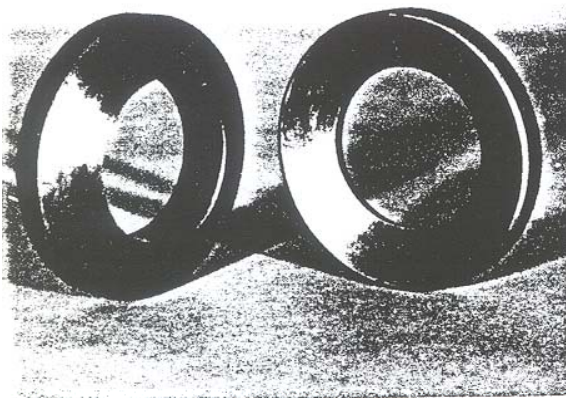
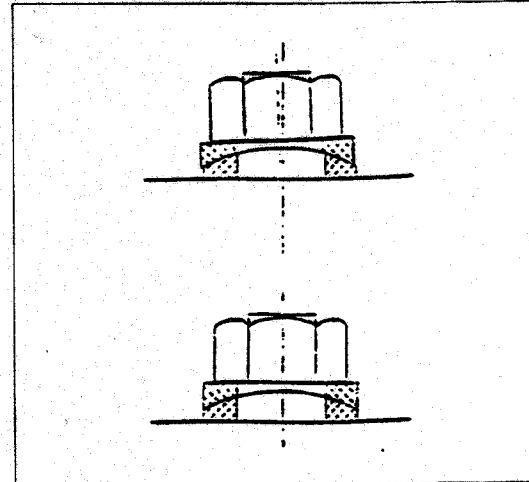


Prevent Broken Bolts Due to Misalignment With Double Spherical Washers

Revised September 03

Rowan double spherical washers provide a unique way to insure a true nut pull on critical anchor bolts and studs. With dual plane surfaces, a broader range of misalignment can be accommodated, at less cost than a conical nut with a concave washer.

Rowan double spherical washers are made from heat treated 4140 steel and are through hardened to ASTM 436 specifications (case hardened washers in smaller sizes for less critical application are also available through Robt. L. Rowan & Assoc., Inc.)



Working Principle

Most bolts and studs break right under the nut where the maximum stress is concentrated. By providing two planes that can tilt slightly—one at the nut face and one at the flange face—better compensation for misalignment is accomplished.

Dual plane surfaces allow the nut to mate properly with the bolt or stud threads, particularly in applications where thermal growth of the flange or frame is expected

Sizes Available - 4140 Heat Treated Steel

Part No.	Bolt Size	O.D.	I.D.	Total Thickness
19312-SW	1-1/8"	2-1/2"	1-3/8"	5/8"
19325-SW	1-1/4"	2-1/2"	1-3/8"	5/8"
19315-SW	1-3/8"	2-7/8"	1-5/8"	3/4"
19315-SW	1-1/2"	2-7/8"	1-5/8"	3/4"
19316-SW	1-5/8"	3"	1-3/4"	3/4"
19320-SW	1-3/4"	3-3/4"	2-1/8"	1-3/16"
19320-SW	1-7/8"	3-3/4"	2-1/8"	1"
19320-SW	2"	3-3/4"	2-1/8"	1"

Sizes Available-Case Hardened Washers *for less critical applications*

Part No.	Bolt Size	O.D.	I.D.	Total Thickness
19306-SW	5/8"	1-3/8"	21/32"	5/16"
19307-SW	3/4"	1-5/8"	25/32"	3/8"
19308-SW	7/8"	1-3/4"	15/16"	3/8"
19310-SW	1"	2"	1-1/16"	1/2"

Special orders are available for any size bolt.

**Double Spherical Washers are available for 1-5/8" bolts by special order only.

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