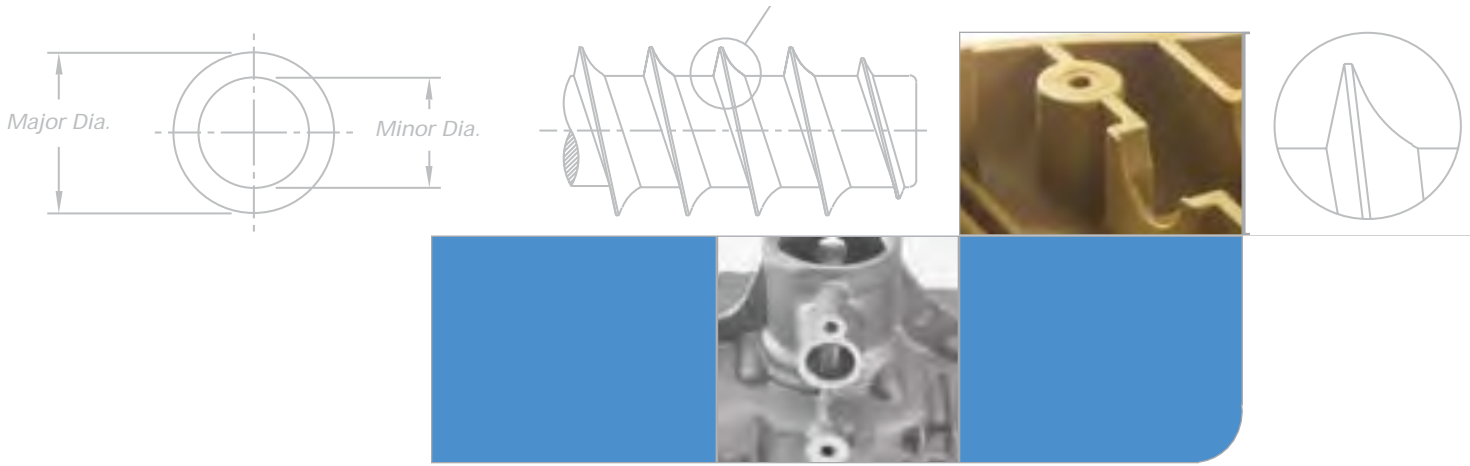
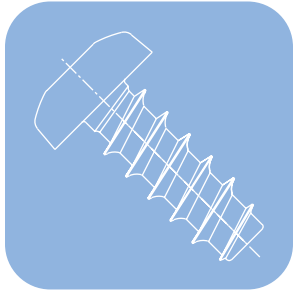


REMFORM® Fastening Products for Plastics and Light Alloy Materials



Leaders in Lowering the Cost of Assembly

REMFORM® Fastening Products for Plastics and Light Alloy Materials

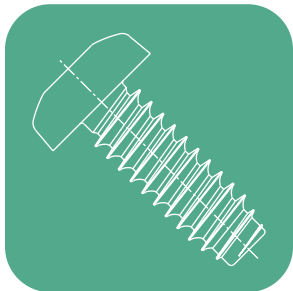


REMFORM® Screws

REMFORM® Screws

Designed Primarily for Plastic Applications

The REMFORM® Screw is a thread rolling fastener with a unique thread form to provide superior performance in today's wide range of plastics. The asymmetrical thread minimizes radial hoop stress to reduce boss bursting. The narrow tip angle also reduces stress in the plastic nut member.



REMFORM® "F" Screws

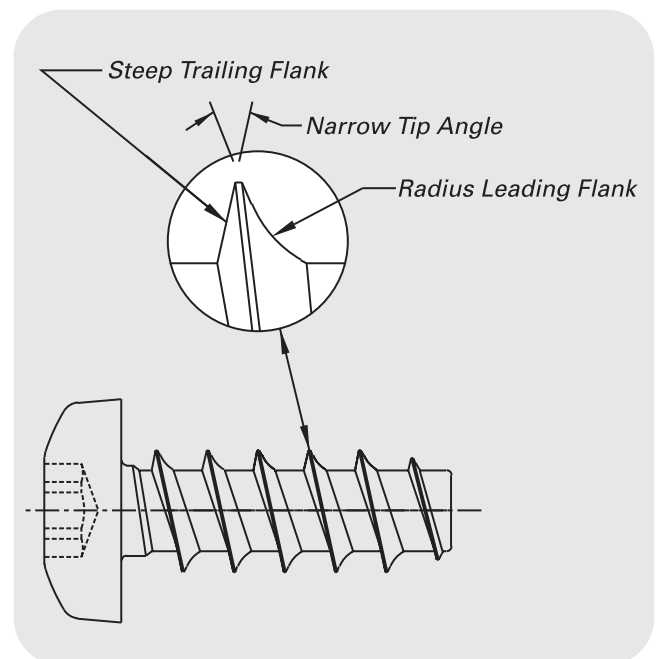
REMFORM® "F" Screws

Designed Primarily for Magnesium Applications

The REMFORM® "F" Screw utilizes the efficient thread form of the standard REMFORM® fastener, but employs finer thread pitch spacing to suit magnesium, soft aluminum, thermoset plastics, and other low ductility materials. The narrow tip angle minimizes the disturbance of low ductility nut member materials, yet engages securely and creates strong internal threads.

The Unique Radius Flank™ Thread Form

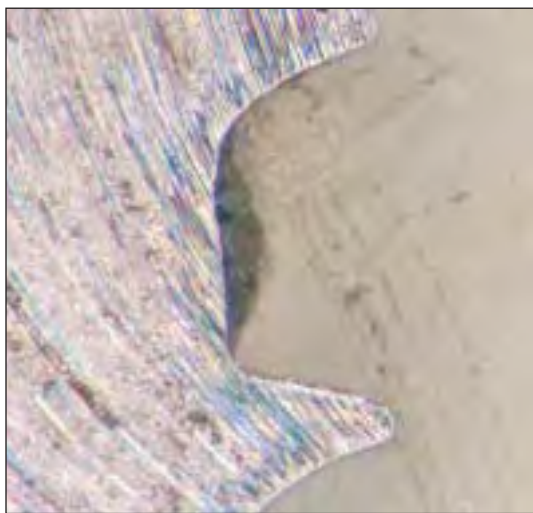
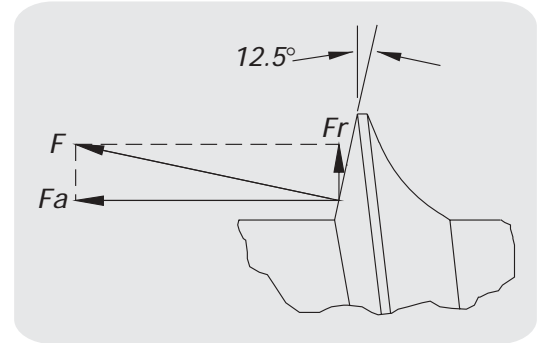
Both REMFORM® and REMFORM® "F" Fasteners employ the Unique Radius Flank™ asymmetrical thread form shown in the drawing to the right. The leading thread flank is most influential in forming the mating thread. The intercepting radius form on the lead flank is there to promote efficient material displacement and material flow. The steep trailing, or pressure, flank which opposes the fastener head is engineered to resist pull-out forces, whether they be applied by a tensile load or induced by torque. This unique thread and its narrow tip angle efficiently displace material and therefore require minimal energy to form an internal thread. The steep trailing flank with excellent material contact results in a high resistance to the internal threads stripping. In applications where the failure mode is fastener fracture, the high torsional strength of REMFORM® fasteners ensures a high failure torque.



REMFORM® Fastening Products

Reduced Hoop Stress

When a threaded fastener is tightened, nearly all of the axial tightening load, designated F , is opposed by the trailing, or pressure, flank of the screw and the mating thread flank of the internal thread. The narrow 12.5° angle of the pressure flank transfers most of the resultant tightening load in the axial direction, F_a , minimizing boss bursting tendencies created by the radial force, F_r . The axial force, F_a , is over 4.5 times greater than F_r , the radial force.



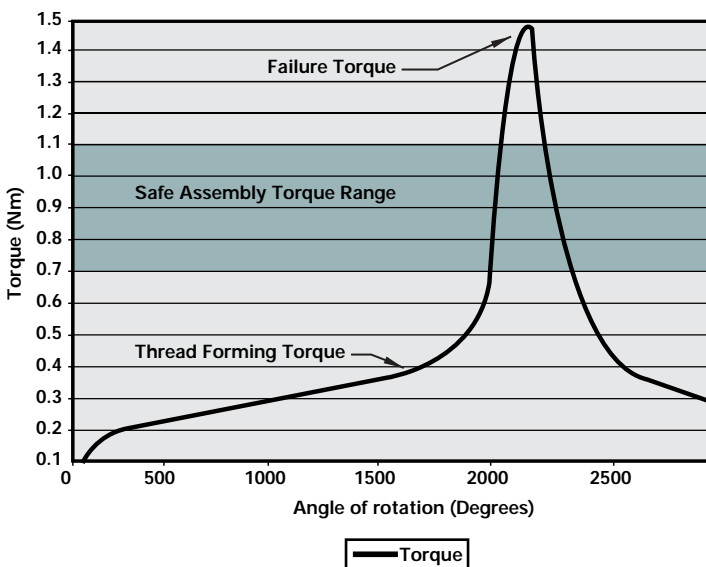
Optimal Material Flow

The radius thread flank of the REMFORM® screw thread minimizes radial forces during thread forming, resulting in low thread forming torque. The asymmetrical thread form of the REMFORM® fastener produces asymmetrical opposing resultant forces off the thread flanks during thread forming, creating improved material flow. The picture to the left shows the material flow towards the thread root which results in greater material contact along the pressure flank of the fastener, increasing resistance to stripping. The reduced contact along the leading flank reduces friction during thread forming and lowers the thread forming torque.

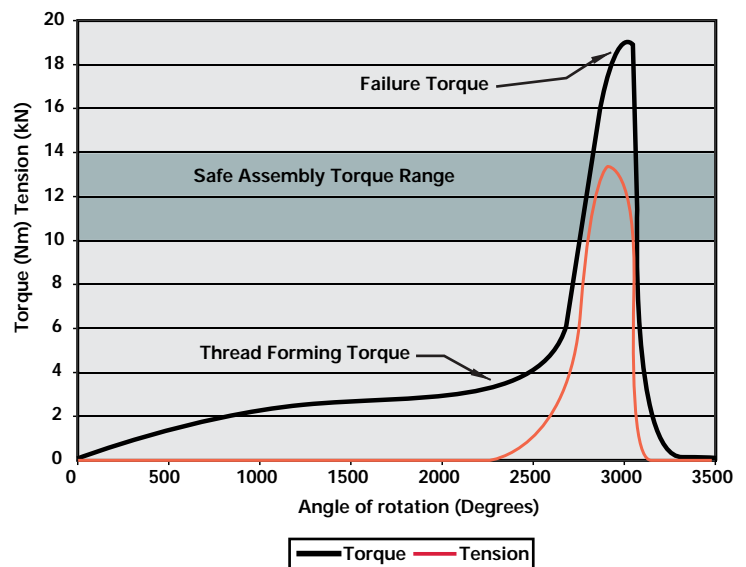
Easy Assembly

Low thread forming torque, when coupled with high failure torque, results in a wide, safe assembly torque range.

3mm Dia. REMFORM® Fastener
in DuPont Crastin® Plastic
9mm Engagement Depth in Cored Hole

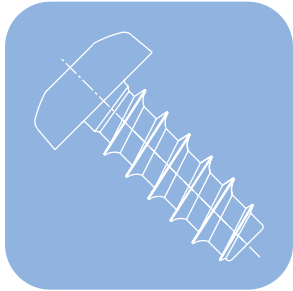


6mm Dia. REMFORM® "F" Fastener
in AM50 Magnesium
15mm Engagement Depth in Drilled Hole

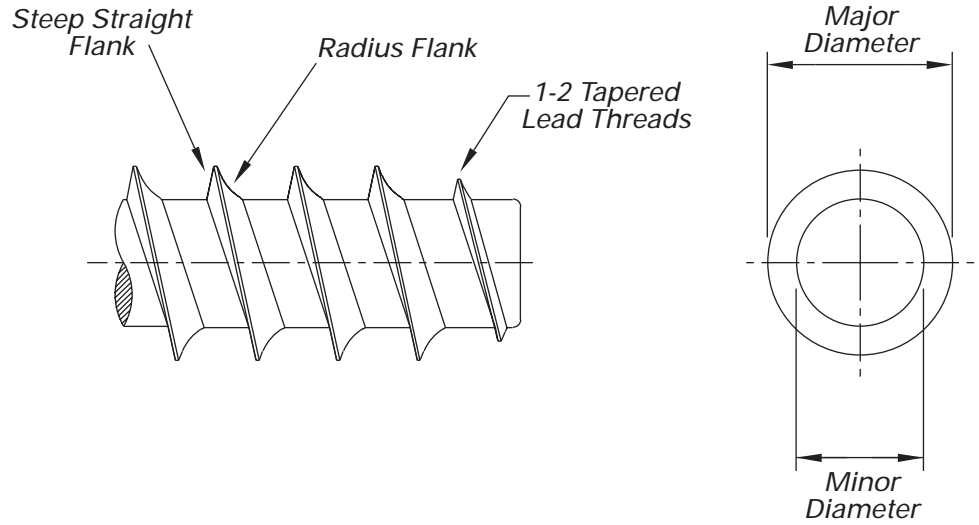


REMFORM® Fasteners

Screw Dimensions



REMFORM® Screws



Metric Series

| SIZE mm | PITCH mm | MAJOR DIA. | | MINOR DIA. Min. |
|------------|-------------|------------|-------|--------------------|
| | | Max. | Min. | |
| 1.0 | 0.55 | 1.05 | 1.00 | 0.65 |
| 1.2 | 0.65 | 1.25 | 1.20 | 0.75 |
| 1.4 | 0.75 | 1.45 | 1.40 | 0.85 |
| 1.6 | 0.85 | 1.70 | 1.60 | 0.96 |
| 1.8 | 0.85 | 1.90 | 1.80 | 1.16 |
| 2.0 | 1.00 | 2.10 | 2.00 | 1.17 |
| 2.5 | 1.15 | 2.60 | 2.50 | 1.48 |
| 3.0 | 1.35 | 3.10 | 3.00 | 1.90 |
| 3.5 | 1.55 | 3.60 | 3.50 | 2.22 |
| 4.0 | 1.75 | 4.10 | 4.00 | 2.55 |
| 4.5 | 2.00 | 4.60 | 4.50 | 2.87 |
| 5.0 | 2.25 | 5.15 | 5.00 | 3.19 |
| 6.0 | 2.65 | 6.15 | 6.00 | 3.84 |
| 7.0 | 3.10 | 7.15 | 7.00 | 4.48 |
| 8.0 | 3.50 | 8.15 | 8.00 | 5.12 |
| 10.0 | 4.50 | 10.15 | 10.00 | 6.40 |

Dimensions in mm

Inch Series

| SIZE | PITCH TPI | MAJOR DIA. | | MINOR DIA. Min. |
|------|--------------|------------|-------|--------------------|
| | | Max. | Min. | |
| 2 | 20 | 0.088 | 0.084 | 0.049 |
| 4 | 18 | 0.114 | 0.110 | 0.066 |
| 6 | 16 | 0.139 | 0.135 | 0.084 |
| 8 | 15 | 0.167 | 0.161 | 0.100 |
| 10 | 13 | 0.193 | 0.187 | 0.122 |
| 12 | 11 | 0.218 | 0.212 | 0.144 |
| 1/4 | 10 | 0.253 | 0.247 | 0.157 |
| 5/16 | 8 | 0.316 | 0.309 | 0.195 |

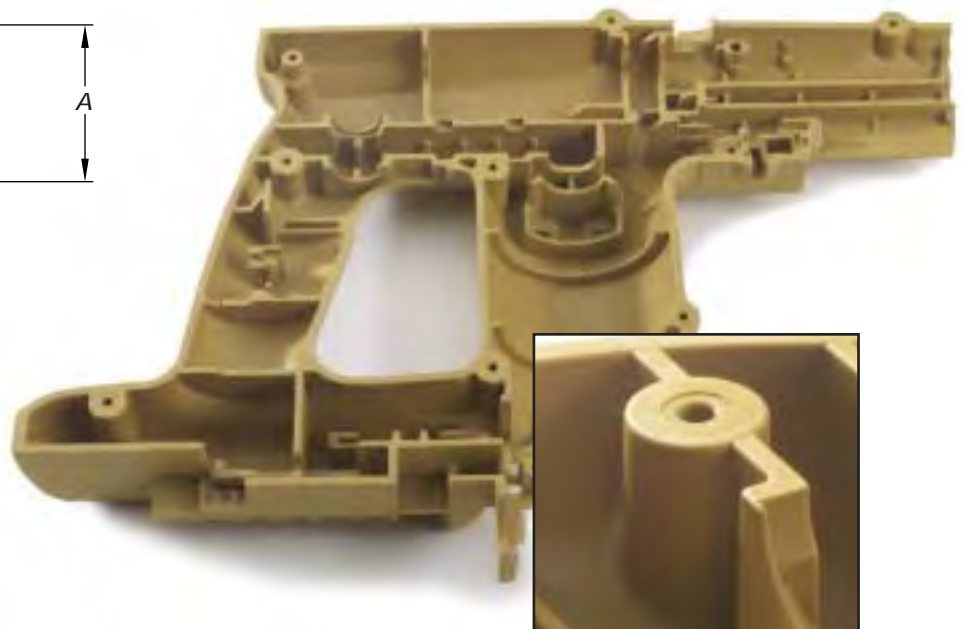
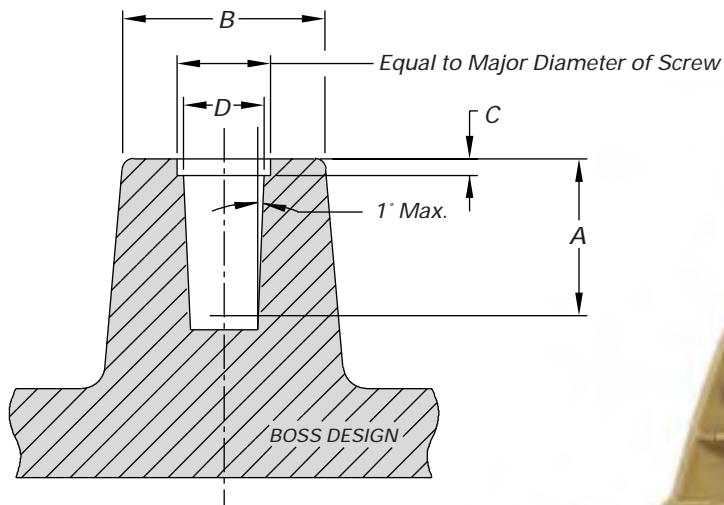
Dimensions in inches

REMFORM® Fasteners

Hole Size Guidelines for Plastics

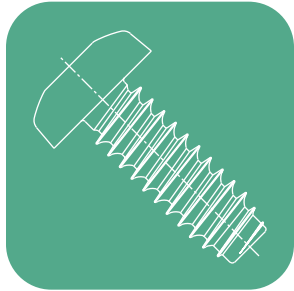
| MATERIAL TYPE | A ENGAGEMENT DEPTH X Nominal Dia. | | B BOSS DIA. X Nominal Dia. | C COUNTERBORE DEPTH X Pitch | D HOLE DIA. X Nominal Dia. |
|--------------------|---|-------------|-------------------------------------|--------------------------------------|-------------------------------------|
| | Minimum | Recommended | | | |
| ABS | 1.5 | 2.5 - 3.5 | 2.0-2.5 | 0.25 - 0.50 | 0.72 |
| ABS / PC Blend | 1.0 | 2.0 - 3.0 | 2.0-2.5 | 0.25 - 0.50 | 0.80 |
| PA (Nylon 6 / 6.6) | 1.5 | 2.5 - 3.5 | 2.0-2.5 | 0.25 - 0.50 | 0.70 |
| PA 6 30%GF | 1.0 | 2.0 - 3.0 | 2.0-2.5 | 0.25 - 0.50 | 0.83 |
| PBT | 1.0 | 2.5 - 3.5 | 2.0-2.5 | 0.25 - 0.50 | 0.75 |
| PBT 30% GF | 1.0 | 2.0 - 3.0 | 2.0-2.5 | 0.25 - 0.50 | 0.83 |
| PC | 1.0 | 2.0 - 3.0 | 2.0-2.5 | 0.25 - 0.50 | 0.80 |
| PC 30% GF | 1.0 | 2.0 - 3.0 | 2.0-2.5 | 0.25 - 0.50 | 0.85 |
| PE | 1.5 | 2.5 - 3.5 | 2.0-2.5 | 0.25 - 0.50 | 0.72 |
| PET | 1.0 | 2.0 - 3.5 | 2.0-2.5 | 0.25 - 0.50 | 0.75 |
| PET 30% GF | 1.0 | 2.0 - 3.0 | 2.0-2.5 | 0.25 - 0.50 | 0.85 |
| PP | 2.0 | 3.0 - 3.5 | 2.0-2.5 | 0.25 - 0.50 | 0.70 |
| PPO | 1.0 | 2.0 - 3.0 | 2.0-2.5 | 0.25 - 0.50 | 0.85 |
| PS | 1.0 | 2.0 - 3.5 | 2.0-2.5 | 0.25 - 0.50 | 0.75 |

BOSS Geometry

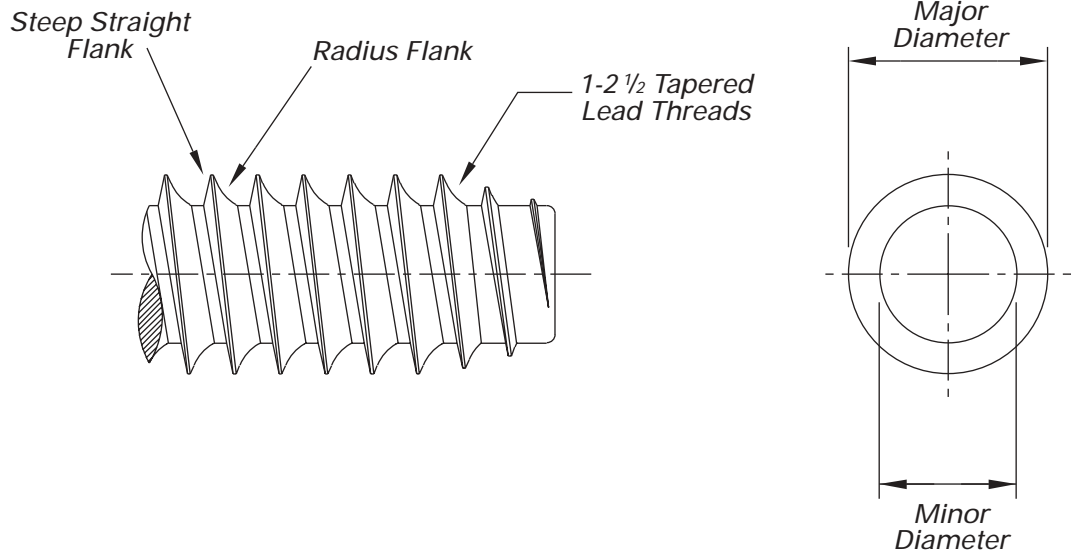


REMFORM® 'F' Fasteners

Screw Dimensions



REMFORM® "F" Screws



Metric Series

| SIZE mm | PITCH mm | MAJOR DIA. | | MINOR DIA. Min. |
|------------|-------------|------------|-------|--------------------|
| | | Max. | Min. | |
| 2.0 | 0.60 | 2.10 | 2.00 | 1.33 |
| 2.2 | 0.70 | 2.30 | 2.20 | 1.36 |
| 2.5 | 0.70 | 2.60 | 2.50 | 1.66 |
| 3.0 | 0.80 | 3.10 | 3.00 | 2.00 |
| 3.5 | 0.95 | 3.60 | 3.50 | 2.33 |
| 4.0 | 1.05 | 4.10 | 4.00 | 2.63 |
| 5.0 | 1.25 | 5.15 | 5.00 | 3.32 |
| 6.0 | 1.40 | 6.15 | 6.00 | 4.06 |
| 7.0 | 1.55 | 7.15 | 7.00 | 5.02 |
| 8.0 | 1.75 | 8.15 | 8.00 | 5.54 |
| 10.0 | 2.25 | 10.15 | 10.00 | 7.02 |

Dimensions in mm

Inch Series

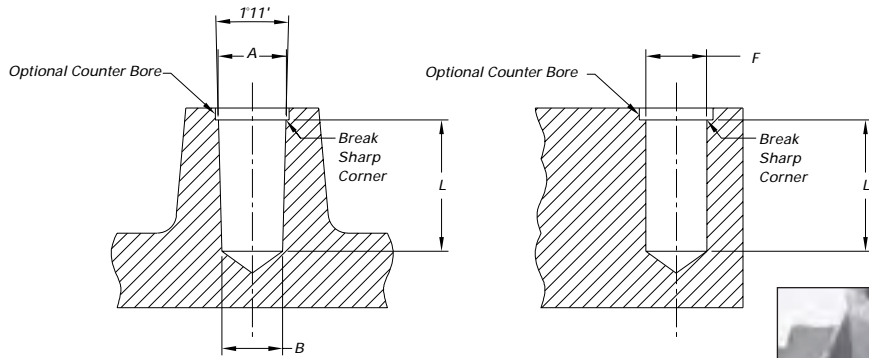
| SIZE | PITCH TPI | MAJOR DIA. | | MINOR DIA. Min. |
|-------|--------------|------------|-------|--------------------|
| | | Max. | Min. | |
| 2 | 40 | 0.088 | 0.084 | 0.055 |
| 3 | 36 | 0.101 | 0.097 | 0.064 |
| 4 | 32 | 0.114 | 0.110 | 0.073 |
| 5 | 30 | 0.127 | 0.123 | 0.082 |
| 6 | 27 | 0.139 | 0.135 | 0.090 |
| 8 | 24 | 0.167 | 0.161 | 0.108 |
| 10 | 21 | 0.193 | 0.187 | 0.126 |
| 12 | 19 | 0.218 | 0.212 | 0.143 |
| 1/4" | 17 | 0.253 | 0.247 | 0.167 |
| 5/16" | 14 | 0.316 | 0.309 | 0.210 |

Dimensions in inches



REMFORM® "F" Fasteners

Hole Size Guidelines for Light Alloy Materials



REMFORM® 'F'Cast Hole Sizes

Metric Series

| Screw Size | Hole Diameter | | | | F Hole Dia. as Drilled | | L Recommended Length of Thread Engagement | H Boss Dia. Min. | J Distance to Edge for No Measurable Distortion -Min. |
|-------------|---------------|------|------------|------|------------------------|------|---|------------------|---|
| | Top - A | | Bottom - B | | Max. | Min. | | | |
| | Max. | Min. | Max. | Min. | Max. | Min. | | | |
| 2.0 - 0.60 | 1.94 | 1.86 | 1.83 | 1.75 | 1.89 | 1.81 | 5.00 | 3.32 | 1.4 |
| 2.5 - 0.70 | 2.39 | 2.31 | 2.26 | 2.18 | 2.32 | 2.24 | 6.25 | 4.15 | 1.8 |
| 3.0 - 0.80 | 2.84 | 2.76 | 2.68 | 2.60 | 2.76 | 2.68 | 7.50 | 4.98 | 2.2 |
| 3.5 - 0.95 | 3.27 | 3.19 | 3.09 | 3.01 | 3.18 | 3.10 | 8.75 | 5.81 | 2.5 |
| 4.0 - 1.05 | 3.69 | 3.61 | 3.49 | 3.41 | 3.59 | 3.51 | 10.00 | 6.64 | 2.9 |
| 5.0 - 1.25 | 4.67 | 4.59 | 4.41 | 4.33 | 4.54 | 4.46 | 12.50 | 8.30 | 3.6 |
| 6.0 - 1.40 | 5.58 | 5.50 | 5.27 | 5.19 | 5.42 | 5.34 | 15.00 | 9.96 | 4.2 |
| 7.0 - 1.55 | 6.56 | 6.48 | 6.20 | 6.12 | 6.38 | 6.30 | 17.50 | 11.62 | 4.3 |
| 8.0 - 1.75 | 7.45 | 7.37 | 7.04 | 6.96 | 7.24 | 7.16 | 20.00 | 13.28 | 5.3 |
| 10.0 - 2.25 | 9.21 | 9.13 | 8.69 | 8.61 | 8.95 | 8.87 | 25.00 | 16.60 | 6.4 |

Dimensions in mm

Inch Series

| Screw Size | Hole Diameter | | | | F Hole Dia. as Drilled | | L Recommended Length of Thread Engagement | H Boss Dia. Min. | J Distance to Edge for No Measurable Distortion -Min. |
|------------|---------------|-------|------------|-------|------------------------|-------|---|------------------|---|
| | Top - A | | Bottom - B | | Max. | Min. | | | |
| | Max. | Min. | Max. | Min. | Max. | Min. | | | |
| 2-40 | 0.080 | 0.077 | 0.076 | 0.073 | 0.078 | 0.075 | 0.215 | 0.143 | 0.061 |
| 3-36 | 0.092 | 0.089 | 0.087 | 0.084 | 0.089 | 0.086 | 0.248 | 0.164 | 0.070 |
| 4-32 | 0.103 | 0.100 | 0.097 | 0.094 | 0.100 | 0.097 | 0.280 | 0.186 | 0.079 |
| 5-30 | 0.115 | 0.112 | 0.109 | 0.106 | 0.112 | 0.109 | 0.313 | 0.208 | 0.088 |
| 6-27 | 0.126 | 0.123 | 0.119 | 0.116 | 0.122 | 0.119 | 0.345 | 0.229 | 0.096 |
| 8-24 | 0.151 | 0.148 | 0.142 | 0.139 | 0.146 | 0.143 | 0.410 | 0.272 | 0.114 |
| 10-21 | 0.174 | 0.171 | 0.164 | 0.161 | 0.169 | 0.166 | 0.475 | 0.315 | 0.131 |
| 12-19 | 0.196 | 0.193 | 0.185 | 0.182 | 0.191 | 0.188 | 0.540 | 0.359 | 0.148 |
| 1/4-17 | 0.229 | 0.226 | 0.216 | 0.213 | 0.222 | 0.219 | 0.625 | 0.415 | 0.171 |
| 5/16-14 | 0.286 | 0.283 | 0.270 | 0.267 | 0.278 | 0.275 | 0.781 | 0.518 | 0.212 |

Dimensions in inches

REMINC/CONTI

Research Engineering & Manufacturing Inc. (REMINC) and Conti Fasteners AG (CONTI) have successfully marketed fastener technology internationally since 1961. Their success has been accomplished by licensing and training leading fastener producers worldwide.

The technical program in the United States is under the direction of REMINC, located in Middletown, Rhode Island and in other countries under the direction of CONTI, situated in Baar, Switzerland.

Although REMINC and CONTI are separate corporations and operate independently, each is dependent on the other for certain functional activities.

Of the thirty-five (35) fastening products that REMINC/CONTI licenses, the most recognizable is the TAPTITE® family of TRILOBULAR™ thread rolling fasteners.

The proprietary products available in the program are marketed and sold, not as fastener items, but rather as **COST REDUCTIONS TO END-USERS OF ASSEMBLED PRODUCTS.**

The proprietary fasteners offered to the assemblers are the means to an end, i.e. used to generate cost reductions while at the same time providing reliably tightened joints.

ORDERING/SUPPLY

When ordering from qualified REMFORM® fastener producers, be sure in all cases to specify the REMFORM® or REMFORM® 'F' brand name, thread size, nominal length, head style, any other special features required, finish and quantity.

DISCLAIMER CLAUSE

The values shown in this brochure are for guidance only. They are not meant to be used for design criteria. Their use and reliance thereon for any purpose by anyone is entirely voluntary and at the sole risk of the user. REMINC/CONTI are not responsible for any loss, claim, or damage resulting from their use. Consult our application engineers or the application engineering department of one of our many qualified producers for your specific application data.

TECHNICAL ASSISTANCE

This brochure contains basic information needed to achieve the cost-savings potential of REMFORM® and REMFORM® 'F' fasteners.

To obtain further assistance and a list of qualified producers, visit our website at www.taptite.com or contact;

REMINC
Tel: 401-841-8880
Email: reminc@reminc.net

CONTI Fasteners AG
Tel: +41 (0)41/761 58 22
Email: conti@contifasteners.ch

SERVICES

A summary of the capabilities of REMINC/CONTI in support of manufacturers:

Technical Support

- New Product Development
- Research and Development Reports
- Technical Manuals
- Technical Reports
- Technical Information Updates
- Engineering Consultation
- Computer Aided Design and Analysis
- Engineering Training
- Tooling Design and Procurement
- Manufacturing Guidance
- Manufacturing Cost Reduction
- Metallurgical Analysis
- End-User Application Guidance
- Technical Training Seminars

MARKETING SUPPORT

- Application Definition Reports
- Application Performance Reports
- Sales Seminars
- Audio/Video Materials
- Graphics
- Customer Product Brochures
- Technical Liaison
- Joint Customer Visits
- Cooperative Studies
- Trademark and Patent Use

In addition to the above stated detail, REMINC/CONTI are positioned to provide:

- Contract Testing
- Contract Engineering
- Consultation Activities
- Contract Joint Analysis
- Fastener Engineering Training

Patents and trademarks issued and/or pending worldwide.



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