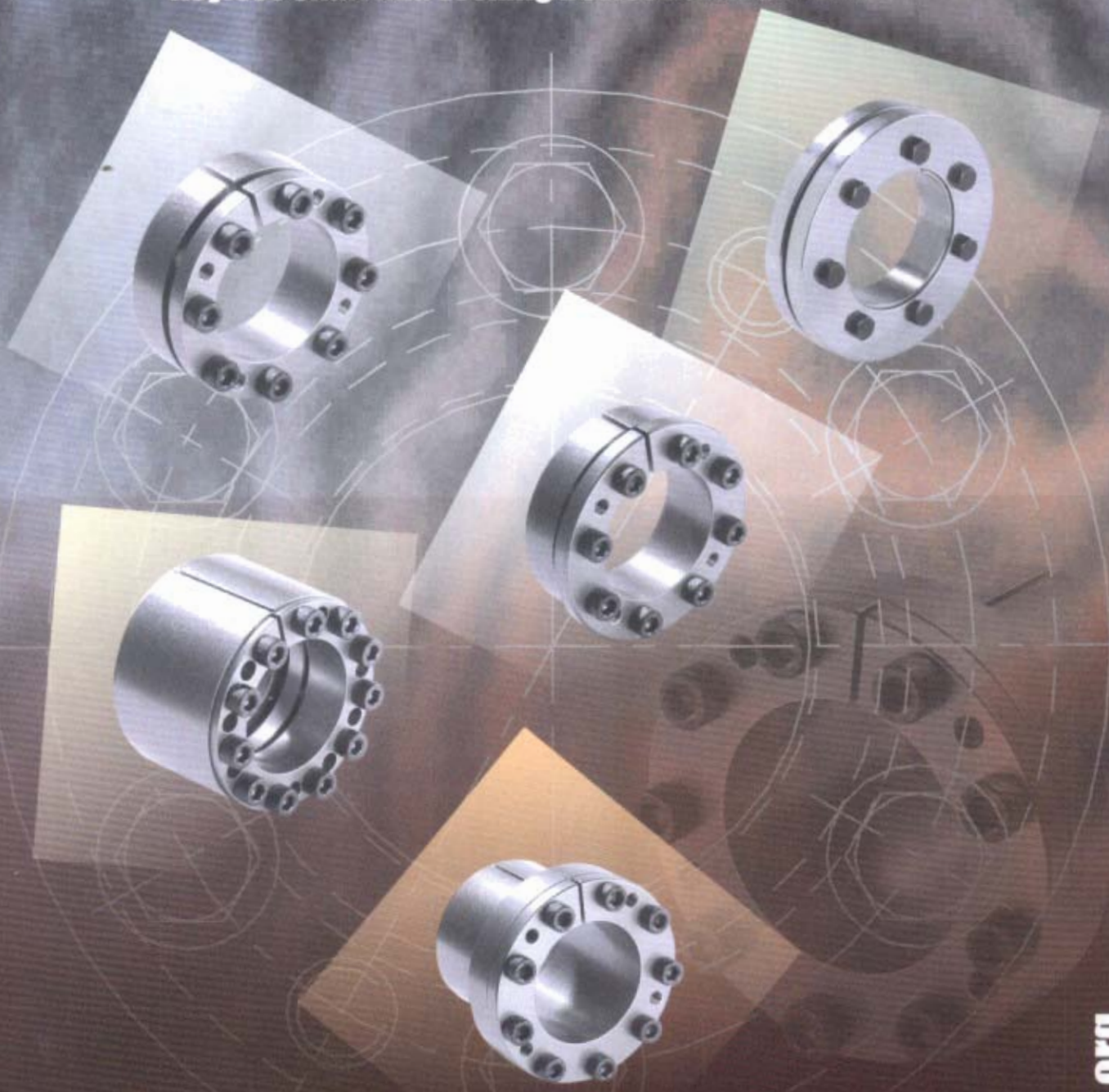
mecaloc™

Keyless Shaft Hub Locking Devices & Shrink Discs



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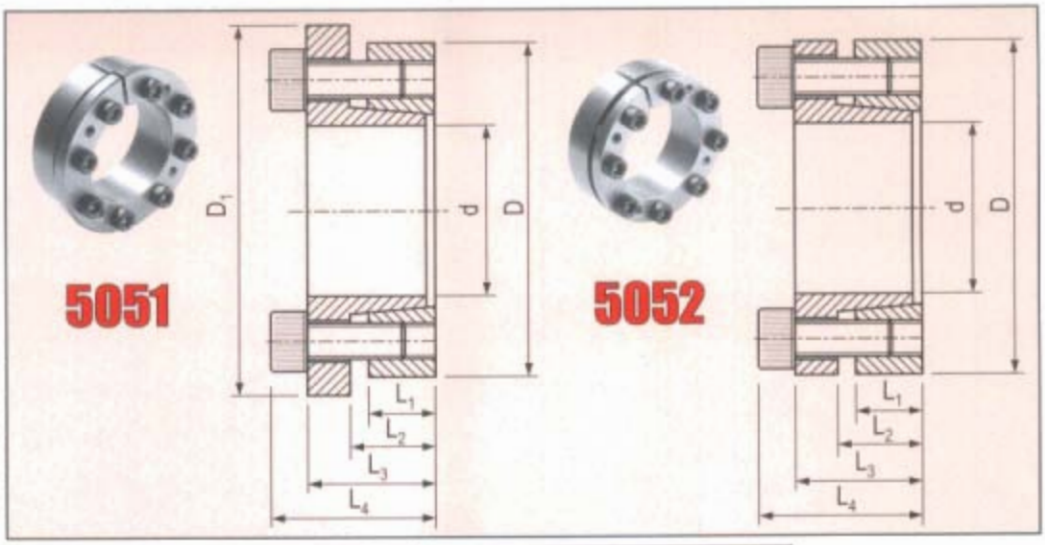
mecaloc™

mecaloc 5051 and **5052** have same overall dimensions except that the series **5052** is designed with a larger flange to form a shoulder for the hub. This eliminates any axial movement of the hub during assembly with respect to the shaft and also improves the perpendicularity of the hub



Dimensions (mm)						Specifications for 5051						Specifications for 5052				
d x D	L_1	L_2	L_3	L_4	n	D_1	T (Nm)	F_A (kN)	p_S (MPa)	p_H (MPa)	T_A (Nm)	T (Nm)	F_A (kN)	p_S (MPa)	p_H (MPa)	T_A (Nm)
14 x 28	14	17	21	25	4	32	68	10	132	66	5	100	15	209	104	5
15 x 28	14	17	21	25	4	32	73	10	123	66	5	110	15	195	104	5
16 x 32	14	18	22	26	5	37	97	12	144	72	5	120	15	183	91	5
18 x 47	17	23	29	35	5	54	250	28	241	92	17	320	36	314	120	14
19 x 47	17	23	29	35	5	54	260	28	229	92	17	340	36	297	120	14
20 x 47	17	23	29	35	5	54	280	28	217	92	17	360	36	283	120	14
22 x 47	17	23	29	35	5	54	310	28	197	92	17	390	36	257	120	14
24 x 50	17	23	29	35	5	57	330	28	181	87	17	430	36	236	113	14
25 x 50	17	23	29	35	6	57	420	33	209	104	17	540	43	271	136	14
28 x 55	17	23	29	35	6	64	470	33	186	95	17	600	43	242	123	14
30 x 55	17	23	29	35	6	64	500	33	174	95	17	650	43	226	123	14
32 x 60	17	23	29	35	8	69	710	45	217	116	17	920	57	283	151	14
35 x 60	17	23	29	35	8	69	780	45	199	116	17	1000	57	258	151	14
38 x 65	17	23	29	35	8	74	850	45	183	107	17	1100	57	238	139	14
40 x 65	17	23	29	35	8	74	890	45	174	107	17	1150	57	226	139	14
42 x 75	20	27	35	43	7	84	1510	72	227	127	41	2040	97	307	172	35
45 x 75	20	27	35	43	7	84	1620	72	212	127	41	2190	97	287	172	35
48 x 80	20	27	35	43	7	89	1730	72	199	119	41	2330	97	269	161	35
50 x 80	20	27	35	43	7	89	1800	72	191	119	41	2430	97	258	161	35
55 x 85	20	27	35	43	8	94	2260	82	198	128	41	3050	111	268	174	35
60 x 90	20	27	35	43	8	99	2470	82	182	121	41	3330	111	246	164	35
65 x 95	20	27	35	43	9	104	3010	93	189	129	41	4060	125	255	175	35
70 x 110	24	31	41	51	8	119	4730	135	213	136	83	6230	178	281	179	69
75 x 115	24	31	41	51	8	124	5070	135	199	130	83	6670	178	262	171	69
80 x 120	24	31	41	51	8	129	5410	135	187	124	83	7120	178	246	164	69
85 x 125	24	31	41	51	9	134	6460	152	198	134	83	8510	200	261	177	69
90 x 130	24	31	41	51	9	139	6840	152	187	129	83	9010	200	246	170	69
95 x 135	24	31	41	51	10	144	8020	169	197	138	83	10500	222	259	182	69
100 x 145	26	33	45	57	8	154	10100	202	206	142	145	13220	264	270	186	120
110 x 155	26	33	45	57	8	164	11100	202	187	133	145	14550	264	245	174	120
120 x 165	26	33	45	57	9	174	13600	227	193	140	145	17850	297	253	184	120
130 x 180	34	41	55	69	9	189	19800	305	183	132	230	25970	399	240	173	190
140 x 190	34	41	55	69	9	199	21400	305	170	125	230	27970	399	223	164	190
150 x 200	34	41	55	69	10	209	25400	339	176	132	230	33300	444	231	173	190
160 x 210	34	41	55	69	11	219	29900	373	182	139	230	39070	488	238	181	190
170 x 225	44	51	65	79	12	234	34600	407	144	109	230	45290	532	189	143	190
180 x 235	44	51	65	79	12	244	36600	407	136	104	230	47950	532	178	137	190
190 x 250	44	51	65	79	15	259	48300	509	161	123	230	63270	666	211	161	190
200 x 260	44	51	65	79	15	269	50900	509	153	118	230	66600	666	201	154	190
220 x 285	50	57	73	89	12	294	61300	558	134	104	355	80970	736	178	137	295
240 x 305	50	57	73	89	15	314	83600	697	154	121	355	110420	920	203	160	295
260 x 325	50	57	73	89	18	334	108700	836	171	137	355	143550	1104	225	180	295
280 x 355	60	67	85	103	16	364	125600	897	142	112	485	166210	1187	187	148	405
300 x 375	60	67	85	103	18	384	151400	1009	149	119	485	200340	1335	197	157	405
320 x 405	74	82	102	122	18	414	209200	1308	146	116	690	279320	1745	196	155	580
340 x 425	74	82	102	122	21	434	259400	1526	161	129	690	346240	2036	215	172	580
360 x 455	86	94	116	138	18	464	291600	1620	139	110	930	388060	2155	185	146	780
380 x 475	86	94	116	138	21	484	359000	1890	153	123	930	477890	2515	204	163	780
400 x 495	86	94	116	138	21	504	377900	1890	146	118	930	503040	2515	194	157	780

T	Transmissible Torque (with $F_A = 0$)
F_A	Axial Force (with T = 0)
p_S	Surface Pressure on Shaft
p_H	Surface Pressure on Hub
T_A	Screw Tightening Torque

5051 / 5052

Ordering Code

mecaloc 5051 - d x D

Series

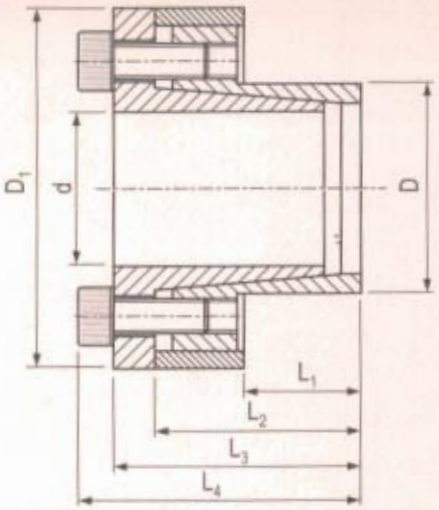
Shaft Dia.

Hub Dia.

mecaloc™

mecaloc 5057 has been designed with a very high optimised 'd x D' ratio, and is ideally suitable for thin walled hubs. A self aligning collar is incorporated in the design to prevent axial movement of the hub during assembly and also improves the perpendicularity of the hub with respect to the shaft.

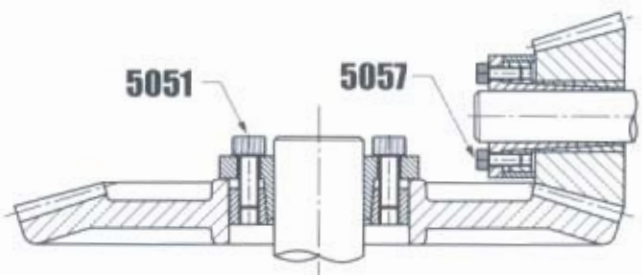
5057



Dimensions (mm)							Specifications				
d x D	L_1	L_2	L_3	L_4	D_1	n	T (Nm)	F_A (kN)	p_S (Mpa)	p_H (MPa)	T_A (Nm)
6 × 14	10	19	22	26	25	3	21	7.1	273	134	5
8 × 15	12	22	25	29	27	3	28	7.1	177	104	5
9 × 16	14	24	27	31	29	4	42	9.4	182	112	5
10 × 16	14	24	27	31	29	4	47	9.4	166	112	5
11 × 18	14	25	28	32	32	4	52	9.4	149	99	5
12 × 18	14	25	28	32	32	4	57	9.4	138	99	5
14 × 23	14	25	28	32	38	4	66	9.4	114	78	5
15 × 24	16	30	37	43	44	3	125	16.7	167	115	17
16 × 24	16	30	37	43	44	3	134	16.7	159	115	17
18 × 26	18	33	40	46	47	4	200	22.3	169	126	17
19 × 27	18	33	40	46	49	4	212	22.3	160	122	17
20 × 28	18	33	40	46	50	4	223	22.3	152	117	17
22 × 32	25	40	47	53	54	4	245	22.3	100	74	17
24 × 34	25	40	47	53	56	6	401	33.4	138	104	17
25 × 34	25	40	47	53	56	6	418	33.4	133	104	17
28 × 39	25	40	47	53	61	6	468	33.4	117	91	17
30 × 41	25	40	47	53	62	6	501	33.4	109	86	17
32 × 43	25	40	47	53	65	8	713	44.6	137	110	17
35 × 47	32	47	54	60	68	8	780	44.6	99	79	17
38 × 50	32	47	54	60	72	8	846	44.6	91	74	17
40 × 53	32	47	54	60	75	8	891	44.6	86	70	17
42 × 55	32	47	54	60	78	8	936	44.6	82	67	17
45 × 59	45	62	70	78	86	8	1850	82.3	102	82	41
48 × 62	45	62	70	78	87	8	1980	82.3	96	78	41
50 × 65	45	62	70	78	92	8	2060	82.3	91	75	41
55 × 71	55	73	81	89	98	9	2550	92.6	77	63	41
60 × 77	55	73	81	89	104	9	2780	92.6	70	58	41
65 × 84	55	73	81	89	111	9	3010	92.6	65	53	41
70 × 90	65	86	96	106	119	9	5320	152	84	69	83
75 × 95	65	86	96	106	126	9	5700	152	78	65	83
80 × 100	65	86	96	106	131	12	8110	203	98	83	83
85 × 106	65	86	96	106	137	12	8610	203	92	78	83
90 × 112	65	86	96	106	144	12	9120	203	87	74	83
95 × 120	65	86	96	106	149	14	11230	236	95	80	83
100 × 125	70	94	107	119	160	12	15100	303	108	92	145
110 × 140	70	94	107	119	174	12	16600	303	97	82	145
120 × 155	90	115	128	140	198	16	24200	404	93	77	145
130 × 165	90	115	128	140	208	16	26200	404	85	72	145

T	Transmissible Torque (with $F_A = 0$)
F_A	Axial Force (with T = 0)
p_S	Surface Pressure on Shaft
p_H	Surface Pressure on Hub
T_A	Screw Tightening Torque

5057



An assembly of two bevel gear drives with **mecaloc 5051** and **5057** is shown. **5057** is used primarily in applications having thin walled hubs whereas **5051** is used in general applications. The use of **mecaloc** ensures correct positioning and proper meshing of gear teeth due to the absence of axial movement during fitting, resulting in reduced dynamic loads.

Ordering Code

mecaloc 5057 - d x D

Series

Shaft Dia.

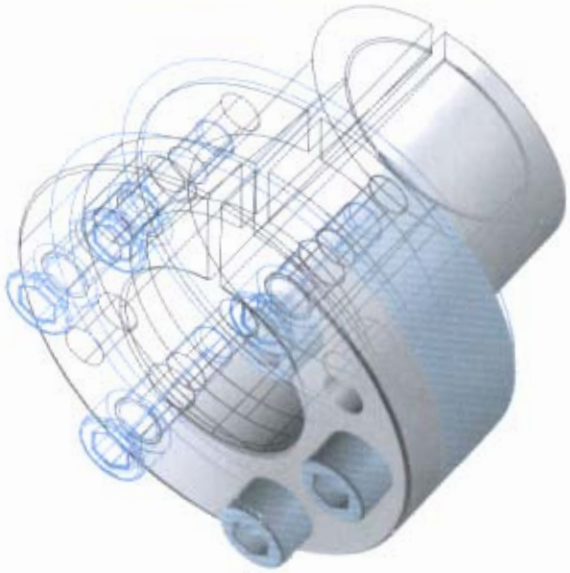
Hub Dia.

mecaloc™

mecaloc shaft hub locking devices once mounted offer a perfect interference fit, with the ease of a slide fit during assembly and disassembly to give a backlash free torque transmission. When the locking screws are tightened, a radial pressure is produced through the taper wedge cross-section of the device to expand into the hub and to shrink on to the shaft to cause a frictional locking between the shaft and the hub.

mecaloc locking devices offer the most advanced solution in the field of locking elements of transmission equipment as it combines the precision of the transmission of synchronous motion with the high power that can be transmitted by a friction coupling.

mecaloc prevents the axial movement of the drive components and will find ideal application to lock timer pulleys, gears, cams, pinions, flywheels, gear boxes, couplings, clutches, brake discs and a whole lot of components in the kinematic chain that have been designed for the transmission of mechanical power.



mecaloc Typical Advantages

- Ease of assembly and disassembly.
- Backlash free frictional torque transmission.
- No angular, axial or radial play.
- High resistance to continuous alternating torsional forces.
- Optimisation of design.
- Reduced costs.

Installation & Removal of **mecaloc**

Installation :

- **mecaloc** devices come in a ready to install condition. Since torque is transmitted through frictional contact, it is very important that all contact surfaces are clean and installation instructions are observed.
- Loosen the screws of **mecaloc** by 2-3 turns and apply a drop of oil on the screw threads, and the screw head bearing surface.
- Insert **mecaloc** into the housing of the hub and slide the shaft into the **mecaloc**.
- Tighten screws uniformly, step by step in a diametrically opposite sequence to the indicated tightening torque Ta.
- Screws adjacent to the slit in the internal ring should be tightened last.
- Recheck tightening torque on all screws to ensure that the tightening torque Ta is achieved.

Note :

- Do not use oils containing molybdenum disulphide.
- The efficiency of **mecaloc** is not reduced if keyway exist on the shaft or hub. Such keyways may be ignored.

Removal :

- Unscrew all screws by a few threads.
- Remove the screws adjacent to the extraction hole and insert them into the extraction holes until contact.
- Tighten screws into the extraction holes uniformly, step by step in a diametrically opposite sequence until connection is released.

We reserve the right to make alterations due to technical developments and change in designs.

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