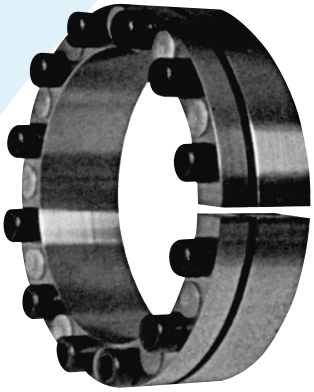
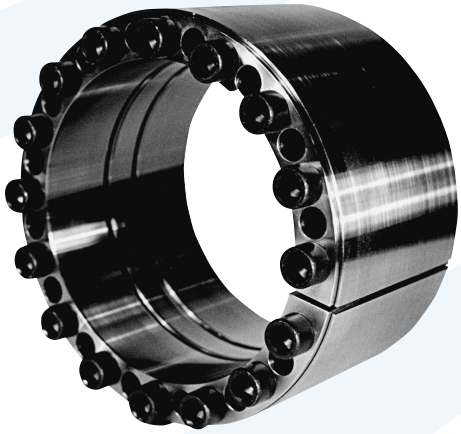
RFC

SPECIALTY LOCKING DEVICES





1 RINGFEDER CORPORATION Specialty Products

INTERNAL LOCKING ASSEMBLIES SERIES 303 and 306 – SINGLE TAPER

ADVANTAGES

- Elimination of keys, keyways or splines and fitting costs
- Reduction of machining costs
- Completely tight fit around shaft – eliminating backlash
- Not affected by reversing, dynamic or shock loads
- Easy installation, assembly and disassembly
- Transmission of high torques and axial loads
- Easy axial and angular adjustment and timing

APPLICATIONS

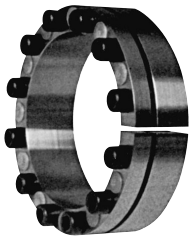
- Applied wherever self-centering action and good concentricity of mounted components is essential and hubs with straight-thru bores are used

HEAVY DUTY LOCKING ASSEMBLIES SERIES TAS 3012 and 3015 – DOUBLE TAPER

BENEFITS

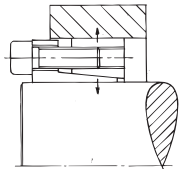
- Transmission of very high torques and axial loads
- Provide for excellent concentric fits with straight-thru hub bores – no precentering hub section needed
- Increased bending moment capacity
- Establish a mechanical, easy to install “shrink fit tight” connection between shaft and hub
- Not affected by reversing, dynamic or shock loads
- Elimination of keys, keyways or splines and fitting costs
- No stress concentrations and premature fatigue failures created by keyed connections
- Easy axial and angular adjustability for precise timing
- Reduction of machining costs

SINGLE TAPER DESIGN



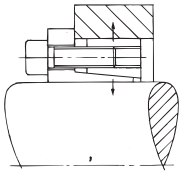
SERIES 303
Straight-Thru Type

Straight-thru type is suitable for recessing inside hubs. Design allows for possible axial shifting of components relative to the shaft, so utilize this device where exact positioning is not critical.



SERIES 306
Flange Type

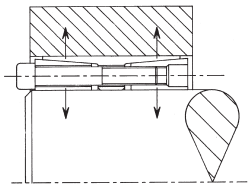
Flange type is designed for narrow hubs and fixes the hub's position relative to the shaft. No axial shifting occurs. Liberal machining tolerances also make this device ideal for sprockets, gears and similar components.



DOUBLE TAPER DESIGN

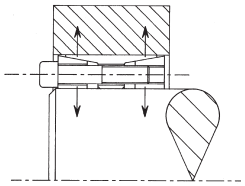
SERIES TAS 3012

The heavy duty locking assembly offers high torque transmittal in a small space. Designed for drums, larger components and heavy shock loads, this device also provides good concentricity to hubs.



SERIES TAS 3015

This device is a lighter duty version for lower torque requirements without sacrificing concentricity.

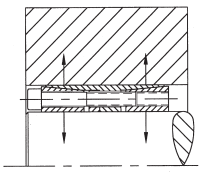


SERIES TAS 3015.1

Designed specifically for lowest shaft and hub pressures for use in conveyor pulleys, heavily loaded drums and components subject to high bending loads requiring lower torques.

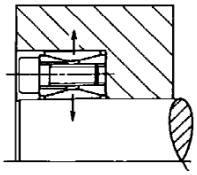
SERIES TAS 3013 – EXTRA HEAVY DUTY

Extra heavy duty locking device is an enhanced version of the 3012 with larger cross sections and highest torque capacities.



SERIES TAS 3020 S1/S2 – STAINLESS STEEL

Identical in function to the RINGFEDER 7012 device, this is available in two types of stainless steel depending on the application. Inch sizes and special sizes available upon request.



2 Locking Assemblies SERIES 303/306 and 303-IN/306-IN

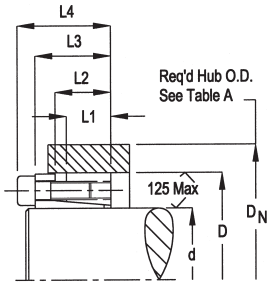


Fig. 1 Typical hub layout SERIES 303/303-IN
(hub axially free to move during tightening)

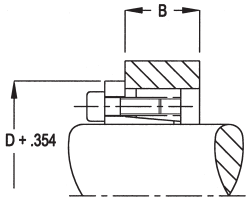


Fig. 2 Typical hub layout SERIES 306/306-IN
(hub axially fixed during tightening)

NOTES:
The values of M_t, p and p' are based on lightly oiled installation (coefficient of friction $\mu = 0.12$)

Series 306 and 306-IN locking assemblies require a higher tightening torque than Series 303 and 303-IN units to compensate for friction between locking assembly O.D. and hub bore during installation. Be sure appropriate tightening torque M_A from specification table is used.

HOW TO ORDER: Specify SIZE and SERIES
e.g. 60 x 90 / 303
2-3/8 / 306-IN

d = nominal locking assembly I.D.
= shaft O.D.
D = nominal locking assembly O.D.
= hub counterbore I.D.

L_1, L_2, L_3, L_4 = width dimensions, relaxed condition

M_t = maximum transmissible torque
p = contact pressure between locking assembly and shaft
p' = contact pressure between locking assembly and hub bore
M_A = required tightening torque per locking screw (tighten with torque wrench)
B = Hub width

T = Allowable machining tolerance
for shaft: use d + 0/-T
for hub bore: use D - 0/+T
Example: for 2" Series 303-IN
req'd shaft size: 2.000" +.000/-.002"
req'd hub bore size: 3.150" -.000/ + .002"

METRIC SERIES 303 & 306			INCH SERIES 303-IN &306-IN			Dimensions					Series 303/303-IN			Series 306/306-IN			Locking Screws DIN 912-12.9				
Size	d inches	D inches	Size	d inches	D inches	T	L1 inches	L2 inches	L3 inches	L4 inches	M_t max. lb-ft	p psi	p' psi	M_t max. lb-ft	p psi	p' psi	Qty	Size	M_A (ft-lbs) 303 303-IN	M_A (ft-lbs) 306 306-IN	Wt lbs
20x47	0.787	1.850	3/4	0.750	1.850	0.0015	0.669	0.866	1.102	1.339	221	34084	14504	207	31755	13485	5	M 6x20	10	13	0.6
22x47	0.866	1.850	7/8	0.875		0.0015	0.669	0.866	1.102	1.339	243	31184	14504	229	29000	13630	5	M 6x20	10	13	0.6
24x50	0.945	1.969				0.0015	0.669	0.866	1.102	1.339	266	28283	13779	251	26825	12905	5	M 6x20	10	13	0.7
25x50	0.984	1.969	1	1.000	1.969	0.0015	0.669	0.866	1.102	1.339	332	32634	15954	310	30450	15225	6	M 6x20	10	13	0.7
28x55	1.102	2.165	1-1/8	1.125	2.165	0.0015	0.669	0.866	1.102	1.339	369	29008	14504	347	27115	13920	6	M 6x20	10	13	0.8
30x55	1.181	2.165	1-3/16	1.188	2.165	0.0015	0.669	0.866	1.102	1.339	398	27558	14504	369	25230	13775	6	M 6x20	10	13	0.8
32x60	1.260	2.362	1-1/4	1.250	2.362	0.0015	0.669	0.866	1.102	1.339	561	33359	18130	531	31900	17110	8	M 6x20	10	13	0.9
35x60	1.378	2.362	1-3/8	1.375	2.362	0.0015	0.669	0.866	1.102	1.339	612	31184	18130	575	28855	16820	8	M 6x20	10	13	0.9
38x65	1.496	2.559	1-7/16	1.438	2.559	0.0015	0.669	0.866	1.102	1.339	671	29008	16680	627	26680	15660	8	M 6x20	10	13	0.9
40x65	1.575	2.559	1-1/2	1.500	2.559	0.0015	0.669	0.866	1.102	1.339	701	26832	16680	664	25520	15660	8	M 6x20	10	13	1.0
			1-5/8	1.625	2.953	0.0015	0.787	0.984	1.299	1.614	1184	35925	19580	1102	33417	18560	8	M 8x25	26	30	1.5
45x75	1.772	2.953	1-3/4	1.750	2.953	0.0015	0.787	0.984	1.339	1.654	1291	33359	19580	1202	31030	18560	8	M 8x25	26	30	1.5
			1-7/8	1.875	3.150	0.0015	0.787	0.984	1.339	1.654	1348	31224	18855	1265	32433	17400	8	M 8x25	26	30	1.8
			1-15/16	1.938	3.150	0.0015	0.787	0.984	1.339	1.654	1393	30216	18855	1307	31387	17400	8	M 8x25	26	30	1.8
50x80	1.969	3.150	2	2.000	3.150	0.0020	0.787	0.984	1.339	1.654	1416	29733	18855	1328	30885	17400	8	M 8x25	26	30	1.8
			2-1/8	2.125	3.346	0.0020	0.787	0.984	1.339	1.654	1737	31031	20306	1629	32796	18850	8	M 8x25	26	30	1.9
55x85	2.165	3.346	2-3/16	2.188	3.346	0.0020	0.787	0.984	1.339	1.654	1770	30458	20306	1660	32190	18850	8	M 8x25	26	30	1.9
			2-1/4	2.250	3.543	0.0020	0.787	0.984	1.339	1.654	1862	29691	18855	1739	30900	17690	8	M 8x25	26	30	2.0
60x90	2.362	3.543	2-3/8	2.375	3.543	0.0020	0.787	0.984	1.339	1.654	1955	28283	18855	1826	29435	17690	8	M 8x25	26	30	2.0
			2-7/16	2.438	3.740	0.0020	0.787	0.984	1.339	1.654	2248	31215	20306	2125	31205	18995	9	M 8x25	26	30	2.1
			2-1/2	2.500	3.740	0.0020	0.787	0.984	1.339	1.654	2306	30435	20306	2180	30427	18995	9	M 8x25	26	30	2.1
65x95	2.559	3.740	2-9/16	2.563	3.740	0.0020	0.787	0.984	1.339	1.654	2360	29733	20306	2231	29725	18995	9	M 8x25	26	30	2.1
70x110	2.756	4.331	2-3/4	2.750	4.331	0.0020	0.945	1.181	1.654	2.047	3614	31909	20306	3393	32915	19140	8	M10x30	51	61	3.7
			2-7/8	2.875	4.528	0.0020	0.945	1.181	1.654	2.047	3770	30540	19580	3537	31574	18270	8	M10x30	51	61	4.0
75x115	2.953	4.528	2-15/16	2.938	4.528	0.0020	0.945	1.181	1.654	2.047	3872	29733	19580	3633	30740	18270	8	M10x30	51	61	4.0
80x120	3.150	4.724	3	3.000	4.724	0.0020	0.945	1.181	1.654	2.047	4131	28283	18855	3872	28710	17545	8	M10x30	51	61	4.2
85x125	3.346	4.921	3-3/8	3.375	4.921	0.0025	0.945	1.181	1.654	2.047	4923	29733	20306	4647	30450	18995	9	M10x30	51	61	4.2
			3-7/16	3.438	5.118	0.0025	0.945	1.181	1.654	2.047	5081	28630	19580	4845	29063	18270	9	M10x30	51	61	4.6
90x130	3.543	5.118	3-1/2	3.500	5.118	0.0025	0.945	1.181	1.654	2.047	5237	28283	19580	4905	28710	18270	9	M10x30	51	61	4.6
95x135	3.740	5.315	3-3/4	3.750	5.315	0.0025	0.945	1.181	1.654	2.047	6122	29733	21031	5753	30305	19575	10	M10x30	51	61	4.9
100x145	3.937	5.709	3-15/16	3.938	5.709	0.0025	1.024	1.260	1.811	2.283	7524	30458	21031	7929	33205	22040	9	M12x35	89	107	6.4
			4	4.000	5.709	0.0025	1.024	1.260	1.811	2.283	7644	29982	21031	8055	32686	22040	9	M12x35	89	107	6.4
110x155	4.331	6.102	4-7/16	4.438	6.102	0.0025	1.024	1.260	1.811	2.283	8298	27558	19580	8741	30160	20590	9	M12x35	89	107	7.1
120x165	4.724	6.496	4-3/4	4.750	6.496	0.0025	1.024	1.260	1.811	2.283	10179	28283	20306	9515	27695	19285	9	M12x35	89	107	7.5
			4-15/16	4.938	7.087	0.0025	1.339	1.575	2.244	2.795	14160	27813	19580	13662	29309	18560	9	M14x40	140	170	11.2
130x180	5.118	7.087	5	5.000	7.087	0.0025	1.339	1.575	2.244	2.795	14678	26832	19580	14162	28275	18560	9	M14x40	140	170	11.2
140x190	5.512	7.480	5-7/16	5.438	7.480	0.0025	1.339	1.575	2.244	2.795	16264	25382	18855	15268	26245	17545	9	M14x40	140	170	11.9
150x200	5.906	7.874	5-15/16	5.938	7.874	0.0025	1.339	1.575	2.244	2.795	19362	26107	20306	18145	27115	18560	10	M14x40	140	170	12.6
160x210	6.299	8.268	6	6.000	8.268	0.0025	1.339	1.575	2.244	2.795	22718	27558	21031	21317	27985	19430	12	M14x40	140	170	13.2
170x225	6.693	8.858	6-7/16	6.438	8.858	0.0025	1.732	1.969	2.638	3.189	26332	21756	16680	24710	21750	15370	12	M14x40	140	170	18.3
180x235	7.087	9.252	6-15/16	6.938	9.252	0.0030	1.732	1.969	2.638	3.189	27881	20306	16680	26185	20590	14645	12	M14x40	140	170	19.4
190x250	7.480	9.843	7-7/16	7.438	9.843	0.0030	1.732	1.969	2.638	3.268	36806	24657	18855	38355	27115	19140	12	M16x50	218	262	22.5
200x260	7.874	10.236	7-15/16	7.938	10.236	0.0030	1.732	1.969	2.638	3.268	38724	23206	17405	40420	25665	18415	12	M16x50	218	262	23.6
220x285	8.661	11.220				0.0030	1.969	2.205	2.953	3.583	46985	20306	15954	44404	20455	14790	12	M16x50	218	262	31.8
240x305	9.449	12.008				0.0030	1.969	2.205	2.953	3.583	64171	23206	18130	60631	23345	17255	15	M16x50	218	262	34.2
260x325	10.236	12.795				0.0035	1.969	2.205	2.953	3.583	83349	26107	20306	70072	23055	17255	16	M16x50	218	262	36.8
280x355	11.024	13.976				0.0035	2.362	2.598	3.425	4.134	96994	21756	17405	90762	20155	15950	16	M18x50	299	358	52.9
300x375	11.811	14.764				0.0035	2.362	2.598	3.425	4.134	116910	22481	18130	109386	21170	16965	18	M18x50	299	358	56.2
320x405	12.598	15.945				0.0035	2.913	3.189	4.094	4.882	160797	22481	17405	134612	18560	14645	18	M20x50	428	509	83.8
340x425	13.386	16.732				0.0035	2.913	3.189	4.094	4.882	199152	24657	19580	160797	19720	15805	21	M20x50	428	509	88.2
360x455	14.173	17.913				0.0035	3.386	3.701	4.724	5.591	224968	21031	16680	213904	20010	15805	18	M22x60	575	686	105.8
380x475	14.961	18.701				0.0035	3.386	3.701	4.724	5.591	276969	23206	18855	224968	18995	15225	21	M22x60	575	686	125.7
400x495	15.478	19.488				0.0035	3.386	3.701	4.724	5.591	291721	22481	18130	261848	19865	16095	21	M22x60	575	686	134.5

Step 1:
Determine shaft diameter (d) to be used or max. torque (M_t) to be transmitted.

$$\text{Torque } M_t = \frac{5252 \times HP}{RPM} \text{ (lb-ft)}$$

Note: For hollow shaft applications please consult with us.

Step 2:
Select a locking assembly for the determined shaft dia. (d) from specification tables and check if corresponding max. transmissible torque (M_t) meets the torque requirement.

If, however, torque is the primary requirement, then select the needed torque (M_t) from same specification tables and find the corresponding shaft diameter (d).

Note: Required peak torque should never exceed specified transmissible torque (M_t).

WHENEVER IN DOUBT, CONSULT US!

Step 3:
Determine required hub outside dia. (D_N) for selected locking assembly from tables below or calculate it by using the following equation:
Hub Calculation:

$$D_N \geqq D \times \sqrt{\frac{YP + C_3 \times p'}{YP - C_3 \times p'}}$$

YP = yield point of hub material (lbs/sq.in.)
p' = contact pressure between locking assembly and hub; see specification tables.
C_3 = stress reduction factors, depending on hub width (B)
= 0.6 if hub width $B \geqq 2L_1$
= 0.8 when using two (2) or more units with $B \geqq L_3 (1 + n)$; n = number of units
= 1.0 for $B = L_1$

Step 4:
Applicable machining tolerances (T) for shaft and hub bore are shown in specification tables.

Step 5:
Specify and order selected locking assembly.

Size	Hub O.D. (D_N) Based on Yield Points shown		
	36 KSI	45 KSI	60 KSI
20 x 47	2.367	2.250	2.141
22 x 47	2.367	2.250	2.141
24 x 50	2.488	2.371	2.262
25 x 50	2.586	2.444	2.313
28 x 55	2.771	2.633	2.506
30 x 55	2.771	2.633	2.506
32 x 60	3.227	3.023	2.837
35 x 60	3.227	3.023	2.837
38 x 65	3.405	3.208	3.028
40 x 65	3.405	3.208	3.028
45 x 75	4.143	3.858	3.601
50 x 80	4.361	4.073	3.812
55 x 85	4.759	4.417	4.111
60 x 90	4.905	4.581	4.288
65 x 95	5.320	4.937	4.595
70 x 110	6.160	5.717	5.321
75 x 115	6.353	5.915	5.521
80 x 120	6.540	6.108	5.717
85 x 125	6.999	6.496	6.046
90 x 130	7.181	6.686	6.241
95 x 135	7.664	7.090	6.580
100 x 145	8.393	7.728	7.143
110 x 155	8.726	8.088	7.520
120 x 165	9.240	8.575	7.981
130 x 180	9.944	9.258	8.642
140 x 190	10.355	9.671	9.053
150 x 200	11.200	10.394	9.674
160 x 210	11.922	11.029	10.236
170 x 225	11.785	11.106	10.482
180 x 235	12.309	11.600	10.949
190 x 250	13.699	12.778	11.948
200 x 260	14.056	13.152	12.332
220 x 285	14.734	13.925	13.179
240 x 305	16.403	15.366	14.424
260 x 325	18.199	16.890	15.721
280 x 355	18.840	17.703	16.663
300 x 375	20.866	19.394	18.076
320 x 405	21.495	20.197	19.010
340 x 425	23.477	21.858	20.403
360 x 455	23.832	22.459	21.198
380 x 475	25.889	24.179	22.633
400 x 495	26.621	24.939	23.409

Size	Hub O.D. (D_N) Based on Yield Points shown		
	36 KSI	45 KSI	60 KSI
3/4	2.367	2.250	2.141
7/8	2.367	2.250	2.141
1	2.586	2.444	2.313
1 1/8	2.771	2.633	2.506
1 3/16	2.771	2.633	2.506
1 1/4	3.227	3.023	2.837
1 3/8	3.227	3.023	2.837
1 7/16	3.405	3.208	3.028
1 1/2	3.405	3.208	3.028
1 5/8	4.143	3.858	3.601
1 3/4	4.143	3.858	3.601
1 7/8	4.361	4.073	3.812
1 15/16	4.361	4.073	3.812
2	4.361	4.073	3.812
2 1/8	4.759	4.417	4.111
2 3/16	4.759	4.417	4.111
2 1/4	4.905	4.581	4.288
2 3.8	4.905	4.581	4.288
2 7/16	5.320	4.937	4.595
2 1/2	5.320	4.937	4.595
2 9/16	5.320	4.937	4.595
2 3/4	6.160	5.717	5.321
2 7/8	6.353	5.915	5.521
2 15/16	6.353	5.915	5.521
3	6.540	6.108	5.717
3 3/8	6.999	6.496	6.046
3 7/16	7.181	6.686	6.241
3 1/2	7.181	6.686	6.241
3 3/4	7.664	7.090	6.580
3 15/16	8.393	7.728	7.143
4	8.393	7.728	7.143
4 7/16	8.726	8.088	7.520
4 3/4	9.240	8.575	7.981
4 15/16	9.944	9.258	8.642
5	9.944	9.258	8.642
5 7/16	10.355	9.671	9.053
5 15/16	11.200	10.394	9.674
6	11.922	11.029	10.236
6 7/16	11.785	11.106	10.482
6 15/16	12.309	11.600	10.949
7 7/16	13.699	12.778	11.948
7 15/16	14.056	13.152	12.332

2 Installation and Removal Instructions

Type 303, 306

INSTALLATION

Since the torque is transmitted by contact pressure and friction between functional surfaces, condition of contact surfaces and proper tightening of the locking screws are important. Locking Assemblies are supplied ready for installation.

1. Check if all contact surfaces, including screw threads and screw head bearing surfaces are clean and lightly oiled. If not, lightly oil these parts.
   Do Not Use Molybdenum Disulfide, "Molykote" or any other similar lubricants.

2. Back-off all locking screws by at least two turns. Take out 3 or 4 equally spaced screws and insert them into adjacent push-off threads after first removing the protective plastic caps. Turn them in hand tight until they make contact with part (b), see Fig. 3. This will keep parts (a) and (b) spaced apart for easy insertion of Locking Assembly into the hub bore, as illustrated in Fig. 3.

3. Slide Locking Assembly onto the shaft and into the hub bore and bring them to desired position.

4. Remove the locking screws separating parts (a) and (b) and return them to their original holes and cover again the tapped holes with the plastic caps.

5. Tighten locking screws gradually and in several stages to specified tightening torque (M_A) using diametrically opposite tightening sequence, however, with following **exception**: The two screws adjacent to the slit in part (a) should be torqued one after the other to avoid possible distortion of the flange, see Fig. 4.

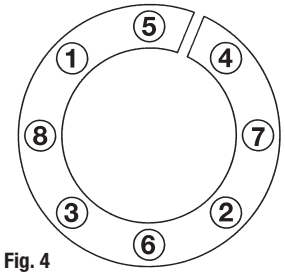


Fig. 4

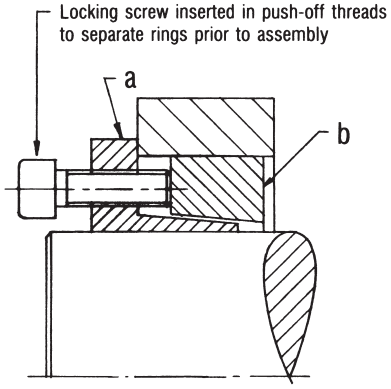


Fig. 3

6. After completing installation, check locking screws again in a clockwise or counter-clockwise sequence and make sure none of the bolts can be turned at specified tightening torque. It is not necessary to recheck tightening torque after equipment has been in operation.

NOTE: SERIES 306 AND 306-IN Locking Assemblies require a higher tightening torque than Series 303 and 303-IN units in order to compensate for friction between O.D. of part (b) and hub bore during installation. Make sure correct tightening torque (M_A) per specification table is applied.

REMOVAL

1. Loosen all screws a few turns.
2. Remove plastic caps in part (a) and transfer screws to all push-off threads.
3. To release connection, progressively tighten these screws in diametrically opposite sequence except the two (2) screws adjacent to the slit, which must be tightened one after the other.
4. Remove Locking Assembly.

Tightening torques (M_A) in lb-ft for Locking Screws DIN 912-12.9

Screw Size	M6	M8	M10	M12	M14	M16	M18	M20	M22
Hex key Size (mm)	5	6	8	10	12	14	14	17	17
SERIES 303 & 303-IN	10	26	51	89	140	218	299	428	575
SERIES 306 & 306-IN	13	30	61	107	170	262	358	509	686

DESIGN CHARACTERISTICS

These Locking Assemblies are of double taper design with self-locking tapers and an integral pre-centering section. As the locking screws are torqued up, the tapered rings are pulled towards each other translating the screw clamp forces into predictable, radial contact pressures on shaft and hub bore creating a mechanical shrink fit.

In contrast to conventional interference or shrink fits, the locking assemblies are installed with initial clearance fits assuring easy installation, axial and radial adjustments.

The wide design of these units offers greater torque and bending moment capacities and provides good pre-centering characteristics in straight-thru bore installations with excellent concentricity.

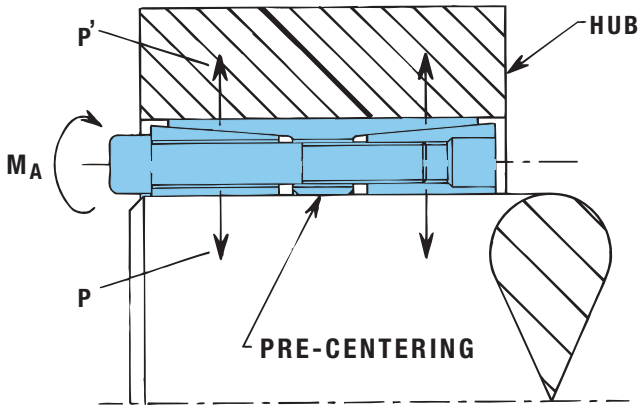


Fig. 5 SERIES TAS 3012/3015 Locking Assemblies

SELECTION GUIDE

Step 1:
Determine shaft diameter (d) to be used or max. torque (M_t) to be transmitted.

$$\text{Torque } M_t = \frac{5252 \times HP}{RPM} \text{ (lb-ft)}$$

If combined torsional and axial loads are to be transmitted, calculate resultant torque as follows:

$$M_{t\,res} = \sqrt{M_t^2 + \left(\frac{P_{ax} \times d}{24}\right)^2} \leq M_{t\,cat}$$

$M_{t\,res}$ = resultant torque to be transmitted (ft-lbs)
M_t = actual or max. torque to be transmitted (ft-lbs)
P_{ax} = axial load/thrust to be transmitted (lbs)
d = shaft diameter (inches)
$M_{t\,cat}$ = max. transmissible torque (ft-lbs) of a locking assembly as specified

NOTE: For hollow shaft applications please consult with us.

Step 2:
Select a locking assembly for the determined shaft dia. (d) from specification tables and check if corresponding max. transmissible torque (M_t) meets the torque requirement.

If, however, torque is the primary requirement, then select the needed torque (M_t) from same specification tables and find the corresponding shaft diameter (d).

NOTE: Required peak torque should never exceed specified transmissible torque (M_t).

Step 3:
Determine recommended min. hub outside dia. (D_N) for locking assembly selected from specification tables or calculate hub outside diameter (D_N) by using the following equation:

Hub Calculation:

$$D_N = D \times \sqrt{\frac{YP + (C_3 \times p')}{YP - (C_3 \times p')}}$$

YP = yield point of hub material (lbs/sq. in.)
p' = contact pressure between locking assembly and hub, see specification tables.
B = Hub width
D_N = required hub O.D.
C_3 = stress reduction factors, depending on hub width (B)
C_3 = 0.6 if hub width $B = 2L_1$
C_3 = 0.8 if $B = 1.5\ L_1$ or with two or more units and $B = L_3\ (1 + n)$; n = number of units
C_3 = 1.0 for $B = L_1$

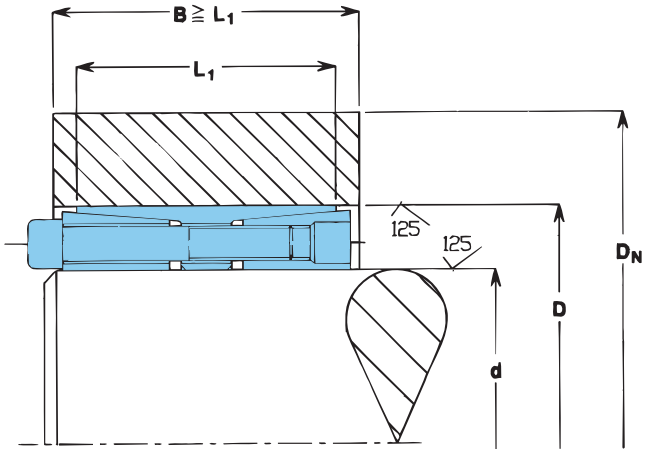


Fig. 6 Typical Hub Layout

Step 4:
Applicable machining tolerances (T) for shaft and hub bore are shown in specification tables.

Required surface finish for shaft and hub bores: **RMS 125 or better**

Step 5:
Ordering Example:
Specify: SIZE and SERIES
METRIC Example: 100 x 145 TAS 3012
INCH Example: 3 15/16 TAS 3012-IN

BENDING MOMENTS
Although these Locking Assemblies are designed to transmit very high torques and axial loads, they are also capable to transmit bending moments.

For applications where bending moments need to be considered, please contact us for assistance.

Whenever in doubt, consult with us!

3 Specifications: INCH SERIES TAS 3012-IN

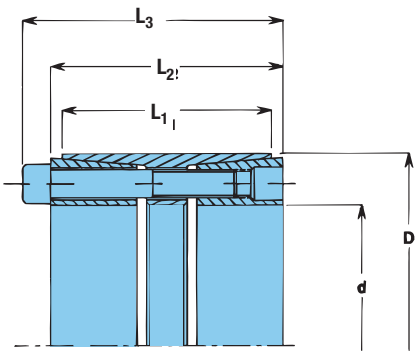


Fig. 7 SERIES TAS 3012-IN

d = nominal locking assembly I.D.
= shaft O.D.

D = nominal locking assembly O.D.
= hub counterbore I.D.

L_1, L_2 = width dimensions, relaxed condition
L_3

M_t = maximum transmissible torque

p = contact pressure between locking assembly and shaft

p' = contact pressure between locking assembly and hub bore

M_A = required tightening torque per locking screw (tighten with torque wrench)

HOW TO ORDER:
Specify SIZE and SERIES
e.g. 3-1/2 TAS 3012-IN

D_N = min. hub O.D. for single unit installation based on hub material Y.P. as shown in table and hub width B=1.5 L_1 (c=0.8); for other hub materials calculate hub O.D. per step 3 of Selection Guide.

T = Allowable maching tolerance
for shaft: use d + 0/–T
for hub bore: use D – 0/+T

Example: for 3" TAS 3012-IN
required shaft size: 3.000" + .000/–.002"
required hub bore size: 4.724" – .000/+.002"

NOTES:
P_{ax} = axial load (thrust capacity) = $\frac{M_t \times 24}{d}$ (lbs)

The values of M_t, P_{ax}, p' are based on lightly oiled installation (coefficient of friction μ = 0.12)

Surface Finish
Required surface finish for shaft O.D. and hub bore:
RMS 125 micro inches or better

TAS 3012-IN Size	Locking Assembly Dimensions						max.	Contact pressure		Locking screws DIN 912-12.9			Wt.	Hub O.D. (D_N) based on Yield Points shown		
	d	D	T	L_1	L_2	L_3	M_t	p	p'	Qty.	Size	M_A		36 KSI	45 KSI	62KSI
			inches				lb-ft	psi	psi			lb-ft	lbs			
1	1.000	1.969	0.0015	1.772	2.165	2.402	472	22 258	11 310	5	M6X45	12.5	1.1	2.546	2.414	2.281
1 1/8	1.125	2.165	0.0015	1.772	2.165	2.402	668	24 050	12 470	6	M6X45	12.5	1.3	2.878	2.712	2.547
1 3/16	1.188	2.165	0.0015	1.772	2.165	2.402	701	22 486	12 470	6	M6X45	12.5	1.3	2.878	2.712	2.547
1 1/4	1.250	2.362	0.0015	1.772	2.165	2.402	856	24 936	13 195	7	M6X45	12.5	1.5	3.195	3.000	2.805
1 3/8	1.375	2.362	0.0015	1.772	2.165	2.402	944	22 669	13 195	7	M6X45	12.5	1.5	3.195	3.000	2.805
1 7/16	1.438	2.559	0.0015	1.772	2.165	2.402	1 131	24 784	13 920	8	M6X45	12.5	1.8	3.523	3.295	3.069
1 1/2	1.500	2.559	0.0015	1.772	2.165	2.402	1 180	23 751	13 920	8	M6X45	12.5	1.8	3.523	3.295	3.069
1 5/8	1.625	2.953	0.0015	1.732	2.126	2.441	2 164	38 422	21 170	7	M8X50	30.2	2.2	4.921	4.387	3.908
1 3/4	1.750	2.953	0.0015	1.732	2.126	2.441	2 330	35 678	21 170	7	M8X50	30.2	2.2	4.921	4.387	3.908
1 7/8	1.875	3.150	0.002	2.205	2.520	2.835	2 870	30 462	14 214	8	M8X50	30.2	3.1	4.369	4.078	3.792
1 15/16	1.938	3.150	0.002	2.205	2.520	2.835	2 965	29 480	14 214	8	M8X50	30.2	3.1	4.369	4.078	3.792
2	2.000	3.150	0.002	2.205	2.520	2.835	3 061	29 008	14 214	8	M8X50	30.2	3.1	4.369	4.078	3.792
2 1/8	2.125	3.346	0.002	2.205	2.520	2.835	3 690	30 292	15 084	9	M8X50	30.2	3.5	4.742	4.405	4.075
2 3/16	2.188	3.346	0.002	2.205	2.520	2.835	3 799	29 733	15 084	9	M8X50	30.2	3.5	4.742	4.405	4.075
2 1/4	2.250	3.543	0.002	2.205	2.520	2.835	4 332	30 756	15 374	10	M8X50	30.2	3.5	5.058	4.690	4.332
2 3/8	2.375	3.543	0.002	2.205	2.520	2.835	4 573	29 298	15 374	10	M8X50	30.2	3.7	5.058	4.690	4.332
2 7/16	2.438	3.740	0.002	2.205	2.520	2.835	4 736	27 817	14 504	10	M8X50	30.2	4.2	5.224	4.869	4.520
2 1/2	2.500	3.740	0.002	2.205	2.520	2.835	4 857	27 806	14 504	10	M8X50	30.2	4.2	5.224	4.869	4.520
2 9/16	2.563	3.740	0.002	2.205	2.520	2.835	4 979	27 122	14 504	10	M8X50	30.2	4.2	5.224	4.869	4.520
2 5/8	2.625	4.331	0.002	2.756	3.071	3.465	8 096	33 958	16 530	10	M10X60	61.2	6.8	6.367	5.863	5.379
2 11/16	2.688	4.331	0.002	2.756	3.071	3.465	8 243	33 168	16 530	10	M10X60	61.2	6.8	6.367	5.863	5.379
2 3/4	2.750	4.331	0.002	2.756	3.071	3.465	8 482	32 344	16 530	10	M10X60	61.2	6.8	6.367	5.863	5.379
2 7/8	2.875	4.528	0.002	2.756	3.071	3.465	9 761	34 167	16 675	10	M10X60	61.2	7.7	6.682	6.147	5.634
2 15/16	2.938	4.528	0.002	2.756	3.071	3.465	9 974	33 440	16 675	10	M10X60	61.2	7.7	6.682	6.147	5.634
3	3.000	4.724	0.002	2.756	3.071	3.465	10 189	32 743	16 675	11	M10X60	61.2	7.7	6.971	6.413	5.878
3 1/8	3.125	4.724	0.002	2.756	3.071	3.465	10 695	31 184	16 675	11	M10X60	61.2	7.7	6.971	6.413	5.878
3 1/4	3.250	4.724	0.002	2.756	3.071	3.465	11 035	32 174	16 675	11	M10X60	61.2	7.7	6.971	6.413	5.878
3 3/8	3.375	4.921	0.0025	2.756	3.071	3.465	11 117	35 628	16 675	12	M10X60	61.2	8.4	7.261	6.680	6.123
3 7/16	3.438	5.118	0.0025	2.756	3.071	3.465	12 895	31 094	16 675	12	M10X60	61.2	8.4	7.552	6.947	6.368
3 1/2	3.500	5.118	0.0025	2.756	3.071	3.465	13 129	30 168	16 675	12	M10X60	61.2	8.4	7.552	6.948	6.368
3 3/4	3.750	5.709	0.0025	3.543	3.937	4.409	18 475	27 622	15 519	11	M12X80	107.0	13.5	8.179	7.578	6.993
3 15/16	3.937	5.709	0.0025	3.543	3.937	4.409	19 399	29 008	15 519	11	M12X80	107.0	13.5	8.179	7.578	6.993
4	4.000	5.709	0.0025	3.543	3.937	4.409	19 707	28 555	15 519	11	M12X80	107.0	13.5	8.179	7.578	6.993
4 3/8	4.375	6.102	0.0025	3.543	3.937	4.409	23 456	28 718	15 954	12	M12X80	107.0	14.6	8.840	8.189	7.520
4 7/16	4.438	6.496	0.0025	3.543	3.937	4.409	27 842	32 733	17 405	14	M12X80	107.0	15.9	9.769	8.945	8.163
4 1/2	4.500	6.496	0.0025	3.543	3.937	4.409	28 231	32 279	17 405	14	M12X80	107.0	15.9	9.769	8.945	8.163
4 3/4	4.750	6.496	0.0025	3.543	3.937	4.409	29 799	30 748	17 405	14	M12X80	107.0	15.9	9.769	8.945	8.163
4 15/16	4.938	7.087	0.0025	4.094	4.567	5.118	37 511	28 866	16 244	12	M14X90	169.6	22.1	10.343	9.540	8.767
5	5.000	7.087	0.0025	4.094	4.567	5.118	37 986	27 848	16 244	12	M14X90	169.6	22.1	10.343	9.540	8.767
5 7/16	5.438	7.480	0.0025	4.094	4.567	5.118	47 078	30 581	17 985	14	M14X90	169.6	23.4	11.421	10.418	9.474
5 1/2	5.500	7.480	0.0025	4.094	4.567	5.118	47 723	30 168	17 985	14	M14X90	169.6	23.4	11.421	10.418	9.474
5 15/16	5.938	7.874	0.0025	4.094	4.567	5.118	54 730	30 168	18 420	15	M14X90	169.6	24.9	12.163	11.062	10.033
6	6.000	8.268	0.0025	4.094	4.567	5.118	62 327	30 168	18 565	16	M14X90	169.6	26.2	12.821	11.649	10.556
6 7/16	6.438	8.858	0.0025	5.276	5.748	6.378	76 761	27 445	18 390	14	M16X110	261.8	39.7	12.976	11.958	10.980
6 1/2	6.500	8.858	0.0025	5.276	5.748	6.378	79 808	26 397	16 390	14	M16X110	261.8	39.7	12.976	11.958	10.980
6 15/16	6.938	9.252	0.0025	5.276	5.748	6.378	88 991	27 262	16 680	15	M16X110	261.8	41.5	13.654	12.560	11.513
7	7.000	9.252	0.0025	5.276	5.748	6.378	90 909	26 687	16 680	15	M16X110	261.8	41.5	13.654	12.560	11.513
7 7/16	7.438	9.843	0.003	5.276	5.748	6.378	98 130	27 133	16 825	16	M16X110	261.8	48.3	14.581	13.401	12.273
7 1/2	7.500	9.843	0.003	5.276	5.748	6.378	98 691	26 977	16 825	16	M16X110	261.8	48.3	14.580	13.400	12.272
7 15/16	7.938	10.236	0.003	5.276	5.748	6.378	107 690	25 672	16 244	16	M16X110	261.8	50.7	14.939	13.779	12.663
8	8.000	10.433	0.003	5.276	5.748	6.378	109 412	25 230	15 805	16	M16X110	261.8	51.0	15.057	13.926	12.830

Other sizes available upon request.

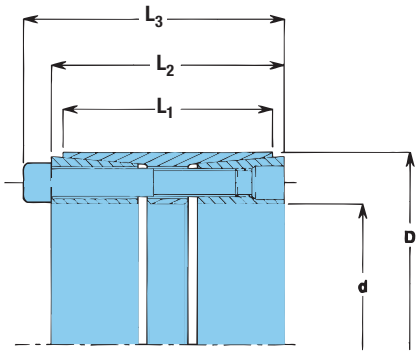


Fig. 8 SERIES TAS 3012

d = nominal locking assembly I.D.
= shaft O.D.

D = nominal locking assembly O.D.
= hub counterbore I.D.

L_1, L_2 = width dimensions, relaxed condition
L_3

M_t = maximum transmissible torque

p = contact pressure between locking assembly and shaft

p' = contact pressure between locking assembly and hub bore

M_A = required tightening torque per locking screw (tighten with torque wrench)

HOW TO ORDER:
Specify SIZE and SERIES
e.g. 100 X 145 TAS 3012

D_N = min. hub O.D. for single unit installation based on hub material Y.P. as shown in table and hub width B=1.5 L_1 (c=0.8); for other hub materials calculate hub O.D. per step 3 of Selection Guide.

T = Allowable maching tolerance
for shaft: use d + 0/–T
for hub bore: use D – 0/+T

Example: for 80 TAS 3012
required shaft size: 3.150" + .000/–.002"
required hub bore size: 4.724" – .000/+.002"

NOTES:
P_{ax} = axial load (thrust capacity) = $\frac{M_t \times 24}{d}$ (lbs)

The values of M_t, P_{ax}, p' are based on lightly oiled installation (coefficient of friction μ = 0.12)

Surface Finish
Required surface finish for shaft O.D. and hub bore:
RMS 125 micro inches or better

TAS 3012 Size mm	Locking Assembly Dimensions inches d	D	T	L_1	L_2	L_3	max. M_t lb-ft	Contact pressure p psi	p' psi	Locking screws DIN 912-12.9 Qty.	Size	M_A lb-ft	Wt. lbs	Hub O.D. (D_N) based on Yield Points shown 36 KSI	45 KSI	62KSI
25x50	0.984	1.969	0.0015	1.772	2.165	2.402	479	22 620	11 310	5	M6X45	12.5	1.1	2.545	2.414	2.280
30x55	1.181	2.165	0.0015	1.772	2.165	2.402	701	22 910	12 470	6	M6X45	12.5	1.3	2.878	2.713	2.547
35x60	1.378	2.362	0.0015	1.772	2.165	2.402	944	22 620	13 195	7	M6X45	12.5	1.5	3.195	3.000	2.805
38x65	1.496	2.559	0.0015	1.772	2.165	2.402	1 180	23 780	13 920	8	M6X45	12.5	1.8	3.523	3.295	3.069
40x65	1.575	2.559	0.0015	1.772	2.165	2.402	1 239	22 620	13 920	8	M6x45	12.5	1.8	3.523	3.295	3.069
45x75	1.772	2.953	0.0015	1.732	2.126	2.441	2 360	35 235	21 170	7	M8X50	30.2	2.2	4.920	4.387	3.908
50x80	1.969	3.150	0.002	2.205	2.520	2.835	3 061	29 008	14 214	8	M8X50	30.2	3.1	4.368	4.078	3.792
55x85	2.165	3.346	0.002	2.205	2.520	2.835	3 799	29 733	15 084	9	M8X50	30.2	3.5	4.743	4.405	4.076
60x90	2.362	3.543	0.002	2.205	2.520	2.835	4 573	29 298	15 374	10	M8X50	30.2	3.7	5.058	4.690	4.332
65x95	2.559	3.740	0.002	2.205	2.520	2.835	4 979	27 122	14 504	10	M8X50	30.2	4.2	5.224	4.869	4.520
70x110	2.756	4.331	0.002	2.756	3.071	3.465	8 482	32 344	16 530	10	M10X60	61.2	6.8	6.367	5.862	5.378
80x120	3.150	4.724	0.002	2.756	3.071	3.465	10 695	31 184	16 675	11	M10X60	61.2	8.4	6.971	6.413	5.879
85x125	3.346	4.921	0.002	2.756	3.071	3.465	11 363	29 350	16 008	11	M10X60	61.2	8.4	7.139	6.594	6.068
90x130	3.543	5.118	0.0025	2.756	3.071	3.465	13 129	30 168	16 675	12	M10X60	61.2	8.4	7.552	6.948	6.368
95x135	3.740	5.315	0.0025	2.756	3.071	3.465	13 830	28 560	16 095	12	M10X60	61.2	8.4	7.727	7.134	6.562
100x145	3.937	5.709	0.0025	3.543	3.937	4.409	19 399	29 008	15 519	11	M12X80	107.0	13.5	8.179	7.578	6.993
110x155	4.331	6.102	0.0025	3.543	3.937	4.409	23 456	28 718	15 954	12	M12X80	107.0	14.6	8.840	8.169	7.520
120x165	4.724	6.496	0.0025	3.543	3.937	4.409	29 799	30 748	17 405	14	M12X80	107.0	15.9	9.769	8.945	8.163
130x180	5.118	7.087	0.0025	4.094	4.567	5.118	37 986	27 848	16 244	12	M14X90	169.6	22.1	10.342	9.540	8.767
140x190	5.512	7.480	0.0025	4.094	4.567	5.118	47 723	30 188	17 985	14	M14X90	169.6	23.4	11.422	10.419	9.475
150x200	5.906	7.874	0.0025	4.094	4.567	5.118	54 730	30 168	18 420	15	M14X90	169.6	24.9	12.163	11.062	10.033
160x210	6.299	8.268	0.0025	4.094	4.567	5.118	62 327	30 168	18 565	16	M14X90	169.6	26.2	12.821	11.649	10.556
170x225	6.693	8.858	0.0025	5.276	5.748	6.378	79 808	26 397	16 390	14	M16X110	261.8	39.7	12.976	11.958	10.980
180x235	7.087	9.252	0.0025	5.276	5.748	6.378	90 909	26 687	16 880	15	M16X110	261.8	41.5	13.654	12.560	11.513
190x250	7.480	9.843	0.003	5.276	5.748	6.378	98 691	26 977	16 825	16	M16X110	261.8	48.3	14.580	13.400	12.272
200x260	7.874	10.236	0.003	5.276	5.748	6.378	107 690	25 672	16 244	16	M16X110	261.8	50.7	14.939	13.779	12.663
220x285	8.661	11.220	0.003	5.276	5.748	6.378	133 506	27 268	16 680	18	M16X110	261.8	59.5	16.559	15.233	13.963
240x305	9.449	12.008	0.003	5.276	5.748	6.378	160 797	26 687	17 260	20	M16X110	261.8	64.4	17.989	16.488	15.060
260x325	10.236	12.795	0.0035	5.276	5.748	6.378	184 400	25 817	16 970	20	M16X110	261.8	69.5	19.025	17.469	15.985
280x355	11.024	13.976	0.0035	6.496	6.969	7.756	265 536	26 832	16 970	18	M20X130	508.9	105.8	20.781	19.082	17.460
300x375	11.811	14.764	0.0035	6.496	6.969	7.756	315 693	27 848	17 840	20	M20X130	508.9	112.5	22.457	20.505	18.663
320x405	12.598	15.945	0.0035	6.496	6.969	7.756	354 048	27 268	17 260	21	M20X130	508.9	136.7	23.887	21.894	19.998
340x425	13.386	16.732	0.0035	6.496	6.969	7.756	393 878	26 977	17 260	22	M20X130	508.9	145.5	25.067	22.975	20.986
360x455	14.173	17.913	0.0035	7.480	7.953	8.819	494 192	25 527	16 680	21	M22X150	686.0	200.7	26.436	24.319	22.291
380x475	14.961	18.701	0.0035	7.480	7.953	8.819	547 299	25 382	16 680	22	M22X150	686.0	209.5	27.598	25.388	23.271
400x495	15.748	19.488	0.0035	7.480	7.953	8.819	628 435	26 252	17 405	24	M22X150	686.0	220.5	29.306	26.835	24.490
420x515	16.535	20.276	0.0035	7.480	7.953	8.819	659 414	25 092	16 825	24	M22X150	686.0	229.3	30.034	27.604	25.280
440x535	17.323	21.063	0.0035	7.480	7.953	8.819	691 131	23 932	16 244	24	M22X150	686.0	240.3	30.739	28.354	26.057
460x555	18.110	21.850	0.0035	7.480	7.953	8.819	722 848	22 916	15 519	24	M22X150	686.0	249.2	31.307	29.005	26.768
480x575	18.898	22.638	0.0035	7.480	7.953	8.819	885 120	25 527	17 550	28	M22X150	686.0	260.2	34.172	31.261	28.505
500x595	19.685	23.425	0.004	7.480	7.953	8.819	914 624	24 512	16 970	28	M22X150	686.0	269.0	34.830	31.982	29.265
520x615	20.472	24.213	0.004	7.480	7.953	8.819	1025 264	25 237	17 550	30	M22X150	686.0	277.8	36.550	33.436	30.488
540x635	21.260	25.000	0.004	7.480	7.953	8.819	1062 144	24 367	16 970	30	M22X150	686.0	288.9	37.172	34.132	31.232
560x655	22.047	25.787	0.005	7.480	7.953	8.819	1172 784	24 947	17 550	32	M22X150	686.0	297.7	38.927	35.611	32.470
580x675	22.835	26.575	0.005	7.480	7.953	8.819	1257 608	24 947	17 550	33	M22X150	686.0	308.7	40.115	36.698	33.462
600x695	23.622	27.362	0.005	7.480	7.953	8.819	1298 176	24 077	17 115	33	M22X150	686.0	317.5	40.838	37.464	34.250

Other sizes available upon request.

3 Specifications: METRIC SERIES TAS 3015

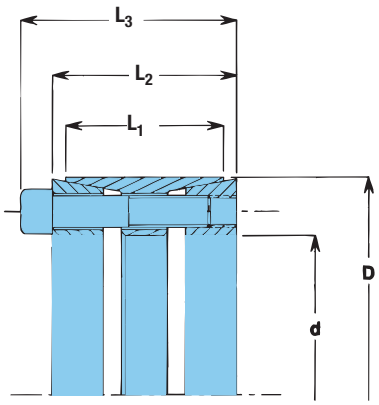


Fig. 9 SERIES TAS 3015

d = nominal locking assembly I.D.
= shaft O.D.

D = nominal locking assembly O.D.
= hub counterbore I.D.

L_1, L_2, L_3 =width dimensions, in relaxed condition

M_t = maximum transmissible torque

p = contact pressure between locking assembly and shaft

p' = contact pressure between locking assembly and hub bore

M_A = required tightening torque per locking screw (tighten with torque wrench)

HOW TO ORDER:
Specify SIZE and SERIES
e.g. 80 X 120 TAS 3015

D_N = min. hub O.D. for single unit installation based on hub material Y.P. as shown in table and hub width B=1.5 L_1 (c=0.8); for other hub materials calculate hub O.D. per step 3 of Selection Guide.

T = Allowable maching tolerance
for shaft: use d + 0/–T
for hub bore: use D – 0/+T

Example: for 80 TAS 3015
required shaft size: 3.150" + .000/–.002"
required hub bore size: 4.724" – .000/+.002"

NOTES:
P_{ax} = axial load (thrust capacity) = $\frac{M_t \times 24}{d}$ (lbs)

The values of M_t, P_{ax}, p' are based on lightly oiled installation (coefficient of friction μ = 0.12)

Surface Finish
Required surface finish for shaft O.D. and hub bore:
RMS 125 micro inches or better

TAS 3015 Size mm	Locking Assembly Dimensions						max.	Contact pressure		Locking screws DIN 912-12.9			Wt.	Hub O.D. (D_N) based on Yield Points shown		
	d	D	T	L_1	L_2	L_3	M_t	p	p'	Qty.	Size	M_A		36 KSI	45 KSI	62KSI
	inches						lb-ft	psi	psi			lb-ft	lbs			
70x110	2.756	4.331	0.002	1.969	2.362	2.756	5 274	28 130	15 515	8	M10X55	61.2	5.1	6.204	5.748	5.305
80x120	3.150	4.724	0.002	1.969	2.362	2.756	7 560	30 740	17 835	10	M10X55	61.2	5.5	7.185	6.561	5.972
90x130	3.543	5.118	0.0025	1.969	2.362	2.756	9 294	30 015	18 125	11	M10X55	61.2	6.0	7.844	7.149	6.495
100x145	3.937	5.709	0.0025	2.362	2.756	3.228	13 719	29 725	18 270	10	M12X60	107.0	9.0	8.783	7.996	7.259
110x155	4.331	6.102	0.0025	2.362	2.756	3.228	15 121	27 115	17 110	10	M12X60	107.0	9.7	9.107	8.354	7.638
120x165	4.724	6.496	0.0025	2.362	2.756	3.228	18 071	27 260	17 690	11	M12X60	107.0	10.6	9.842	8.995	8.195
130x180	5.118	7.087	0.0025	2.559	3.110	3.583	24 931	28 565	18 560	14	M12X65	107.0	13.9	10.988	9.984	9.047
140x190	5.512	7.480	0.0025	2.559	3.110	3.583	28 766	28 420	18 850	15	M12X65	107.0	14.6	11.689	10.600	9.588
150x200	5.906	7.874	0.0025	2.559	3.110	3.583	30 832	26 535	17 835	15	M12X65	107.0	17.2	11.975	10.935	9.953
160x210	6.299	8.268	0.0025	2.559	3.110	3.583	35 036	26 535	18 125	16	M12X65	107.0	16.3	12.671	11.548	10.492
170x225	6.693	8.858	0.0025	3.071	3.622	4.173	47 944	27 985	19 285	15	M14X75	169.6	23.6	14.006	12.663	11.422
180x235	7.087	9.252	0.0025	3.071	3.622	4.173	50 894	26 390	18 415	15	M14X75	169.6	24.9	14.289	12.997	11.788
190x250	7.480	9.843	0.003	3.465	4.016	4.567	57 164	23 635	14 935	16	M14X80	169.6	32.2	13.897	12.920	11.964
200x260	7.874	10.236	0.003	3.465	4.016	4.567	75 235	28 130	17 980	18	M14X80	169.6	33.7	15.628	14.256	12.965
220x285	8.661	11.220	0.003	3.780	4.252	4.882	86 299	25 230	16 385	15	M16X90	261.8	44.5	16.434	15.146	13.907
240x305	9.449	12.008	0.003	3.780	4.252	4.882	125 392	30 740	20 300	20	M16X90	261.8	48.1	19.524	17.522	15.701
260x325	10.236	12.795	0.0035	3.780	4.252	4.882	142 357	29 725	20 010	20	M16X90	261.8	51.6	20.637	18.561	16.664
280x355	11.024	13.976	0.0035	3.780	4.331	5.118	171 123	30 885	20 445	15	M20X100	508.9	66.2	22.817	20.455	18.312
300x375	11.811	14.764	0.0035	3.780	4.331	5.118	183 662	28 710	19 430	16	M20X100	508.9	68.8	23.436	21.166	19.074
320x405	12.598	15.945	0.0035	4.882	5.354	6.142	261 110	27 695	18 125	20	M20X110	508.9	105.8	24.437	22.270	20.235
340x425	13.386	16.732	0.0035	4.882	5.354	6.142	277 338	26 100	17 255	20	M20X110	508.9	112.5	25.064	22.973	20.984
360x455	14.173	17.913	0.0035	5.512	6.102	6.969	365 850	26 825	17 110	20	M22X130	686.0	152.1	26.732	24.524	22.421
380x475	14.961	18.701	0.0035	5.512	6.102	6.969	386 502	25 375	16 385	20	M22X130	686.0	161.0	27.390	25.243	23.178
400x495	15.748	19.488	0.0035	5.512	6.102	6.969	444 035	26 535	17 690	22	M22X130	686.0	167.6	29.526	26.986	24.586
420x515	16.535	20.276	0.0035	5.512	6.102	6.969	511 894	27 550	18 415	24	M22X130	686.0	176.4	31.315	28.483	25.833
440x535	17.323	21.063	0.0035	5.512	6.102	6.969	536 973	24 070	17 835	24	M22X130	686.0	178.6	32.034	29.251	26.625
460x555	18.110	21.850	0.0035	5.512	6.102	6.969	560 576	23 055	17 110	24	M22X130	686.0	187.4	32.607	29.914	27.349
480x575	18.898	22.638	0.0035	5.512	6.102	6.969	612 208	23 055	17 255	25	M22X130	686.0	194.0	33.910	31.081	28.391
500x595	19.685	23.425	0.004	5.512	6.102	6.969	635 074	22 185	16 675	25	M22X130	686.0	200.7	34.566	31.799	29.148
520x615	20.472	24.213	0.004	5.512	6.102	6.969	739 813	23 780	17 980	28	M22X130	686.0	209.5	36.966	33.721	30.667
540x635	21.260	25.000	0.004	5.512	6.102	6.969	768 579	22 910	17 400	28	M22X130	686.0	216.1	37.590	34.422	31.415
560x655	22.047	25.787	0.005	5.512	6.102	6.969	853 403	23 635	18 125	30	M22X130	686.0	222.7	39.522	36.018	32.726
580x675	22.835	26.575	0.005	5.512	6.102	6.969	884 382	22 910	17 545	30	M22X130	686.0	229.3	40.110	36.694	33.460
600x695	23.622	27.362	0.005	5.512	6.102	6.969	914 624	22 185	17 110	30	M22X130	686.0	238.1	40.833	37.460	34.248

Other sizes upon request.

Specifications: INCH SERIES TAS 3015-IN

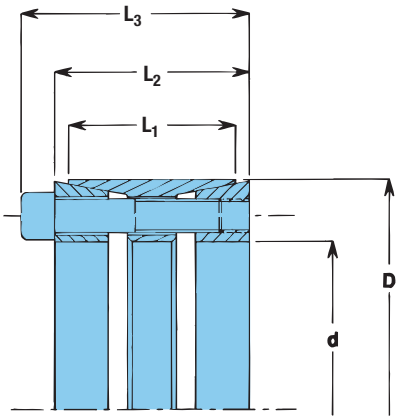


Fig. 10 SERIES TAS 3015-IN

d = nominal locking assembly I.D.
= shaft O.D.

D = nominal locking assembly O.D.
= hub counterbore I.D.

L_1, L_2 = width dimensions, relaxed condition
L_3

M_t = maximum transmissible torque

p = contact pressure between locking assembly and shaft

p' = contact pressure between locking assembly and hub bore

M_A = required tightening torque per locking screw (tighten with torque wrench)

HOW TO ORDER: Specify SIZE and SERIES
e.g. 3-15/16 TAS 3015-IN

D_N = min. hub O.D. for single unit installation based on hub material Y.P. as shown in table and hub width B=1.5 L_1 (c=0.8); for other hub materials calculate hub O.D. per step 3 of Selection Guide.

T = Allowable maching tolerance
for shaft: use d + 0/–T
for hub bore: use D – 0/+T

Example: for 80 TAS 3015.1
required shaft size: 3.150" + .000/–.002"
required hub bore size: 4.724" – .000/+.002"

NOTES:
P_{ax} = axial load (thrust capacity) = $\frac{M_t \times 24}{d}$ (lbs)

The values of M_t, P_{ax}, p' are based on lightly oiled installation (coefficient of friction μ = 0.12)

Surface Finish
Required surface finish for shaft O.D. and hub bore:
RMS 125 micro inches or better

TAS 3015-IN	Locking Assembly Dimensions						max.	Contact pressure		Locking screws DIN 912-12.9			Wt.	Hub O.D. (D_N) based on Yield Points shown		
	d	D	T	L_1	L_2	L_3	M_t	p	p'	Qty.	Size	M_A		36 KSI	45 KSI	62KSI
	inches						lb-ft	psi	psi			lb-ft	lbs			
2 3/4	2.750	4.331	0.002	1.969	2.362	2.756	5 263	28 130	15 515	8	M10X55	61.2	5.1	6.204	5.748	5.305
2 7/8	2.875	4.528	0.002	1.969	2.362	2.756	6 343	29 580	16 675	9	M10X55	61.2	5.3	6.682	6.147	5.634
3	3.000	4.724	0.002	1.969	2.362	2.756	7 200	30 740	17 835	10	M10X55	61.2	5.7	7.185	6.561	5.972
3 1/8	3.125	4.724	0.002	1.969	2.362	2.756	7 500	30 740	17 835	10	M10x55	61.2	5.6	7.185	6.561	5.972
3 1/4	3.250	4.724	0.002	1.969	2.362	2.756	7 800	30 740	17 835	10	M10x55	61.2	5.5	7.185	6.561	5.972
3 7/16	3.438	5.118	0.0025	1.969	2.362	2.756	9 017	30 015	18 125	11	M10x55	61.2	6.0	7.844	7.149	6.495
3 1/2	3.500	5.118	0.0025	1.969	2.362	2.756	9 181	30 015	18 125	11	M10x55	61.2	6.0	7.844	7.149	6.495
3 15/16	3.938	5.709	0.0025	2.362	2.756	3.228	13 719	29 725	18 270	10	M12x60	107.0	9.0	8.783	7.996	7.259
4	4.000	5.709	0.0025	2.362	2.756	3.228	13 937	29 725	18 270	10	M12x60	107.0	8.9	8.783	7.996	7.259
4 3/8	4.375	6.102	0.0025	2.362	2.756	3.228	15 275	27 115	17 110	10	M12x60	107.0	9.7	9.107	8.354	7.638
4 7/16	4.438	6.496	0.0025	2.362	2.756	3.228	16 975	27 260	17 690	11	M12x60	107.0	10.9	9.842	8.995	8.195
4 1/2	4.500	6.496	0.0025	2.362	2.756	3.228	17 214	27 260	17 690	11	M12x60	107.0	10.8	9.842	8.995	8.195
4 3/4	4.750	6.496	0.0025	2.362	2.756	3.228	18 170	27 260	17 690	11	M12x60	107.0	10.6	9.842	8.995	8.195
4 15/16	4.938	7.087	0.0025	2.559	3.110	3.583	24 052	28 565	18 560	14	M12x65	107.0	14.0	10.988	9.984	9.047
5	5.000	7.087	0.0025	2.559	3.110	3.583	24 356	28 565	18 560	14	M12x65	107.0	13.9	10.988	9.984	9.047
5 7/16	5.438	7.480	0.0025	2.559	3.110	3.583	28 377	28 420	18 850	15	M12x65	107.0	14.9	11.689	10.600	9.588
5 1/2	5.500	7.480	0.0025	2.559	3.110	3.583	28 703	28 420	18 850	15	M12x65	107.0	14.6	11.689	10.600	9.588
5 15/16	5.938	7.874	0.0025	2.559	3.110	3.583	30 996	26 535	17 835	15	M12x65	107.0	17.2	11.975	10.935	9.953
6	6.000	8.268	0.0025	2.559	3.110	3.583	33 373	26 535	18 125	16	M12x65	107.0	16.3	12.671	11.548	10.492
6 7/16	6.438	8.858	0.0025	3.071	3.622	4.173	46 114	27 985	19 285	15	M14x75	169.6	24.2	14.006	12.663	11.422
6 1/2	6.500	8.858	0.0025	3.071	3.622	4.173	46 561	27 985	19 285	15	M14x75	169.6	23.6	14.006	12.663	11.422
6 15/16	6.938	9.252	0.0025	3.071	3.622	4.173	49 820	26 390	18 415	15	M14x75	169.6	25.5	14.289	12.997	11.788
7	7.000	9.252	0.0025	3.071	3.622	4.173	50 269	26 390	18 415	15	M14x75	169.6	24.9	14.289	12.997	11.788
7 7/16	7.438	9.843	0.003	3.465	4.016	4.567	56 839	23 635	14 935	16	M14x80	169.6	32.6	13.897	12.920	11.964
7 1/2	7.500	9.843	0.003	3.465	4.016	4.567	57 317	23 635	14 935	16	M14x80	169.6	32.2	13.897	12.920	11.964
7 15/16	7.938	10.236	0.003	3.465	4.016	4.567	75 842	28 130	17 980	18	M14x80	169.6	33.7	15.628	14.256	12.965

Other sizes upon request.

3 Specifications: METRIC SERIES TAS 3015.1

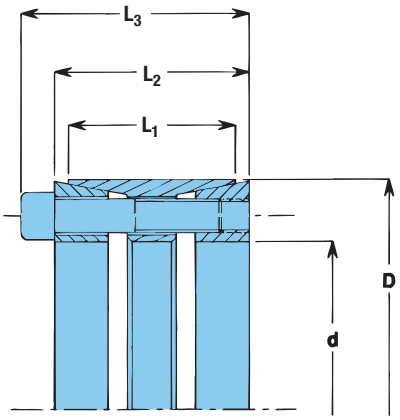


Fig. 11 SERIES TAS 3015.1

d = nominal locking assembly I.D.
= shaft O.D.

D = nominal locking assembly O.D.
= hub counterbore I.D.

L_1, L_2, L_3 =width dimensions, in relaxed condition

M_t = maximum transmissible torque

p = contact pressure between locking assembly and shaft

p' = contact pressure between locking assembly and hub bore

M_A = required tightening torque per locking screw (tighten with torque wrench)

HOW TO ORDER: Specify SIZE and SERIES
e.g. 80 X 120 TAS 3015.1

D_N = min. hub O.D. for single unit installation based on hub material Y.P. as shown in table and hub width B=1.5 L_1 (c=0.8); for other hub materials calculate hub O.D. per step 3 of Selection Guide.

T = Allowable maching tolerance
for shaft: use d + 0/–T
for hub bore: use D – 0/+T

Example: for 80 TAS 3015.1
required shaft size: 3.150" + .000/–.002"
required hub bore size: 4.724" – .000/+.002"

NOTES:

P_{ax} = axial load (thrust capacity) = $\frac{M_t \times 24}{d}$ (lbs)

The values of M_t, P_{ax}, p' are based on lightly oiled installation (coefficient of friction μ = 0.12)

Surface Finish
Required surface finish for shaft O.D. and hub bore:
RMS 125 micro inches or better

TAS 3015.1 Size mm	Locking Assembly Dimensions inches d	D	T	L_1	L_2	L_3	max. M_t lb-ft	Contact pressure p psi	p' psi	Locking screws DIN 912-12.9 Qty.	Size	M_A lb-ft	Wt. lbs	Hub O.D. (D_N) based on Yield Points shown 36 KSI	45 KSI	62KSI
70x110	2.756	4.331	0.002	1.969	2.362	2.756	3 135	16 675	9 280	8	M10X55	36.1	5.1	5.339	5.115	4.884
80x120	3.150	4.724	0.002	1.969	2.362	2.756	4 499	18 125	10 585	10	M10X55	36.1	5.5	6.004	5.716	5.420
90x130	3.543	5.118	0.0025	1.969	2.362	2.756	5 532	17 690	10 730	11	M10X55	36.1	6.0	6.527	6.208	5.883
100x145	3.937	5.709	0.0025	2.362	2.756	3.228	6 520	14 065	8 700	10	M12X60	50.9	9.0	6.943	6.672	6.390
110x155	4.331	6.102	0.0025	2.362	2.756	3.228	7 184	12 905	8 120	10	M12X60	50.9	9.7	7.324	7.057	6.779
120x165	4.724	6.496	0.0025	2.362	2.756	3.228	8 556	12 905	8 410	11	M12X60	50.9	10.6	7.848	7.552	7.244
130x180	5.118	7.087	0.0025	2.559	3.110	3.583	11 846	13 485	8 845	14	M12X65	50.9	13.9	8.648	8.304	7.947
140x190	5.512	7.480	0.0025	2.559	3.110	3.583	13 646	13 485	8 990	15	M12X65	50.9	14.6	9.159	8.789	8.405
150x200	5.906	7.874	0.0025	2.559	3.110	3.583	14 649	12 615	8 555	15	M12X65	50.9	17.2	9.545	9.178	8.797
160x210	6.299	8.268	0.0025	2.559	3.110	3.583	17 164	12 615	8 700	16	M12X65	50.9	16.3	10.056	9.663	9.254
170x225	6.693	8.858	0.0025	3.071	3.622	4.173	22 770	13 340	9 135	15	M14X75	79.7	23.6	10.883	10.435	9.972
180x235	7.087	9.252	0.0025	3.071	3.622	4.173	24 156	12 615	8 700	15	M14X75	79.7	24.9	11.253	10.813	10.356
190x250	7.480	9.843	0.003	3.465	4.016	4.567	27 144	11 310	7 250	16	M14X80	79.7	32.2	11.580	11.205	10.811
200x260	7.874	10.236	0.003	3.465	4.016	4.567	35 737	13 340	8 555	18	M14X80	79.7	33.7	12.409	11.932	11.436
220x285	8.661	11.220	0.003	3.780	4.252	4.882	40 988	12 035	7 830	15	M16X90	123.9	44.5	13.377	12.908	12.418
240x305	9.449	12.008	0.003	3.780	4.252	4.882	59 561	14 500	9 715	20	M16X90	123.9	48.1	14.953	14.297	13.621
260x325	10.236	12.795	0.0035	3.780	4.252	4.882	67 616	14 065	9 570	20	M16X90	123.9	51.6	15.880	15.194	14.486
280x355	11.024	13.976	0.0035	3.780	4.331	5.118	90 577	16 530	10 875	15	M20X100	272.2	66.2	17.884	16.999	16.097
300x375	11.811	14.764	0.0035	3.780	4.331	5.118	98 101	15 370	10 440	16	M20X100	272.2	68.8	18.699	17.813	16.907
320x405	12.598	15.945	0.0035	4.882	5.354	6.142	139 406	14 790	9 715	20	M20X110	272.2	105.8	19.855	18.984	18.086
340x425	13.386	16.732	0.0035	4.882	5.354	6.142	148 110	13 920	9 280	20	M20X110	272.2	112.5	20.626	19.764	18.872
360x455	14.173	17.913	0.0035	5.512	6.102	6.969	193 251	14 210	8 990	20	M22X130	365.1	152.1	21.934	21.047	20.127
380x475	14.961	18.701	0.0035	5.512	6.102	6.969	204 832	13 485	8 700	20	M22X130	365.1	161.0	22.745	21.856	20.932
400x495	15.748	19.488	0.0035	5.512	6.102	6.969	235 294	14 065	9 425	22	M22X130	365.1	167.6	24.105	23.080	22.022
420x515	16.535	20.276	0.0035	5.512	6.102	6.969	271 289	14 500	9 860	24	M22X130	365.1	176.4	25.334	24.204	23.042
440x535	17.323	21.063	0.0035	5.512	6.102	6.969	316 799	14 210	10 585	24	M22X130	405.7	178.6	26.769	25.482	24.166
460x555	18.110	21.850	0.0035	5.512	6.102	6.969	330 740	13 630	10 150	24	M22X130	405.7	187.4	27.487	26.224	24.927
480x575	18.898	22.638	0.0035	5.512	6.102	6.969	361 203	13 630	10 150	25	M22X130	405.7	194.0	28.478	27.169	25.825
500x595	19.685	23.425	0.004	5.512	6.102	6.969	374 701	13 050	9 860	25	M22X130	405.7	200.7	29.269	27.964	26.622
520x615	20.472	24.213	0.004	5.512	6.102	6.969	435 922	14 065	10 585	28	M22X130	405.7	209.5	30.771	29.292	27.780
540x635	21.260	25.000	0.004	5.512	6.102	6.969	452 886	13 485	10 295	28	M22X130	405.7	216.1	31.556	30.084	28.574
560x655	22.047	25.787	0.005	5.512	6.102	6.969	503 043	13 920	10 730	30	M22X130	405.7	222.7	32.885	31.281	29.643
580x675	22.835	26.575	0.005	5.512	6.102	6.969	521 778	13 485	10 440	30	M22X130	405.7	229.3	33.659	32.064	30.432
600x695	23.622	27.362	0.005	5.512	6.102	6.969	539 628	13 050	10 150	30	M22X130	405.7	238.1	34.421	32.839	31.215

Inch sizes upon request.

INSTALLATION and REMOVAL Instructions

For locking assemblies TAS 3012, 3015, 3015.1 and 3013

INSTALLATION

Since the torque is transmitted by contact pressure and friction between functional surfaces, condition of contact surfaces and proper tightening of the locking screws is important. Locking Assemblies are supplied ready for installation.

1. All contact surfaces, including screw threads and screw head bearing surfaces should be clean and lightly oiled. If not, lightly oil these parts.

Do Not Use Molybdenum Disulfide, "Molykote" or any other similar lubricants.

2. Back-off all locking screws by at least two turns. Take out at least 3 equally spaced screws and insert them into adjacent push-off threads in front thrust ring ③ and outer ring ② as shown in Fig. 12. This procedure will keep the tapers apart for easy installation of the locking assembly. If the holes are covered with protective plastic caps remove them first, of course.

3. Place locking assembly on shaft and into hub bore to desired position. Remove the screws from the push-off threads and screw them back into the original threaded holes of the rear thrust ring ① as shown in Fig. 13.

4. Tighten locking screws evenly in several stages to specified tightening torque (M_A), listed in table below or specification tables. Use diametrically opposite tightening sequence, however, with following exception: The two screws adjacent to the slit should be torqued one after the other to avoid possible distortion of the thrust rings, see Fig. 14.

NOTES

a) Even tightening is best accomplished by turning each screw in increments of approx. 90°.

b) For the final pass it is recommended to set the torque wrench by approx. 5% over the specified tightening torque (M_A) to compensate for any possible setting.

5. After completing the final pass, it is important to make sure that the torque wrench is set at specified tightening torque (M_A). Now check all locking screws in clockwise or counter-wise sequence. If no screw can be turned any more, the installation is finished. There is no need to recheck tightening torque after equipment has been in operation.

NOTE

Used locking assemblies must be cleaned, lightly oiled and re-assembled as shown in Fig. 13. That means the slits of the front ③ and rear ① thrust rings as well as the outer ring ② have to be lined up and the clearance holes of the front and outer ring must be opposite the threaded holes of the rear thrust ring.

REMOVAL

1. Loosen all screws a few turns.

2. Remove plastic caps located in front thrust ring ③ and transfer the locking screws into all push-off threads provided in front thrust ring ③ and outer ring ② as shown in Fig. 12.

3. To release connection, progressively tighten all screws in diametrically opposite sequence except the two (2) screws adjacent to the slit, which must be tightened one after the other.

4. Remove Locking Assembly.

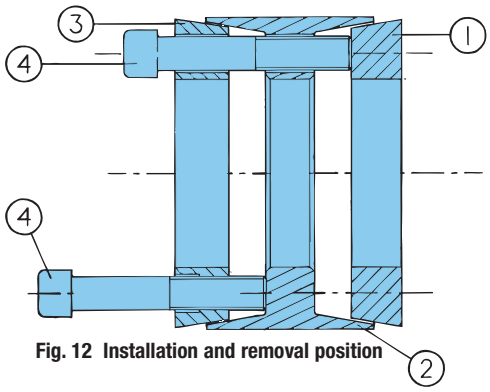


Fig. 12 Installation and removal position

1 = Rear thrust ring
2 = Outer ring
3 = Front thrust ring
4 = Locking screw

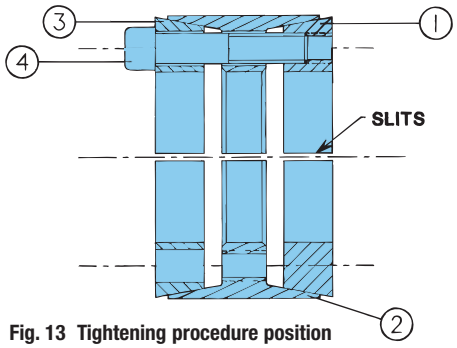


Fig. 13 Tightening procedure position

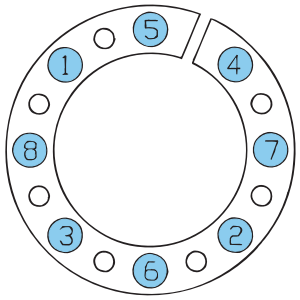


Fig. 14 Recommended screw tightening sequence

Tightening torques (M_A) in lb-ft

Screw Size	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27
Hexkey Size (mm)	5	6	8	10	12	14	14	17	17	19	19
for TAS 3012 & 3015 (M_A)	13	30	61	107	170	262	358	509	686	—	—
for TAS 3015.1 (M_A)	—	—	36	51	80	124	—	272	365	—	—
for TAS 3015.1 Sizes 440 and larger use (M_A) →									406	—	—
for TAS 3013 (M_A)									686	885	1328

4 Extra Heavy Duty Locking Assemblies SERIES TAS 3013

Extra Heavy Duty Locking Devices are to be used in heavy duty applications where highest torque capacity is required. This device is not dimensionally interchangeable with any other locking device we offer.

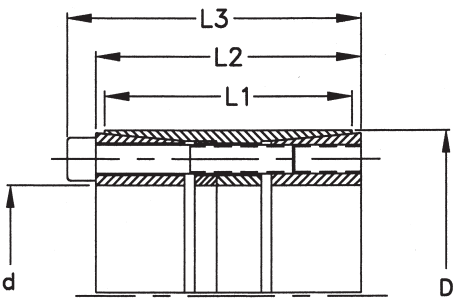


Fig. 15 SERIES TAS 3013

d = nominal locking assembly I.D.
= shaft O.D.
D = nominal locking assembly O.D.
= hub counterbore I.D.
L_1, L_2 = width dimensions, relaxed condition
L_3
M_t = maximum transmissible torque
p = contact pressure between locking assembly and shaft
p' = contact pressure between locking assembly and hub bore
M_A = required tightening torque per locking screw (tighten with torque wrench)

HOW TO ORDER: Specify SIZE and SERIES
e.g. 180 X 285 TAS 3013

D_N = min. hub O.D. for single unit installation based on hub material Y.P. as shown in table and hub width B=1.5 L_1 (c=0.8); for other hub materials calculate hub O.D. per step 3 of Selection Guide.

T = Allowable maching tolerance
for shaft: use d + 0/–T
for hub bore: use D – 0/+T

Example: for 180 TAS 3013
required shaft size: 7.087" + .000/–.0025"
required hub bore size: 11.220" –.000/+.0025"

NOTES:
P_{ax} = axial load (thrust capacity) = $\frac{M_t \times 24}{d}$ (lbs)

The values of M_t, P_{ax}, p' are based on lightly oiled installation (coefficient of friction μ = 0.12)

Surface Finish
Required surface finish for shaft O.D. and hub bore: **RMS 125 micro inches or better**

TAS 3013 Size mm	Locking Assembly Dimensions d	D	T inches	L_1	L_2	L_3	max. M_t lb-ft	Contact pressure p psi	p' psi	Locking screws DIN 912-12.9 Qty.	Size	M_A lb-ft	Wt. lbs	Hub O.D. (D_N) based on Yield Points shown 36 KSI	45 KSI	62KSI
180 x 285	7.087	11.220	0.0025	8.071	9.016	9.882	164 476	31 610	18 705	14	M22x180	686	136	17.46	15.85	14.35
200 x 305	7.874	12.008	0.003	8.071	9.016	9.882	209 467	32 480	19 865	16	M22x180	686	147	19.29	17.36	15.61
220 x 325	8.661	12.795	0.003	8.071	9.016	9.882	230 119	29 580	18 705	16	M22x180	686	160	19.92	18.07	16.37
240 x 355	9.449	13.976	0.003	8.189	9.370	10.315	289 861	31 320	18 125	16	M24x180	885	193	21.42	19.52	17.74
260 x 375	10.236	14.764	0.0035	8.189	9.370	10.315	354 029	32 480	19 285	18	M24x180	885	207	23.34	21.10	19.04
280 x 405	11.024	15.945	0.0035	8.189	9.370	10.315	423 359	33 495	19 865	20	M24x180	885	242	25.61	23.06	20.72
300 x 425	11.811	16.732	0.0035	8.189	9.370	10.315	453 599	31 320	18 850	20	M24x180	885	257	26.15	23.71	21.45
320 x 455	12.598	17.913	0.0035	9.843	11.024	12.087	571 609	29 145	17 400	18	M27x220	1328	356	26.93	24.66	22.51
340 x 475	13.386	18.701	0.0035	9.843	11.024	12.087	674 867	30 450	18 560	20	M27x220	1328	374	29.00	26.34	23.87
360 x 495	14.173	19.488	0.0035	9.843	11.024	12.087	781 814	31 755	19 575	22	M27x220	1328	391	31.06	28.02	25.23
380 x 515	14.961	20.276	0.0035	9.843	11.024	12.087	826 067	30 015	18 850	22	M27x220	1328	411	31.68	28.73	25.99
400 x 535	15.748	21.063	0.0035	9.843	11.024	12.087	870 321	28 565	18 125	22	M27x220	1328	429	32.28	29.41	26.73
420 x 555	16.535	21.850	0.0035	9.843	11.024	12.087	995 706	29 725	18 995	24	M27x220	1328	446	34.28	31.05	28.06
440 x 575	17.323	22.638	0.0035	9.843	11.024	12.087	1047 335	28 275	18 415	24	M27x220	1328	464	34.96	31.80	28.84
460 x 595	18.110	23.425	0.0035	9.843	11.024	12.087	1097 489	27 115	17 835	24	M27x220	1328	484	35.63	32.53	29.61
480 x 615	18.898	24.213	0.0035	9.843	11.024	12.087	1336 459	30 305	20 010	28	M27x220	1328	501	39.05	35.12	31.53
500 x 635	19.685	25.000	0.004	9.843	11.024	12.087	1392 513	29 000	19 430	28	M27x220	1328	519	39.68	35.84	32.30
520 x 655	20.472	25.787	0.004	9.843	11.024	12.087	1445 618	27 985	18 850	28	M27x220	1328	539	40.29	36.54	33.05
540 x 675	21.260	26.575	0.004	9.843	11.024	12.087	1607 881	28 855	19 575	30	M27x220	1328	554	42.35	38.21	34.40
560 x 695	22.047	27.362	0.005	9.843	11.024	12.087	1666 886	27 840	18 850	30	M27x220	1328	574	42.76	38.77	35.07
600 x 735	23.622	28.937	0.005	9.843	11.024	12.087	1902 905	27 695	18 995	32	M27x220	1328	625	45.39	41.12	37.16

Installation is the same as the 3012 series. Refer to page 13. Use screw tightening torques shown in table above.

Identical in function to the RINGFEDER 7012, this device offers two stainless steel versions:
S1 in 316 Stainless for lower torque capacities but better corrosion resistance
S2 in 422 Stainless for torque capacities similar to the RINGFEDER 7012

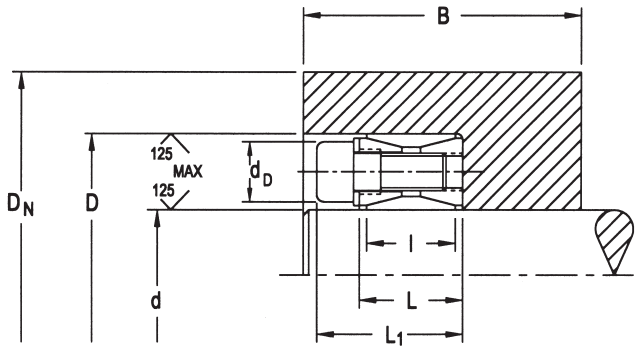


Fig. 16 SERIES TAS 3020 S1/S2

l, L, L_1 = width dimensions, relaxed condition
M_t = maximum calculated transmissible torque
p, p' = contact pressure on shaft / on hub
M_a = tightening torque using torque wrench
D_N = minimum hub O.D. to be calculated
T = allowable machining tolerance
for shaft use: d + O / -T
for hub use: D + T / -O

NOTE: For additional technical information consult our Catalog W-300

							Series S1 AISI 316			Series S2 AISI422			LOCKING SCREW		Tightening Torque M_A (ft-lbs)		
3020 SIZE	d	D	T	l	L	L1	max.M_t lb-ft	p psi	p' psi	max.M_t lb-ft	p psi	p' psi	Qty	Size	S1	S2	Wt. lbs
20 x 47	0.787	1.850	0.0020	0.669	0.787	1.083	80	17917	7679	199	29862	12798	8	M 6x18	5	12.5	0.5
22 x 47	0.866	1.850	0.0020	0.669	0.787	1.083	88	16637	7821	221	27729	12798	8	M 6x18	5	12.5	0.5
24 x 50	0.945	1.969	0.0020	0.669	0.787	1.083	107	16637	7963	266	27729	13509	9	M 6x18	5	12.5	0.6
25 x 50	0.984	1.969	0.0020	0.669	0.787	1.083	112	16211	8105	280	27018	13509	9	M 6x18	5	12.5	0.6
28 x 55	1.102	2.165	0.0025	0.669	0.787	1.083	139	15784	8105	347	26307	13509	9	M 6x18	5	12.5	0.7
30 x 55	1.181	2.165	0.0025	0.669	0.787	1.083	147	14931	8105	369	24885	13509	9	M 6x18	5	12.5	0.6
32 x 60	1.260	2.362	0.0025	0.669	0.787	1.083	186	16353	8674	465	27729	14931	12	M 6x18	5	12.5	0.7
35 x 60	1.378	2.362	0.0025	0.669	0.787	1.083	206	15358	8959	516	25596	14931	12	M 6x18	5	12.5	0.7
38 x 65	1.496	2.559	0.0025	0.669	0.787	1.083	257	16069	9385	642	27018	15642	15	M 6x18	5	12.5	0.7
40 x 65	1.575	2.559	0.0025	0.669	0.787	1.083	273	15358	9527	679	25596	15642	15	M 6x18	5	12.5	0.7
42 x 75	1.654	2.953	0.0025	0.787	0.945	1.319	442	19339	10807	1106	31995	17775	12	M 8x22	13	30.0	1.3
45 x 75	1.772	2.953	0.0025	0.787	0.945	1.319	476	17917	10807	1187	29862	17775	12	M 8x22	13	30.0	1.3
48 x 80	1.890	3.150	0.0025	0.787	0.945	1.319	501	16780	10096	1254	28156	16353	12	M 8x22	13	30.0	1.3
50 x 80	1.969	3.150	0.0025	0.787	0.945	1.319	516	16211	10096	1305	27018	16353	12	M 8x22	13	30.0	1.3
55 x 85	2.165	3.346	0.0030	0.787	0.945	1.319	671	17064	11092	1674	28440	18486	14	M 8x22	13	30.0	1.4
60 x 90	2.362	3.543	0.0030	0.787	0.945	1.319	730	15358	10238	1822	25596	17064	14	M 8x22	13	30.0	1.5
65 x 95	2.559	3.740	0.0030	0.787	0.945	1.319	822	16211	11092	2242	27018	18486	16	M 8x22	13	30.0	1.6
70 x 110	2.756	4.331	0.0030	0.945	1.102	1.555	1357	17917	11376	3393	29862	18486	14	M 10x25	26	52.0	2.8
75 x 115	2.953	4.528	0.0030	0.945	1.102	1.555	1446	16637	10807	3614	27729	17775	14	M 10x25	26	52.0	2.9
80 x 120	3.150	4.724	0.0030	0.945	1.102	1.555	1534	16780	11234	3855	25596	17064	14	M 10x25	26	52.0	3.1
85 x 125	3.346	4.921	0.0035	0.945	1.102	1.555	1859	16637	11376	4647	27729	18486	16	M 10x25	26	52.0	3.3
90 x 130	3.543	5.118	0.0035	0.945	1.102	1.555	1947	15358	10665	4868	25596	17775	16	M 10x25	26	52.0	3.4
95 x 135	3.740	5.315	0.0035	0.945	1.102	1.555	2331	16637	11660	5827	27729	19197	18	M 10x25	26	52.0	3.6

Inch sizes available upon request.

Installation is identical to the RINGFEDER 7012 (see catalog W300, page 9) with the exception to the screw tightening torque:
for S1 version, torque screws to maximum value shown in table column S1 above
for S2 version, torque screws to maximum value shown in table column S2 above

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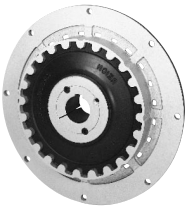
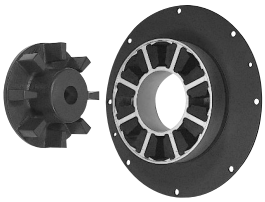
SHRINK DISCS®
(External Locking Devices)



RING-flex®
Double Flexing Couplings with Ringfeder® Shrink Discs®

Assure a totally backlash-free connection with precise synchronization capability. Additional features: Clearance fits for hub/shaft connection allow easy assembly and free axial movement compensation during installation which eliminates unwanted pre-loading or pre-stressing of the flexible elements.



ARCUSAFLEX® Flywheel Couplings

Highly flexible, backlash-free, vulcanized rubber disc couplings designed to couple the flywheel of an internal combustion engine to the shaft of the driven machine. Rubber disc element accepts relatively high angular, axial and parallel misalignments. Flange dimensions according to SAE J.620 standards.

Multi Mont OCTA Flywheel Couplings

Torsionally flexible, economical flange couplings for connecting the flywheel of a combustion engine to the input shaft of a driven machine. Rubber elements dampen vibrations and accommodate misalignments.

In accordance with our established policy to constantly improve our products, the specifications contained herein are subject to change without notice.

Since our Engineers cannot be aware of all applications and cannot control all the factors that may affect the function of our products, our warranty applies to our products only.

TECHNICAL ASSISTANCE

Call us Toll Free at 1-800-638-1830

Please let us know what your specific requirements are and we shall be very happy to work out detailed recommendations without any obligation. Just send a sketch with your requirements and specifications.

Call or write for more information
Visit our website: **www.mdmetric.com**

RINGFEDER Products are available from MARYLAND METRICS

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