

MOLD-FORM™ INSERTS

REDUCED COST, EASE OF INSTALLATION
AND EXCEPTIONAL PERFORMANCE



MOLD-FORM™ INSERTS

REDUCED COST

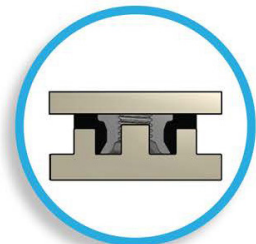
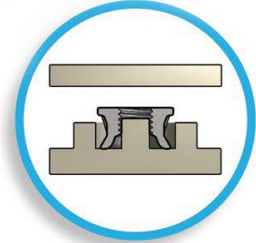
MOLD-FORM is a cold-formed steel insert, providing a cost savings of up to 50% over comparable machined inserts.

EASE OF INSTALLATION

MOLD-FORM is simply located on a pin within the mold tool, giving a consistent flash-free insertion.

EXCEPTIONAL PERFORMANCE

Six large splines provide exceptional direct torque resistance. Cold formed steel achieves PC 8 strength, with PC 10 also available.



FREQUENTLY ASKED QUESTIONS ABOUT MOLD-FORM

HOW IS MOLD-FORM DIFFERENT FROM TRADITIONAL INSERTS FOR PLASTIC?

Traditionally Inserts for Plastic have been made from brass, manufactured by metal cutting and had relatively fine knurls and undercuts. MOLD-FORM is steel, manufactured by cold-forming and has six large splines and a very large undercut.

WHAT MATERIALS, STRENGTH GRADES, SURFACE TREATMENTS ARE AVAILABLE?

Steel is the standard material type, aluminum and stainless steel are special material options. The standard steel type achieves PC 8 mechanical properties. Steel to PC 10 is available to special order. Zinc plating is the standard surface treatment, almost all commercially available finishes can specified.

WHAT ARE THE PERFORMANCE BENEFITS OF MOLD-FORM?

The six large splines give exceptional torque resistance, eliminating the risk of inserts turning. The very large undercut created by the flange and flare diameters provide excellent resistance to push-out and pull-out. Molding-in gives a 100% plastic fill around the insert profile. The large top flange diameter provides a large contact area with the mating part, eliminating a torque induced pull-out failure.

HOW WILL MOLD-FORM REDUCE MY COST?

MOLD-FORM is manufactured by high speed cold forming where material utilization is optimized, this should typically give a 30-50% cost saving when compared with a metal-cut steel equivalent.



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FREQUENTLY ASKED QUESTIONS ABOUT MOLD-FORM

ARE THERE DIFFERENT TYPES OF MOLD-FORM?

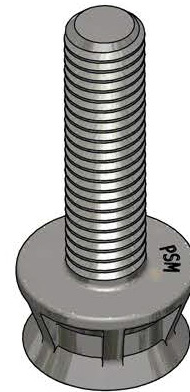
Yes, MOLD-FORM can be manufactured with special diameters and lengths to suit your application. Male threaded stud types are also available. Special variants, including plain hole inserts, locating pins, ball pins and spacers can be made to order where volumes warrant a custom fastener.

WHAT ARE THE BENEFITS OF MOLD-FORM AND MOLDING-IN?

MOLD-FORM can be molded-in to all types of plastic. With post molded insertion into thermoset plastic it is very difficult to achieve both high torque and high pull-out, MOLD-FORM overcomes this problem. Post molded insertion costs can be high due to equipment cost and machine hour rate for secondary insertion. MOLD-FORM is designed to withstand a light compression as the mold tools close, eliminating thread damage. Cold form splines eliminate the risk of metal chips associated with knurls.

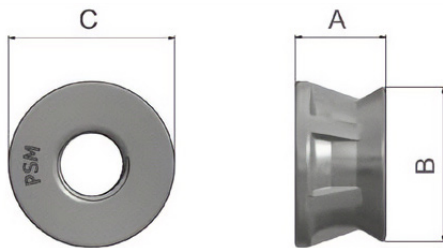
WHAT APPLICATIONS WOULD BE MOST SUITED TO MOLD-FORM?

Most thermosetting plastic components utilize molding-in, therefore MOLD-FORM is an ideal high strength replacement for high cost machined inserts. It achieves a much higher performance than conventional post-molded inserts, making it ideal for heavy duty industrial and automotive applications. Molding-in also eliminates handling problems associated with post-molded insertion of large moldings.



MOLD-FORM™ INSERTS

DIMENSIONS



Product Code - (MF)
Standard Material - Steel (S)
Standard Finish - Zinc Trivalent & Clear Sealer (W)
 Special Materials - Steel PC10 (S10)
 Aluminium (A)
 Stainless Steel (STST)

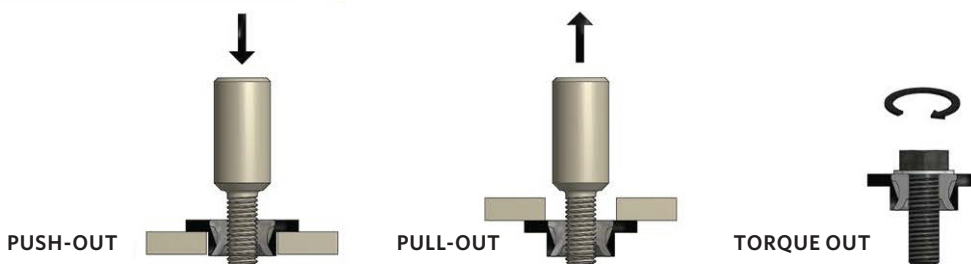
HOW TO SPECIFY

Product Code	MF-S-M6-W
Material Code	MF- S -M6-W
Thread Size	MF-S- M6 -W
Finish	MF-S-M6- W

DESIGN GUIDE

MOLD-FORM is designed to be molded-in, the end face of the insert should be closed off using the faces of the mold tool or the face of a molding pin against diameter B, if the plastic is thicker than insert length A. The performance obtained will be dependant on the type of plastic used and the localized strength of the boss and surrounding area. The suggested boss diameter should equal diameter B plus the thread size, e.g. M6 = 18.1 (12.1 + 6). Smaller bosses can be used with a suggested minimum of diameter B plus (0.5 x thread size), e.g. M6 = 15.1 (12.1+(0.5 x 6)).

PERFORMANCE DATA



METRIC	UNIFIED	Pull-Out (N)	Push-Out (N)	Torque Out (Nm)	A	B**	C
M4 X 0.7	8.32	2600	3000	6Nm	04.50	07.80	08.80
M5 X 0.8	10.32	4400	5000	17Nm	06.95	09.75	10.90
M6 X 1.0	1/4-20	6500	8600	19Nm	08.20	11.90	13.20
M8 X 1.25	5/16-18	9100	10500	40Nm	09.30	16.30	17.60
M10 X 1.5	3/8-16	11500	14700	110Nm	10.80	19.60	21.75
M12 X 1.75	1/2-13	24500	26000	157Nm	13.60	24.70	26.30

The above results were obtained from PA6 GF30 bosses, molded to the above suggested boss diameters, produced on an in-house prototype molding machine.

** Measurement based on maximum metal condition as slight out of roundness will be present.