAPTOR	FRONT END ASSY		PRE-WINDER		MANDREL ASSY.	SPACER SET
			BULK	TAPE FEED	BULK	TAPE FEED		
6-40	AIR MOTOR 719020020	719024036	719030501		719060501		719040503	719080400
10-32			719031106	719030280	719061103		719041105	719080806
1/4-28			719031403	719030314	719061400	719061460	719041402	719081200
5/16-24		719025033	719033003	719030364	719063000	719063060	719043002	719081408
3/8-24			719033409		719063406		719043408	719082000
7/16-20			719035008		719063802		719045007	719082109
1/2-20			719035303		719065401		719045403	719082208

UNC

NOMINAL THREAD SIZE		ADAPTOR	FRONT END ASSY		PRE-WINDER		MANDREL ASSY.	SPACER SET
			BULK	TAPE FEED	BULK	TAPE FEED		
2-56	AIR MOTOR 719020020	719024036		719030300		719060135	719050130	
4-40			719030140	719030215	719060204	719060147	719040206	719080202
6-32			719030602	719030256	719060600	719060253	719040602	719080400
8-32			719030610	719030322	719060907	719060261	719040909	719090169
10-24			719030628	719030330	719061202	719060279	719041204	719080806
1/4-20			719031700	719030348	719061707	719061764	719041709	719081200
5/16-18		719025033	719033307	719030356	719063307	719063360	719043309	719081408
3/8-16			719033706		719063703		719043705	719082000
7/16-14			719035206		719065203		719045205	719082109
1/2-13			719035301		719065609		719045601	719082208

NIMONIC 90

NOMINAL THREAD SIZE		ADAPTOR	FRONT END ASSY		PRE-WINDER		MANDREL ASSY.	SPACER SET
			BULK	TAPE FEED	BULK	TAPE FEED		
10-32 UNF	AIR MOTOR 719020090	719025090		719031147		719018887	719041147	719080847
1/4-28 UNF				719031444		719018886	719041446	719081244
5/16-24 UNF		719025190	719037915		719060565		719041155	719080825
3/8-24 UNF			719037920		719060570		719041030	719080830

METRIC

KIT SIZE	PRODUCT CODE	DRILL INC.	INSERT QTY.	REPLACEMENT INSERT PACK
M2 x 0.4	79151852400	Yes	10	79161808500
M2.2 x 0.45	79151852401	Yes	10	79161808501
M2.5 X 0.45	79151852402	Yes	10	79161808502
M3 X 0.5	79151852403	Yes	10	79161808503
M3.5 X 0.6	79151845700	Yes	10	
M4 X 0.7	79151852404	Yes	10	79161808504
M5 X 0.8	79151852405	Yes	10	79161808505
M6 X 1.0	79151852406	Yes	10	79161808506
M7 X 1.0	79151852407	Yes	10	79161808507
M8 X 1.25	79151852408	Yes	10	79161808508
M8 X 1.0	79151852409	Yes	10	79161808509
M9 X 1.0	79151845701	Yes	10	
M10 X 1.5	79151852410	Yes	10	79161808510
M10 X 1.25	79151852411	Yes	10	79161808511
M10 X 1.0	79151852414	Yes	10	79161808514
M11 X 1.5	79151845702	No	10	
M11 X 1.0	79151845703	No	10	
M12 X 1.75	79151852412	No	10	79161808512
M12 X 1.5	79151852413	No	10	79161808513
M12 X 1.25	79151852498	No	10	79161808596
M14 X 1.25	79151845705	No	10	
M14 X 2.0	79151852450	No	10	79161808564
M15 X 2.0	79151845706	No	10	
M16 X 2.0	79151852451	No	10	79161808560
M18 X 2.5	79151852452	No	10	79161808561
M20 X 2.5	79151852453	No	10	79161808563
M24 X 3.0	79151852454	No	10	79161808564

BSW

KIT SIZE	PRODUCT CODE	DRILL INC.	INSERT QTY.	REPLACEMENT INSERT PACK
3/16-24	79151852436	Yes	10	79161808536
1/4-20	79151852437	Yes	10	79161808537
5/16-18	79151852438	Yes	10	79161808538
3/8-16	79151852439	No	10	79161808539
7/16-14	79151852440	No	10	79161808540
1/2-12	79151852441	No	10	79161808541
9/16-12	79151852480	No	5	79161808588
5/8-11	79151852481	No	5	79161808589
3/4-10	79151852482	No	5	79161808590

BSF

KIT SIZE	PRODUCT CODE	DRILL INC.	INSERT QTY.	REPLACEMENT INSERT PACK
3/16-32	79151852490	Yes	10	79161808551
1/4-26	79151852491	Yes	10	79161808552
5/16-22	79151852492	Yes	10	79161808553
3/8-20	79151852493	No	10	79161808554
7/16-18	79151852494	No	10	79161808555
1/2-16	79151852495	No	10	79161808556
9/16-16	79151852475	No	5	79161808582
5/8-14	79151852476	No	5	79161808583
3/4-12	79151852477	No	5	79161808584

G (BSPF)

KIT SIZE	PRODUCT CODE	DRILL INC.	INSERT QTY.	REPLACEMENT INSERT PACK
1/8-28	79151852443	No	10	79161808595
1/4-19	79151852444	No	10	79161808596

UNC

Thread Repair Kits

KIT SIZE	PRODUCT CODE	DRILL INC.	INSERT QTY.	REPLACEMENT INSERT PACK
4-40	79151852426	Yes	10	79161808526
5-40	79151852496	Yes	10	79161808595
6-32	79151852427	Yes	10	79161808527
8-32	79151852428	Yes	10	79161808528
10-24	79151852429	Yes	10	79161808529
12-24	79151852430	Yes	10	79161808530
1/4-20	79151852431	Yes	10	79161808531
5/16-18	79151852432	No	10	79161808532
3/8-16	79151852433	No	10	79161808533
7/16-14	79151852434	No	10	79161808534
1/2-13	79151852435	No	10	79161808535
9/16-12	79151852466	No	5	79161808575
5/8-11	79151852467	No	5	79161808576
3/4-10	79151852468	No	5	79161808577
7/8-9	79151852469	No	5	79161808578
1-8	79151852470	No	5	79161808579

UNF

KIT SIZE	PRODUCT CODE	DRILL INC.	INSERT QTY.	REPLACEMENT INSERT PACK
3-56	79151852416	Yes	10	79161808516
4-48	79151852417	Yes	10	79161808517
6-40	79151852418	Yes	10	79161808518
8-36	79151852419	Yes	10	79161808519
10-32	79151852420	Yes	10	79161808520
1/4-28	79151852421	Yes	10	79161808521
5/16-24	79151852422	No	10	79161808522
3/8-24	79151852423	No	10	79161808523
7/16-20	79151852424	No	10	79161808524
1/2-20	79151852425	No	10	79161808525
9/16-18	79151852461	No	5	79161808568
5/8-18	79151852462	No	5	79161808569
3/4-16	79151852463	No	5	79161808570
7/8-14	79151852464	No	5	79161808571

SPARK PLUG

KIT SIZE	PRODUCT CODE	REACH	INSERT QTY.	REPLACEMENT INSERT PACK
M10	79151852445	1/4"	5	79161808545
		1/2"	5	79161808546
M12	79151852447	1/2"	5	79161808547
		3/4"	5	79161808548
M14	79151852449	1/2"	5	79161808549
		3/4"	5	79161808550

*Pilot Nose Tap (No drill included) Spark Plug Kit contains Pilot Nose Tap.

Thread Repair Kit



METRIC

KIT SIZE	PRODUCT CODE	INSERT QTY.
M3 X 0.5	71671745643	50
M3.5 X 0.6	71671745644	50
M4 X 0.7	71671745645	50
M5 X 0.8	71671745646	50
M6 X 1.0	71671745647	50
M7 X 1.0	71671745651	50
M8 X 1.25	71671745648	50
M8 X 1.0	71671745652	50
M10 X 1.5	71671745649	25
M10 X 1.0	71671745653	25
M10 X 1.25	71671745695	25
M11 X 1.5	71671745654	25
M12 X 1.75	71671745650	25
M12 X 1.5	71671745655	25
M14 X 2.0	71671745679	25
M14 X 1.5	71671745678	25
M16 X 1.5	71671745680	12
M16 X 2.0	71671745681	12
M18 X 1.5	71671745682	12
M18 X 2.0	71671745683	12
M18 X 2.5	71671745684	12
M20 X 1.5	71671745685	12
M20 X 2.5	71671745687	12
M22 X 1.5	71671745688	12
M22 X 2.0	71671745689	12
M22 X 2.5	71671745690	12
M24 X 3.0*	71650824300	6
M24 X 2.0*	71650825100	6
M30 X 2.0*	716590120	25
M30 X 3.5*	71650824500	6

G (BSPF)

KIT SIZE	PRODUCT CODE	INSERT QTY.
1/8-28	71671745634	25
1/4-19	71671745635	25
3/8-19	71671745675	16
1/2-14	71671745676	16
5/8-14	71671745677	16
3/4-14*	71620832600	6
7/8-14*	71620832700	6
1-11*	71620832800	6
1-1/4-11*	71620832900	6

BA

KIT SIZE	PRODUCT CODE	INSERT QTY.
0BA	71671745636	50
1BA	71671745637	50
2BA	71671745638	50
3BA	71671745639	50
4BA	71671745640	50
5BA	71671745641	50
6BA	71671745642	50

* Not available in Plastic Case

BSW

KIT SIZE	PRODUCT CODE	INSERT QTY.
1/8-40	71671745627	50
3/16-24	71671745628	50
1/4-20	71671745629	50
5/16-18	71671745630	50
3/8-16	71671745631	25
7/16-14	71671745632	25
1/2-12	71671745633	25
9/16-12	71671745670	25
5/8-11	71671745671	12
11/16-11	71671745672	12
3/4-10	71671745673	12
7/8-9	71671745674	12
1-8*	71620830000	6
1-1/8-7*	71620830200	6
1-1/4-7*	71620830300	6
1-1/2-6*	71620830400	6

BSF

KIT SIZE	PRODUCT CODE	INSERT QTY.
3/16-32	71671745621	50
1/4-26	71671745622	50
5/16-22	71671745623	50
3/8-20	71671745624	25
7/16-18	71671745625	25
1/2-16	71671745626	25
9/16-16	71671745664	25
5/8-14	71671745665	12
11/16-14	71671745666	12
3/4-12	71671745667	12
13/16-12	71671745668	12
7/8-11	71671745669	12
1-10*	71620829000	6
1-1/8-9*	71620829100	6
1-1/4-9*	71620829200	6
1-3/8-8*	71620829300	6
1-1/2-8*	71620829400	6



Professional Single Size Kits

UNC

KIT SIZE	PRODUCT CODE	INSERT QTY.
4-40	71671745610	50
5-40	71671745611	50
6-32	71671745612	50
8-32	71671745613	50
10-24	71671745614	50
12-24	71671745615	50
1/4-20	71671745616	50
5/16-18	71671745617	50
3/8-16	71671745618	25
7/16-14	71671745619	25
1/2-13	71671745620	25
9/16-12	71671745660	12
5/8-11	71671745661	12
3/4-10	71671745662	12
7/8-9	71671745663	12
1-8*	71620831800	6
1-1/8-7*	71620831900	6
1-1/4-7*	71620832000	6
1-3/8-6*	71620832100	6
1-1/2-6*	71620832200	6

UNF

KIT SIZE	PRODUCT CODE	INSERT QTY.
4-48	71671745601	50
6-40	71671745602	50
8-36	71671745603	50
10-32	71671745604	50
1/4-28	71671745605	50
5/16-24	71671745606	50
3/8-24	71671745607	50
7/16-20	71671745608	50
1/2-20	71671745609	25
9/16-18	71671745656	25
5/8-18	71671745657	12
3/4-16	71671745658	12
7/8-14	71671745659	12
1-12*	71620830900	6
1-1/8-12*	71620831000	6
1-1/4-12*	71620831100	6
1-3/8-12*	71620831200	6
1-1/2-12*	71620831300	6

Professional Kit

METRIC

METRIC	KIT NO.	REPLACEMENT	INSERT PACK
M5 - M12	71661731800	M5 X 0.8	79161808505
		M6 X 1.0	79161808506
		M8 X 1.25	79161808508
		M10 X 1.5	79161808510
		M12 X 1.75	79161808512
M6 - M12 PLUS M14 SPARK PLUG (Non Pilot Nose Tap)	71661748600	M6 X 1.0	79161808506
		M8 X 1.25	79161808508
		M12 X 1.75	79161808512
		M10 X 1.5	79161808510
		M14 X 1/2" Reach	79161808549
M6 - M12 PLUS M14 SPARK PLUG (Pilot Nose Tap)	71661748700	M6 X 1.0	79161808506
		M8 X 1.25	79161808508
		M10 X 1.5	79161808510
		M12 X 1.75	79161808512
		M14 X 1/2" Reach	79161808549
		M14 X 3/4" Reach	79161808550

UNF

UNF	KIT NO.	REPLACEMENT	INSERT PACK
1/4 - 1/2 UNF	71661731400	1/4-28	79161808521
		5/16-24	79161808522
		3/8-24	79161808523
		7/16-20	79161808524
		1/2-20	79161808525

UNC

UNF	KIT NO.	REPLACEMENT	INSERT PACK
1/4 - 1/2 UNC	71661731500	1/4-20	79161808531
		5/16-18	79161808532
		3/8-16	79161808533
		7/16-14	79161808534
		1/2-13	79161808535

BSF

BSF	KIT NO.	REPLACEMENT	INSERT PACK
1/4 - 1/2 BSF	71661731600	1/4-26	79161808552
		5/16-22	79161808553
		3/8-20	79161808554
		7/16-18	79161808555
		1/2-16	79161808556

BSW

BSW	KIT NO.	REPLACEMENT	INSERT PACK
1/4 - 1/2 BSW	71661731700	1/4-20	79161808537
		5/16-18	79161808538
		3/8-16	79161808539
		7/16-14	79161808540
		1/2-12	79161808541

BA

BA	KIT NO.
0 - 6 BA (0, 2, 4 & 6BA) Metal Case Kit	71610587600



Workshop Kit

Böllhoff International with companies in:

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