FLEXIBLE COUPLINGS

HUTCHINSON®
PAULSTRA

FLEXIBLE COUPLINGS

CONTENTS

Please see current price list for availability of items.
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The order comprises :
- the contract signed by both parties, or the purchase order and the acknoledgement of receipt,
- eventualy, special or specific additional conditions,
- sale general conditions, available upon request are part of the order.

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I - GENERAL

I.1 - FUNCTION OF A FLEXIBLE COUPLING

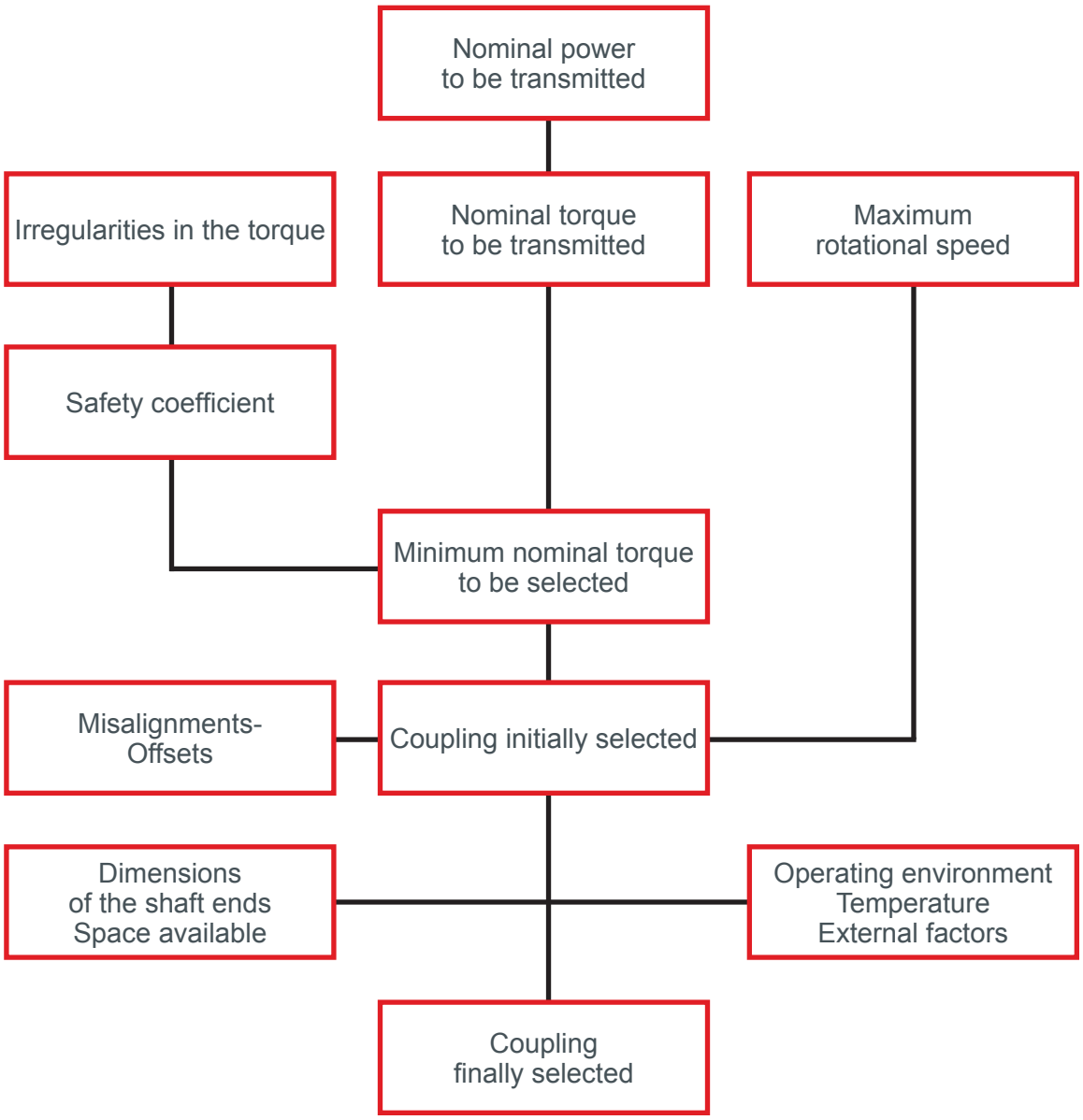
When transmitting torque from a drive shaft to a driven shaft, flexible couplings :

- absorb and dampen irregularities in the torque,
- distribute peak loads,
- allow misalignments and offsets between the shafts,
- permit some distortions in the mounting beds,
- avoid the unwelcome constraints that may occur if a rigid coupling were fitted in the same conditions,
- allow a lighter construction, with wider tolerances, and lower cost.

In particular, a flexible coupling is absolutely essential if the machines that are coupled are on flexible mountings.
Moreover, there is no play in a flexible coupling, and it therefore runs silently, without friction anddoes not need to be greased.

I.2 - SELECTION PARAMETERS

The procedure for selecting a coupling is set out below :



In order to select a flexible coupling, therefore, the following parameters should be known :

- **Nominal torque to be transmitted.**
- **Safety coefficient - Nominal torque of the coupling.**
- **Stiffness - Misalignments - Offset.**
- **Dimensions - Space available.**
- **Operating environment - Temperature - External factors.**

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I.2.1 - NOMINAL TORQUE TO BE TRANSMITTED

The nominal torque is the main factor which determines the dimensions of the coupling between the shafts of the machines that are connected directly to it.
The nominal torque to be transmitted is a function of the nominal power to be transmitted and the rotational speed.

$$T\ (N.m) = \frac{7\,024 \times P\ (bhp)}{N\ (rpm)}$$

$$T\ (N.m) = \frac{9\,550 \times P\ (Kw)}{N\ (rpm)}$$

The nominal power to be transmitted is that of the driving machine expressed in kilowatts (Kw) or brake horsepower (bhp). The couplings in PAULSTRA's standard range can transmit power from 1 Kw to more than 2,000 Kw.

The rotational speed expressed in revolutions per minute is that of the driving machine and must be less than the maximum speed accepted by the coupling.

The couplings in PAULSTRA's standard range allow high speeds (up to 10,000 rpm), which is greater than electric motor speeds. The maximum speeds indicated can be achieved only if great care is taken during assembly.

In addition to its elastic properties, the rubber has **viscous damping** characteristics which dampen the oscillations (1) and in particular the oscillations which might become excessive during transient periods of peak load.
The dampening effect is produced by irreversibly absorbing the energy which is thus converted into heat. In order to prevent the rubber being damaged by the resultant increase in temperature, especially if running at high speed, it is important to ensure the best possible alignment.

Once the coupling has been chosen, if difficult **peak load conditions** become evident, it would be advisable to choose a flexible coupling with different characteristics.

I.2.2 - SAFETY COEFFICIENT

The following factors should be taken into consideration when selecting the nominal torque of the coupling :
- irregularities in the torque characteristic of the driving and the driven machines (K_1),
- frequency of start-ups (K_2),
- number of hours in operation per day (K_3).

The product K of these three coefficients K_1, K_2, K_3, is called the safety coefficient or the load factor.

Nominal torque of the coupling = Nominal torque to be transmitted x safety coefficient.

An excessive safety coefficient should be avoided as this tends to lead to the selection of a coupling that is oversize and too stiff.

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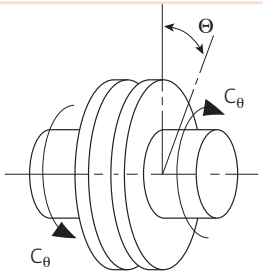
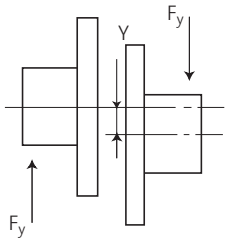
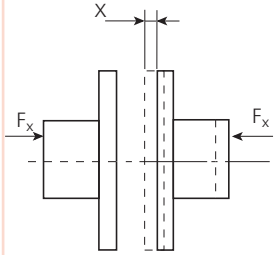
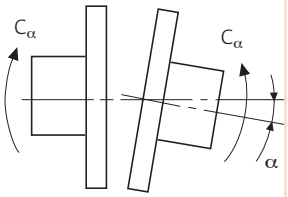
I.2.3 - STIFFNESS - MISALIGNMENTS - OFFSETS

A flexible coupling always allows, to varying degrees depending on type, structure and dimensions, displacements in four ways : axial, radial, conical and torsional. A stiffness defined for each of these cases. The stiffness affects the way in which the coupling reacts when subjected to each of the various possible displacements.

Torsional or polar stiffness	Radial stiffness	Axial stiffness	Conical stiffness
			
$K\theta = \frac{\text{Torque}}{\text{Angular}} = \frac{C\theta}{\Theta}$ expressed in m.kN/radian	$Ky = \frac{\text{Radial force}}{\text{Corresponding radial displacement}} = \frac{Fy}{Y}$ expressed in m.kN/radian	$Kx = \frac{\text{Axial force}}{\text{Corresponding axial displacement}} = \frac{Fx}{X}$ expressed in daN/mm	$K\alpha = \frac{\text{Misalignment torque}}{\text{Angular misalignment}} = \frac{T\alpha}{\alpha}$ expressed in m.kN/radian

It can be seen that a coupling can absorb misalignment more easily if it is very flexible (ie it is less stiff). With flexible couplings «alignment» is not an arduous, high precision operation as is the case with rigid couplings.
The forces generated by flexible couplings, which are transmitted to the shafts and supports, are, of course, proportional to the magnitude of the misalignments.

I.2.4 - DIMENSIONS – SPACE OCCUPIED

When choosing the coupling, one should bear in mind :

- the dimensions (diameter and length) of the ends of the shafts to which the flanges of the coupling will be fitted,
- the space (diameter and length) available between the machines for the coupling.

I.2.5 - OPERATING CONDITIONS – TEMPERATURE – EXTERNAL FACTORS

The natural rubber which has been selected for most of our standard couplings on the basis of its good dynamic qualities :

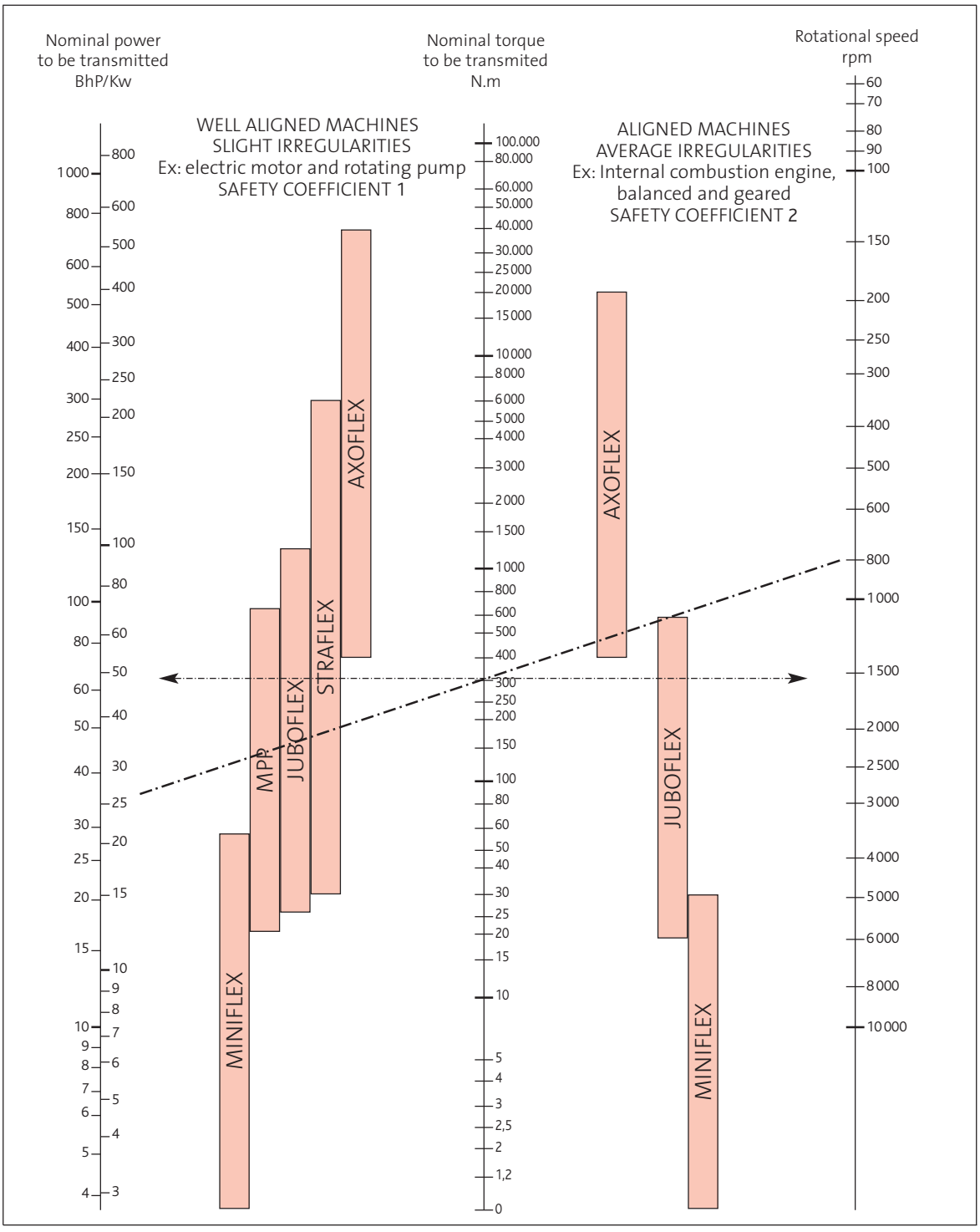
- is very good for the operating environment of most machines,
- is not affected by accidental contact with oil or petrol,
- easily withstands temperatures up to 70°C.

A temperature which is permanently higher will lead to progressive deterioration in the properties of the rubber and it would therefore be advisable to consider special compounds.
Most PAULSTRA flexible couplings can be made using various types of special compounds that can withstand above average temperatures and remain serviceable in unusual conditions: prolonged contact with hydrocarbons, acids, alkalis or with unusual gases (ozone, chlorine . .).

If operating conditions are different from those defined for our standard couplings, contact our Technical Department.

II - SELECTING A COUPLING

I.1 - CALCULATING THE NOMINAL TORQUE TO BE TRANSMITTED



Example : To calculate the torque, draw a straight line between the points representing the power to be transmitted and the rotational speed of the machine. The intersection at the central scale indicates the torque value.
Ex. : 25 Kw at 800 rpm 300 N.m. Draw an horizontal line through this point.
The type of coupling will then be selected, bearing in mind the safety coefficient to be applied and the flexibility required. Refer to the selection chart, page 300.

II.2 - SAFETY COEFFICIENT

II.2.1 - COEFFICIENT K1 = DRIVING MACHINE/DRIVEN MACHINE

Driving Machine			Driven machine	Examples of driven machines
Electr. motor or turbine	Piston Engine			
	4 to 6 cylin.	1 to 3 cylin.		
1	1.2	1.4	❶ Smooth operation - Very low inertia	• Lay shaft • Lighting generator • Series of shafts • Centrifugal pump • Centrifugal fan...
1.2	1.4	1.7	❷ Irregular operation - Low inertia	• Fluid agitator • Conveyor belt • Lift • Rotating machine tools for wood and metal • Light textile machines • Folding machines • Geared pumps • Paddle pumps • Fans...
1.4	1.7	2	❸ Irregular operation - Average inertia	• Agitator for heavy liquid • Rotary compressor • Roller conveyor • Shredders • Rotary ovens • Wood machinery (planing machine, band-saw . . .) • Printing machines • Mixers • Hoists • Punch • Centrifugal pump for loaded liquid...
1.7	2	2.4	❹ Irregular operation - Average inertia - Average shocks	• Concrete mixer • Bar shredder • Shot blaster • Piston compressor with fly wheel • Chain conveyor • Crane • Light rolling mill • Flour mills • Power hammer • Loom • Piston pump with fly wheel • Horizontal mills • Winches • Mine fans...
2	2.4	2.8	❺ Irregular operation - High inertia - Hard shocks	• Hammer crushers • Calender (rubber, textiles...) • Piston compressor with low inertia fly wheel • Wood shredder • Excavator • Rolling mill • Piston pump with low inertia fly wheel • Forging press • Paper press • Vibrating sieve...
2.4	2.8	3.3	❻ Irregular operation - Very high inertia - Very hard shocks	• Piston compressor without fly wheel • Crusher • Welding generator • Heavy rolling mill • Brick press • Piston pump without fly-wheel...

II.2.2 - COEFFICIENT K2 = NUMBER OF START-UPS

Depending on driving machine - driven machine See table K_1	NUMBER OF START-UPS PER HOUR				
	1	10	30	60	120
❶	1	1.2	1.3	1.5	1.6
❷ ❸	1	1.1	1.2	1.3	1.4
❹ ❺ ❻	1	1.05	1.1	1.2	1.2

II.2.3 - COEFFICIENT K3 = NUMBER OF OPERATING HOURS PER DAY

Number of operating hours per day	0-2	2-8	8-16	16-24
Coefficient K_3	0.9	1	1.1	1.2

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II.2.4 - NOMINAL TORQUE OF THE COUPLING

Nominal torque of the coupling = Nominal torque to be transmitted x safety coefficient.
The safety coefficient, K, is the product of the three coefficients K_1, K_2 and K_3.

The above parameters should enable one or two types of coupling to be selected which are suitable for the application required.
The final choice will be made on the basis of the data sheets for the coupling selected, checking :

- The dimensions allowed for the shaft ends.
- The space available.
- The exact values of the misalignements, offset, stiffness.
- And any other parameter (eg : installation).

II.3 - EXAMPLES

II.3.1 - ELECTRIC MOTOR – PUMP

Driving machine Standard electric motor 160 M Power : 15 Kw Speed : 3000 rpm End of shaft Ø : 42 mm - length: 110 mm	Driven machine : Standard C2 water pump End of shaft Ø : 32 mm -length: 80 mm 30 start-ups/hour 8 hours operation per day

Nominal torque to be transmitted: chart indicates 5 N.m.
Safety coefficient : $K_1 = 1$ $K_2 = 1.3$ $K_3 = 1$ hence $K = K_1 \times K_2 \times K_3 = 1.3$.
Nominal torque of coupling : NT = 50 N.m x 1.3 = 65 N.m.

For machines which have a regular cyclic operation with correct alignment, it is not essential to have a highly flexible coupling and so the following couplings would be pre-selected :

CARDAFLEX	80 N.m
PAULSTRA MPP	80 N.m
STRAFLEX	100 N.m

All these couplings can be used at a speed of 3,000 rpm.

In this case, the PAULSTRA MPP 80 N.m coupling would be chosen as it is the only one which will fit the diameter (42 mm) of the end of the motor shaft.

II.3.2 - ELECTRIC MOTOR – COMPRESSOR

Driving machine Standard electric motor 160 M Power : 15 Kw Speed : 3000 rpm End of shaft Ø : 42 mm - length : 110 mm	Driven machine : Standard C2 water pump End of shaft Ø : 32 mm -length : 80 mm 30 start-ups/hour 8 hours operation per day

Nominal torque to be transmitted: chart indicates 190 N.m.
Safety coefficient : $K_1 = 1.7$ $K_2 = 1$ $K_3 = 1$ hence $K = 1.7$.
Nominal torque of coupling : NT = 190 x 1.7 = 320 N.m.

The characteristics of the driven machine mean that high torsional flexibility is essential to absorb the cyclic irregularities.

The JUBOFLEX 350 N.m will therefore be selected, having checked that it can accommodate the shaft ends of the machines.
These examples are simple cases. In many instances, this method is adequate for selecting couplings. In more complex cases (cyclic vibrations, for example), it is advisable to consult our Technical Department.

COUPLING

In order to make it easier to select the coupling required, this SELECTION CHART indicates the behaviour of PAULSTRA couplings when under stress.

This rating takes account of the possibilities of misalignments, offset and the resultant forces on the shafts and supports. Each condition is shown :

	MINIFLEX® P303				MPP® P307				JUBOFLEX® P311				STRAFLEX® P319			
TORSION	**				**				***				*			
RADIAL	***				*				**				*			
AXIAL	Push fit				Push fit				***				**			
CONICAL	**				*				***				**			
Nominal Torque (N.m)	Coupling Ref.	Nominal Torque (N.m)	Speed Max (rpm)	Max shaft Ø (mm)	Coupling Ref.	Nominal Torque (N.m)	Speed Max (rpm)	Max shaft Ø (mm)	Coupling Ref.	Nominal Torque (N.m)	Speed Max (rpm)	Max shaft Ø (mm)	Coupling Ref.	Nominal Torque (N.m)	Speed Max (rpm)	Max shaft Ø (mm)
100 000																
50 000																
40 000																
30 000																
20 000																
10 000													635107	6 000	2 000	145
5 000																
4 000																
3 000													635106	3 200	2 400	110
2 000													635105	1 600	2 800	100
1 000																
500					633055	650	3 000	75	632025	700	2 400	80	635304 *635308	800	3 500	700
400					633054	380	3 000	60	632043	500	2 800	75				
300									632031	350	3 000	70	635303 *635307	400	4 500	50
200					633051	200	4 000	55	632017 *632217	250	3 500	60				
100					633053	80	7 000	42	632017 *632217	160	4 500	48	635302 *635306	200	5 000	42
50	633047	60	4 000	55					632023 *632210	90	5 000	40	635301 *635305	100	5 500	32
40	633044	40	4 000	55												
30					633052	30	9 000	28	632027 *632205	40	6 000	30	635100	50	6 000	30
20	633038	20	7 000	42												
10	633039	10	9 000	28												
2,5	633041	2,5	10 000	14												

*separate hubs

SELECTION CHART

Very flexible [* * *] Flexible [* *] Semi-flexible [*] Rigid [ ]

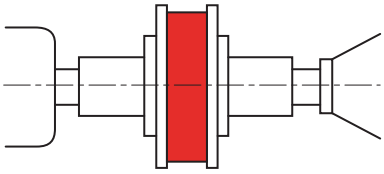
More precise information on the values for misalignment, offset and rigidity can be found in the individual Data Sheets.

AXOFLEX® P333				CARDAFLEX® P325			RADIAFLEX® RTP* P329			
*				**			*			TORSION
*				*			*			RADIAL
**				**			see Data Sheet			AXIAL
*				**						CONICAL
Coupling Ref.	Nominal Torque (N.m)	Speed Max (rpm)	Max shaft Ø (mm)	Coupling Ref.	Nominal Torque (N.m)	Max shaft Ø (mm)	Coupling Ref.	Nominal Torque (N.m)	Max shaft Ø (mm)	Nominal Torque (N.m)
							612616	104 000		100 000
							612613	72 000		
							612612	60 000		50 000
										40 000
615418	40 000	1 200	200				612608	34 000		30 000
615444	} 24 000	1 400	200				612606	} 17 500		20 000
615414			170				612416			
615442	} 17 500	1 500	170							
615412			150							
615440	} 12 000	1 500	150							10 000
615410			120				612412	9 700		
615408	7 500	1 800	120				612410	6 900	1 500	5 000
615212	} 5 000	1 800	120				612408	4500	1 500	
615406		2 000	100				612212	4 100	2 000	4 000
615210	3 600	2 500	100				612210	2 800	2 500	3 000
615208	2 300	2 500	80				612406	2 500	1 500	2 000
							612208	1 800	2 500	
615206	1 300	3 000	80							
							612206	1 100	3 000	1 000
615204	800	3 000	60							
							612 204	630	3 000	500
615203	800	3 000	60	622406	520	4500	612203	470	3 000	400
										300
										200
				622405	160	5 500				
				622404	120	5 500				
				622403	80	6 000				100
				622402	50	6 500				50
										40
				622401	30	7 000				30
										20
										10
										2,5

* See current price list for items held in stock. Braking force proportional to the speed of displacment.

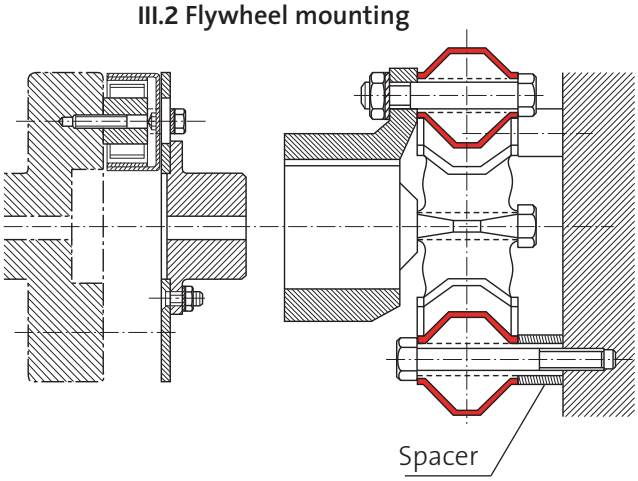
III - EXAMPLES OF INSTALLATION

III.1 Flanged shaft mounting



The most common mounting

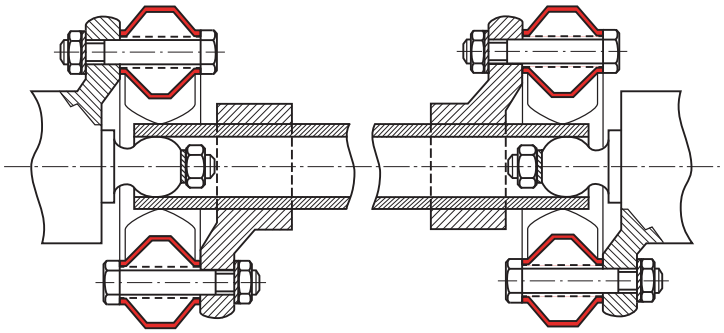
III.2 Flywheel mounting



Mounted directly on flywheel
Ex. : AXOFLEX

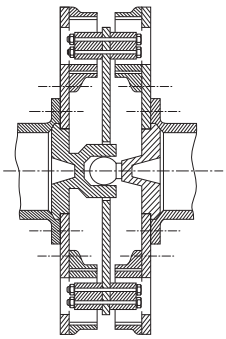
Mounting with spacer.
Ex. : JUBOFLEX

III.3 Mounting on transmission shaft

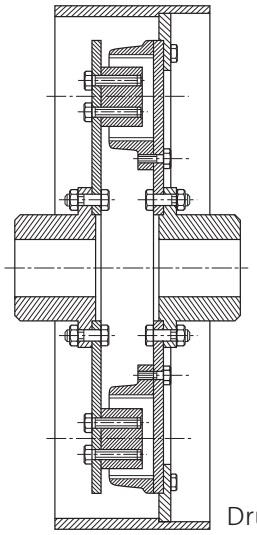


Assembly with centred transmission shaft. Ex.: JUBOFLEX

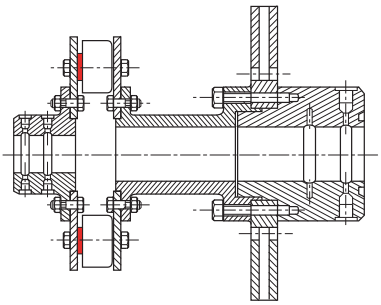
III.4 Mounting in series



Increases the flexibility while keeping the torque constant.
Ex.: AXOFLEX coupling with two sets of studs linked by an "anti-centrifuge" disk.



III.5 Drum brake and disk brake mounting



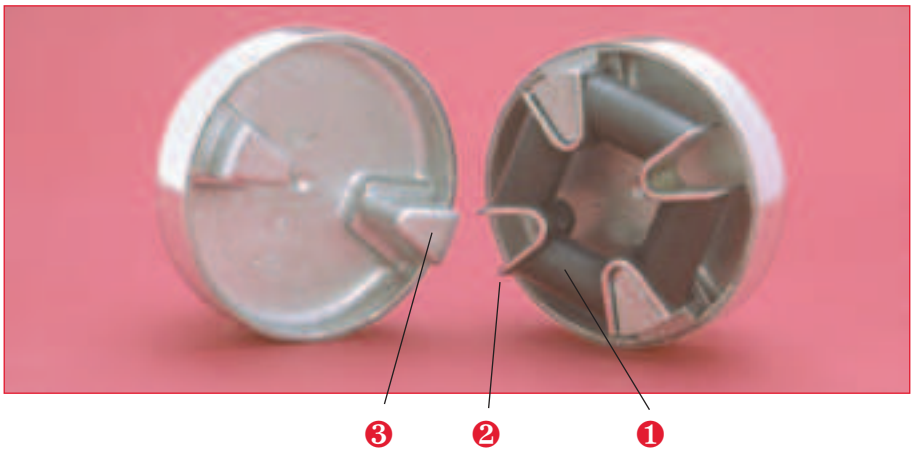
Disk brake mounting

Drum brake for mounting our couplings with rings: AXOFLEX, RTP

IV - DATA SHEETS

MINIFLEX®

***	Torsional flexibility	***	Radial flexibility	Push fit	Axial flexibility	**	Conical flexibility



DESCRIPTION

- Flexible element :
  - ❶ Natural rubber block bonded to.
  - ❷ V-shaped metal armatures.

- Flange : aluminium or cast-iron :
  - ❸ DRIVE-SEGMENT

Operation

The MINIFLEX coupling is designed with the following features :

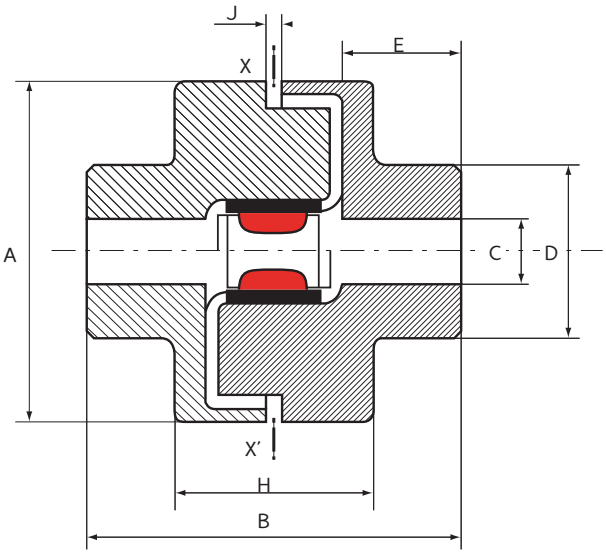
- Push fit assembly.
- Compact, smooth cylindrical shape without protrusions.
- The flexible element is precompressed during assembly, which extends the range of operating conditions where the rubber is not subject to tension.

Advantages :
- Highly effective attenuation of cyclic irregularities and peaks in the torque.
- Exceptionally long-life ensured by precompressing the flexible element.
- Tolerance to large misalignment: avoids the need for precise alignment of the machines to be coupled.

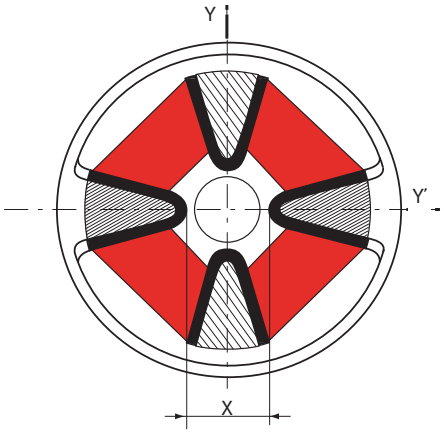
Recommendation :
- It is recommended that the coupling should not be subjected to axial tension which might cause the flexible element to slip from the drive segment on the flange.

DIMENSIONS

Section YY'



Section XX'



Flanges supplied unbored

	Nominal torque (N.m)	Max torque (N.m)	Max speed (rpm)	Max hole C (mm)	A (mm)	B (mm)	D (mm)	E (mm)	Reference	H (mm)	J (mm)	X (mm)	Weight (kg)
ALUMINIUM FLANGES	2.5	5	10,000	14	45	41	28	14	**633040**	21	2	14	0.10
	10	20	9,000	19	58	61	36	20	**633010**	31	2	16	0.26
	20	40	7,000	28	80	88	48	30	**633020**	40	4	28	0.68
CAST IRON FLANGES	2.5	5	10,000	14	45	41	28	14	**633041**	21	2	14	0.25
	10	20	9,000	28	58	61	42	20	**633039**	31	2	16	0.6
	20	40	7,000	42	84	88	63	30	**633038**	40	4	28	1.8
	40	80	4,000	55	118	116	82	40	**633044**	51	6	38	4.5
	60	120	4,000	55	118	120	82	40	**633047**	55	10	38	4.5

1 N.m ≈0.1 mkg

Please see current price list for availability of items.

The maximum torque is considered to be infrequent, start-up torque and not periodic.

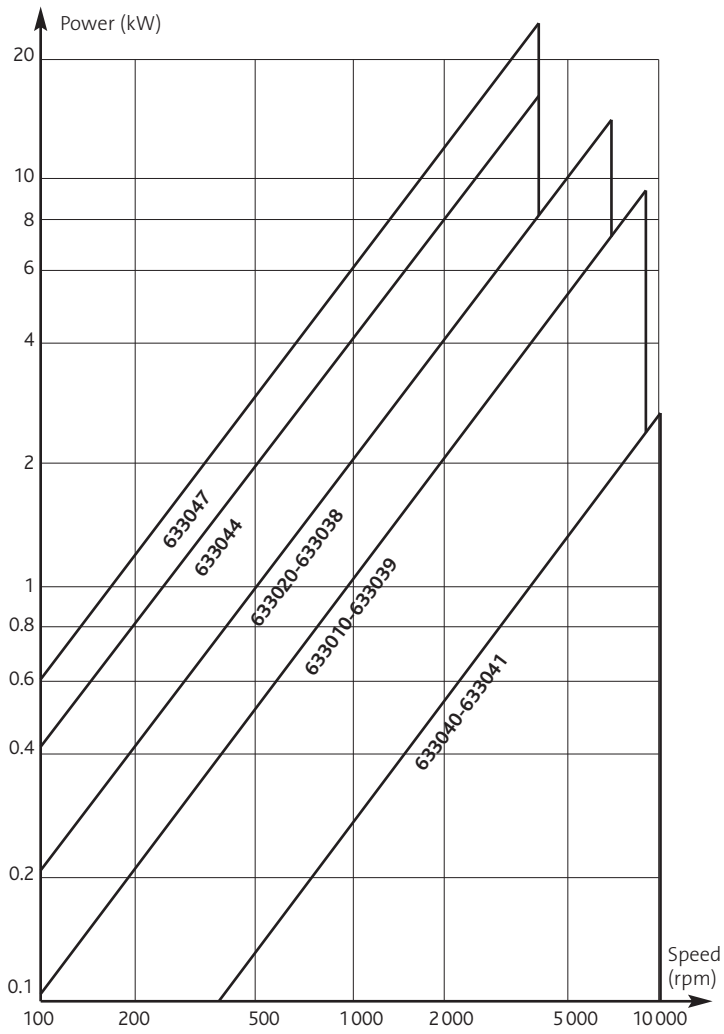
PARTS LIST

Coupling reference	Flexible element reference	Qty	Flange reference	Qty
633010	**633510**	1	321521	2
633020	**633520**	1	321531	2
633038	**633520**	1	321534	2
633039	**633510**	1	321503	2

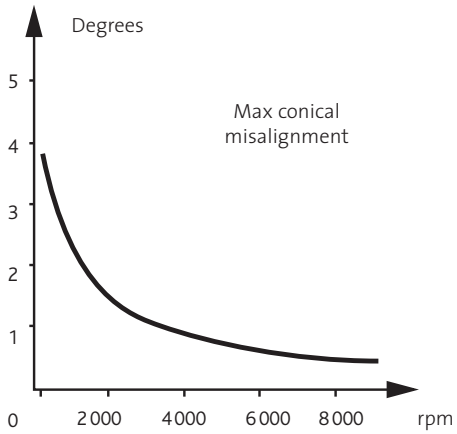
Coupling reference	Flexible element reference	Qty	Flange reference	Qty
633040	**633501**	1	321511	2
633041	**633501**	1	321501	2
633044	**633540**	1	321535	2
633047	**633640**	1	321535	2

OPERATING LIMITS

POWER RANGE



CONICAL MISALIGNMENT



RADIAL MISALIGNMENT

Nominal torque N.m	Radial misalignment at 1,500 rpm
2.5	0.15 mm
10	0.25 mm
20	0.50 mm
40	1.00 mm
60	1.00 mm

OPERATING CHARACTERISTICS

Nominal torque (N.m)	Vibrat. coupling (N.m)	Torsion under NT (degrees)	STIFFNESS			
			AXIA (daN/mm)	RADIAL (daN/mm)	TORSIONAL (daN/mm)	CONICAL (daN/mm)
2.5	1.2	28	0.30	2	0.004	0.005
10	5	28	1.50	5	0.020	0.090
20	10	24	1.25	7	0.045	0.090
40	20	18	2.0	8	0.126	0.022
60	30	16	4.5	12	0.214	0.034

1 N.m ≈0.1 mkg

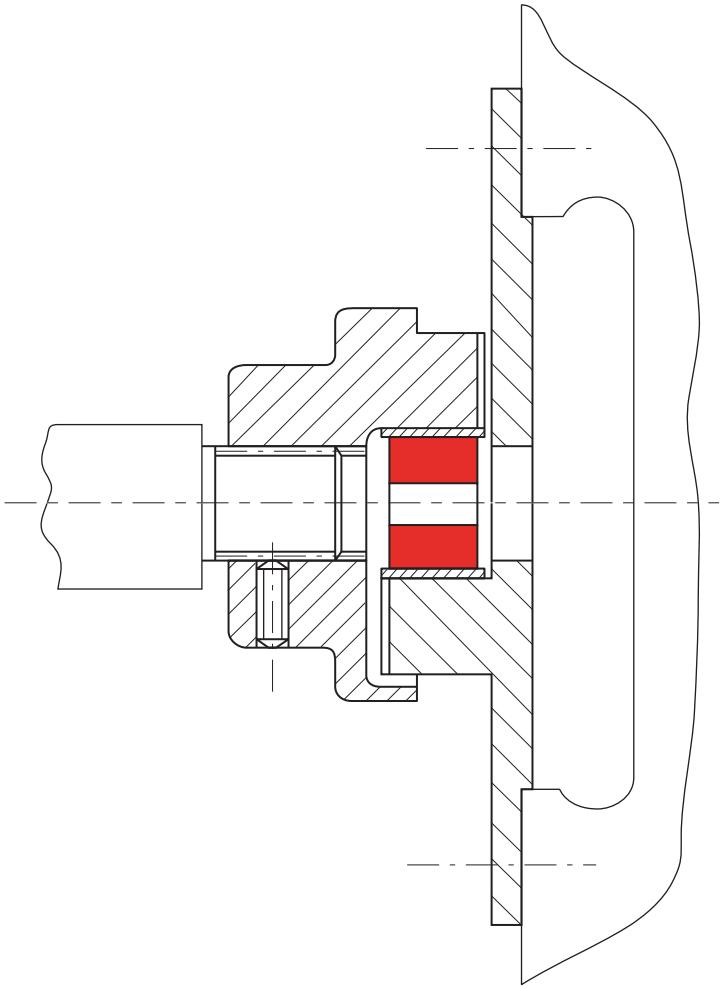
Please see current price list for availability of items.

ASSEMBLY

The coupling is assembled and disassembled axially which entails moving one of the machines. This procedure is not difficult and can be done quickly, as at least one of the machines being coupled is not heavy.

Method :

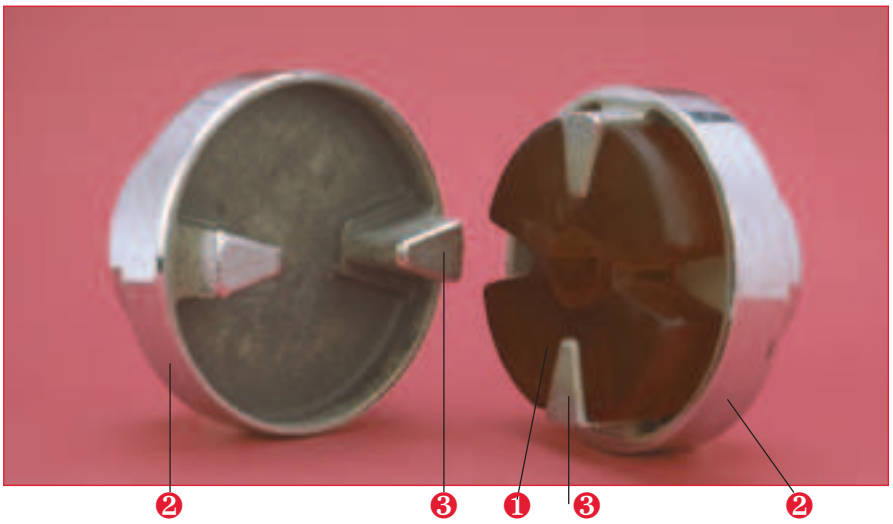
- Fit an opposing pair of armatures of the flexible element half-way onto the drive segments of one flange.
- Position the second flange.
- Push the two flanges together to engage the armatures of the flexible element.
- Release.



Example : electric motor/pump coupling mounted on fly wheel and grooved shaft.

MPP®

**	Torsional flexibility	*	Radial flexibility	Push fit	Axial flexibility	*	Conical flexibility



DESCRIPTION

- Flexible element ❶ : polyurethane in the form of a Maltese cross.
- Flange ❷ : cast iron with drive segments ❸ supplied unbored (except 633054 and 633055).

OPERATING

The MPP coupling is designed with the following features :
- Push fit assembly,
- Smooth, compact cylindrical shape, without protrusions,
- The flexible element operates under compression,
- Safe in use,
- Temperature range -30°C to + 70°C in continuous operation.

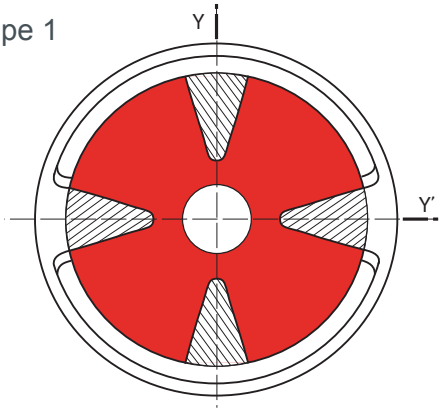
Advantages :
- Reduced size,
- Easy to use.

Recommendation :
- It is recommended that the coupling should not be subjected to axial tension which might cause the flexible element to slip off the drive segments on the flanges.

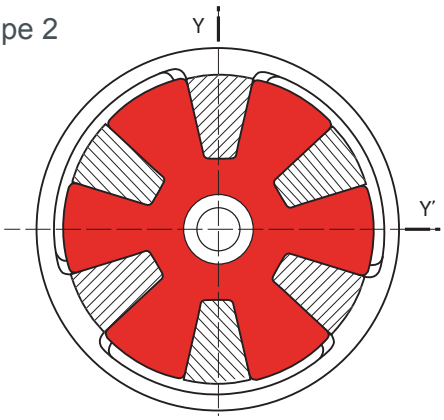
DIMENSIONS

Section XX'

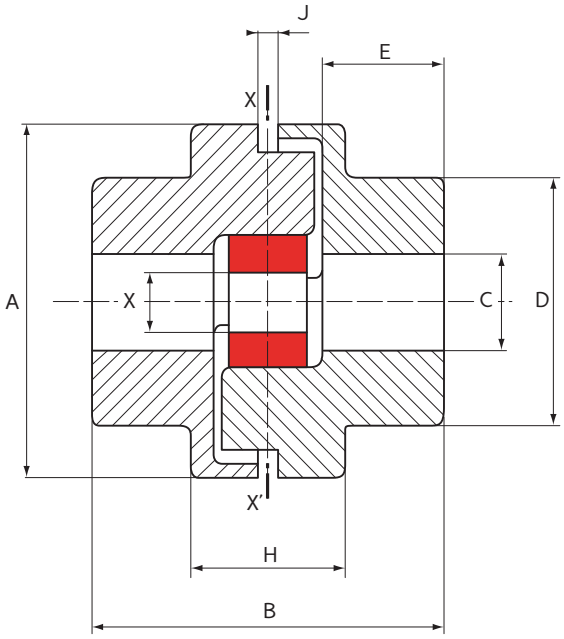
Shape 1



Shape 2



Section YY'



Flanges supplied unbored

Type	Shape	Nominal torque (TCN-N.m)	Max torque (N.m)	Max speed (rpm)	Hole size C mm (min)	Hole size C mm (max)	A (mm)	B (mm)	D (mm)	E (mm)	Reference	H (mm)	J (mm)	X (mm)	Weight (kg)
MPP 3	1	30	90	9000	-	28	58	62	42	20	**633052**	32	3	10	0.6
MPP 8	1	80	240	7000	-	42	84	89	63	30	**633053**	41	5	13	1.8
MPP 20	1	200	600	4000	-	55	118	116	82	40	**633051**	51	6	20	4.5
MPP 38	2	380	1150	3000	20	60	145	160	90	60	**633054**	67	6	30	9.4
MPP 65	2	650	2000	3000	20	75	170	208	112	80	**633055**	82	6	32	18

1 N.m ≈0.1 mkg

Please see current price list for availability of items.

The maximum torque is considered to be an infrequent start-up torque and not periodic.

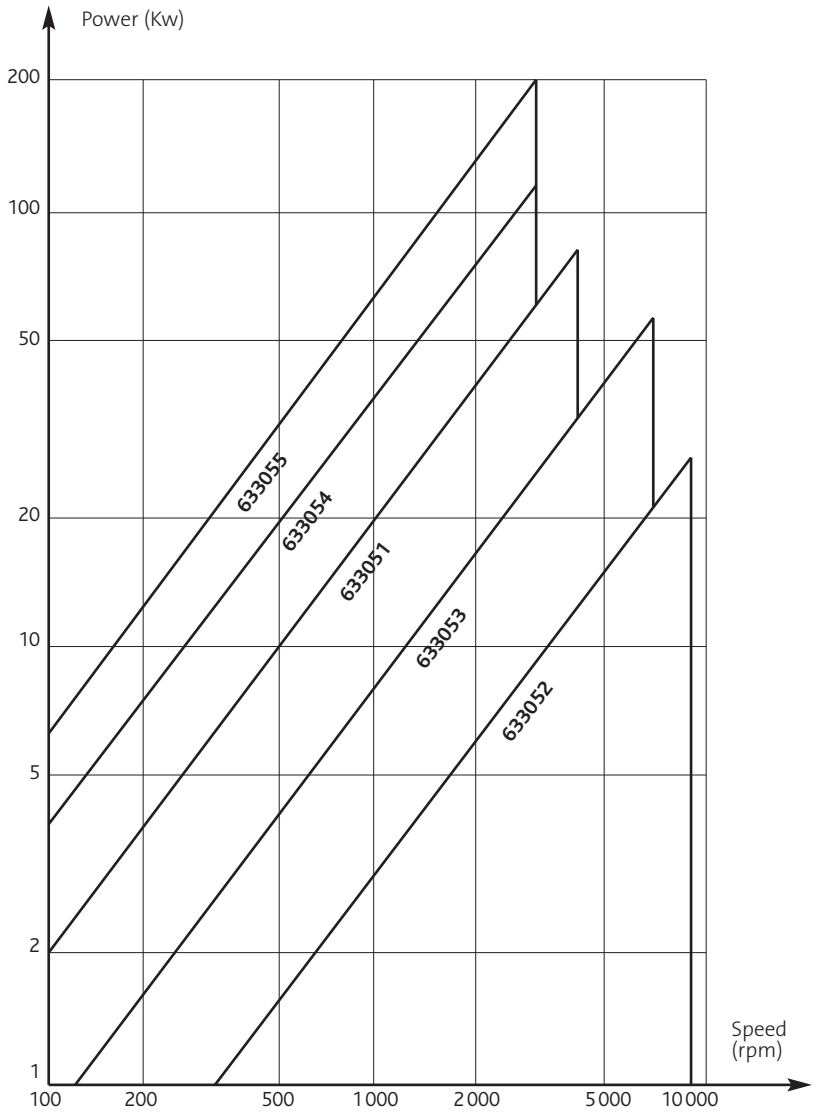
PARTS LIST

Coupling reference	Flexible element reference	Qty	Flange reference	Qty
633051	**633551**	1	321535	2
633052	**633552**	1	321503	2
633053	**633553**	1	321534	2

Coupling reference	Flexible element reference	Qty	Flange reference	Qty
633054	**633554**	1	321464	2
633055	**633555**	1	321465	2

OPERATING LIMITS

POWER RANGE

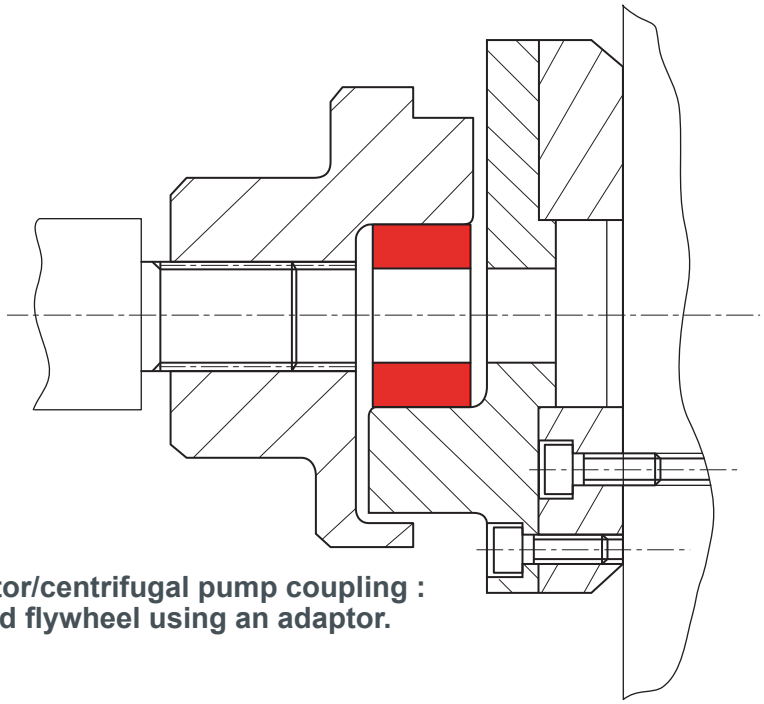


OPERATING CHARACTERISTICS

Nominal torque (N.m)	Vibratory torque (N.m)	Torsion under NT (degrees)	Radial misalignment* (mm)	Conical misalignment* (degrees)	Axial misalignment (mm)
30	15	10°	0.2	1°	1.5
80	40	10°	0.4	1°	2.5
200	100	10°	0.9	1°	3
380	380	10°	1	1°	3
650	650	10°	1	1°	4

* given for a speed of 3,000 rpm.

ASSEMBLY



Example: electric motor/centrifugal pump coupling : mounted on motorised flywheel using an adaptor.

SELECTION GUIDE

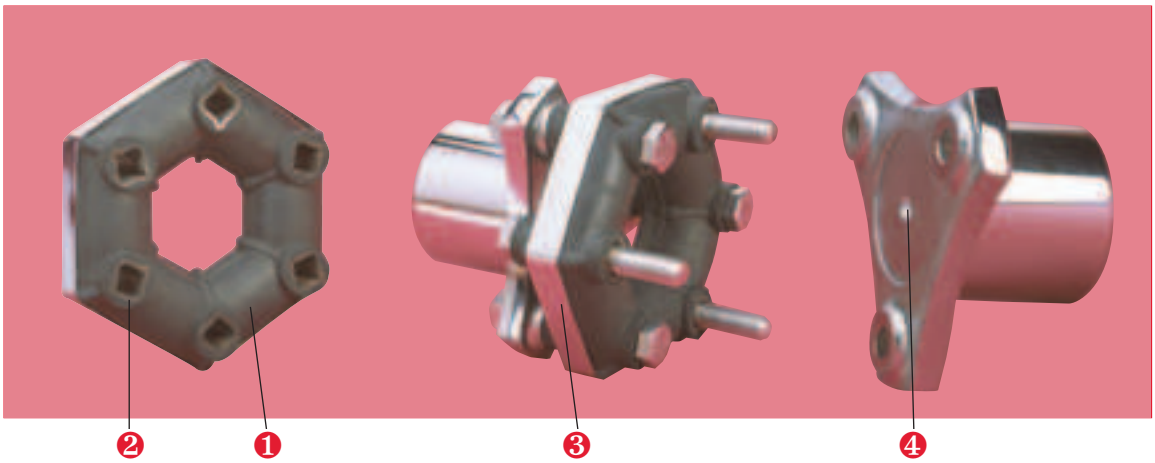
PAULSTRA MPP® / STANDARD, 50 HZ ASYNCHRONOUS THREE PHASES MOTORS

This table uses a safety coeficient of 1.3 corresponding to normal operating conditions of commonly used driven machines.

Motor type	Power 2 poles n ≃ 3000 rpm		Type of coupling	Power 4 poles n ≃ 1500 rpm		Type of coupling	Power 6 poles n ≃ 1000 rpm		Type of coupling	Power 8 poles n ≃ 750 rpm		Type of coupling	Shaft dimensions D x E	
	Kw	CV		Kw	CV		Kw	CV		Kw	CV		≃ 3000 tr/mn	≃ 1500 tr/mn
56	0.09 0.12	0.12 0.16	MPP 3 MPP 3	0.06 0.09	0.08 0.12	MPP 3 MPP 3	0.06 0.09	0.08 0.12	MPP 3 MPP 3				9 x 20	
63	0.18 0.25	0.25 0.34	MPP 3 MPP 3	0.12 0.18	0.16 0.25	MPP 3 MPP 3	0.12 0.18	0.16 0.25	MPP 3 MPP 3				11 x 23	
71	0.37 0.55 0.55	0.5 0.75 0.75	MPP 3 MPP 3 MPP 3	0.25 0.37 0.37	0.34 0.5 0.5	MPP 3 MPP 3 MPP 3							14 x 30	
80	0.75 1.1	1 1.5	MPP 3 MPP 3	0.55 0.75	0.75 1	MPP 3 MPP 3	0.37 0.55	0.5 0.75	MPP 3 MPP 3				19 x 40	
90 S 90 L	1.5 2.2	2 3	MPP 3 MPP 3	1.1 1.5	1.5 2	MPP 3 MPP 3	0.75 1.1	1 1.5	MPP 3 MPP 3				24 x 50	
100 L	3	4	MPP 3 MPP 3	2.2 3	3 4	MPP 3 MPP 3	1.5	2	MPP 3	0.75 1.1	1 1.5	MPP 3 MPP 3	28 x 60	
112 M	4	5.5	MPP 3	4	5.5	MPP 3	2.2	3	MPP 3	1.5	2	MPP 3	28 x 60	
132 S	5.5 7.5	7.5 10	MPP 8	5.5	7.5	MPP 8	3	4	MPP 8	2.2	3	MPP 8	38 x 80	
132 M				7.5	10	MPP 8	4.0 5.5	5.5 7.5	MPP 8 MPP 8	3	4	MPP 8	38 x 80	
160 M 160 L	11.0 15.0 18.5	15 20 25	MPP 8 MPP 8 MPP 8	11 15	15 20	MPP 20 MPP 20	7.5 11	10 15	MPP 20 MPP 20	4 5.5 7.5	5.5 7.5 10	MPP 8 MPP 20 MPP 20	42 x 110	
180 M 180 L	22	30	MPP 20	18.5 22	25 30	MPP 20 MPP 20	15	20	MPP 20	11	15	MPP 20	48 x 110	
200 L	30 37	40 50	MPP 20 MPP 20	30	40	MPP 38	18.5 22	25 30	MPP 38 MPP 38	15	20	MPP 38	55 x 110	
225 S 225 M	45	61	MPP 38	37 45	50 61	MPP 38 MPP 38	30	40	MPP 38	18.5 22	25 30	MPP 38 MPP 38	55 x 110	60 x 140
250 M	55	75	MPP 38	55	75	MPP 65	37	50	MPP 65	30	40	MPP 65	60 x 140	65 x 140
280 S	75	100	MPP 65	75	100	MPP 65	45	61	MPP 65	37	50	MPP 65	65 x 140	75 x 140

JUBOFLEX ®

***	Torsional flexibility	**	Radial flexibility	***	Axial flexibility	***	Conical flexibility



DESCRIPTION

Flexible element :

❶ Precompressed natural rubber,
❷ Bonded metal spacers,
❸ Precompression band (to be removed after installation).

Flange :

❹ Die-cast steel (except 632320 which is cast-iron).

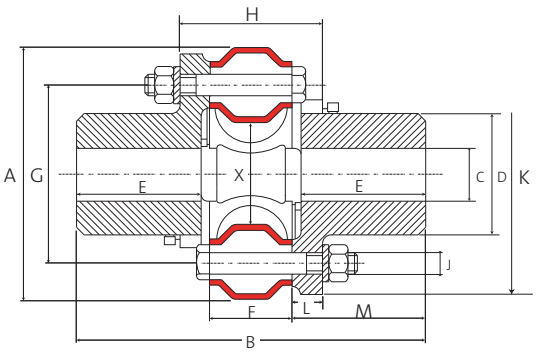
OPERATION

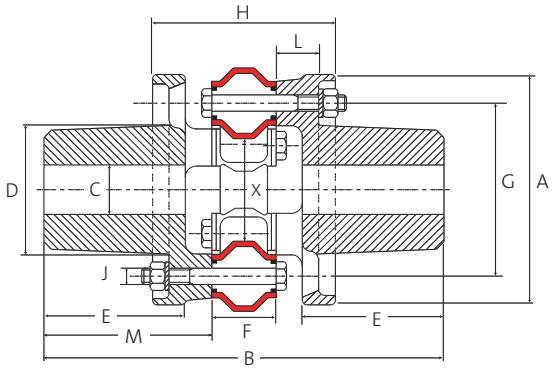
The JUBOFLEX coupling is designed with the following features :
- Radial disassembly without moving the machines that are coupled.
- The flexible element is precompressed during assembly, which extends the range of operating conditions where the rubber is not subject to tension.

Advantages :
- Highly effective attenuation of cyclic irregularities and peaks in the torque.
- Very safe in use and the precompression ensures very high resistance to oscillation
- Tolerance to large misalignment: avoids the need for precise alignment of the machines to be coupled.

Recommendation :
- In use, precompression is achieved by the fixing bolts, and the JUBOFLEX coupling operates wiThout the precompression band round the flexible element.

DIMENSIONS





Flanges supplied unbored

JUBOFLEX Steel flanges except 632320 **JUBOFLEX Cast-iron flanges : ref. 632320**

Nominal torque (N.m)	Max torque (N.m)	Max speed (rpm)	Hole size C (mm)		A (mm)	B (mm)	D (mm)	E (mm)	Reference	F (mm)	G (mm)	H (mm)	J (mm)	K (mm)	L (mm)	M (mm)	X* (mm)	Weight (kg)
			min	max														
40	120	6000		30	91	128	42	47	**632027**	28	65	50	8	87	11	50	23	2
90	270	5000		40	117	172	56	66	**632023**	32	85	60	10	113	14	70	35	3
160	480	4500		48	142	196	68	70	**632017**	46	100	80	12	135	17	75	40	5
250	750	3500		60	181	247	90	93	**632029**	51	132	93	14	172	21	98	63	12
350	1050	3000		70	202	284	105	109	**632031**	54	150	96	18	196	21	115	68	18
500	1500	2800		75	232	322	115	124	**632043**	62	170	108	20	225	23	130	75	25
700	2100	2400		80	263	346	122	133	**632025**	68	190	116	20	246	24	139	82	32
1200	3600	2400	60	100	280	486	156	172	632320	78	210	222	20	-	52	204	110	57

* Diameter of passage in flexible element under the nominal torque.
1 N.m ≈0.1 mkg

Please see current price list for availability of items.

The maximum torque is considered to be an infrequent start-up torque and is not periodic.

For higher nominal torques see «JUBOFLEX 'S».

Parts list

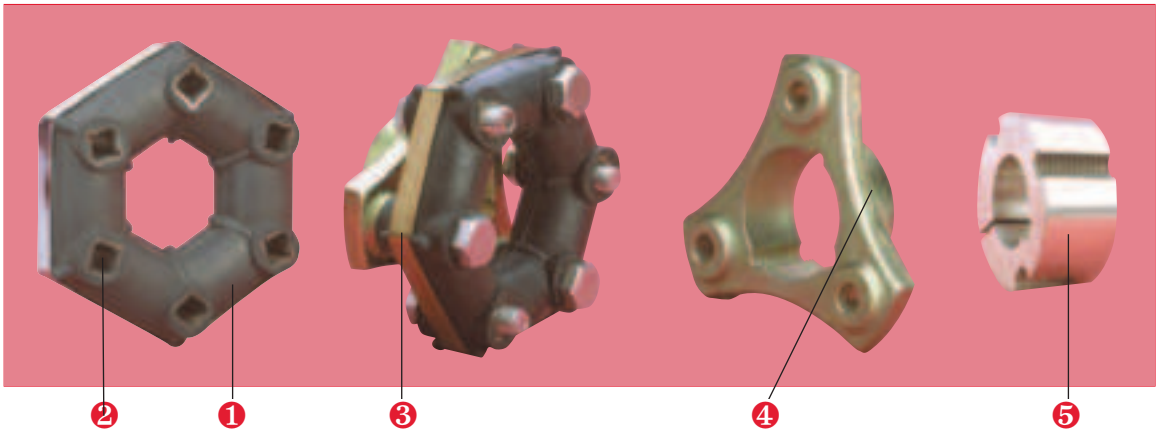
The flexible elements are delivered precompressed using a precompression band which should be removed after installation.

Coupling without protector reference	Flexible element reference	Qty	Flange reference	Qty
632017	**632505**	1	**321334**	2
632023	**632503**	1	**321324**	2
632025	**632511**	1	**321364**	2
632027	**632502**	1	**321314**	2
632029	**632507**	1	**321344**	2
632031	**632508**	1	**321354**	2
632043	**632500**	1	**321374**	2
632320	632520*	1	321390	2

* This element has 8 mounting holes.

JUBOFLEX ®
WITH SEPARATE HUB

***	Torsional flexibility	**	Radial flexibility	***	Axial flexibility	***	Conical flexibility



DESCRIPTION

Flexible element :

❶ Precompressed natural rubber.
❷ Bonded metal spacers.
❸ Precompression band (to be removed after installation).

- Flange :

❹ Die-cast steel specially bored to fit the separate hub.
❺ Universal separate hub (not supplied by PAULSTRA).

OPERATION

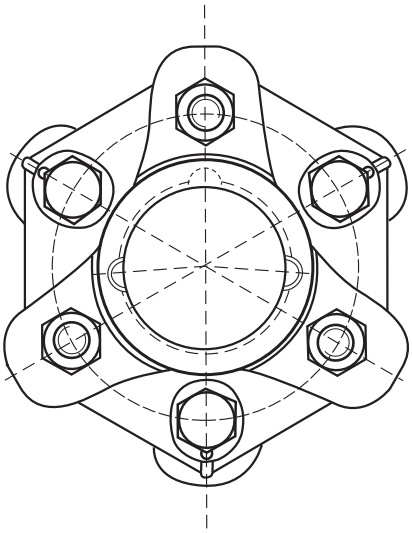
In addition to the characteristics described above, the separate hub used in conjunction with the JUBOFLEX coupling provides the advantage :

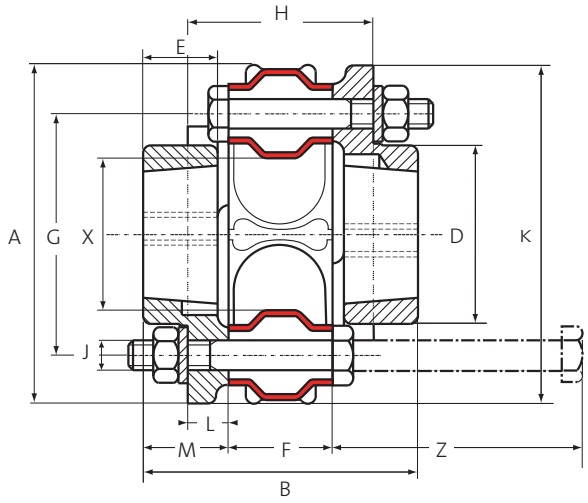
Ready to assemble without machining the flanges.

Advantages :
- Reduced size.
- Simplified axial positionning.
- Easy to assemble and disassemble.
- Reduction of costs by simplifiying the machining required for the shafts and flanges.

Recommendation :
- In use, precompression is achieved by the fixing bolts and the JUBOFLEX coupling operates without the precompression band round the flexible element.

DIMENSIONS





Nominal torque (N.m)	Max torque (N.m)	Max speed (rpm)	Separate hub*	Ref.	A (mm)	B (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (mm)	K (mm)	L (mm)	M (mm)	X (mm)	Z (mm)	Weight (kg)
40	120	6000	SEE PARTS LIST	**632205**	91	74	48	20	28	65	54	8	91	11	23	23	65	0.8
90	270	5000		**632210**	117	90	60	25	32	85	65	10	121	14	29	35	75	1.6
160	480	4500		**632217**	142	106	70	25	46	100	81	12	140	17	30	40	90	2.7
250	750	3500		**632226**	181	121	95	30	51	132	91	14	177	21	35	63	100	5

1 N.m ≈ 0.1 mkg

Please see current price list for availability of items.

*** For shaft diameters, please refer to the hub manufacturers' specifications.**

The maximum torque is considered to be an infrequent start-up torque and is not periodic.
For higher nominal torque see "Juboflex S".

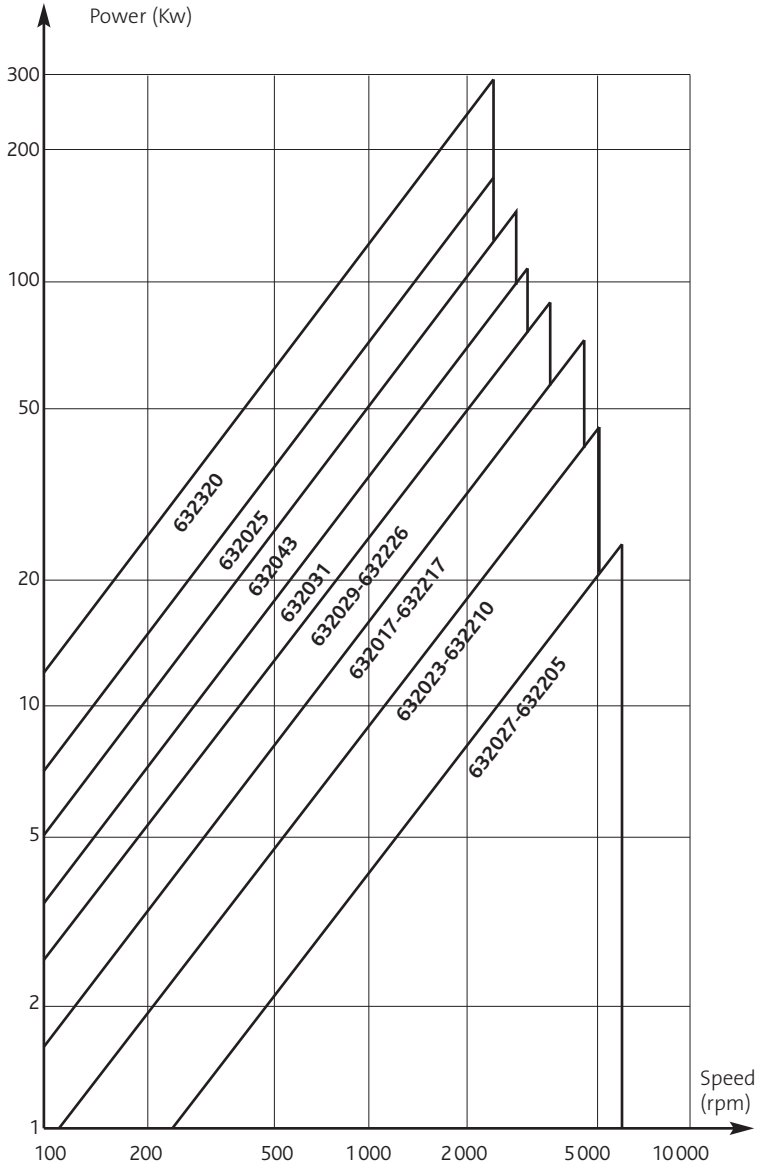
PARTS LIST

The flexible elements are delivered precompressed using a precompression band which should be removed after installation.

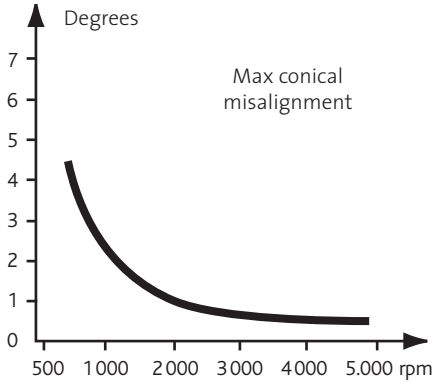
Coupling reference	Flexible element reference	Qty	Flange reference	Qty	SEPARATE HUB	
					Current reference	Universal reference
632205	**632502**	1	321316	2	28-20	11-08
632210	**632503**	1	321326	2	30-25	12-10
632217	**632505**	1	321336	2	40-25	16-10
632226	**632507**	1	321346	2	50-30	20-12

OPERATING LIMITS

POWER RANGE



CONICAL MISALIGNMENT



RADIAL MISALIGNMENT

Nominal torque N.m	Radial misalignment at 1,500 rpm
40	0.7 mm
90	0.9 mm
160	1.4 mm
250	1.5 mm
350	1.8 mm
500	2.0 mm
700	2.1 mm
1200	2.4 mm

OPERATING CHARACTERISTICS

Nominal torque (N.m)	Vibratory coupling (N.m)	Torsion under NT (degrees)	STIFFNESS			
			AXIAL (daN/mm)	RADIAL (daN/mm)	TORSIONAL (m.KN/rad.)	CONICAL (m.KN/rad.)
40	20	8	6	20	0.285	0.04
90	45	8	8	30	0.57	0.057
160	80	8	11	45	1.14	1.143
250	125	7	11.5	30	2.12	0.57
350	175	7	10	30	2.75	0.57
500	250	7	11	30	4.3	0.57
700	350	8	12	35	4.5	0.86
1200	600	6.30	15	60	10.6	1.14

1 N.m ≈0.1 mkg

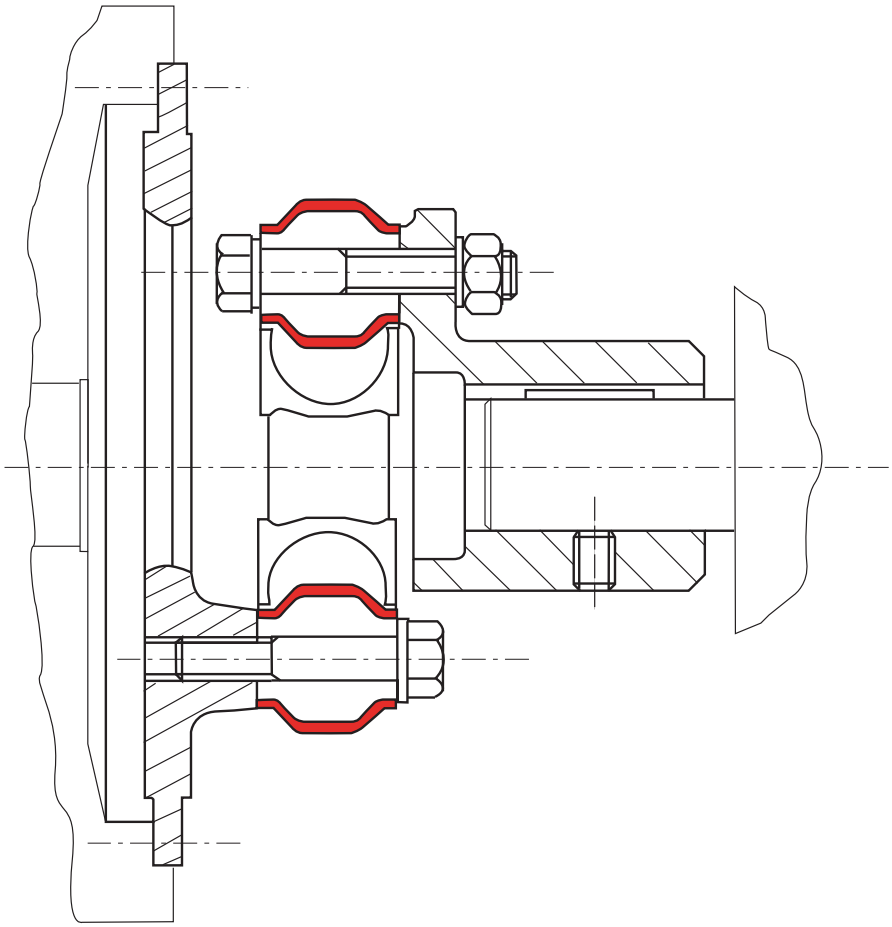
Please see current price list for availability of items.

ASSEMBLY

- Precompression for the initial installation is achieved by a band ❸ placed round the outside (our flexible elements are delivered with this band).
- Position the flexible element with its band to attach three non-adjacent holes to the three arms of one flange, and then the three other holes to the other flange.
- Tighten the bolts to the following torques :

Couple nominal TCN (N.m)	Référence	Couple de serrage (N.m)
40	**632027/632205**	21
90	**632023/632210**	41
160	**632017/632217**	72
250	**632029/632226**	113
350	**632031**	240
500	**632043**	350
700	**632025**	350
1 200	632320	350

Cut the original band or remove th disassembly band.

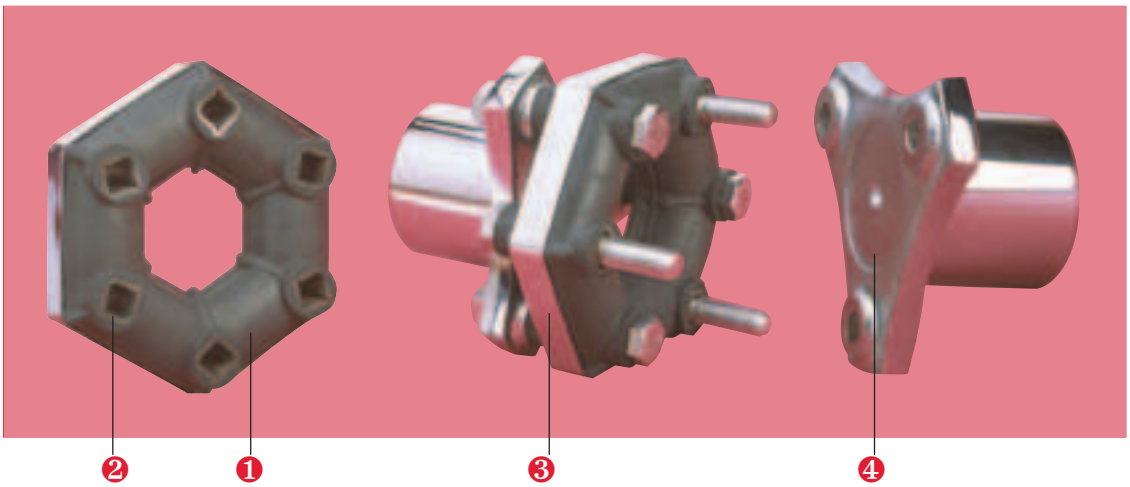


Example : internal combustion engine/generator coupling mounted on a ring attached to the fly wheel.

• Cut the original band or remove th disassembly band.

JUBOFLEX® "S"

***	Torsional flexibility	**	Radial flexibility	***	Axial flexibility	***	Conical flexibility



DESCRIPTION

- Flexible element :
  - ❶ Precompressed natural rubber.
  - ❷ Bonded metal reinforcing mountings.
  - ❸ Precompression band (to be removed after installation).
- Flange :
  - ❹ Die-cast steel (except 632267 which is cast-iron).

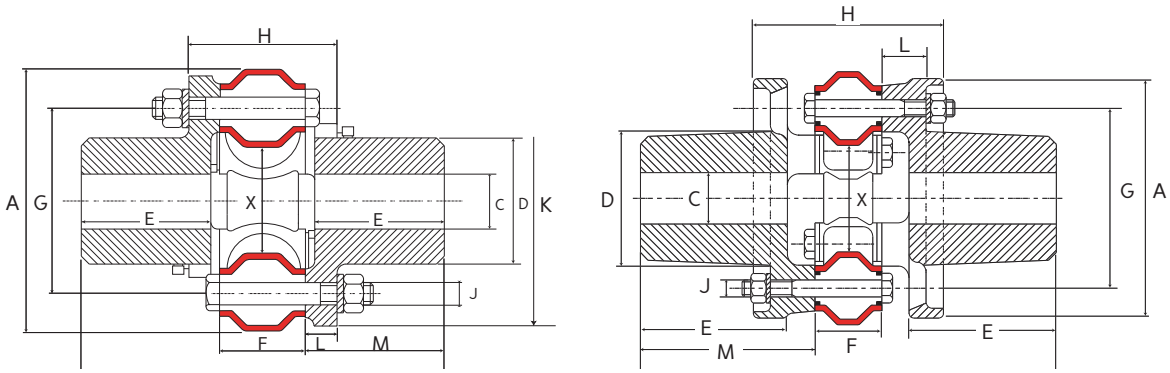
OPERATION

The JUBOFLEX «S» coupling is designed with the following features :
- Radial disassembly without moving the machines that are coupled.
- The flexible element is compressed during assembly, which extends the range of operating conditions where the rubber is not subject to tension.

Advantages :
- JUBOFLEX «S» has a greater load capacity than the standard JUBOFLEX.
- Highly effective attenuation of cyclic irregularities and peaks in the torque.
- Due to the precompression, the JUBOFLEX «S» has very good resistance to torsional peaks.
- Tolerance to large misalignment: avoids the need for precise alignment of the machines to be coupled.

Recommendation :
- In use, precompression is achieved by the fixing bolts, and the JUBOFLEX «S» coupling operates without the precompression band round the flexible element.

DIMENSIONS



Flanges supplied unbored

JUBOFLEX Steel flanges except 632267 **JUBOFLEX Cast-iron flanges : ref. 632267**

Nominal torque (N.m)	Vibrat. torque (N.m)	Max torque (N.m)	Max speed (rpm)	Hole size C (mm)		A (mm)	B (mm)	D (mm)	E (mm)	Reference	F (mm)	G (mm)	H (mm)	J (mm)	K (mm)	L (mm)	M (mm)	X* (mm)	Weight (kg)
				min	max														
60	30	120	6 000		30	91	128	42	47	**632260**	28	65	50	8	87	11	50	23	2
130	65	270	5000		40	117	172	56	66	**632261**	32	85	60	10	113	14	70	35	3
240	120	480	4500		48	142	196	68	70	**632262**	46	100	80	12	135	17	75	40	5
370	185	750	3500		60	181	247	90	93	**632263**	51	132	93	14	172	21	98	63	12
520	260	1050	3000		70	202	284	105	109	**632264**	54	150	96	18	196	21	115	68	18
750	375	1500	2800		75	232	322	115	124	**632265**	62	170	108	20	225	23	130	75	25
1050	525	2100	2 400		80	263	346	122	133	**632266**	68	190	116	20	246	24	139	82	32
1800	900	3600	2 400	60	100	280	486	156	172	**632267**	78	210	222	20	-	52	204	110	57

* Diameter of passage in flexible element under the nominal torque.
1 N.m ≈0.1 mkg

Please see current price list for availability of items.

The maximum torque is considered to be an infrequent start-up torque and is not periodic.

PARTS LIST

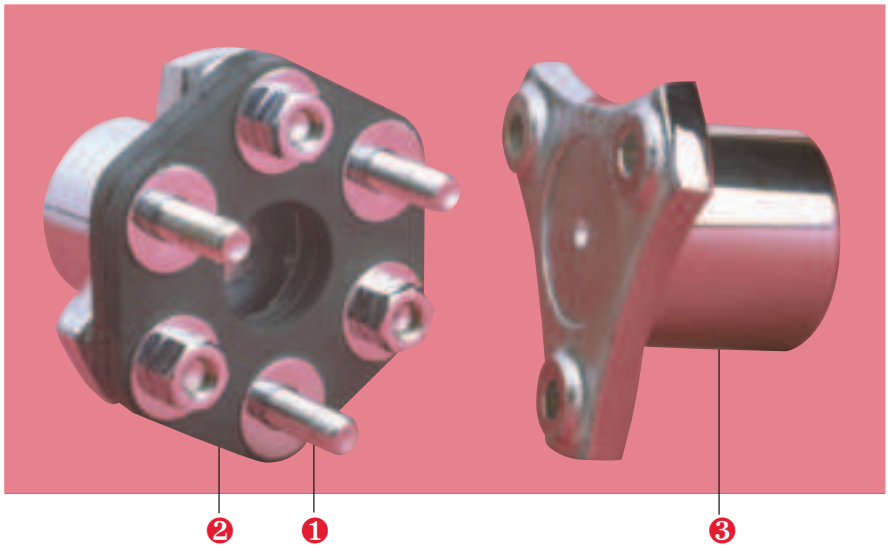
The flexible elements are delivered precompressed using a precompression band which should be removed after installation.

Coupling without protector	Reference	Qty	Flange reference	Qty
632262	**632552**	1	**321334**	2
632261	**632551**	1	**321324**	2
632266	**632556**	1	**321364**	2
632260	**632550**	1	**321314**	2
632263	**632553**	1	**321344**	2
632264	**632554**	1	**321354**	2
632265	**632555**	1	**321374**	2
632267	**632557***	1	321390	2

* This element has 8 mounting holes.

STRAFLEX®

* Torsional flexibility	* Radial flexibility	** Axial flexibility	** Conical flexibility



DESCRIPTION

- Flexible element :
  - ❶ Metallic bobbins linked together by rayon fibres.
  - ❷ The whole unit ❶ is potted in natural rubber and is hexagonal.

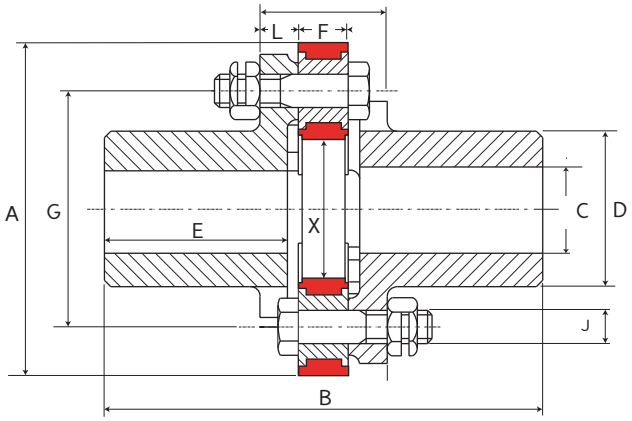
- Flange :
  - ❸ forged steel.

Operation

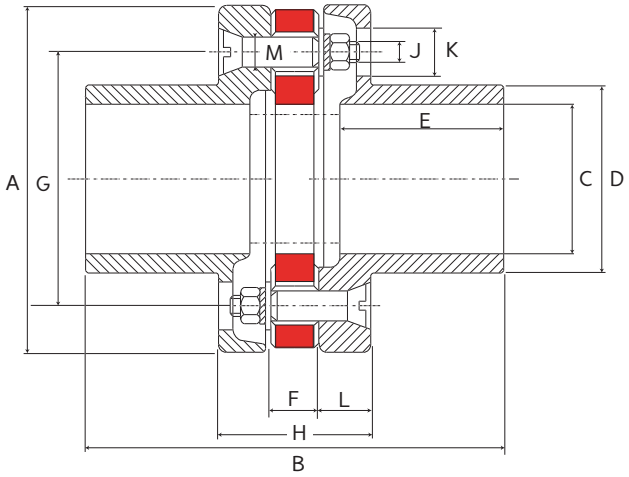
The STRAFLEX coupling is designed with the following features :
- Radial disassembly wihout moving the machines that are coupled.
- Reduced size.
- Used at relatively high rotational speeds.

Recommendation :
- The reinforced textile structure means that it has a low tolerance to irregularities in the torque.

DIMENSIONS



Assembly of models ref. 635301, 635302, 635303, 635304



Flanges supplied unbored

Assembly of models ref. 635105, 635106, 635107: screws with countersunk heads

Warning : The coupling ref. 635100 is equiped with melded studs instead of the standard bolts. It's assembly is done simply by pushing the elements on the flanges.

Nominal torque (N.m)	Max torque (N.m)	Max speed (rpm)	Hole size C (mm)		A (mm)	B (mm)	D (mm)	E (mm)	Reference	F (mm)	G (mm)	H (mm)	J (mm)	K (mm)	L (mm)	M (mm)	X (mm)	Weight (kg)
			min	max														
50	100	6000	-	30	78	80	43	32	**635100**	12	50	32	-	-	8	7.8	20	1.3
100	200	5500	-	30	94	115	42	40	**635301**	15	65	37	10	-	11	-	28	1.6
200	400	5000	-	40	120	158	56	66	**635302**	18	85	46	12	-	14	-	40	3
400	800	4500	-	48	140	171	68	70	**635303**	21	100	55	14	-	17	-	44	5.5
800	1600	3500	-	60	178	222	90	93	**635304**	26	132	68	16	-	21	-	66	12
1600	3200	2800	-	100	232	280	126	110	**635105**	32	170	102	14	32	35	20	86	36
3200	6400	2400	-	110	268	340	142	123	**635106**	42	190	130	16	37	44	24	94	50
6000	12000	2000	-	145	330	424	184	160	635107	48	240	136	16	37	44	24	120	97

1 N.m ≈0.1 mkg

Please see current price list for availability of items.

The maximum torque is considered to be an infrequent start-up torque and is not periodic.

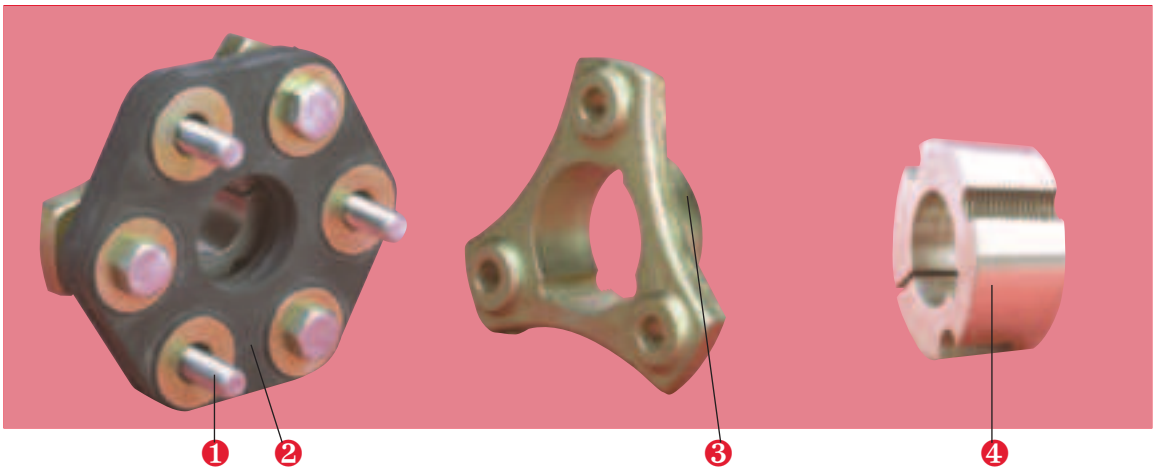
PARTS LIST

Coupling reference	Flexible element ref.	Qty	Flange reference	Qty
635100	**635631**	1	331100	2
635105	**635636**	1	321826	2
635106	**635637**	1	331106	2
635107	**635619**	1	331107	2

Coupling reference	Flexible element ref.	Qty	Flange reference	Qty
635301	**635632**	1	321315	2
635302	**635633**	1	321325	2
635303	**635634**	1	321335	2
635304	**635635**	1	321345	2

STRAFLEX ®
WITH SEPARATE HUB

*	Torsional flexibility	*	Radial flexibility	**	Axial flexibility	**	Conical flexibility



DESCRIPTION

- Flexible element :
  1. Metallic bobbins linked together by rayon fibres.
  2. The whole unit 1 is potted in natural rubber and is hexagonal.

- Flange :
  3. Forged steel specially bored to accommodate the separate hub.
  4. Universal separate hub (not supplied by PAULSTRA).

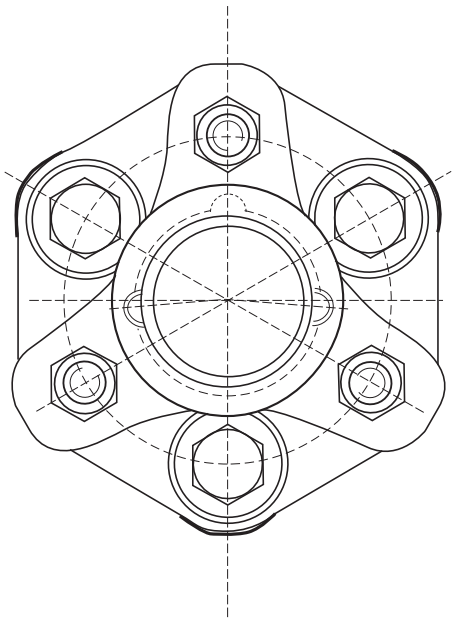
OPERATION

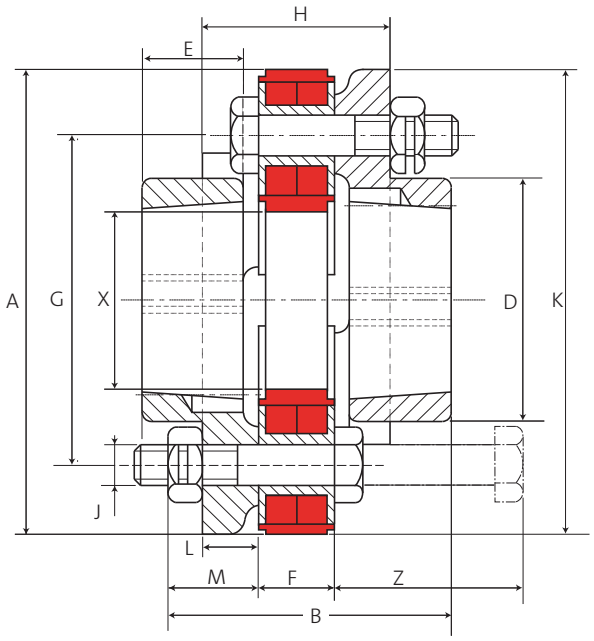
In addition to the characteristics described above, the separate hub used in conjunction with the STRAFLEX coupling provides the advantage: ready to assemble without machining.

Advantages :
- Reduced size.
- Simplified axial positionning.
- Easy to assemble and disassemble.
- Reduction of costs by simplifying the machining required for the shafts and flanges.

Recommendation :
- The reinforced textile structure means that it has a low tolerance to irregularities in the torque.

DIMENSIONS





Nominal torque (N.m)	Max torque (N.m)	Max speed (rpm)	Separate hub*	Ref.	A (mm)	B (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (mm)	K (mm)	L (mm)	M (mm)	X (mm)	Z (mm)	Wg (kg)
100	200	5500	SEE PARTS LIST	**635305**	94	61	48	20	15	65	41	8	91	11	23	28	45	0.9
200	400	5000		**635306**	120	76	60	25	18	85	51	12	121	14	29	40	60	1.6
400	800	4500		**635307**	140	81	70	25	21	100	56	14	140	17	30	44	70	2.7
800	1600	3500		**635308**	178	96	95	30	26	132	66	16	177	21	35	66	80	5

1 N.m ≈0.1 mkg

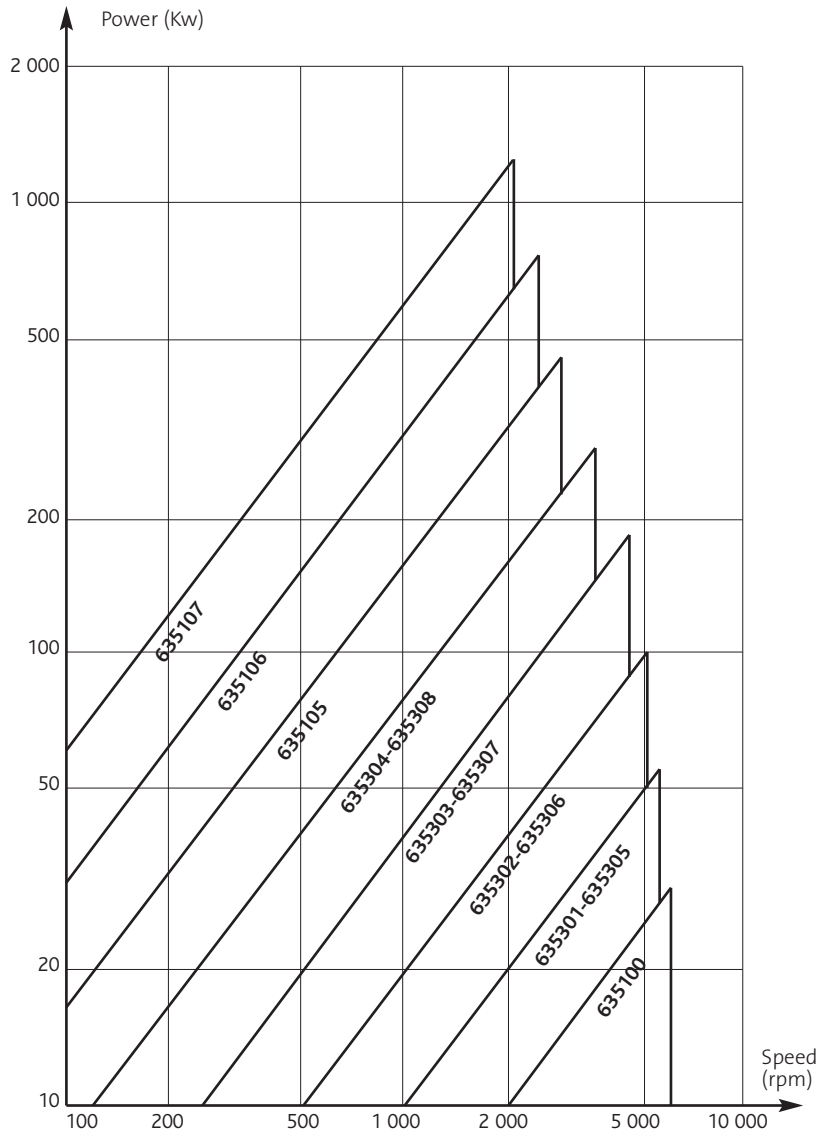
*** For shaft diameters, please refer to the hub manufacturers' specifications.**

The maximum torque is considered to be an infrequent start-up torque and not periodic.

PARTS LIST

Coupling reference	Flexible element reference	Qty	Flange reference	Qty	SEPARATE HUB	
					Current reference	Universal reference
635305	**635632**	1	321316	2	28 -20	11 -08
635306	**635633**	1	321815	2	30 -25	12 -10
635307	**635634**	1	321819	2	40 -25	16 -10
635308	**635635**	1	321827	2	50 -30	20 -12

OPERATING LIMITS
POWER RANGE



OPERATING CHARACTERISTICS

Nominal torque (N.m)	Vibrat. coupling (N.m)	Torsion under NT (degrees)	STIFFNESS			
			AXIALE (daN/mm)	RADIAL (daN/mm)	TORSIONAL (m.KN/rad.)	CONICAL (m.KN/rad.)
50	25	6	30	150	0.46	0.08
100	50	3	20	70	1.9	0.114
200	100	1°45	25	180	6.6	0.2
400	200	2°30	60	150	9.2	0.29
800	400	1°45	30	150	26	0.57
1600	800	2°20	50	150	40	1.43
3200	1600	2	120	180	73	2.3
6 000	3000	2	75	200	172	3.44

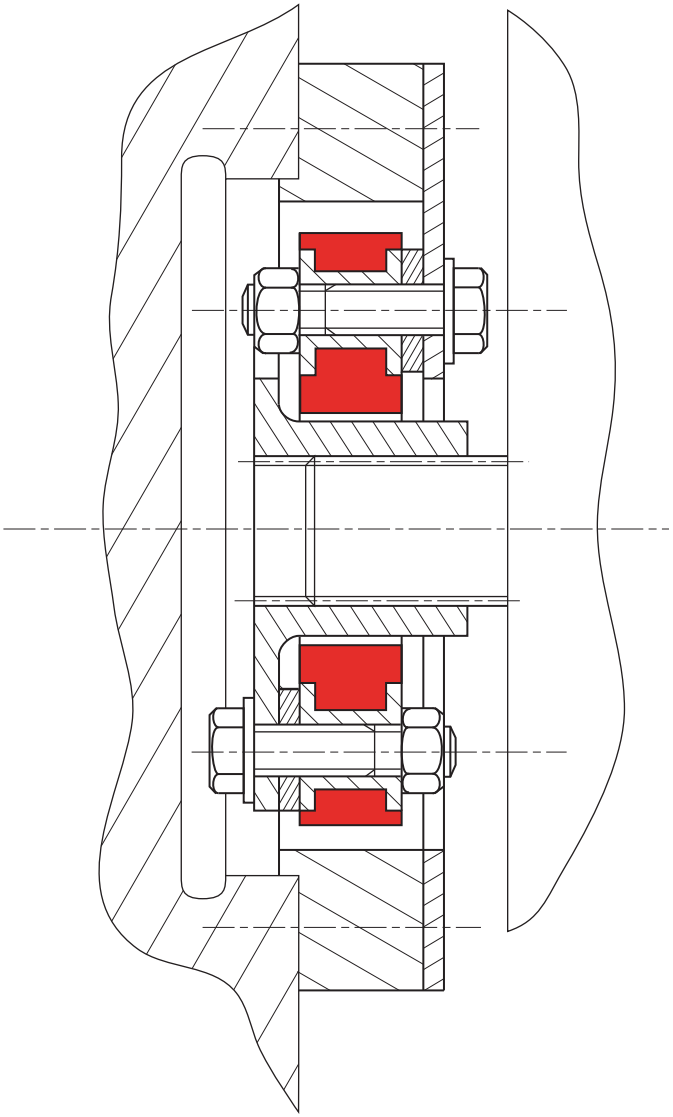
1 N.m ≈0.1 mkg

ASSEMBLY

Method :

- Mount the flanges on the shafts of the machines to be coupled.
- Position the flexible element to attach three non-adjacent bobbins to one flange with bolts, then attach the three other bobbins to the second flange.

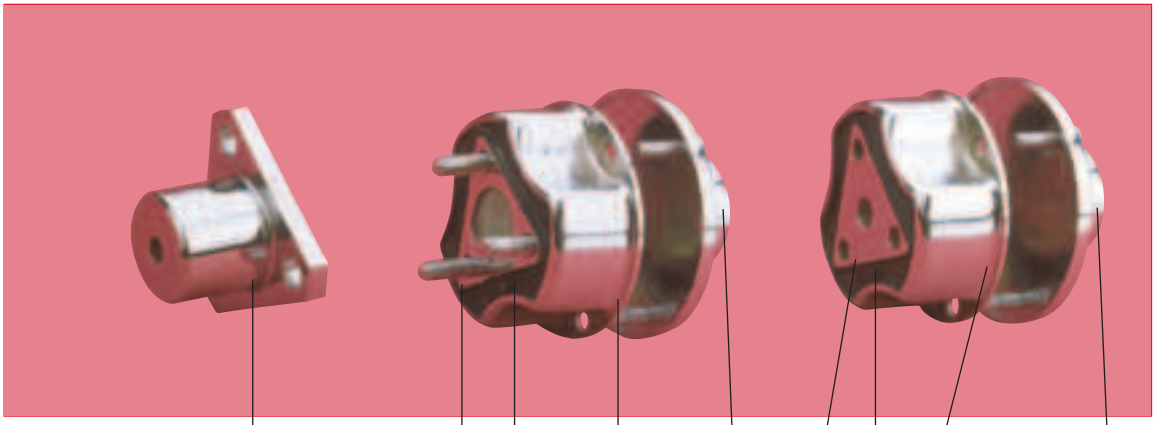
NOTE : For the 635100 coupling, the bolts are replaced by welded studs and so this must be assembled by pushing the flanges together.



Example : electric motor/volumetric pump coupling : mounted on channelled shaft and flywheel.

CARDAFLEX®

**	Torsional flexibility	*	Radial flexibility	**	Axial flexibility	**	Conical flexibility



Hollow hub coupling

Solid hub coupling

DESCRIPTION

There are two variations of the CARDAFLEX coupling :
hollow hub and solid hub :

- Flexible element :
  - ❶ Formed of solid natural rubber.
  - ❷ External steel surround, bonded to the rubber.
  - ❸ Triangular hub: a hollow hub bonded to the rubber and attached to the flange ❺, or a solid hub which accommodates a grooved or keyed shaft.

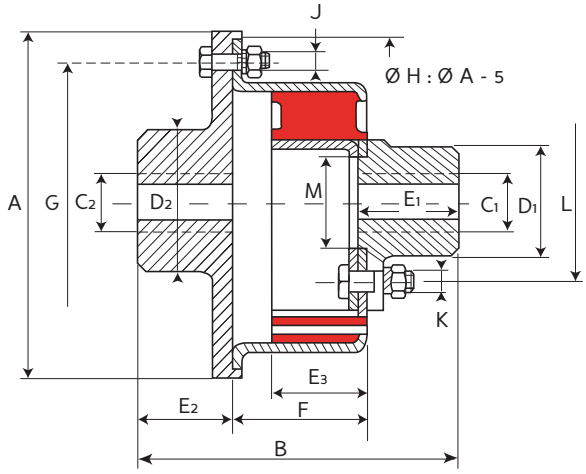
- Steel flanges :
  - ❹ round.
  - ❺ triangular.

OPERATION

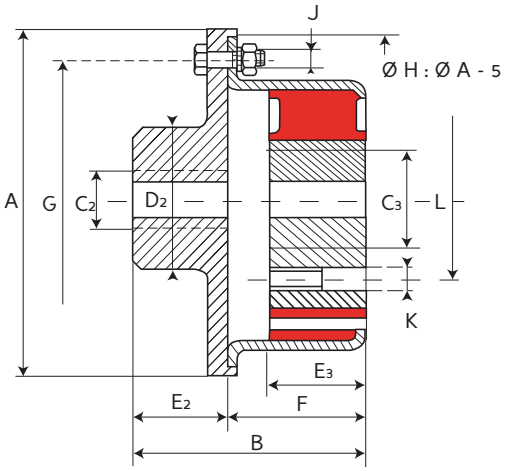
The CARDAFLEX coupling is designed with the following features :
- Safe in use.
- Fairly low conical stiffness.
- Compact shape
- Good performance at high speeds.

Advantages :
- Especially in the case of the CARDAFLEX solid hub coupling, the space occupied by the unit is much reduced.
- The outer surround of the flexible element can be centred directly onto the flywheel of one of the machines to be coupled.

DIMENSIONS



Hollow hub coupling



Solid hub coupling

HOLLOW HUB

Nominal torque (N.m)	Max torque (N.m)	Max speed (rpm)	Hole size C1 (mm)		Hole size C2 (mm)		A (mm)	B (mm)	D1 (mm)	D2 (mm)	E1 (mm)	E2 (mm)	Reference	E3 (mm)	F (mm)	G (mm)	J (mm)	K (mm)	L (mm)	M (mm)	Weight (kg)
			min	max	min	max															
50	100	6500	7	19	7	28	105	100	34	45	33	30	**622310**	28	40	86	6	8	52	30	1.6
80	160	6000	9	20	9	30	120	125	32	50	44	40	**622311**	35	45	100	6	8	52	30	2.3
120	240	5500	9	25	9	36	130	140	40	55	49	45	**622312**	35	50	108	8	10	64	36	2.8
160	320	5500	9	32	9	42	155	155	49	60	55	50	**622315**	43	55	130	10	12	76	42	4.5
520	1040	4500	11	42	11	56	205	203	67	80	71	65	**622320**	57	73	175	12	16	100	56	10.7

1 N.m ≈0.1 mkg

Please see current price list for availability of items.

SOLID HUB

Nominal torque (N.m)	Max torque (N.m)	Max speed (rpm)	Hole size C2 (mm)		Hole size C3 (mm)		A (mm)	B (mm)	D2 (mm)	E2 (mm)	E3 (mm)	Reference	F (mm)	G (mm)	J (mm)	K (mm)	L (mm)	Weight (kg)
			min	max	min	max												
30	60	7000	7	24	10	21	85	60	40	28	26	**622401**	32	68	6	7	42	0.4
50	100	6500	7	28	16	28	105	70	45	30	28	**622402**	40	86	6	8	52	0.7
80	160	6000	9	30	17	28	120	85	50	40	35	**622403**	45	100	6	8	52	1
120	240	5500	9	36	18	36	130	95	55	45	35	**622404**	50	108	8	10	64	1.2
160	320	5500	9	42	22	42	155	105	60	50	43	**622405**	55	130	10	12	76	2.3
520	1040	4500	11	56	30	56	205	138	80	65	57	**622406**	73	175	12	16	100	5

1 N.m ≈0.1 mkg

Please see current price list for availability of items.

The maximum torque is considered to be an infrequent start-up torque and is not periodic.

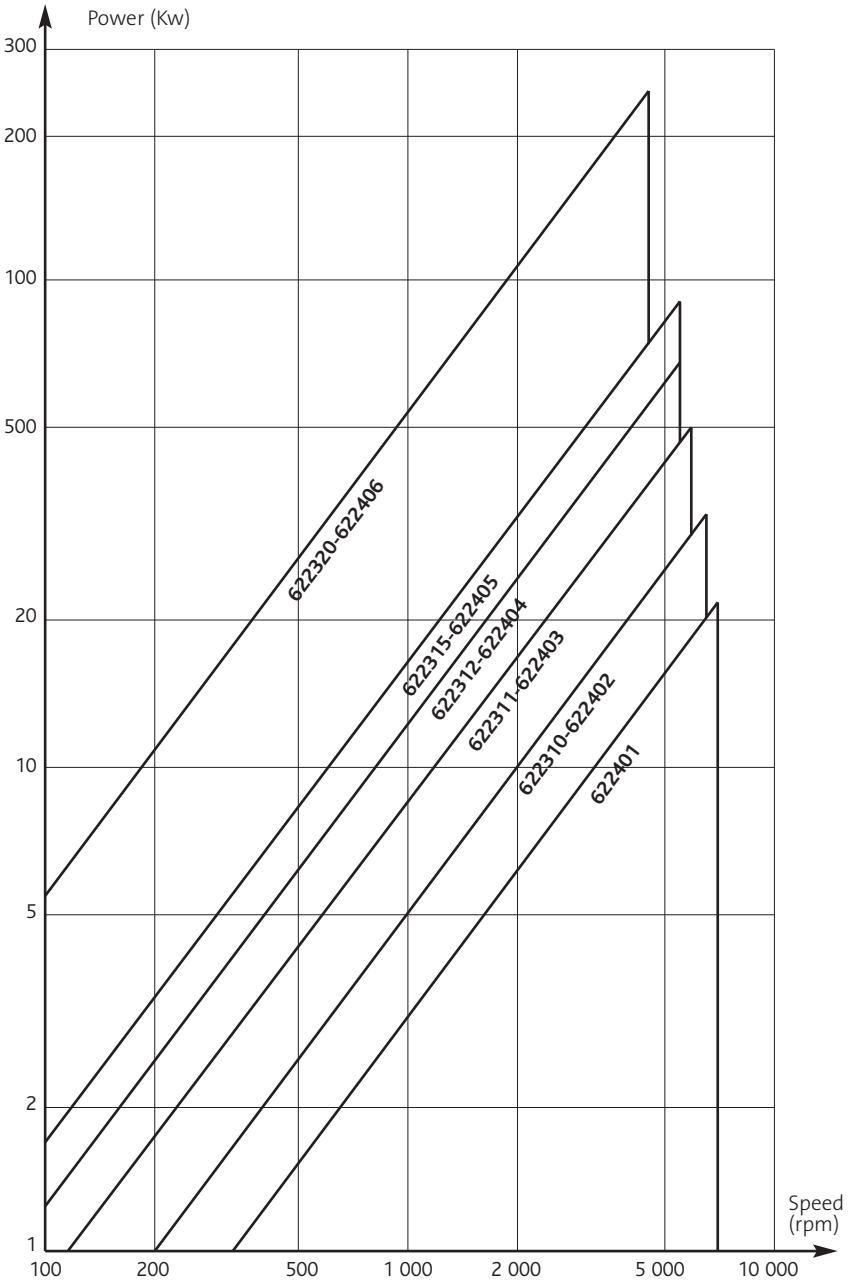
PARTS LIST

Coupling reference	Flexible element reference	Qty	Round flange reference	Qty	Triangular flange reference	Nbre
622310	**622210**	1	321631	1	321636	1
622311	**622211**	1	321641	1	321646	1
622312	**622212**	1	321651	1	321656	1
622315	**622215**	1	321661	1	321666	1
622320	**622220**	1	321671	1	321676	1
622325	622225	1	321681	1	321686	1

Coupling reference	Flexible element reference	Qty	Round flange reference	Qty
622401	**622108**	1	321621	1
622402	**622110**	1	321631	1
622403	**622111**	1	321641	1
622404	**622112**	1	321651	1
622405	**622115**	1	321661	1
622406	**622120**	1	321671	1
622407	622125	1	321681	1

OPERATING LIMITS

POWER RANGE



OPERATING CHARACTERISTICS

Nominal torque (N.m)	Vibrat. coupling (N.m)	Torsion under NT (degrees)	STIFFNESS			
			AXIAL (daN/mm)	RADIAL (daN/mm)	TORSIONAL (m.KN/rad.)	CONICAL (m.KN/rad.)
30	15	6	30	100	0.286	0.114
50	25	7	16	65	0.400	0.114
80	40	5	30	90	0.860	0.23
120	60	8	25	80	0.860	0.23
160	80	5	32	90	1.72	0.46
520	260	7	40	150	4	1.14

1 N.m ≈0.1 mkg

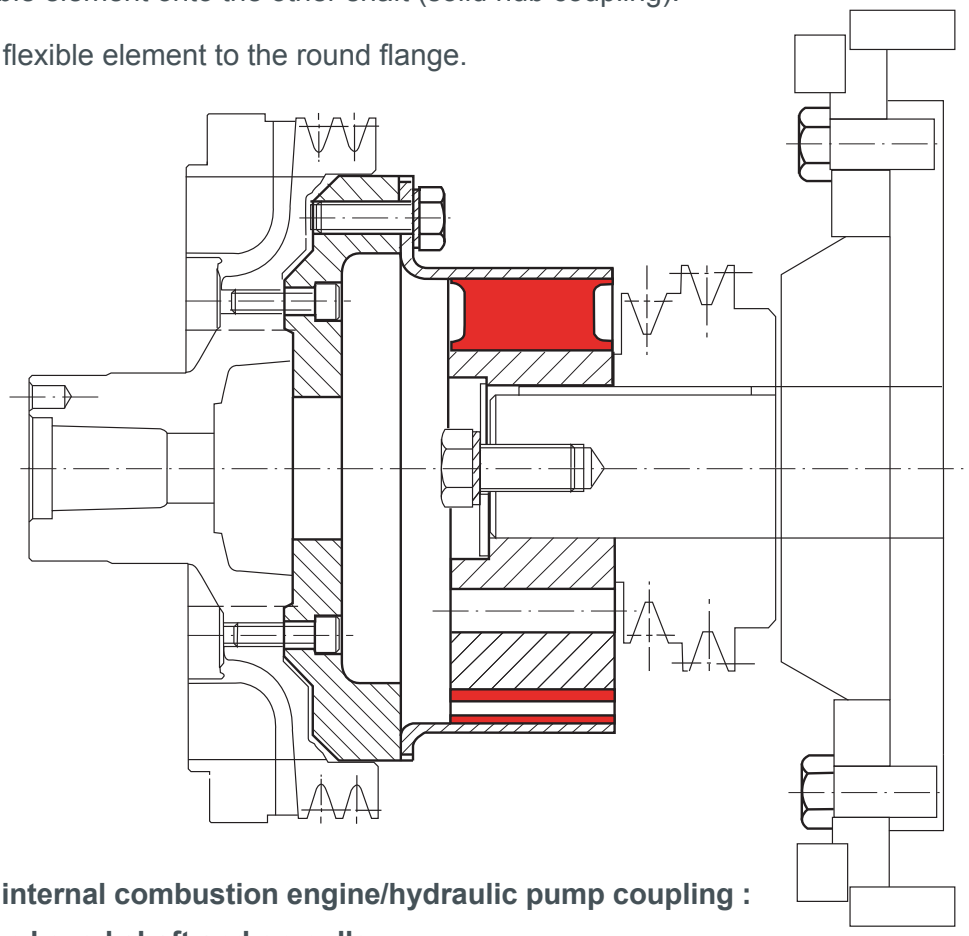
ASSEMBLY

Method :

- Mount the round flange onto the shaft of one machine.

- Mount :
  - The triangular flange onto the other shaft (hollow hub coupling).
  - The flexible element onto the other shaft (solid hub coupling).

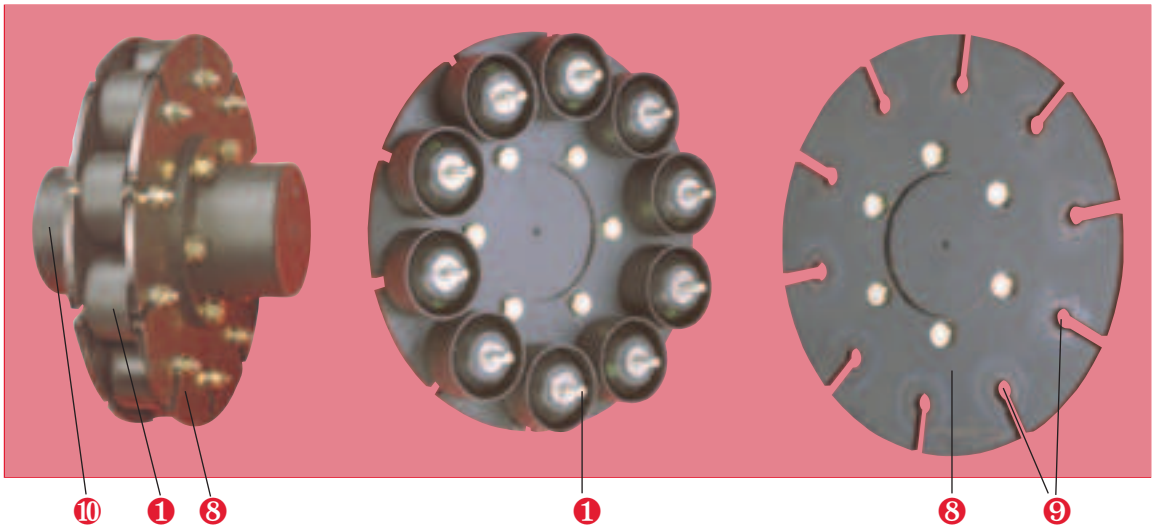
- Attach the flexible element to the round flange.



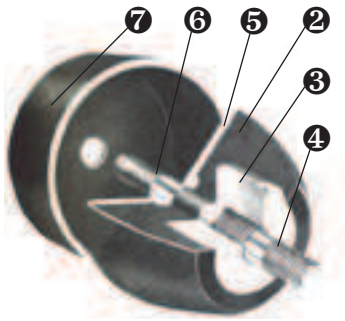
Example : internal combustion engine/hydraulic pump coupling : mounted on keyed shaft and on pulley.

RADIAFLEX® - RTP

* Torsional flexibility	* Radial flexibility	See Data Sheet Axial flexibility	Conical flexibility



DESCRIPTION



- Flexible element made up of a variable number of FLEXIBLE STUDS ❶ depending on the torque to be transmitted :
  - ❷ Solid natural rubber blocks in the form of a truncated cone.
  - ❸ Internal armature bonded to the rubber.
  - ❹ Threaded stud.
  - ❺ External armature bonded to the rubber.
  - ❻ Studding welded to armature.
  - ❼ Cylindrical metal cover.
- Steel disks :
  - ❽ Two identical disks, bolted to the flanges ❿ and with slits ❶ to house the studs ❾.
- Flanges : ❿ die-cast steel.

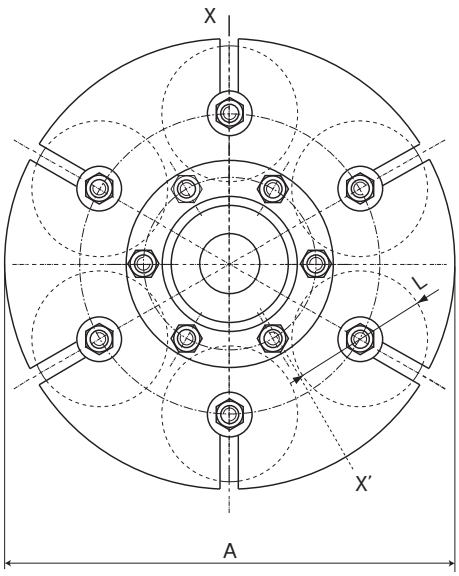
OPERATION

The RADIAFLEX RTP coupling is designed with the following features :
The studs can be removed radially without moving the coupled machines.

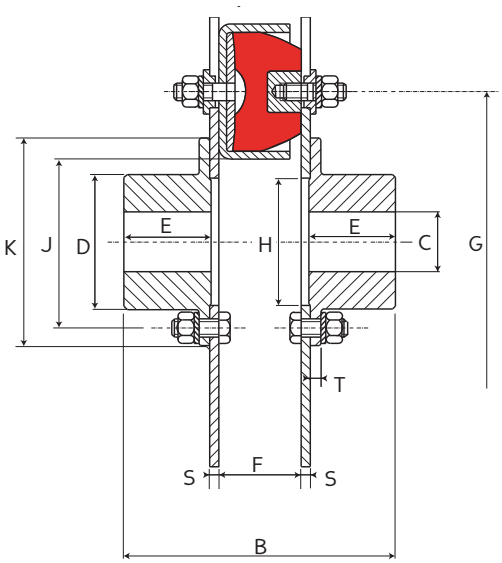
- At low and average torque : the rubber operates under compression.
- At high torque : there is progressive thrust of the rubber against the metal cover ❸.
- Safe in use.
- It can absorb the effects of tension or compression axially (for example: push and pull of a helical screw).

DIMENSIONS

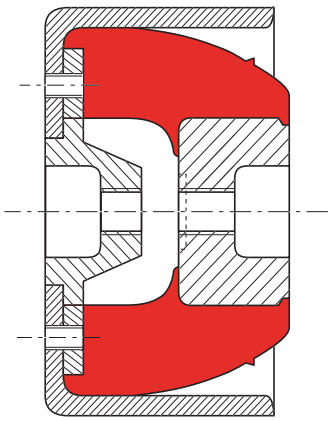
View from F_1



XX' Section



Alternative mount :



Ref. 526401Δ60

The alternative mount **526401Δ60** is softened. It's radial stiffness is equal to 2/3 of the standard mounting ref. **522131Δ60**.

Warning : A coupling equiped with the alternative mounts **526401** can only transmit 80% of the torque of the standard version.

Nominal torque (N.m)	Max torque (N.m)	Max speed (rpm)	Hole size C (mm)		A (mm)	B (mm)	D (mm)	E (mm)	Type	Reference	F (mm)	G (mm)	H (mm)	J (mm)	K (mm)	L (mm)	S (mm)	T (mm)	Weight (kg)
			min	max															
470	1000	3000	18	60	270	181	86	60	RTP 2.3	612203	55	180	85	115	138	90	6	7	13
630	1250	3000	18	60	270	181	86	60	RTP 2.4	612 204	55	180	85	115	138	90	6	7	15
1100	2200	3000	18	60	300	185	86	60	RTP 2.6	612206	55	200	85	115	138	90	8	7	28
1800	3600	2500	23	80	364	235	115	85	RTP 2.8	612208	55	264	115	145	168	90	8	9.5	45
2500	5000	1500	28	100	420	299	145	102	RTP 4.6	612406	80	280	145	180	210	130	10	12.5	77
2800	5600	2500	28	100	424	274	145	102	RTP 2.10	612210	55	324	145	180	210	90	10	12.5	72
4100	8200	2000	28	120	475	345	177	136	RTP 2.12	612212	55	380	178	213	247	90	12	16	103
4500	9000	1500	28	120	510	370	177	136	RTP 4.8	612408	80	370	178	213	247	130	12	16	127
6900	13500	1500	28	120	600	382	177	136	RTP 4.10	612410	80	460	178	213	247	130	18	16	178
9700	20000		32	150	680	424	210	155	RTP 4.12	612412	80	540	178	260	290	130	20	18	253
17500	35000		32	150	860	424	210	155	RTP 4.16	612416	80	720	178	260	290	130	20	18	330
17500	35000		32	155	826	687	220	250	RTP 6.6	612606	147	580	200			246	30		590
34000	68000		32	220	1096	827	320	320	RTP 6.8	612608	147	850	320			246	30		1140
60000	120000		32	200	1246	827	275	320	RTP 6.12	612612	147	1000	250			246	30		1200
72000	140000		32	360	1446	827	540	320	RTP 6.12	612613	147	1200	500			246	30		2200
104000	200000		35	360	1546	887	540	350	RTP 6.16	612616	147	1300	500			246	30		2500

1 N.m ≈0.1 mkg

Please see current price list for availability of items.

The maximum torque is considered to be an infrequent start-up torque and is not periodic.

OPERATING CHARACTERISTICS

Nominal torque (N.m)	Vibrat. coupling (N.m)	Torsion under NT (degrees)	STIFFNESS				
			Axial compr. (daN/mm)	Axial compres. (daN/mm)	Axial tension (daN/mm)	Radial (daN/mm)	Torsional (m. KN/radian)
470	235	3° 10'	375	300	105	8.6	10.3
630	315	3° 10'	500	400	140	11.4	20.6
1100	550	2° 50'	750	600	210	21.2	86
1800	900	2° 10'	1000	800	280	49.3	114
2500	1250	2° 15'	1500	1200	330	65.5	86
2800	1400	1° 50'	1250	1000	350	92.6	229
4100	2050	1° 30'	1500	1200	420	160	573
4500	2250	1° 40'	2000	1600	440	152	460
6900	3450	1° 25'	2500	2000	550	292	1030
9700	4850	1° 10'	3000	2 400	660	482	
17500	8750	0° 50	4000	3200	880	1140	
17500	8750	2° 10'	3000	1800	550	458	
34000	17000	1° 30'	4000	2 400	730	1320	
60000	30000	1° 15'	6 000	3600	1100	2700	
72000	36000	1°	6 000	3600	1100	3900	
104000	52000	0° 50'	8000	4800	1460	6100	

1 N.m ≈0.1 mkg

1 daN = 1 kg

PARTS LIST

FLEXIBLE STUDS, DISK AND FLANGES

Coupling reference	Flexible stud reference	Qty	Flange reference	Qty	Disk reference	Qty
612203	**522090 Δ 60**	3	321138	2	351103	2
612 204	**522090 Δ 60**	4	321136	2	351110	2
612206	**522090 Δ 60**	6	321138	2	351122	2
612208	**522090 Δ 60**	8	321147	2	351133	2
612210	**522090 Δ 60**	10	321154	2	351142	2
612212	**522090 Δ 60**	12	321167	2	351152	2
612406	**522131 Δ 60**	6	321154	2	351125	2
612408	**522131 Δ 60**	8	321167	2	351134	2
612410	**522131 Δ 60**	10	321167	2	351143	2
612412	**522131 Δ 60**	12	321191	2	351157	2
612416	**522131 Δ 60**	16	321191	2	351170	2
612606	522240 Δ 45 et 60	6	321189	2	351124	2
612608	522240 Δ 45 et 60	8	321193	2	351135	2
612612	522240 Δ 45 et 60	12	321182	2	351155	2
612613	522240 Δ 45 et 60	12	321195	2	351156	2
612616	522240 Δ 45 et 60	16	321197	2	351169	2

FIXING FOR FLANGES AND DISCS. LOCATING SLEEVES

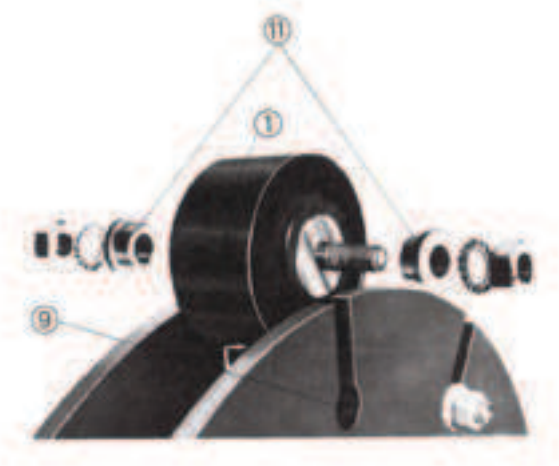
Coupling part number	Flange fixing reference	Qty	Locating sleeve reference	Qty	Elastic element reference	Qty
612203	337216	1	337217	1	337217	1
612 204	337206	1	337207	1	337208	1
612206	337209	1	337210	3	337211	2
612208	337206	2	337210	4	337208	2
612210	337565	1	337227	1	337208 -337228	2 -1
612212	337229	1	337230	1	337208	3
612406	337675	1	337226	1	337215	1
612408	337229	1	337231	1	337232	2
612410	337233	1	337234	1	337215 -337232	1 -1
612412	337676	1	337237	3	337232	3
612416	337676	1	337237	4	337232	4
612606	Please consult our Technical Service		351282	12	Please consult our Technical Service	
612608			351282	16		
612612			351282	24		
612613			351282	24		
612616			351282	32		

References written in bold are kept in stock.

ASSEMBLY

Method :

- Mount each of the flanges onto the ends of the corresponding shafts.
- Use the specially machined recess to centre the disks onto the flanges and screw together.
- Attach the external armature of the studs to the appropriate disk.
- Attach the internal armature of the studs to the other disk.



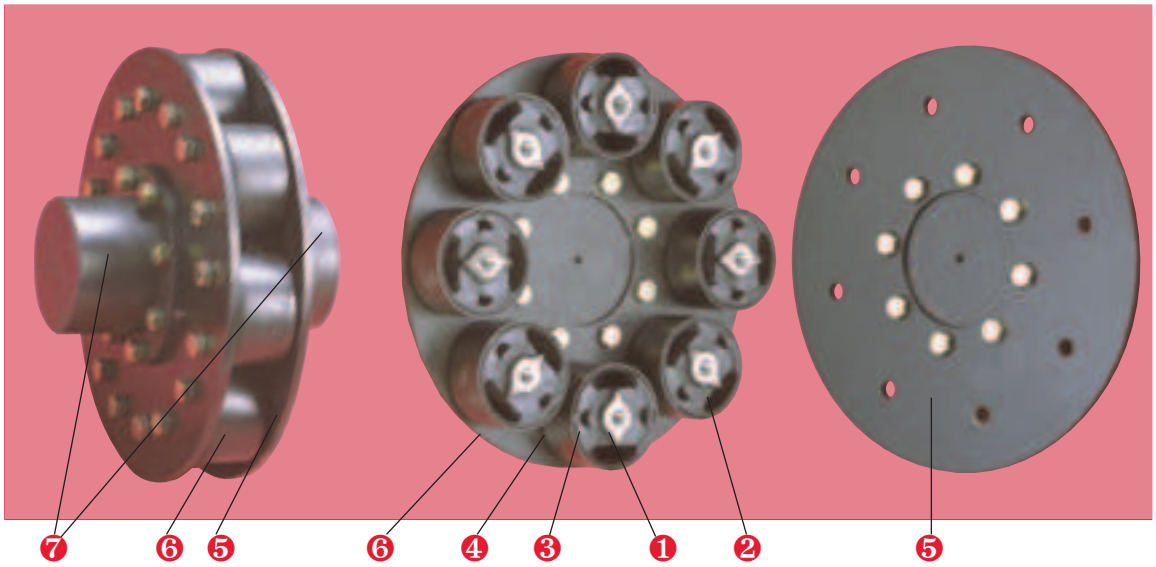
Note :
The slits ❾ are designed to take the loose locating sleeves ⓫ to enable the individual flexible studs ❶ to be mounted and removed radially.

Torque to be applied to the stud fixing bolts :

- Stud RTP2 : 522090 Ø 12 → 75 N.m.
- Stud RTP4 : 522131 Ø 16 → 185 N.m.
- Stud RTP6 : 522240 Ø 24 → 640 N.m.

AXOFLEX®

*	Torsional flexibility	*	Radial flexibility	**	Axial flexibility	*	Conical flexibility



DESCRIPTION

- **Flexible element** comprising a variable number of flexible bushes,depending on the torque to be transmitted.
  ❶ Inner with tapped or smooth holes (normal mounting or on flywheel).
  ❷ Precompressed natural rubber bonded to inner ❶ and to outer the half-cylinders ❸.
  ❸ Half-cylinders bonded to the rubber.
  ❹ Outer housing ensuring precompression of rubber by exerting pressure on the half-cylinders ❸.

- **Steel disks :**
  ❺ Flange to which the inner studs are attached (normal mounting).
  ❻ Disk to which the studs are attached (flywheel mounting).

- **Die cast steel hubs :**
  ❼ The two hubs are identical. They may be bolted to disks ❺ or ❻ depending on the mounting used.

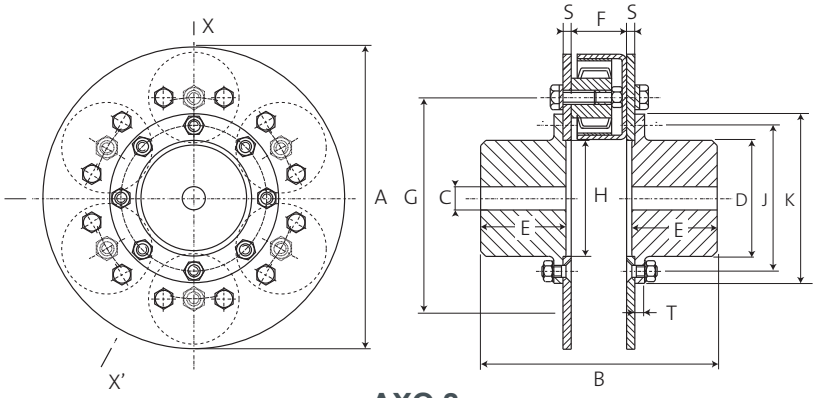
OPERATION

The AXOFLEX coupling is designed with the following features :
- Radial disassembly without moving the machines that are coupled (usually very large machines).
- Precompression of the rubber which limits operation under tension.

Advantage :
- Good axial flexibility which allows great axial displacement, for example in the case of conical rotor machines.

DIMENSIONS AXO 2

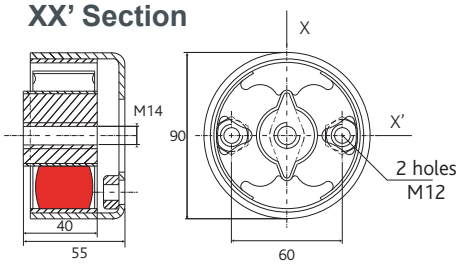
XX' Section



AXO 2

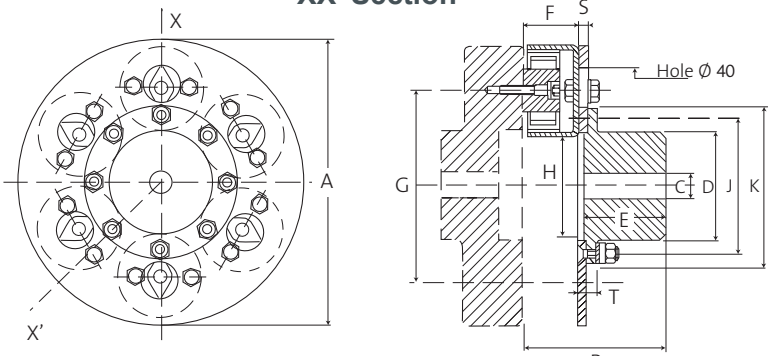
AXO 2 Coupling

XX' Section



AXO 2 stud N° 525210-60 Weight : 0.9 kg

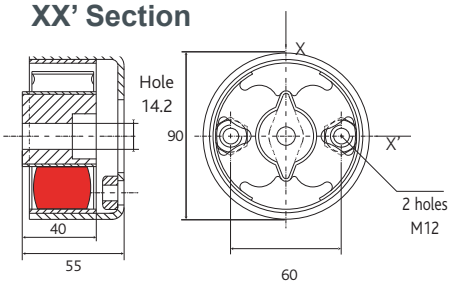
XX' Section



AXO 2V

AXO 2V Flywheel coupling

XX' Section



AXO 2V stud N° 525211-60 Weight : 0.9 kg

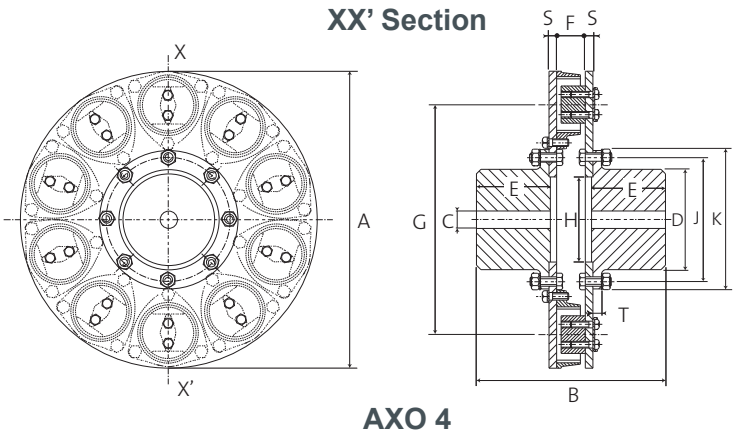
Flanges supplied unbored

Nominal torque (N.m)	Max torque (N.m)	Max speed (rpm)	Hole size C (mm)		A (mm)	B mm type		D (mm)	E (mm)	Ref. Standard coupling	Ref Flywheel coupling	F (mm)	G (mm)	H (mm)	J (mm)	K (mm)	S (mm)	T (mm)	Weight stand. coupling
			min	max		stan.	flyw.												
600	1200	3000	18	60	270	181	138	86	60	615203	615253	55	180	85	115	138	6	7	14
800	1600	3000	18	60	270	181	138	86	60	615204	615254	55	180	85	115	138	6	7	15
1300	2600	3000	23	80	300	235	145	115	85	615206	615256	55	200	115	145	168	8	9.5	28
2300	4600	2500	23	80	364	235	145	115	85	615208	615258	55	268	115	145	168	8	9.5	45
3600	7200	2500	28	100	424	274	164	145	102	615210	615260	55	324	145	180	210	10	12.5	72
5000	10000	2000	28	120	475	345	200	177	136	615212	615262	55	380	178	213	247	12	16	103

1 N.m ≈0.1 mkg

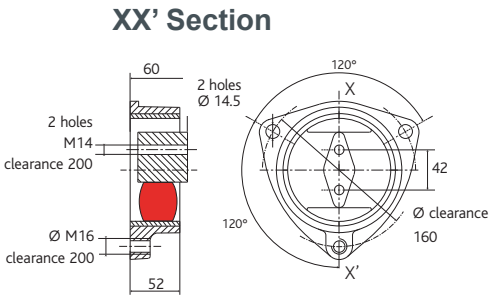
Please see current price list for availability of items.

DIMENSIONS AXO 4

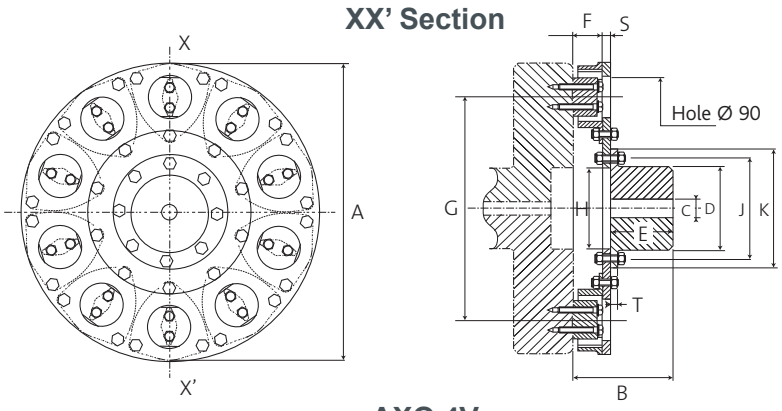


AXO 4

AXO 4 Coupling

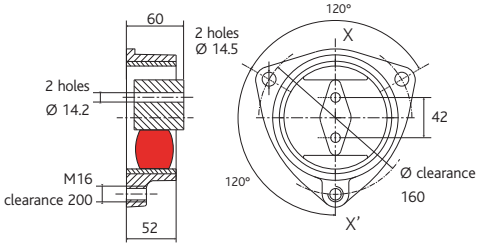


AXO 4 stud N° 525400-60 Weight : 2.7 kg



AXO 4V

AXO 4V Flywheel coupling



AXO 4V stud N° 525403-60 Weight: 2.7 kg

Flanges supplied unbored

Nominal torque (N.m)	Max torque N.m)	Max speed (rpm)	Hole size C (mm)		A (mm)	B (mm)		D (mm)	E (mm)	Ref. Standard coupling	Ref Flywheel coupling	F (mm)	G (mm)	H (mm)	J (mm)	K (mm)	S (mm)	T (mm)	Weight stand. coupling
			min	ma		stan.	flyw.												
5 000	10000	1 800	28	100	480	279	170	145	102	615406	615456	60	340	145	180	210	10	12,5	80
7 500	15000	1 800	28	120	513	346	203	177	136	615408	615458	60	373	178	213	247	10	16	115
12 000	24000	1 500	28	120	622	358	209	177	136	615410	615460	60	482	178	213	247	16	16	178
12 000	24000	1 500	32	150	622	396	228	210	155	615440	615490	60	482	178	260	290	16	18	200
17 500	35000	1 500	32	150	720	396	228	210	155	615412	615462	60	580	178	260	290	16	18	240
17 500	35000	1 500	36	170	720	516	288	240	215	615442	615492	60	580	240	290	335	16	24	300
24000		1400	36	170	840	524	292	240	215	615414	615464	60	700	240	290	335	20	24	400
24000		1400	36	200	840	570	315	285	240	615444	615494	60	700	240	335	380	20	40	500
40000		1 200	36	200	1040	590	325	285	240	615418	615468	60	900	240	335	380	30	40	700

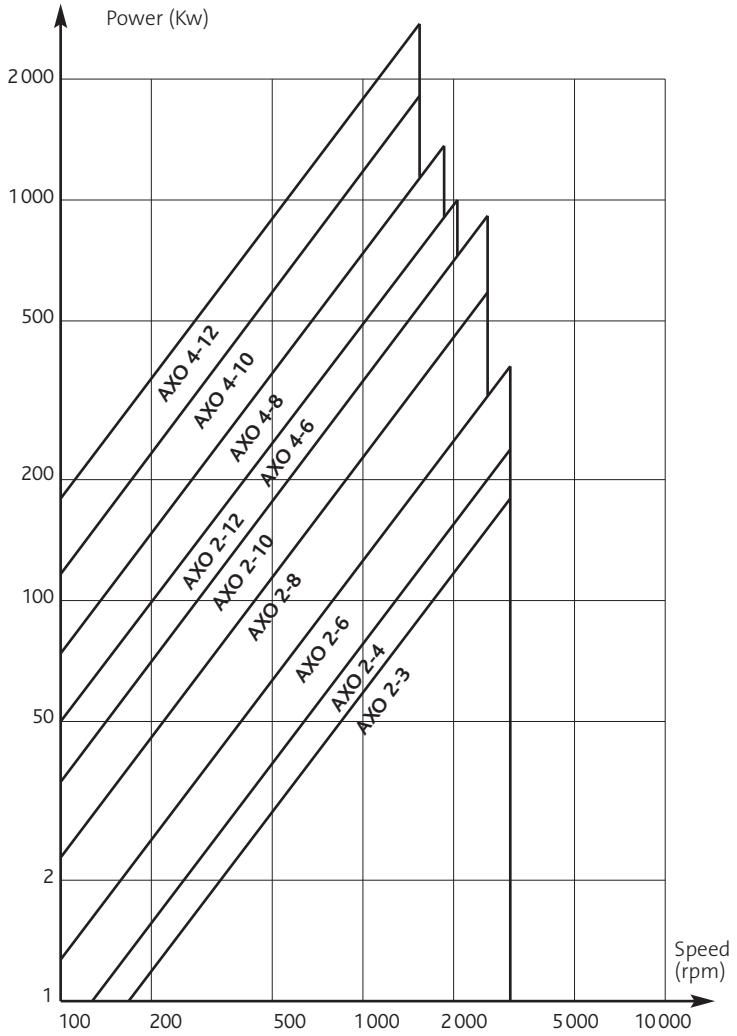
1 N.m ≈ 0.1 mkg

Please see current price list for availability of items.

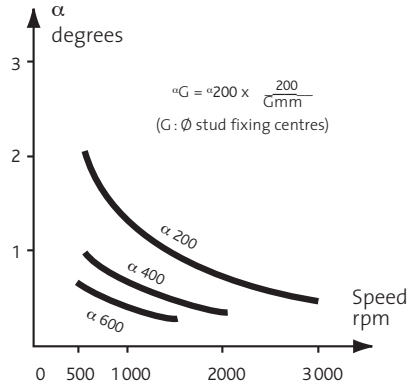
The maximum torque is considered to be an infrequent start-up torque and is not periodic.

OPERATING LIMITS

POWER RANGE



CONICAL MISALIGNMENT



RADIAL MISALIGNMENT

Nominal torque N.m	Axial displacement at 1,500 rpm
600	2 rpm
800	2 rpm
1 300	2 rpm
2 300	2 rpm
3 600	2 rpm
5 000	3 rpm
7 500	3 rpm
12 000	3 rpm
17 500	3 rpm

OPERATING CHARACTERISTICS AXO 2

Nominal torque (N.m)	Vibrat; coupling (N.m)	Torsion under NT (degrees)	STIFFNESS		
			AXIAL (daN/mm)	RADIAL (daN/mm)	TORSIONAL (m.KN/rad.)
600	300	3° 30'	22	75	10.9
800	400	3° 30'	30	100	14.3
1 300	650	3°	45	150	25.8

Nominal torque (N.m)	Vibrat; coupling (N.m)	Torsion under NT (degrees)	STIFFNESS		
			AXIAL (daN/mm)	RADIAL (daN/mm)	TORSIONAL (m.KN/rad.)
2 300	1 150	2° 20'	60	210	53.3
3 600	1 800	2°	75	250	114.6
5 000	2 500	1° 50'	90	300	190

1 N.m ≈0.1 mkg

Operating characteristics AXO 4

Nominal torque (N.m)	Vibrat; coupling (N.m)	Torsion under NT (degrees)	STIFFNESS		
			AXIAL (daN/mm)	RADIAL (daN/mm)	TORSIONAL (m.KN/rad.)
5 000	2 500	1° 50'	100	360	157
8 000	4 000	1° 40'	130	480	252
12 000	6 000	1° 20'	170	600	528

Nominal torque (N.m)	Vibrat; coupling (N.m)	Torsion under NT (degrees)	STIFFNESS		
			AXIAL (daN/mm)	RADIAL (daN/mm)	TORSIONAL (m.KN/rad.)
17 500	8750	1°	200	720	916
24000	12 000	0° 50'	240	850	1550
40000	20000	0° 40'	300	1100	3300

1 N.m ≈0.1 mkg

PARTS LIST

Coupling reference	Flexible stud reference	Quantity	Flange reference	Quantity	Disk reference	Quantity
615203	**525210-60**	3	321138	2	351026 -351027	1 -1
615204	**525210-60**	4	321136	2	351028 -351029	1 -1
615206	**525210-60**	6	321147	2	351011 -351012	1 -1
615208	**525210-60**	8	321147	2	351013 -351014	1 -1
615210	**525210-60**	10	321154	2	351015 -351016	1 -1
615212	**525210-60**	12	321167	2	351017 -351018	1 -1
615253	**525211-60**	3	321138	1	351042	1
615254	**525211-60**	4	321136	1	351043	1
615256	**525211-60**	6	321147	1	351044	1
615258	**525211-60**	8	321147	1	351045	1
615260	**525211-60**	10	321154	1	351046	1
615262	**525211-60**	12	321167	1	351047	1

Coupling reference	Flexible stud reference	Quantity	Flange reference	Quantity	Disk reference	Quantity
615406	**525400-60**	6	321154	2	351665 -351666	1 -1
615408	**525400-60**	8	321167	2	351667 -351668	1 -1
615410	**525400-60**	10	321167	2	351663 -351664	1 -1
615412	**525400-60**	12	321191	2	351659 -351660	1 -1
615414	**525400-60**	14	324602	2	351655 -351656	1 -1
615418	**525400-60**	18	324601	2	351651 -351652	1 -1
615440	**525400-60**	10	321191	2	351661 -351662	1 -1
615442	**525400-60**	12	324602	2	351657 -351658	1 -1
615444	**525400-60**	14	324601	2	351653 -351654	1 -1
615456	**525403-60**	6	321154	1	351669	1
615458	**525403-60**	8	321167	1	351670	1
615460	**525403-60**	10	321167	1	351671	1
615462	**525403-60**	12	321191	1	351672	1
615464	**525403-60**	14	324602	1	351675	1
615468	**525403-60**	18	324601	1	351677	1
615490	**525403-60**	10	321191	1	351673	1
615492	**525403-60**	12	324602	1	351676	1
915494	**525403-60**	14	324601	1	351674	1

ASSEMBLY

Method : (normal)

- Attach each of the flanges to the ends of the appropriate shafts.
- Use the specially machined recess to centre the disks onto the flanges and screw together.
- Attach the external armature of the studs to the appropriate disk.
- Attach the internal armature of the studs to the other disk.

Torque for the bolts attaching the studs.

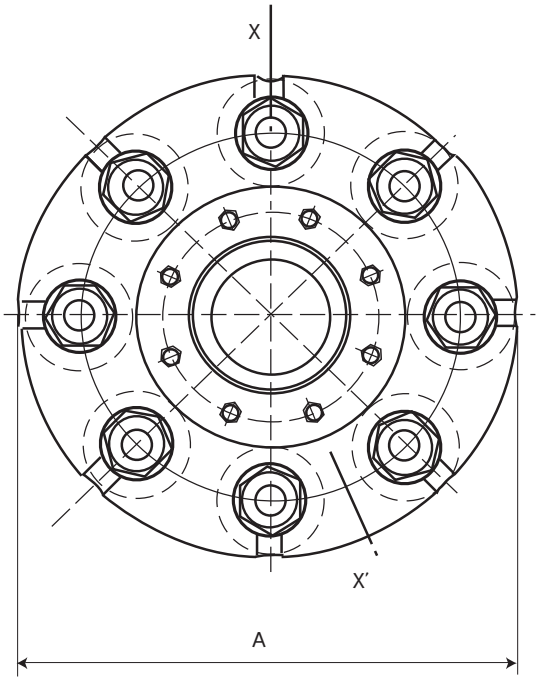
Ø 12 → 75 N.m Ø 14 → 122 N.m Ø 16 → 185 N.m

Method : (flywheel)

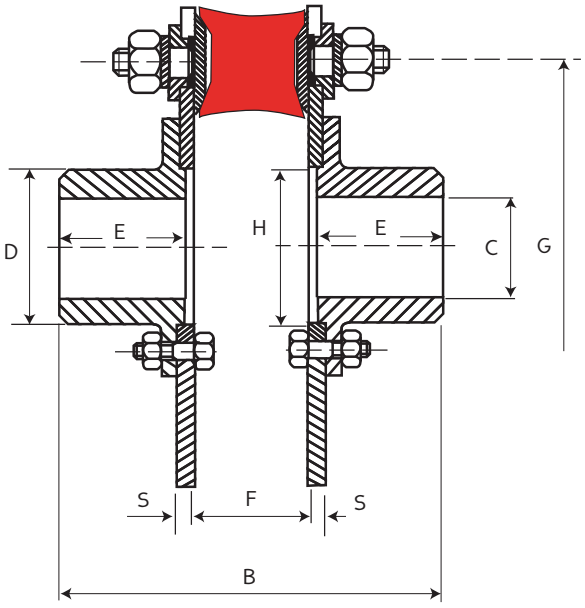
- Mount the flange onto the shaft end.
- Bolt the disk onto the flange.
- Attach the external armature of the studs to the disk.
- Attach the internal armature of the studs to the flywheel of the second machine.

SPARE PARTS

RADIAFLEX R COUPLING



XX' Section



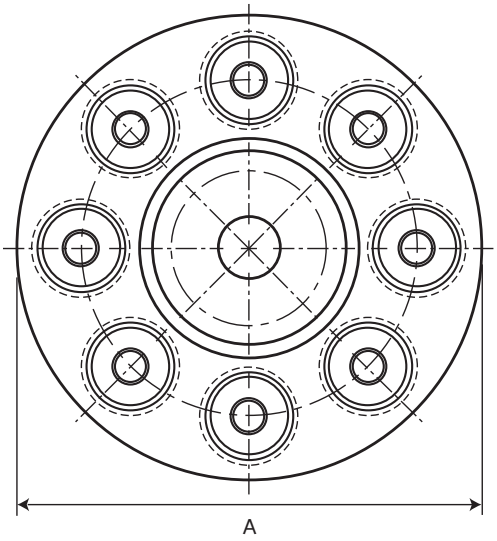
Nominal torque (N.m)	Max speed (rpm)	Hole size C (mm)		A (mm)	B (mm)	D (mm)	E (mm)	Coupling reference	Flexible stud reference	Nbre	F (mm)	G (mm)	H (mm)	S (mm)
		min	max											
0.8	4000	5	10	45	40	20	15	610503	**521128**	3	15	33	-	3
10	4000	0	26	80	59	40	20	610406	**521201**	6	19	60	-	5
30	3000	0	38	172	120	73	38	611113	**521571**	3	44	114	50	4
50	3000	0	38	172	120	73	38	611213	**521572**	3	44	114	50	4
80	3000	18	48	187	138	69	46	611116	**521571**	6	44	130	70	4
120	3000	18	48	187	138	69	46	611216	**521572**	6	44	130	70	4
160	3000	18	60	248	166	90	60	611108	**521571**	8	44	190	85	4
220	2500	18	60	248	166	90	60	611208	**521572**	8	44	190	85	4
300	2000	18	60	240	190	90	60	611408	**521602**	8	60	180	85	8
550	1500	23	80	300	240	115	85	611412	**521602**	12	60	236	115	8
1050	1500	28	100	395	275	145	102.5	611416	**521602**	16	60	330	145	8
1460	1500	28	120	430	356	177	136	611512	**521801**	12	70	340	178	10
2320	1500	28	120	475	366	177	136	611612	**521951**	12	76	380	178	12

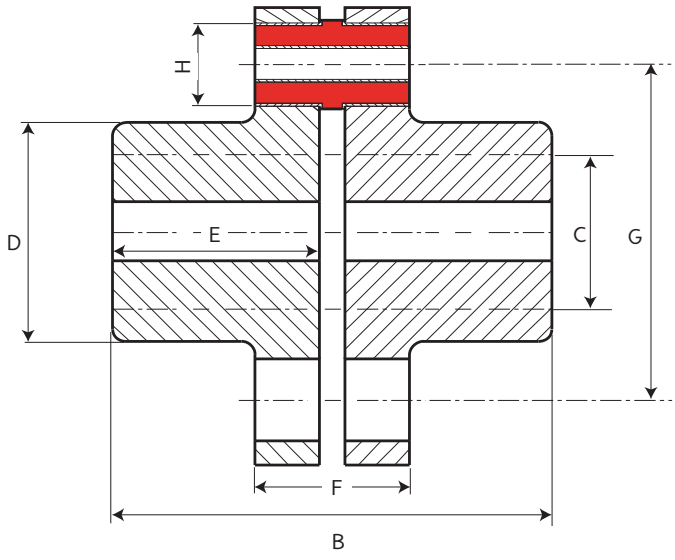
1 N.m ≈0.1 mkg

SPARE PARTS

GV Coupling

Recommended in case of very high speed of rotation.





Nominal torque (N.m)	Max speed (rpm)	Hole size C (mm)		A (mm)	B (mm)	D (mm)	E (mm)	Type	Coupling reference	Stud reference	Nber of studs	F (mm)	G (mm)	H (mm)
		min	max											
80	9000	10	35	100	125	56	60	G.V.10-8	613101	**523102**	8	35	76	16
450	7000	24	60	180	170	85	80	G.V.40-8	613400	**523401**	8	70	130	32
1000	5000	35	70	220	235	100	110	G.V.80-8	613800	**523801**	8	115	150	40
3800	3500	35	120	330	320	170	150	G.V.150-10	613901	**523902**	10	120	250	50
5400	3000	35	140	380	340	200	160	G.V.150-12	613902	**523902**	12	120	300	50
9000	2500	40	180	480	400	250	190	G.V.150-16	613903	**523902**	16	120	400	50

1 N.m ≈0.1 mkg

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