

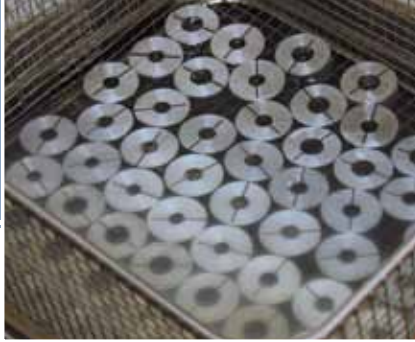
*Metal Bellows Couplings*

**ECOLOC**



US  
12|2010

**ECOLOC**



## **ECOLOC you can trust – others you can't be sure!**

Where the focus is on cost efficient solutions, RINGFEDER POWER TRANSMISSION can now provide the answer with the ECOLOC product line, offering an unbeatable price-performance ratio. Improved manufacturing processes ensure competitive pricing, making it possible to produce a quality low cost RINGFEDER POWER TRANSMISSION branded product which is suitable for most applications.



# **ECOLOC**

# Products

## Backlash-free Metal Bellows Coupling

Absolutely backlash-free · Near infinite life and maintenance-free  
Accurate transmission characteristics · Installation and removal friendly



04 **5075 ECOLOC**

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06 **5078 ECOLOC**

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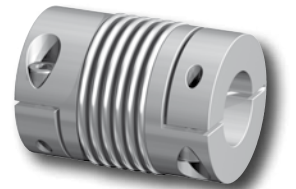


08 **5080 ECOLOC**

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10 **5085 ECOLOC**

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Backlash-free Metal Bellows Coupling

# 5075 ECOLOC

Short design · High torsional stiffness · Low moment of inertia

Moment of inertia and weight (mass) are calculated with reference to the largest bore size.

Inch Dimensions									
Size	L ±0.08	Ø A	Ø H	Ø D1	Ø D2	C	K	I	G
	inch	inch	inch	inch	inch	inch	inch	inch	
18	1.890	1.772	1.890	0.394-1.024	0.394-1.024	0.650	0.689	0.217	M5
30	2.283	2.165	2.205	0.394-1.181	0.394-1.181	0.827	0.787	0.295	M6
60	2.638	2.520	2.638	0.551-1.339	0.551-1.339	0.925	0.925	0.354	M8
150	3.071	3.150	3.268	0.669-1.654	0.669-1.654	1.083	1.102	0.394	M10
300	3.701	4.331	4.331	0.945-2.362	0.945-2.362	1.280	1.535	0.492	M12
500	3.937	4.685	4.843	1.260-2.756	1.260-2.756	1.413	1.791	0.551	M14

## Dimensions

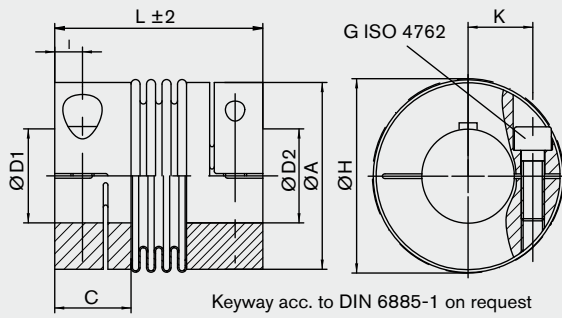
- Ø A = Outer diameter
- Ø D1 = Bore diameter
- Ø D2 = Bore diameter
- Ø H = Clearance diameter
- C = Guided length shaft bore
- G = Clamping screws
- I = Basic dimension
- K = Basic dimension
- L = Total length

## Ordering example: 5075 ECOLOC

Size Type	Bore-Ø D1	Bore-Ø D2	Further details
5075 ECOLOC 30	0.433	0.591	*



Bore range (mm/inch)																			
Size	10	11	12	1/2"	13	14	15	5/8"	16	17	18	19	3/4"	20	22	7/8"	23	24	25
18	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
30	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
60						•	•	•	•	•	•	•	•	•	•	•	•	•	•
150										•	•	•	•	•	•	•	•	•	•
300																		•	•
500																			



**Sectional view**

Technical Data											
Size	T <sub>KN</sub> ft-lbs	M <sub>A</sub> ft-lbs	C <sub>y</sub> dyn 10 <sup>3</sup> inch-lbs/rad	Cr lbs/inch	Ca lbs/inch	n <sub>max</sub> RPM	Δ Ka ± inch	Δ Kw degree	Δ Kr inch	Weight lbs	J 10 <sup>-3</sup> lbs inch <sup>2</sup>
18	13	4.4	70.8	1199	126	12700	0.016	1	0.004	0.29	136.7
30	22	8.9	309.8	4112	286	10200	0.016	1	0.004	0.52	376.0
60	44	22	663.9	6281	514	8600	0.016	1	0.004	0.79	820
150	111	63	1328	11421	857	6800	0.016	1	0.008	1.4	2290
300	221	89	4426	35976	1599	5900	0.016	1	0.008	3.1	8955
500	369	140	6019	50252	571	4900	0.020	1	0.008	3.5	13331

**Technical Data**

- T<sub>KN</sub> = Nominal torque
- C<sub>y</sub> dyn = Dynamic torsional stiffness
- Cr = Radial spring stiffness
- Ca = Axial spring stiffness
- ΔKr = Max. approved misalignment radial
- ΔKa = Max. approved misalignment axial
- ΔKw = Max. approved misalignment angular
- J = Moment of inertia
- M<sub>A</sub> = Tightening torque of screws
- n<sub>max</sub> = Max. rotational speed

**Characteristics**

- Metal bellows made of stainless steel, hubs made of aluminum
- The shaft tolerance should be within the fit tolerance "g6" or "h7"
- The contact surfaces have to be free from oil and grease
- Optional designs with keyways DIN 6885-1



Size	Bore range (mm/inch)																						
	1"	26	27	28	30	31	1 1/4"	32	34	1 3/8"	35	38	40	42	44	45	48	50	55	60	65	70	
18	●	●																					
30	●	●	●	●	●																		
60	●	●	●	●	●	●	●	●	●														
150	●	●	●	●	●	●	●	●	●	●	●	●	●	●									
300	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
500								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

# 5078 ECOLOC

Compact design · High misalignment compensation



Moment of inertia and weight (mass) are calculated with reference to the largest bore size.

Inch Dimensions									
Size	L ±0.08	Ø A	Ø H	Ø D1	Ø D2	C	K	I	G
	inch	inch	inch	inch	inch	inch	inch	inch	
18	2.244	1.772	1.890	0.394-1.024	0.394-1.024	0.650	0.689	0.217	M5
30	2.598	2.165	2.205	0.394-1.181	0.394-1.181	0.827	0.787	0.295	M6
60	3.071	2.520	2.638	0.551-1.339	0.551-1.339	0.925	0.925	0.354	M8
150	3.583	3.150	3.252	0.669-1.654	0.669-1.654	1.102	1.122	0.413	M10
300	4.134	4.331	4.331	0.945-2.362	0.945-2.362	1.283	1.535	0.492	M12
500	4.409	4.685	4.843	1.260-2.756	1.260-2.756	1.413	1.791	0.551	M14

## Dimensions

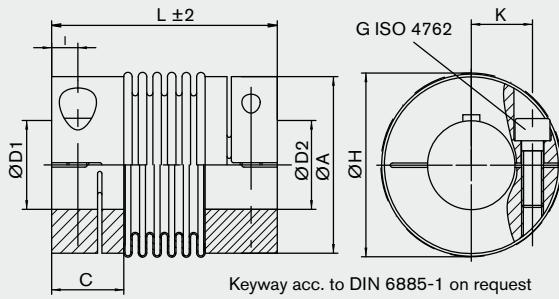
- Ø A = Outer diameter
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- Ø D2 = Bore diameter
- Ø H = Clearance diameter
- C = Guided length shaft bore
- G = Clamping screws
- I = Basic dimension
- K = Basic dimension
- L = Total length

## Ordering example: 5078 ECOLOC

Size Type	Bore-Ø D1	Bore-Ø D2	Further details
5078 ECOLOC 30	0.433	0.591	*

Bore range (mm/inch)

Size	10	11	12	1/2"	13	14	15	5/8"	16	17	18	19	3/4"	20	22	7/8"	23	24	25
18	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
30	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
60						•	•	•	•	•	•	•	•	•	•	•	•	•	•
150										•	•	•	•	•	•	•	•	•	•
300																		•	•
500																			



### Sectional view

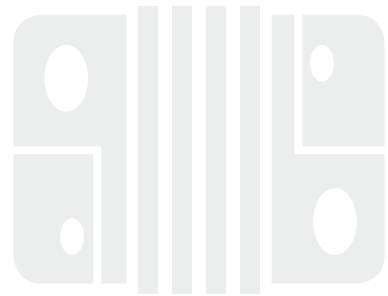
Technical Data											
Size	T <sub>KN</sub> ft-lbs	M <sub>A</sub> ft-lbs	C <sub>y</sub> dyn 10 <sup>3</sup> inch-lbs/rad	Cr lbs/inch	Ca lbs/inch	n <sub>max</sub> RPM	Δ Ka ± inch	Δ Kw degree	Δ Kr inch	Weight lbs	J 10 <sup>-3</sup> lbs inch <sup>2</sup>
18	13	4.4	71	1199	126	12700	0.016	1	0.004	0.29	136.7
30	22	8.9	310	4112	286	10200	0.016	1	0.004	0.52	376.0
60	44	22	664	6281	514	8600	0.016	1	0.004	0.79	820.3
150	111	63	1328	11421	857	6800	0.016	1	0.008	1.4	2290
300	221	89	4426	35976	1599	5900	0.016	1	0.008	3.1	8955
500	369	140	6019	50252	571	4900	0.020	1	0.008	3.5	13331

### Technical Data

- T<sub>KN</sub> = Nominal torque
- C<sub>y</sub> dyn = Dynamic torsional stiffness
- Cr = Radial spring stiffness
- Ca = Axial spring stiffness
- ΔKr = Max. approved misalignment radial
- ΔKa = Max. approved misalignment axial
- ΔKw = Max. approved misalignment angular
- J = Moment of inertia
- M<sub>A</sub> = Tightening torque of screws
- n<sub>max</sub> = Max. rotational speed

### Characteristics

- Metal bellows made of stainless steel, hubs made of aluminum
- The shaft tolerance should be within the fit tolerance "g6" or "h7"
- The contact surfaces have to be free from oil and grease
- Optional designs with keyways DIN 6885-1



### Bore range (mm/inch)

Size	1"	26	27	28	30	31	1 1/4"	32	34	1 3/8"	35	38	40	42	44	45	48	50	55	60	65	70
18	●	●																				
30	●	●	●	●	●																	
60	●	●	●	●	●	●	●	●	●													
150	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
300	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
500								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



Backlash-free Metal Bellows Coupling

# 5080 ECOLOC



Compact design · High torsional stiffness

Moment of inertia and weight (mass) are calculated with reference to the largest bore size.

Inch Dimensions									
Size	L ±0.08	Ø A	Ø H	Ø D1	Ø D2	C	K	I	G
	inch	inch	inch	inch	inch	inch	inch	inch	
0.9	0.906	0.630	0.709	0.118-0.315	0.118-0.315	0.276	0.197	0.079	M2
1.5	1.024	0.787	0.827	0.118-0.394	0.118-0.394	0.354	0.276	0.118	M2.5
2	1.260	0.984	1.063	0.118-0.472	0.118-0.472	0.433	0.354	0.157	M3
4.5	1.614	1.299	1.339	0.236-0.630	0.236-0.630	0.512	0.472	0.197	M4
10	1.850	1.575	1.654	0.236-0.630	0.236-0.630	0.551	0.630	0.197	M4
18	2.480	1.772	1.890	0.394-0.984	0.394-0.984	0.787	0.709	0.236	M5
30	2.559	2.165	2.205	0.394-0.984	0.394-0.984	0.984	0.787	0.315	M6
60	3.071	2.520	2.638	0.551-1.260	0.551-1.260	1.142	0.945	0.394	M8
150	3.543	3.150	3.307	0.787-1.575	0.787-1.575	1.299	1.102	0.472	M10
200	3.898	3.543	3.661	0.984-1.732	0.984-1.732	1.496	1.220	0.512	M12
300	4.094	4.331	4.331	1.260-1.967	1.260-1.967	1.496	1.535	0.512	M12
500	4.370	4.685	4.803	1.575-2.362	1.575-2.362	1.614	1.693	0.591	M14

### Dimensions

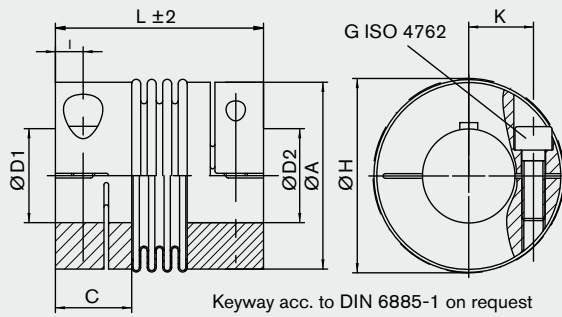
- Ø A = Outer diameter
- Ø D1 = Bore diameter
- Ø D2 = Bore diameter
- Ø H = Clearance diameter
- C = Guided length shaft bore
- G = Clamping screws
- I = Basic dimension
- K = Basic dimension
- L = Total length

### Ordering example: 5080 ECOLOC

Size Type	Bore-Ø D1	Bore-Ø D2	Further details
5080 ECOLOC 60	0.787	0.787	*

Size	Bore range (mm/inch)																								
	3	1/8"	4	3/16"	5	6	1/4"	7	5/16"	8	9	3/8"	10	11	12	1/2"	13	14	15	5/8"	16	17	18	19	3/4"
0.9	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1.5	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
4.5					•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10						•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
18													•	•	•	•	•	•	•	•	•	•	•	•	•
30													•	•	•	•	•	•	•	•	•	•	•	•	•
60																		•	•	•	•	•	•	•	•
150																									
200																									
300																									
500																									





Sectional view

Technical Data											
Size	T <sub>KN</sub>	M <sub>A</sub>	C <sub>y</sub> dyn	Cr	Ca	n <sub>max</sub>	Δ Ka	Δ Kw	Δ Kr	Weight	J
	ft-lbs	ft-lbs	10 <sup>3</sup> inch-lbs/rad	lbs/inch	lbs/inch	RPM	± inch	degree	inch	lbs	10 <sup>-3</sup> lbs inch <sup>2</sup>
0.9	0.7	0.2	0.2	1068	206	15000	0.01	2	0.004	0.02	1.03
1.5	1.1	0.6	0.6	794	69	15000	0.01	2	0.004	0.05	3.76
2	1.5	0.7	0.7	839	51	15000	0.01	2	0.004	0.08	8.55
4.5	3.3	2.2	2.2	2535	268	15000	0.01	2	0.004	0.16	34.2
10	7.4	2.2	2.2	2061	194	15000	0.02	2	0.006	0.26	78.6
18	13	4.4	4.4	1142	286	12700	0.02	1.5	0.008	0.35	171
30	22	8.9	8.9	4112	286	10200	0.02	1.5	0.004	0.57	410
60	44	22	22	6281	514	8600	0.02	1.5	0.004	1.0	991
150	111	63	63	11421	857	6800	0.02	1.5	0.008	2.2	2974
200	148	74	74	14276	857	6300	0.02	1.5	0.008	2.6	4922
300	221	89	89	35976	1599	5900	0.02	1.5	0.008	3.0	10254
500	369	140	140	50252	571	4900	0.02	1.5	0.008	3.8	16065

Technical Data

- T<sub>KN</sub> = Nominal torque
- C<sub>y</sub> dyn = Dynamic torsional stiffness
- Cr = Radial spring stiffness
- Ca = Axial spring stiffness
- ΔKr = Max. approved misalignment radial
- ΔKa = Max. approved misalignment axial
- ΔKw = Max. approved misalignment angular
- J = Moment of inertia
- M<sub>A</sub> = Tightening torque of screws
- n<sub>max</sub> = Max. rotational speed

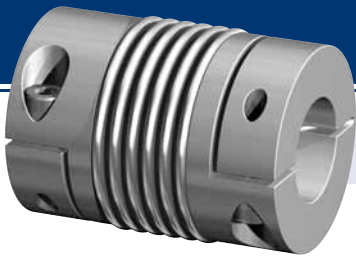
Characteristics

- Metal bellows made of stainless steel, hubs made of aluminum
- The shaft tolerance should be within the fit tolerance "g6" or "h7"
- The contact surfaces have to be free from oil and grease
- Optional designs with keyways DIN 6885-1

Size	Bore range (mm/inch)																									
	20	22	7/8"	23	24	25	1"	26	27	28	30	31	1 1/4"	32	34	1 3/8"	35	38	40	42	44	45	48	50	55	60
0.9																										
1.5																										
2																										
4.5																										
10																										
18	●	●	●	●	●	●																				
30	●	●	●	●	●	●																				
60	●	●	●	●	●	●	●	●	●	●	●	●	●	●												
150	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
200						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
300														●	●	●	●	●	●	●	●	●	●	●	●	●
500																			●	●	●	●	●	●	●	●

Backlash-free Metal Bellows Coupling

# 5085 ECOLOC



Rear installation space · High misalignment compensation

Moment of inertia and weight (mass) are calculated with reference to the largest bore size.

Inch Dimensions									
Size	L ±0.08	Ø A	Ø H	Ø D1	Ø D2	C	K	I	G
	inch	inch	inch	inch	inch	inch	inch	inch	
0.9	1.181	0.630	0.709	0.118-0.315	0.118-0.315	0.276	0.197	0.079	M2
1.5	1.181	0.787	0.827	0.118-0.394	0.118-0.394	0.354	0.276	0.118	M2.5
2	1.654	0.984	1.063	0.118-0.472	0.118-0.472	0.433	0.354	0.157	M3
4.5	1.969	1.299	1.339	0.236-0.630	0.236-0.630	0.512	0.472	0.197	M4
10	2.244	1.575	1.654	0.236-0.630	0.236-0.630	0.551	0.630	0.197	M4
18	2.795	1.772	1.850	0.394-0.984	0.394-0.984	0.787	0.709	0.236	M5
30	2.874	2.165	2.205	0.394-0.984	0.394-0.984	0.984	0.787	0.315	M6
60	3.504	2.520	2.638	0.551-1.260	0.551-1.260	1.142	0.945	0.394	M8
150	4.055	3.150	3.307	0.787-1.575	0.787-1.575	1.339	1.102	0.472	M10
200	4.449	3.543	3.661	0.984-1.732	0.984-1.732	1.496	1.220	0.512	M12
300	4.528	4.331	4.331	1.260-1.967	1.260-1.967	1.496	1.535	0.512	M12
500	4.803	4.685	4.803	1.575-2.362	1.575-2.362	1.614	1.693	0.591	M14

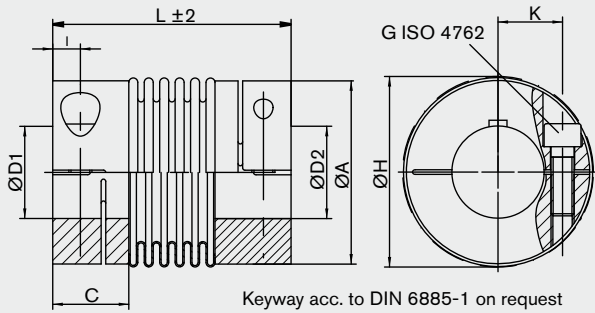
**Dimensions**

- Ø A = Outer diameter
- Ø D1 = Bore diameter
- Ø D2 = Bore diameter
- Ø H = Clearance diameter
- C = Guided length shaft bore
- G = Clamping screws
- I = Basic dimension
- K = Basic dimension
- L = Total length

**Ordering example:  
5085 ECOLOC**

Size Type	Bore-Ø D1	Bore-Ø D2	Further details
5085 ECOLOC 2	0.157	0.236	*

Size	Bore range (mm/inch)																								
	3	1/8"	4	3/16"	5	6	1/4"	7	5/16"	8	9	3/8"	10	11	12	1/2"	13	14	15	5/8"	16	17	18	19	3/4"
0.9	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1.5	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
4.5					•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10						•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
18													•	•	•	•	•	•	•	•	•	•	•	•	•
30													•	•	•	•	•	•	•	•	•	•	•	•	•
60																		•	•	•	•	•	•	•	•
150																									
200																									
300																									
500																									



Sectional view

Technical Data											
Size	T <sub>KN</sub>	M <sub>A</sub>	C <sub>y dyn</sub>	Cr	Ca	n <sub>max</sub>	ΔKa	ΔKw	ΔKr	Weight	J
	ft-lbs	ft-lbs	10 <sup>8</sup> inch-lbs/rad	lbs/inch	lbs/inch	RPM	± inch	degree	inch	lbs	10 <sup>-3</sup> lbs inch <sup>2</sup>
0.9	0.7	0.2	2.7	240	126	15000	0.016	2	0.008	0.02	1.03
1.5	1.1	0.6	6.2	463	131	15000	0.016	2	0.006	0.05	4.10
2	1.5	0.7	8.9	263	80	15000	0.020	2	0.010	0.09	9.57
4.5	3.3	2.2	35.4	617	166	15000	0.020	2	0.008	0.17	35.2
10	7.4	2.2	59.3	1102	263	15000	0.020	2	0.010	0.29	85.5
18	13	4.4	53.1	485	228	12700	0.020	1.5	0.008	0.37	205.1
30	22	8.9	221	1256	171	10200	0.020	1.5	0.008	0.60	444.4
60	44	22	443	1884	314	8600	0.020	1.5	0.008	1.04	1025
150	111	63	885	3426	485	6800	0.020	1.5	0.008	2.2	3076
200	148	74	1062	2570	485	6300	0.020	1.5	0.008	2.6	5127
300	221	89	2478	8566	857	5900	0.020	1.5	0.008	3.1	10938
500	369	140	2744	5710	485	4900	0.039	1.5	0.008	4.0	16749

Technical Data

- T<sub>KN</sub> = Nominal torque
- C<sub>y dyn</sub> = Dynamic torsional stiffness
- Cr = Radial spring stiffness
- Ca = Axial spring stiffness
- ΔKr = Max. approved misalignment radial
- ΔKa = Max. approved misalignment axial
- ΔKw = Max. approved misalignment angular
- J = Moment of inertia
- M<sub>A</sub> = Tightening torque of screws
- n<sub>max</sub> = Max. rotational speed

Characteristics

- Metal bellows made of stainless steel, hubs made of aluminum
- The shaft tolerance should be within the fit tolerance "g6" or "h7"
- The contact surfaces have to be free from oil and grease
- Optional designs with keyways DIN 6885-1

Size	Bore range (mm/inch)																										
	20	22	7/8"	23	24	25	1"	26	27	28	30	31	1 1/4"	32	34	1 3/8"	35	38	40	42	44	45	48	50	55	60	
0.9																											
1.5																											
2																											
4.5																											
10																											
18	●	●	●	●	●	●																					
30	●	●	●	●	●	●																					
60	●	●	●	●	●	●	●	●	●	●	●	●	●	●													
150	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
200						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
300														●	●	●	●	●	●	●	●	●	●	●	●	●	●
500																				●	●	●	●	●	●	●	●

# Metal Bellows Couplings



On this page please explain the planned application of an ECOLOC coupling and we will propose our solution. Please send this page to:

**RINGFEDER POWER TRANSMISSION USA CORPORATION**

**FAX: +1 201 664 6053**

### 1. Application

Planned use of the coupling (machine, machine group or plant):

### 2. Type of attachment (please tick/check)

- Clamping hub     
  Tapered hub     
  Tapered shaft end 1:10 (Fanuc Motor)     
  Hub with set screw  
 Flange mount     
  Outer taper     
  Acc. customer request

### 3. Dimensions

Length (Inches)     
  Bore D<sub>1</sub> (Inches)     
  Keyway  
 Outer diameter (inch)     
  Bore D<sub>2</sub> (Inches)     
  Keyway

### 4. Shaft Misalignment

Axial (Inches)     
  Radial (Inches)     
  Angular (degree)

### 5. Drive

Drive power **P** =  **HP**     
 Nominal torque of the drive **Mt<sub>nom</sub>** =  **ft-lbs**  
 Input speed **n** =  **rpm**     
 Peak torque of the drive **Mt<sub>max</sub>** =  **ft-lbs**

### 6. Mass moment of inertia

On the drive side      
 On the driven side

### 7. Environmental influences

Temperature in the area of the coupling **Temp** =  **Degree F**     
 Special materials (e.g. stainless steel)

Are there any impacts on the load side?  
  No     
  Slight     
  Medium     
  Heavy

Other, special influences

### 8. Estimated demand

### 9. Target Price

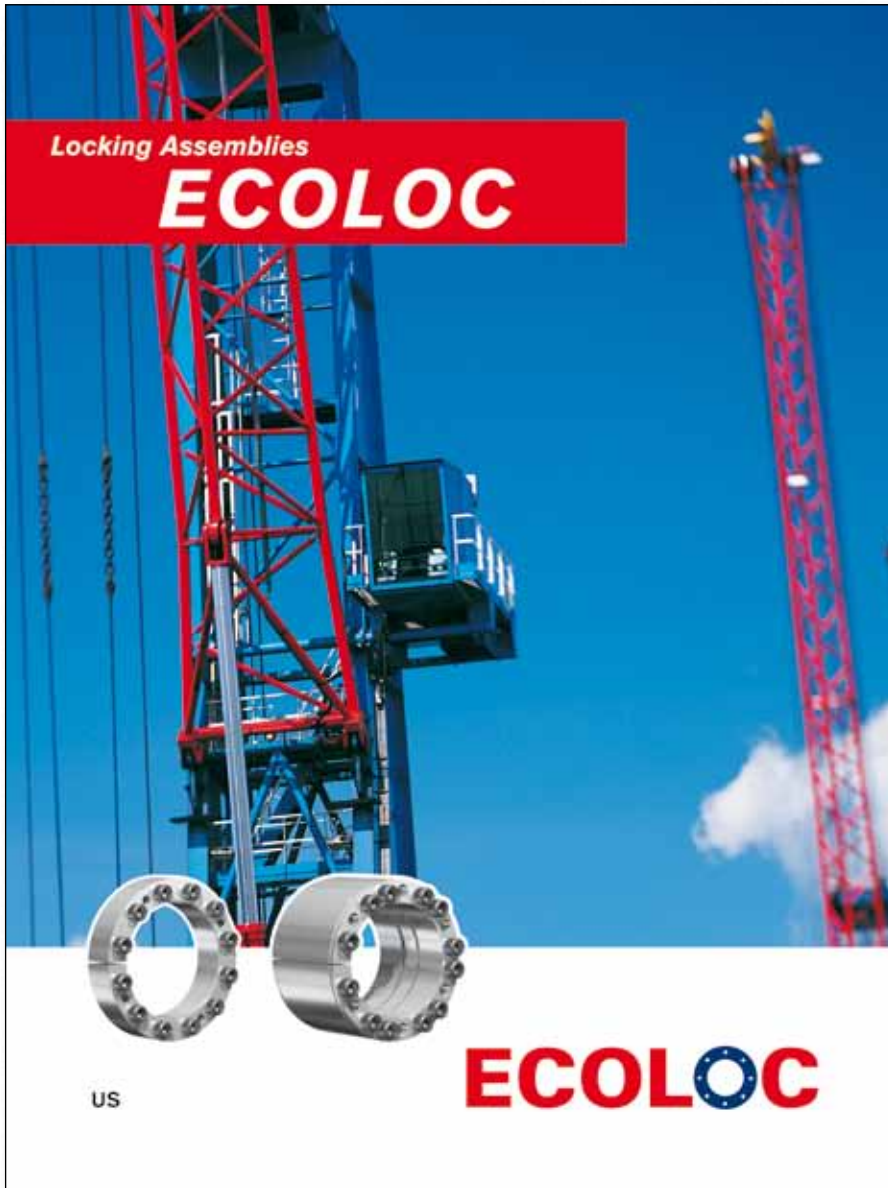
Type     
  Project     
  Repair     
  Number of items. annual requirement     
  **\$/Each**

### Please send your offer to:

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 Attention   
 Address   
 Phone      
 Fax   
 E-mail



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