INTERNATIONAL STANDARD ISO 3895

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Road vehicles — Screened and waterproof spark plug and its connection — Type 2

Véhicules routiers — Bougie d'allumage blindée et étanche et sa connexion — Type 2

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3895 was drawn up by Technical Committee ISO/TC 22, *Road vehicles,* and was circulated to the Member Bodies in June 1975.

It has been approved by the Member Bodies of the following countries :

Australia	Germany	Sweden
Austria	Hungary	Switzerland
Belgium	Iran	Turkey
Chile	Italy	United Kingdom
Czechoslovakia	Mexico	Yugoslavia
Finland	Romania	
France	Spain	

The Member Body of the following country expressed disapproval of the document on technical grounds :

Japan

Printed in Switzerland

Road vehicles — Screened and waterproof spark plug and its connection — Type 2

1 SCOPE

This International Standard specifies the essential dimensional characteristics of a spark plug type used with spark ignition engines.

2 FIELD OF APPLICATION

The provisions of this International Standard apply to screened and waterproof spark plugs and their connections, type 2.

3 REFERENCES

ISO 68, *ISO general purpose screw threads — Basic profile.*

ISO 261, *ISO general purpose metric screw threads — General plan.*

ISO 965/I, *ISO general purpose metric screw threads — Tolerances — Principles and basic data.*

ISO 995/III, *ISO general purpose metric screw threads — Tolerances — Deviations for constructional threads.*

ISO 3412, *Road vehicles — Screened and waterproof spark plug and its connection — Type 1.*

ISO 3896, *Road vehicles — Screened and waterproof spark plug and its connection — Type 3.*

4 REQUIRED CHARACTERISTICS FOR THE SPARK PLUG AND THE HOUSING IN THE CYLINDER HEAD

4.1 Dimensions and thread (see figure)

4.1.1 *Plug reach and installed height*

Dimensions in millimetres

Type of reach	*A*	*B* max.	*C* (see 4.1.2)
Short reach	12,5 ± 0,2	70	1,1 to 1,7
Long reach	20,3 ± 0,2	65	2,0 to 2,3

4.1.2 *Gasket*

When the spark plugs have been tightened with a torque of 48 N·m (threads clean, smooth and dry), the gasket thickness shall correspond with dimension *C* in the table in 4.1.1. If the gaskets are of a different thickness, a corresponding adjustment to dimension *A* shall be made.

4.1.3 *Thread*

4.1.3.1 DIMENSION LIMITS

Dimensions in millimetres

Dimension		Plug thread (on finished plug) 6e	Tapped hole in cylinder head 6H
Major diameter	max.	17,933	not specified
	min.	17,697	18,000
Pitch diameter	max.	16,959	17,216
	min.	16,819	17,026
Minor diameter	max.	16,092	16,676
	min.	15,845*	16,376

* With a root radius ⩾ 0,150 mm (0,1 *P*).

4.1.3.2 TOLERANCE CLASSES

The tolerance classes of thread M18 × 1,5 of finished spark plugs and of the corresponding tapped holes in the cylinder head are as follows :

— 6e for spark plugs (see note 2);

— 6H for tapped holes in the cylinder head.

NOTES

1 The threads M18 × 1,5 of the spark plugs and the corresponding tapped holes in the cylinder head shall conform to ISO 68, ISO 261, ISO 965/I and ISO 965/III.

2 In order that the spark plugs complying with this International Standard can be fitted in existing cylinder heads also in limiting cases, the value for the *upper limiting profile* of the minor diameter of the spark plug base has been slightly reduced with respect to the ISO value.

This maximum value of the minor diameter was calculated from a distance of $H/6$ for the ***upper limiting profile*** instead of $3H/16$ given in figure 6 of ISO 965/I, clause 10, according to the formula given below :

$$\text{Minor diameter max.} = d_1 - es - 2(H/4 - H/6)$$
$$= 16{,}376 - 0{,}067 - 0{,}217$$
$$= 16{,}376 - 0{,}284^{1)} = 16{,}092$$

The value for the ***basic profile*** remains the same as for the ISO thread (16,376 − 0,067 = 16,309).

3 The initial clearance $e = 0{,}067$ mm between the pitch diameters of the thread and of the tapped hole is intended to prevent the possibility of seizure, as a result of combustion deposits on the bare threads, when removing the spark plugs.

This clearance is also intended to enable spark plugs with threads in accordance with this International Standard to be fitted in existing tapped holes.

4.2 Other dimensions of the spark plug and the housing in the cylinder head

The other dimensions are indicated on the figure.

Details not specified are left to the manufacturer's choice.

5 REQUIRED CHARACTERISTICS FOR THE CONNECTION

The connector of this spark plug shall have a 3/4-20 UNEF-3B thread and a hexagon size of $22{,}2\ ^{0}_{-0{,}4}$ mm with a width across corners of 24,6 mm min.

Moreover, the connector fitted to the spark plug must provide good watertightness, good electrical contact and a good screening to radio-electric radiation.

1) This value for the minor diameter is given in ISO 965/III.