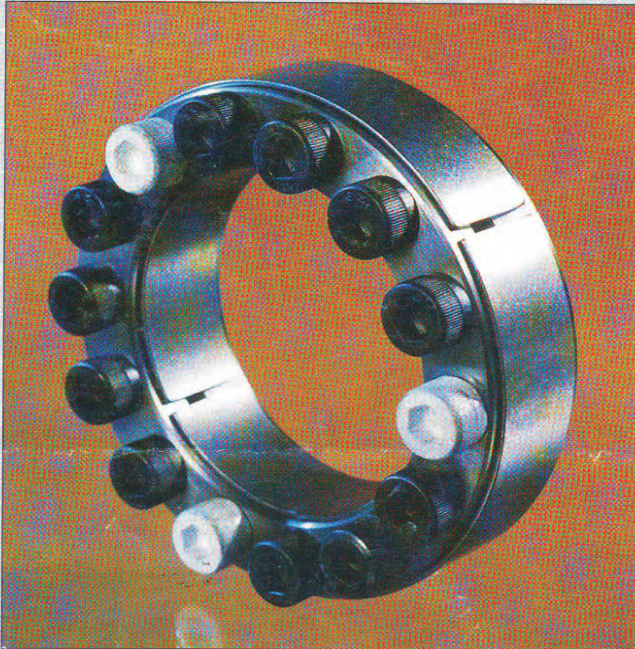




GRIPSPRING

Locking Assemblies GSN 7012



Highly - Stressed
Shaft - Hub
Connections

- ✓ **Transmission of high torques & axial loads**
Using several locking assemblies in series high torques & axial loads can be transmitted.
- ✓ **Transmission of high peripheral forces -**
Several GSN 7012 locking assemblies can be used in series. The transmissible torques and axial loads are added.
- ✓ **Economical & simple manufacture**
Key & keyway machining costs are reduced.
- ✓ **Infinitely adjustable**
Bosses and hubs can therefore be located and locked at any point of the shaft.
- ✓ **Unlimited application range**
GSN 7012 locking assemblies are most suitable for securing all types of bosses and hubs on shaft and axles. they efficiently replace shrink fits, key and polygon connections, splined shafts, etc. These locking assemblies are used for the connection of gearwheels, chain sprockets, cams, cam plates, belt pulleys, brake drums, flywheels, couplings and clutches, shaft mounted gearings, flanges, track wheels, impellers, ship and aircraft propellers etc.
- ✓ **Perfect true running**
Forming a frictional lock connection, GSN 7012 locking assemblies have absolutely no play.
- ✓ **High fatigue strength under alternating torsional stresses**
Neither shaft nor hub have keyways. Thus notch effect is minimized and a high polar section modulus is at the disposal of the designer.
- ✓ **Easy adjustability -**
GSN 7012 locking assemblies need no stops. Bosses and hubs can therefore be located and locked at any point of the shaft, both axially & radially.
- ✓ **Easy mounting:**
Mounting is easy. machining or fitting work is not required.
- ✓ **Easy removal:**
Release the locking screws, and the GSN 7012 locking assemblies can be removed.
- ✓ **Freedom from wear:**
Having no moving parts, GSN 7012 locking assemblies can be tightened and released as often as required.



APPLICATIONS

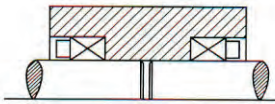


Fig. 1 Connection of two shafts using one GSN 7012 locking assembly per shaft

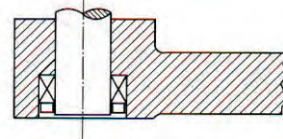


Fig. 2 : Lever mounted using one GSN 7012 locking assembly. This arrangement permits stepless movement of the lever to any degree of accuracy.

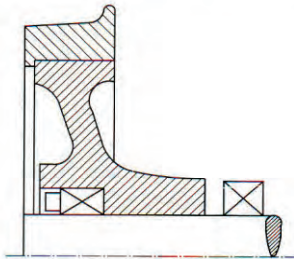


Fig. 3 : Track wheel mounted using GSN 7012 locking assembly.

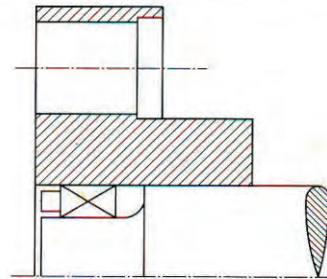


Fig. 4 : Coupling half mounted with GSN 7012 locking assembly.

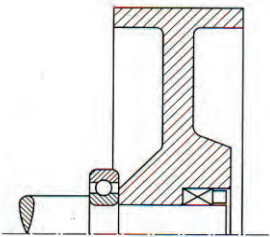


Fig. 5 : Flywheel mounted using one GSN 7012 locking assembly.

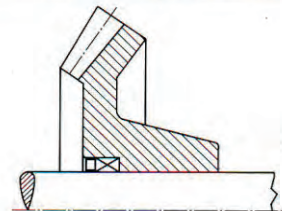


Fig 6 : Bevel gear mounted using GSN 7012 locking assembly. The locking assembly transmits both the torque and the tooth pressure axial component.

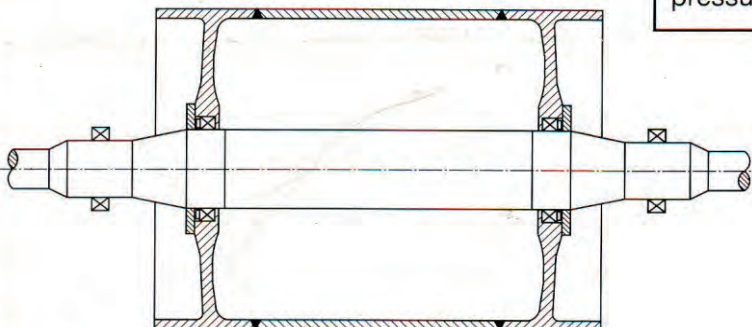
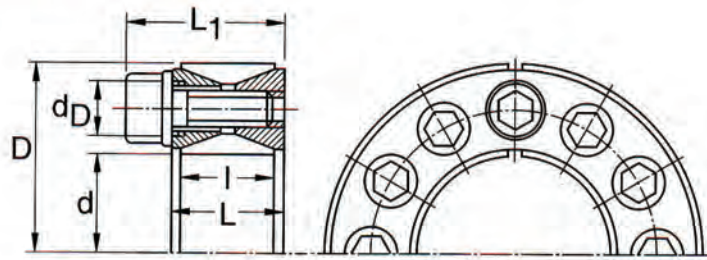


Fig 7 : Belt drum mounted with GSN 7012 locking assemblies.



LOCKING ASSEMBLY GSN 7012



Locking Assembly Dimensions					Transmissible Torques		Weight	Locking Assembly Dimensions					Transmissible Torques		Weight
d x D mm	L	I	L ₁	T Nm	Fax kN	kg	d x D mm	L	I	L ₁	T Nm	Fax kN	kg		
20 x 47	20	17	27.5	270	27	0.24	340 x 425	78	72	100.5	224000	1310	31.1		
22 x 47	20	17	27.5	300	27	0.23	360 x 455	90	84	116	294000	1630	42.2		
24 x 50	20	17	27.5	360	30	0.26	380 x 475	90	84	116	308000	1620	44		
25 x 50	20	17	27.5	380	30	0.25	400 x 495	90	84	116	322000	1610	46		
28 x 55	20	17	27.5	470	33	0.3	420 x 515	90	84	116	374000	1780	50		
30 x 55	20	17	27.5	500	33	0.29	440 x 545	102	96	130	455000	2060	64.6		
32 x 60	20	17	27.5	630	40	0.34	460 x 565	102	96	130	470000	2040	67.4		
35 x 60	20	17	27.5	700	40	0.32	480 x 585	102	96	130	515000	2160	71		
38 x 65	20	17	27.5	870	46	0.36	500 x 605	102	96	130	560000	2240	72.6		
40 x 65	20	17	27.5	920	46	0.34	520 x 630	102	96	130	600000	2320	80		
42 x 75	24	20	33.5	1500	72	0.6	540 x 650	102	96	130	630000	2340	82		
45 x 75	24	20	33.5	1610	72	0.57	560 x 670	102	96	130	680000	2440	85		
48 x 80	24	20	33.5	1700	71	0.62	580 x 690	102	96	130	735000	2540	88		
50 x 80	24	20	33.5	1770	71	0.6	600 x 710	102	96	130	775000	2580	91		
55 x 85	24	20	33.5	2270	83	0.63	620 x 730	102	96	130	825000	2660	93		
60 x 90	24	20	33.5	2470	83	0.69	640 x 750	102	96	130	865000	2700	96		
65 x 95	24	20	33.5	3040	93	0.73	660 x 770	102	96	130	925000	2800	99		
70 x 110	28	24	39.5	4600	132	1.26	680 x 790	102	96	130	965000	2840	102		
75 x 115	28	24	39.5	4900	131	1.33	700 x 810	102	96	130	1030000	2960	104		
80 x 120	28	24	39.5	5200	131	1.4	720 x 830	102	96	130	1070000	2980	107		
85 x 125	28	24	39.5	6300	148	1.49	740 x 850	102	96	130	1140000	3080	110		
90 x 130	28	24	39.5	6600	147	1.53	760 x 870	102	96	130	1210000	3180	113		
95 x 135	28	24	39.5	7900	167	1.62	780 x 890	102	96	130	1250000	3220	116		
100 x 145	33	26	47	9600	192	2.01	800 x 910	102	96	130	1300000	3260	118		
110 x 155	33	26	47	10500	191	2.15	820 x 930	102	96	130	1370000	3340	121		
120 x 165	33	26	47	13100	218	2.35	840 x 950	102	96	130	1450000	3460	124		
130 x 180	38	34	52	17600	272	3.51	860 x 970	102	96	130	1520000	3540	127		
140 x 190	38	34	52	20900	298	3.85	880 x 990	102	96	130	1590000	3620	129		
150 x 200	38	34	52	24200	324	4.07	900 x 1010	102	96	130	1650000	3680	132		
160 x 210	38	34	52	28000	350	4.3	920 x 1030	102	96	130	1710000	3720	135		
170 x 225	44	38	60	32800	386	5.78	940 x 1050	102	96	130	1790000	3820	138		
180 x 235	44	38	60	37800	420	6.05	960 x 1070	102	96	130	1870000	3900	140		
190 x 250	52	46	68	46500	490	8.25	980 x 1090	102	96	130	1940000	3960	143		
200 x 260	52	46	68	52500	525	8.65	1000 x 1110	102	96	130	2000000	4000	146		
220 x 285	56	50	74	68000	620	11.22									
240 x 305	56	50	74	85500	715	12.2									
260 x 325	56	50	74	104000	800	13.2									
280 x 355	66	60	86.5	128000	915	19.2									
300 x 375	66	60	86.5	153000	1020	20.5									
320 x 405	78	72	100.5	210000	1310	29.6									

FITS, SURFACES

GSN 7012 locking assemblies can bridge relatively large clearances without significant losses. All clearances between k-11 and h-11 resp. N11 and H11 are possible. However the difference between both deviations of normal dimensions should not exceed IT 9 (with regard to d).

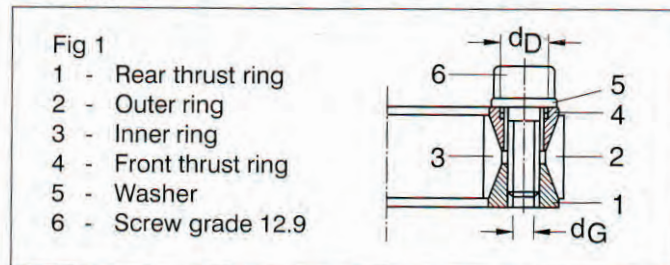
The running accuracy depends exclusively on the fit between shaft and hub bore d, as the clamping element has no centring effect.

The mean peak-to-valley height R on the pressure surfaces of shaft and hub should be $R_z \leq 16 \mu\text{m}$

INSTALLATION

Since the force is transmitted by contact pressure and friction between functional surfaces, condition of contact surfaces, and proper tightening of the locking screws are of great importance (see point 1).

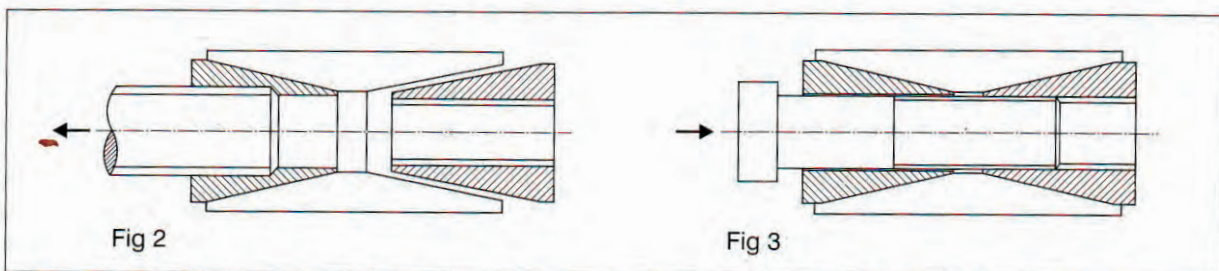
- 1 All contact surfaces, including screw threads and screw head bearing surface, must be clean and slightly oiled. In this condition, the shaft, hub and Locking Assemblies are to be assembled.
- 2 Tighten locking screws lightly and align hub.
- 3 Tighten screws evenly in diametrically opposite sequence and do this in two or three stages up to the indicated tightening torque (T_A).
- 4 Re- check tightening torque by applying it to all screws all the way around. When no screw will turn any more, the assembly is completed.



REMOVAL

- 1 Loosen locking screws in several stages and in diametrically opposite sequence.
- 2 Now the loosened connection can be readjusted or dis- assembled.

If necessary, the front and rear thrust ring are to be dis- assembled as shown in fig.2 & 3 The removal threads have only 3-5 threads and are not suitable for high pulling forces. They are to be used only for removal of the Locking Assembly by means of pull- out bolts.



Used Locking Assemblies have to be cleaned and slightly oiled prior to installation and assembled according to fig.1. The special marked screws are to be fitted with a washer and placed in the holes of front thrust ring which have the pull- out threads (d_D).

- Important :**
1. Locking screws must be sufficiently oiled. Do not use oils containing Molybdenum Disulphide!
 2. Do not interchange components of two Locking Assemblies

Tightening Torques for Bolts

d_G	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
T_A (Nm)	14	35	70	125	190	295	405	580	780	1000
T_A (ft-lbs)	10.1	25.3	51	91	138	214	293	420	564	723
d_D	M8	M10	M12	M14	M16	M20	M22	M24	M27	M30