BS ISO 2982-1:2013

BSI Standards Publication

Rolling bearings — Accessories

Part 1: Dimensions for adapter sleeve assemblies and withdrawal sleeves

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National foreword

This British Standard is the UK implementation of ISO 2982-1:2013. It supersedes BS ISO 2982-1:1995 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MCE/7, Rolling bearings.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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Rolling bearings — Accessories —

Part 1: Dimensions for adapter sleeve assemblies and withdrawal sleeves

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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 a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 2982-1 was prepared by Technical Committee ISO/TC 4, *Rolling bearings*.

This second edition cancels and replaces the first edition (ISO 2982-1:1995), which has been technically revised. In particular, the title has been corrected and approximate values for B_2 are indicated.

ISO 2982 consists of the following parts, under the general title: *Rolling bearings — Accessories*:

— *Part 1: Dimensions for adapter sleeve assemblies and withdrawal sleeves*

— *Part 2: Dimensions for locknuts and locking devices*

INTERNATIONAL STANDARD **ISO 2982-1:2013(E)**

Rolling bearings — Accessories —

Part 1: Dimensions for adapter sleeve assemblies and withdrawal sleeves

1 Scope

This part of ISO 2982 specifies:

— boundary dimensions of adapter sleeves with taper 1:12 and withdrawal sleeves with tapers 1:12 and 1:30 for rolling bearings of a number of dimension series as specified in ISO 15;

— the outside diameter of suitable locknuts;

— distance from bearing small bore face to outer face of locknut;

— distance from bearing small bore face to outer face of bolt head;

— overall length of withdrawal sleeve and bearing ring.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 15, *Rolling bearings — Radial bearings — Boundary dimensions, general plan*

ISO 2982-2, *Rolling bearings — Accessories — Part 2: Dimensions for locknuts and locking devices*

ISO 5593, *Rolling bearings — Vocabulary*

ISO 15241, *Rolling bearings — Symbols for physical quantities*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5593 and the following apply.

3.1
adapter sleeve assembly
assembly comprising an adapter sleeve, a locknut, and a locking device

3.2
locking clip
part in C-shape for securing a locknut

3.3
locking clip assembly
assembly comprising a locking clip and a bolt

4 Symbols

For the purposes of this document, the symbols given in ISO 15241 and the following apply.

The symbols shown in Figure 1 and the values given in Table 1, Table 2, Table 3, Table 4 and Table 5 denote nominal dimensions, unless specified otherwise.

B_1 adapter sleeve length or withdrawal sleeve length

B_2 distance from bearing small bore face to outer face of locknut

B_3 distance from bearing small bore face to outer face of bolt head

B_4 overall length of withdrawal sleeve and bearing ring

B_5 slot width (for lockwasher inner tab or locking clip)

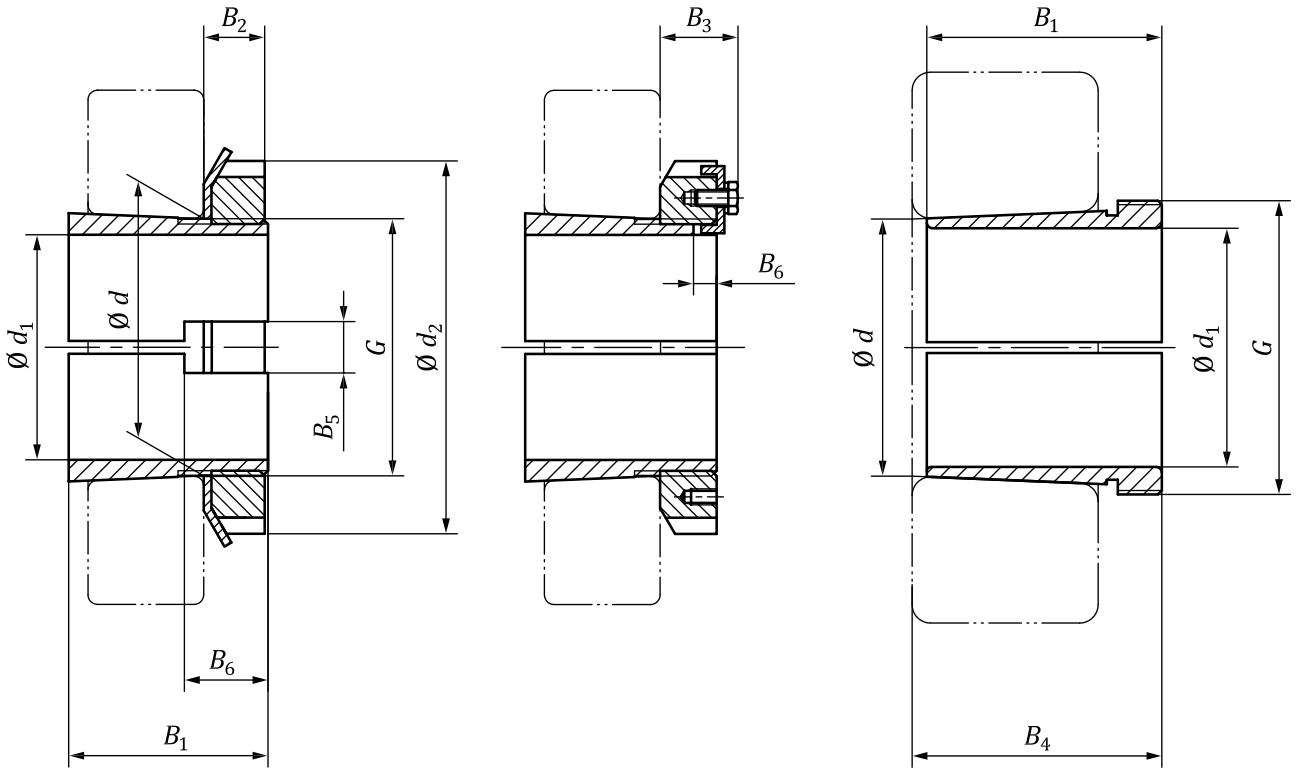
B_6 slot length

d bearing bore diameter

d_1 bore diameter of sleeve

d_2 outside diameter of locknut

G designation of screw thread



a) Adapter sleeve with locknut and lockwasher

b) Adapter sleeve with locknut and locking clip assembly

c) Withdrawal sleeve

Figure 1 — Adapter sleeve assemblies and withdrawal sleeve

5 Dimensions

5.1 General

Dimensions of adapter sleeve assemblies and boundary dimensions of withdrawal sleeves and overall lengths of withdrawal sleeve and bearing ring are given in Table 1, Table 2, Table 3, Table 4 and Table 5.

Thread lengths are not specified but shall be appropriate for securing adapter sleeve with locknut or for withdrawing a rolling bearing on the withdrawal sleeve with locknut. Dimensions of locknuts, lockwashers, and locking clip assemblies for the adapter sleeves are given in ISO 2982-2. The locknuts are also suitable for the dismounting of the withdrawal sleeves.

5.2 Adapter sleeve assemblies with taper 1:12

Dimensions of adapter sleeve assemblies with taper 1:12 are given in Table 1, Table 2 and Table 3. Slot lengths, B_6, are not specified but

— shall be at least long enough that lockwasher or locking clip can be installed when rolling bearing, adapter sleeve, and locknut are secured onto a shaft, and

— shall not be longer than 1,3 times thread lengths.

Table 1 — Dimensions of adapter sleeve assemblies with taper 1:12 ($15 \leq d \leq 110$)

Dimensions in millimetres

d	d_1	B_2 ≈	B_5 min.	d_2	B_1					G
					Suitable for bearing dimension series					
					02	22, 03	31	32	23	
15	12	6	5	25	19	22	—	—	25	M15 × 1
17	14	6	5	28	20	24	—	—	27	M17 × 1
20	17	7	5	32	24	28	—	—	31	M20 × 1
25	20	8	6	38	26	29	—	—	35	M25 × 1,5
30	25	8	6	45	27	31	—	—	38	M30 × 1,5
35	30	9	7	52	29	35	—	—	43	M35 × 1,5
40	35	10	7	58	31	36	—	—	46	M40 × 1,5
45	40	11	7	65	33	39	—	—	50	M45 × 1,5
50	45	12	7	70	35	42	—	—	55	M50 × 1,5
55	50	12	9	75	37	45	—	—	59	M55 × 2
60	55	13	9	80	38	47	—	—	62	M60 × 2
65	60	14	9	85	40	50	—	—	65	M65 × 2
70	60	14	9	92	41	52	—	—	68	M70 × 2
75	65	15	9	98	43	55	—	—	73	M75 × 2
80	70	17	11	105	46	59	—	—	78	M80 × 2
85	75	18	11	110	50	63	—	—	82	M85 × 2
90	80	18	11	120	52	65	—	86	86	M90 × 2
95	85	19	11	125	55	68	—	90	90	M95 × 2
100	90	20	13	130	58	71	76	97	97	M100 × 2
105	95	20	13	140	60	74	80	101	101	M105 × 2
110	100	21	13	145	63	77	81	105	105	M110 × 2

Table 2 — Dimensions of adapter sleeve assemblies with taper 1:12 ($120 \leq d \leq 440$)

Dimensions in millimetres

d	d_1	B_2 ≈	B_3 max.	B_5 min.	d_2	B_1 Suitable for bearing dimension series		d_2	B_1 Suitable for bearing dimension series		G
						39	30, 02, 12		31, 22, 03, 13	32, 23	
120	110	22	—	15	145	60	72	155	88	112	M120 × 2
130	115	23	—	15	155	65	80	165	92	121	M130 × 2
140	125	24	—	17	165	66	82	180	97	131	M140 × 2
150	135	26	—	17	180	76	87	195	111	139	M150 × 2
160	140	28	—	19	190	78	93	210	119	147	M160 × 3
170	150	29	—	19	200	79	101	220	122	154	M170 × 3
180	160	30	—	21	210	87	109	230	131	161	M180 × 3
190	170	31	—	21	220	89	112	240	141	169	M190 × 3
200	180	32	—	21	240	98	120	250	150	176	M200 × 3
220	200	—	41	20	260	96	126	—	—	—	Tr220 × 4
220	200	35	—	25	—	—	—	280	161	186	Tr220 × 4
240	220	—	46	20	290	101	133	—	—	—	Tr240 × 4
240	220	37	—	25	—	—	—	300	172	199	Tr240 × 4
260	240	—	46	20	310	116	145	—	—	—	Tr260 × 4
260	240	39	—	29	—	—	—	330	190	211	Tr260 × 4
280	260	—	50	24	330	121	152	—	—	—	Tr280 × 4
280	260	41	—	29	—	—	—	350	195	224	Tr280 × 4
300	280	—	54	24	360	140	168	—	—	—	Tr300 × 4
300	280	—	53	24	—	—	—	380	208	240	Tr300 × 4
320	300	—	55	24	380	140	171	—	—	—	Tr320 × 5
320	300	—	56	24	—	—	—	400	226	258	Tr320 × 5
340	320	—	58	24	400	144	187	—	—	—	Tr340 × 5
340	320	—	72	28	—	—	—	440	254	288	Tr340 × 5
360	340	—	58	28	420	144	188	—	—	—	Tr360 × 5
360	340	—	75	28	—	—	—	460	259	299	Tr360 × 5
380	360	—	62	28	450	164	193	—	—	—	Tr380 × 5
380	360	—	77	32	—	—	—	490	264	310	Tr380 × 5
400	380	—	66	28	470	168	210	—	—	—	Tr400 × 5
400	380	—	82	32	—	—	—	520	272	328	Tr400 × 5
420	400	—	66	32	490	168	212	—	—	—	Tr420 × 5
420	400	—	90	32	—	—	—	540	304	352	Tr420 × 5
440	410	—	77	32	520	189	228	—	—	—	Tr440 × 5
440	410	—	90	36	—	—	—	560	307	361	Tr440 × 5

Table 3 — Dimensions of adapter sleeve assemblies with taper 1:12 ($460 \leq d \leq 1\,060$)

Dimensions in millimetres

d	d_1	B_3 max.	B_5 min.	d_2	B_1 Suitable for bearing dimension series		d_2	B_1 Suitable for bearing dimension series		G
					39	30		31	32	
460 460	430 430	77 95	32 36	540 —	189 —	234 —	— 580	— 326	— 382	Tr460 × 5 Tr460 × 5
480 480	450 450	77 95	36 36	560 —	200 —	237 —	— 620	— 335	— 397	Tr480 × 5 Tr480 × 5
500 500	470 470	85 100	36 40	580 —	208 —	247 —	— 630	— 356	— 428	Tr500 × 5 Tr500 × 5
530 530	500 500	90 105	40 40	630 —	216 —	265 —	— 670	— 364	— 447	Tr530 × 6 Tr530 × 6
560 560	530 530	97 110	40 45	650 —	227 —	282 —	— 710	— 377	— 462	Tr560 × 6 Tr560 × 6
600 600	560 560	97 110	40 45	700 —	239 —	289 —	— 750	— 399	— 487	Tr600 × 6 Tr600 × 6
630 630	600 600	97 120	45 50	730 —	254 —	301 —	— 800	— 424	— 521	Tr630 × 6 Tr630 × 6
670 670	630 630	102 131	45 50	780 —	264 —	324 —	— 850	— 456	— 558	Tr670 × 6 Tr670 × 6
710 710	670 670	112 135	50 55	830 —	286 —	342 —	— 900	— 467	— 572	Tr710 × 7 Tr710 × 7
750 750	710 710	112 141	55 60	870 —	291 —	356 —	— 950	— 493	— 603	Tr750 × 7 Tr750 × 7
800 800	750 750	112 141	55 60	920 —	303 —	366 —	— 1 000	— 505	— 618	Tr800 × 7 Tr800 × 7
850 850	800 800	115 147	60 70	980 —	308 —	380 —	— 1 060	— 536	— 651	Tr850 × 7 Tr850 × 7
900 900	850 850	125 154	60 70	1 030 —	326 —	400 —	— 1 120	— 557	— 660	Tr900 × 7 Tr900 × 7
950 950	900 900	125 154	60 70	1 080 —	344 —	420 —	— 1 170	— 583	— 675	Tr950 × 8 Tr950 × 8
1 000 1 000	950 950	125 154	60 70	1 140 —	358 —	430 —	— 1 240	— 609	— 707	Tr1000 × 8 Tr1000 × 8
1 060 1 060	1 000 1 000	125 154	60 70	1 200 —	372 —	447 —	— 1 300	— 622	— —	Tr1060 × 8 Tr1060 × 8

5.3 Withdrawal sleeves with taper 1:12

Boundary dimensions of withdrawal sleeves with taper 1:12 and overall lengths of withdrawal sleeve and bearing ring are given in Table 4.

Table 4 — Boundary dimensions of withdrawal sleeves with taper 1:12, and overall lengths of withdrawal sleeve and bearing ring

Dimensions in millimetres

d	d_1	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	G
		Suitable for bearing dimension series																
		39		02		30		03, 13		22		31		32		23		
40	35	—	—	25	27	—	—	29	32	29	32	—	—	—	—	40	43	M45 × 1,5
45	40	—	—	26	29	—	—	31	34	31	34	—	—	—	—	44	47	M50 × 1,5
50	45	—	—	28	31	—	—	35	38	35	38	—	—	—	—	50	53	M55 × 2
55	50	—	—	29	32	—	—	37	40	37	40	—	—	—	—	54	57	M60 × 2
60	55	—	—	32	35	—	—	40	43	40	43	—	—	—	—	58	61	M65 × 2
65	60	—	—	32,5	36	—	—	42	45	42	45	—	—	—	—	61	64	M70 × 2
70	65	—	—	33,5	37	—	—	43	47	43	47	—	—	—	—	64	68	M75 × 2
75	70	—	—	34,5	38	—	—	45	49	45	49	—	—	—	—	68	72	M80 × 2
80	75	—	—	35,5	39	—	—	48	52	48	52	—	—	—	—	71	75	M90 × 2
85	80	—	—	38,5	42	—	—	52	56	52	56	—	—	—	—	74	78	M95 × 2
90	85	—	—	40	44	—	—	53	57	53	57	—	—	63	67	79	83	M100 × 2
95	90	—	—	43	47	—	—	57	61	57	61	—	—	67	71	85	89	M105 × 2
100	95	—	—	45	49	—	—	59	63	59	63	64	68	73	77	90	94	M110 × 2
105	100	—	—	47	51	—	—	62	66	62	66	68	72	78	82	—	—	M115 × 2
105	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94	98	M120 × 2
110	105	—	—	50	54	—	—	63	67	68	72	68	72	82	86	98	102	M120 × 2
120	115	—	—	53	57	60	64	69	73	75	79	75	79	90	94	105	109	M130 × 2
130	125	—	—	53	57	67	71	74	78	78	82	78	82	98	102	115	119	M140 × 2
140	135	—	—	56	61	68	73	77	82	83	88	83	88	104	109	125	130	M150 × 2
150	145	—	—	60	65	72	77	83	88	96	101	96	101	114	119	135	140	M160 × 3
160	150	—	—	64	69	77	82	88	93	103	108	103	108	124	130	140	146	M170 × 3
170	160	59	64	69	74	85	90	93	98	104	109	104	109	134	140	146	152	M180 × 3
180	170	66	71	69	74	92	98	—	—	105	110	116	122	140	146	154	160	M190 × 3
190	180	66	71	73	78	96	102	—	—	112	117	125	131	145	152	160	167	M200 × 3
200	190	77	83	77	82	102	108	—	—	—	—	—	—	—	—	—	—	Tr210 × 4
200	190	—	—	—	—	—	—	—	—	118	123	134	140	153	160	170	177	Tr220 × 4
220	200	77	83	85	91	111	117	—	—	—	—	—	—	—	—	—	—	Tr230 × 4
220	200	—	—	—	—	—	—	—	—	130	136	145	151	181	189	181	189	Tr240 × 4
240	220	77	83	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Tr250 × 4
240	220	—	—	96	102	116	123	—	—	144	150	154	161	189	197	189	197	Tr260 × 4
260	240	94	100	105	111	128	135	—	—	155	161	172	179	205	213	205	213	Tr280 × 4
280	260	94	100	105	113	131	139	—	—	155	163	175	183	212	220	212	220	Tr300 × 4
300	280	112	119	—	—	145	153	—	—	170	178	192	200	228	236	—	—	Tr320 × 5
320	300	112	119	—	—	149	157	—	—	180	190	209	217	246	254	—	—	Tr340 × 5
340	320	112	119	—	—	162	171	—	—	—	—	225	234	264	273	—	—	Tr360 × 5
360	340	112	119	—	—	167	176	—	—	—	—	229	238	274	283	—	—	Tr380 × 5
380	360	130	138	—	—	170	180	—	—	—	—	232	242	284	294	—	—	Tr400 × 5
400	380	130	138	—	—	183	193	—	—	—	—	240	250	302	312	—	—	Tr420 × 5
420	400	130	138	—	—	186	196	—	—	—	—	266	276	321	331	—	—	Tr440 × 5
440	420	145	153	—	—	194	205	—	—	—	—	270	281	330	341	—	—	Tr460 × 5
460	440	145	153	—	—	202	213	—	—	—	—	285	296	349	360	—	—	Tr480 × 5
480	460	158	167	—	—	205	217	—	—	—	—	295	307	364	376	—	—	Tr500 × 5
500	480	162	172	—	—	209	221	—	—	—	—	313	325	393	405	—	—	Tr530 × 6
530	500	175	185	—	—	230	242	—	—	—	—	325	337	412	424	—	—	Tr560 × 6
560	530	180	190	—	—	240	252	—	—	—	—	335	347	422	434	—	—	Tr600 × 6
600	570	192	202	—	—	245	259	—	—	—	—	355	369	445	459	—	—	Tr630 × 6
630	600	210	222	—	—	258	272	—	—	—	—	375	389	475	489	—	—	Tr670 × 6
670	630	216	228	—	—	280	294	—	—	—	—	395	409	500	514	—	—	Tr710 × 7
710	670	228	240	—	—	286	302	—	—	—	—	405	421	515	531	—	—	Tr750 × 7
750	710	234	246	—	—	300	316	—	—	—	—	425	441	540	556	—	—	Tr800 × 7
800	750	245	257	—	—	308	326	—	—	—	—	438	456	550	568	—	—	Tr850 × 7

Table 4 *(continued)*

d	d_1	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	B_1 max.	B_4	G
		Suitable for bearing dimension series																
		39		02		30		03, 13		22		31		32		23		
850	800	258	270	—	—	325	343	—	—	—	—	462	480	585	603	—	—	Tr900 × 7
900	850	265	277	—	—	335	355	—	—	—	—	475	495	585	605	—	—	Tr950 × 8
950	900	282	297	—	—	355	375	—	—	—	—	500	520	600	620	—	—	Tr1000 × 8
1 000	950	296	311	—	—	365	387	—	—	—	—	525	547	630	652	—	—	Tr1060 × 8
1 060	1 000	310	325	—	—	385	407	—	—	—	—	540	562	—	—	—	—	Tr1120 × 8

5.4 Withdrawal sleeves with taper 1:30

Boundary dimensions of withdrawal sleeves with taper 1:30 and overall lengths of withdrawal sleeve and bearing ring are given in Table 5.

Table 5 — Boundary dimensions of withdrawal sleeves with taper 1:30, and overall lengths of withdrawal sleeve and bearing ring

Dimensions in millimetres

d	d_1	B_1 max.	B_4	B_1 max.	B_4	G
		Suitable for bearing dimension series				
		40		41		
110	105	—	—	82	91	M115 × 2
120	115	73	82	—	—	M125 × 2
120	115	—	—	93	102	M130 × 2
130	125	83	93	—	—	M135 × 2
130	125	—	—	94	104	M140 × 2
140	135	83	93	—	—	M145 × 2
140	135	—	—	99	109	M150 × 2
150	145	90	101	—	—	M155 × 3
150	145	—	—	115	126	M160 × 3
160	150	95	106	124	135	M170 × 3
170	160	106	117	125	136	M180 × 3
180	170	116	127	134	145	M190 × 3
190	180	118	131	146	159	M200 × 3
200	190	127	140	158	171	Tr210 × 4
220	200	138	152	170	184	Tr230 × 4
240	220	138	153	—	—	Tr250 × 4
240	220	—	—	180	195	Tr260 × 4
260	240	162	178	202	218	Tr280 × 4
280	260	162	179	202	219	Tr300 × 4
300	280	184	202	224	242	Tr320 × 5
320	300	184	202	242	260	Tr340 × 5
340	320	206	225	269	288	Tr360 × 5
360	340	206	226	269	289	Tr380 × 5
380	360	208	228	271	291	Tr400 × 5
400	380	228	248	278	298	Tr420 × 5
420	400	230	252	310	332	Tr440 × 5
440	420	242	264	310	332	Tr460 × 5
460	440	250	273	332	355	Tr480 × 5
480	460	250	273	340	363	Tr500 × 5
500	480	253	276	360	383	Tr530 × 6
530	500	285	309	370	394	Tr560 × 6
560	530	296	320	393	417	Tr600 × 6
600	570	310	336	413	439	Tr630 × 6
630	600	330	356	440	466	Tr670 × 6
670	630	348	374	452	478	Tr710 × 7
710	670	360	386	483	509	Tr750 × 7
750	710	380	408	520	548	Tr800 × 7
800	750	395	423	525	553	Tr850 × 7
850	800	415	445	560	600	Tr900 × 7
900	850	430	475	575	620	Tr950 × 8
950	900	467	512	605	650	Tr1000 × 8
1 000	950	469	519	645	695	Tr1060 × 8
1 060	1 000	498	548	665	715	Tr1120 × 8

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