

# GripTide™ Insert

A low cost steel insert for plastics that *surpasses* brass inserts in quality, cost and performance.

The GripTide insert utilizes cold forming and rolling to give the unique feature to the outside of the insert that ensures the joint *simply stays tight*.

## GripTide™ Insert Benefits

### ENGINEERED

The GripTide insert's revolutionary pattern integrates with all common installation methods (induction press, conductive, heat staking, insert molding, ultrasonic insertion, and cold press) eliminating the need for multiple designs.

### COST SAVINGS

The GripTide inserts are cold formed, allowing maximum design freedom for flange diameter/bearing surface without the scrap cost associated with typical machined inserts. Custom lengths and GripTide stud versions can be manufactured to suit all applications.

### SECURITY

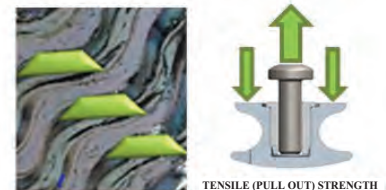
The GripTide insert's multidirectional pattern provides industry leading anti-rotation and pullout performance. In addition, the pattern acts as a stabilizer in the mating material, minimizing "hot float" and improving installation accuracy.

### ENVIRONMENTAL

The GripTide insert has been optimized for use on induction equipment. During induction, steel heats more efficiently than brass, leading to decreased cycle times, lower capital equipment costs, and reduced energy consumption through the use of smaller units.



**ANTI-ROTATION**



**HIGH PULLOUT**



This cold rolled insert has a unique feature that creates a permanent mechanical interference in plastic.

### PROBLEM

"Brass inserts are high in cost and low in performance."

### SOLUTION

#### GripTide™ Inserts

- 1 Steel material and manufacturing cost is much lower than brass
- 2 The unique cold rolled feature creates increased pull out force of the insert and allows for less thread engagement to achieve necessary joint strength.



WERCS® is a trademark of WERCS™ Tooling, a division of Illinois Tool Works Inc. ITW WERCS™ Tooling Technology has revolutionized the design and manufacturing of threaded products. This technology allows for the formation of unique geometries on the thread.

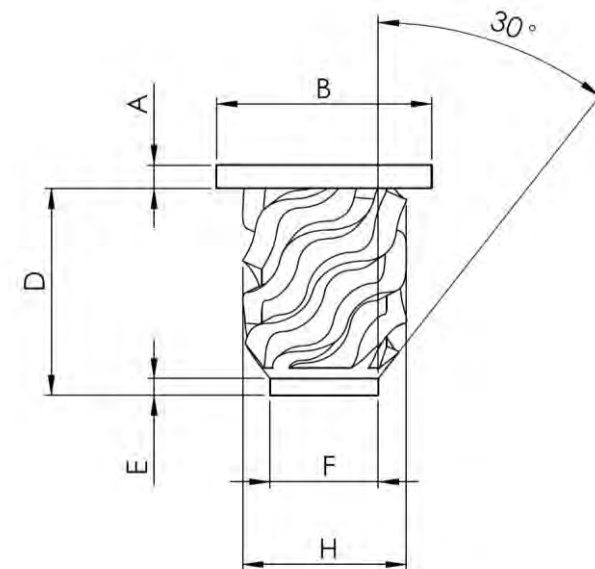
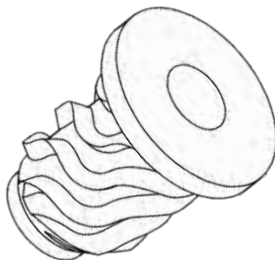
815-654-1510  
[www.shakeproof.com](http://www.shakeproof.com)

## Griptide Standards Matrix

**\*For customer reference only. Contact product management for tolerances**

| ITW PA#  | Part Name                | Internal Thread            | Head Flange Height | Head Flange Diameter | Underhead Height | Pilot Height | Pilot Diameter | Finished Part OD | Rec. Hole Size | Est. Part Weight | Est. Carton Quantity | Carton Weight |
|----------|--------------------------|----------------------------|--------------------|----------------------|------------------|--------------|----------------|------------------|----------------|------------------|----------------------|---------------|
|          |                          |                            | A                  | B                    | D                | E            | F              | H                |                |                  |                      |               |
| 01112702 | M5 Standard              | M5 X 0.8 - 6H              | 1.30               | 9.50                 | 9.50             | 1.00         | 7.00           | 8.26             | 7.62           | 5.82             | 5,200                | 30.2536       |
| 01112902 | M6 Standard              | M6 X 1.0 - 6H              | 1.25               | 11.00                | 12.70            | 1.25         | 8.00           | 9.73             | 8.89           | 9.62             | 3,000                | 28.863        |
| 01118502 | M6 Standard Large Flange | M6 X 1.0 - 6H              | 1.25               | 14.00                | 12.70            | 1.25         | 8.00           | 9.73             | 8.89           | 10.9             | 2,600                | 28.3348       |
| 01118302 | M6 Short                 | M6 X 1.0 - 6H              | 1.25               | 11.00                | 10.50            | 1.25         | 8.00           | 9.73             | 8.89           | 8.18             | 3,500                | 28.616        |
| 01118402 | M6 Short Large Flange    | M6 X 1.0 - 6H              | 1.25               | 14.00                | 10.50            | 1.25         | 8.00           | 9.73             | 8.89           | 9.45             | 3,000                | 28.362        |
|          | M4 Standard              | Contact product management |                    |                      |                  |              |                |                  |                |                  |                      |               |
|          | M8 Standard              | Contact product management |                    |                      |                  |              |                |                  |                |                  |                      |               |
|          | M10 Standard             | Contact product management |                    |                      |                  |              |                |                  |                |                  |                      |               |

- Material 1008/1010 Steel
- Finish Type A = Clear Trivalent Zn Electroplate, 250 hrs (ZinKlad 250)
- Finish Type B = Clear Trivalent Zn/Ni Electroplate, 768 hrs (ZinKlad 1000B)





## *GripTide Generic Performance Matrix*

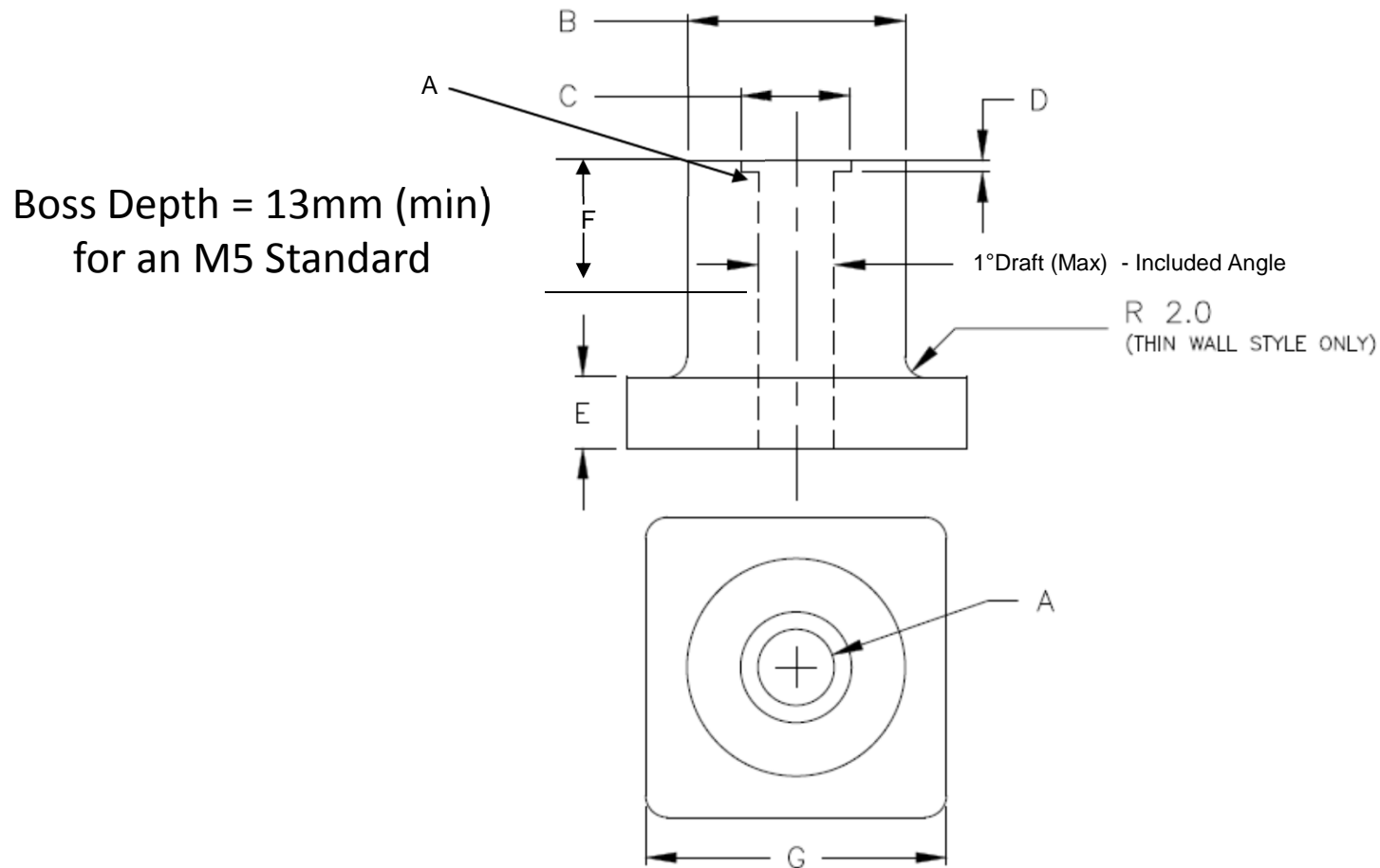
M5 - Generic Pull-Out Force - 4,000 Newton

M6 - Generic Pull-Out Force - 6,000 Newton

| Metric Data |                     |              |                 |               |                 |                  |                 |              |                 |
|-------------|---------------------|--------------|-----------------|---------------|-----------------|------------------|-----------------|--------------|-----------------|
| Part Size   | Assembly Method     | ABS          |                 | Polycarbonate |                 | Nylon 6/6 30% GF |                 | Nylon 6/6    |                 |
|             |                     | Tensile<br>N | Rotation<br>N-m | Tensile<br>N  | Rotation<br>N-m | Tensile<br>N     | Rotation<br>N-m | Tensile<br>N | Rotation<br>N-m |
| ITW M5SIP   | Induction Hot Press | 3083         | 13.8            | 3990          | 13.6            | 4257             | 13.1            | 4911         | 12.6            |
| ITW M6SIP   | Induction Hot Press | 5623         | 21.6            | 7615          | 21.5            | 7718             | 20.6            | 8251         | 22.2            |

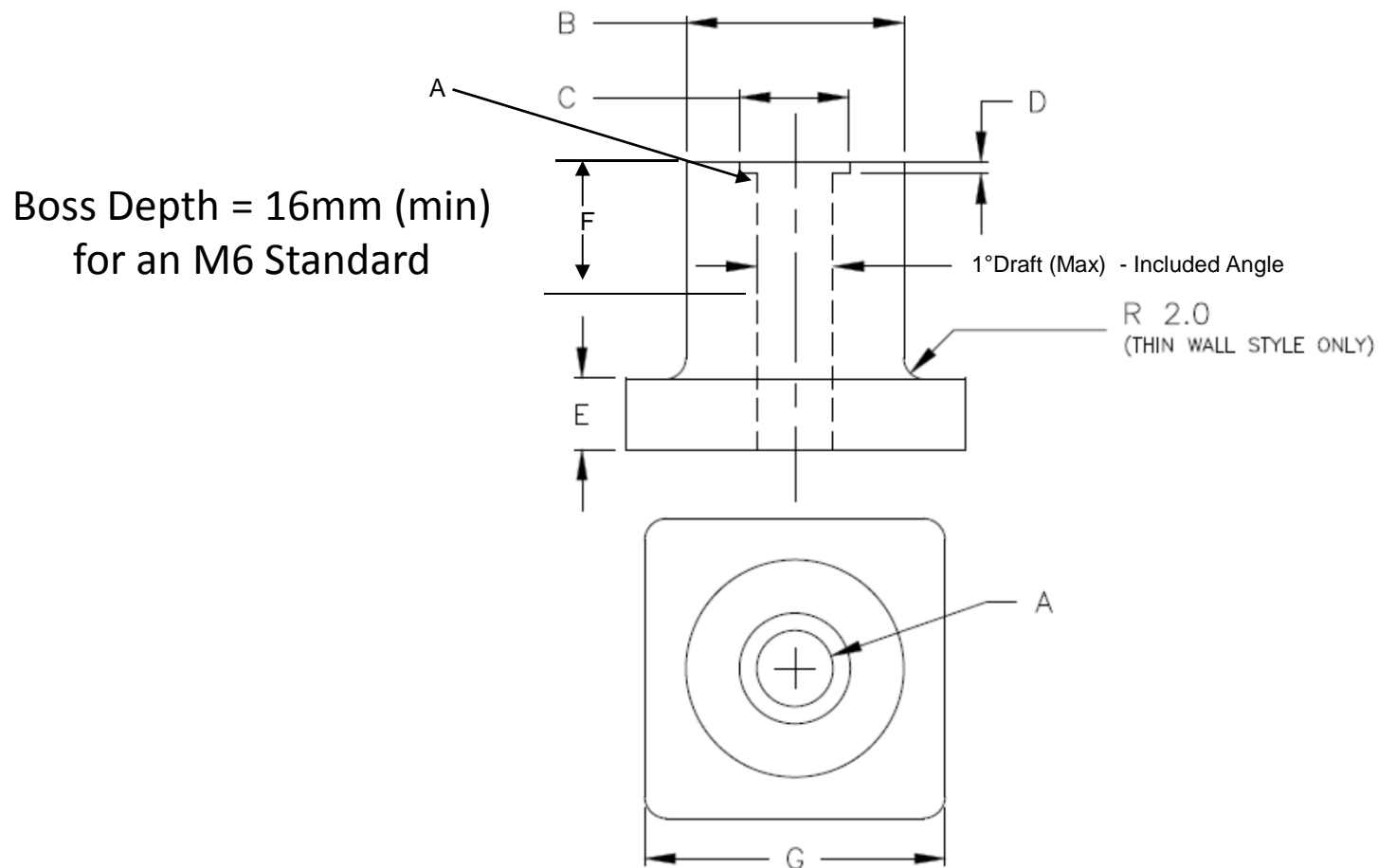
\*\* Yellow boxes indicate screw failure (zero rotation of installed GripTide insert)

\*\*DATA for additional assembly methods available upon request. See App Engineering



## GripTide Test Boss Dimensions

| GripTide      | Inner Diameter [A] | Outer Diameter [B] | Counterbore [C] | Counterbore Depth [D] | Base Thickness [E] | Boss Depth [F] | Base Width [G] |
|---------------|--------------------|--------------------|-----------------|-----------------------|--------------------|----------------|----------------|
| <b>M5x0.8</b> | 7.8 +0.0/- 0.2     | 14.3               | 11.5            | 1.3                   | 8.0                | 25.4           | 25.4           |



## GripTide Test Boss Dimensions

| GripTide | Inner Diameter [A] | Outer Diameter [B] | Counterbore [C] | Counterbore Depth [D] | Base Thickness [E] | Boss Depth [F] | Base Width [G] |
|----------|--------------------|--------------------|-----------------|-----------------------|--------------------|----------------|----------------|
| M6x1.0   | 9.0 + 0.0 /- 0.2   | 17.0               | 13.0            | 1.3                   | 8.0                | 25.4           | 25.4           |