

couplings

# Lamidisc® all steel coupling





# Lamidisc® coupling

JAURE has been engaged more than 35 years in the development and production of couplings that are used in a variety of applications ranging from light to heavy duty and low speed to high speed.

From our commitment for continuous improvement JAURE has developed a new disc coupling that provides a reliable transmission of mechanical power from driving to driven machines.

Disc couplings provide compensation for axial, angular and radial<sup>1</sup> misalignment. In general they have the following advantages:

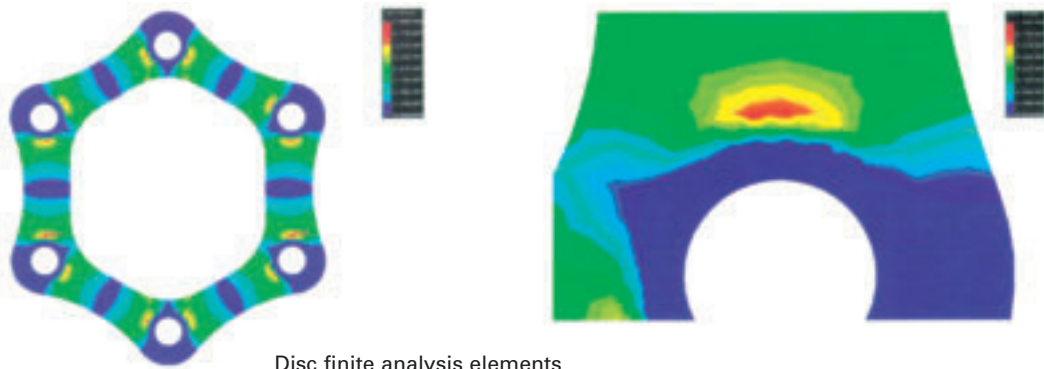
- No need for lubrication and maintenance.
- There is no need to disassemble the coupling to inspect. Additionally, the condition of the discs can be checked while the machine is running, using a strobe light.
- The machine misalignment can be assessed.
- Torsionally rigid without any backlash.
- No wearing parts, high resistance to harsh environmental conditions.
- Infinite life if properly aligned.

Nevertheless, disc pack couplings have only a few disadvantages:

- They tend to impose large axial forces on the thrust bearings if the machines are not properly spaced.
- The life of the discs is a function of the operating misalignment of the coupling.
- Piloting of the disc pack to the hubs is a key factor especially for high speed applications.

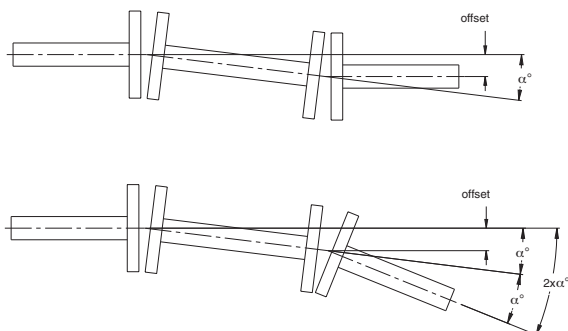
However, if misalignment is kept within specified limits, these couplings can last as long as the machines on which they are installed.

To improve on these disadvantages, various couplings manufacturers have modified the profile in many ways. JAURE has accomplished a superior disc profile by using the more recent Finite Element Analysis. As a result of our development work, the LAMIDISC® - 6 Bolts, can operate at 1.5° angular misalignment<sup>2</sup> continuously without losing any torque capability, or in other words: impose smaller forces on the bearings for a given misalignment and transmit more torque than other competitive couplings .



Disc finite analysis elements

The angular misalignment between shafts can vary from 0 to 2 times  $\alpha$  as per the figure shown:



$\alpha$  = represents the angular misalignment per disc-pack

- $\alpha$  (for Lamidisc®-6 under 202) = 1.5°
- $\alpha$  (for Lamidisc® above or equal 202) = 1°
- $\alpha$  (for Lamidisc®-8) = 0.5°
- $\alpha$  (for Lamidisc®-10) = 0.4°

- 1- For radial misalignment 2 disc packs must be used.
- 2- See graph in Page 5.

Technical modifications reserved

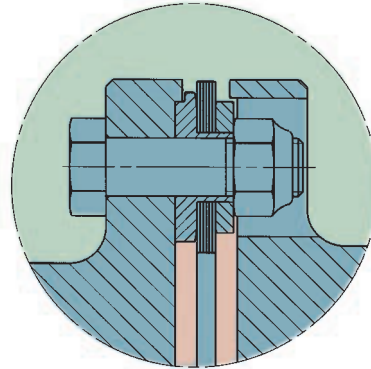


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JAURE uses fitted bolts to pilot their couplings but for high speed applications has also found a straight-forward method of piloting the disc packs to their hubs (see below). By machining rabbets in the washers that are used to unitize the disc pack, it ensures the repeatability of residual unbalance standards, as mandated by API 671.



Disc piloting (Jaure Patent)



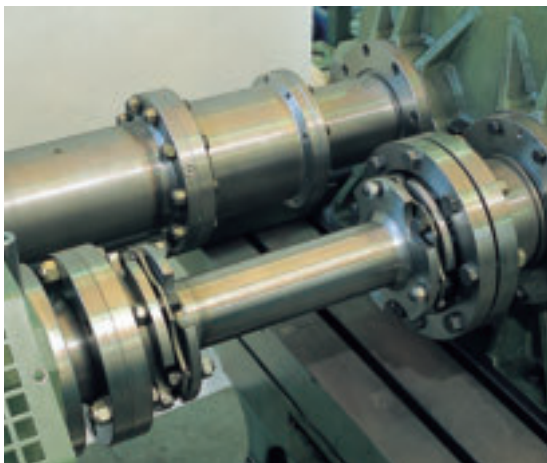
The discs of the LAMIDISC® couplings are made of high - grade stainless steels (AISI-301), ensuring not only a high strength and high endurance to fatigue, but also the resistance to most environmental conditions. Furthermore, discs can be covered with a low friction coefficient coating to improve the resistance to fretting wear.

LAMIDISC® couplings utilizes unitized disc packs with 6, 8 and 10 bolts. The higher the number of bolts, the larger the torque that can be transmitted but the smaller the misalignment the couplings can accomodate.

The Lamidisc® couplings can also be fitted with overload bushings which also serve as an anti-flail device.

The design and manufacture of LAMIDISC® couplings is integrated into a certified Quality System according to DIN ISO 9001 to fulfil the high quality demands on LAMIDISC® couplings.

The LAMIDISC® couplings are offered in a variety of configurations to fit most applications: in addition, our engineering department can customize a coupling to special requirements: close - coupled, drop-out, electrically insulated, vertical mounting, safety couplings, etc. A notable design is our Lamidisc® CX (reduced moment) coupling, that not only has the anti-flail device mandated by API 610, but offers a low weight and a short center of gravity to bearing distance.



Testing machine



Different disc profiles

Technical modifications reserved



## Selection procedure

1.- Select the coupling type.

2.- Select the driven machine service factor  $SFA$  from Table 1.

Select the driving machine service factor  $SFD$  from Table 2.

Care should be taken when the driving machine is other than a standard electric motor or turbine. Some engines will impose extra fluctuations on the drive system and allowance should be made accordingly. Please refer to Table 2.

The two service factors  $SFA$  and  $SFD$  must be added resulting in the combined service factor SF.

**Driven machine service factor  $SFA$  Table 1.**

Driven equipment	$SFA$
<b>BLOWERS , FANS</b>	
Centrifugal	1.0
Lobe / Vane / Turboblenders	1.25
Forced draught fans	1.5
Induc.draught with damper	1.5
Induc.draught without control	2.0
Cooling towers	2.0
<b>CHEMICAL INDUSTRY</b>	
Agitators (thin liquid)	1.0
Agitators (viscous liquid)	1.5
Centrifuges (light)	1.25
Centrifuges (heavy)	1.75
Mixers	1.75
<b>COMPRESSORS</b>	
Centrifugal	1.0
Lobe / Rotary	1.25
Turbocompressors	1.75
Reciprocating :	
1 to 3 cylinders	3.0
4 or more cylinders	1.75
<b>CONVEYOR, HOISTS , ELEVATORS</b>	
Conveyors :	
Screw / Apron / Belt / Chain	1.25
Bucket / Rotary / Lifts	1.5
Reciprocating	3.0
Hoists:	
Medium duty	2.5
Heavy duty	3.0
Elevators :	
Centrifugal and gravity disch.	1.25
<b>DREDGERS</b>	2.0
<b>FOOD INDUSTRY</b>	
Packaging machines and fillers.	1.25
Kneading machines.	1.5
Cane crushers	1.5
Cane cutters	1.5
Cane mills	2.0
Sugar beet cutters	1.5
Sugar beet washing machines	1.5
<b>GENERATORS</b>	
Even load	1.0
Frequency converters	1.5
Welding generators	2.0
<b>MACHINE TOOLS</b>	
Main Drives	2.0
Auxiliary and transverse drives	1.5
<b>METAL WORKING</b>	
Presses / Hammers.	2.0
Straighteners.	2.0
Bending machines / Shears.	1.5
Punching machines	2.0
<b>MARINE APLICATIONS</b>	2.5

<b>MINING AND STONES</b>	
Crushers	2.5
Mills	2.5
Mine ventilators	2.0
Vibrators	1.5
<b>OIL INDUSTRY</b>	
Pipeline pumps	1.5
Rotary drilling equipment	2.0
<b>PAPER INDUSTRY</b>	
Calenders	2.0
Couches	2.0
Drying cylinders	2.25
Pulpers	2.0
Pulp grinders	2.0
Suction rolls	2.0
Wet presses	2.0
Reels	2.0
Agitators	2.0
<b>PLASTIC INDUSTRY</b>	
Calenders , Crushers , Mixers.	1.75
<b>PUMPS</b>	
Centrifugal , General Feed or Boiler Feed	1.0
Centrifugal , Slurry	1.5
Centrifugal , Dredge	2.0
Rotary / Gear / Lobe or Vane	1.5
Reciprocating :	
1 cylinder	3.0
2 cylinder , single acting	2.0
2 cylinders , double acting	1.75
3 cylinders or more	1.5
<b>ROLLING MILLS</b>	
Billet shears	2.5
Chain transfers	1.5
Cold rolling mills	2.0
Continuous casting plants	2.5
Cooling beds	1.5
Cropping shears	2.0
Cross transfers	1.5
Descaling machines	2.0
Heavy and medium duty mills	3.0
Ingot and blooming mills	2.5
Ingot handling machinery	2.5
Ingot pushers	2.5
Manipulators	2.0
Plate shears	2.0
Roller adjustment drives	1.5
Roller straighteners	1.5
Roller tables (heavy)	2.5
Roller tables (light)	1.5
Sheet mills	2.5
Trimming shears	1.5
Tube and welding machines	2.0
Winding machines	1.5
Wire drawing benches	1.5

<b>RUBBER INDUSTRY</b>	
Extruder	1.75
Calender	2.0
Mixing mill / Refiner / Crusher	2.5
<b>STEEL PLANTS</b>	
Blast furnace blowers	1.5
Converters	2.5
Inclined blast furnace elev.	2.0
Crushers	2.0
<b>TEXTILE MACHINES</b>	
Printing and drying machines	1.5
Tanning vats	1.5
Calenders	1.5
Looms	1.5
<b>WATER AND WASTE INDUSTRY</b>	
Aerators , Screw pumps , Screens.	1.5
<b>WOOD WORKING MACHINERY</b>	
Trimmers , Barkers , Saws , Planes	2.0

The factors in Table 1 are for general guidance and can be modified by customers' specialist knowledge of their own equipment.

**Driving machine service factor  $SFD$  Table 2.**

Driving equipment	$SFD$
Multi-cylinder engine	
8 or more	0.5
6	1.0
4 or 5	1.5
Less than 4	Refer to Jaure
Variable speed motors	0.8
Electric motors <sup>1</sup> and turbines	0

<sup>1</sup> Except variable speed motors

Please consult our Technical Department if quick axial excitations are foreseeable either on the driving or driven side.



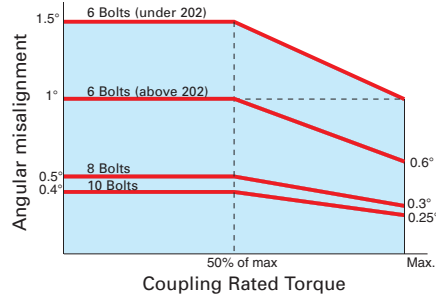
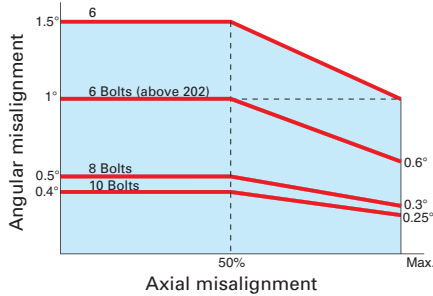
# Lamidisc® coupling

3.- Calculate the minimum torque rating as per,

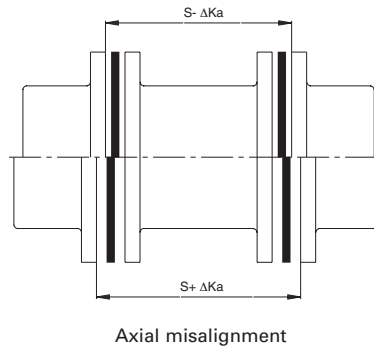
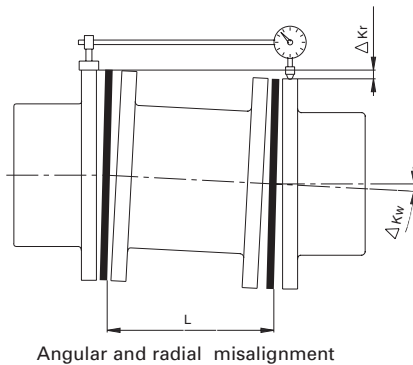
$$\text{Torque (Nm)} = \frac{9550 \cdot \text{Nominal power (kW)} \cdot \text{SF}}{n \text{ (rpm)}}$$

4.- The coupling to be selected must have an equal or greater rated torque capacity than the torque calculated in 3. Check the peak or starting torque capacity of the selected coupling. For systems which frequently utilize the peak torque capability of the power source, verify that the magnitude of the peak torque does not exceed twice the rated nominal torque of the coupling selected.

5.- Check if existing or predicted axial, angular and offset misalignments are within permissible values as shown in the catalog. The permissible axial misalignment and torque depend on the angular misalignment as per shown below. (Angular misalignment is given for a disc pack. Axial misalignment is measured for a complete coupling with 2 disc packs ).



The listed values represent the total permissible misalignment which may occur during operation. Consult the appropriate operating instructions for allowable shaft misalignments when installing the coupling.

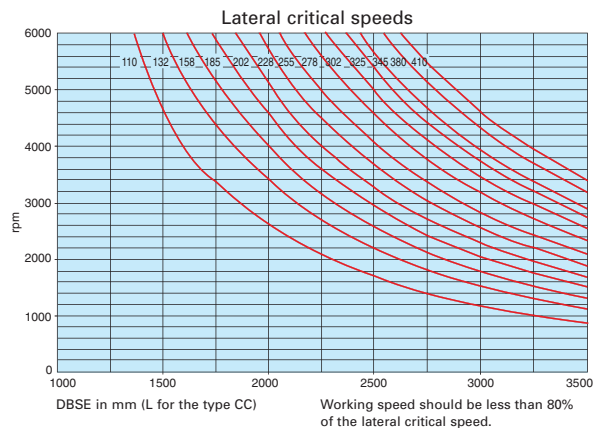
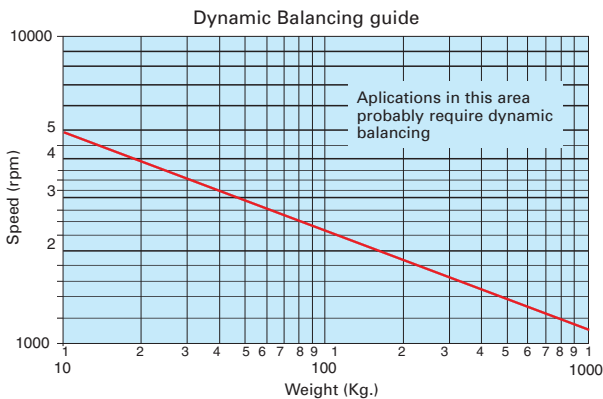


The permissible offset or radial misalignment is given by :

$$\Delta K_r = \tan \Delta K_w \cdot L, \text{ where } L \text{ is the distance between the discs.}$$

6.- Check the maximum hub bores, speed and if the shaft to hub assembly will transmit the torque. If the speed exceeds 3000 r.p.m. please contact our Technical Department.

7.- Check if balancing is needed following the dynamic balancing guide below. This graph relates the maximum speed unbalanced with the total weight of the coupling and it should be considered only as a guide. Tabulated speeds are based solely on the maximum stress considerations on the flange. For a through analysis please contact JAURE.



Technical modifications reserved





# Lamidisc® coupling

## Example of selection

Select a spacer coupling to connect a standard electric motor to rated at 250 kW to, running at 1000 r.p.m, to a centrifugal pump rated at 230 kW. The shafts are ø75 mm and ø70 mm respectively.

1. Coupling type SX

2. Service factor

a) Centrifugal pump	1.0
b) Electric motor	0.0
TOTAL	<u>1.0</u>

3. Required minimum torque rating

$$\text{Torque} = \frac{9550 \times 230 \times 1}{1000} = 2197 \text{ Nm}$$

The coupling selected is SX size 185-6 with a nominal torque of 3300 Nm, peak torque of 6600 Nm, ΔKa = ± 3.7 mm and ΔKw = ±1.5 °.

4. Check peak torque ( Coupling peak torque is 3300 x 2 = 6600 Nm )

5. Check expected misalignment .

6. Check maximum bores: Lamidisc® 185-6 has a maximum bore diameter of 80 mm, therefore this dimension is larger than the existing shaft diameters. The speed check shows it to be less than allowable speed ( 1000 rpm < 6850 rpm).

## How to specify a LAMIDISC® coupling

The following data have to be given JAURE in order to verify that a proper selection has been made.

Application and type of duty.

Type of prime mover , power and speed.

Shaft types and sizes , keyway dimensions , hub length.

Expected misalignments.

Type of driven equipment.

Coupling type , size and DBSE ( Distance between shaft ends ).

Space limitations.

Special requirements ( vertical mounting , spark free , API 610 or 671 , etc).



## Applications: some examples

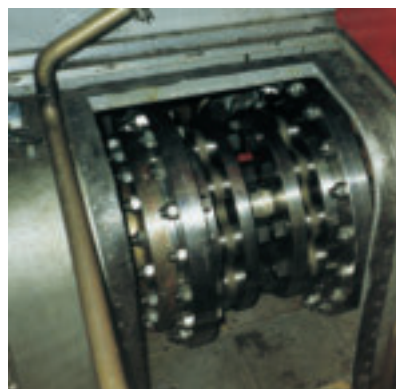
(See more on pages 19 and 20)



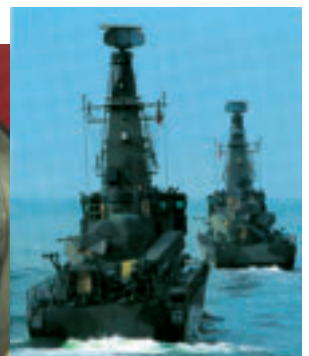
Windmills



Paper industry



Marine applications

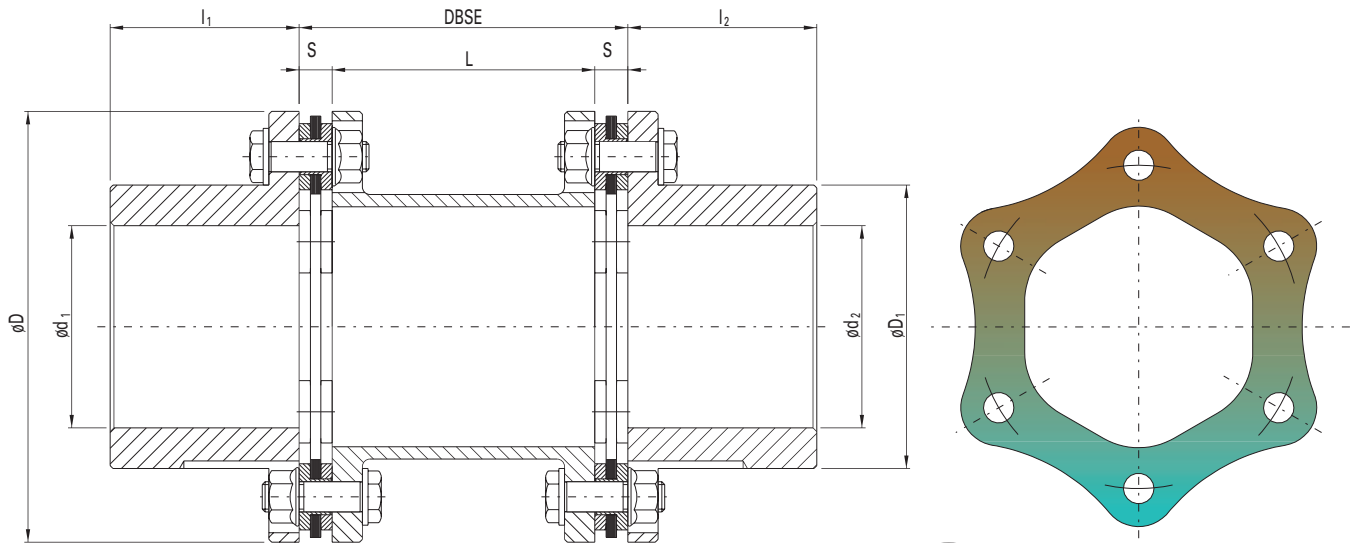


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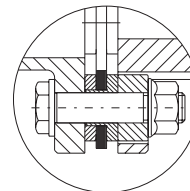


# Lamidisc® coupling

## SX-6, SXR-6 Types: Standard Configuration with Variable DBSE<sup>4)</sup>



Designation example: SX-110-6, DBSE = 140 mm



SXR<sup>7)</sup> Type

Coupling Type SX Size	NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	MAX. <sup>1)</sup> SPEED UNBALANCED r.p.m.	MAX. <sup>2)</sup> SPEED BALANCED r.p.m.	DIMENSIONS (mm.)							5) Inertia J kgm <sup>2</sup>	5) Weight kg.	6) Axial Misalig. ±ΔKa mm.	6) Ang. Misalig. ±ΔKw deg.
					d1-d2 <sup>3)</sup> max.	D	D1	l <sub>1</sub> -l <sub>2</sub>	DBSE min <sup>4)</sup>	L min.	S				
90-6	240	480	9100	22700	41	90	58	40	71	56	7.5	0.002	2.1	1.5	1.5°
110-6	575	1150	7200	18000	50	110	70	50	88	71.2	8.4	0.004	2.9	2.1	
132-6	1100	2200	5840	14600	65	132	89	60	108	91.2	8.4	0.012	5.5	2.6	
158-6	2000	4000	4920	12300	75	158	104	70	124	101.6	11.2	0.025	8.6	3.1	
185-6	3300	6600	4200	10500	87	185	121	80	140	112.0	14.0	0.063	15	3.7	
202-6	4600	9200	3840	9600	95	202	132	90	158	127.0	15.5	0.11	21	3.8	1°
228-6	7000	14000	3400	8500	107	228	150	100	174	139.0	17.5	0.20	30	4.2	
255-6	10200	20400	3080	7700	117	255	163	115	196	155.0	20.5	0.32	40	4.7	
278-6	14200	28400	2800	7000	131	278	183	125	218	175.6	21.2	0.56	57	5.2	
302-6	20000	40000	2560	6400	145	302	201	135	234	185.2	24.4	0.86	74	5.7	
325-6	25000	50000	2400	6000	156	325	219	145	254	202.0	26.0	1.17	89	6.5	
345-6	31000	62000	2200	5500	165	345	230	155	270	213.6	28.2	1.63	109	6.9	
380-6	42300	84600	2040	5100	178	380	249	170	296	232.0	32.0	2.64	146	7.6	
410-6	57100	114200	1880	4700	192	410	269	185	320	253.6	33.2	4.04	190	8.2	
440-6	73500	147000	1740	4350	206	440	289	195	334	261.2	36.4	5.45	224	8.8	
475-6	92000	184000	1680	4200	220	475	309	210	358	281.6	38.2	8.20	288	9.5	
505-6	117000	234000	1520	3800	233	505	327	230	394	310.0	42.0	11.96	366	10.1	

Larger sizes are available on demand.

1) Operating speed must be equal or less than permissible speed. Permissible speeds could be limited by the weight and critical speeds of spacers. Check the dynamic balancing guide and critical speeds on page 5.

2) Max. rotation speeds considered in special mat. and/or execution. For higher rotation speeds, please consult JAURE.

3) The maximum bores shown are for cylindrical or taper shafts with keys. For other type of connections consult JAURE.

4) Dimension DBSE is the distance between shafts ends and is a variable parameter.

5) Value of complete coupling with DBSE min, d1 and d2 max., GD<sup>2</sup> = 4J.

6) The value for axial misalignment is given for a complete 2 disc pack. Angular misalignment is given per pack. Refer to page 5 for combined permissible misalignment.

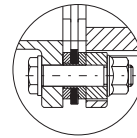
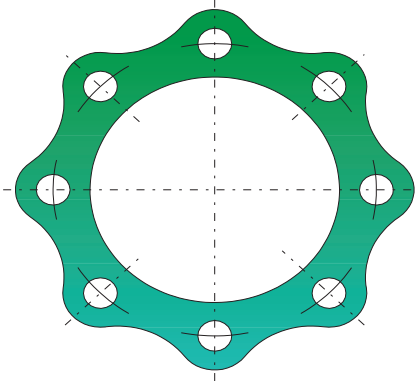
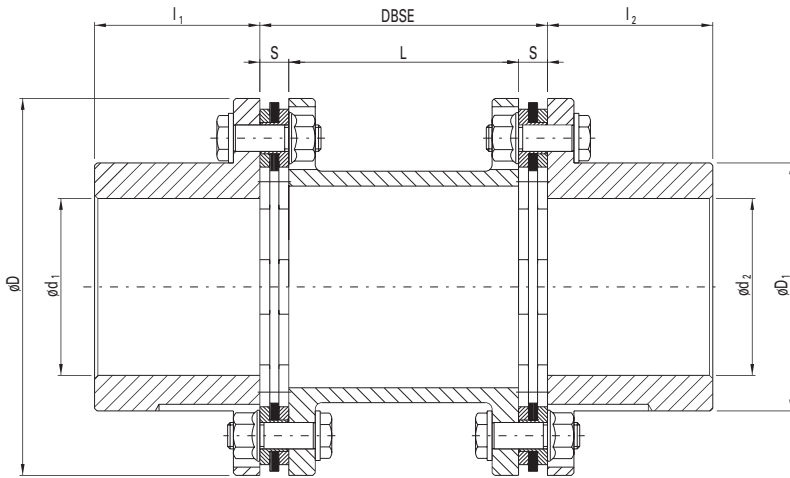
7) Overload bushings (SRX) are available on demand.

Technical modifications reserved



# Lamidisc® coupling

## SX-8, SXR-8 Types: Standard Configuration with Variable DBSE<sup>4)</sup>



Designation example: SX-278-8, DBSE = 240 mm

### SXR<sup>7)</sup> Type

Coupling Type SX Size	NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	MAX <sup>1)</sup> SPEED UNBALANCED r.p.m.	MAX. <sup>2)</sup> SPEED BALANCED r.p.m.	DIMENSIONS (mm.)							5) Inertia J kgm <sup>2</sup>	5) Weight kg.	6) Axial Misalig. ±ΔKa mm.	6) Ang. Misalig. ±ΔKw deg.
					d1-d2 3) max.	D	D1	l <sub>1</sub> -l <sub>2</sub>	DBSE min 4)	L min.	S				
278-8	20000	40000	2800	7000	131	278	183	125	218	175.6	21.2	0.573	59	3.7	0.5°
302-8	30000	60000	2560	6400	145	302	201	135	234	185.2	24.4	0.878	77	4.0	
325-8	37000	74000	2400	6000	156	325	219	145	254	202.0	26.0	1.199	92	4.3	
345-8	46000	92000	2200	5500	165	345	230	155	270	213.6	28.2	1.660	112	4.6	
380-8	63000	126000	2040	5100	178	380	249	170	296	232.0	32.0	2.715	150	5.0	
410-8	86000	172000	1880	4700	192	410	269	185	320	253.6	33.2	4.11	195	5.4	
440-8	110000	220000	1740	4350	206	440	289	195	334	261.2	36.4	5.54	230	5.8	
475-8	138000	276000	1680	4200	220	475	309	210	358	281.6	38.2	8.32	295	6.3	
505-8	175000	350000	1520	3800	233	505	327	230	394	310.0	42.0	12.13	374	6.7	
540-8	220000	440000	1440	3600	235	540	330	240	416	324.0	46.0	16.77	454	7.2	
570-8	259000	518000	1360	3400	250	570	350	250	450	346.8	51.6	22.02	535	7.6	
605-8	315000	630000	1280	3200	265	605	370	265	474	367.6	53.2	28.00	617	7.8	
635-8	383000	766000	1240	3100	275	635	385	280	521	399.4	60.8	36.64	728	8.2	
675-8	454000	908000	1160	2900	290	675	410	300	558	427.6	65.2	48.62	875	8.4	
700-8	528000	1056000	1120	2800	300	700	420	315	595	457.4	68.8	62.26	1021	8.9	
730-8	608000	1216000	1080	2700	315	730	440	330	610	467.6	71.2	74.87	1130	9.2	
760-8	700000	1400000	1040	2600	330	760	460	350	642	496.4	72.8	94.87	1310	9.6	

#### Larger sizes are available on demand.

- 1) Operating speed must be equal or less than permissible speed. Permissible speeds could be limited by the weight and critical speeds of spacers. Check the dynamic balancing guide and critical speeds on page 5.
- 2) Max. rotation speeds considered in special mat. and/or execution. For higher rotation speeds, please consult JAURE.
- 3) The maximum bores shown are for cylindrical or taper shafts with keys. For other type of connections consult JAURE.
- 4) Dimension DBSE is the distance between shafts ends and is a variable parameter.
- 5) Value of complete coupling with DBSE min, d1 and d2 max.,  $GD^2 = 4J$ .
- 6) The value for axial misalignment is given for a complete 2 disc pack coupling. Angular misalignment is given per pack. Refer to page 5 for combined permissible misalignment.
- 7) Overload bushings (SRX) are available on demand.

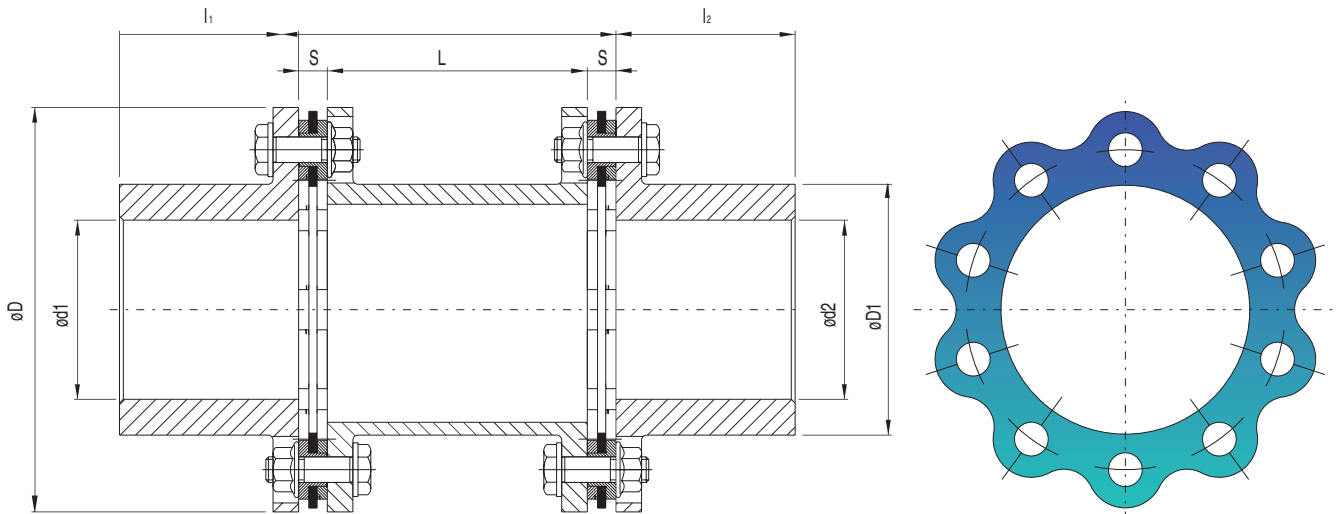
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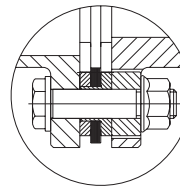


# Lamidisc® coupling

## SX-10, SXR-10 Types: Standard Configuration with Variable DBSE<sup>4)</sup>



Designation example: SX-505-10, DBSE = 650 mm



**SXR<sup>7)</sup> Type**

Coupling Type SX Size	NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	MAX. <sup>1)</sup> SPEED UNBALANCED r.p.m.	MAX. <sup>2)</sup> SPEED BALANCED r.p.m.	DIMENSIONS (mm.)							5) Inertia J kgm <sup>2</sup>	5) Weight kg.	6) Axial Misalign. ±ΔKa mm.	6) Ang. Misalign. ±ΔKw deg.
					d1-d2 3) max.	D	D1	l <sub>1</sub> -l <sub>2</sub>	DBSE min 4)	L min.	S				
505-10	219000	438000	1520	3800	220	505	310	230	394	310.0	42.0	12.21	378	5.0	0.4°
540-10	274000	548000	1440	3600	235	540	330	240	416	324.0	46.0	16.86	459	5.4	
570-10	323000	646000	1360	3400	250	570	350	250	450	346.8	51.6	22.14	540	5.7	
605-10	394000	788000	1280	3200	265	605	370	265	474	367.6	53.2	28.14	622	5.8	
635-10	480000	960000	1240	3100	275	635	385	280	521	399.4	60.8	36.82	734	6.2	
675-10	570000	1140000	1160	2900	290	675	410	300	558	427.6	65.2	48.86	882	6.4	
700-10	660000	1320000	1120	2800	300	700	420	315	595	457.4	68.8	62.56	1029	6.7	
730-10	760000	1520000	1080	2700	315	730	440	330	610	467.6	71.2	75.20	1139	7.0	
760-10	870000	1740000	1040	2600	330	760	460	350	642	496.4	72.8	95.28	1320	7.5	

Larger sizes are available on demand.

1) Operating speed must be equal or less than permissible speed. Permissible speeds could be limited by the weight and critical speeds of spacers. Check the dynamic balancing guide and critical speeds on page 5.

2) Max. rotation speeds considered in special mat. and/or execution. For higher rotation speeds, please consult JAURE.

3) The maximum bores shown are for cylindrical or taper shafts with keys. For other type of connections consult JAURE.

4) Dimension DBSE is the distance between shafts ends and is a variable parameter.

5) Value of complete coupling with DBSE min, d1 and d2 max., GD<sup>2</sup> = 4J.

6) The value for axial misalignment is given for a complete 2 disc pack coupling. Angular misalignment is given per pack. Refer to page 5 for combined permissible misalignment.

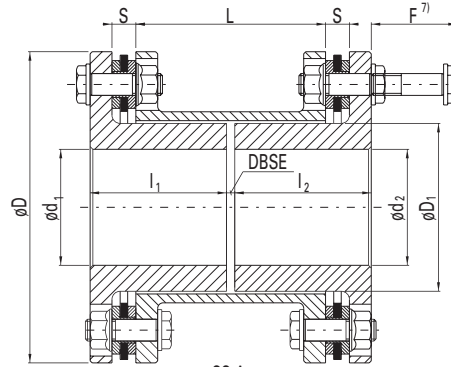
7) Overload bushings (SRX) are available on demand.



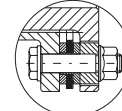
# Lamidisc® coupling

## CC-6, CCR-6 Types: Close Coupled Configuration

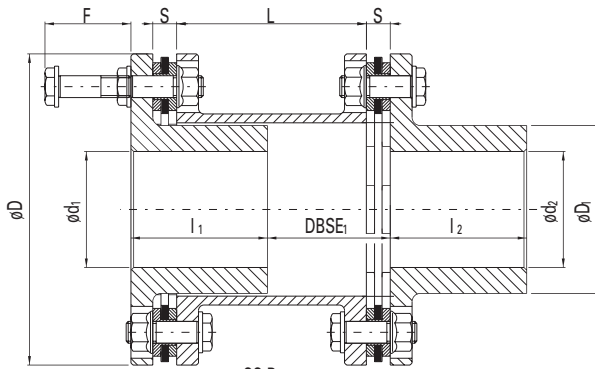
Designation example:  
CC-A-158-6, DBSE = 4 mm



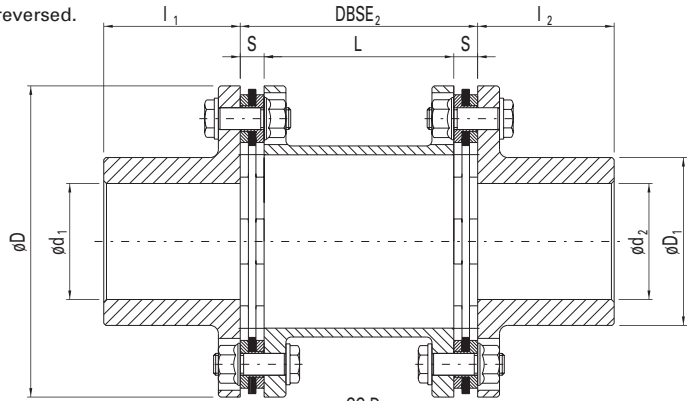
CC-A  
Both hubs reversed.



CCR<sup>8)</sup> Type



CC-B  
Only one hub reversed.



CC-D

Coupling Type CC Size	NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	MAX. <sup>1)</sup> SPEED UNBALANCED r.p.m.	MAX. <sup>2)</sup> SPEED BALANCED r.p.m.	DIMENSIONS (mm.)										5) Inertia J kgm <sup>2</sup>	5) Weight kg.	6) Axial Misalign. $\pm\Delta K_a$ mm.	6) Ang. Misalign. $\pm\Delta K_w$ deg.
					d1-d2 3) max.	D	D1	$l_1-l_2$	DBSE min 4)	DBSE <sub>1</sub>	DBSE <sub>2</sub>	L min.	F <sup>7)</sup>	S				
90-6	240	480	9100	22700	31	90	44	40	3	37	71	56	30	7.5	0.002	1.7	1.5	1.5°
110-6	575	1150	7200	18000	39	110	54	50	4	46	88	71.2	45	8.4	0.003	1.8	2.1	
132-6	1100	2200	5840	14600	50	132	71	60	4	56	108	91.2	45	8.4	0.010	3.8	2.6	
158-6	2000	4000	4920	12300	60	158	84	70	4	64	124	101.6	55	11.2	0.021	5.8	3.1	
185-6	3300	6600	4200	10500	68	185	95	80	4	72	140	112.0	65	14.0	0.053	10	3.7	
202-6	4600	9200	3840	9600	75	202	108	90	6	82	158	127.0	75	15.5	0.091	15	3.8	1°
228-6	7000	14000	3400	8500	85	228	123	100	6	90	174	139.0	85	17.5	0.17	21	4.2	
255-6	10200	20400	3080	7700	95	255	135	115	6	101	196	155.0	100	20.5	0.27	27	4.7	
278-6	14200	28400	2800	7000	105	278	152	125	8	113	218	175.6	105	21.2	0.46	36	5.2	
302-6	20000	40000	2560	6400	115	302	165	135	8	121	234	185.2	115	24.4	0.71	46	5.7	
325-6	25000	50000	2400	6000	125	325	174	145	8	131	254	202.0	115	26.0	0.96	55	6.5	
345-6	31000	62000	2200	5500	130	345	186	155	8	139	270	213.6	125	28.2	1.34	70	6.9	
380-6	42300	84600	2040	5100	145	380	204	170	10	153	296	232.0	140	32.0	2.17	92	7.6	
410-6	57100	114200	1880	4700	160	410	223	185	10	165	320	253.6	150	33.2	3.28	116	8.2	
440-6	73500	147000	1740	4350	165	440	233	195	10	172	334	261.2	165	36.4	4.46	136	8.8	
475-6	92000	184000	1680	4200	180	475	252	210	10	184	358	281.6	180	38.2	6.71	172	9.5	
505-6	117000	234000	1520	3800	190	505	266	230	12	203	394	310.0	195	42.0	9.76	228	10.1	

### Larger sizes are available on demand.

1) Operating speed must be equal or less than permissible speed. Permissible speeds could be limited by the weight and critical speeds of spacers. Check the dynamic balancing guide and critical speeds on page 5.

2) Max. rotation speeds considered in special mat. and/or execution. For higher rotation speeds, please consult JAURE.

3) The maximum bores shown are for cylindrical or taper shafts with keys. For other type of connections consult JAURE.

4) Dimension DBSE is the distance between shafts ends and is a variable parameter.

5) Value of complete coupling with DBSE min, d1 and d2 max.,  $GD^2 = 4J$ .

6) The value for axial misalignment is given for a complete 2 disc pack coupling. Angular misalignment is given per pack. Refer to page 5 for combined permissible misalignment.

7) The dimension F is required for dismounting the fitted bolts.

8) Overload bushings (CCR) are available on demand.

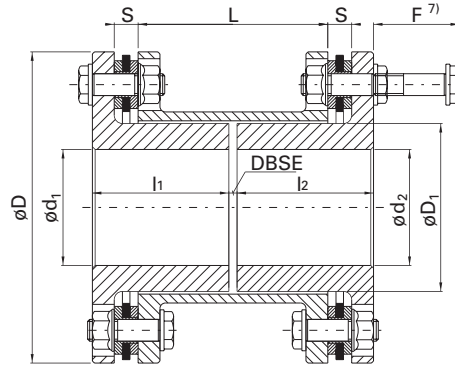
Technical modifications reserved



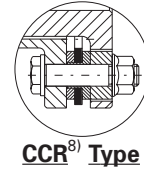
# Lamidisc® coupling

## CC-8, CCR-8 Types: Close Coupled Configuration

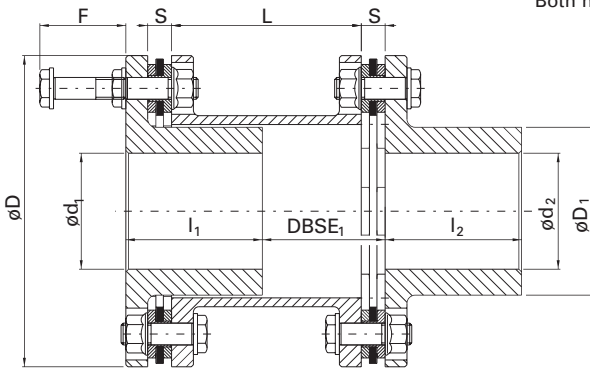
Designation example:  
CC-A-325-8, DBSE = 8 mm



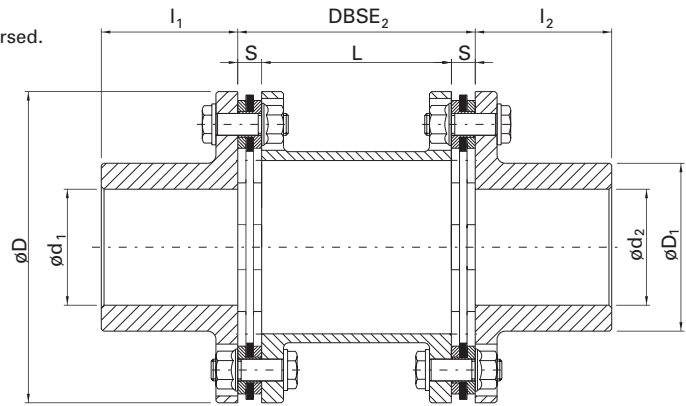
CC-A  
Both hubs reversed.



CCR<sup>8</sup>) Type



CC-B  
Only one hub reversed.



CC-D

Coupling Type CC Size	NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	MAX <sup>1)</sup> SPEED UNBALANCED r.p.m.	MAX. <sup>2)</sup> SPEED BALANCED r.p.m.	DIMENSIONS (mm.)										5) Weight J kgm <sup>2</sup>	5) Weight kg.	6) Axial Misalign. ±ΔKa mm.	6) Ang. Misalign. ±ΔKw deg.
					d1-d2 <sup>3)</sup> max.	D	D1	l <sub>1</sub> -l <sub>2</sub>	DBSE min <sup>4)</sup>	DBSE <sub>1</sub>	DBSE <sub>2</sub>	L min.	F <sup>7)</sup>	S				
278-8	20000	40000	2800	7000	100	278	142	125	8	113	218	175.6	105	21.2	0.466	36	3.7	
302-8	30000	60000	2560	6400	110	302	153	135	8	121	234	185.2	115	24.4	0.706	45	4.0	
325-8	37000	74000	2400	6000	115	325	166	145	8	131	254	202.0	115	26.0	0.954	51	4.3	
345-8	46000	92000	2200	5500	125	345	178	155	8	139	270	213.6	125	28.2	1.321	64	4.6	
380-8	63000	126000	2040	5100	140	380	196	170	10	153	296	232.0	140	32.0	2.16	84	5.0	
410-8	86000	172000	1880	4700	150	410	210	185	10	165	320	253.6	150	33.2	3.26	109	5.4	
440-8	110000	220000	1740	4350	160	440	225	195	10	172	334	261.2	165	36.4	4.43	130	5.8	
475-8	138000	276000	1680	4200	170	475	244	210	10	184	358	281.6	180	38.2	6.67	164	6.3	
505-8	175000	350000	1520	3800	180	505	254	230	12	203	394	310.0	195	42.0	9.54	212	6.7	
540-8	220000	440000	1440	3600	195	540	278	240	20	218	416	324.0	210	46.0	13.60	265	7.2	
570-8	259000	518000	1360	3400	205	570	288	250	40	245	450	346.8	230	51.6	18.04	311	7.6	
605-8	315000	630000	1280	3200	215	605	306	265	40	257	474	367.6	240	53.2	22.70	353	7.8	
635-8	383000	766000	1240	3100	230	635	322	280	65	293	521	399.4	265	60.8	29.53	406	8.2	
675-8	454000	908000	1160	2900	250	675	350	300	70	314	558	427.6	280	65.2	38.05	458	8.4	
700-8	528000	1056000	1120	2800	260	700	365	315	85	340	595	457.4	300	68.8	49.06	556	8.9	
730-8	608000	1216000	1080	2700	265	730	375	330	70	340	610	467.6	305	71.2	58.95	613	9.2	
760-8	700000	1400000	1040	2600	280	760	395	350	70	356	642	496.4	320	72.8	73.77	698	9.6	

0.5°

Larger sizes are available on demand.

1) Operating speed must be equal or less than permissible speed. Permissible speeds could be limited by the weight and critical speeds of spacers. Check the dynamic balancing guide and critical speeds on page 5.

2) Max. rotation speeds considered in special mat. and/or execution. For higher rotation speeds, please consult JAURE.

3) The maximum bores shown are for cylindrical or taper shafts with keys. For other types of connections consult JAURE.

4) Dimension DBSE is the distance between shafts ends and is a variable parameter.

5) Value of complete coupling with DBSE min, d1 and d2 max., GD<sup>2</sup> = 4J.

6) The value for axial misalignment is given for a complete 2 disc pack coupling. Angular misalignment is given per pack. Refer to page 5 for combined permissible misalignment.

7) The dimension F is required for dismantling the fitted bolts.

8) Overload bushings (CCR) are available on demand.

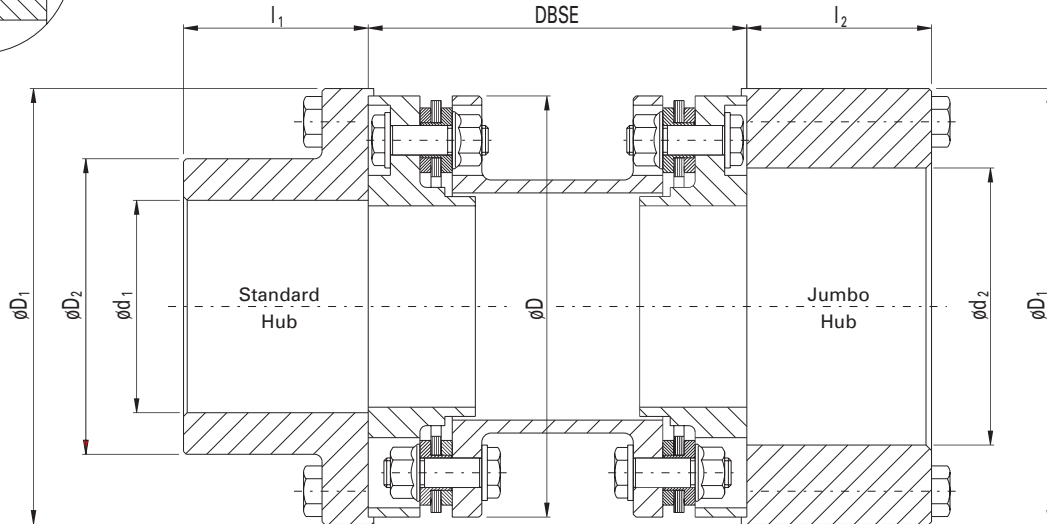
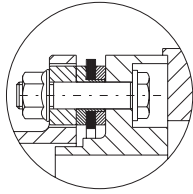
Technical modifications reserved



# Lamidisc® coupling

## DO-6 Type: Drop-Out Configuration According to API\* 610

DOR<sup>7)</sup> Type



Designation example: DO-110-6, DBSE = 140 mm, max speed (rpm), standard or jumbo hubs.

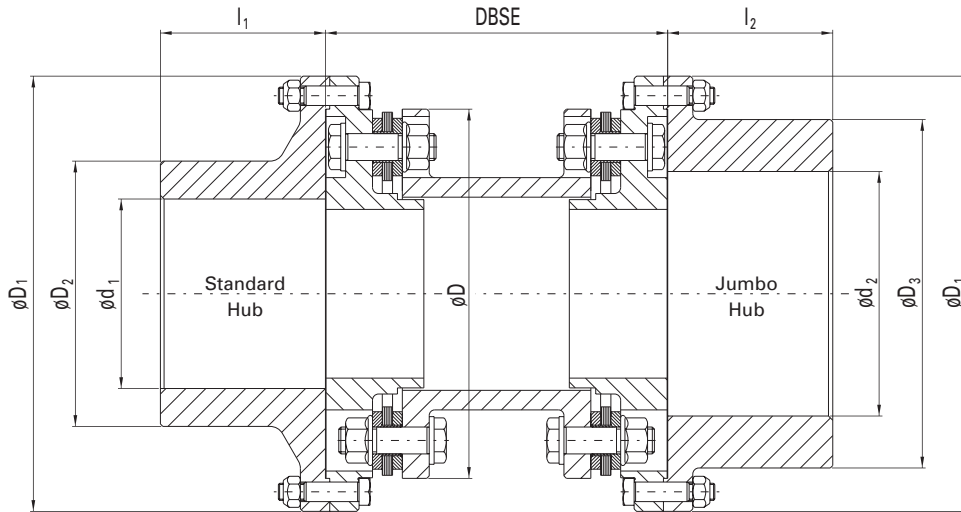
Coupling Type DO Size	NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	MAX <sup>1)</sup> SPEED UNBALANCED r.p.m.	MAX <sup>2)</sup> SPEED BALANCED r.p.m.	DIMENSIONS (mm.)							5) Inertia J kgm <sup>2</sup>	5) Weight kg.	6) Axial Misalig. ±ΔKa mm.	6) Ang. Misalig. ±ΔKw deg.
					d1 3) max.	d2 3) max.	D	D1	D2	l <sub>1</sub> -l <sub>2</sub>	DBSE min. 4)				
90-6	240	480	9100	22700	43	60	90	94	60	40	79	0.0046	3.6	1.5	1.5°
110-6	575	1150	7200	18000	52	75	110	115	73	50	108	0.009	5.4	2.1	
132-6	1100	2200	5840	14600	67	90	132	139	95	60	110	0.024	10	2.6	
158-6	2000	4000	4920	12300	80	105	158	165	112	70	140	0.062	18	3.1	
185-6	3300	6600	4200	10500	95	125	185	193	134	80	160	0.13	28	3.7	
202-6	4600	9200	3840	9600	102	135	202	210	144	90	185	0.22	38	3.8	1°
228-6	7000	14000	3400	8500	115	150	228	236	160	100	205	0.41	55	4.2	
255-6	10200	20400	3080	7700	125	170	255	263	175	115	250	0.65	72	4.7	
278-6	14200	28400	2800	7000	140	185	278	286	195	125	255	1.12	101	5.2	
302-6	20000	40000	2560	6400	155	200	302	310	217	135	280	1.72	133	5.7	
325-6	25000	50000	2400	6000	170	215	325	333	240	145	285	2.35	160	6.5	
345-6	31000	62000	2200	5500	180	230	345	355	255	155	320	3.26	193	6.9	
380-6	42300	84600	2040	5100	210	250	380	390	295	170	345	5.32	262	7.6	
410-6	57100	114200	1880	4700	225	270	410	420	315	185	375	8.02	335	8.2	
440-6	73500	147000	1740	4350	235	290	440	450	330	195	415	10.78	397	8.8	
475-6	92000	184000	1680	4200	250	312	475	485	355	210	450	16.02	505	9.5	
505-6	117000	234000	1520	3800	275	332	505	515	385	230	490	22.94	631	10.1	

**Larger sizes are available on demand.**

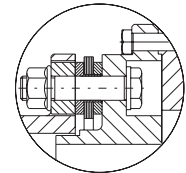
- 1) Operating speed must be equal or less than permissible speed. Permissible speeds could be limited by the weight and critical speeds of spacers. Check the dynamic balancing guide and critical speeds on page 5.
- 2) Max. rotation speeds considered in special mat. and/or execution. For higher rotation speeds, please consult JAURE.
- 3) The maximum bores shown are for cylindrical or taper shaft with keys. For other type of connections consult JAURE.
- 4) Dimension DBSE is the distance between shaft ends and is a variable parameter.
- 5) Value of complete coupling with DBSE min, d1 and d2 max.,  $GD^2 = 4J$ .
- 6) The value for axial misalignment is given for a complete 2 disc pack. Angular misalignment is given per pack. Refer to page 5 for combined permissible misalignment.
- 7) Overload bushings (DOR) are available on demand.

\*API: American Petroleum Institute.

Technical modifications reserved



Designation example: DO-325-8, DBSE = 350 mm, max speed (rpm), standard or jumbo hubs.



DOR <sup>7)</sup> Type

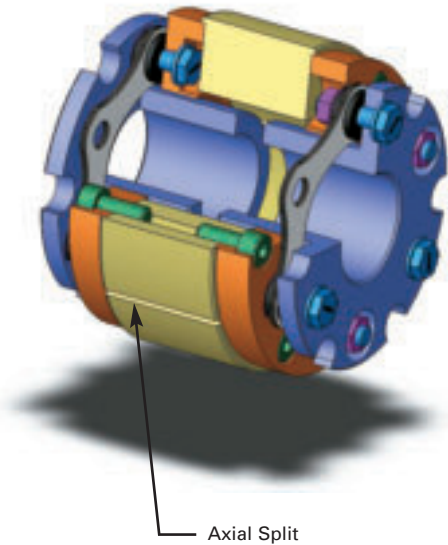
Coupling Type DO Size	NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	MAX <sup>1)</sup> SPEED UNBALANCED r.p.m.	MAX <sup>2)</sup> SPEED BALANCED r.p.m.	DIMENSIONS (mm.)								5) Inertia J kgm <sup>2</sup>	5) Weight kg.	6) Axial Misalig. ±ΔKa mm.	6) Ang. Misalig. ±ΔKw deg.
					d1 <sub>2) max.</sub>	d2 <sub>2) max.</sub>	D	D1	D2	D3	l <sub>1</sub> -l <sub>2</sub>	DBSE min 4)				
278-8	20000	40000	2800	7000	140	185	278	332	195	260	125	255	1.69	130	3.7	0.5°
302-8	30000	60000	2560	6400	155	200	302	356	217	285	135	280	2.45	164	4.0	
325-8	37000	74000	2400	6000	170	215	325	400	240	305	145	285	3.95	213	4.3	
345-8	46000	92000	2200	5500	180	230	345	417	255	322	155	320	5.20	250	4.6	
380-8	63000	126000	2040	5100	210	255	380	455	295	360	170	345	7.80	325	5.0	
410-8	86000	172000	1880	4700	225	275	410	498	315	390	185	375	11.65	412	5.4	
440-8	110000	220000	1740	4350	235	300	440	528	330	420	195	415	15.20	480	5.8	
475-8	138000	276000	1680	4200	250	320	475	585	355	450	210	450	24.30	632	6.3	
505-8	175000	350000	1520	3800	275	340	505	615	385	480	230	490	34.40	794	6.7	
540-8	220000	440000	1440	3600	295	360	540	670	415	508	240	560	42.25	840	7.2	
570-8	259000	518000	1360	3400	320	385	570	702	450	540	250	605	51.14	950	7.6	
605-8	315000	630000	1280	3200	325	400	605	727	460	565	265	620	64.50	1120	7.8	

**Larger sizes are available on demand.**

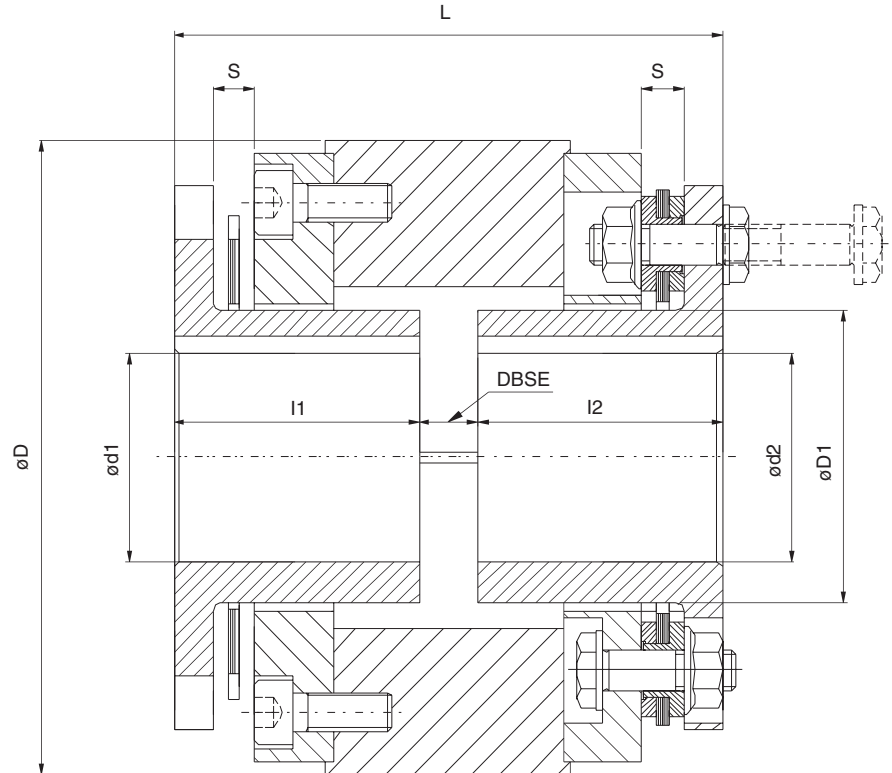
- 1) Operating speed must be equal or less than permissible speed. Permissible speeds could be limited by the weight and critical speeds of spacers. Check the dynamic balancing guide and critical speeds on page 5.
- 2) Max. rotation speeds considered in special mat. and/or execution. For higher rotation speeds, please consult JAURE.
- 3) The maximum bores shown are for cylindrical or taper shaft with keys. For other type of connections consult JAURE.
- 4) Dimension DBSE is the distance between shaft ends and is a variable parameter.
- 5) Value of complete coupling with DBSE min, d1 and d2 max.,  $GD^2 = 4J$ .
- 6) The value for axial misalignment is given for a complete 2 disc pack. Angular misalignment is given per pack. Refer to page 5 for combined permissible misalignment.
- 7) Overload bushings (DOR) are available on demand.

\*API: American Petroleum Institute.





Axial Split



Designation example: CC-E 110-6, DBSE= 11mm.

Coupling Type CC-E Size	NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	MAX <sup>1)</sup> SPEED r.p.m.	DIMENSIONS (mm.)								<sup>4)</sup> Inertia J kgm <sup>2</sup>	<sup>4)</sup> Weight kg.	<sup>5)</sup> Axial Misalig. $\pm \Delta K_a$ mm.	<sup>5)</sup> Ang. Misalig. $\pm \Delta K_w$ deg.
				d1-d2 <sup>2)</sup> max.	D	D <sub>1</sub>	l1-l2	DBSE min. <sup>3)</sup>	L min.	F <sub>6)</sub>	S				
90-6	240	480	11600	34	106	47	40	9	89	30	7,5	0,006	4,3	1,5	1,5°
110-6	575	1150	9500	42	128	59	50	10	110	45	8,4	0,016	7,5	2,1	
132-6	1100	2200	7900	53	149	74	60	10	130	45	8,4	0,037	11	2,6	
158-6	2000	4000	6600	63	175	88	70	12	152	55	11,2	0,08	19	3,1	
185-6	3300	6600	5600	71	199	100	80	15	175	65	14,0	0,16	29	3,7	
202-6	4600	9200	5150	81	218	113	90	17	197	78	15,5	0,26	38	3,8	1°
228-6	7000	14000	4550	91	247	127	100	19	219	85	17,5	0,48	57	4,2	
255-6	10200	20400	4100	99	278	139	115	21	251	100	19,5	0,88	84	4,7	
278-6	14200	28400	3750	111	298	155	125	22	272	105	21,2	1,27	104	5,2	
302-6	20000	40000	3450	121	331	170	135	26	296	115	24,4	2,10	139	5,7	

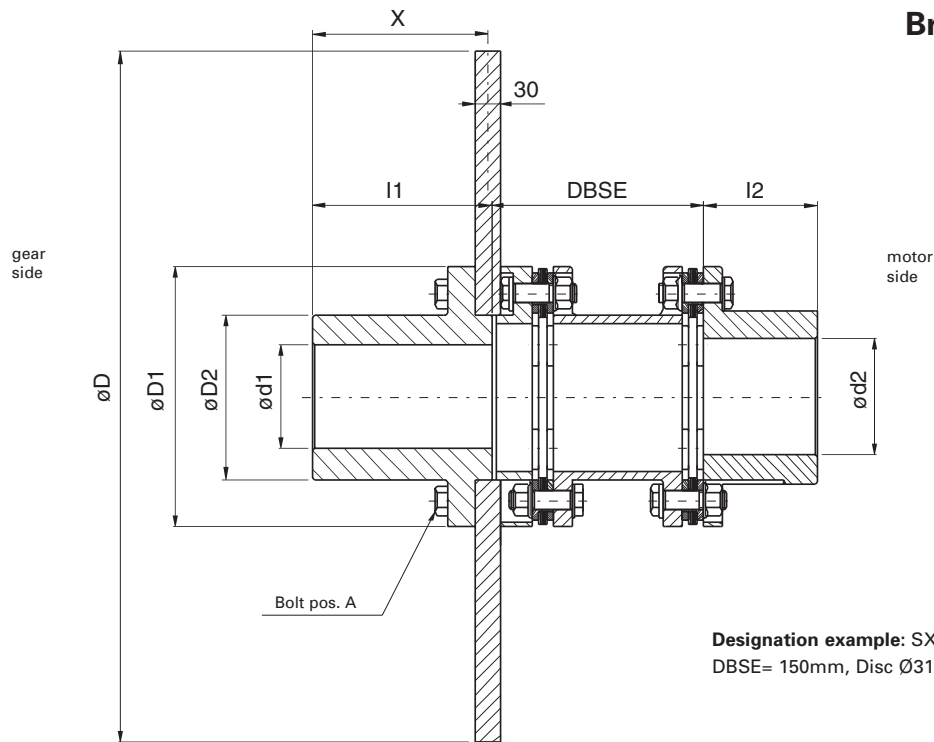
**Larger sizes are available on demand.**

- Operating speed must be equal or less than permissible speed. Permissible speed could be limited by the weight and critical speeds of spacers. For higher speeds consult JAURE.
- The maximum bores shown are for cylindrical or taper shafts with keys. For other type of connections consult JAURE.
- Dimension DBSE is the distance between shafts ends and is a variable parameter. DBSE can be reduced, but in this case disc-packs can not be removed radially without moving one of the machines.
- Value of complete coupling with DBSE min., d1 and d2 max.,  $GD^2=4J$ .
- The value for axial misalignment is given for a complete 2 disc pack. Angular misalignment is given per pack. Refer to page 5 of the catalogue for combined permissible misalignment.
- The dimension F is required for dismantling the fitted bolts.



# Lamidisc® coupling

## SXFD-6 Type: Brake Disc configuration



Designation example: SXFD-132-6,  
DBSE= 150mm, Disc Ø315x30, Speed (rpm)

Coupling Type SXFD Size	1) NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	2) MAX. SPEED r.p.m.	DIMENSIONS (mm.)								Bolt Data pos.A 6)		7) J Inertia Kg <sup>m</sup>	7) Weight Kg.	Axial 8) Misalig. ±Ka mm.	Ang. 8) Misalig. ±Kw deg.
				d1-d2 max. 3)	4) D	D1	D2	I1	I2	5) DBSE	X	Z-M	Nm				
132-6	1.100	2.200	3.500 3.100	65	315 355	132	89	85	60	105	80	12-M8	35	0,241 0,381	23,5 28,5	2,6	1,5°
158-6	2.000	4.000	3.500 3.100 2.800	75	315 355 395	158	104	110	70	131	105	12-M10	60	0,269 0,409 0,605	31 36 41,5	3,1	
185-6	3.300	6.600	2.800 2.500 2.200	87	395 445 495	185	121	110	80	148	105	12-M12	120	0,653 0,997 1,478	49 57 65,7	3,7	
202-6	4.600	9.200	2.500 2.200 2.000	95	445 495 550	202	132	140	90	170	135	12-M14	190	1,054 1,536 2,263	64,6 73 84	3,8	1°
228-6	7.000	14.000	2.200 2.000 1.800	107	495 550 625	228	150	170	100	187	165	12-M16	295	1,665 2,393 3,805	87 97,7 114	4,2	
255-6	10.200	20.400	1.800 1.600	117	625 705	255	163	170	115	241	165	12-M18	405	4,016 6,200	130,5 150,2	4,7	
278-6	14.200	28.400	1.800 1.600 1.400	131	625 705 795	278	183	210	125	263	205	12-M20	580	4,297 6,480 10,004	153 172,7 197,7	5,2	
302-6	20.000	40.000	1.600 1.400	145	705 795	302	201	210	135	282,3	205	12-M22	780	6,883 10,407	194,8 219,8	5,7	
325-6	25.000	50.000	1.600 1.400 1.100	156	705 795 995x40	325	219	250	145	302 302 307	245 245 240	12-M22	780	7,389 10,914 31,883	219 244 368	6,5	
345-6	31.000	62.000	1.400 1.100	165	795 995x40	345	230	250	155	321 326	245 240	12-M24	1000	11,477 32,445	268 393	6,9	

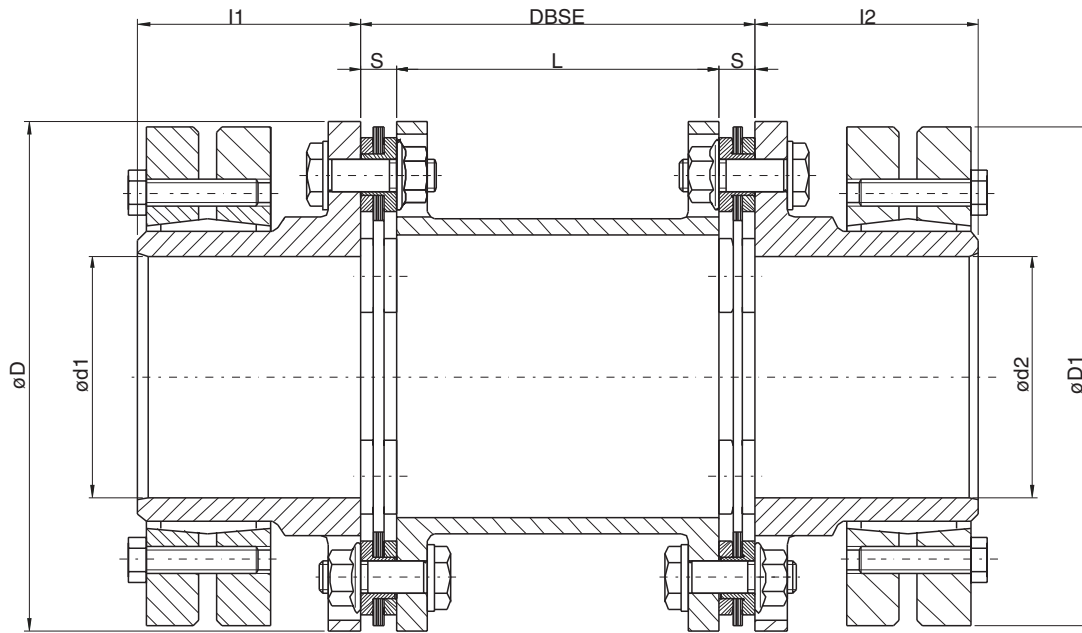
### Larger sizes are available on demand

- (1) For coupling selection, apply corresponding service factor (SF=2 minimum)
- (2) Values for St-52.3 disc material balanced to G 6.3 ISO 1940. Consult JAURE for couplings operating at higher speeds.
- (3) Max. admissible bore for couplings with DIN 6885/1 keys. For other types of keys or connections please consult JAURE.
- (4) Ø995mm brake disc's thickness: 40mm.
- (5) Dimension DBSE is the distance between shaft ends, and is a variable parameter.
- (6) Tightening torques are given in dry condition. For lubricated bolts reduce these values by 20%.
- (7) Value of complete coupling with std. DBSE, d1 and d2 max., GD<sup>2</sup> = 4J
- (8) The value for axial misalignment is given for a complete 2 disc pack. Angular misalignment is given per pack. Refer to page 5 for combined permissible misalignment.



# Lamidisc® coupling

## SXAC-6 Type: Shrink Disc Configuration with Variable Distance between Shaft Ends (D.B.S.E.)<sup>5)</sup>.



Designation example: SXAC-132-6, DBSE= 140mm, d1 and d2.

Coupling Type SXAC Size	1) NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	MAX <sup>2)</sup> SPEED r.p.m.	DIMENSIONS (mm.)								6) Inertia J kgm <sup>2</sup>	6) Weight kg.	7) Axial Misalign. $\pm\Delta K_a$ mm.	7) Ang. Misalign. $\pm\Delta K_w$ deg.
				d1-d2 3) max.	d1-d2 4) max.	D	D1 max.	l1-l2	DBSE 5)	L min.	S				
90-6	240	480	11600	42	25	90	90	40	60	45	7,5	0,004	3,2	1,5	1,5°
110-6	575	1150	9500	52	36	110	110	50	88	71,2	8,4	0,01	5,7	2,1	
132-6	1100	2200	7900	70	46	132	145	60	108	91,2	8,4	0,028	9,6	2,6	
158-6	2000	4000	6600	75	60	158	155	70	124	101,6	11,2	0,053	15,1	3,1	
185-6	3300	6600	5600	85	66	185	185	80	140	112,0	14,0	0,13	26	3,7	
202-6	4600	9200	5150	105	75	202	185	90	158	127,0	15,5	0,17	30	3,8	1°
228-6	7000	14000	4550	125	85	228	220	100	174	139,0	17,5	0,31	39	4,2	
255-6	10200	20400	4100	140	95	255	245	115	196	155,0	19,5	0,53	55	4,7	
278-6	14200	28400	3750	145	105	278	260	125	218	175,6	21,2	0,81	74	5,2	
302-6	20000	40000	3450	165	115	302	295	135	234	185,2	24,4	1,33	97	5,7	
325-6	25000	50000	3200	175	123	325	315	145	254	202,0	26,0	1,92	123	6,5	
345-6	31000	62000	3000	175	134	345	315	155	270	213,6	28,2	2,32	142	6,9	
380-6	42300	84600	2700	215	144	380	370	170	296	232,0	32,0	4,39	198	7,6	
410-6	57100	114200	2500	215	157	410	370	185	320	253,6	33,2	5,52	235	8,2	
440-6	73500	147000	2350	235	167	440	395	195	334	261,2	36,4	7,61	280	8,8	
475-6	92000	184000	2200	250	180	475	425	210	358	281,6	38,2	11,19	356	9,5	
505-6	117000	234000	2050	270	196	505	460	230	394	310,0	42,0	16,22	450	10,1	

Larger sizes are available on demand.

1) Nominal Torque shrink disc connection included

2) Operating speed must be equal or less than permissible speed. For higher rotation speeds, please consult JAURE.

Permissible speeds could be limited by the weight and critical speeds of spacers. Check the dynamic balancing guide on page 5.

3) Shafts must be machined with tolerance g6. For other tolerances consult JAURE.

4) The minimum bore is given for Nominal Torque. Smaller bores are possible but transmitted torque is decreased. Consult JAURE.

5) Dimension DBSE is the distance between shafts ends and is a variable parameter.

6) Value of complete coupling and shrink discs with std. DBSE, d1 and d2 max.,  $GD^2=4J$ .

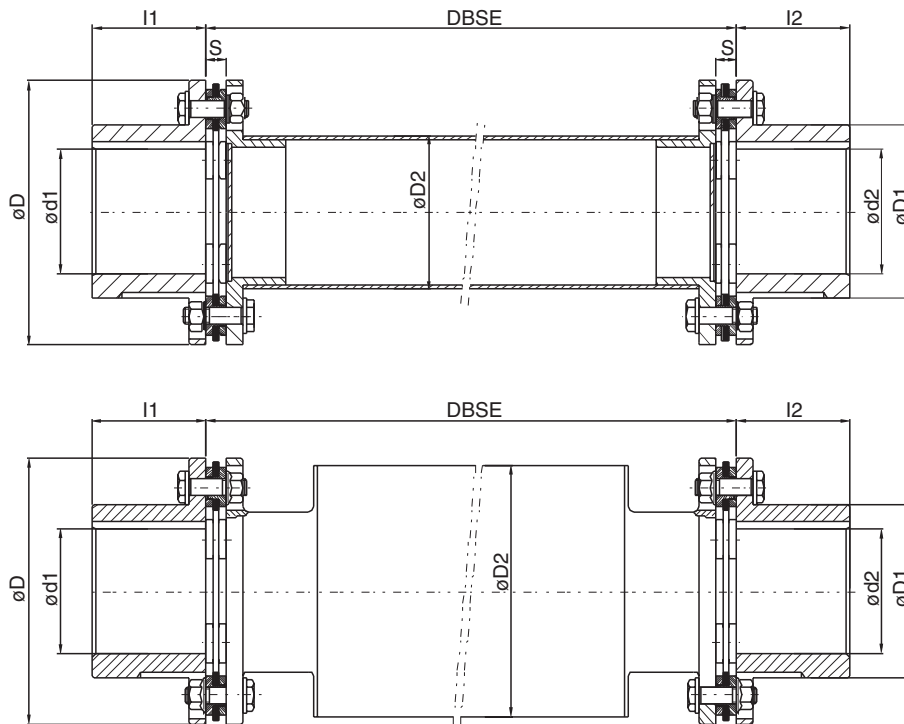
7) The value for axial misalignment is given for a complete 2 disc pack. Angular misalignment is given per pack. Refer to page 5 for combined permissible misalignment.

Modificaciones técnicas reservadas



# Lamidisc® coupling

## SXCF-6 Type: Composite<sup>1)</sup> Tube Configuration with Variable Distance Between Shaft Ends (D.B.S.E.).



Designation example: SXCF-158-6, DBSE= 3000mm, Max. speed= 1500rpm

Coupling Type SXCF Size	2) NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	REF. TUBE DESING	DIMENSIONS (mm.)						Axial 4) Misalig. ±Ka mm.	Ang. 4) Misalig. ±Kw deg.
				d1-d2 3) max.	D	D1	D2	l1-l2	S		
132-6	750	1125	C1	65	132	89	109	60	8,4	2,6	1,5°
158-6	1400	2100	C2 / C3	75	158	104	117 / 137	70	11,2	3,1	
185-6	2300	3450	C3 / C4	87	185	121	137 / 160	80	14,0	3,7	
202-6	3200	4800	C4 / C5	95	202	132	160 / 170	90	15,5	3,8	1°
228-6	4900	7350	C6	107	228	150	209	100	17,5	4,2	

REF. TUBE DESING	Max. DBSE (mm) x SPEED (rpm) <sup>5)</sup>			
	1800	1500	1000	750
C1	3300	3500	3600	3600
C2	3300	3600	3700	3700
C3	3600	3900	4800	5400
C4	3900	4300	5200	6100
C5	4000	4400	5400	5500
C6	4500	4900	5900	5900

Different sizes are available on demand.

1) All composite tubes made in CARBON FIBER. GLASS FIBER tubes available on demand.

2) Nominal Torque considered with stainless steel hardware

3) The maximum bores shown are for cylindrical or taper shafts with keys. For other type of connections consult JAURE.

4) The value for axial misalignment is given for a complete 2 disc pack. Angular misalignment is given per pack. Refer to page 5 of the catalogue for combined permissible misalignment.

5) The maximum DBSE and speed could be increased with a special design by means of a bigger tube diameter. Please consult JAURE.

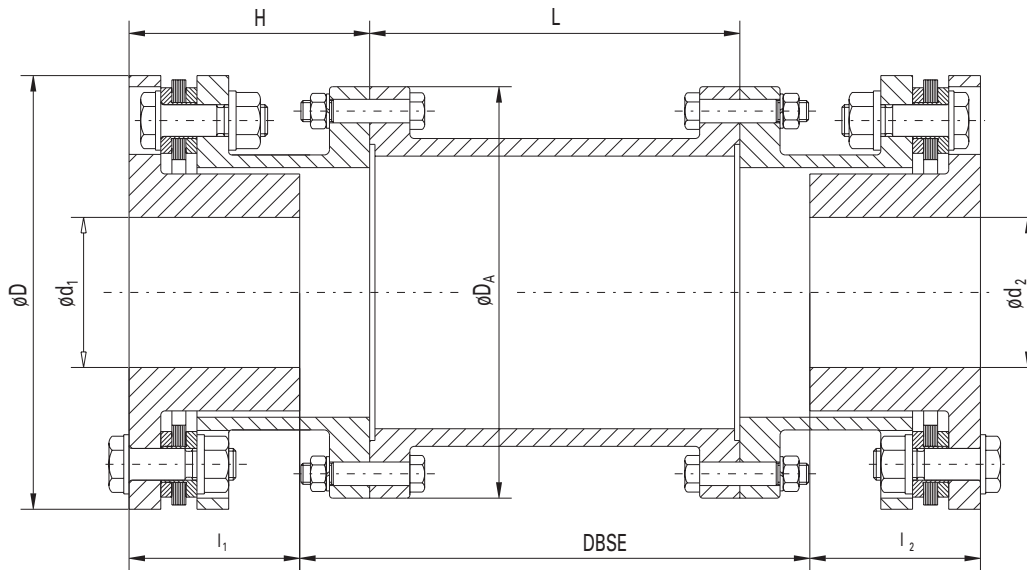
**NOTE:** the fan speed and number of blades is required to select a composite drive shaft for a cooling tower application.

For cooling towers, min. service factor=2

Modificaciones técnicas reservadas



## CX Type: Reduced Moment Configuration with Spacer according to AGMA\* 516



Designation example: CX-132-6/10, DBSE= 200mm.

Coupling Type CX Size	NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	MAX <sup>1)</sup> SPEED UNBALANCED r.p.m.	MAX <sup>2)</sup> SPEED BALANCED r.p.m.	DIMENSIONS (mm.)							5) Inertia J kgm <sup>2</sup>	5) Weight kg.	6) Axial Misalig. $\pm \Delta K_a$ mm.	6) Ang. Misalig. $\pm \Delta K_w$ deg.
					L min.	d1-d2 3) max.	D	D <sub>A</sub>	H	L <sub>1</sub> -L <sub>2</sub>	DBSE min 4)				
132-6/10	1100	2200	5840	14600	85	50	132	116	66	60	97	0.017	7.8	2.6	1.5°
158-6/15	2000	4000	4920	12300	110	60	158	152	81	70	132	0.056	16	3.1	
185-6/20	3300	6600	4200	10500	115	70	185	178	96	80	147	0.11	24	3.7	
202-6/25	4600	9200	3840	9600	135	75	202	213	110	90	175	0.23	38	3.8	1°
255-6/30	10200	20400	3080	7700	135	95	255	240	130	115	165	0.49	57	4.7	
278-8/35	20000	40000	2800	7000	175	100	278	279	150	125	225	1.02	91	3.7	
302-8/40	30000	60000	2560	6400	175	110	302	318	160	135	225	1.64	118	4.0	0.5°
325-8/45	37000	74000	2400	6000	175	115	325	346	165	145	215	2.23	134	4.3	
345-8/50	46000	92000	2200	5500	220	125	345	389	185	155	280	4.00	196	4.6	
380-8/55	63000	126000	2040	5100	220	140	380	425	200	170	280	5.92	245	5.0	
410-8/60	86000	172000	1880	4700	180	150	410	457	200	185	210	6.87	254	5.4	
540-8/70	220000	440000	1440	3600	200	195	540	527	235	240	190	21.13	508	7.2	

Larger sizes are available on demand.

1) Operating speed must be equal or less than permissible speed. Permissible speeds could be limited by the weight and critical speeds of spacers. Check the dynamic balancing guide and critical speeds on page 5.

2) Max. rotation speeds considered in special mat. and/or execution. For higher rotation speeds, please consult JAURE.

3) The maximum bores shown are for cylindrical or taper shaft with keys. For other type of connections consult JAURE.

4) Dimension DBSE is the distance between shaft ends and is a variable parameter.

5) Value of complete coupling with DBSE min, d1 and d2 max.,  $GD^2 = 4J$ .

6) The value for axial misalignment is given for a complete 2 disc pack. Angular misalignment is given per pack. Refer to page 5 for combined permissible misalignment.

Overload bushings (CXR) are available on demand.

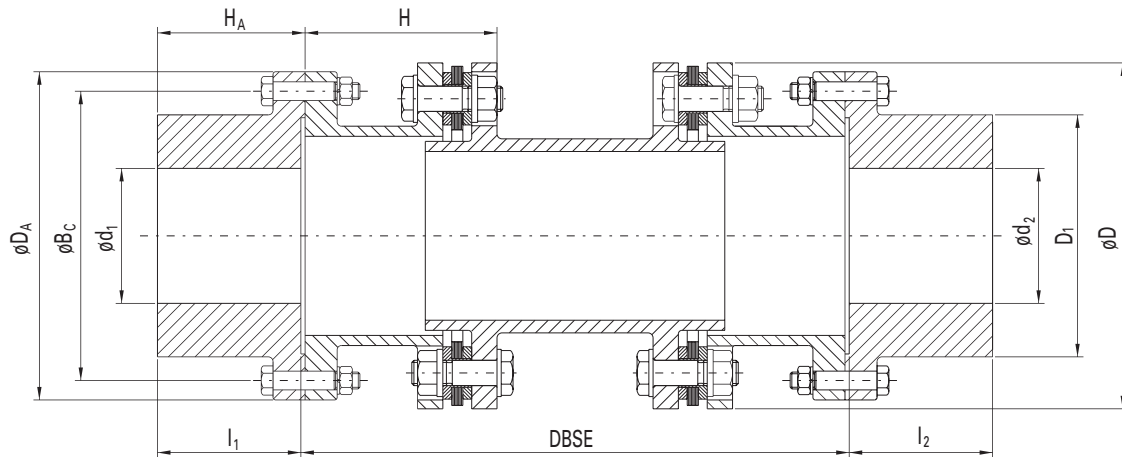
\*AGMA: American Gear Manufacturers Association





# Lamidisc® coupling

## DX Type: Drop-out Configuration with Floating Assembly, Flanges according to AGMA\* 516



Designation example: DX-132-6/10, DBSE= 200mm.

Coupling Type DX Size	NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	MAX. <sup>1)</sup> SPEED UNBALANCED r.p.m.	MAX. <sup>2)</sup> SPEED BALANCED r.p.m.	DIMENSIONS (mm.)									4) Inertia J kgm <sup>2</sup>	4) Weight kg.	5) Axial Misalign. ±ΔKa mm.	5) Ang. Misalign. ±ΔKw deg.
					d1-d2 2) max.	D <sub>1</sub>	D	D <sub>A</sub>	B <sub>C</sub>	H <sub>A</sub>	l <sub>1</sub> -l <sub>2</sub>	H	DBSE min 3)				
132-6/10	1100	2200	5840	14600	55	80	132	116	95.2	42.0	40	66	170	0.013	5	2.6	1.5°
158-6/15	2000	4000	4920	12300	70	100	158	152	122.2	49.5	47	81	225	0.039	11	3.1	
185-6/20	3300	6600	4200	10500	90	125	185	178	149.2	60.5	58	96	265	0.084	17	3.7	
202-6/25	4600	9200	3840	9600	105	148	202	213	180.9	76.5	74	110	300	0.15	24	3.8	1°
255-6/30	10200	20400	3080	7700	120	173	252	240	206.4	90.5	88	130	365	0.40	42	4.7	
278-8/35	20000	40000	2800	7000	145	204	278	279	241.3	105	102	150	405	0.75	67	3.7	0.5°
302-8/40	30000	60000	2560	6400	170	242	302	318	279.4	118	113	160	440	1.18	86	4.0	
325-8/45	37000	74000	2400	6000	190	268	325	346	304.8	134	129	165	455	1.62	102	4.3	
345-8/50	46000	92000	2200	5500	215	302	345	389	342.9	149	144	185	500	2.67	139	4.6	
380-8/55	63000	126000	2040	5100	230	327	380	425	368.3	181	175	200	545	4.10	179	5.0	
410-8/60	86000	172000	1880	4700	250	354	410	457	400.0	194	188	200	555	5.15	199	5.4	
540-8/70	220000	440000	1440	3600	290	410	540	527	463.5	227	221	235	680	17.56	419	7.2	

Larger sizes are available on demand.

1) Max. rotation speeds considered in special mat. and/or execution. For higher rotation speeds, please consult JAURE. Due to their large DBSE, JAURE recommends that all DX couplings to be balanced. Check the critical speed on page 5.

2) The maximum bores shown are for cylindrical or taper shaft with keys. For other type of connections consult JAURE.

3) Dimension DBSE is the distance between shaft ends and is a variable parameter.

4) Value of complete coupling with DBSE min, d1 and d2 max.,  $GD^2 = 4J$ .

5) The value for axial misalignment is given for a complete 2 disc pack. Angular misalignment is given per pack. Refer to page 5 for combined permissible misalignment.

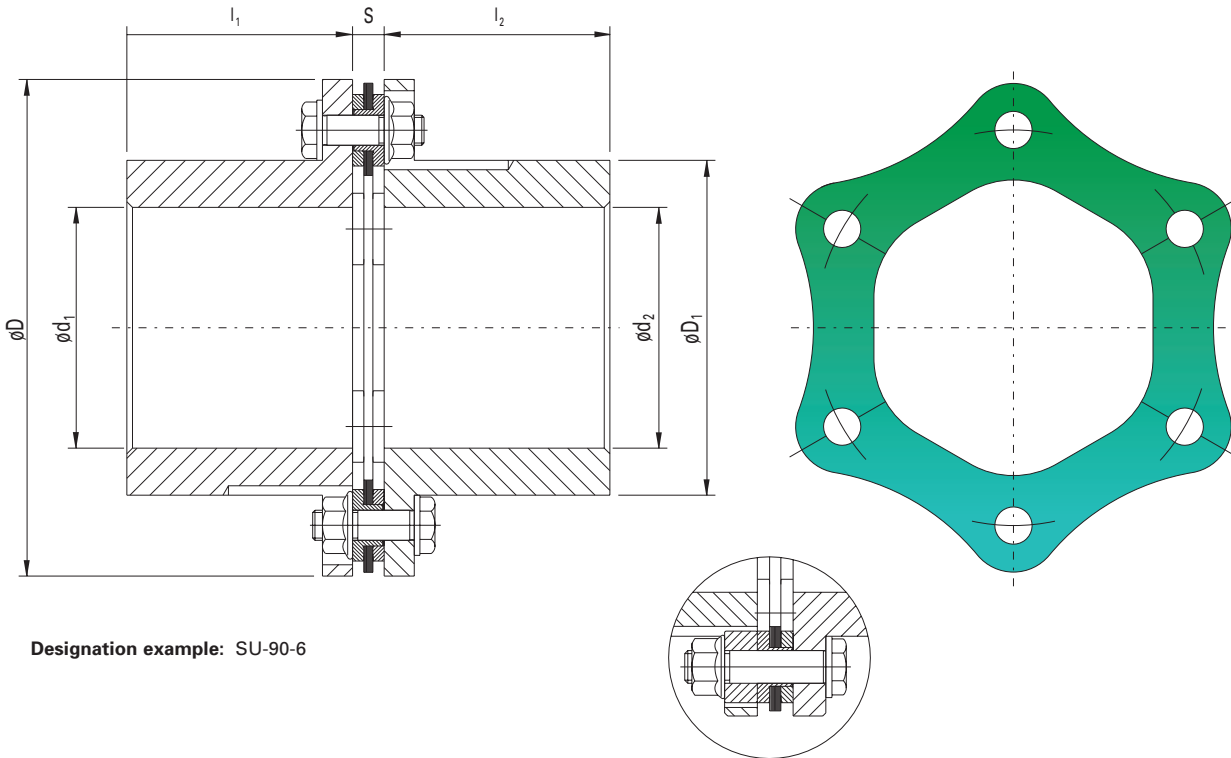
Overload bushings (DXR) are available on demand.

\*AGMA: American Gear Manufactures Association



# Lamidisc® coupling

## SU-6 Type: Single disc pack configuration



Designation example: SU-90-6

**SUR<sup>4)</sup> Type**

Coupling Type <b>SU</b> Size	NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	DIMENSIONS (mm.)					2) Inertia J kgm <sup>2</sup>	2) Weight kg.	3) Axial Misalig. ±ΔKa mm.	3) Ang. Misalig. ±ΔKw deg.
			d1-d2 1) max.	D	D1	l <sub>1</sub> -l <sub>2</sub>	S				
<b>90-6</b>	240	480	41	90	58	40	7.5	0.0012	1.4	0.75	1.5°
<b>110-6</b>	575	1150	50	110	70	50	8.4	0.003	2.3	1.0	
<b>132-6</b>	1100	2200	65	132	89	60	8.4	0.007	3.8	1.3	
<b>158-6</b>	2000	4000	75	158	104	70	11.2	0.017	6.4	1.5	
<b>185-6</b>	3300	6600	87	185	121	80	14.0	0.037	9.9	1.8	
<b>202-6</b>	4600	9200	95	202	132	90	15.5	0.061	13.5	1.9	1°
<b>228-6</b>	7000	14000	107	228	150	100	17.5	0.11	19	2.1	
<b>255-6</b>	10200	20400	117	255	163	115	20.5	0.21	29	2.3	
<b>278-6</b>	14200	28400	131	278	183	125	21.2	0.32	37	2.6	
<b>302-6</b>	20000	40000	145	302	201	135	24.4	0.50	49	2.8	
<b>325-6</b>	25000	50000	156	325	219	145	26.0	0.71	60.5	3.2	
<b>345-6</b>	31000	62000	165	345	230	155	28.2	0.98	73	3.4	
<b>380-6</b>	42300	84600	178	380	249	170	32.0	1.57	96	3.8	
<b>410-6</b>	57100	114200	192	410	269	185	33.2	2.33	124	4.1	
<b>440-6</b>	73500	147000	206	440	289	195	36.4	3.32	151	4.4	
<b>475-6</b>	92000	184000	220	475	309	210	38.2	4.89	191	4.7	
<b>505-6</b>	117000	234000	233	505	327	230	42.0	6.69	233	5.0	

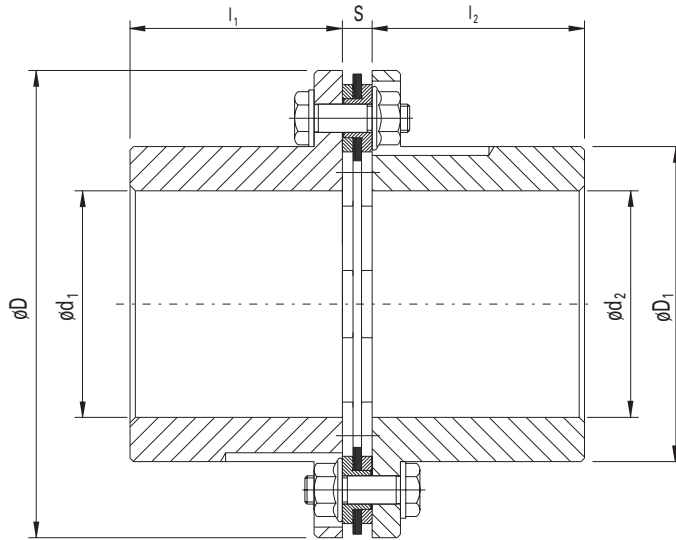
**Larger sizes are available on demand**

- 1) The maximum bores shown are for cylindrical or taper shafts with keys. For other type of connections consult JAURE.
- 2) Value of complete coupling with DBSE min, d1 and d2 max., GD<sup>2</sup> =4J.
- 3) This configuration allows only stated axial and angular misalignments. RADIAL MISALIGNMENTS ARE NOT ADMISSIBLE.
- 4) Overload bushings (SUR) are available on demand.

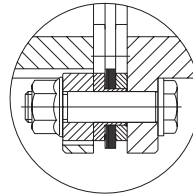
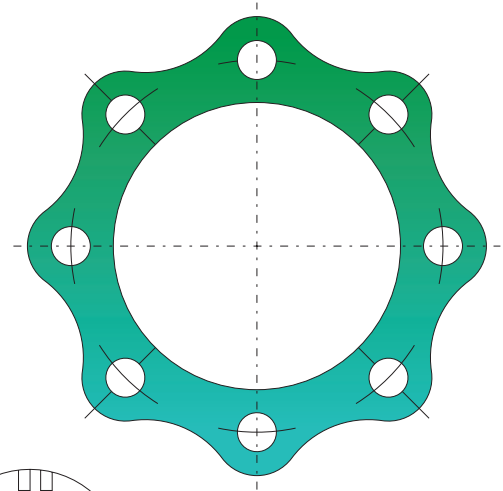


# Lamidisc® coupling

## SU-8 Type: Single disc pack configuration



Designation example: SU-302-8



SUR<sup>4)</sup> Type

Coupling Type <b>SU</b> Size	NOMINAL TORQUE Nm.	PEAK TORQUE Nm.	DIMENSIONS (mm.)					2) Inertia J kgm <sup>2</sup>	2) Weight kg.	3) Axial Misalig. ±ΔKa mm.	3) Ang. Misalig. ±ΔKw deg.
			d1-d2 1) max.	D	D1	l <sub>1</sub> -l <sub>2</sub>	S				
278-8	20000	40000	131	278	183	125	21.2	0.348	39	1,8	0.5°
302-8	30000	60000	145	302	201	135	24.4	0.540	51	2.0	
325-8	37000	74000	156	325	219	145	26.0	0.756	63	2.1	
345-8	46000	92000	165	345	230	155	28.2	1.03	75	2.3	
380-8	63000	126000	178	380	249	170	32.0	1.68	101	2.5	
410-8	86000	172000	192	410	269	185	33.2	2.51	130	2.7	
440-8	110000	220000	206	440	289	195	36.4	3.59	158	2.9	
475-8	138000	276000	220	475	309	210	38.2	5.25	200	3.1	
505-8	175000	350000	233	505	327	230	42.0	7.22	245	3.3	
540-8	220000	440000	235	540	330	240	46.0	8.67	272	3.6	
570-8	259000	518000	250	570	350	250	51.6	11.49	320	3.8	
605-8	315000	630000	265	605	370	265	53.2	15.39	381	3.9	
635-8	383000	766000	275	635	385	280	60.8	20.42	446	4.1	
675-8	454000	908000	290	675	410	300	65.2	27.9	541	4.2	
700-8	528000	1056000	300	700	420	315	68.8	33.9	610	4.4	
730-8	608000	1216000	315	730	440	330	71.2	41.3	685	4.6	
760-8	700000	1400000	330	760	460	350	72.8	52.1	792	4.8	

**Larger sizes are available on demand**

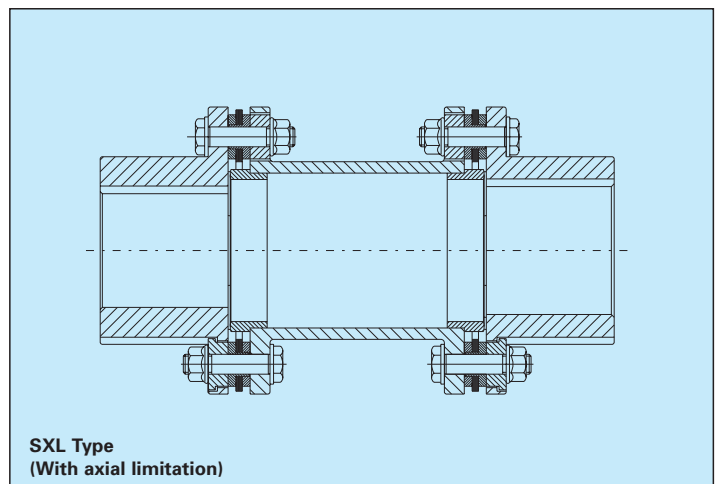
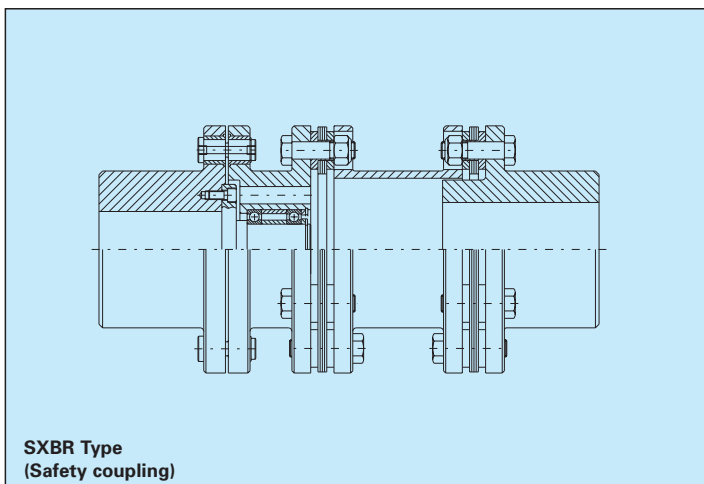
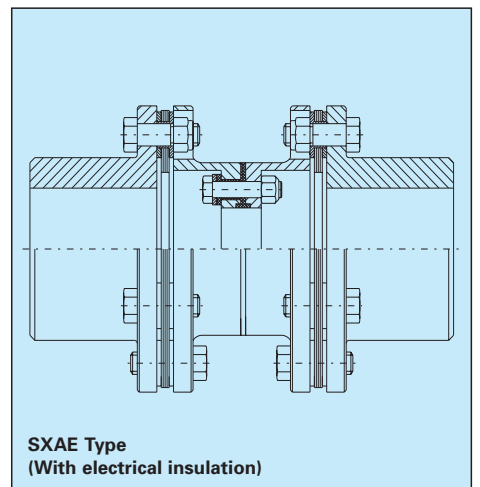
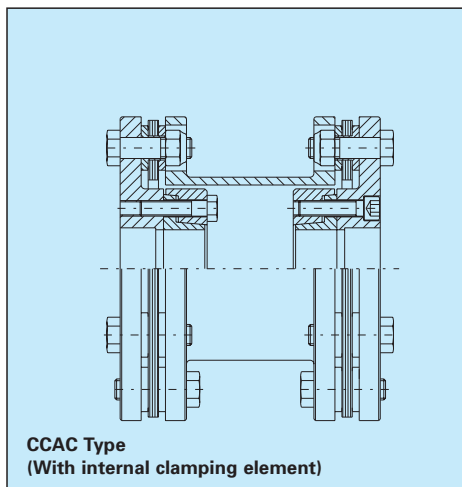
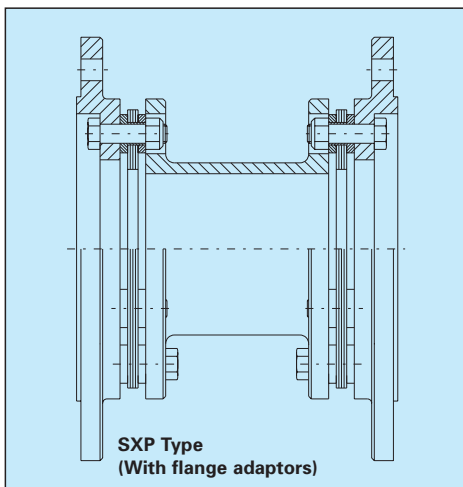
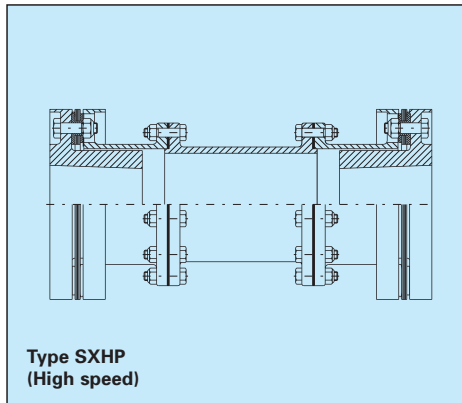
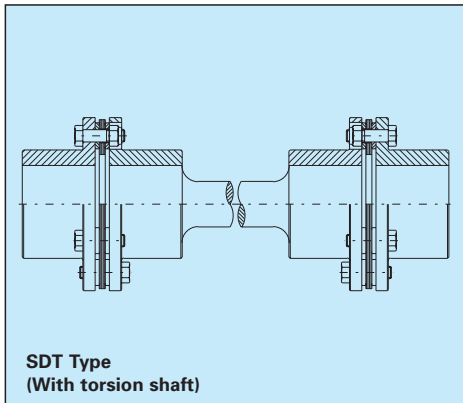
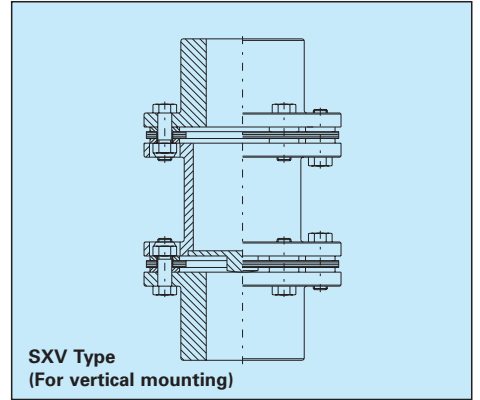
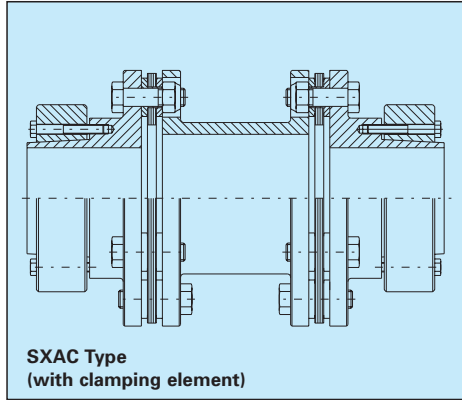
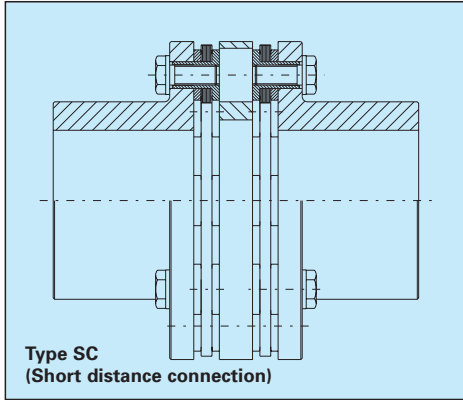
- 1) The maximum bores shown are for cylindrical or taper shafts with keys. For other type of connections consult JAURE.
- 2) Value of complete coupling with DBSE min, d1 and d2 max., GD<sup>2</sup> =4J.
- 3) This configuration allows only stated axial and angular misalignments. RADIAL MISALIGNMENTS ARE NOT ADMISSIBLE.
- 4) Overload bushings (SUR) are available on demand.



# Lamidisc® coupling

## Applications

Herewith are shown various examples for the Lamidisc® coupling. Our Technical Department is ready to study the most suitable configuration to fit your requirements.





# Lamidisc® coupling



Lamidisc® DOAE-345-8 CFRP: for patrol boats propulsion



Lamidisc® SX-730-10 & DO-675-8



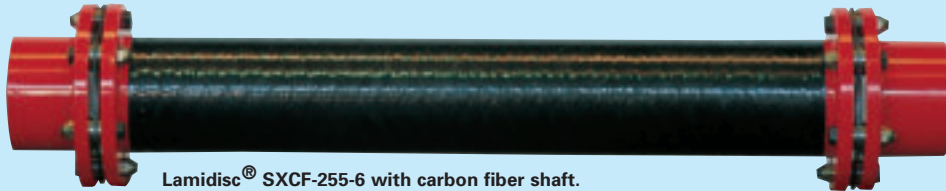
Glass fiber shaft for Lamidisc® SXGF-228-6/3296 mm for cooling towers with bonded and bolted joint.



AISI 301 disc-pack with an antifretting and anti-rust coating.



Dynamic balancing.



Lamidisc® SXCF-255-6 with carbon fiber shaft.



Lamidisc® SXGF-302-6/752 mm with glass fiber shaft for windmills.



Superficial treatment for composite shaft



Bonded joint curing

Technical modifications reserved





# Lamidisc® coupling



Conical sleeve for hydraulic dismantling



Lamidisc® DO-570-8.



Lamidisc® DOAE-475-8 - CFRP: for fast ferry shaft lines



Lamidisc® DO-675-8 SP for marine main propulsion (waterjet)  
(11.640 kW @ 558 rpm)



Custom-made solutions, high speed and API (610, 671) couplings.



Detail of Lamidisc® DO-675-8 SP with electrical insulation.



Lamidisc® SXRFD-202-6 for cranes.



## Installation of hubs . Machinery alignment . Installation of disc packs and spacer.

### 1.- Installation of the hubs on the machine shafts.

#### a) Straight shafts with keyway.

Jaure supplies Lamidisc® hubs machined with H7 (ISO-286) tolerance. Jaure recommends that the shaft should be machined for an interference fit, using tolerance s6 (ISO-286).

Whenever the shafts are already machined with a different tolerance from s6, Jaure will customize the hub bores. The following tolerances are recommended by JAURE.

Shaft tolerance	Hub tolerance
h6	S7
k6	M7
m6	K7
n6	J7
p6	H7

#### b) Clamping devices.

When clamping devices, such as tapered bushings, are used, JAURE recommends that the shafts should be machined with g6 tolerances, for a standard Lamidisc® bore, (H7).

For other type of connections, please consult our Technical Department.

### 2.- Machinery Alignment.

As long as the machines are aligned within the mounting specifications from this catalog, the Lamidisc® couplings will operate for a long time. However, it should be understood that the useful life of any disc pack coupling is directly influenced by the operating misalignment: the better the alignment, the longer the coupling life.

Although the Lamidisc® couplings can operate satisfactorily at the misalignment listed in the catalog, both the coupling life and machine bearing wear can be greatly improved if the machines are aligned better than the maximum value that the coupling can accommodate. JAURE recommends that the working misalignment should not exceed 20 % of the catalog values. Therefore, the following formulas show JAURE's recommendations for maximum misalignment.

Three types of machine misalignment (offset, angular, and axial) should be checked. JAURE has the following recommendations:

• **The maximum radial misalignment** that the Lamidisc® coupling can accommodate is a function of the distance between the disc packs. For the configurations SX this distance is practically the same as the distance between the shaft ends. This statement is not valid for other configurations, such as CC, DO, CX, DX.

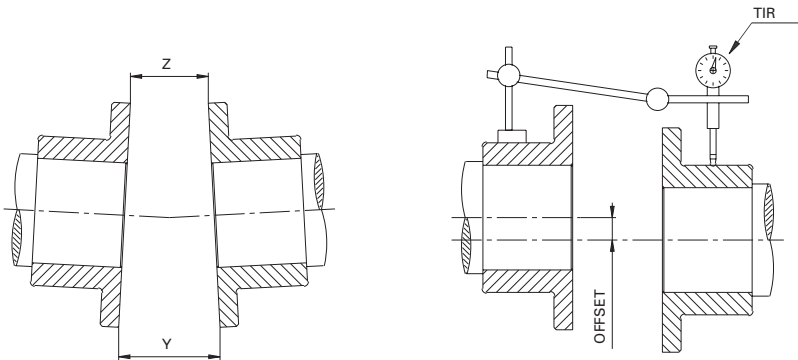
If shafts have an offset misalignment with minimum angular misalignment, the following maximum values for the offset are applicable.

- Lamidisc® with 6 bolts  $TIR < ( \text{disc pack to disc pack distance} ) / 150$
  - Lamidisc® with 8 bolts  $TIR < ( \text{disc pack to disc pack distance} ) / 300$
  - Lamidisc® with 10 bolts  $TIR < ( \text{disc pack to disc pack distance} ) / 350$
- (NOTE : TIR is the Total Indicator Reading, which is twice the shaft offset )

• **The maximum angular misalignment** at each disc pack is listed in the tables. This angular misalignment can be verified by measuring the flange-to-flange distance (see figure below) and subtracting the smallest reading from the largest reading (Y-Z). The maximum value of (Y-Z) depends on the flange diameter, therefore on the coupling size. Based on the data from the tables, the following maximum values for (Y-Z) are recommended:

- Lamidisc® with 6 bolts  $(Y-Z) \leq \text{Coupling size} / 300$
- Lamidisc® with 8 bolts  $(Y-Z) \leq \text{Coupling size} / 600$
- Lamidisc® with 10 bolts  $(Y-Z) \leq \text{Coupling size} / 700$

Example: For Lamidisc® size 380-6 ( maximum angular misalignment of 1 ° ), (Y-Z) should not exceed  $380/300 = 1.27$  mm.



• **The axial misalignment** allowable between shafts during installation, should not exceed 20% of the allowable displacement given in the catalog. This displacement is a function of the coupling size and the number of bolts utilized. The larger the size the larger axial displacement.

The axial displacement creates large stresses in the discs. For a long life it is recommended that the discs are as close as possible to being flat. Therefore, the movements of the shafts as caused by thermal expansion should be carefully considered. For instance, if the distance between shaft ends changes by -5 mm ( the shafts are coming closer to each other ) from cold to hot machines, the distance between shaft ends with cold machines should be intentionally be made larger by 5 mm when the coupling is installed.

### 3.- Installation of disc packs and spacer.

The installation of the coupling components depends of the type Lamidisc® coupling: the only tool needed are regular wrenches or sockets, and a torque wrench. **Tightening the bolts of a coupling according to specification is very important.**



# Lamidisc® coupling

## Values for Disc-pack bolts tightening torque.

Size	Disc bolt non-lubricated tightening torque (Nm)	Size	Disc bolt non-lubricated tightening torque (Nm)	Size	Disc bolt non-lubricated tightening torque (Nm)	Size	Disc bolt non-lubricated tightening torque (Nm)
90	13	255	450	440	2000	675	9900
110	30	278	450	475	2600	700	12200
132	30	302	600	505	3300	730	12200
158	60	325	600	540	4100	760	14800
185	100	345	780	570	5100		
202	150	380	1100	605	6200		
228	230	410	1500	635	7900		

NOTA: For lubricated threads reduce the given values by 20 %.  
For hardware (Bolts and nuts) in stainless steel mat., consult JAURE.

## Values for spacer (type CX) and flange (type DX) bolt non-lubricated tightening torque in Nm.

Size	CX and DX types	Size	CX and DX types
132-6/10	8	302-8/40	230
158-6/15	20	325-8/45	230
185-6/20	68	345-8/50	325
202-6/25	108	380-8/55	325
255-6/30	108	410-8/60	325
278-8/35	230	540-8/70	565

## Values of tightening torque in Nm for flange connecting bolts. Types DO-6 and DO-8.

Size	Bolt non-lubricated tightening torque (Nm)	Size	Bolt non-lubricated tightening torque (Nm)	Size	Bolt non-lubricated tightening torque (Nm)	Size	Bolt non-lubricated tightening torque (Nm)
90-6	15	278-6	580	505-6	2000	410-8	565
110-6	35	302-6	780	278-8	108	475-8	660
132-6	35	325-6	780	302-8	108	505-8	660
158-6	69	345-6	580	325-8	325	540-8	760
185-6	120	380-6	780	345-8	325	570-8	760
202-6	190	410-6	1000	380-8	325	605-8	760
228-6	295	440-6	1500				
255-6	580	475-6	2000				

NOTE: For lubricated threads reduce the given values by 20 %  
For hardware (Bolts and nuts) in stainless steel mat., consult JAURE.

### a) Standard configuration. SX and SXR types.

The only bolts to be installed and tightened are the ones that attach the disc packs to the hubs and spacer. Place the spacer and install the bolts with their heads at the flange and not at the disc pack. The nuts shall be turned with the torque wrench to the specified torque, while the heads of the bolts are held stationary.

### b) Close coupled configuration. CC and CCR types.

The CC coupling type was created for use with machines that have the shafts too close for the use of the standard SX coupling. The outside diameter of the hubs was reduced to be inserted in the inside of the hole of the disc pack.

To install the hubs on their shafts, the shafts must be spaced apart at least the length of one hub (see dimension I1 and I2 in the table). To install the coupling, the disc packs can be first attached with their bolts to the spacer, and then slide over one of the hubs, and attached to it. Next, the machines must be brought in position so that the second disc pack can be attached to its hub.

The machine alignment can now be performed. Because the spacer covers the shaft ends, the axial spacing must be checked by measuring the flange to flange distance (dimension "S" in tables). The offset and angular misalignments can be checked as previously described.

The bolts that attach the disc packs to the hubs and spacer must be tighten to specification, using a torque wrench at the nuts, while the bolts heads are held stationary.

### c) Drop-out configuration. DO type.

The drop-out configuration allows the installation and removal of the coupling assembly, without the need to remove the hubs from their shafts. The coupling is received from JAURE fully assembled, with the bolts tightened to specifications. If, however, there is a need to disassemble the coupling assembly (in case the disc packs need to be replaced) the nuts should be tightened to specification using a torque wrench, while the bolt heads are held stationary. Machine alignment should be done before the coupling assembly is in place.

The coupling assembly will not fit between the hubs, as long as the shaft-to-shaft distance was correctly set. The coupling ends should be brought together by compressing the disc packs using the shipping screws, so that the assembly will fit between the male rabbets.

Once in position, the coupling will snap in place, and the bolts that attach the assembly to the shaft hubs must be tightened to JAURE specifications using a torque wrench. This operation must be carefully performed, as these bolts transmit the full coupling torque.

To remove the coupling assembly first remove all the bolts that retain it to the hubs. Then compress the assembly by introducing the existing flange bolts in the shipping holes and press the coupling away from the male rabbets.

### d) Reduced moment coupling with spacer according to AGMA 516, CX type.

The reduced moment configuration is used whenever the shaft stresses require that the center of gravity of the coupling is very close to the machine bearings. This configuration also allows either machine to be removed by dropping the spacer, without the need to disturb the disc-pack assemblies.

The installation of this coupling requires the following steps:

- Install the hubs on their shafts.
- Measure and adjust the shaft to shaft (DBSE) distance.
- Align the machine shafts as previously described.
- Attach one disc pack and a short sleeve at each hub, by tightening the nuts to specifications, while holding the bolt heads stationary.
- Place the spacer between the two sleeves. It should fit without interference, or without a gap remaining between the flanges. Correct the machine spacing if necessary, as any axial displacement can adversely affect coupling's long term performance.
- Insert the flange bolts and tighten the nuts to specifications using a torque wrench and adaptor, while holding the bolt heads stationary.
- Recheck the alignment, and correct if necessary.

### e) Drop-out coupling with floating assembly, flanges according to AGMA 516, DX type.

Machine alignment should be done before the coupling assembly is in place. The drop-out configuration allows the installation and removal of the coupling assembly, without the need to remove the hubs from their shafts. The coupling is received from Jaure fully assembled, with the bolts tightened to specifications. If, however, there is a need to disassemble the coupling assembly (in case the disc packs need to be replaced) the nuts should be tightened to specification using a torque wrench, while the bolt heads are held stationary.

The coupling assembly will fit between the hubs, as long as the shaft-to-shaft distance was correctly set. Once in position, the nuts that attach the assembly to the shaft hubs must be tightened to specifications using a torque wrench and adaptor, while the bolt heads are held stationary. This operation must be carefully performed, as these bolts transmit the full coupling torque.

Technical modifications reserved



## DO Type with STANDARD HUB

Mounting and dismounting instructions.

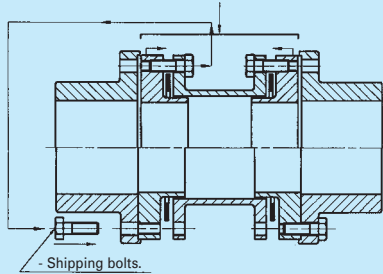
### Mounting

① - Shipping position.

② - Remove the flange bolts (and shipping bolts if shipping bushings are supplied).

② **IMPORTANT:** Remove shipping bushings before installation. (when supply, only with big couplings).

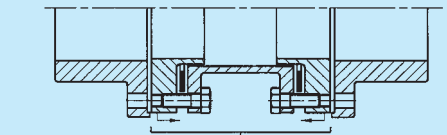
③ - Introduce flange bolts or shipping bolts in the shipping holes in order to compress the central element.



④ - Bolt up with the recommended tightening torque. ⑤ - Work position.

### Dismounting

① - Work position. ② - Remove flange bolts.



③ - Introduce the flange bolts in the shipping holes in order to compress the central element.

## DO Type with JUMBO HUB

Mounting and dismounting instructions.

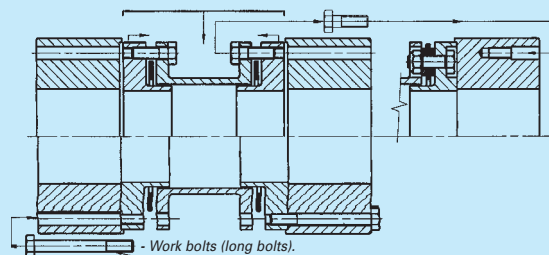
### Mounting

① - Shipping position.

② - Remove the long and short flange bolts (if shipping bushings are supplied).

② **IMPORTANT:** Remove shipping bushings before installation. (when supply, only with big couplings).

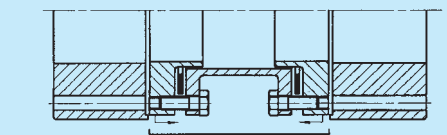
③ - Introduce the shipping-dismounting bolts (short bolts) in the shipping holes in order to compress the central element. - After, remove shipping bolts and store in screw bores of the hubs.



④ - Bolt up the long bolts with the recommended tightening torque. ⑤ - Work position.

### Dismounting

① - Work position. ② - Remove flange bolts (long bolts) and shipping-dismounting bolts (short bolts).



③ - Introduce the shipping-dismounting bolts (short bolts) in the shipping holes in order to compress the central element.

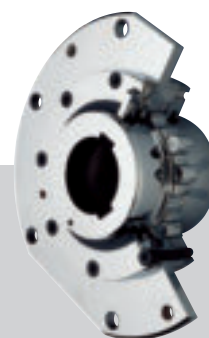
# JAURE, S.A. - Couplings and transmission elements



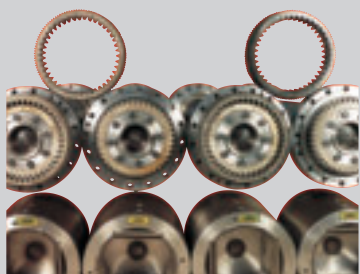
■ MT crowned tooth gear coupling



■ LAMIDISC® all steel disc coupling



■ Barrel coupling TCB-s®



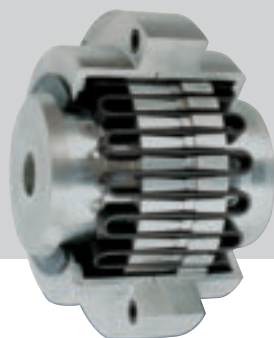
■ Gear spindles for rolling mills



■ High speed disc couplings LAMIDISC®HP



■ Composite link coupling COMPOLINK®



■ RECORD flexible spring coupling



■ JAUFLEX® elastic coupling



■ IXILFLEX® link type elastic coupling



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