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AMENDMENT 1
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Hand-held portable power tools — Test methods for evaluation of vibration emission —

Part 2: Wrenches, nutrunners and screwdrivers

AMENDMENT 1: Changes in Annex C — Brake devices

Machines à moteur portatives — Méthodes d'essai pour l'évaluation de l'émission de vibrations —

Partie 2: Clés, boulonneuses et visseuses

AMENDEMENT 1: Modification de l'Annexe C — Dispositifs de freinage

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This document was prepared by Technical Committee ISO/TC 118, *Compressors and pneumatic tools, machines and equipment*, Subcommittee SC 3, *Pneumatic tools and machines*.

Hand-held portable power tools — Test methods for evaluation of vibration emission —

Part 2: Wrenches, nutrunners and screwdrivers

AMENDMENT 1: Changes in Annex C — Brake devices

Page 26, Annex C

Replace the existing Annex C with the following:

Annex C

(normative)

Brake devices — Assembly specification and example drawings of parts

This annex gives requirements for the brake and also examples of brake designs.

C.1 Specification of brake device

The requirements on the brake system are:

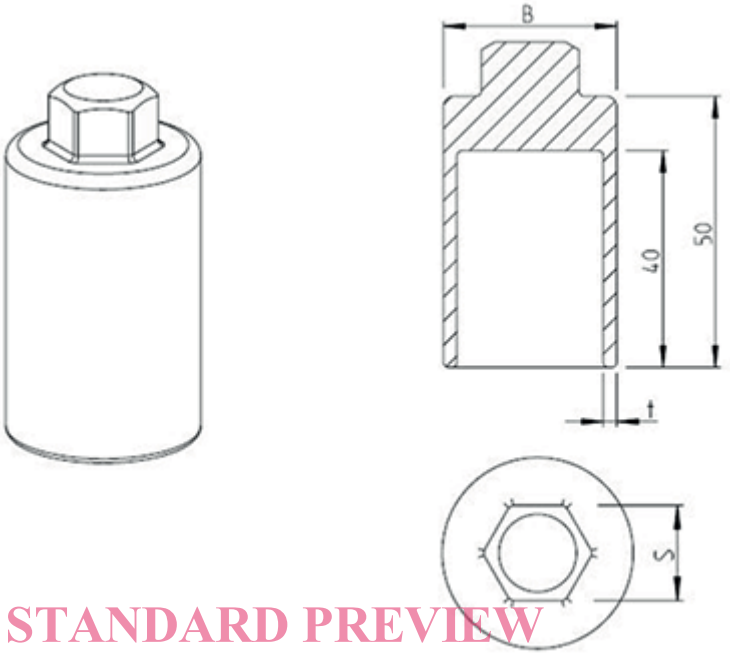
— The size of the sockets should be according to Figures C.1 to C.5. The reason is to define the weight of the sockets.

— The static friction coefficient of the brake shall not exceed the dynamic friction coefficient with more than 20%.

— The brake force should not vary more than 20 % over a test run. This is obtained if the brake design uses conical disc springs. If other design is used, the variation in brake force needs to be verified by measurement.

— The mounted test rig shall not have any resonances within the frequency range for hand–arm vibration that could influence the test results. This can be assured by bolting the base frame to a concrete block having a mass of at least 400 kg.

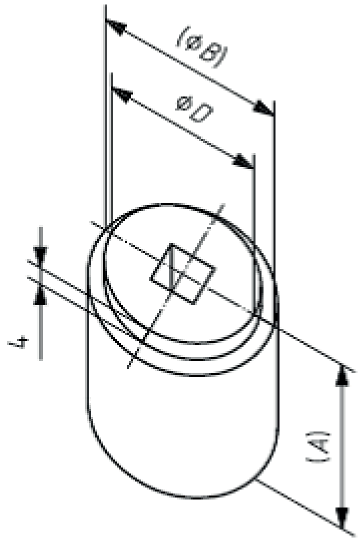
C.2 Drawings, sockets

Name of part	Material	Dimensions mm
Socket 1009	General engineering steel Carbonitrided 0,15	

No.	*s* (across flat)	*B*	*t*
1009-1	8	14	1
1009-02	13	22,2	2
1009-03	16	31,8	2

Dimensions of the hex head is according to ISO 4014.

Figure C.1 — Socket, 1009

<table>
<tr><th>Name of part</th><th>Material</th><th>Dimensions
mm</th></tr>
<tr><td>Socket 1010</td><td>General engi-
neering steel</td><td>


<table>
<tr><th>No.</th><th>Square drive</th><th>B</th><th>D</th></tr>
<tr><td>1010-04</td><td>12,5;1/2</td><td>50,8</td><td>43</td></tr>
<tr><td>1010-05</td><td>16;5/8</td><td>50,8</td><td>43</td></tr>
</table>
A may be made shorter if a suitable stud is added between the socket and the lower cover plate. Other combinations of square drive size and socket outer diameter may be used as long as the rotational speed can be kept within given limits.
For guided sockets, use the specification in ISO/TS 21108:2011.
</td></tr>
</table>

Figure C.2 — Socket, 1010

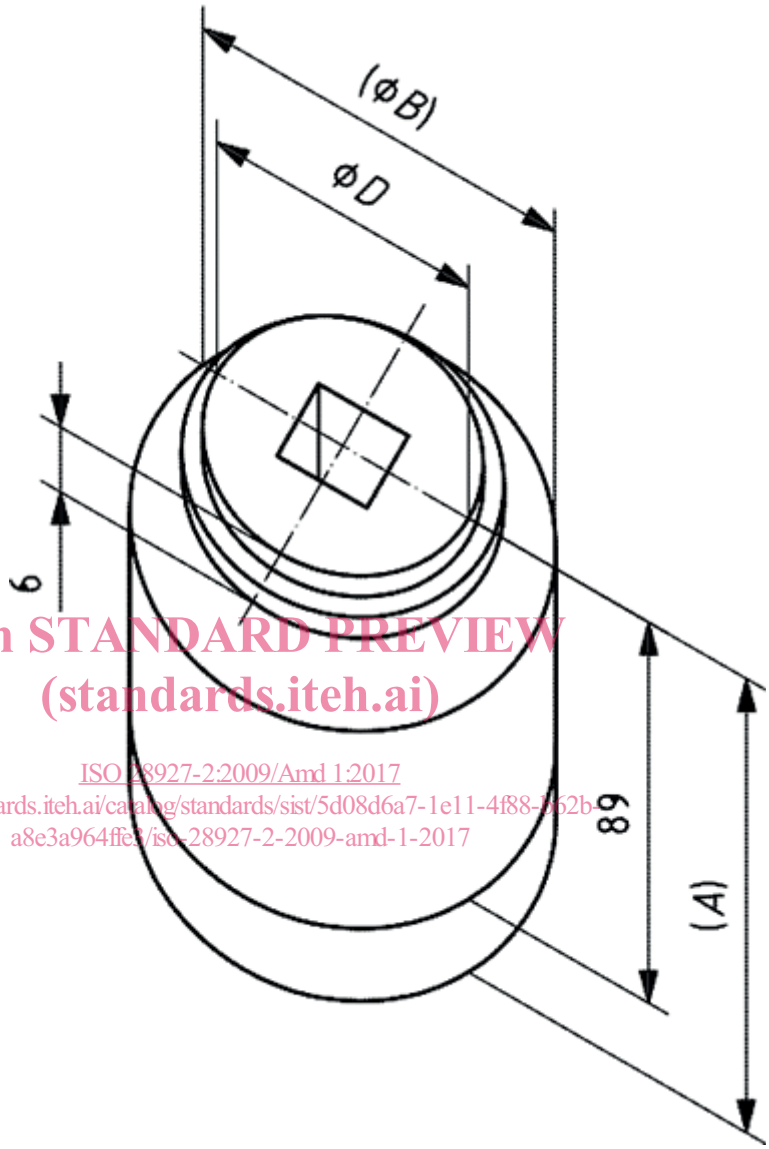
Name of part	Material	Dimensions mm
Socket 1011	General engineering steel	 **No. / Square drive / *A* / *B* / *D*** 1011-01 / 20;3/4 / 101,6 / 69,9 / 42 1011-02 / 25;1 / 114,3 / 101,6 / 71 *A* may be made shorter if a suitable stud is added between the socket and the lower cover plate. Other combinations of square drive size and socket outer diameter may be used as long as the rotational speed can be kept within given limits. For guided sockets, use the specification in ISO/TS 21108:2011.

Figure C.3 — Socket, 1011

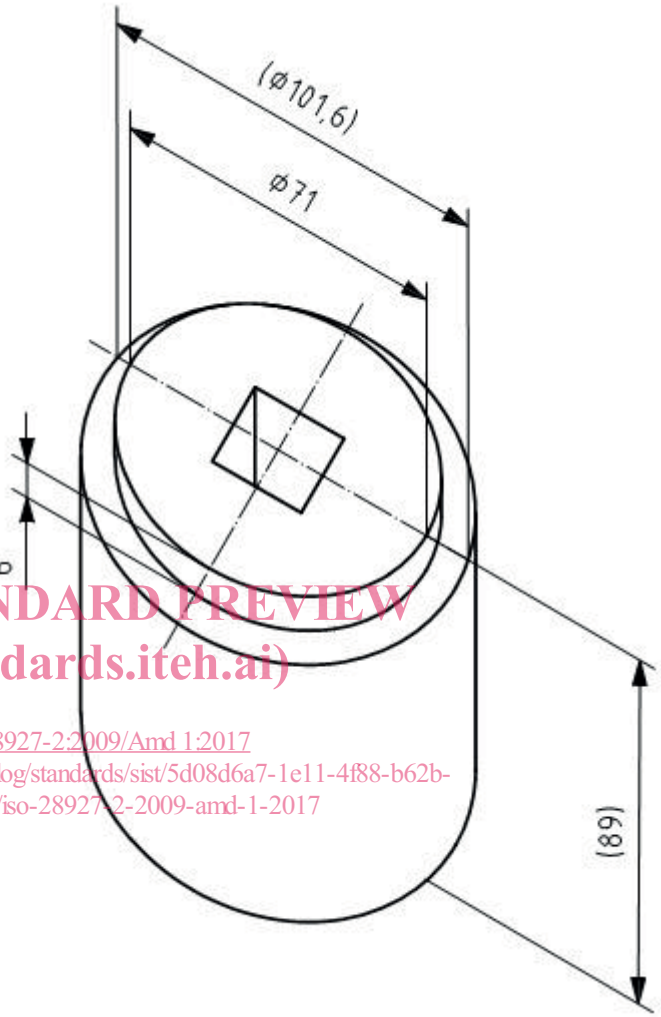
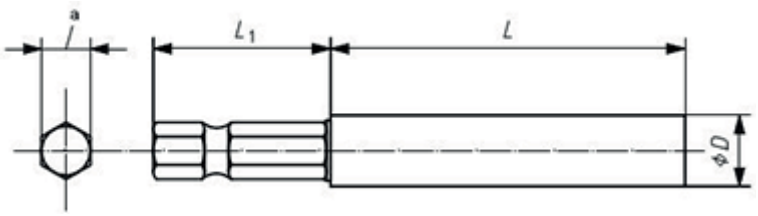
Name of part	Material	Dimensions mm
Socket 1012	General engineering steel	 Square drive 1½ 38 mm For guided sockets, use the specification in ISO/TS 21108:2011.

Figure C.4 — Socket, 1012

<table>
<tr><th>Name of part</th><th>Material</th><th>Dimensions
mm</th></tr>
<tr><td>Socket 1013</td><td>General engineering steel</td><td>


<table>
<tr><th>No.</th><th>a</th><th>L_1</th><th>L</th><th>D</th></tr>
<tr><td>1013-01</td><td rowspan="2">1/4</td><td>25</td><td>50</td><td>10</td></tr>
<tr><td>1013-02</td><td>25</td><td>50</td><td>8</td></tr>
<tr><td colspan="5">a Standards hex drive 1/4 inch or other drive suitable for the machine to be tested.</td></tr>
</table>
L may be made shorter if a suitable stud is added between the socket and the lower cover plate..
</td></tr>
</table>

Figure C.5 — Socket, 1013

Page 39, Annex D

The following new Annex D has been added:

Annex D

(informative)

Drawings, example of brake blocks

Example of brake block design:

— a steel base for mounting the brake and supporting the inner brake block;

— a pair of brake blocks for example aluminium blocks with a lining on the cylindrical surface (see Tables D.1 and D.2 footnotes);

— a steel plate which supports the outer brake block;

— two cover plates made of steel;

— a socket that is rotated by the machine;

— bolts, nuts and spring washers used to apply the contact pressure between the socket and the brake block;

— mounting screws for stopping the axial movements of the socket.

The conical disc spring shall be mounted in suitable directions to give an appropriate contact pressure, i.e. such that they are half-compressed when the specified rotational frequency is reached.

Intense use of the brake device may necessitate the introduction of air cooling by the addition of a small hole in the lower cover plate.

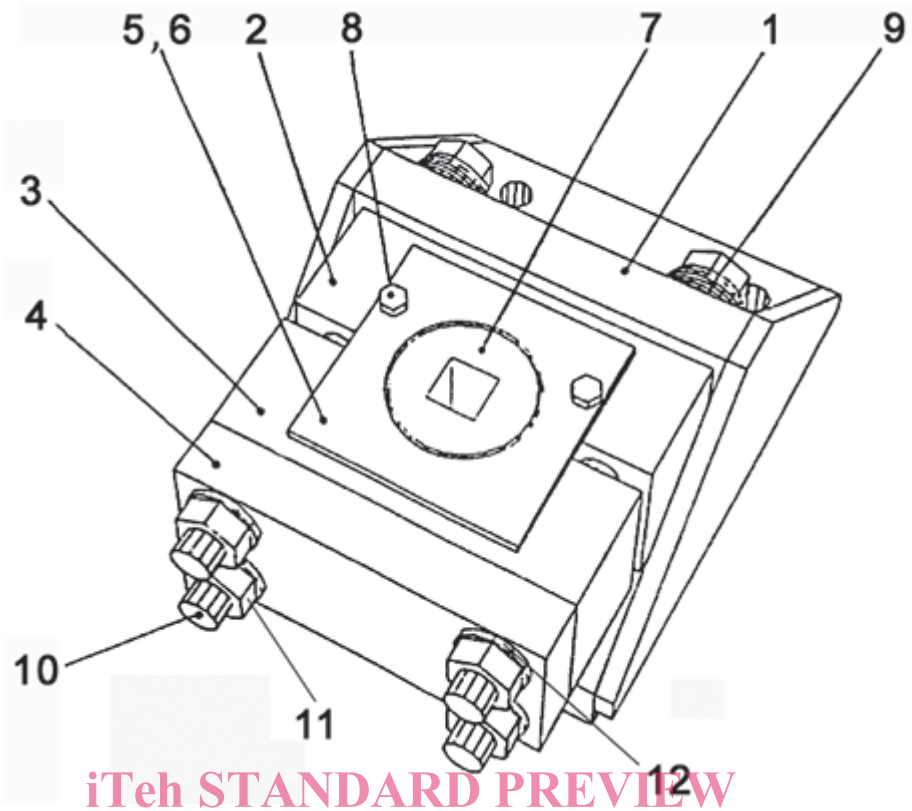


Figure D.1 — Brake device, large — For machines with shaft sizes 20 mm, 25 mm **and** 40 mm

Table D.1 — Brake device, large

Brake device, large mm				**Square drive size**		
				3/4 20	1 25	11/2 38
Pos.	**Name of part**	**No.**	**Material**	**Quantity**		
1	Base	1001	Structural steel	1	1	1
2	Block, large (R 35)	1002-01	a	1	—	—
2	Block, large (R 51)	1002-02		—	1	1
3	Block, large (R 35)	1002-03		1	—	—
3	Block, large (R 51)	1002-04		—	1	1
4	Plate, large	1004	Tool steel	1	1	1
5	Coverplate, large upper	1006-01	General engineering steel	1	—	—
5	Coverplate, large upper	1006-02	General engineering steel	—	1	1
6	Coverplate, large lower	1007	General engineering steel	1	1	1
7	Socket (3/4; 69,9)	1011-01		1	—	—
7	Socket (1; 101,6)	1011-02		—	1	—
7	Socket (1½; 101,6)	1012		—	—	1
8	Screw M8 x 100		ISO 8-8	2	2	2
9	Conical disc spring 40/20,4/2,25 (approx.)		DIN 2093 — A 40 GR 2	40	40	40