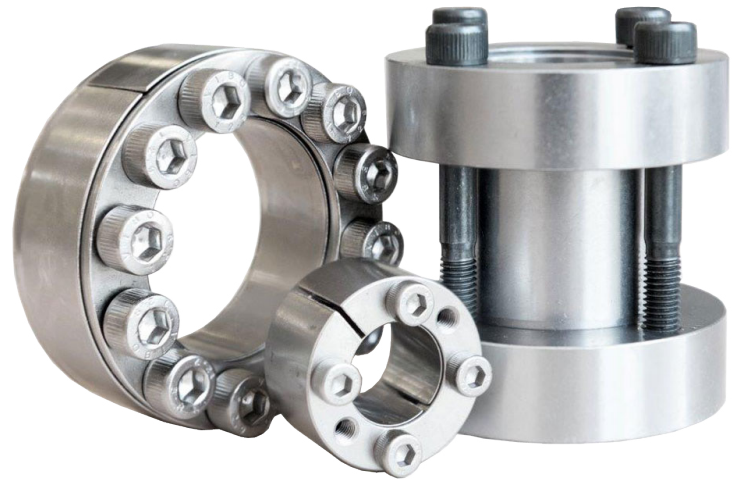


SHAFT LOCKING ASSEMBLY

The advantages of Conex keyless shaft to hub connection

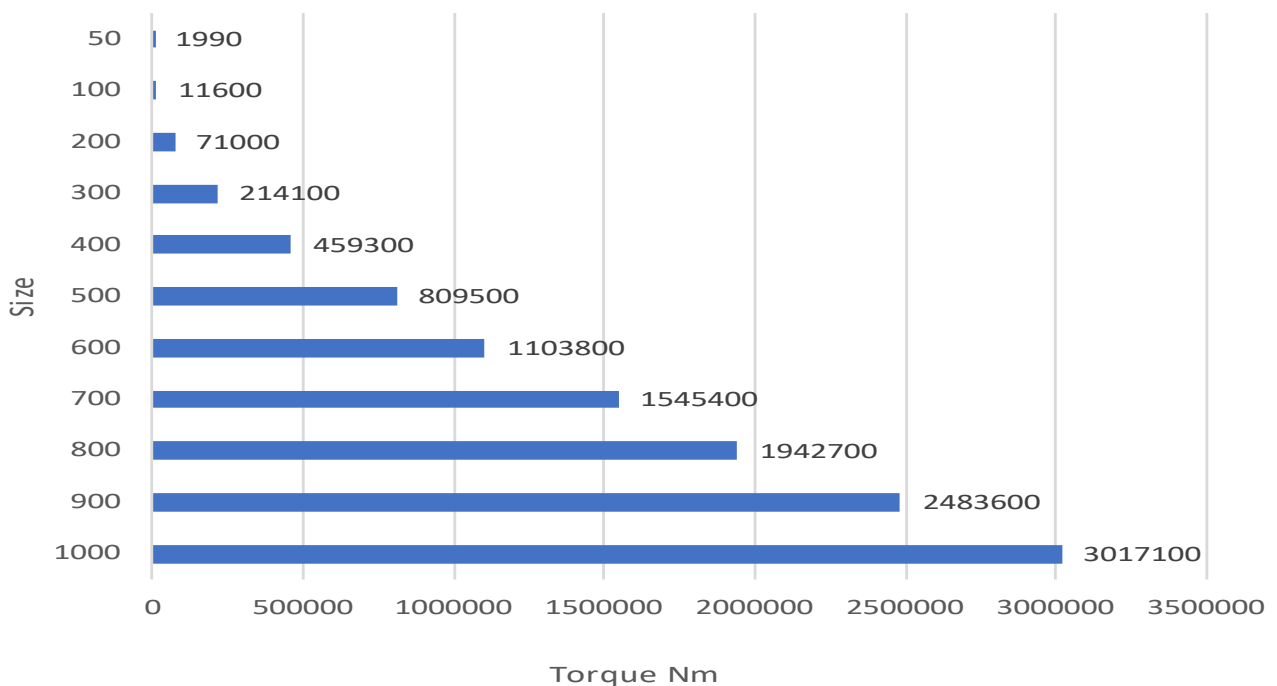
Traditional methods of shaft-to-hub connection are not satisfactory in many applications, mostly when frequent start-stopping-reversing are involved. Over the time the keyway engagement became less accurate due to mechanical wear. Conex bridge the clearance between the shaft and the hub and distributes the power transmission over the entire surface while with a key connection the transmission is concentrated on a limited area only. Conex is a zero backlash connection.

This allows savings in materials because the shaft diameters can be done smaller, and make Conex ideal for heavy transmissions, with overloads or continuous reversing.

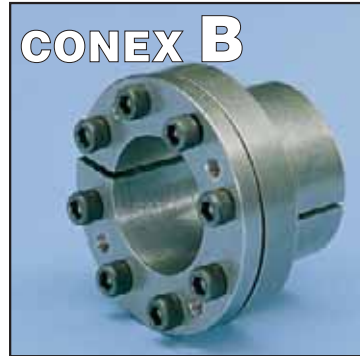


Conex reduces the machining costs, eliminates all the operations for axial fixing of the hub and to machine the keyway seats. This cost benefit can increase dramatically for small production batches.

Maximum Transmittable Torque



Shaft Locking Assembly



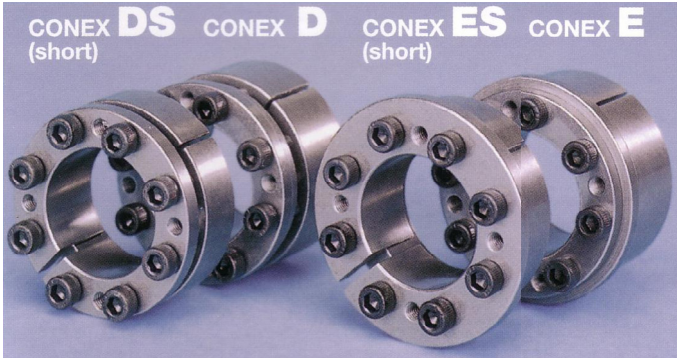
CONEX A				
d mm	D mm	B mm	L mm	Torques Nm
18	47	20	26	250
19	47	20	26	260
20	47	20	26	280
22	47	20	26	310
24	50	20	26	330
25	50	20	26	350
28	55	20	26	580
30	55	20	26	630
32	60	20	26	670
35	60	20	26	730
38	65	20	26	990
40	65	20	26	1040
42	75	24	32	1600
45	75	24	32	1700
48	80	24	32	1800
50	80	24	32	1900
55	85	24	32	2600
60	90	24	32	2850
65	95	24	32	3100
70	110	28	38	5350
75	115	28	38	5730
80	120	28	38	6100
85	125	28	38	6500
90	130	28	38	6900
95	135	28	38	8700
100	145	30	42	11200
110	155	30	42	12300
120	165	30	42	14300
130	180	38	50	19400
140	190	38	50	23000
150	200	38	50	26900
160	210	38	50	31000
170	225	44	58	36300
180	235	44	58	42000
190	250	52	66	51800
200	260	52	66	58300
220	285	56	72	74100
240	305	56	72	93200
260	325	56	72	114500
280	355	66	84	141000
300	375	66	84	170000

CONEX SD					
d mm	d _s mm	D mm	L mm	B mm	Torques Nm
14	10-11-12	38	15	11	28-38-50
16	12-13-14	41	19	15	50-70-90
20	15-16-18	50	23	19	130-150-200
24	19-20-21	50	23	19	180-210-250
30	24-25-26	60	25	21	310-340-380
36	28-30-31	72	27	23	460-590-630
44	32-35-36	80	29	25	630-780-860
50	38-40-42	90	31	27	940-1100-1300
55	42-45-48	100	34	30	1200-1500-1900
62	48-50-52	110	34	30	1800-2200-2400
68	50-55-60	115	34	30	2000-2500-3100
75	55-60-65	138	38	33	2500-3200-3900
80	60-65-70	145	38	32	3200-3900-4600
90	65-70-75	155	45	39	4700-6000-7200
100	70-75-80	170	49,5	44	6900-7500-9000
110	75-80-85	185	57	50	7200-9000-11000
115	80-85 90	188	57	50	8500-10000 12000
125	85-90 95	215	61	54	11000-13000 15000
140	95-100 105	230	68	60	15000-17000 20000
155	105-110 115	265	72	64	20000-23000 26000
165	115-120 125	290	81	71	36000-39000 44000
175	125-130 135	300	81	71	40000-44000 49000
185	135-140 145	330	96	86	55000-60000 65000
195	140-150 155	350	96	86	66000-76000 82000
200	150-155 160	350	96	86	73700-79800 85800
220	160-165 170	370	114	104	95000-102000 110000
240	170-180 190	405	121	108	120000-140000 160000

CONEX B						
d mm	D mm	D ₁ mm	A mm	B mm	L mm	Torques Nm
6	14	25	10	21	24	11
8	15	27	12	25	29	26
10	16	29	14	26	30	42
12	18	32	14	26	30	55
14	23	38	14	26	30	64
15	24	44	16	36	42	145
16	24	44	16	36	42	155
18	26	47	18	38	44	200
19	27	48	18	38	44	210
20	28	49	18	38	44	220
22	32	54	25	45	51	250
24	34	56	25	45	51	270
25	34	56	25	45	51	280
28	39	61	25	45	51	500
30	41	62	25	45	51	520
32	43	65	30	50	56	730
35	47	69	30	50	56	800
38	50	72	30	50	56	900
40	53	75	30	50	56	900
42	55	78	40	65	73	1800
45	59	85	40	65	73	1900
48	62	87	45	70	78	2000
50	65	92	45	70	78	2600
55	71	98	50	75	83	2900
60	77	104	50	75	83	3100
65	84	111	50	75	83	3400
70	90	119	60	91	101	5800
75	95	126	60	91	101	6200
80	100	131	65	96	106	7800
85	106	137	65	96	106	8500
90	112	143	65	96	106	11200
100	125	162	65	102	114	14600

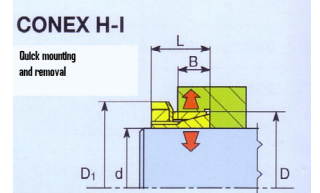
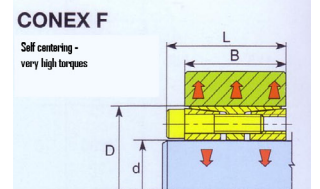
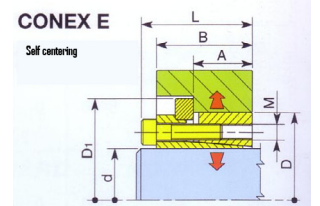
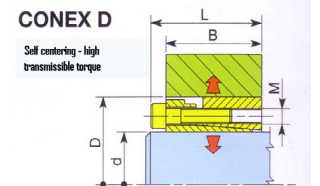
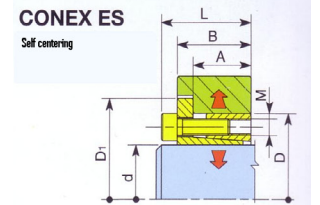
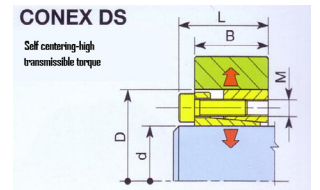
CONEX C				
d mm	D mm	L mm	Torques Nm	F _A kN
8	11	4,5	5	6
10	13	4,5	10	16
12	15	4,5	11	16
14	18	6,3	22	26
15	19	6,3	25	27
16	20	6,3	26	27
18	22	6,3	33	33
19	24	6,3	40	33
20	25	6,3	44	33
22	26	6,3	50	34
24	28	6,3	68	34
25	30	6,3	75	37
28	32	6,3	90	40
30	35	6,3	100	40
32	36	6,3	120	40
35	40	7	160	50
38	44	7	190	60
40	45	8	230	70
42	48	8	260	70
45	52	10	390	110
48	55	10	430	110
50	57	10	470	110
55	62	10	580	120
60	68	12	840	160
65	73	12	1000	160
70	79	14	1300	200
75	84	14	1500	220
80	91	17	2100	300
90	101	17	2700	320
100	114	21	4200	440
110	124	21	4300	450
120	134	21	5100	460
130	148	28	8100	650

Shaft Locking Assembly



CONEX DS CONEX ES						CONEX DS	CONEX ES
d mm	D mm	D ₁ mm	A mm	B mm	L mm	Torques Nm	Torques Nm
20	47	53	22	28	34	410	320
22	47	53	22	28	34	450	350
24	50	56	22	28	34	490	390
25	50	56	22	28	34	510	400
28	55	62	22	28	34	570	450
30	55	62	22	28	34	610	490
32	60	67	22	28	34	880	700
35	60	67	22	28	34	960	760
38	65	72	22	28	34	1000	820
40	65	72	22	28	34	1100	870
42	75	84	25	33	41	2200	1700
45	75	84	25	33	41	2400	1800
48	80	89	24	33,5	41	2500	1900
50	80	89	24	33,5	41	2600	2000
55	85	91	24	33,5	41	2900	2200
60	90	99	24	33,5	41	3100	2400
65	95	104	24	33,5	41	3400	2600
70	110	119	29	40	50	6000	4600
75	115	124	29	40	50	6400	5000
80	120	129	29	40	50	6800	5300
85	125	134	29	40	50	9000	7000
90	130	139	29	40	50	9600	7400
95	135	144	29	40	50	10200	7800
100	145	154	32	44	56	12000	9700

CONEX D CONEX E						CONEX D	CONEX E
d mm	D mm	D ₁ mm	A mm	B mm	L mm	Torques Nm	Torques Nm
20	47	53	31	42	48	530	320
22	47	53	31	42	48	580	360
24	50	56	31	42	48	630	390
25	50	56	31	42	48	660	400
28	55	61	31	42	48	740	450
30	55	61	31	42	48	790	490
32	60	66	31	42	48	1200	690
35	60	66	31	42	48	1300	750
38	65	71	31	42	48	1300	820
40	65	71	31	42	48	1400	860
42	75	81	36	50	58	2000	1300
45	75	81	36	50	58	2200	1400
48	80	86	36	50	58	3200	2000
50	80	86	36	50	58	3300	2000
55	85	91	36	50	58	3600	2200
60	90	96	36	50	58	3900	2400
65	95	101	36	50	58	4300	2600
70	110	119	46	60	70	7500	4600
75	115	124	46	60	70	8000	5000
80	120	129	46	60	70	8500	5200
85	125	134	46	60	70	11400	7000
90	130	139	46	60	70	12000	7400
100	145	155	52	68	80	15000	9800



CONEX H					
d mm	D mm	D ₁ mm	B mm	L mm	Torques Nm
14	25	32	6,5	16,5	37
15	25	32	6,5	16,5	40
16	25	32	6,5	16,5	42
18	30	38	7	17	65
19	30	38	7	17	60
20	30	38	7	17	70
24	35	45	7	17	100
25	35	45	7	17	110
28	40	52	8	20	140
30	40	52	8	20	170
32	45	58	9	22	210
35	45	58	9	22	230
40	50	65	9	23	330
45	55	70	10	25,5	440
50	60	75	10	25,5	530
60	70	85	12	29,5	830

CONEX I					
d mm	D mm	D ₁ mm	B mm	L mm	Torques Nm
14	25	32	17	29	90
15	25	32	17	29	100
16	25	32	17	29	80
18	30	38	18	31	200
19	30	38	18	31	170
20	30	38	18	31	130
24	35	45	22	35	270
25	35	45	22	35	200
28	40	52	22	35	460
30	40	52	22	35	300
32	45	58	28	42	420
35	45	58	28	42	460
40	50	65	28	44	640
45	55	70	28	45	760
50	60	75	28	46	930
60	70	85	28	52	1500

CONEX F					
d mm	D mm	B mm	L mm	Torques Nm	
25	50	45	51	700	
30	55	45	51	1200	
35	60	45	51	1400	
40	65	45	51	2000	
45	75	45	51	3200	
50	80	64	72	3600	
55	85	64	72	4000	
60	90	64	72	5400	
65	95	64	72	5800	
70	110	64	72	10300	
75	115	78	88	11000	
80	120	78	88	14000	
85	125	78	88	15000	
90	130	78	88	16000	
95	135	78	88	17000	
100	145	100	112	26000	
110	155	100	112	29000	
120	165	100	112	36400	
130	180	116	130	45400	
140	190	116	130	57000	
150	200	116	130	70000	
160	210	116	130	75000	
170	225	146	162	95000	
180	235	146	162	115000	

Diametro esterno minimo del mozzo D_h		<table border="1"> <thead> <tr> <th>P N/mm²</th> <th>f</th> <th>C G25 $\sigma = 180$ N/mm²</th> <th>C St 37 $\sigma = 220$ N/mm²</th> <th>C C 40 $\sigma = 300$ N/mm²</th> </tr> </thead> <tbody> <tr> <td>60</td> <td>0,6 0,8 1</td> <td>1,25 1,30 1,42</td> <td>1,18 1,23 1,32</td> <td>1,12 1,18 1,22</td> </tr> <tr> <td>80</td> <td>0,6 0,8 1</td> <td>1,31 1,45 1,61</td> <td>1,25 1,35 1,46</td> <td>1,18 1,24 1,31</td> </tr> <tr> <td>100</td> <td>0,6 0,8 1</td> <td>1,41 1,61 1,86</td> <td>1,32 1,46 1,63</td> <td>1,22 1,31 1,41</td> </tr> <tr> <td>130</td> <td>0,6 0,8 1</td> <td>1,59 1,93 2,49</td> <td>1,45 1,67 1,97</td> <td>1,30 1,44 1,59</td> </tr> <tr> <td>160</td> <td>0,6 0,8 1</td> <td>1,81 2,43 4,12</td> <td>1,60 1,94 2,52</td> <td>1,39 1,58 1,81</td> </tr> </tbody> </table>	P N/mm ²	f	C G25 $\sigma = 180$ N/mm ²	C St 37 $\sigma = 220$ N/mm ²	C C 40 $\sigma = 300$ N/mm ²	60	0,6 0,8 1	1,25 1,30 1,42	1,18 1,23 1,32	1,12 1,18 1,22	80	0,6 0,8 1	1,31 1,45 1,61	1,25 1,35 1,46	1,18 1,24 1,31	100	0,6 0,8 1	1,41 1,61 1,86	1,32 1,46 1,63	1,22 1,31 1,41	130	0,6 0,8 1	1,59 1,93 2,49	1,45 1,67 1,97	1,30 1,44 1,59	160	0,6 0,8 1	1,81 2,43 4,12	1,60 1,94 2,52	1,39 1,58 1,81	p PRESSIONE SUL MOZZO HUB SURFACE PRESSURE PRESSION SUR LE MOYEU
P N/mm ²	f		C G25 $\sigma = 180$ N/mm ²	C St 37 $\sigma = 220$ N/mm ²	C C 40 $\sigma = 300$ N/mm ²																												
60	0,6 0,8 1		1,25 1,30 1,42	1,18 1,23 1,32	1,12 1,18 1,22																												
80	0,6 0,8 1		1,31 1,45 1,61	1,25 1,35 1,46	1,18 1,24 1,31																												
100	0,6 0,8 1		1,41 1,61 1,86	1,32 1,46 1,63	1,22 1,31 1,41																												
130	0,6 0,8 1		1,59 1,93 2,49	1,45 1,67 1,97	1,30 1,44 1,59																												
160	0,6 0,8 1	1,81 2,43 4,12	1,60 1,94 2,52	1,39 1,58 1,81																													
Smallest hub outer diameter D_h		f COEFFICIENTE DI FORMA FORM FACTOR FACTEUR DE FORME																															
Diamètre extérieur minimum du moyeu D_h		σ LIMITE SNERVAMENTO DEL MOZZO HUB MATERIAL YIELD POINT LIMITE D'ÉLASTICITÉ DU MOYEU																															
		C $D_{h \min} = c \cdot D$																															

INSTALLATION

Clean and slightly oil all contact surfaces, including screw threads, screw heads, shaft and hub.

Do not use oils containing Molybdenum Disulphide.

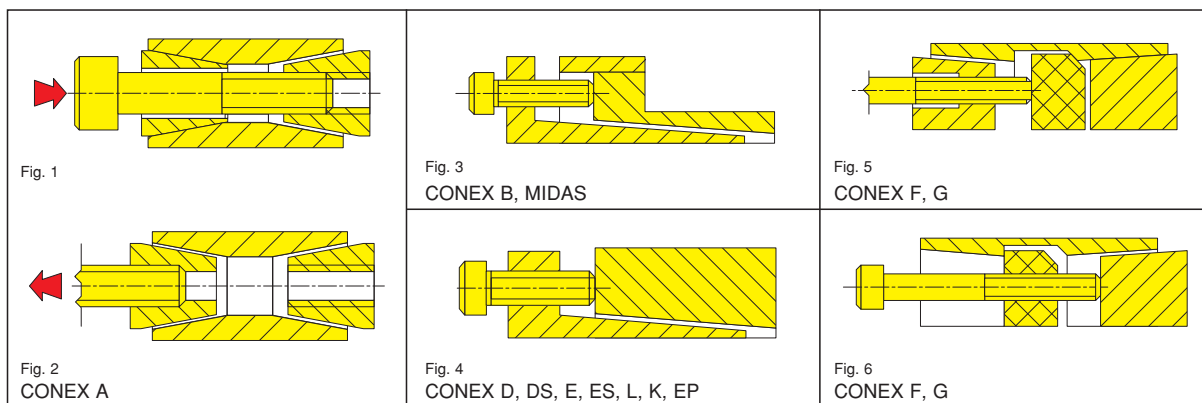
Tighten screws lightly and align hub. Tighten screws in diametrically opposite sequence in two or three stages up to the catalogue tightening torque T_s .

Re-check tightening torque by applying it to all the screws.

For CONEX A: the silver plated screws are to be fitted in the holes of the front thrust ring with the pull-out threads.

For all the others CONEX, the release threads of the front ring, used for removal, have to be

positioned opposite to undrilled spaces of the rear ring, and eventually used to release CONEX before the mounting.



REMOVAL

Loosen all screws by a few turns.

CONEX A. Normally it release itself because of the wide cone angle; if necessary lightly tap the screws to release the rear thrust ring (fig. 1). If the front thrust ring is locked, use screws of next size up, screwed in to the removal pull-out threads, located under the silver plated screws, and pull the front ring off (fig. 2). The removal threads have only 3 threads.

CONEX B, D, DS, E, ES, L, K, MIDAS, EP. Remove the screws and screw them into the release threads

of the front ring, pressing off the rear ring and releasing CONEX (fig. 3, 4). Remove the screws from the release threads only after CONEX has been taken out of the hub.

CONEX F, G

- Dismounting 1 (fig. 5): Remove the screws and screw them in the threaded bores in the front thrust ring and release it.
- Dismounting 2 (fig. 6): Screw the screws in the threaded bores in the central flange and release the rear thrust ring.