



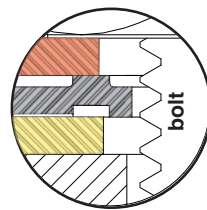
OPTIMUM FLAT WASHER CONFIGURATION CHART FOR USE WITH SQUIRTER® DTIs

Non-standard holes in outer plies must be covered by an appropriate flat washer (see RCSC Table 6.1).

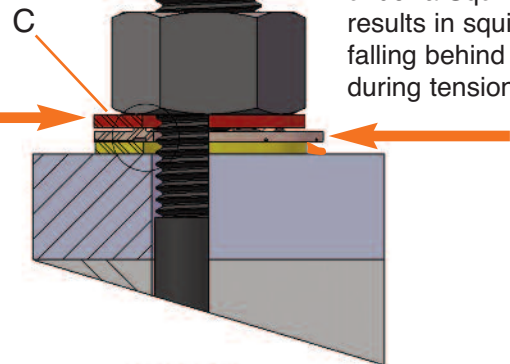
If an ASTM F436 washer is required under a Squirter® DTI, a special flat washer should be procured for optimum squirt performance. While standard ASTM F436 washers are acceptable per specification, their use sacrifices some of the benefits of a Squirter® DTI. See below for details.

See flat washer information on reverse side, call us, or see our website for details.

Detail C of Figure 1.2 illustrates problematic use of standard ASTM F436 washers on top of DTI bumps, eccentricity due to sloppy washer inner diameters, may result in partial compression of DTI bumps.

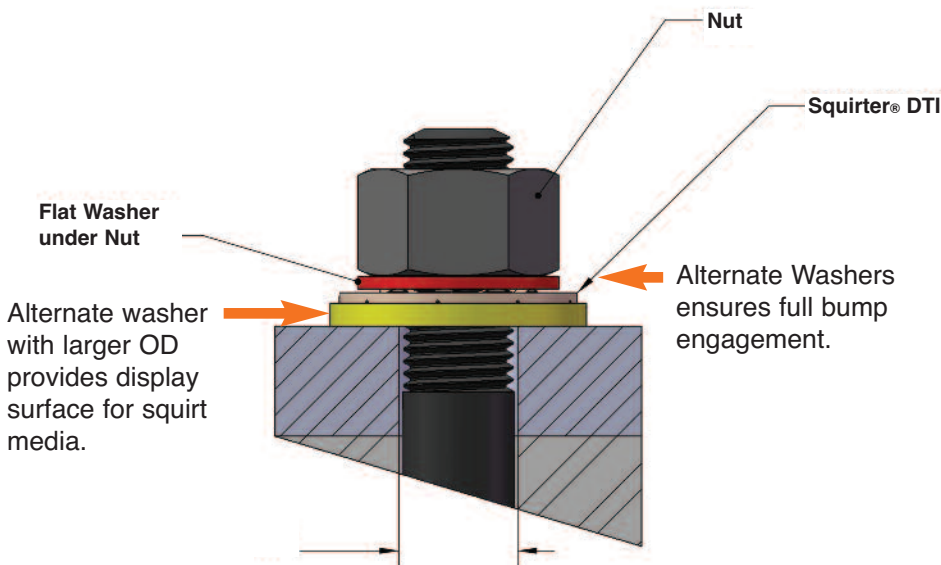


Detail C



Use of a Standard ASTM F436 washer under a Squirter® DTI results in squirt media falling behind DTI during tensioning.

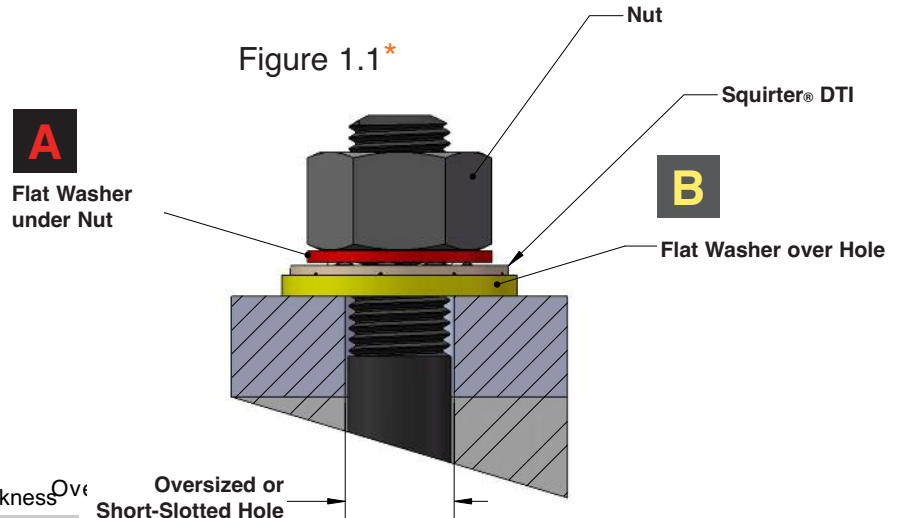
FIGURE 1.2



Flat Washer Recommendations for Use with Squirter® DTIs

Optimum Washer (See Figure 1.1)	Bolt Type	Bolt / Squirter® DTI Size						
		3/4"	7/8"	1"	1-1/8"	1-1/4"	1-3/8"	1-1/2"
A Flat Washer Under Nut	A325 or A490	3/4" F436	7/8" F436	1" F436	1-1/8" F436	SAE 1-1/8"	1-1/4" F436	1-3/8" F436
B Flat Washer Over OS/SS	A325	3/4" USS	7/8" USS	1" USS	118UH	114UH	138UH	112UH
	A490	3/4" USS	7/8" USS	1" USS	118USPTKH	114USPTKH	138USPTKH	112USPTKH

Washer A (red washer per table above and Figure 1.1 right) is recommended for all Standard and Squirter® DTI applications. **Washer B** (yellow washer per 1.1 and table) is only recommended for oversized and short-slotted hole configurations.



Various Flat Washer Dimensions¹

Size Type	ID	OD	Thickness ^{OVt}
3/4" F436	13/16"	1-15/32"	.122-.177
7/8" F436	15/16"	1-3/4"	.136-.177
1" F436	1-1/16"	2"	.136-.177
1-1/8" F436	1-3/16"	2-1/4"	.136-.177
1-1/4" F436	1-3/8"	2-1/2"	.136-.177
1-3/8" F436	1-1/2"	2-3/4"	.136-.177
1-1/2" F436	1-5/8"	3"	.136-.177

← F436 washers have a tight ID (+1/16") up to and including 1-1/8" bolt size and sloppy ID's (+1/8") 1-1/4" up to 1-1/2".

3/4" USS	13/16"	2"	.122-.177
7/8" USS	15/16"	2-1/4"	.136-.192
1" USS	1-1/16"	2-1/2"	.136-.192

← USS washers have a tighter ID and an OD sufficiently bigger than the DTI up to and including 1". USS flat washers are available both hardened and unhardened. Use only hardened USS washers.

1-1/8" SAE	1-1/4"	2-1/4"	.108-.160
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← Suggested SAE washers have a tighter ID than ASTM F436 washers, and therefore fit better. SAE washers are available both hardened and unhardened. Use ONLY hardened SAE washers over DTI bumps.

Applied Bolting Special USS Washers

118 UH	1-3/16"	2-3/4"	.136 min
114 UH	1-5/16"	3"	.136 min
138 UH	1-7/16"	3-1/4"	.136 min
112 UH	1-9/16"	3-1/2"	.136 min
118USPTKH	1-3/16"	2-3/4"	5/16"
114USPTKH	1-5/16"	3"	5/16"
138USPTKH	1-7/16"	3-1/4"	5/16"

← UH and USPTKH washers are special washers for use under Squirter® DTIs wherever oversized and short-slotted holes are encountered 1-1/8" up to 1-1/2". These washers have the OD of a USS washer with a tight ID (+1/16"). Call Applied Bolting for availability.

* Nut side installation illustrated, for other configurations please call Applied Bolting.

¹F436 Dimensions per ASTM Specifications, USS and SAE dimensions per ANSI B18.22.1

Table 1A

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For more information about Squirter® DTIs, other products and services we offer and projects we've worked on, visit our website.