
INTERNATIONAL STANDARD



99

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Pulleys for flat transmission belts — Diameters

Poulies pour courroies plates de transmission — Diamètres

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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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 41 has reviewed ISO Recommendation R 99 and found it technically suitable for transformation. International Standard ISO 99 therefore replaces ISO Recommendation R 99-1959 to which it is technically identical.

ISO Recommendation R 99 was approved by the Member Bodies of the following countries :

Austria	Germany	Romania
Belgium	Greece	South Africa, Rep. of
Bulgaria	India	Spain
Canada	Ireland	Sweden
Czechoslovakia	Italy	Switzerland
Denmark	Japan	United Kingdom
Finland	Pakistan	U.S.A.
France	Portugal	U.S.S.R.

No Member Body expressed disapproval of the Recommendation.

No Member Body disapproved the transformation of ISO/R 99 into an International Standard.

Pulleys for flat transmission belts – Diameters

1 SCOPE AND FIELD OF APPLICATION

This International Standard lays down the diameters and tolerances of pulleys for flat transmission belts.

NOTE – The rim-widths and the crowns of these pulleys are given respectively in ISO 22 and ISO 100.

2 DEFINITION

diameter of a pulley for a flat transmission belt: The diameter of the pulley measured in the plane of symmetry of its rim.

3 DIAMETERS

TABLE 1 – Series of diameters

mm	in	mm	in	mm	in
40	1.6	160	6.3	630	25
45	1.8	180	7.1	710	28
50	2	200	8	800	31.5
56	2.24	224	9	900	35.5
63	2.5	250	10	1 000	40
71	2.8	280	11.2	1 120	45
80	3.15	315	12.5	1 250	50
90	3.55	355	14	1 400	56
100	4	400	16	1 600	63
112	4.5	450	18	1 800	71
125	5	500	20	2 000	80
140	5.6	560	22.4		

The values given in table 1 are taken from the R 20 series of preferred numbers.

NOTES

1 These diameters differ slightly according to whether they are expressed in metric units or inches. For practical purposes they may be considered as equivalents.

2 In the present state of engineering practice, the following rounding off is permitted in the case of certain inch values.

TABLE 2 – Rounding off in inches

Normal values	Rounded-off values	Normal values	Rounded-off values
1.6	1 1/2	11.2	11
1.8	1 3/4	12.5	12
2.8	2 3/4	22.4	22
3.15	3	31.5	32
3.55	3 1/2	35.5	36
5.6	5 1/2	56	55
6.3	6	63	62
7.1	7	71	70

4 TOLERANCES ON DIAMETERS

Tolerances are given in table 3 on the metric values of the diameters.

TABLE 3 – Tolerances in millimetres

Diameters	Tolerances	Diameters	Tolerances
40	± 0,5	224 and 250	± 2,5
45 and 50	± 0,6	280 to 355	± 3,2
56 and 63	± 0,8	400 to 500	± 4,0
71 and 80	± 1,0	560 to 710	± 5,0
90 to 112	± 1,2	800 to 1 000	± 6,3
125 and 140	± 1,6	1 120 to 1 400	± 8,0
160 to 200	± 2,0	1 600 to 2 000	± 10,0

Limit diameters in millimetres and inches, given in table 4, are calculated by applying the tolerances given in table 3.

TABLE 4 — Limit diameters

Designation		Limit diameters			
		minimum	maximum	minimum	maximum
mm	in	mm	mm	in	in
40	1.6	39,5	40,5	1.56	1.60
45	1.8	44,4	45,6	1.75	1.80
50	2	49,4	50,6	1.95	2.00
56	2.24	55,2	56,8	2.17	2.24
63	2.5	62,2	63,8	2.45	2.51
71	2.8	70	72	2.76	2.84
80	3.15	79	81	3.11	3.19
90	3.55	88,8	91,2	3.50	3.59
100	4	98,8	101,2	3.88	3.98
112	4.5	110,8	113,2	4.36	4.46
125	5	123,4	126,6	4.86	4.98
140	5.6	138,4	141,6	5.45	5.58
160	6.3	158	162	6.22	6.38
180	7.1	178	182	7.01	7.17
200	8	198	202	7.80	7.95
224	9	221,5	226,5	8.72	8.92
250	10	247,5	252,5	9.74	9.94
280	11.2	276,8	283,2	10.90	11.15
315	12.5	311,8	318,2	12.28	12.53
355	14	351,8	358,2	13.85	14.10
400	16	396	404	15.59	15.91
450	18	446	454	17.56	17.87
500	20	496	504	19.53	19.84
560	22.4	555	565	21.85	22.24
630	25	625	635	24.61	25.00
710	28	705	715	27.75	28.15
800	31.5	793,7	806,3	31.25	31.74
900	35.5	893,7	906,3	35.18	35.68
1 000	40	993,7	1 006,3	39.12	39.62
1 120	45	1 112	1 128	43.78	44.41
1 250	50	1 242	1 258	48.90	49.53
1 400	56	1 392	1 408	54.80	55.43
1 600	63	1 590	1 610	62.60	63.39
1 800	71	1 790	1 810	70.48	71.26
2 000	80	1 990	2 010	78.35	79.13