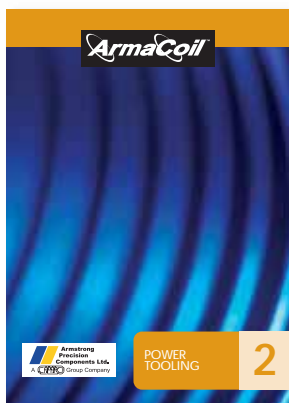


TECHNICAL
DATA &
TOOLING

1

Other product brochures available:



2 POWER TOOLING

High volume, high speed power installation is achievable with the **ArmaCoil** range of Pneumatic or Electrically Operated Power Tools. Pneumatic Tooling can be hand held or bench mounted for increased production output, especially if 'tape feed' inserts are used.

Suitable for Free Running or Screw Locking **ArmaCoil** inserts. The Electric Inserting Tool is a fully automatic tool which installs the **ArmaCoil** insert to depth and automatically reverses out in a single lever action.



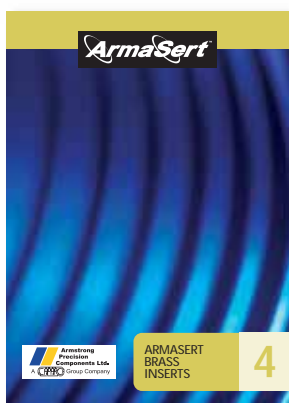
3 TWINCOIL

TwinCoil inserts are two inserts, one inside the other, for the repair and/or recovery of stripped or off-centre tapped holes.

The 'outer' **TwinCoil** is always Free Running and the 'inner' can be either Free Running or Screw Locking.

Lengths are from 1.5D upwards, 1D inserts due to the shorter inner insert are not recommended.

TwinCoil Kits come complete with tap, Outer Inserting Tool and both Inner and Outer inserts. The Inner Inserting Tool is not included as it is a standard tool.



4 ARMASERT BRASS INSERTS

Armstrong Precision Components Ltd. offer a range of threaded inserts for installation into Thermoset and Thermoplastic materials.

Armaserts in their many forms can be installed cold, hot or ultrasonically in thermoplastics and high friction retention in thermosets.

TECHNICAL DATA & TOOLING

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Superiority

ArmaCoil Inserts provide positive means for protecting and strengthening all tapped threads.

They are mirror-smooth, reinforced internal threads of cold rolled 18-8 stainless steel, of hardness 43-50Rc, or other specialised material, with hardness far in excess of the usual tapped materials.

The outstanding engineering features of **ArmaCoil** inserts, recognised by the leading aerospace, industrial and military equipment manufacturers, have established their widespread use in these fields.



Flexibility

Maximum design flexibility as well as compliance with conventional engineering practice gives the designer unlimited opportunities to use ArmaCoil Insert assemblies.

Five lengths of insert for each thread size are available; lengths of 1, 1.5, 2, 2.5 and 3 times the nominal thread diameter.

This choice of insert length offers the designer the opportunity to balance the tensile strength of the bolt against the shear strength of the parent material.

The variety of insert lengths also aids the designer to conform to the conventional engineering practice of assuring bolt failure rather than damage to the parent material when the assembly is subjected to destructive loads.

A table has been prepared to assist the designer in his choice of thread engagements for different combinations of bolt and parent materials.

This information together with all pertinent product data is found in the following sections.



Assembled Strength

Of major importance to the designer are the charts showing the Tensile Strength of ArmaCoil assemblies.

These charts are available in Metric sizes from M2.2 to M24 and Unified sizes from 2-56 to 1".

The chart provides all the data necessary to establish the following:

- Tensile Strength of the **ArmaCoil** assembly.
- Minimum length of Thread Engagement.
- Shear strengths of various bolt grades.

The graphs are easy to use and provide the flexibility of insert size and length selection.

For more information contact our Technical Department.



Advantages

DESIGN FLEXIBILITY

ArmaCoil inserts provide maximum flexibility with the widest choice of materials for the component, the fastening, and even the insert to meet performance and production requirements.

GUARDS AGAINST THREAD WEAR

Protects threads against wear and damage in all metals and their alloys - Aluminium, Magnesium, Titanium, Copper, Steel, as well as in plastics and other materials.

MAXIMUM CLAMPING TORQUE

ArmaCoil Inserts develop maximum clamping load and bolt tension through efficient use of the applied torque. Their smooth rolled thread surface assures the most effective use of high strength alloy steel bolts.

MINIMISE WEIGHT & SPACE

Weight saving is unmatched - an important design feature for many products, particularly airborne equipment.

Space saving is maximised, permitting the use of standard boss configurations with no oversize boss requirements - as is necessary to accommodate solid bushings. A boss radius equal to the nominal bolt size is adequate for most load conditions.

BALANCED STRENGTH DISTRIBUTION

They strengthen threads by a more balanced distribution of dynamic and static loads for the full length of thread engagement. The flexibility of the **ArmaCoil** compensates for lead and angle error and allows each coil to carry its share of the load.

REUSABLE LOCKING FEATURE

Screw Lock inserts positively secure the threaded members against loosening caused by vibration and shock. They have a high reusable factor that permits frequent removal and re-assembly of bolts without appreciable loss of torque.

CORROSION RESISTANCE

The superior corrosion resistant characteristics of **ArmaCoil** stainless steel inserts assure their adaptability to most materials and usual environmental conditions. Applications must be made consistent with good engineering practice as outlined in the design data. Where conditions warrant, other materials may be used such as Phosphor Bronze, Nimonic 90 or Nitronic 60.

MINIMISE TOTAL COST

Overall production cost savings may be realised by using a less expensive material and still maintain the required thread strength with **ArmaCoil** inserts.

Cost savings apply in many directions - lower insert cost, lower installation costs and smaller bosses all produce savings.

Lowest installed cost is realised with **ArmaCoil** Power Tools & Tape Feed. Production rates of 800 or more per hour with minimal waste.

QUALITY AND RELIABILITY

Stringent Quality Control is rigorously enforced in all phases of manufacturing.



Free Running

ArmaCoil inserts are manufactured from High Tensile Stainless Steel Wire that has been formed into a diamond section to exacting dimensional standards.

When installed the **ArmaCoil** provides a precision female thread of high surface finish and strength.

HOW TO INSTALL

Installation of the **ArmaCoil** is achieved using the appropriate inserting tool, listed in the following pages. The driving tang is engaged in an abutment or slot in the Inserting Tool Mandrel. It is then pre-wound in the Nozzle. Placing the tool over the tapped hole the **ArmaCoil** is wound into place. No forward pressure should be applied once the insert has engaged with thread of the nozzle or whilst inserting into the work piece.

Withdraw the tool when the insert is to the correct depth below the surface, 1/4 to 1/2 turn below (plus any counter bore or chamfer).

The tang is removed using the Tang Break Off Tool. Place the tool inside the **ArmaCoil** and a sharp tap with a hammer will break the tang at the notch position.

The configuration of this notch allows for bolt entry from either end of the assembled **ArmaCoil**.

INSERT RETENTION

Correctly fitted the **ArmaCoil** will not move. It is secured in position through Radial Pressure exerted by the coils bearing on the thread flanks.

Radial Pressure exists due to the outside diameter of the **ArmaCoil**, in its free state, being larger by a calculated amount than the tapped hole into which it is to be installed.

PITCH VARIABILITY

All male and female threads have Pitch and Angle errors. This means that of all the threads supposedly in engagement only one or two are actually in contact.

When loading the assembly the bolt stretches and causes further Strain Pitch Error - consequently **about 70% of the load is imposed on the two threads** in engagement at the mouth of the hole.

This extremely high stress concentration contributes to early loss of pre-load due to creep relaxation.

The result is a slack assembly and early fatigue failure.

PITCH AND ANGLE ERRORS CAUSE...

- Poor flank contact between male and female threads.
- Unequal load distribution over thread engagement.
- Early loss of pre-load.
- Premature failure of assembly.



Screw Lock

In addition to all the characteristics of the Free Running insert the ArmaCoil Screw Lock insert has one or more of its intermediate coils deformed polygonally. This serves to create strong resilient pressure onto the thread flanks of the bolt as it passes through. This built in Prevailing Torque of the grip coil positively locks the bolt safeguarding against loosening under vibration or impact.

Bolts can be inserted by hand up to the grip coil, after which some mechanical means, spanner or wrench, must be employed to overcome the prevailing torque.

COLOUR IDENTIFICATION

ArmaCoil Screw Lock inserts are normally coloured RED for identification purposes only, to distinguish them from Free Running inserts. This colour has no other function such as lubricity.

A C.O.S.H.H. sheet for the dye is available on request.

Customers requiring this colour to be omitted must specify 'Undyed' inserts.

PERFORMANCE

To obtain the best performance from **ArmaCoil** Screw Lock inserts it is recommended that only good quality close limit fit, rolled thread, oil lubricated bolts are used. Under no circumstances should 'black' (heat treatment scale) bolts be used.

LOCKING COMPOUNDS

The use of thread locking compounds on **ArmaCoil** assemblies may cause the bolt to lock onto the insert causing the ArmaCoil to withdraw with the bolt. We recommend that no locking compounds be used.

ARMACOIL FLEXIBILITY

The **ArmaCoil** insert has 'designed-in' axial and radial elasticity. This enables each coil to independently adapt itself and compensate for pitch and angle error that exist and develop between the threaded hole and the bolt as the load is applied.

The load, and the resultant stress, is more evenly distributed over all the threads in the assembly. There is no concentration of stress at any specific point in the assembly.

Pre-load, once induced, remain constant, thus ensuring assembly tightness in spite of shock or vibration.

CANCELS OUT PITCH AND ANGLE DEFECTS

- Ideal contact between all thread flanks.
- Equal share of loads for all threads.
- Pre-load remains a live factor in the assembly.
- Stress intensity reduced.
- Fatigue life greatly extended.

INSERT MATERIAL



For equivalent specifications see p19

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 ArmaCoil for special applications. In particular, ArmaCoil 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

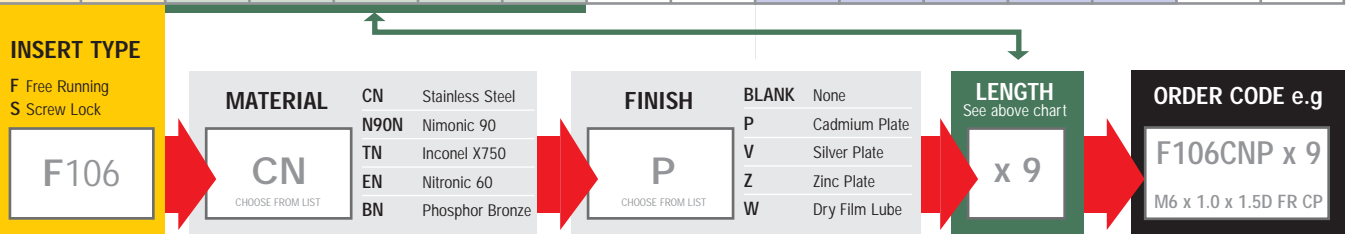
ArmaGuard

Prevents galvanic corrosion between insert and parent material.
Eliminates the need for zinc primers.
Improves installation productivity.
Colour: Glossy Black

METRIC

THREAD SIZE	FR PART NUMBER TO BS 7752	SL PART NUMBER TO BS 7751	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
			4	5	6	7	8			11	12	13	14	15	16	17
M2 x 0.4	F102	S102	2	3	4	5	6	2.6	2.8	2.9	4.9	6.9	8.9	10.9	0.12 Nm	0.003 Nm
M2.2 x 0.45	F1022	S1022	2.2	3.3	4.4	5.5	6.6	2.8	2.9	3.2	5.4	7.8	10	12.3	0.14 Nm	0.02 Nm
M2.5 X 0.45	F1025	S1025	2.5	3.75	5	6.25	7.5	3.3	3.5	3.5	5.9	8.1	10.5	12.9	0.23 Nm	0.05 Nm
M3 X 0.5	F103	S103	3	4.5	6	7.5	9	3.8	4.0	3.9	6.3	8.7	11.1	13.5	0.45 Nm	0.1 Nm
M3.5 X 0.6	F1035	S1035	3.5	5.25	7	8.75	10.5	4.55	4.75	3.7	6.3	8.7	11.2	13.3	0.68 Nm	0.12 Nm
M4 X 0.7	F104	S104	4	6	8	10	12	5.15	5.35	3.7	6.1	8.4	10.9	13.2	0.9 Nm	0.15 Nm
M4.5 X 0.75	F1045	S1045	4.5	6.75	9	11.25	13.5	6.02	5.77	3.9	6.6	9.3	11.9	14.6		
M5 X 0.8	F105	S105	5	7.5	10	12.5	15	6.35	6.6	4.3	6.9	9.7	12.3	14.8	1.6 Nm	0.3 Nm
M6 X 1.0	F106	S106	6	9	12	15	18	7.6	7.85	4.2	6.9	9.6	12.3	14.6	3 Nm	0.4 Nm
M7 X 1.0	F107	S107	7	10.5	14	17.5	21	8.65	8.9	5.3	8.2	11.1	14.3	17.4	4.5 Nm	0.6 Nm
M8 X 1.0	F408	S408	8	12	16	20	24	9.85	10.1	6.1	9.5	12.9	16.5	19.9		
M8 X 1.25	F108	S108	8	12	16	20	24	9.85	10.1	4.7	7.4	10.6	13.5	16.4	6 Nm	0.8 Nm
M9 X 1.25	F109	S109	9	13.5	18	22.5	27	10.85	11.1	5.3	8.6	11.9	15.3	18.1		
M10 X 1.0*	474		1/4	3/8	7/16	1/2	3/4	12.1	12.5	2.8	5.6	7.0	8.4	13.9		
M10 X 1.25	F510	S510	10	15	20	25	30	12.1	12.5	6.0	9.7	13.1	16.9	20.1		
M10 X 1.5	F110	S110	10	15	20	25	30	12.1	12.5	5.0	8.1	11.2	14.2	17.2	10.5 Nm	1.4 Nm
M11 X 1.5	F111	S111	11	16.5	22	27.5	33	13.1	13.5	5.6	9.0	12.3	15.7	19.1		
M12 X 1.25*	IN139		1/2	3/4				12.5	13.1	6.1	10.6					
M12 X 1.25	F512	S512	12	18	24	30	36	14.4	14.8	7.4	11.6	15.9	20.0	24.3		
M12 X 1.5	F412	S412	12	18	24	30	36	14.4	14.8	14.8	6.2	13.5	16.8	20.8		
M12 X 1.75	F112	S112	12	18	24	30	36	14.4	14.8	5.2	8.4	11.7	14.7	18.0	15.5 Nm	2.1 Nm
M14 X 1.25*	512		3/8	7/16	1/2	5/8	3/4	17.2	17.7	3.5	4.6	5.7	7.9	10.1		
M14 X 1.5	F414	S414	14	21	28	35	42	17.2	17.7	7.1	7.4	11.6	15.7	19.9		
M14 X 2.0	F114	S114	14	21	28	35	42	17.2	17.7	5.2	8.3	11.5	14.6	18.4	23.5 Nm	3 Nm
M16 X 1.5	F416	S416	16	24	32	40	48	19.4	19.9	8.3	13.0	17.7	22.4	27.6		
M16 X 2.0	F116	S116	16	24	32	40	48	19.4	19.9	6.1	9.7	13.3	16.8	21.4	31.5 Nm	4.2 Nm
M18 X 1.5*	514		1/2	5/8				22.2	22.8	4.6	6.5					
M18 X 1.5	F418	S418	18	27	36	45	54	21.5	22.0	9.5	14.9	20.2	25.3	31.4		
M18 X 2.0	F218	S218	18	27	36	45	54	21.5	22.0	7.1	11.2	15.1	19.1	23.1		
M18 X 2.5	F118	S118	18	27	36	45	54	21.5	22.0	5.6	9.0	12.3	15.5	19.1	42 Nm	5.5 Nm
M20 X 1.5	F420	S420	20	30	40	50	60	23.7	24.2	10.7	16.7	22.4	29.9	35.0		
M20 X 2.0	F220	S220	20	30	40	50	60	23.7	24.2	8.0	12.5	16.8	21.3	25.9		
M20 X 2.5	F120	S120	20	30	40	50	60	23.7	24.2	6.3	10.0	13.7	17.7	21.5	54 Nm	7 Nm
M22 X 1.5	F422	S422	22	33	44	55	66	26.3	26.8	11.7	18.1	24.5	32.0	38.6		
M22 X 2.0	F222	S222	22	33	44	55	66	26.3	26.8	8.7	13.6	18.4	23.7	28.7		
M22 X 2.5	F122	S122	22	33	44	55	66	26.3	26.8	6.9	10.9	15.0	19.6	23.8	67.5 Nm	9 Nm
M24 X 2.0	F224	S224	24	36	48	60	72	28.6	29.1	9.6	15.0	20.2	25.9	31.4		
M24 X 3.0	F124	S124	24	36	48			28.6	29.1	6.2	10.0	14.0	17.7	21.5	80 Nm	10.5 Nm
M27 X 2.0	F227	S227	27	40.5	54	67.5		32.2	32.7	10.9	17.1	22.6				
M27 X 3.0	F127	S127	27	40.5	54	67.5		32.2	32.7	7.1	11.4	15.4	20.1		94 Nm	12 Nm
M30 X 2.0	F230	S230	30	45	60	75		35.2	35.7	12.3	19.0	25.5	32.8			
M30 X 3.5	F130	S130	30	45	60	75	90	35.2	35.7	7.0	11.0	14.9	19	23.1	108 Nm	14 Nm
M33 X 2.0	F233	S233	33	49.5				38.3	38.8	13.7	21.2					
M33 X 3.5	F133	S133	33	49.5	66			38.3	38.8	7.8	12.2	16.5			122 Nm	15.5 Nm
M36 X 2.0	F436	S436	36	54	72			42.1	42.6	14.1	21.9	31.1				
M36 X 4.0	F136	S136	36	54	72			42.1	42.6	7.0	11.0	15.2			136 Nm	17.5 Nm
M39 X 2.0	F639	S639	39	58.5				45.1	45.6	16.3	25.0					
M39 X 4.0	F139	S139	39	58.5	78			45.1	45.6	7.7	12.2	16.6			150 Nm	19.5 Nm

*Spark Plug Sizes



METRIC

THREAD SIZE	ARMACOIL TAPS					ARMACOIL GAUGES		INSERTING TOOL		TANG BREAK OFF		AUTO TANG BREAK OFF		EXTRACTION TOOL
	Rough	Finish	Bottom	SP Flute	SP Point									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
M2 x 0.4		020040P	020040B	020040S	020040V	0200405	0200406	ST1300	ST1300	MTB102				1227-06
M2.2 x 0.45	022045R	022045P	022045B	022045S	022045V	0220455	0220456	ST1311	ST1311	TBO-50	TBO-50			1227-06
M2.5 X 0.45	025045R	025045P	025045B	025045S	025045V	0250455	0250456	ST1248	ST1248	TBO-50	TBO-50	ATB-50		1227-06
M3 X 0.5	030050R	030050P	030050B	030050S	030050V	0300505	0300506	ST1281	ST1281	TBO-52	TBO-52	ATB-52		1227-06
M3.5 X 0.6	035060R	035060P	035060B	035060S	035060V	0350605	0350606	9865-1035	9865-1035	TBO-53	TBO-52	ATB-52		1227-06
M4 X 0.7	040070R	040070P	040070B	040070S	040070V	0400705	0400706	9865-104	9865-104	TBO-54	TBO-53	ATB-53		1227-06
M4.5 X 0.75	045075R	045075P	045075B	045075S	045075V	0450755	0450756	9865-1045	9865-1045	TBO-70				1227-06
M5 X 0.8	050080R	050080P	050080B	050080S	050080V	0500805	0500806	9865-105	9865-105	TBO-55	TBO-54	ATB-54		1227-6
M6 X 1.0	060100R	060100P	060100B	060100S	060100V	0601005	0601006	9865-106	9865-106	TBO-71	TBO-71	ATB-55		1227-6
M7 X 1.0	070100R	070100P	070100B	070100S	070100V	0701005	0701006	9865-107	9865-107	TBO-57	TBO-56			1227-6
M8 X 1.0	080100R	080100P	080100B	080100S	080100V	0801005	0801006	9865-408	9865-408	TBO-56	TBO-58	ATB-56		1227-6
M8 X 1.25	080125R	080125P	080125B	080125S	080125V	0801255	0801256	9865-108	9865-108	TBO-58	TBO-57	ATB-57		1227-6
M9 X 1.25	090125R	090125P	090125B	090125S	090125V	0901255	0901256	9865-109	9865-109	TBO-59	TBO-59			1227-6
M10 X 1.0*	475	476					477	541						1227-6
M10 X 1.25	100125R	100125P	100125B	100125S	100125V	1001255	1001256	9865-510	9865-510	TBO-61	TBO-61	ATB-61		1227-6
M10 X 1.5	100150R	100150P	100150B	100150S	100150V	1001505	1001506	9865-110	9865-110	TBO-61	TBO-60	ATB-62		1227-6
M11 X 1.5	110150R	110150P	110150B	110150S	110150V	1101505	1101506	9865-111	9865-111	TBO-65	SMTB-111			1227-16
M12 X 1.25*	ST534	ST535					ST536	ST537						1227-16
M12 X 1.25	120125R	120125P	120125B	120125S	120125V	1201255	1201256	9865-512	9865-512	TBO-68	TBO-67	ATB-67		1227-16
M12 X 1.5	120150R	120150P	120150B	120150S	120150V	1201505	1201506	9865-412	9865-412	TBO-68	TBO-67	ATB-67		1227-16
M12 X 1.75	120175R	120175P	120175B	120175S	120175V	1201755	1201756	MIP-112	SMIP-112	TBO-69	TBO-69	ATB-69		1227-16
M14 X 1.25*	525	521					845	542						1227-16
M14 X 1.5	140150R	140150P	140150B	140150S	140150V	1401505	1401506	MIP-414	SMIP-414	MTB-414	SMTB-414			1227-16
M14 X 2.0	140200R	140200P	140200B	140200S	140200V	1402005	1402006	MIP-114	SMIP-114	XTB-9	SMTB-114			1227-16
M16 X 1.5	160150R	160150P	160150B	160150S	160150V	1601505	1601506	MIP-416	SMIP-416	1196-10	SMTB-416			1227-16
M16 X 2.0	160200R	160200P	160200B	160200S	160200V	1602005	1602006	MIP-116	SMIP-116	XTB-10	XTB-10			1227-16
M18 X 1.5*	526	522					846	543						1227-16
M18 X 1.5	180150R	180150P	180150B	180150S	180150V	1801505	1801505	MIP-418	SMIP-418	1195-12	SMTB-418			1227-16
M18 X 2.0	180200R	180200P	180200B	180200S	180200V	1802005	1802006	MIP-218	SMIP-218	MTB-218	SMTB-218			1227-16
M18 X 2.5	180250R	180250P	180250B	180250S	180250V	1802505	1802506	MIP-118	SMIP-118	MTB-118	SMTB-118			1227-16
M20 X 1.5	200150R	200150P	200150B	200150S	200150V	2001505	2001506	MIP-420	SMIP-420	MTB-420	SMTB-420			1227-16
M20 X 2.0	200200R	200200P	200200B	200200S	200200V	2002005	2002006	MIP-220	SMIP-220	MTB-220	SMTB-220			1227-16
M20 X 2.5	200250R	200250P	200250B	200250S	200250V	2002505	2002506	MIP-120	SMIP-120	MTB-120	SMTB-120			1227-16
M22 X 1.5	220150R	220150P	220150B	220150S	220150V	2201505	2201506	MIP-422	SMIP-422	MTB-422	SMTB-422			1227-16
M22 X 2.0	220200R	220200P	220200B	220200S	220200V	2202005	2002006	MIP-222	SMIP-222	MTB-222	SMTB-222			1227-16
M22 X 2.5	220250R	220250P	220250B	220250S	220250V	2202505	2202506	MIP-122	SMIP-122	MTB-122	SMTB-122			1227-16
M24 X 2.0	240200R	240200P	240200B	240200S	240200V	2402005	2402006	MIP-224	SMIP-224	WTB-16	USE PLIERS			1227-16
M24 X 3.0	240300R	240300P	240300B	240300S	240300V	2403005	2403006	MIP-124	SMIP-124	MTB-124	SMTB-124			1227-16
M27 X 2.0	270200R	270200P	270200B	270200S	270200V	2702005	2702006	MIP-227		USE PLIERS	USE PLIERS			1227-16
M27 X 3.0	270300R	270300P	270300B	270300S	270300V	2703005	2703006	MIP-127	SMIP-127	USE PLIERS	USE PLIERS			1227-16
M30 X 2.0	300200R	300200P	300200B	300200S	300200V	3002005	3002006	MIP-230		USE PLIERS	USE PLIERS			1227-24
M30 X 3.5	300350R	300350P	300350B	300350S	300350V	3003505	3003506	MIP-130	SMIP-130	USE PLIERS	USE PLIERS			1227-24
M33 X 2.0	330200R	330200P	330200B	330200S	330200V	3302005	3302006	MIP-233		USE PLIERS	USE PLIERS			1227-24
M33 X 3.5	330350R	330350P	330350B	330350S	330350V	3303505	3303506	MIP-133	SMIP-133	USE PLIERS	USE PLIERS			1227-24
M36 X 2.0	360200R	360200P	360200B	360200S	360200V	3602005	3602006	MIP-436		USE PLIERS	USE PLIERS			1227-24
M36 X 4.0	360400R	360400P	360400B	360400S	360400V	3604005	3604006	MIP-136	SMIP-136	USE PLIERS	USE PLIERS			1227-24
M39 X 2.0	390200R	390200P	390200B	390200S	390200V	3902005	3902006	MIP-639		USE PLIERS	USE PLIERS			1227-24
M39 X 4.0	390400R	390400P	390400B	390400S	390400V	3904005	3904006	MIP-139	SMIP-139	USE PLIERS	USE PLIERS			1227-24

*Spark Plug Sizes

UNC

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
2-56	1185-02	3585-02	0.086	0.129	0.172	0.215	0.258	0.110	0.119	3.000	5.250	7.375	9.625	11.875	20 oz-in	3 oz-in
3-48	1185-03	3585-03	0.099	0.148	0.198	0.248	0.297	0.128	0.139	2.875	5.000	7.250	9.375	11.500	32 oz-in	7 oz-in
4-40	1185-04	3585-04	0.112	0.168	0.224	0.280	0.336	0.144	0.159	2.750	4.750	6.750	8.875	10.875	48 oz-in	10 oz-in
5-40	1185-05	3585-05	0.125	0.188	0.250	0.312	0.375	0.158	0.173	3.250	5.500	7.750	10.000	12.250	75 oz-in	13 oz-in
6-32	1185-06	3585-06	0.138	0.207	0.276	0.345	0.414	0.178	0.193	2.750	4.750	6.875	8.875	10.875	6 lb-in	1.0 lb-in
8-32	1185-2	3585-2	0.164	0.246	0.328	0.410	0.492	0.205	0.220	3.500	6.000	8.375	10.750	13.250	9 lb-in	1.5 lb-in
10-24	1185-3	3585-3	0.190	0.285	0.380	0.475	0.570	0.244	0.259	2.875	5.000	7.125	9.250	11.375	13 lb-in	2.0 lb-in
12-24	1185-1	3585-1	0.216	0.324	0.432	0.540	0.648	0.270	0.285	3.500	6.000	8.375	10.625	13.125	24 lb-in	3.0 lb-in
1/4-20	1185-4	3585-4	0.250	0.375	0.500	0.625	0.750	0.310	0.330	3.375	5.750	8.000	10.375	12.750	30 lb-in	4.5 lb-in
5/16-18	1185-5	3585-5	0.313	0.469	0.625	0.781	0.938	0.380	0.400	4.000	6.625	9.250	11.875	14.625	60 lb-in	7.5 lb-in
3/8-16	1185-6	3585-6	0.375	0.563	0.750	0.938	1.125	0.452	0.472	4.375	7.250	10.000	12.875	15.750	80 lb-in	12.0 lb-in
7/16-14	1185-7	3585-7	0.438	0.656	0.875	1.094	1.313	0.526	0.551	4.500	7.375	10.250	13.125	16.125	100 lb-in	16.5 lb-in
1/2-13	1185-8	3585-8	0.500	0.750	1.000	1.250	1.500	0.597	0.622	4.875	7.875	11.000	14.125	17.125	150 lb-in	24.0 lb-in
9/16-12	1185-9	3585-9	0.563	0.844	1.125	1.406	1.688	0.669	0.694	5.125	8.250	11.500	14.750	17.875	200 lb-in	30.0 lb-in
5/8-11	1185-10	3585-10	0.625	0.938	1.250	1.563	1.875	0.742	0.767	5.250	8.500	11.750	15.000	18.375	300 lb-in	40.0 lb-in
3/4-10	1185-12	3585-12	0.750	1.125	1.500	1.875	2.250	0.881	0.906	5.875	9.375	13.000	16.500	20.125	400 lb-in	60.0 lb-in
7/8-9	1185-14	3585-14	0.875	1.313	1.750	2.188	2.625	1.022	1.052	6.250	10.000	13.750	17.500	21.250	600 lb-in	82.0 lb-in
1-8	1185-16	3585-16	1.000	1.500	2.000	2.500	3.000	1.166	1.196	6.375	10.125	14.000	17.750	21.625	800 lb-in	110.0 lb-in
1-1/8-7	1185-18	3585-18	1.125	1.688	2.250	2.813	3.375	1.315	1.355	6.125	9.875	13.625	17.500	21.250	900 lb-in	137.0 lb-in
1-1/4-7	1185-20	3585-20	1.250	1.875	2.500	3.125	3.750	1.443	1.483	7.000	11.250	15.375	19.500	23.750	1000 lb-in	165.0 lb-in
1-3/8-6	1185-22	3585-22	1.375	2.063	2.750	3.438	4.125	1.598	1.643	6.500	10.500	14.375	18.375	22.250	1150 lb-in	185.0 lb-in
1-1/2-6	1185-24	3585-24	1.500	2.250	3.000	3.750	4.500	1.727	1.772	7.250	11.500	15.875	20.125	24.500	1350 lb-in	210.0 lb-in

UNF

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
2-64	1191-02	3591-02	0.086	0.129	0.172	0.215	0.258	0.110	0.119	3.500	5.875	8.375	10.750	13.125	20 oz-in	3 oz-in
3-56	1191-03	3591-03	0.099	0.148	0.198	0.248	0.297	0.131	0.146	3.375	5.625	8.000	10.375	12.625	32 oz-in	7 oz-in
4-48	1191-04	3591-04	0.112	0.168	0.224	0.280	0.336	0.147	0.162	3.375	5.625	7.875	10.250	12.500	48 oz-in	10 oz-in
5-44	1191-05	3591-05	0.125	0.188	0.250	0.312	0.375	0.163	0.178	3.563	5.938	8.313	10.750	13.125		
6-40	1191-06	3591-06	0.138	0.207	0.276	0.345	0.414	0.173	0.193	3.500	6.000	8.375	10.750	13.250	6 lb-in	1.0 lb-in
8-36	1191-2	3591-2	0.164	0.246	0.328	0.410	0.492	0.204	0.224	3.875	6.500	9.125	11.625	14.250	9 lb-in	1.5 lb-in
10-32	1191-3	3591-3	0.190	0.285	0.380	0.475	0.570	0.236	0.256	4.125	6.875	9.500	12.250	14.875	13 lb-in	2.0 lb-in
1/4-28	1191-4	3591-4	0.250	0.375	0.500	0.625	0.750	0.306	0.326	5.000	8.250	11.375	14.500	17.625	30 lb-in	3.5 lb-in
5/16-24	1191-5	3591-5	0.313	0.469	0.625	0.781	0.938	0.380	0.400	5.500	8.875	12.250	15.625	19.000	60 lb-in	6.5 lb-in
3/8-24	1191-6	3591-6	0.375	0.563	0.750	0.938	1.125	0.448	0.468	6.875	11.000	15.000	19.125	23.125	80 lb-in	9.5 lb-in
7/16-20	1191-7	3591-7	0.438	0.656	0.875	1.094	1.313	0.524	0.549	6.625	10.625	14.625	18.500	22.500	100 lb-in	14.0 lb-in
1/2-20	1191-8	3591-8	0.500	0.750	1.000	1.250	1.500	0.592	0.617	7.875	12.375	16.875	21.375	25.875	150 lb-in	18.0 lb-in
9/16-18	1191-9	3591-9	0.563	0.844	1.125	1.406	1.688	0.666	0.691	8.000	12.500	17.125	21.750	26.250	200 lb-in	24.0 lb-in
5/8-18	1191-10	3591-10	0.625	0.938	1.250	1.563	1.875	0.733	0.758	9.000	14.125	19.250	24.250	29.375	300 lb-in	32.0 lb-in
3/4-16	1191-12	3591-12	0.750	1.125	1.500	1.875	2.250	0.876	0.901	9.750	15.125	20.625	26.000	31.500	400 lb-in	50.0 lb-in
7/8-14	1191-14	3591-14	0.875	1.313	1.750	2.188	2.625	1.021	1.051	9.875	15.500	21.125	26.625	32.250	600 lb-in	70.0 lb-in
1-12	1191-161	3591-161	1.000	1.500	2.000	2.500	3.000	1.169	1.199	9.625	15.000	20.500	26.000	31.500	800 lb-in	90.0 lb-in
1-1/8-12	1191-18	3591-18	1.125	1.688	2.250	2.813	3.375	1.304	1.334	11.125	17.250	23.375	29.500	35.750	900 lb-in	117.0 lb-in
1-1/4-12	1191-20	3591-20	1.250	1.875	2.500	3.125	3.750	1.439	1.469	12.500	19.375	26.250	33.000	39.875	1000 lb-in	143.0 lb-in
1-3/8-12	1191-22	3591-22	1.375	2.063	2.750	3.438	4.125	1.575	1.610	13.750	21.375	28.875	36.500	44.000	1150 lb-in	165.0 lb-in
1-1/2-12	1191-24	3591-24	1.500	2.250	3.000	3.750	4.500	1.710	1.745	15.250	23.500	31.625	39.875	48.125	1350 lb-in	190.0 lb-in

INSERT TYPE

- 1185 UNC FR
- 3585 UNC SL
- 1191 UNF FR
- 3591 UNF SL

HOW TO ORDER

1191-3

MATERIAL

CN

CHOOSE FROM LIST

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

FINISH

P

CHOOSE FROM LIST

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

LENGTH

See above chart

x .190

ORDER CODE e.g

1191-3CNP x .190
10-32UNF x 1D FR CP

UNC

THREAD SIZE	ARMACOIL TAPS					ARMACOIL GAUGES		INSERTING TOOL		TANG BREAK OFF		AUTO TANG BREAK OFF		EXTRACTION TOOL
	Rough	Finish	Bottom	SP Flute	SP Point									
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		TBO-50		ATB-50		
3-48	03CRU	03CPB	03CBB	03CS	03CSB	1440-03	1688-03	528-03		TBO-51		ATB-50		
4-40	04CRU	04CPB	04CBB	04CS	04CSB	1440-04	1688-04	ST1104	ST1104	TBO-51	TBO-50	ATB-51		1227-06
5-40	05CRU	05CPB	05CBB	05CS	05CSB	1440-05	1688-05	528-05	3551-05	TBO-52	TBO-52	ATB-51		1227-06
6-32	06CRU	06CPB	06CBB	06CS	06CSB	1440-06	1688-06	ST1103	ST1103	TBO-52	TBO-52	ATB-52		1227-06
8-32	2CRU	2CPB	2CBB	2CS	2CSB	1440-2	1688-2	ST980	ST980	TBO-54	TBO-53	ATB-53		1227-06
10-24	3CRU	3CPB	3CBB	3CS	3CSB	1440-3	1688-3	ST1101	ST1101	TBO-70	TBO-54	ATB-54		1227-6
12-24	1CRU	1CPB	1CBB	1CS	1CSB	1440-1	1688-1	528-1	3551-1	TBO-55	TBO-55	ATB-54		1227-6
1/4-20	4CRU	4CPB	4CBB	4CS	4CSB	1440-4	1688-4	528-4	3551-4	TBO-56	TBO-71	ATB-55		1227-6
5/16-18	5CRU	5CPB	5CBB	5CS	5CSB	1440-5	1688-5	528-5	3551-5	TBO-57	TBO-57	ATB-57		1227-6
3/8-16	6CRU	6CPB	6CBB	6CS	6CSB	1440-6	1688-6	528-6	3551-6	TBO-60	TBO-59	ATB-59		1227-6
7/16-14	7CRU	7CPB	7CBB	7CS	7CSB	1440-7	1688-7	528-7	3551-7	TBO-65	TBO-63	ATB-63		1227-16
1/2-13	8CRU	8CPB	8CBB	8CS	8CSB	1440-8	1688-8	528-8	3551-8	TBO-68	TBO-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	ARMACOIL TAPS					ARMACOIL GAUGES		INSERTING TOOL		TANG BREAK OFF		AUTO TANG BREAK OFF		EXTRACTION TOOL
	Rough	Finish	Bottom	SP Flute	SP Point									
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	TBO-50	TBO-50	ATB-50		1227-06
3-56	03FRU	03FPB	03FBB	03FS	03FSB	1441-03	1694-03	ST1312	ST1312	TBO-51	TBO-51	ATB-50		1227-06
4-48	04FRU	04FPB	04FBB	04FS	04FSB	1441-04	1694-04	9863-04	9863-04	TBO-52	TBO-52	ATB-51		1227-06
5-44	05FRU	05FPB	05FBB	05FS	05FSB	1441-05	1694-05	9863-05	9863-05	TBO-52	TBO-52	ATB-51		1227-06
6-40	06FRU	06FPB	06FBB	06FS	06FSB	1441-06	1694-06	9863-06	9863-06	TBO-53	TBO-52	ATB-52		1227-06
8-36	2FRU	2FPB	2FBB	2FS	2FSB	1441-2	1694-2	9863-2	9863-2	TBO-54	TBO-53	ATB-53		1227-06
10-32	3FRU	3FPB	3FBB	3FS	3FSB	1441-3	1694-3	9863-3	9863-3	TBO-55	TBO-54	ATB-54		1227-6
1/4-28	4FRU	4FPB	4FBB	4FS	4FSB	1441-4	1694-4	9863-4	9863-4	TBO-56	TBO-71	ATB-55		1227-6
5/16-24	5FRU	5FPB	5FBB	5FS	5FSB	1441-5	1694-5	9863-5	9863-5	TBO-58	TBO-57	ATB-58		1227-6
3/8-24	6FRU	6FPB	6FBB	6FS	6FSB	1441-6	1694-6	9863-6	9863-6	TBO-60	TBO-60	ATB-60		1227-6
7/16-20	7FRU	7FPB	7FBB	7FS	7FSB	1441-7	1694-7	9863-7	9863-7	TBO-69	TBO-64	ATB-64		1227-16
1/2-20	8FRU	8FPB	8FBB	8FS	8FSB	1441-8	1694-8	9863-8	9863-8	TBO-66	TBO-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	96FS	96FSB	1441-161	1694-161	535-161	535-161	1196-161	USE PLIERS			1227-16
1-1/8-12	18FRU	18FPB	18FBB	18FS	18FSB	1441-18	1694-18	535-18	535-18	USE PLIERS	USE PLIERS			1227-24
1-1/4-12	20FRU	20FPB	20FBB	20FS	20FSB	1441-20	1694-20	535-20	535-20	USE PLIERS	USE PLIERS			1227-24
1-3/8-12	22FRU	22FPB	22FBB	22FS	22FSB	1441-22	1694-22	535-22	535-22	USE PLIERS	USE PLIERS			1227-24
1-1/2-12	24FRU	24FPB	24FBB	24FS	24FSB	1441-24	1694-24	535-24	535-24	USE PLIERS	USE PLIERS			1227-24

BSW

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 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

Z
CHOOSE FROM LIST

LENGTH
See above chart

x .375

ORDER CODE e.g

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

BSW

THREAD SIZE	ARMACOIL TAPS					ARMACOIL GAUGES		INSERTING TOOL		TANG BREAK OFF		AUTO TANG BREAK OFF		EXTRACTION TOOL
	Rough	Finish	Bottom	SP Flute	SP Point									
	2	3	4	5	6	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	WGC-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	ARMACOIL TAPS					ARMACOIL GAUGES		INSERTING TOOL		TANG BREAK OFF		AUTO TANG BREAK OFF		EXTRACTION TOOL
	Rough	Finish	Bottom	SP Flute	SP Point									
	2	3	4	5	6	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

G (BSPF)

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

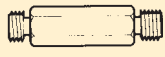




See above chart

x .375

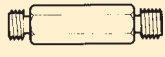

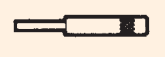


ORDER CODE e.g

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

G (BSPF)

THREAD SIZE	ARMACOIL TAPS					ARMACOIL GAUGES		INSERTING TOOL		TANG BREAK OFF		AUTO TANG BREAK OFF		EXTRACT 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
1/8-28	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	ARMACOIL TAPS					ARMACOIL 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

TAPPED HOLE DATA



METRIC To BS 4377		TAPPED HOLE				FITTED MINOR DIA.
		MINOR DIA. MAX - MIN	MAJOR DIA.	CLASS 5H MAX - MIN	CLASS 6H MAX - MIN	
		A	B	C	C	
SIZE	DRILL	A	B	C	C	E
M2 X 0.4	2.10	2.18 - 2.09	2.52	2.30 - 2.26	2.31 - 2.26	1.57
M2.2 X 0.45	2.30	2.40 - 2.30	2.79	2.53 - 2.49	2.55 - 2.49	1.71
M2.5 X 0.45	2.60	2.70 - 2.60	3.09	2.83 - 2.79	2.85 - 2.79	2.01
M3 X 0.5	3.10	3.22 - 3.11	3.65	3.37 - 3.33	3.38 - 3.33	2.46
M3.5 X 0.6	3.60	3.75 - 3.63	4.28	3.94 - 3.89	3.96 - 3.89	2.85
M4 X 0.7	4.10	4.29 - 4.15	4.91	4.51 - 4.46	4.53 - 4.46	3.24
M4.5 X 0.75	4.70	4.81 - 4.66	5.47	5.04 - 4.99	5.06 - 4.99	3.69
M5 X 0.8	5.20	5.33 - 5.17	6.04	5.58 - 5.52	5.60 - 5.52	4.13
M6 X 1.0	6.20	6.41 - 6.22	7.30	6.72 - 6.65	6.74 - 6.65	4.92
M7 X 1.0	7.20	7.41 - 7.22	8.30	7.72 - 7.65	7.74 - 7.65	5.92
M8 X 1.0	8.20	8.41 - 8.22	9.30	8.72 - 8.65	8.74 - 8.65	6.92
M8 X 1.25	8.30	8.48 - 8.27	9.62	8.89 - 8.81	8.91 - 8.81	6.65
M9 X 1.25	9.30	9.48 - 9.27	10.62	9.89 - 9.81	9.91 - 9.81	7.65
M10 X 1.0 *	10.30	10.39 - 10.26	11.20		10.71 - 10.65	8.86
M10 X 1.25	10.30	10.48 - 10.27	11.62	10.89 - 10.81	10.91 - 10.81	8.65
M10 X 1.5	10.30	10.56 - 10.33	11.95	11.06 - 10.97	11.09 - 10.97	8.38
M11 X 1.5	11.30	11.56 - 11.33	12.95	12.06 - 11.97	12.09 - 11.97	9.38
M12 X 1.25 *	12.30	12.47 - 12.27	13.61		12.90 - 12.81	10.64
M12 X 1.25	12.30	12.48 - 12.27	13.62	12.90 - 12.81	12.93 - 12.81	10.65
M12 X 1.5	12.50	12.32 - 12.56	13.95	13.07 - 12.97	13.10 - 12.97	
M12 X 1.75	12.40	12.64 - 12.38	14.27	13.24 - 13.14	13.27 - 13.14	10.11
M14 X 1.25 *	9/6	14.40 - 14.28	15.57		15.04 - 14.97	12.65
M14 X 1.5	14.30	14.56 - 14.33	15.95	15.07 - 14.97	15.10 - 14.97	12.38
M14 X 2.0	14.50	14.73 - 14.43	16.60	15.41 - 15.30	15.44 - 15.30	11.84
M16 X 1.5	16.25	16.56 - 16.33	17.95	17.07 - 16.97	17.10 - 16.97	14.38
M16 X 2.0	16.50	16.73 - 16.43	18.60	17.41 - 17.30	17.44 - 17.30	13.84
M18 X 1.5 *	23/32	18.36 - 18.24	20.14		19.15 - 19.06	16.05
M18 X 1.5	18.25	18.56 - 18.33	19.95	19.07 - 18.97	19.10 - 18.97	16.38
M18 X 2.0	18.50	18.73 - 18.43	20.60	19.41 - 19.30	19.44 - 19.30	15.84
M18 X 2.5	18.50	18.90 - 18.54	21.25	19.74 - 19.62	19.78 - 19.62	15.29
M20 X 1.5	20.25	20.56 - 20.33	21.95	21.07 - 20.97	21.10 - 20.97	18.38
M20 X 2.0	20.50	20.73 - 20.43	22.60	21.41 - 21.30	21.44 - 21.30	17.84
M20 X 2.5	20.50	20.90 - 20.54	23.25	21.74 - 21.62	21.78 - 21.62	17.29
M22 X 1.5	22.50	22.56 - 22.33	23.95	23.07 - 22.97	23.10 - 22.97	20.38
M22 X 2.0	22.50	22.73 - 22.43	24.60	23.41 - 23.30	23.44 - 23.30	19.84
M22 X 2.5	22.50	22.90 - 22.54	25.25	23.74 - 23.62	23.78 - 23.62	19.29
M24 X 2.0	24.25	24.73 - 24.43	26.60	25.41 - 25.30	25.45 - 25.30	21.84
M24 X 3.0	24.75	25.05 - 24.65	27.90	26.09 - 25.95	26.14 - 25.95	20.75
M27 X 2.0	27.50	27.43 - 27.73	29.60			
M27 X 3.0	27.50	28.05 - 27.65	30.90	29.09 - 28.95	29.14 - 28.95	23.75
M30 X 2.0	30.50	30.43 - 30.73	32.60			
M30 X 3.5	30.50	31.21 - 30.76	34.55	32.43 - 32.27	32.47 - 32.27	26.21
M33 X 2.0	33.50	33.43 - 33.78	35.60			
M33 X 3.5	33.50	34.21 - 33.76	37.55	35.43 - 35.27	35.47 - 35.27	29.21
M36 X 2.0	36.50	36.43 - 36.73	38.60			
M36 X 4.0	36.50	37.34 - 36.87	41.20	38.76 - 38.60	38.81 - 38.60	31.67
M39 X 2.0	39.50	39.43 - 39.73	41.60			
M39 X 4.0	39.50	40.34 - 39.87	44.20	41.76 - 41.60	41.81 - 41.60	34.67

UNC To BS 3409		TAPPED HOLE				FITTED MINOR DIA.
		MINOR DIA. MAX - MIN	MAJOR DIA.	CLASS 2B MAX - MIN	CLASS 3B MAX - MIN	
		A	B	C	C	
SIZE	DRILL	A	B	C	C	E
2-56	2.3MM	0.094 - 0.090	0.1092	0.0996 - 0.0976	0.0989 - 0.0976	0.0667
3-48	2.7MM	0.108 - 0.104	0.1261	0.1147 - 0.1125	0.1139 - 0.1125	0.0764
4-40	3MM	0.122 - 0.118	0.1445	0.1307 - 0.1282	0.1298 - 0.1282	0.0849
5-40	3.4MM	0.135 - 0.131	0.1575	0.1437 - 0.1412	0.1429 - 0.1412	0.0979
6-32	3.7MM	0.150 - 0.145	0.1786	0.1611 - 0.1583	0.1601 - 0.1583	0.1042
8-32	11/64	0.175 - 0.171	0.2046	0.1872 - 0.1843	0.1862 - 0.1843	0.1302
10-24	5.1MM	0.205 - 0.199	0.2441	0.2204 - 0.2171	0.2193 - 0.2171	0.1449
12-24	5.8MM	0.230 - 0.225	0.2701	0.2465 - 0.2431	0.2454 - 0.2431	0.1709
1/4-20	6.7MM	0.270 - 0.261	0.3150	0.2863 - 0.2825	0.2851 - 0.2825	0.1959
5/16-18	8.3MM	0.334 - 0.325	0.3847	0.3529 - 0.3486	0.3515 - 0.3486	0.2524
3/8-16	9.9MM	0.398 - 0.389	0.4562	0.4203 - 0.4156	0.4189 - 0.4156	0.3073
7/16-14	29/64	0.463 - 0.453	0.5303	0.4890 - 0.4839	0.4875 - 0.4839	0.3602
1/2-13	33/64	0.527 - 0.517	0.5999	0.5554 - 0.5499	0.5537 - 0.5499	0.4167
9/16-12	14.75MM	0.591 - 0.581	0.6708	0.6225 - 0.6167	0.6208 - 0.6167	0.4723
5/8-11	16.5MM	0.656 - 0.645	0.7431	0.6903 - 0.6841	0.6885 - 0.6841	0.5266
3/4-10	19.75MM	0.783 - 0.772	0.8799	0.8216 - 0.8149	0.8196 - 0.8149	0.6417
7/8-9	23MM	0.912 - 0.899	1.0193	0.9543 - 0.9471	0.9522 - 0.9471	0.7547
1-8	1-1/32	1.042 - 1.027	1.1624	1.0890 - 1.0812	1.0868 - 1.0812	0.8647
1-1/8-7	1-5/32	1.170 - 1.156	1.3106	1.2262 - 1.2178	1.2239 - 1.2178	0.9704
1-1/4-7	1-9/32	1.295 - 1.281	1.4356	1.3514 - 1.3428	1.3490 - 1.3428	1.0954
1-3/8-6	36MM	1.431 - 1.411	1.5914	1.4926 - 1.4832	1.4900 - 1.4832	1.1946
1-1/2-6	1-35/64	1.556 - 1.536	1.7164	1.6177 - 1.6082	1.6151 - 1.6082	1.3196

UNF To BS 3409		TAPPED HOLE				FITTED MINOR DIA.
		MINOR DIA. MAX - MIN	MAJOR DIA.	CLASS 2B MAX - MIN	CLASS 3B MAX - MIN	
		A	B	C	C	
SIZE	DRILL	A	B	C	C	E
2-64	2.3MM	0.093 - 0.090	0.1063	0.0980 - 0.0962	0.0974 - 0.0962	0.0691
3-56	2.65MM	0.106 - 0.103	0.1222	0.1126 - 0.1106	0.1119 - 0.1106	0.0797
4-48	3MM	0.120 - 0.117	0.1391	0.1278 - 0.1255	0.1270 - 0.1255	0.0894
5-44	3.3MM	0.134 - 0.130	0.1545	0.1422 - 0.1398	0.1414 - 0.1398	0.1004
6-40	3.7MM	0.148 - 0.144	0.1705	0.1568 - 0.1542	0.1559 - 0.1542	0.1109
8-36	11/64	0.174 - 0.170	0.2001	0.1848 - 0.1820	0.1839 - 0.1820	0.1339
10-32	5.1MM	0.201 - 0.197	0.2306	0.2133 - 0.2103	0.2123 - 0.2103	0.1562
1/4-28	6.6MM	0.264 - 0.258	0.2964	0.2765 - 0.2732	0.2754 - 0.2732	0.2113
5/16-24	8.2MM	0.328 - 0.322	0.3666	0.3433 - 0.3395	0.3421 - 0.3395	0.2674
3/8-24	9.8MM	0.390 - 0.384	0.4291	0.4059 - 0.4020	0.4047 - 0.4020	0.3299
7/16-20	29/64	0.456 - 0.449	0.5025	0.4744 - 0.4700	0.4731 - 0.4700	0.3834
1/2-20	33/64	0.518 - 0.511	0.5650	0.5371 - 0.5325	0.5357 - 0.5325	0.4459
9/16-18	37/64	0.582 - 0.575	0.6347	0.6035 - 0.5986	0.6020 - 0.5986	0.5024
5/8-18	41/64	0.644 - 0.637	0.6972	0.6661 - 0.6611	0.6646 - 0.6611	0.5649
3/4-16	49/64	0.771 - 0.764	0.8312	0.7961 - 0.7906	0.7945 - 0.7906	0.6823
7/8-14	22.75MM	0.899 - 0.891	0.9678	0.9274 - 0.9214	0.9257 - 0.9214	0.7977
1-12	26MM	1.028 - 1.018	1.1083	1.0608 - 1.0542	1.0589 - 1.0542	0.9098
1-1/8-12	29.25MM	1.153 - 1.143	2333	1.1860 - 1.1792	1.1841 - 1.1792	1.0348
1-1/4-12	1-17/64	1.278 - 1.268	1.3583	1.3112 - 1.3042	1.3092 - 1.3042	1.1598
1-3/8-12	35.5MM	1.403 - 1.393	1.4833	1.4364 - 1.4292	1.4343 - 1.4292	1.2848
1-1/2-12	38.5MM	1.528 - 1.518	1.6083	1.5615 - 1.5542	1.5595 - 1.5542	1.4098

*Spark Plug Sizes

BSW		TAPPED HOLE				FITTED MINOR DIA.
		MINOR DIA. MAX - MIN	MAJOR DIA.	MED CLASS MAX - MIN	CLOSE CLASS MAX - MIN	
		A	B	C	C	
SIZE	DRILL	A	B	C	C	E
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

BSF		TAPPED HOLE				FITTED MINOR DIA.
		MINOR DIA. MAX - MIN	MAJOR DIA.	MED CLASS MAX - MIN	CLOSE CLASS MAX - MIN	
		A	B	C	C	
SIZE	DRILL	A	B	C	C	E
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	0.3447 - 0.3416	0.2543
3/8-20	9.8MM	0.392 - 0.385	0.4340	0.4104 - 0.4070	0.4104 - 0.4070	0.3110
7/16-18	29/64	0.458 - 0.450	0.5030	0.4767 - 0.4730	0.4751 - 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

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	
SIZE	DRILL	A	B	C	C	E
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

BA		TAPPED HOLE			FITTED MINOR DIA.
		MINOR DIA. MAX - MIN	MAJOR DIA.	STANDARD NUT FIT MAX - MIN	
		A	B	C	
SIZE	DRILL	A	B	C	E
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

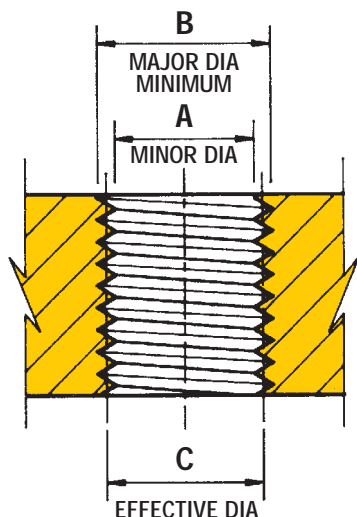
Recommended for Screw Lock Insert applications.

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.

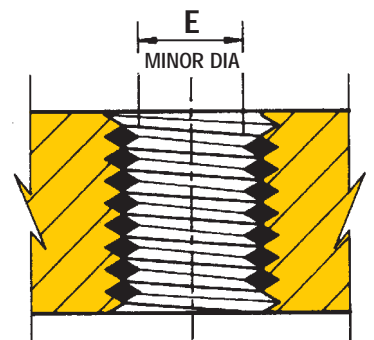
Minimum drilling and tapping depths are given in the tables.



INSERT (FITTED)

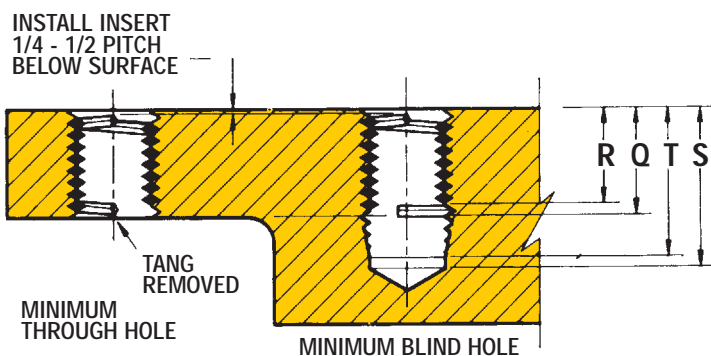
ArmaCoil when fitted will 'mimic' the class of fit of the tapped hole. It is important that the class of fit is checked with an ArmaCoil gauge before insertion.

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.



METRIC

METRIC SIZE	1D				1.5D				2D				2.5D				3D			
	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T
M2 X 0.4	2.00	1.60	3.80	3.40	3.00	2.60	4.80	4.40	4.00	3.60	5.80	5.40	5.00	4.60	6.80	6.40	6.00	5.60	7.80	7.40
M2.2 X 0.45	2.20	1.75	4.23	3.78	3.30	2.85	5.33	4.88	4.40	3.95	6.43	5.98	5.50	5.05	7.53	7.08	6.60	6.15	8.63	8.18
M2.5 X 0.45	2.50	2.05	4.53	4.08	3.75	3.30	5.78	5.33	5.00	4.55	7.03	6.58	6.25	5.80	8.28	7.83	7.50	7.05	9.53	9.08
M3 X 0.5	3.00	2.50	5.25	4.75	4.50	4.00	6.75	6.25	6.00	5.50	8.25	7.75	7.50	7.00	9.75	9.25	9.00	8.50	11.25	10.75
M3.5 X 0.6	3.50	2.90	6.20	5.60	5.25	4.65	7.95	7.35	7.00	6.40	9.70	9.10	8.75	8.15	11.45	10.85	10.50	9.90	13.20	12.60
M4 X 0.7	4.00	3.30	7.15	6.45	6.00	5.30	9.15	8.45	8.00	7.30	11.15	10.45	10.00	9.30	13.15	12.45	12.00	11.30	15.15	14.45
M4.5 X 0.75	4.50	3.75	7.88	7.13	6.75	6.00	10.13	9.38	9.00	8.25	12.38	11.63	11.25	10.50	14.63	13.88	13.50	12.75	16.88	16.13
M5 X 0.8	5.00	4.20	8.60	7.80	7.50	6.70	11.10	10.30	10.00	9.20	13.60	12.80	12.50	11.70	16.10	15.30	15.00	14.20	18.60	17.80
M6 X 1.0	6.00	5.00	10.50	9.50	9.00	8.00	13.50	12.50	12.00	11.00	16.50	15.50	15.00	14.00	19.50	18.50	18.00	17.00	22.50	21.50
M7 X 1.0	7.00	6.00	11.50	10.50	10.50	9.50	15.00	14.00	14.00	13.00	18.50	17.50	17.50	16.50	22.00	21.00	21.00	20.00	25.50	24.50
M8 X 1.0	8.00	7.00	12.50	11.50	12.00	11.00	16.50	15.50	16.00	15.00	20.50	19.50	20.00	19.00	24.50	23.50	24.00	23.00	28.50	27.50
M8 X 1.25	8.00	6.75	13.63	12.38	12.00	10.75	17.63	16.38	16.00	14.75	21.63	20.38	20.00	18.75	25.63	24.38	24.00	22.75	29.63	28.38
M9 X 1.25	9.00	7.75	14.63	13.38	13.50	12.25	19.13	17.88	18.00	16.75	23.63	22.38	22.50	21.25	28.13	26.88	27.00	25.75	32.63	31.38
M10 X 1.25	10.00	8.75	15.63	14.38	15.00	13.75	20.63	19.38	20.00	18.75	25.63	24.38	25.00	23.75	30.63	29.38	30.00	28.75	35.63	34.38
M10 X 1.5	10.00	8.50	16.75	15.25	15.00	13.50	21.75	20.25	20.00	18.50	26.75	25.25	25.00	23.50	31.75	30.25	30.00	28.50	36.75	35.25
M11 X 1.5	11.00	9.50	17.75	16.25	16.50	15.00	23.25	21.75	22.00	20.50	28.75	27.25	27.50	26.00	34.25	32.75	33.00	31.50	39.75	38.25
M12 X 1.25	12.00	10.75	17.63	16.38	18.00	16.75	23.63	22.38	24.00	22.75	29.63	27.38	30.00	28.75	35.63	34.38	36.00	34.75	41.63	40.38
M12 X 1.75	12.00	10.25	19.88	18.13	18.00	16.25	25.88	24.13	24.00	22.25	31.88	30.13	30.00	28.25	37.88	36.13	36.00	34.25	43.88	42.13
M14 X 1.5	14.00	12.50	20.75	19.25	21.00	19.50	27.75	26.25	28.00	26.50	34.75	33.25	35.00	33.50	41.75	40.25	42.00	40.50	48.75	47.25
M14 X 2.0	14.00	12.00	23.00	21.00	21.00	19.00	30.00	28.00	28.00	26.00	37.00	35.00	35.00	33.00	44.00	42.00	42.00	40.00	51.00	49.00
M16 X 1.5	16.00	14.50	22.75	21.25	24.00	22.50	30.75	29.25	32.00	30.50	38.75	37.25	40.00	38.50	46.75	45.25	48.00	46.50	54.75	53.25
M16 X 2.0	16.00	14.00	25.00	23.00	24.00	22.00	33.00	31.00	32.00	30.00	41.00	39.00	40.00	38.00	49.00	47.00	48.00	46.00	57.00	55.00
M18 X 1.5	18.00	16.50	24.75	23.25	27.00	25.50	33.75	32.25	36.00	34.50	42.75	41.25	45.00	43.50	51.75	50.25	54.00	52.50	60.75	59.25
M18 X 2.0	18.00	16.00	27.00	25.00	27.00	25.00	36.00	34.00	36.00	34.00	45.00	43.00	45.00	43.00	54.00	52.00	54.00	52.00	63.00	61.00
M18 X 2.5	18.00	15.50	29.25	26.75	27.00	24.50	38.25	35.75	36.00	33.50	47.25	44.75	45.00	42.50	56.25	53.75	54.00	51.50	65.25	62.75
M20 X 1.5	20.00	18.50	26.75	25.25	30.00	28.50	36.75	35.25	40.00	38.50	46.75	45.25	50.00	48.50	56.75	55.25	60.00	58.50	66.75	65.25
M20 X 2.0	20.00	18.00	29.00	27.00	30.00	28.00	39.00	37.00	40.00	38.00	49.00	47.00	50.00	48.00	59.00	57.00	60.00	58.00	69.00	67.00
M20 X 2.5	20.00	17.50	31.25	28.75	30.00	27.50	41.25	38.75	40.00	37.50	51.25	48.75	50.00	47.50	61.25	58.75	60.00	57.50	71.25	68.75
M22 X 1.5	22.00	20.50	28.75	27.25	33.00	31.50	39.75	38.25	44.00	42.50	50.75	49.25	55.00	53.50	61.75	60.25	66.00	64.50	72.75	71.25
M22 X 2.0	22.00	20.00	31.00	29.00	33.00	31.00	42.00	40.00	44.00	42.00	53.00	51.00	55.00	53.00	64.00	62.00	66.00	64.00	75.00	73.00
M22 X 2.5	22.00	19.50	33.25	30.75	33.00	30.50	44.25	41.75	44.00	41.50	55.25	52.75	55.00	52.50	66.25	63.75	66.00	63.50	77.25	74.75
M24 X 2.0	24.00	22.00	33.00	31.00	36.00	34.00	45.00	43.00	48.00	46.00	57.00	55.00	60.00	58.00	69.00	67.00	72.00	70.00	81.00	79.00
M24 X 3.0	24.00	21.00	37.50	34.50	36.00	33.00	49.50	46.50	48.00	45.00	61.50	58.50	60.00	57.00	73.50	70.50	72.00	69.00	85.50	82.50
M27 X 3.0	27.00	24.00	40.50	37.50	40.50	37.50	54.00	51.00	54.00	51.00	67.50	64.50	67.50	64.50	81.00	78.00	81.00	78.00	94.50	91.50
M30 X 3.5	30.00	26.50	45.75	42.25	45.00	41.50	60.75	57.25	60.00	56.50	75.75	72.25	75.00	71.50	90.75	87.25	90.00	86.50	105.75	102.25
M33 X 3.5	33.00	29.50	48.75	45.25	49.50	46.00	65.25	61.75	66.00	62.50	81.75	78.25	82.50	79.00	98.25	94.75	99.00	95.50	114.75	111.25
M36 X 4.0	36.00	32.00	54.00	50.00	54.00	50.00	72.00	68.00	72.00	68.00	90.00	86.00	90.00	86.00	108.00	104.00	108.00	104.00	126.00	122.00
M39 X 4.0	39.00	35.00	57.00	53.00	58.50	54.50	76.50	72.50	78.00	74.00	96.00	92.00	97.50	93.50	115.50	111.50	117.00	113.00	135.00	131.00



- Q - Full tapped thread length (min.)
 - R - Entering portion of screw (max.). If Tang is not removed.
 - S - Drill depth (min.) - excluding point.
 - T - Tap depth (min.) - including 3 1/2 threads chamfer of plug tap.
1. Figures in table are for min. depth holes. When possible, add 1 pitch to Q, S and T. Insert can then be installed 1/4 - 1/2 pitch below surface.
 2. Depths of C'bores or C'sks. If any, must be added to values for Q, R, S and T.
 3. If bottoming taps are used, S and T may be reduced by an amount equal to 2 x pitch.



DRILLING & TAPPING DEPTHS - UNIFIED

UNC

UNC SIZE	1D				1.5D				2D				2.5D				3D			
	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T
2-56	0.086	0.068	0.166	0.148	0.129	0.111	0.209	0.191	0.172	0.154	0.252	0.234	0.215	0.197	0.295	0.277	0.258	0.240	0.338	0.320
3-48	0.099	0.078	0.193	0.172	0.148	0.127	0.242	0.221	0.198	0.177	0.292	0.271	0.248	0.227	0.342	0.321	0.297	0.276	0.391	0.370
4-40	0.112	0.087	0.224	0.199	0.168	0.143	0.280	0.255	0.224	0.199	0.336	0.311	0.280	0.255	0.392	0.367	0.336	0.311	0.448	0.423
5-40	0.125	0.100	0.237	0.212	0.187	0.162	0.300	0.275	0.250	0.225	0.362	0.337	0.312	0.287	0.425	0.400	0.375	0.350	0.487	0.462
6-32	0.138	0.107	0.279	0.247	0.207	0.176	0.348	0.316	0.276	0.245	0.417	0.385	0.345	0.314	0.486	0.454	0.414	0.383	0.555	0.523
8-32	0.164	0.133	0.305	0.273	0.246	0.215	0.387	0.355	0.328	0.297	0.469	0.437	0.410	0.379	0.551	0.519	0.492	0.461	0.633	0.601
10-24	0.190	0.148	0.377	0.336	0.285	0.243	0.472	0.431	0.380	0.338	0.567	0.526	0.475	0.433	0.662	0.621	0.570	0.528	0.757	0.716
12-24	0.216	0.174	0.404	0.362	0.324	0.282	0.512	0.470	0.432	0.390	0.620	0.578	0.540	0.498	0.727	0.686	0.648	0.606	0.836	0.794
1/4-20	0.250	0.200	0.475	0.425	0.375	0.325	0.600	0.550	0.500	0.450	0.725	0.675	0.625	0.575	0.850	0.800	0.750	0.700	0.975	0.925
5/16-18	0.312	0.257	0.562	0.507	0.469	0.413	0.719	0.663	0.625	0.569	0.875	0.819	0.781	0.726	1.031	0.976	0.937	0.882	1.187	1.132
3/8-16	0.375	0.312	0.656	0.594	0.562	0.500	0.844	0.781	0.750	0.687	1.031	0.969	0.937	0.875	1.219	1.156	1.125	1.062	1.406	1.344
7/16-14	0.437	0.366	0.759	0.687	0.656	0.585	0.978	0.906	0.875	0.804	1.196	1.125	1.094	1.022	1.415	1.343	1.312	1.241	1.634	1.562
1/2-13	0.500	0.423	0.846	0.769	0.750	0.673	1.096	1.019	1.000	0.923	1.346	1.269	1.250	1.173	1.596	1.519	1.500	1.423	1.846	1.769
9/16-12	0.562	0.479	0.937	0.854	0.844	0.760	1.219	1.135	1.125	1.042	1.500	1.417	1.406	1.323	1.781	1.698	1.687	1.604	2.062	1.979
5/8-11	0.625	0.534	1.034	0.943	0.937	0.846	1.347	1.256	1.250	1.159	1.659	1.568	1.562	1.471	1.972	1.881	1.875	1.784	2.284	2.193
3/4-10	0.750	0.650	1.200	1.100	1.125	1.025	1.575	1.475	1.500	1.400	1.950	1.850	1.875	1.775	2.325	2.225	2.250	2.150	2.700	2.600
7/8-9	0.875	0.764	1.375	1.264	1.312	1.201	1.812	1.701	1.750	1.639	2.250	2.139	2.187	2.076	2.687	2.576	2.625	2.514	3.125	3.014
1-8	1.000	0.875	1.563	1.437	1.500	1.375	2.062	1.937	2.000	1.875	2.562	2.437	2.500	2.375	3.062	2.937	3.000	2.875	3.562	3.437
1-1/8-7	1.125	0.982	1.768	1.625	1.687	1.545	2.330	2.187	2.250	2.107	2.893	2.750	2.812	2.670	3.455	3.312	3.375	3.232	4.018	3.875
1-1/4-7	1.250	1.107	1.893	1.750	1.875	1.732	2.518	2.375	2.500	2.357	3.143	3.000	3.125	2.982	3.768	3.625	3.750	3.607	4.393	4.250
1-3/8-6	1.375	1.208	2.125	1.958	2.062	1.896	2.812	2.646	2.750	2.583	3.500	3.333	3.437	3.270	4.187	4.021	4.125	3.958	4.875	4.708
1-1/2-6	1.500	1.333	2.250	2.083	2.250	2.083	3.000	2.833	3.000	2.833	3.750	3.583	3.750	3.583	4.500	4.333	4.500	4.333	5.250	5.083

UNF

UNF SIZE	1D				1.5D				2D				2.5D				3D			
	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T
2-64	0.086	0.070	0.156	0.141	0.129	0.113	0.199	0.184	0.172	0.156	0.242	0.227	0.215	0.199	0.285	0.270	0.258	0.242	0.328	0.313
3-56	0.099	0.081	0.179	0.161	0.148	0.130	0.228	0.210	0.198	0.180	0.278	0.260	0.248	0.230	0.328	0.310	0.297	0.279	0.377	0.359
4-48	0.112	0.091	0.206	0.185	0.168	0.147	0.262	0.241	0.224	0.203	0.318	0.297	0.280	0.259	0.374	0.353	0.336	0.315	0.430	0.409
5-44	0.125	0.102	0.227	0.205	0.188	0.165	0.290	0.268	0.250	0.227	0.352	0.330	0.312	0.289	0.414	0.392	0.375	0.352	0.477	0.455
6-40	0.138	0.113	0.250	0.225	0.207	0.182	0.319	0.294	0.276	0.251	0.388	0.363	0.345	0.320	0.457	0.432	0.414	0.389	0.526	0.501
8-36	0.164	0.136	0.289	0.261	0.246	0.218	0.371	0.343	0.328	0.300	0.453	0.425	0.410	0.382	0.535	0.507	0.492	0.464	0.617	0.589
10-32	0.190	0.159	0.331	0.299	0.285	0.254	0.426	0.394	0.380	0.349	0.521	0.489	0.475	0.444	0.616	0.584	0.570	0.539	0.711	0.679
1/4-28	0.250	0.214	0.411	0.375	0.375	0.339	0.536	0.500	0.500	0.464	0.661	0.625	0.625	0.589	0.786	0.750	0.750	0.714	0.911	0.875
5/16-24	0.312	0.271	0.500	0.458	0.469	0.428	0.656	0.615	0.625	0.583	0.812	0.771	0.781	0.740	0.969	0.927	0.937	0.896	1.125	1.083
3/8-24	0.375	0.333	0.562	0.521	0.562	0.521	0.750	0.708	0.750	0.708	0.937	0.896	0.937	0.896	1.125	1.083	1.125	1.083	1.312	1.271
7/16-20	0.437	0.387	0.662	0.612	0.656	0.606	0.881	0.831	0.875	0.825	1.100	1.050	1.094	1.044	1.319	1.269	1.312	1.262	1.537	1.488
1/2-20	0.500	0.450	0.725	0.675	0.750	0.700	0.975	0.925	1.000	0.950	1.225	1.175	1.250	1.200	1.475	1.425	1.500	1.450	1.725	1.675
9/16-18	0.562	0.507	0.812	0.757	0.844	0.788	1.094	1.038	1.125	1.068	1.375	1.319	1.406	1.351	1.656	1.601	1.687	1.632	1.937	1.882
5/8-18	0.625	0.569	0.875	0.819	0.937	0.882	1.187	1.132	1.250	1.194	1.500	1.444	1.562	1.507	1.812	1.757	1.875	1.819	2.125	2.069
3/4-16	0.750	0.687	1.031	0.969	1.125	1.062	1.406	1.344	1.500	1.437	1.781	1.719	1.875	1.812	2.156	2.094	2.250	2.187	2.531	2.469
7/8-14	0.875	0.804	1.196	1.125	1.312	1.241	1.634	1.562	1.750	1.679	2.071	2.000	2.187	2.116	2.509	2.437	2.625	2.554	2.946	2.875
1-12	1.000	0.917	1.375	1.292	1.500	1.417	1.875	1.792	2.000	1.917	2.375	2.292	2.500	2.417	2.875	2.792	3.000	2.917	3.375	3.292
1-1/8-12	1.125	1.042	1.500	1.417	1.687	1.604	2.062	1.979	2.250	2.167	2.625	2.542	2.812	2.729	3.187	3.104	3.375	3.292	3.750	3.667
1-1/4-12	1.250	1.167	1.625	1.542	1.875	1.792	2.250	2.167	2.500	2.417	2.875	2.792	3.125	3.042	3.500	3.417	3.750	3.667	4.125	4.042
1-3/8-12	1.375	1.292	1.750	1.667	2.062	1.979	2.437	2.354	2.750	2.667	3.125	3.042	3.437	3.354	3.812	3.729	4.125	4.042	4.500	4.417
1-1/2-12	1.500	1.417	1.875	1.792	2.250	2.167	2.625	2.542	3.000	2.917	3.375	3.292	3.750	3.667	4.125	4.042	4.500	4.417	4.875	4.792

BSW

BSW SIZE	1D				1.5D				2D				2.5D				3D			
	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T
1/8-40	0.125	0.100	0.237	0.212	0.187	0.162	0.299	0.274	0.250	0.225	0.362	0.337	0.312	0.287	0.425	0.400	0.375	0.350	0.487	0.462
3/16-24	0.187	0.146	0.375	0.332	0.281	0.240	0.468	0.426	0.375	0.334	0.562	0.520	0.468	0.427	0.656	0.612	0.562	0.521	0.750	0.708
1/4-20	0.250	0.200	0.475	0.425	0.375	0.325	0.600	0.550	0.500	0.450	0.725	0.675	0.625	0.575	0.850	0.800	0.750	0.700	0.975	0.925
5/16-18	0.312	0.257	0.562	0.507	0.469	0.413	0.719	0.663	0.625	0.569	0.875	0.819	0.781	0.726	1.031	0.976	0.937	0.882	1.187	1.132
3/8-16	0.375	0.312	0.656	0.594	0.562	0.500	0.844	0.781	0.750	0.687	1.031	0.969	0.937	0.875	1.219	1.156	1.125	1.062	1.406	1.344
7/16-14	0.437	0.366	0.759	0.687	0.656	0.585	0.978	0.906	0.875	0.804	1.196	1.125	1.093	1.022	1.415	1.343	1.312	1.241	1.634	1.562
1/2-12	0.500	0.417	0.875	0.792	0.750	0.667	1.125	1.042	1.000	0.917	1.375	1.292	1.250	1.167	1.625	1.542	1.500	1.417	1.875	1.792
9/16-12	0.562	0.479	0.937	0.854	0.844	0.760	1.219	1.135	1.125	1.042	1.500	1.417	1.406	1.323	1.781	1.698	1.687	1.604	2.062	1.979
5/8-11	0.625	0.534	1.034	0.943	0.937	0.846	1.347	1.256	1.250	1.159	1.659	1.568	1.562	1.471	1.972	1.881	1.875	1.784	2.284	2.193
11/16-11	0.687	0.596	1.097	1.006	1.031	0.940	1.441	1.350	1.375	1.284	1.785	1.694	1.718	1.627	2.128	2.037	2.062	1.971	2.472	2.381
3/4-10	0.750	0.650	1.200	1.100	1.125	1.025	1.575	1.475	1.500	1.400	1.950	1.850	1.875	1.775	2.325	2.225	2.250	2.150	2.700	2.600
7/8-9	0.875	0.764	1.375	1.264	1.312	1.201	1.812	1.701	1.750	1.639	2.250	2.139	2.187	2.076	2.687	2.576	2.625	2.514	3.125	3.014
1-8	1.000	0.875	1.563	1.437	1.500	1.375	2.062	1.937	2.000	1.875	2.562	2.437	2.500	2.375	3.062	2.937	3.000	2.875	3.562	3.437
1-1/8-7	1.125	0.982	1.768	1.625	1.687	1.545	2.330	2.187	2.250	2.107	2.893	2.750	2.812	2.670	3.455	3.312	3.375	3.232	4.018	3.875
1-1/4-7	1.250	1.107	1.893	1.750	1.875	1.732	2.518	2.375	2.500	2.357	3.143	3.000	3.125	2.982	3.768	3.625	3.750	3.607	4.393	4.250
1-1/2-6	1.500	1.333	2.250	2.083	2.250	2.083	3.000	2.833	3.000	2.833	3.750	3.583	3.750	3.583	4.500	4.333	4.500	4.333	5.250	5.083

BSF

BSF SIZE	1D				1.5D				2D				2.5D				3D			
	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T
3/16-32	0.187	0.156	0.327	0.296	0.281	0.250	0.421	0.390	0.375	0.344	0.515	0.484	0.468	0.437	0.608	0.577	0.562	0.531	0.702	0.671
7/32-28	0.218	0.182	0.379	0.343	0.328	0.292	0.489	0.453	0.437	0.401	0.598	0.562	0.546	0.510	0.707	0.671	0.656	0.620	0.817	0.781
1/4-26	0.250	0.212	0.423	0.385	0.375	0.337	0.548	0.510	0.500	0.462	0.673	0.635	0.625	0.587	0.798	0.760	0.750	0.712	0.923	0.885
9/32-26	0.281	0.243	0.454	0.416	0.421	0.383	0.594	0.556	0.562	0.524	0.735	0.697	0.703	0.665	0.876	0.838	0.843	0.805	1.016	0.978
5/16-22	0.312	0.267	0.516	0.471	0.469	0.424	0.673	0.628	0.625	0.580	0.829	0.784	0.781	0.736	0.985	0.940	0.937	0.892	1.141	1.096
3/8-20	0.375	0.325	0.600	0.550	0.562	0.512	0.787	0.737	0.750	0.700	0.975	0.925	0.937	0.887	1.162	1.112	1.125	1.075	1.350	1.300
7/16-18	0.437	0.381	0.687	0.631	0.656	0.600	0.906	0.850	0.875	0.819	1.125	1.069	1.093	1.037	1.343	1.287	1.312	1.256	1.562	1.506
1/2-16	0.500	0.437	0.781	0.719	0.750	0.688	1.031	0.969	1.000	0.938	1.281	1.219	1.250	1.188	1.531	1.469	1.500	1.438	1.781	1.719
9/16-16	0.562	0.500	0.843	0.781	0.844	0.782	1.125	1.063	1.125	1.062	1.406	1.344	1.406	1.344	1.687	1.625	1.687	1.625	1.968	1.906
5/8-14	0.625	0.554	0.946	0.875	0.937	0.866	1.258	1.187	1.250	1.179	1.571	1.500	1.562	1.491	1.883	1.812	1.875	1.804	2.196	2.125
11/16-14	0.687	0.616	1.008	0.937	1.031	0.960	1.352	1.281	1.375	1.304	1.696	1.625	1.718	1.647	2.039	1.968	2.062	1.991	2.383	2.312
3/4-12	0.750	0.667	1.125	1.042	1.125	1.042	1.500	1.417	1.500	1.417	1.875	1.792	1.875	1.792	2.250	2.167	2.250	2.167	2.625	2.542
13/16-12	0.812	0.729	1.187	1.104	1.218	1.135	1.593	1.510	1.625	1.542	2.000	1.917	2.031	1.948	2.406	2.323	2.437	2.354	2.812	2.729
7/8-11	0.875	0.784	1.284	1.193	1.312	1.221	1.721	1.630	1.750	1.659	2.159	2.068	2.187	2.096	2.596	2.505	2.625	2.534	3.034	2.943
1-10	1.000	0.900	1.450	1.350	1.500	1.400	1.950	1.850	2.000	1.900	2.450	2.350	2.500	2.400	2.950	2.850	3.000	2.900	3.450	3.350
1-1/8-9	1.125	1.014	1.625	1.514	1.687	1.576	2.187	2.076	2.250	2.139	2.750	2.639	2.812	2.701	3.312	3.201	3.375	3.264	3.875	3.764
1-1/4-9	1.250	1.139	1.750	1.639	1.875	1.764	2.375	2.264	2.500	2.389	3.000	2.889	3.125	3.014	3.625	3.514	3.750	3.639	4.250	4.139
1-3/8-8	1.375	1.250	1.938	1.813	2.062	1.937	2.625	2.500	2.750	2.625	3.312	3.188	3.437	3.312	4.000	3.875	4.125	4.000	4.688	4.563
1-1/2-8	1.500	1.375	2.063	1.938	2.250	2.125	2.813	2.688	3.000	2.875	3.563	3.438	3.750	3.625	4.313	4.188	4.500	4.375	5.063	4.938

G (BSPF)

G(BSPF) SIZE	1D				1.5D				2D				2.5D				3D			
	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T
1/8-28	0.125	0.089	0.287	0.251	0.187	0.151	0.349	0.313	0.250	0.214	0.412	0.376	0.312	0.276	0.474	0.438	0.375	0.339	0.537	0.501
1/4-19	0.250	0.197	0.488	0.435	0.375	0.322	0.613	0.560	0.500	0.447	0.738	0.685	0.625	0.572	0.863	0.810	0.750	0.697	0.988	0.935
3/8-19	0.375	0.322	0.613	0.560	0.562	0.509	0.800	0.747	0.750	0.697	0.988	0.935	0.937	0.884	1.175	1.122	1.125	1.072	1.363	1.310
1/2-14	0.500	0.429	0.820	0.749	0.750	0.679	1.070	0.999	1.000	0.929	1.320	1.249	1.250	1.179	1.570	1.499	1.500	1.429	1.820	1.749
5/8-14	0.625	0.554	0.945	0.874	0.937	0.866	1.257	1.186	1.250	1.179	1.570	1.499	1.562	1.491	1.882	1.811	1.875	1.804	2.195	2.124
3/4-14	0.750	0.679	1.070	0.999	1.125	1.054	1.445	1.374	1.500	1.429	1.820	1.749	1.875	1.804	2.195	2.124	2.250	2.179	2.570	2.499
7/8-14	0.875	0.804	1.195	1.124	1.312	1.241	1.632	1.561	1.750	1.679	2.070	1.999	2.187	2.116	2.507	2.436	2.625	2.554	2.945	2.874
1-11	1.000	0.909	1.410	1.319	1.500	1.409	1.910	1.819	2.000	1.909	2.410	2.319	2.500	2.409	2.910	2.819	3.000	2.909	3.410	3.319
1-1/4-11	1.250	1.159	1.660	1.569	1.875	1.784	2.285	2.194	2.500	2.409	2.910	2.819	3.125	3.034	3.535	3.44	3.750	3.659	4.160	4.069
1-1/2-11	1.500	1.409	1.910	1.819	2.250	2.159	2.660	2.569	3.000	2.909	3.410	3.319	3.750	3.659	4.160	4.069	4.500	4.409	4.910	4.819

BA

BA SIZE	1D				1.5D				2D				2.5D				3D			
	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T	Q	R	S	T
0BA	0.236	0.197	0.413	0.374	0.354	0.315	0.531	0.492	0.472	0.433	0.649	0.610	0.591	0.552	0.768	0.729	0.709	0.670	0.886	0.847
1BA	0.209	0.174	0.368	0.333	0.313	0.278	0.472	0.437	0.417	0.382	0.576	0.541	0.522	0.487	0.681	0.646	0.626	0.591	0.785	0.750
2BA	0.185	0.153	0.329	0.297	0.278	0.246	0.422	0.390	0.370	0.338	0.514	0.482	0.463	0.431	0.607	0.575	0.555	0.523	0.699	0.667
3BA	0.161	0.132	0.291	0.262	0.242	0.213	0.372	0.343	0.323	0.294	0.453	0.424	0.404	0.375	0.534	0.505	0.484	0.455	0.614	0.585
4BA	0.142	0.116	0.259	0.233	0.213	0.187	0.330	0.304	0.283	0.257	0.400	0.374	0.354	0.328	0.471	0.445	0.425	0.399	0.542	0.516
5BA	0.126	0.103	0.230	0.207	0.189	0.166	0.293	0.270	0.252	0.229	0.356	0.333	0.315	0.292	0.419	0.396	0.378	0.355	0.482	0.459
6BA	0.110	0.089	0.204	0.183	0.165	0.144	0.259	0.238	0.220	0.199	0.314	0.293</								

Chemical Composition & Related Materials

TABLE 1

18-8 STAINLESS STEEL	C	Si	Mn	Ni	Cr
DTD734	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	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

ArmaCoil 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 earth's magnetic field) gave a residual field of 2 to 10 gauss.

ArmaCoil 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 **ArmaCoil**.

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

ArmaCoil 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

ArmaCoil 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 **ArmaCoil** inserts to Aerospace standards quote the relevant AGS part no.

ArmaCoil 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.

ArmaCoil 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



Roughing Tap

Straight fluted taps made undersize to reduce the load on the finishing tap and particularly for difficult tapping operations. Recommended for use when tapping steels or close tolerance fits as required, reducing wear on the finishing tap.



Finishing Tap

Hand or machine tapping for through holes and blind holes where ample chip clearance is available. The lead chamfer permits easier starting and requires less tapping torque than bottoming taps.



Bottoming Tap

Used for tapping blind holes when maximum full form threads are required in minimum depth holes.



Spiral Flute Tap

Tap designed with spiral flutes in the same "hand" as the thread. This directs the swarf backwards out of the hole. Recommended for blind or deep hole applications in soft (eg. Aluminium) materials. Due to the suitability blind hole tapping the lead chamfer is normally that of a bottoming tap.



Spiral Point Tap

Designed primarily as a machine tap for tapping through holes. The Spiral Point is formed in the lead teeth at an angle to the tap axis. The swarf, due to the cutting action, is pushed forwards ahead of the tap. The flutes of the spiral point tap serve only to deliver coolant to the cutting edges, therefore much shallower flutes are used. Subsequently the tap has greater strength and makes precise tapping possible. Not recommended on abrasive materials.



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 ArmaCoil 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 ArmaCoil 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 ArmaCoil 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 ArmaCoil 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 ArmaCoil.

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 ArmaCoil 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 ArmaCoil.

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 ArmaCoil.

Electric Installation Tool



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

The Electric Tool with its Mandrel and Depth Stop will install the ArmaCoil 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

POWER TOOL FRONT END ASSEMBLY

METRIC

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
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

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

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



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

* Not available in Plastic Case

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 <small>(Non Pilot Nose Tap)</small>	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
M14 X 3/4" Reach	79161808550		
M6 - M12 PLUS M14 SPARK PLUG <small>(Pilot Nose Tap)</small>	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

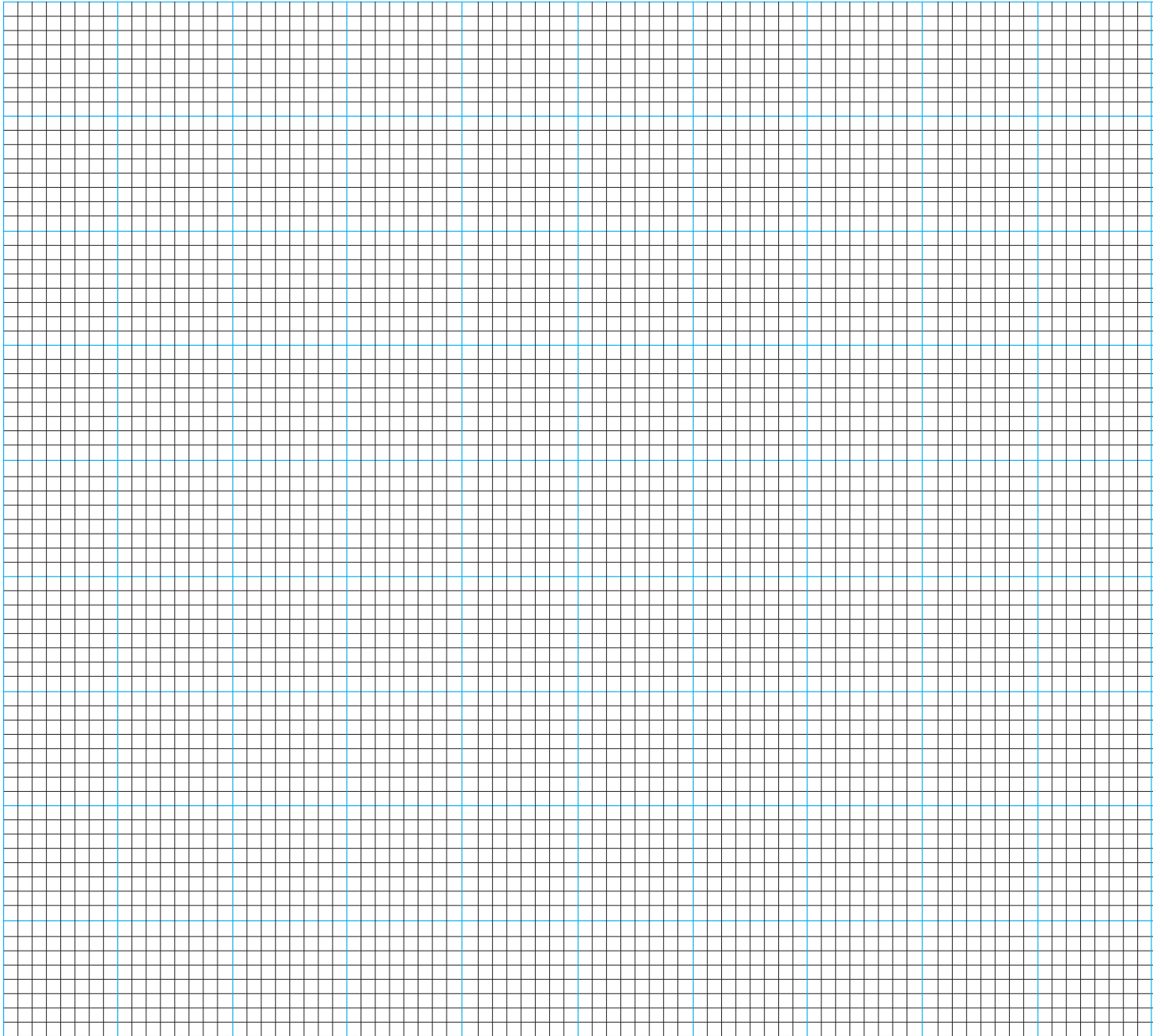
BSW	KIT NO.	REPLACEMENT	INSERT PACK
1/4 - 1/2 BSW	71661731700	1/4-20	79161808537
		5/16-18	79161808538
		3/8-16	79161808539
		7/16-14	79161808540
		1/2-12	79161808541

BA

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



Workshop Kit



Product Quality Assurance

Armstrong Precision Components Ltd is approved to:

ISO9001: 2000 Plus AS9100 Rev B CERT No: FM00049

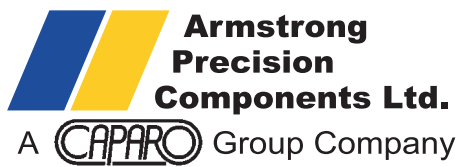
ISO14001: 2004 CERT No: EMS507767

OHSAS 18001: 1999 CERT No: OHS507769

Investor In People



INVESTOR IN PEOPLE



**Armstrong
Precision
Components Ltd.**

A **CAPARO** Group Company

Armstrong Precision Components Ltd

Stoneferry Business Park, Foster Street, Hull HU8 8BT United Kingdom

Main	t: +44 (0)1482 325425	f: +44 (0)1482 327229
Sales	t: +44 (0)1482 591569	f: +44 (0)1482 326986
Accounts	t: +44 (0)1482 591589	
Technical	t: +44 (0)1482 591579	f: +44 (0)1482 591576

e: info@apc-caparo.com **w:** www.apc-caparo.com

