GOST : 11371-78

Title : WASHERS TECHNICAL CONDITIONS

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Date : FEBRUARY 1984.

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UDC 621.882.4:006.354 Group G36

USSR STATE STANDARD

WASHERS
TECHNICAL CONDITIONS

GOST 11371-78
This supercedes GOST 11371-68

BY ORDER NO.1674 DATED 26th JUNE 1978 OF THE USSR STATE COMMITTEE ON STANDARDS THIS STANDARD IS VALID FROM 01.01.1979 TO 01.01.1984

The present standard is applicable to ~~normal~~ Standard washers for ~~fasteners~~ fastenings with thread diameter from 1 to 48 mm.

The standard is conformity with the COMECON standards ST SEV 280-76 and ST SEV 281-76 for diameters from 1 to 48 mm and with ST SEV 219-75 in respect of maximum permissible deviations in inside and outside diameters and in respect of ~~noncoaxiality~~ coaxiality of washers of thickness upto 4 mm and tolerance classes A and C.

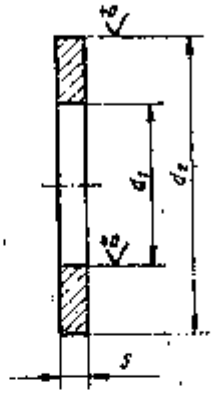
1. DIMENSIONS

Washer dimensions must conform to the values given in the drawing and Table.

PLAIN WASHER

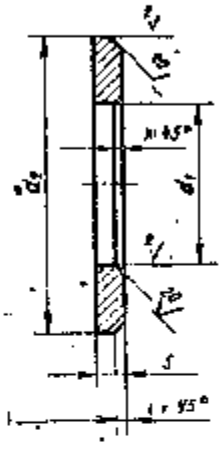
Исполнение 1

Variant 1



Исполнение 2

Variant 2 (V)



Example of ~~notional~~ designation of a washer for a fastener of variant 1, diameter 12 mm and standard thickness made of material of group 01 with ~~plating~~ coating type 01 of thickness 9 microns:

Washer 12.01.019 GOST 11371-78

Ditto of variant 2

Washer 2.12.01.019 GOST 11371-78

1.2. The following are permitted by mutual agreement between manufacturer and user:

Making washers of other thicknesses;

Using washers with internal diameters 12.5; 14.5 and 16.5 mm

2. TECHNICAL REQUIREMENTS

2.1. Washers must be manufactured in conformity with the requirements of the present standard and GOST 18123-72.

2.2. ~~Maximum permissible~~ Limit deviations in washer dimensions as per ST SEV 144-75 and ST SEV 145-75;

in hole diameter d_1 - follow H11 for variant 1 and H13 for variant 2;

in outside diameter d_2 - follow h14; in ~~noncoaxiality~~ misalignment of hole diameter d_1 with respect to outside diameter d_2

$$\text{for } d_2 \leqslant 50 - \frac{IT15}{2}$$

$$\text{for } d_2 > 50 - \frac{IT16}{2}$$

2.3. The reference annexure lists theoretical weights of washers.

3. ACCEPTANCE PROCEDURE

3.1. Acceptance procedure for rough class of accuracy washers follows GOST 17769-72.

4. INSPECTION PROCEDURE

4.1. Inspection procedure for washers follows GOST 18123-72.

5. PACKING AND MARKING

5.1. Packing of washers and ~~case~~ package markings follow GOST 18160-72.

mm

Thread diameter of fastener	d_1	d_2	s	e		x, not less than
				not more than	not less than	
1.0	1.1	3.5				
1.2	1.3					
1.4	1.5	4.0	0.3	0.08	0.15	0.15
1.6	1.7					
2.0	2.2	5.0				
2.5	2.7	6.5	0.5	0.13	0.25	0.25
3.0	3.2	7.0				
4.0	4.3	9.0	0.8	0.20	0.40	0.40
5.0	5.3	10.0	1.0	0.25	0.50	0.50
6.0	6.4	12.5	1.6	0.40	0.80	0.80
8.0	8.4	17.0				
10.0	10.5	21.0	2.0	0.50	1.00	1.00
12.0	13.0	24.0	2.5	0.60	1.25	1.25
14.0	15.0	28.0				
16.0	17.0	30.0				
18.0	19.0	34.0	3.0	0.75	1.50	
20.0	21.0	37.0				
22.0	23.0	39.0				1.50
24.0	25.0	44.0	4.0	1.00	2.00	
27.0	28.0	50.0				
30.0	31.0	56.0				
36.0	37.0	66.0	5.0	1.25	2.50	
42.0	43.0	78.0	7.0	1.75	3.50	2.10
48.0	50.0	92.0	8.0	2.00	4.00	2.40

Notes:

Washers of variant 2 may be manufactured without chamfer but with the edges rounded off to radius e.

Washers of variant 2 may be manufactured without internal chamfer.

Annexure

Reference

WEIGHTS OF STEEL WASHERS

Thread diameter of fasteners mm	Theoretical weight of 1000 nos., in kg in variant: 1	2	Thread diameter of fasteners mm	Theoretical weight of 1000 nos. in kg in variant 1	2
1.0	0.021	0.020	12.0	6.270	5.558
1.2	0.026	0.025	14.0	8.620	7.795
1.4	0.025	0.023	16.0	11.300	10.000
1.6	0.024	0.022	18.0	14.700	13.230
2.0	0.037	0.035	20.0	17.160	15.560
2.5	0.109	0.102	22.0	18.350	16.530
3.0	0.119	0.110	24.0	32.330	29.530
4.0	0.308	0.282	27.0	42.310	39.120
5.0	0.450	0.415	30.0	53.640	50.080
6.0	1.139	0.990	36.0	92.080	86.120
8.0	2.150	1.949	42.0	182.770	169.070
10.0	4.080	3.699	48.0	294.170	273.090

Notes: The weights given in the table are to be multiplied by the factors given below for determining the weight of washers made out of other materials:

0.35 - for aluminium alloy;

0.97 - for bronze;

1.08 - for brass;

1.13 - for copper.

BASE UNITS SI

Quantity	Units: Name	Abbreviations: Russian	Abbreviations: International
LENGTH	metre	M	m
MASS	kilogram	k	kg
TIME	second	c	s
ELECTRIC CURRENT	ampere	A	A
Thermodynamic temperature	kelvin	K	K
Amount of substance	mole	Моль	mol
Luminous Intensity	candela	кд	cd
SUPPLEMENTARY UNITS			
Plane angle	radian	рад	rad
Solid angle	steradian	ср	sr

DERIVED UNITS SI HAVING PROPRIETORY NAMES

Quantity	Unit: Name	Abbreviation		Expressed in derived units: in terms of other units SI	Expressed in derived units: in terms of base units SI
Frequency	hertz	Гц	Hz	–	s^{-1}
Force	newton	Н	N	–	$m, kg. s^{-2}$
Pressure	pascal	Па	Pa	N/m^2	$m^{-1}, kg. s^{-2}$
Energy, work, heat	joule	Дж	J	N.m	$m^2. kg. s^{-2}$
Power, Rate of flow of energy	watt	Вт	W	J/s	$m^2. kg. s^{-3}$
Quantity of electricity, electrical charge	coulomb	К	C	A.s	s.A
Electrical voltage, potential difference	volt	В	V	W/A	$m^2, kg. s^{-3}. A^{-1}$
Capacitance	farad	Ф	F	C/V	$m^{-2} kg^{-1} s^4 A^2$
Resistance	ohm	Ом	Ω	V/A	$m^2, kg. s^{-3}. A^{-2}$
Conductance	siemens	См	S	A/V	$m^{-2} kg^{-1} s^3 A^2$
Magnetic flux	weber	Вб	W	B.s	$m^2, kg. s^{-2}. A^{-1}$
Magnetic flux density	tesla	Тл	T	Wb/m^2	$kg. s^{-2}. A^{-1}$
Inductance	henry	Гн	H	Wb/A	$m^2. kg. s^{-2}. A^{-2}$
Luminous flux	lumen	лм	m	–	cd, sr
Brightness	lux	лк	x	–	m^{-2} cd. sr *
Nucleid activity	beckerel	Бк		–	s^{-1}
Radiation dose	grey	Гр	–	–	$m^2. s^{-2}$

* The supplementary unit steradian figures in these two expressions along with base units.