



# QUARTERLY JOURNAL OF INFORMATION

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Welcome to the Fourth edition of the Clamps Incorporated Newsletter  
Clamps Tech

## New Product

### All Stainless Steel Worm Hose Clamps

Clamps Incorporated is pleased to announce a new addition to our stocked parts - All Stainless Steel Worm Hose Clamps. These clamps are made in China and meet the SAE standards.



Band Width: 1/2 Inch  
Screw: 5/16 inch Hex Head  
Material:  
All 300 Series Stainless Steel  
(Band, Housing & Screw)

SAE Sizes 06 to 104

Part Number	SAE Size
HC3006	06
HC3008	08
HC3010	10
HC3012	12
HC3016	16
HC3020	20
HC3024	24
HC3028	28
HC3032	32
HC3036	36
HC3040	40
HC3044	44
HC3048	48
HC3052	52
HC3056	56
HC3060	60
HC3064	64
HC3072	72
HC3080	80
HC3088	88
HC3096	96
HC3104	104

Contact us for more information

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**Booth 1843**

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Thank You, Clamp Tech  
techinfo@clampsinc.com

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## THREAD GALLING AND STAINLESS STEEL THREADED FASTENERS

Galling as defined by Wikipedia is a form of wear caused by adhesion between sliding surfaces. When a material galls, some of it is pulled with the contacting surface, especially if there is a large amount of force compressing the surfaces together. Galling is caused by a combination of friction and adhesion between the surfaces, followed by slipping and tearing of crystal structure beneath the surface. This will generally leave some material stuck or even friction welded to the adjacent surface, while the galled material may appear gouged with balled-up or torn lumps of material stuck to its surface.

Sometimes fasteners have a problem in loosening and separating from mating parts. This condition is called thread galling. This is a friction weld process created during installation of the part with mating surfaces. The galling process during installation is particularly susceptible to stainless steel fasteners. During installation, tightening of mating parts build pressure between the contacting surfaces and breaks down the protective oxides causing the high points to lock together.



Galling can be minor causing only slight damage to the threaded surface. In severe cases, it can completely weld the nut and bolt together and prevent the removal of the fastener. Often times, during installation the threads may strip out or the fastener may twist off. Galling is more likely to occur when the external threads are cut, rather than rolled. Cut threads have rougher surfaces due to the machining process. Galling can also result from surface oxidation in some materials.

Galling can be minimized with the following:

- Thread lubrication - this reduces friction which is the key element in thread galling.
- Thread damage - thread damage during assembly and un-assembly. This is of importance when nuts and bolts are being re-used.
- Use coarse threads - coarse threads have a larger thread and are more tolerant.
- Lower wrench speed - installing a fastener at a high speed generates heat and contributes to thread galling.
- Matting alloys - parts of the same alloy have a tendency to gall more than dissimilar alloys having different hardness.
- Less frictional resistance - a smoother surface such as rolled thread rather than cut threads.
- Environmental factors - extreme heat and/or exposure to corrosive chemicals can damage threads after assembly. There is nothing you can do to prevent this, except the previous mentioned suggestions.



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