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SURFACE VEHICLE STANDARD

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TYPE "F" CLAMPS FOR PLUMBING APPLICATIONS

***Foreword*—**This Document has not changed other than to put it into the new SAE Technical Standards Board Format.

1. ***Scope*—**This SAE Standard covers complete dimensional and general specifications for worm gear/worm drive hose clamps for general use in the plumbing industry.

1.1 **Purpose—**To establish minimum functional guidelines for hose clamps intended for use in Plumbing application, herein referred to as Type "F" clamps.

2. ***References*—**There are no referenced publications specified herein.

3. ***General Description*—**Worm drive hose clamps for clamps with tangentially mounted buttress-like threaded screws, enclosed in a housing which is securely fastened to the band, which, in turn, is engaged with the screw. When the screw is rotated in a clockwise direction, the clamp becomes smaller and conversely a counterclockwise motion of the screw will eventually open the clamp.

4. ***General Dimensions*—**The following specifications tables and illustrations apply to Type "F" worm drive hose clamps.

4.1 **Shipping Diameter—**Type "F" clamps will be supplied in an "A" Diameter, full open, still engaged. See Table 1.

4.2 **Identification—**Clamps will be permanently marked with Country or Origin and/or manufacturer's identification.

4.2.1 The SAE clamp size number shall be clearly marked on the band.

5. ***Screws*—**The screws shall conform to the specifications designated as follows:

5.1 The screw head shall have an 8 mm (5/16 in) hex collar head screw as specified in Figure 1, Style 4, Slot optional.

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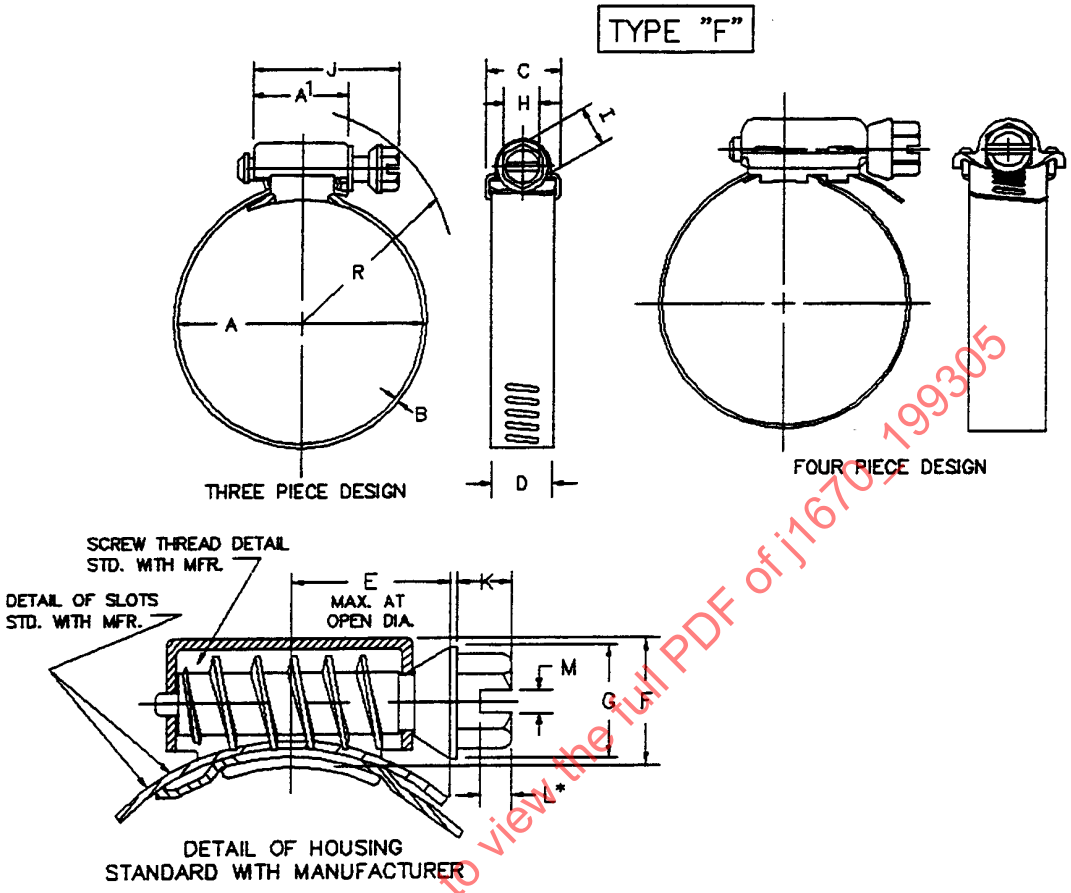

DIMENSIONS OF CLAMPS

Dimension		Type F mm	Type F in
A[1]	HSG Length (Ref.)	19.30	0.76
B	Thickness	0.533/0.787	0.021/0.031
C	HSG Width (Ref.)	20.570	0.81
D	Band Width	12.57/14.45	0.495/0.569
E	Max. at Open Dia.	19.050	0.75
F	Height (Ref.)	14.450	0.56
G	Collar Diameter	9.398/10.79	0.370/0.425
H	Across Flats	7.747/7.925	0.305/0.312
I	Across Corners (Min.)	8.636	0.340
J	Lg. of Screw (Max.)	34.29	1.35
K	Hex Height	3.556/6.350	0.140/0.250
L	Slot Depth (*Optional)	1.956/3.048	0.077/0.120
M	Slot Width	1.422/1.936	0.056/0.076

* Slot optional
[1] Reference dimension only

FIGURE 1—STAINLESS STEEL HOSE CLAMPS

5.1.1 Screw threads shall be modified buttress external thread standard with manufacturer.

TABLE 1—DIMENSIONS OF TYPE F HOSE CLAMPS

SAE Size No.	A Dia.(1) Open mm	A Dia.(1) Open in	A Dia.(1) Closed mm	A Dia.(1) Closed in	R Radius(2) Over Screw mm	R Radius(2) Over Screw in
06	19.8	0.78	11.2	0.44	29.7	1.17
08	23.1	0.91	12.7	0.50	30.9	1.22
10	26.9	1.06	14.2	0.56	32.0	1.26
12	31.7	1.25	17.5	0.69	33.5	1.32
16	38.1	1.50	20.6	0.81	36.1	1.42
20	44.4	1.75	20.6	0.81	38.6	1.52
24	50.8	2.00	26.9	1.06	41.4	1.63
28	57.1	2.25	33.3	1.31	44.5	1.75
32	63.5	2.50	39.6	1.56	47.2	1.86
36	69.8	2.75	45.9	1.81	50.0	1.97
40	76.2	3.00	52.3	2.06	53.0	2.09
44	82.5	3.25	58.6	2.31	55.8	2.20
48	88.9	3.50	65.0	2.56	58.9	2.32
52	95.2	3.75	71.4	2.81	61.9	2.44
56	101.6	4.00	77.7	3.06	65.0	2.56
60	107.9	4.25	84.1	3.31	68.0	2.68
64	114.3	4.50	90.4	3.56	71.1	2.80
72	127.0	5.00	103.1	4.06	77.2	3.04
80	139.7	5.50	117.3	4.62	83.3	3.28
88	152.4	6.00	130.0	5.12	89.6	3.53
96	165.1	6.50	141.2	5.56	95.7	3.77
104	177.8	7.00	156.9	6.18	101.8	4.01

1. Diameter shall be determined by assembly over mandrels.
2. Reference dimensions for clearance purposes only.

NOTES—For sizes greater than 104 contact the manufacturer.
Clamps closing smaller than list must comply with 8.1

6. ***Materials*****—**Screws, bands, and housing shall be fabricated from a minimum of 300 series stainless steel.

7. ***Workmanship*****—**All clamps and components thereof shall be free of burrs, seams, loose scale, and other defects that might affect the performance.

8. ***Test and Performance Requirements*****—**Clamp acceptability shall be determined by compliance with the following methods.

8.1 Clamping Diameter Range—Clamps shall assemble over and close tight upon round mandrels equal to the corresponding open and closed diameters listed in Table 1. Diameters smaller than the diameters shown are permissible. For diameters greater than listed, contact the manufacturers.

8.1.1 When tested for minimum and maximum open diameter, all threads must be fully engaged.

8.2 Free Running Torque

8.2.1 FREE TORQUE—The torque value expressed in newton meters (pound inches) when the clamp is tightened four complete revolutions of the screw or nut, while in the free state. This value does not include any break-away effects due to staking or passage of the band ends beyond the screw head.

8.3 Durability Torque—Clamps shall be tightened once, over a round steel mandrel of the specified open diameters less 1.52 mm (0.06 in) with hand-applied torque of 5.6 N·m (50 lb-in) There shall be no failure occurring in the clamp nor evidence of deformation of the threads on the screw and/or in the band. There shall be no deformation of the housing.

8.4 Ductility Tests—Bands shall be subjected to 180 degrees, bend around a 4.77 mm (0.188 in) diameter mandrel, at the perforated portion of the band and then restraightened. The band shall at no time during or after the test exhibit cracks, breaking, or other indications of failure.

9. Installation Torque—The suggested installation torque for a particular application must be established by the user.

9.1 Manufacturer's recommended installation torque for all size TYPE "F" worm drive clamp is:

TYPE "F" = 3.44 N·m (30 lb-in) for all size and materials.

9.2 Assembly Tools—It is advised that the use of power tools to install worm drive clamps be of the stall torque type. Use of clutch type or impact type assembly tools is not recommended.

PREPARED BY THE SAE HOSE/CLAMP SUBCOMMITTEE
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