

# Finishes & Coatings



## Lubricants and Coatings

It is important that correct selection of the most suitable fastening lubricant or coating is made at the design stage for long term security within the bolted joint.

The ideal finish or coating for the insert is dependent upon the optimum coefficient of friction (governed by the bolt material and surface finish), and the required service conditions of the assembled parts, e.g. temperature, chemical influences, humidity and dust.

The coefficient of friction ( $\mu$ ) of most threaded components will generally vary between  $\mu = 0.15$  and  $\mu = 0.35$ .

For example differences occur between bolts made of Grade 8.8 steel (Werkstoff 1.0503), compared with the same size of bolt, but produced from an austenitic stainless steel X5 CrNi 18-9, (Werkstoff 1.4301).

Differences also occur between bolts having different surface coatings, such as electro-galvanising, hot galvanising, cadmium plating or chromium plating.

## Typical Recoil wire thread insert finishes and coatings

PLATING / FINISH	PART NUMBER SUFFIX	APPLICABLE PROCESS SPECIFICATION
Silver Plating	AG	QQS-365 or AMS2411 or EN2786
Cadmium plating	C	QQP-416 or DEF STD 03-19
Dry Film Lubricant	D	MIL-L-8937 or MIL-L-46010
Red Dye	Not Applicable	Applied to all Recoil locking inserts for identification where called for by specification*

\* Recoil inserts may also be dyed in other colours such as Green and Blue for identification purposes.

MATERIAL TYPE	MAX. TEMPERATURE		TYPICAL APPLICATIONS	COATINGS (SEE SECTION ON LUBRICANTS)
	PEAK	CONTINUOUS		
<b>Stainless 304</b>	425°C (800°F)	315°C (600°F)	Most general applications in all materials	Non-finished Dry film Lubricant Silver Cadmium
<b>Stainless 316</b>	425°C (800°F)	315°C (600°F)	Improved corrosion resistance Salt water applications	Non-finished Dry film Lubricant Silver Cadmium
<b>Phosphor Bronze</b>	300°C (572°F)	235°C (455°F)	Copper parts Non magnetic / Low permeability applications	Cadmium Silver
<b>Inconel x 750</b>	650°C (1200°F)	550°C (1020°F)	Aerospace / Turbines / Corrosive atmospheres / High temperature use	Silver Copper
<b>Nimonic alloy 90</b>	650°C (1200°F)	550°C (1020°F)	Aerospace / Turbine applications	Silver

## Silver Plating

Primarily used to reduce the effects of galling (seizure) of screw threads in high temperature service applications.

Silver plating is the most commonly used coating for aero-engine fasteners providing an even degree of lubrication up to a maximum service temperature of about 650°C (1200°F).

The plated silver is electrolytically deposited in typical thicknesses up to 6.3µm (0.00025").

Silver plated wire thread inserts may be installed into various housing materials including magnesium alloys, aluminium alloys, corrosion and heat resistant materials, etc.

**Caution must be emphasised where inserts are to be installed into titanium alloy components which may exceed a service temperature of 300°C (570°F). Silver plated inserts are not recommended with titanium housings as stress corrosion, resulting from the combination of silver with titanium may occur in the housing material.**

## Cadmium Plating

In mildly corrosive or marine environments, cadmium plating is the preferred treatment for providing protection against pitting of the insert/bolt materials and to minimise the risk of thread seizure.

Plating thickness may vary depending on particular applications, between 2µm - 5µm (0.0001" - 0.0002"). Following cadmium plating, either a bronze or olive drab chromate finish will be used to provide uniformity in the overall finish.

It should be noted that cadmium plated parts must not:-

- Be subjected to temperatures exceeding 235°C (455°F).
- Come into contact with fuel or hot oil.
- Come into contact with food or drinking water
- Be used with titanium components either directly or indirectly as, at elevated temperatures, embrittlement and subsequent component failure may occur.

**Warning: Cadmium is a highly toxic compound. Because of its poisonous nature extreme care must be taken when handling.**

## Dry Film Lubricants

Used for mildly corrosive or high temperature applications, dry film lubricants comprise of suspensions of small particles of solid lubricants such as molybdenum disulphide (MoS<sub>2</sub>) or PTFE, in organic or inorganic binders. They are applied as a thin film (5µm - 20µm) to grease-free metal surfaces.

Through careful selection of appropriate additives and solvents, specific lubricants may be formulated to suit most industrial applications to service temperatures around 315°C (600°F).

Special high temperature lubricant coatings are available for use up to 425°C (800°F).

Recoil inserts may be coated with dry-film lubricant in either the non-finished (passivated) condition or after cadmium plating treatment for maximum corrosion protection.

## Red Dye Coating

Recoil screw-locking inserts are, generally colour coded with a red dye coating for identification purposes only. This organic resin based dye does not affect the installation or function of the inserts and normally does not need to be removed.

However, if in extreme conditions of cleanliness (such as precision instrument assembly in clean room conditions) removal of the dye may be desired.

The red dye may be removed by soaking the inserts in a denatured alcohol solution prior to use.

To prevent galling or seizing when using an unplated or corrosion resistant screw/bolt in a screw-locking insert, we recommend the use of an anti-seize compound on the bolt threads.

## Corrosion Protection

Under some service conditions, Recoil inserts and their mating parts may be subjected to a degree of corrosion, the severity of which is dependent upon the particular application.

Factors such as: differing material types, atmospheric conditions, chemical attack and even frequency of use will have an appreciable effect on the longevity of the bolted joint.

The following are recommendations to minimise corrosion within the bolted Recoil insert assemblies:-

**Normal Service:** Natural atmospheric environment with the screw/bolt permanently installed into the insert not adjacent to salt water.

**Severe Service:** Mildly contaminated atmospheric environments involving moisture, occasional exposure to a chloride air or sea spray and where the screw/bolt may be removed from the insert for extended periods of time.

**Extremely Severe Service:** Assembly is exposed to salt water, corrosive atmosphere, high temperature or the screw/bolt is frequently removed from the assembly, allowing the ingress of water into a blind hole.

In addition to methods 1, 2 and 3 below, further corrosion protection can be achieved by:-

- Using blind holes wherever possible
- Using a sealing, insulating or step-down type washer under the head of the bolt.
- Using bolts that extend completely through the entire length of the insert.
- In critical applications, the use of a non-hardening seal or compound over the joint and protecting bolt thread is recommended.

Note - For extremely severe service conditions involving temperatures in excess of 425°C (800°F), or contact with acids, alkalis or sea water stainless steel inserts are not recommended.

## Corrosion Protection Methods

PARENT MATERIAL	SERVICE CONDITIONS		
	NORMAL	SEVERE	EXTREMELY SEVERE
Aluminium	None	Methods 2 or 3	Methods 1,2 & 3
Magnesium	Methods 2 or 3	Methods 2 and 3	Methods 1, 2 & 3

## Typical Corrosion Recommendations

METHOD 1	METHOD 2	METHOD 3
Parent Material Protection Aluminium: For oxide coating use Alodine, Anodise, Iridite, or similar. Iridite 14 or 14-2 (MIL-C-554) is recommended for critical parts rather than anodising (MIL-S-5002)	Coat the insert with one of the following: Cadmium per QQ-P-416, Type II 0.0001" thick; or Dry Film Lubricant per MIL-L-893 (must be free of graphite)	Separate the parent material from the insert by using liquid zinc chromate primer, Federal Specification TT-P-1757 Apply the primer to the hole sparingly and install while the primer is still wet.

## Gas and Water Applications

Where gas or water threads are being manufactured or repaired it is important that a Recoil sales office be consulted regarding the type of seal that will be provided in this situation. A wire insert may not provide a satisfactory thread seal.

# MS Insert Dimensional Data

## Drawing Call-Out

An example of a typical drawing specification for a Recoil insert is shown below:

Free coil diameter  
.448"  
.468"

No. of coil = 11

End of coil may be square or angular

Vee notch on top or side face of first coil

1. Recoil insert part number 14063.
2. Size and Location of notch, shape of tang, reduced first coil & all dimensions not shown will be produced to Recoil standards.
3. Number of free coils to be counted from the notch.

NAME	MATERIAL	DESCRIPTION
	STAINLESS STEEL AS 7245	INSERT 3/8"-24X1 1/2 D .562" LONG ST. STL
NAME	PART No.	MANUFACTURER
		RECOIL PTY

A typical drawing call-out for a Recoil screw-locking insert 3/8" - 24 x 1 1/2 dia. long Class 3B Unified Fine Thread (UNF) is shown.

Drawing call-outs can be simply defined by using a production sequence process sheet to provide the operational steps with the drawing showing dimensional limits and data. (Example shown below)

- 1) Drill hole  $25/64"$  (.3906") diameter, depth .812" plus your normal standard for drilling depth.
- 2) Countersink  $120^\circ \pm 5^\circ$  .42"/.45" diameter.
- 3) Tap with Recoil STI Tap No. 44065 (class 3B) full thread depth .600".
- 4) Gauge with Recoil Gauge No. 64063 or according to your inspection requirements.
- 5) Install Recoil screw-lock insert 14063 with Recoil Inserting Tool No. 54061.
- 6) Break off driving tang with Recoil Tang Break-off Tool No. 59280.

## Recoil Thread Insert Part Numbering System

Recoil insert product part numbering system uses a logically structured 5 digit basic part number. Suffixes are typically added to differentiate between special or non-standard features.

This guide defines the structure of Recoils part numbers and may be used for reference to identify a Recoil insert from its part number.

### Recoil Insert Part Number Example

**O5082XAG**

**First Digit = Category**

- 0=Inserts Bulk - Free Running
- 1=Inserts Bulk - Self Locking
- 2=Insert Packets (Free running only)

**Fifth Digit = Insert**

Length in 1/2 Diameters

- 2=1D
- 3=1.5D
- 4=2D
- 5=2.5D
- 6=3D

**Special Suffixes**

- AG=Silver plated
- C=Cadmium plated
- D=Dry Film Lubrication
- LH=Left Hand
- PB=Phosphor Bronze
- SF=Strip Feed
- X=Inconel X750
- Y=316 Stainless Steel

**Second Digit = Thread Diameter**

- 0=BSP, BA
- 1=BSP
- 2=BSW
- 3=UNC
- 4=UNF, UNEF, UNS, ETC.
- 5=METRIC Coarse
- 6=NPT, BSC, 8UN
- 7=Metric Fine
- 8=Metric Fine & Spark-Plug

**Third and Fourth Digit = Thread Diameter**

- 0=size in 1/16"s (ie 08=1/2")
- 1=size in 1/16"s (ie 08=1/2")
- 2=size in 1/16"s (ie 08=1/2")
- 3=size in 1/16"s (ie 08=1/2")
- 4=size in 1/16"s (ie 08=1/2")
- 5=size in 1mm's (ie 08=8mm)
- 6=size in 1/16"s (ie 08=1/2")
- 7=size in 1mm's (ie 08=8mm)
- 8=size in 1mm's (ie 08=8mm)

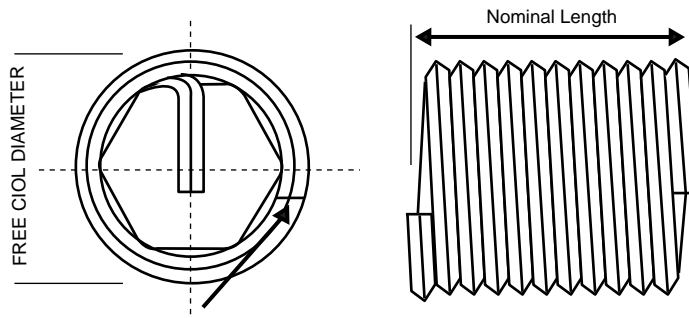
**Example - O5082-XAG =M8 - 1.25 x1D Inconel X750, silver plated insert**

# Inch Series Insert Dimensional Data

## Recoil Inch Insert Part Number Call-Out and Dimensional Data

THREAD SIZE	PART # - STANDARD INSERT NOMINAL LENGTH					PART # - LOCKING INSERT NOMINAL LENGTH					FREE COIL DIAMETER		NUMBER OF COILS NOMINAL LENGTH				
	1D	1½D	2D	2½D	3D	1D	1½D	2D	2½D	3D	MIN	MAX	1D	1½D	2D	2½D	3D
<b>INCH SERIES - COARSE THREAD</b>																	
2 (.086) - 56	03522	03523	03524	03525	03526	13522	13523	13524	13525	13526	.110	.119	3.000	5.250	7.375	9.625	11.875
3 (.099) - 48	03532	03533	03534	03535	03536	13532	13533	13534	13535	13536	.128	.139	2.875	5.000	7.250	9.375	11.500
4 (.112) - 40	03542	03543	03544	03545	03546	13542	13543	13544	13545	13546	.144	.159	2.750	4.750	6.750	8.875	10.875
5 (.125) - 40	03552	03553	03554	03555	03556	13552	13553	13554	13555	13556	.158	.173	3.250	5.500	7.750	10.000	12.250
6 (.138) - 32	03562	03563	03564	03565	03566	13562	13563	13564	13565	13566	.178	.193	2.750	4.750	6.875	8.875	10.750
8 (.164) - 32	03582	03583	03584	03585	03586	13582	13583	13584	13585	13586	.205	.220	3.500	6.000	8.375	10.750	13.250
10 (.190) - 24	03602	03603	03604	03605	03606	13602	13603	13604	13605	13606	.244	.259	2.875	5.000	7.125	9.250	11.375
12 (.216) - 24	03622	03623	03624	03625	03626	13622	13623	13624	13625	13626	.270	.285	3.500	6.000	8.375	10.625	13.125
1/4 (.2500) - 20	03042	03043	03044	03045	03046	13042	13043	13044	13045	13046	.310	.330	3.375	5.750	8.000	10.375	12.750
5/16 (.3125) - 18	03052	03053	03054	03055	03056	13052	13053	13054	13055	13056	.380	.400	4.000	6.625	9.250	11.875	14.625
3/8 (.3750) - 16	03062	03063	03064	03065	03066	13062	13063	13064	13065	13066	.452	.472	4.375	7.250	10.000	12.875	15.750
7/16 (.4375) - 14	03072	03073	03074	03075	03076	13072	13073	13074	13075	13076	.526	.551	4.500	7.375	10.250	13.125	16.125
1/2 (.5000) - 13	03082	03083	03084	03085	03086	13082	13083	13084	13085	13086	.597	.622	4.875	7.875	11.000	14.125	17.125
9/16 (.5625) - 12	03092	03093	03094	03095	03096	13092	13093	13094	13095	13096	.669	.694	5.125	8.250	11.500	14.750	17.125
5/8 (.6250) - 11	03102	03103	03104	03105	03106	13102	13103	13104	13105	13106	.742	.767	5.250	8.500	11.750	15.000	18.375
3/4 (.7500) - 10	03122	03123	03124	03125	03126	13122	13123	13124	13125	13126	.881	.906	5.875	9.375	13.000	16.500	20.125
7/8 (.8750) - 9	03142	03143	03144	03145	03146	13142	13143	13144	13145	13146	1.022	1.052	6.250	10.000	13.750	17.500	21.250
1 (1.0000) - 8	03162	03163	03164	03165	03166	13162	13163	13164	13165	13166	1.166	1.196	6.375	10.125	14.000	17.750	21.625
1 1/8 (1.1250) - 7	03182	03183	03184	03185	03186	13182	13183	13184	13185	13186	1.315	1.355	6.125	9.875	13.625	17.500	21.250
1 1/4 (1.2500) - 7	03202	03203	03204	03205	03206	13202	13203	13204	13205	13206	1.443	1.483	7.000	11.250	15.375	19.500	23.750
1 3/8 (1.3750) - 6	03222	03223	03224	03225	03226	13222	13223	13224	13225	13226	1.598	1.643	6.500	10.500	14.375	18.375	22.250
1 1/2 (1.5000) - 6	03242	03243	03244	03245	03246	13242	13243	13244	13245	13246	1.727	1.772	7.250	11.500	15.875	20.125	24.500
<b>INCH SERIES - FINE THREAD</b>																	
3 (.099) - 56	04532	04533	04534	04535	04536	14532	14533	14534	14535	14536	.131	.146	3.375	5.625	8.000	10.375	12.625
4 (.112) - 48	04542	04543	04544	04545	04546	14542	14543	14544	14545	14546	.147	.162	3.375	5.625	7.875	10.250	12.500
6 (.138) - 40	04562	04563	04564	04565	04566	14562	14563	14564	14565	14566	.173	.193	3.500	6.000	8.375	10.750	13.250
8 (.164) - 36	04582	04583	04584	04585	04586	14582	14583	14584	14585	14586	.204	.224	3.875	6.500	9.125	11.625	14.250
10 (.190) - 32	04602	04603	04604	04605	04606	14602	14603	14604	14605	14606	.236	.256	4.125	6.875	9.500	12.000	14.875
1/4 (.2500) - 28	04042	04043	04044	04045	04046	14042	14043	14044	14045	14046	.306	.326	5.000	8.250	11.375	14.500	17.625
5/16 (.3125) - 24	04052	04053	04054	04055	04056	14052	14053	14054	14055	14056	.380	.400	5.500	8.875	12.250	15.625	19.000
3/8 (.3750) - 24	04062	04063	04064	04065	04066	14062	14063	14064	14065	14066	.448	.468	6.875	11.000	15.000	19.125	23.125
7/16 (.4375) - 20	04072	04073	04074	04075	04076	14072	14073	14074	14075	14076	.524	.549	6.625	10.625	14.625	18.500	22.500
1/2 (.5000) - 20	04082	04083	04084	04085	04086	14082	14083	14084	14085	14086	.592	.617	7.875	12.375	16.875	21.375	25.875
9/16 (.5625) - 18	04092	04093	04094	04095	04096	14092	14093	14094	14095	14096	.666	.691	8.000	12.500	17.125	21.750	26.250
5/8 (.6250) - 18	04102	04103	04104	04105	04106	14102	14103	14104	14105	14106	.733	.758	9.000	14.125	19.250	24.250	29.375
3/4 (.7500) - 16	04122	04123	04124	04125	04126	14122	14123	14124	14125	14126	.876	.901	9.750	15.125	20.625	26.000	31.500
7/8 (.8750) - 14	04142	04143	04144	04145	04146	14142	14143	14144	14145	14146	1.021	1.051	9.875	15.500	21.125	26.625	32.250
1 (1.0000) - 14	04162-14	04163-14	04164-14	04165-14	04166-14	14162-14	14163-14	1464-14	14165-14	14166-14	1.156	1.186	11.500	17.875	24.250	30.625	37.000
1 (1.0000) - 12	04162	04163	04164	04165	04166	04162	14163	14164	14165	14166	1.169	1.199	9.625	15.000	20.500	26.000	31.500
1 1/8 (1.1250) - 12	04182	04183	04184	04185	04186	14182	14183	14184	14185	14186	1.304	1.334	11.125	17.250	23.375	29.500	35.750
1 1/4 (1.2500) - 12	04202	04203	04204	04205	04206	14202	14203	14204	14205	14206	1.439	1.469	12.500	19.375	26.250	33.000	39.875
1 3/8 (1.3750) - 12	04222	04223	04224	04225	04226	14222	14223	14224	14225	14226	1.575	1.610	13.750	21.375	28.875	36.500	44.000
1 1/2 (1.5000)-12	04242	04243	04244	04245	04246	14242	14243	14244	14245	14246	1.710	1.745	15.250	23.500	31.625	39.875	48.125

Note: Dimensions apply to MIL specification parts only.



# Metric Series Insert Dimensional Data

## Recoil Metric Insert Part Number Call-Out and Dimensional Data

THREAD SIZE	PART # - STANDARD INSERT NOMINAL LENGTH					PART # - LOCKING INSERT NOMINAL LENGTH					FREE COIL DIAMETER		NUMBER OF COILS NOMINAL LENGTH				
	1D	1½D	2D	2½D	3D	1D	1½D	2D	2½D	3D	MIN	MAX	1D	1½D	2D	2½D	3D
<b>METRIC SERIES - COARSE THREAD</b>																	
M2.2 x 0.45	05012	05013	05014	05015	05016	15012	15013	15014	15015	15016	2.80	3.00	3.125	5.375	7.625	9.875	12.125
M2.5 x 0.45	05252	05253	05254	05255	05256	15252	15253	15254	15255	15256	3.20	3.70	3.375	5.750	8.125	10.500	12.750
M3 x 0.5	05032	05033	05034	05035	05036	15032	15033	15034	15035	15036	3.80	4.35	3.750	6.375	8.875	11.375	13.875
M3.5 x 0.6	05352	05353	05354	05355	05356	15352	15353	15354	15355	15356	4.40	4.95	3.750	6.375	8.625	11.375	13.625
M4 x 0.7	05042	05043	05044	05045	05046	15042	15043	15044	15045	15046	5.05	5.60	3.625	6.125	8.625	11.125	13.625
M5 x 0.8	05052	05053	05054	05055	05056	15052	15053	15054	15055	15056	6.25	6.80	4.125	6.875	9.625	12.375	15.125
M6 x 1	05062	05063	05064	05065	05066	15062	15063	15064	15065	15066	7.40	7.95	4.000	6.750	9.500	12.125	14.875
M7 x 1	05072	05073	05074	05075	05076	15072	15073	15074	15075	15076	8.65	9.20	4.875	8.000	11.125	14.125	17.250
M8 x 1.25	05082	05083	05084	05085	05086	15082	15083	15084	15085	15086	9.80	10.35	4.500	7.375	10.250	13.250	16.125
M10 x 1.5	05102	05103	05104	05105	05106	15102	15103	15104	15105	15106	11.95	12.50	4.875	8.000	11.125	14.250	17.375
M12 x 1.75	05122	05123	05124	05125	05126	15122	15123	15124	15125	15126	14.30	15.00	5.000	8.250	11.500	14.625	17.875
M14 x 2	05142	05143	05144	05145	05146	15142	15143	15144	15145	15146	16.65	17.35	5.125	8.500	11.750	15.000	18.375
M16 x 2	05162	05163	05164	05165	05166	15162	15163	15164	15165	15166	18.90	19.60	6.125	9.750	13.500	17.250	21.000
M18 x 2.5	05182	05183	05184	05185	05186	15182	15183	15184	15185	15186	21.30	22.00	5.375	8.875	12.250	15.625	19.000
M20 x 2.5	05202	05203	05204	05205	05206	15202	15203	15204	15205	15206	23.55	24.40	6.125	9.875	13.625	17.375	21.125
M22 x 2.5	05222	05223	05224	05225	05226	15222	15223	15224	15225	15226	25.90	26.90	6.750	10.875	14.875	19.000	23.125
M24 x 3	05242	05243	05244	05245	05246	15242	15243	15244	15245	15246	28.00	29.00	6.125	10.000	13.750	17.500	21.375
M27 x 3	05272	05273	05274	05275	05276	15272	15273	15274	15275	15276	31.40	32.40	7.000	11.250	15.500	19.750	24.000
M30 x 3	05302	05303	05304	05305	05306	15302	15303	15304	15305	15306	34.90	36.10	7.875	12.500	17.125	21.875	26.500
M33 x 3	07332-3	07333-3	07334-3	07335-3	07336-3	17332-3	17333-3	17334-3	17335-3	17336-3	38.10	39.50	8.750	13.875	19.000	24.125	29.250
M36 x 3	07362	07363	07364	07365	07366	17362	17363	17364	17365	17366	41.30	42.70	9.750	15.250	20.875	26.500	32.000
M39 x 3	07392	07393	07394	07395	07396	17392	17393	17394	17395	17396	44.40	45.80	10.750	16.750	22.750	28.875	34.875
<b>METRIC SERIES - FINE THREAD</b>																	
M8 x 1	07082	07083	07084	07085	07086	17082	17083	17084	17085	17086	9.70	10.25	5.875	9.375	13.000	16.500	20.125
M10 x 1.25	07102	07103	07104	07105	07106	17102	17103	17104	17105	17106	12.10	12.65	5.875	9.500	13.125	16.750	20.375
M12 x 1.25	08122	08123	08124	08125	08126	18122	18123	18124	18125	18126	14.30	15.00	7.250	11.625	15.875	20.250	24.500
M12 x 1.5	07122	07123	07124	07125	07126	17122	17123	17124	17125	17126	14.25	14.95	6.000	9.625	13.375	17.000	20.750
M14 x 1.5	07142	07143	07144	07145	07146	17142	17143	17144	17145	17146	16.55	17.25	7.125	11.375	15.625	20.000	24.250
M16 x 1.5	07162	07163	07164	07165	07166	17162	17163	17164	17165	17166	18.90	19.60	8.250	13.125	18.000	22.750	27.625
M18 x 1.5	08182	08183	08184	08185	08186	18182	18183	18184	18185	18186	21.05	21.75	9.500	15.000	20.375	25.875	31.375
M18 x 2	07182	07183	07184	07185	07186	17182	17183	17184	17185	17186	21.15	21.85	7.000	11.125	15.375	19.500	23.625
M20 x 1.5	08202	08203	08204	08205	08206	18202	18203	18204	18205	18206	23.15	24.00	10.750	16.875	22.875	28.875	35.000
M20 x 2	07202	07203	07204	07205	07206	17202	17203	17204	17205	17206	23.20	24.05	7.875	12.500	17.250	21.875	26.500
M22 x 1.5	08222	08223	08224	08225	08226	18222	18223	18224	18225	18226	25.55	26.45	11.875	18.500	25.125	31.625	38.250
M22 x 2	07222	07223	07224	07225	07226	17222	17223	17224	17225	17226	25.60	26.50	8.750	13.750	18.875	23.875	29.000
M24 x 2	07242	07243	07244	07245	07246	17242	17243	17244	17245	17246	28.10	29.10	9.500	15.000	20.375	25.875	31.250
M27 x 2	07272	07273	07274	07275	07276	17272	17273	17274	17275	17276	31.30	32.30	10.875	17.000	23.250	29.375	35.500
M30 x 2	07302	07303	07304	07305	07306	17302	17303	17304	17305	17306	34.50	35.70	12.250	19.125	25.875	32.750	39.500
M33 x 2	07332	07333	07334	07335	07336	17332	17333	17334	17335	17336	37.80	39.20	13.625	21.125	28.625	36.000	43.500
M36 x 2	07362-2	07363-2	07364-2	07365-2	07366-2	17362-2	17363-2	17364-2	17365-2	17366-2	41.00	42.40	15.000	23.250	31.375	39.500	47.750
M39 x 2	08392	08393	08394	08395	08396	18392	18393	18394	18395	18396	44.30	45.70	16.375	25.250	34.125	43.000	51.875

Note: Recoil metric inserts are made to Din locking torque requirements. Military specification MA parts need to be specifically ordered by adding MA to the standard part number above.

Note: Dimensions shown are for MA parts only.

