

Automotive parts - Hose clamps

1. Scope

This standard specifies hose clamps (hereinafter referred to as the “clamps”) mainly used to connect the hose for cooling, suction air, fuel, lubrication and heating systems in automobiles with the joint fittings or metallic tubes.

2. Normative reference

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies.

JIS B0205-2:2001	ISO general purpose metric screw threads -- Part 2: General plan
JIS B0209-1:2001	ISO general purpose metric screw threads -- Tolerances -- Part 1: Principles and basic data
JIS B1051:2000	Mechanical properties of fasteners made of carbon steel and alloy steel – Part 1: Bolts, screws and studs
JIS B1101:1996	Slotted head screws
JIS B1111:1996	Cross recessed head screws
JIS B1180:2004	Hexagon head bolts and hexagon head screws
JIS D0201:1995	Automobile parts - General rules of electroplating
JIS G3141:2009	Cold-reduced carbon steel sheet and strip
JIS G3521:1991	Hard drawn steel wires
JIS G3532:2000	Low carbon steel wires
JIS K6920-1:2000	Plastics -- Polyamide (PA) moulding and extrusion materials -- Part 1: Designation system and basis for specifications
JIS K7364-1:2004	Plastics -- Polyoxymethylene (POM) moulding and extrusion materials -- Part 1: Designation system and basis for specifications
JIS Z2371:2000	Methods of salt spray testing

3. Classifications

The clamps are classified into 2 classes as shown in **Table 1**, according to the construction of clamp screw part.

Table 1 Class of clamp

Class	Construction	Applicable nominal size (Based on Table 2)
Type A1	Flat clamp plate	10 to 118
Type A2	Squeezed clamp plate	20 to 118

4. Operation of screw

The operation of screw shall be smooth when the clamp is tightened.

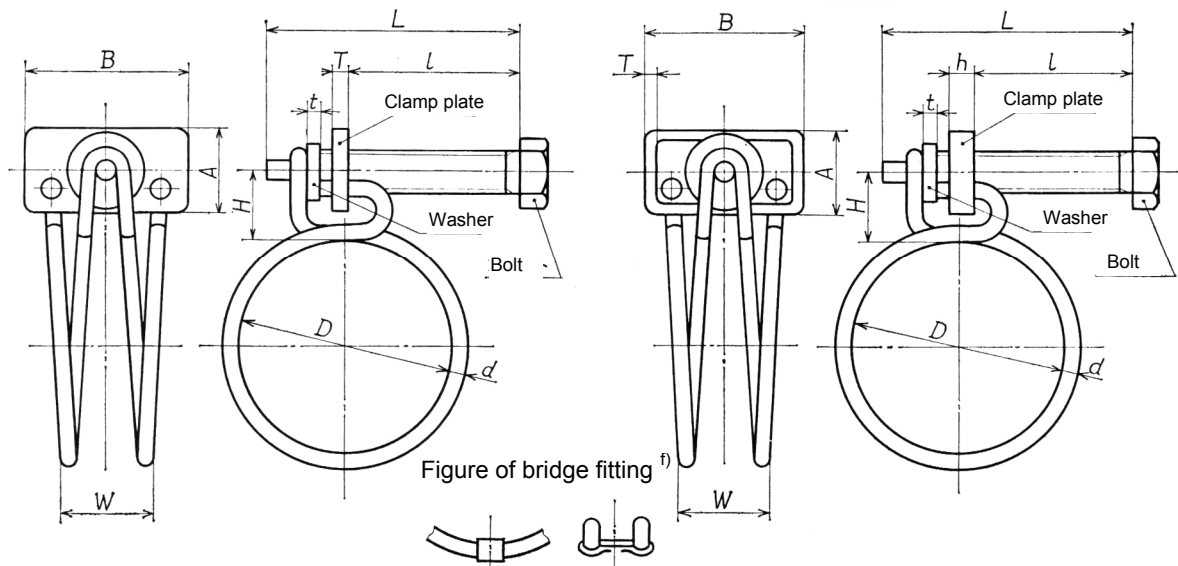
5. Shape and Dimensions

The shape and dimensions of the clamp shall be as given in **Table 2**.

Table 2 Shape and dimensions of clamp

Type A1 (Flat clamp plate)

Type A2 (Squeezed clamp plate)



Unit: mm

Dimensions Nominal size		Ring				Bolt ^{a)}			Clamp plate ^{b)}				Washer	W (Max.)	H (Max.)	
Type A1	Type A2	D when opened		D when closed ^{c)} (Reference)	Wire diam. ^{d)} d	L (Max.)	l (Min.)	Nominal size and pitch of screw	Type A1	Type A2		A	B			t
		Basic size	Tolerance						T	T	h					
10	-	10	+1 0	8	1.2	20	10	M3x0.5	1.6	-	-	8	15	1	8	8
12	-	12		10												
14	-	14		11												
16	-	16		1.6	25	15	M4x0.7	2.0	-	-	8	15	1	8	10	
18	-	18														15
20	20	20														17
22	22	22		2.0	35	22	M6x1	3.2	1.6	4	12	22	2	13	12	
24	24	24														18
25	25	25														20
27	27	27														21
28	28	28														23
30	30	30		2.3	35 (40) ^{e)}	22 (27) ^{e)}	M6x1	3.2	1.6	4	12	22	2	13	12	
33	33	33														24
36	36	36														26
38	38	38														29
40	40	40														32
43	43	43														34
45	45	45														35
48	48	48														38
50	50	50														40
			43													
			45													

Table 2 Shape and dimensions of hose clamp (continued)

Dimensions Nominal size		Ring				Bolt a)			Clamp plate ^{b)}				Washer	W (Max.)	H (Max.)	
Type A1	Type A2	D when opened		D when closed ^{c)} (Reference)	Wire diam. ^{d)} d	L (Max.)	l (Min.)	Nominal size and pitch of screw	Type A1	Type A2		A	B			t
		Basic size	Tolerance						T	T	h					
53	53	53	+1 0	48	2.3	35	22	M6x1	3.2	1.6	4	12	22	2	13	12
56	56	56		51												
58	58	58		53												
60	60	60		55												
63	63	63	+1.5 0	58		40	27									
65	65	65		60												
67	67	67		62												
69	69	69		64												
71	71	71		66												
73	73	73		68												
75	75	75		70												
78	78	78		73												
80	80	80		75												
83	83	83		77		45	32									
85	85	85		79												
88	88	88		82												
90	90	90		84												
93	93	93		87												
95	95	95		89												
98	98	98		92												
100	100	100		94												
103	103	103	97	50		37										
106	106	106	100													
109	109	109	103													
112	112	112	105													
115	115	115	108													
118	118	118	111													

The following are the supplementary remarks for Table 2.

a) The nominal size of clamp is based on the basic size of inner diameter of the ring when opened.

b) Double ring of the clamp shall be nearly concentric.

Note: ^{a)} Generally, use the metric coarse screw threads specified in **JIS B0205-2**, and for the tolerance zone use 6 g specified in **JIS B0209-1**.

In addition, the shape of head may be selected suitably among from **JIS B1180**, **JIS B1101**, **JIS B1111**, and the like. However, in any case the thread part shall be fully threaded, and the length of imperfect thread shall be 2 threads or less from the bottom of head.

Cross recess or slot may be made on hexagon head bolt, and the shape shall be agreed between the parties concerned.

Note: ^{b)} Type A1 is flat plate and Type A2 is squeezed type, and the thread part shall have approx. 3 threads. The clamp plate shall have metric coarse screw thread specified in **JIS B0205-2**, and the fitting with bolt shall be smooth.

Note: ^{c)} This is the value at which uniform clamping on the circumference of metallic rod or tube is possible.

Note: ^{d)} The tolerance on wire diameter used shall comply with **JIS G3521**, **JIS G3532**, or **JIS G3547**.

Note: ^{e)} If further tightening is necessary due to the wall thickness, hardness, and others of the hose to be clamped, the value given in parentheses may be used subject to the agreement between the parties concerned.

Note: ^{f)} The bridge may be fitted to the clamp if necessary.