# INTERNATIONAL STANDARD



Second edition 1992-12-15

## Small craft with inboard engine — Propeller shaft ends and bosses with 1:10 taper

## iTeh STANDARD PREVIEW

Navires de plaisance à moteur intérieur — Extrémités d'arbres porte-hélices et moyeux d'hélices avec une conicité de 1:10

<u>ISO 4566:1992</u> https://standards.iteh.ai/catalog/standards/sist/9273ea95-2390-43c9-98a2e533d12b8989/iso-4566-1992

1.717



Reference number ISO 4566:1992(E)

### Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75% of the member bodies casting VIEW a vote.

International Standard ISO 4566 was prepared by Technical Committee ISO/TC 188, Small craft.

#### ISO 4566:1992

This second edition cancels and and itelreplaces/statherdsfirst027edition390-43c9-98a2-(ISO 4566:1985). In table 1, the nominal diameter  $D_{hom}$  of 22 mm and its associated values are additional, and corrections have been made in the "key" column for nominal diameter,  $D_{nom}$ , of 25 mm. Minor editorial corrections have also been made.

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International Organization for Standardization

Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

## Small craft with inboard engine — Propeller shaft ends and bosses with 1:10 taper

#### Scope 1

This International Standard specifies the dimensions for interchangeability of propeller bosses (hubs) and propeller shaft ends in the shaft diameter range of 20 mm to 160 mm with a taper of 1:10<sup>1</sup>, intended for installation on inboard-engined small craft.

### Normative references Ceh STANDAR 2

The following standards contain provisions which, through reference in this text, constitute provisions CLS. Nominal diameters without brackets shall be preof this International Standard. At the time of publi-

cation. the editions indicated were valid. All standards4566:1 are subject to revision, and parties to agreements dards based on this International Standard are encouraged 80/iso to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO/R 773:1969, Rectangular or square parallel keys and their corresponding keyways (Dimensions in millimetres).

ISO 1947:1973, System of cone tolerances for conical workpieces from C = 1:3 to 1:500 and lengths from 6 to 630 mm.

#### 3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 nominal diameter: Diameter of the large end of the shaft end taper, which is the same as the diameter of the cylindrical shaft, ignoring tolerances.

**3.2 taper:** Conical portion of the shaft end designed to accommodate a key to transmit the full propeller shaft torque to the propeller, while allowing for disassembly.

#### 4 Dimensions

The dimensions shall be those shown in figure 1 and table 1. The "reference dimensions" indicated in the table shall be considered nominal dimensions for guidance only.

Configurations shown in figure 1 not specified by dimensions in table 1 are not essential to interchangeability and are therefore left to the discretion of the manufacturer.

ferred; those in brackets are a second choice.

Thread diameters without brackets shall similarly be preferred; those in brackets are alternatives.

#### Construction details 5

Details indicated in figure 1 are not intended to restrict design; nor are they to scale. Types and methods of construction or machining of the key, the keyway and their corner radii, the thread undercut and the thread end, or of other optional details (i.e. safety pin hole, centring point, etc.) are left open for individual methods to comply with the configuration of the coupling and/or particular needs.

The length of the thread  $l_2$  shall be equal to thread diameter  $d_2$ . The part of the thread engaged by the propeller nut shall be not less than 80 % of the thread length l<sub>2</sub>.

#### 6 Tolerances

### 6.1 Shaft end taper small diameter, d<sub>1</sub>

The tolerances shall be as given in table 1. The tolerance deviations are calculated from the nominal diameter.

<sup>1)</sup> ISO 8845 (to be published) will cover propeller shaft ends and bosses machined to a taper of 1:16.

#### 6.2 Boss taper large diameter, D

The tolerances shall be as given in table 1.

#### 6.3 Cone angle

The tolerances shall be cone diameter tolerances as in ISO 1947 with tolerance ranges equal to the diameter tolerance ranges specified in 6.1 and 6.2 for diameters  $d_1$  and D respectively.

#### 6.4 Keyways and keys

The tolerances shall be those given for normal keys in ISO/R 773.

#### 6.5 Boss length, $l_1$

The tolerance shall be  $\pm$  0,5 mm.

#### 7 Threads

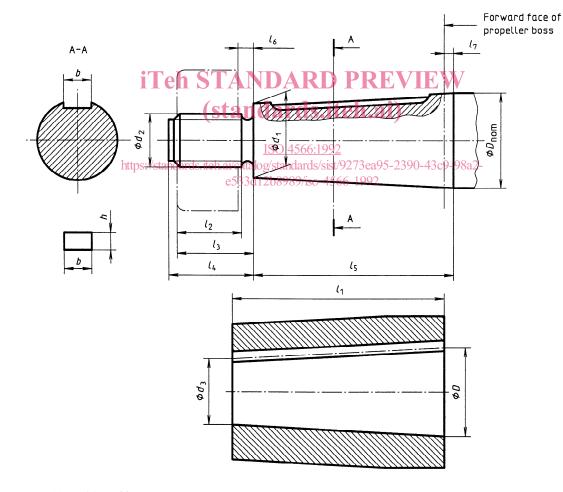
Propeller nuts and shaft ends shall use M-Fine threads.

#### 8 Designation

Both propeller shafts and bosses constructed in accordance with these requirements shall be designated by a reference to this International Standard, and the nominal diameter.

#### EXAMPLE

#### Propeller boss ISO 4566 - 35



NOTE —  $l_2$  (thread length) =  $\emptyset d_2$ Part of thread engaged by nut = 0,8  $l_2$ See clause 5.

Figure 1

Table 1

gth Born m ) 20, ) 22, ) 25,	<b>Boss</b> e bigge iin. 000 000	max.	Small d	iameter	Diamotor	Thread			K	ey				
) 20, ) 22, ) 25,	<i>E</i> iin. 000	) max.	a		Diamotor				Кеу					!1\
) 20, ) 22, ) 25,	iin. 000	max.			Diameter d <sub>2</sub>	Pitch P	Eņd		Width	Depth	Reference dimension <sup>1)</sup>			
) 20, ) 22, ) 25,	000						l <sub>3</sub>	l <sub>4</sub>	Ь	h	l <sub>5</sub>	l <sub>6</sub>	<i>l</i> 7	<i>d</i> <sub>3</sub>
) 22, ) 25,			11107.	min.										
) 25,	000	20,052	15,500	15,448	14	1,5	20	25	6	6	45	5	0	15
· · ·		22,052	17,500	17,448	16	1,5	20	25	6	6	45	5	0	17
) 30,	000	25,052	19,500	19,448	16	1,5	20	25	8	7	55	5	0	19
	000	30,052	22,500	22,448	20	1,5	25	30	8	7	75	5	0	22
) 35,	000	35,062	26,500	26,448	24	2	30	35	10	8	85	5	0	26
0 40,	000	40,062	30,500	30,448	24	2	30	35	12	8	95	5	0	30
0 45,	000	45,062	34,500	34,438	30	2	35	40	14	9	105	5	0	34
0 50,	000	50,062	38,500	38,438	36 (30)	3	40	45	14	9	115	5	0	38
0 55,	000	55,074	43,000	42,926	36	3	40	45	16	10	120	10	0	42
0 60,	000	60,074	47,000	46,926	42	3	50	55	18	11	130	10	0	46
0 65,	000	65,074	51,000	50,926	42	3	50	55	18	11	140	10	0	50
0 70,	000	70,074	55,000	54,926	48	3	55	60	20	12	150	10	0	54
0 74,	500	74,574	58,500	58,426	48	3	55	60	20	12	165	10	5	57
1		79,574	62,500	62,426	56	4	65	70	22	14	175	10	5	61
0 84,	500	84,587	66,500	66,413	56	_4 _	65		7 22	14	185	10	5	65
0 89,	500	89,587	71,000	70,913	64 (56)		70	75	25	14	190	15	5	69
0 94,	500	94,587	75,000	74,913	64 (56)	h4a	70	75	25	14	200	15	5	73
0 99,	000	99,087	78,500	78,413	72 (64)	4	80	85	28	16	215	15	10	77
0 109	,000	109,087	86,500	86,413 ISO	80 (72) 4566:1992	4	85	90	28	16	235	15	10	85
	,000 <u>h</u>	ttp3:9/987nd	arc <mark>94i500</mark> .ai/	ca940433tai	ndar90s/800t/92	73 <b>c</b> a95	-2990-	43959-9	18a <u>3</u> 2	18	255	15	10	93
0   12	9,0	129,1	102,500 <mark>e</mark>	3302121389	89/199-(99)66-	19 <b>9</b> 2	100	105	32	18	275	15	10	101
0 13	9,0	139,1	110,500	110,413	100 (90)	4	100	105	36	20	295	15	10	109
		149,1	118,500	118,413	110 (100)	4	110	115	36	20	315	15	10	117
0 15	9,0	159,1	126,500	126,413	120 (110)	4	120	125	40	22	335	15	10	125
	clause	4		•										·
	9 79, 84, 9 94, 9 99, 109 119 12 13 13 14 15	79,500   84,500   89,500   94,500   99,000   109,000   119,000   129,0   139,0   149,0	79,500 79,574   84,500 84,587   89,500 94,587   99,000 99,087   109,000 109,087   119,000 119,087   129,0 129,1   139,0 139,1   149,0 149,1   159,0 159,1	79,500 79,574 62,500   84,500 84,587 66,500   89,500 89,587 71,000   94,500 94,587 75,000   99,000 99,087 78,500   109,000 109,087 86,500   119,000 1139,087 102,500   139,0 139,1 110,500   149,0 149,1 118,500   159,0 159,1 126,500	79,500 79,574 62,500 62,426   84,500 84,587 66,500 66,413   89,500 89,587 71,000 70,913   94,500 94,587 75,000 74,913   99,000 99,087 78,500 86,413   109,000 109,087 86,500 86,413   119,000 119,087 86,500 36,413   129,0 129,1 102,500 3102,413   139,0 139,1 110,500 110,413   149,0 149,1 118,500 118,413   159,0 159,1 126,500 126,413	79,500 79,574 62,500 62,426 56   84,500 84,587 66,500 66,413 56   89,500 89,587 71,000 70,913 64 (56)   94,500 94,587 75,000 74,413 72 (64)   99,000 99,087 78,500 78,413 80 (72)   109,000 109,087 86,500 86,413 80 (72)   119,000 1119,087 102,500 3102,413 89 (00 (90))   129,0 129,1 102,500 3102,413 89 (100 (90))   139,0 139,1 110,500 118,413 110 (100)   149,0 149,1 118,500 118,413 120 (110)	79,500 84,500 89,50079,574 84,587 89,500 $62,500$ $66,500$ $66,413$ $70,913$ $64$ $64$ $64$ $4$ $4$ 94,500 99,00094,587 99,00075,000 99,08774,913 78,500 $64$ 76,913 $64$ 64 $66$ $44$ 99,000 109,08799,087 86,50078,413 86,50072 (64) 86,413 80 (72) $4$ $4566$ $4$ $4$ 119,000 129,0119,087 129,1102,500 102,500 $3102,4138$ 110,413 $89,100$ (80)/92 100 (90) $734,95$ $4$ 149,0 139,0149,1 159,0118,500 159,1118,413 126,500110 (100) 126,413 $4$	79,500 79,574 62,500 62,426 56 4 65   84,500 84,587 66,500 66,413 56 4 65   89,500 89,587 71,000 70,913 64 (56) 64 70   94,500 94,587 75,000 74,913 64 (56) 64 70   99,000 99,087 78,500 78,413 72 (64) 4 80   109,000 109,087 86,500 86,413 80 (72) 4 85   119,000 11139,087 102,500 3102,4138 89,100 (90) 73,495 2900-   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#### UDC 629.125.037-233.1

**Descriptors:** shipbuilding, small craft, marine propellers, propeller shafts, shaft ends, hubs, dimensions, dimensional tolerances, designation.

Price based on 3 pages