创明TRUMY
POWER TRANSMISSION PRODUCTS

LJQ COMPACT
DISC COUPLINGS

Close-coupled-shafts application can also have a chance
To enjoy excellent performance of disc coupling .

A COMPETITIVE CHOICE FOR CLOSE-COUPLED-SHAFTS APPLICATION

- Short distance between shaft ends
- Double disc pack
- Easy to assemble or disassemble
- Good misalignment compensating

无锡创明传动工程有限公司
WUXI TRUMY TRANSMISSION ENGINEERING CO.,LTD.

LJQ COMPACT DISC COUPLINGS

COUPLING SERIES DESIGNATION

LJQ – 270 – 80X100/60X80 – 00T1
A B C D

Group A: LJQ is the name of TRUMY compact disc coupling.
Group B: Represents the grade of torque transmission of the coupling. The grade value represents the power (in KW) transmitted per 1000 rpm.
Group C: Shows the fitting diameter and length of driving and driven hubs (in a fraction form, with numerator representing driving shaft end, while denominator – driven shaft end).
Group D: Shows design number of the coupling.

APPLICATION FIELDS

- Used for low speed applications with very short shaft distance, such as pumps and low speed fans or blowers.
- Directly replace elastic pin coupling or other non–metallic elastic coupling.

FEATURES

The design of LJQ series compact disc coupling has followed the advanced and matured technologies owned by TRUMY. The flexible elements are thin metal discs made from high strength stainless steel. Having passed finite element analysis and profile optimization, all types of the metal discs offer optimal comprehensive performances. The bolts transmitting torque with strength class above 10.8 are made from high quality alloy steel. Coupling half (also called hub) and ring spacer are also made from alloy steel. LJQ compact coupling has all advantages of TRUMY's disc coupling, It also has the following obvious characteristics:

- *Double disc pack used, good compensation performance.
- Easy use, disc pack and fasteners can be replaced without moving equipment.
- Used to replace non metal elastic coupling, can not only reduce the running noise, but also obviously reduce equipment down time.
- Alloy steel hub and ring spacer, light weight, high power density, small affect to the machines.
- Can be used in corrosive environment.

The design of LJQ compact coupling has obtained Chinese patent for utility model, the patent number is ZL 2013 2 0035701.X.

*Single pack disc coupling (means disc coupling with only one disc pack) can not compensate radial misalignment, and its axial compensation ability is also limited, so it is not recommended.

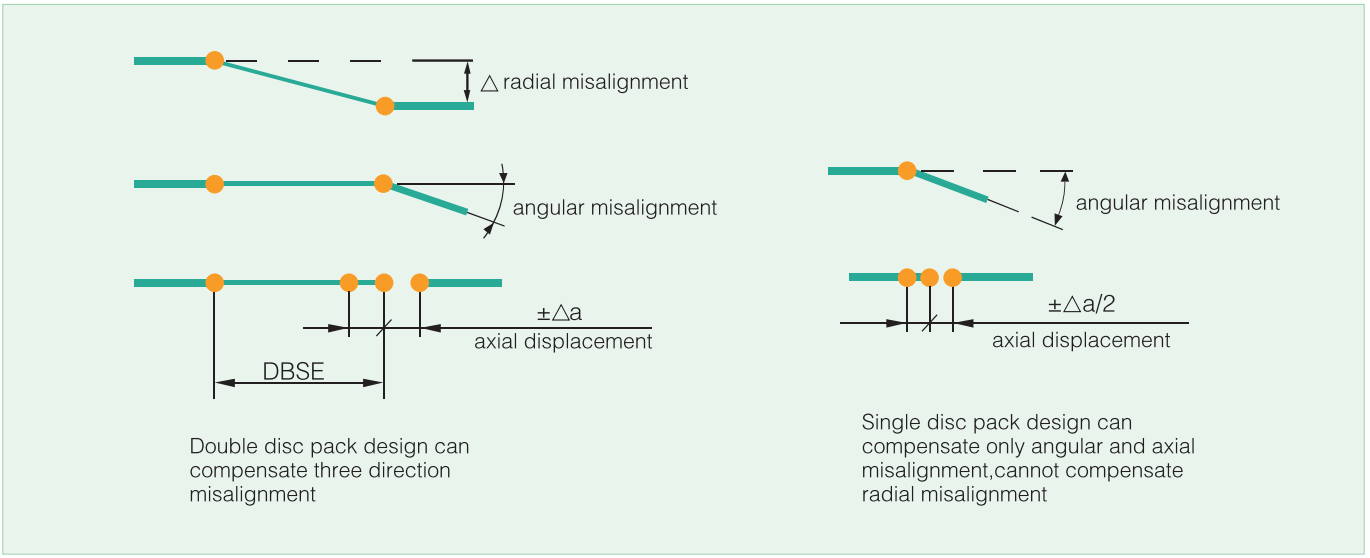


Fig.1 misalignment compensating diagram

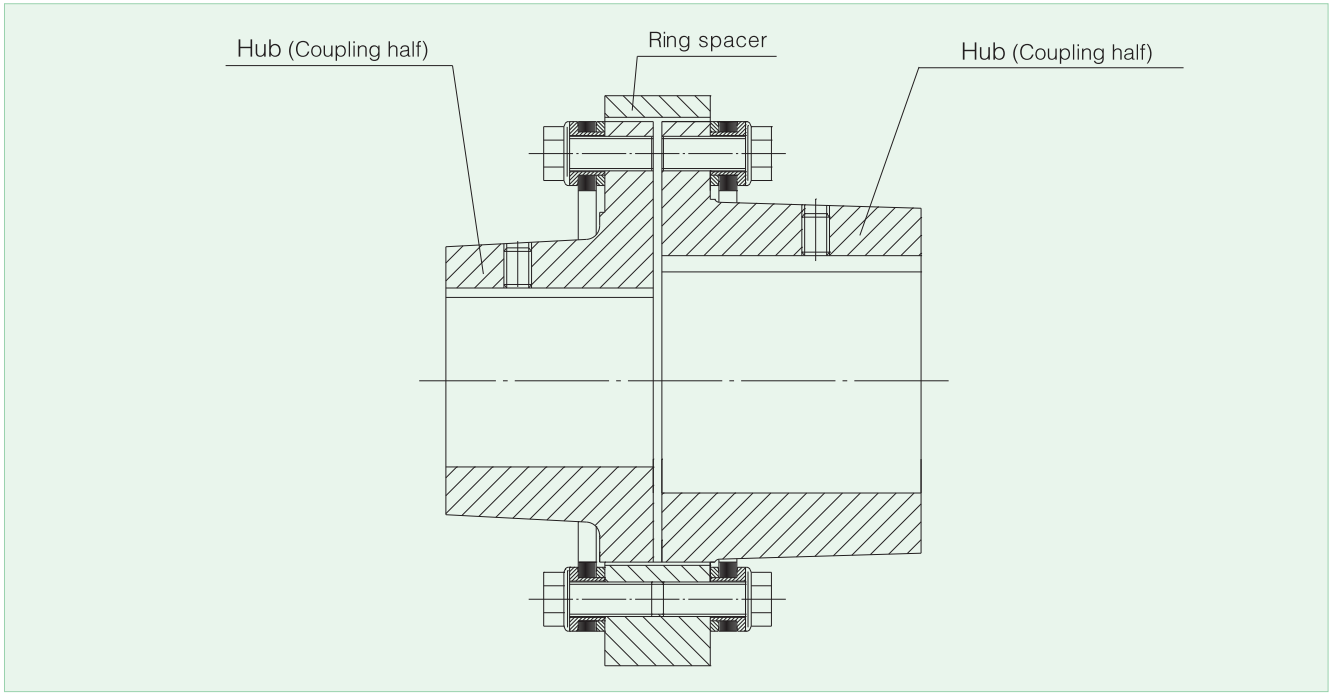


Fig. 2 Typical structure of LJQ compact disc coupling

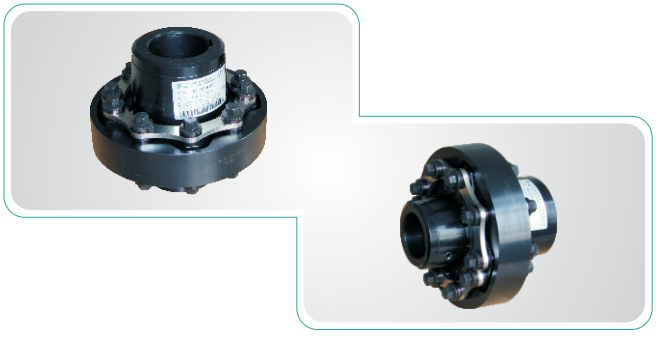
DESIGN OF HUB-SHAFT FIT AND INSTRUCTIONS FOR HUB INSTALLATION

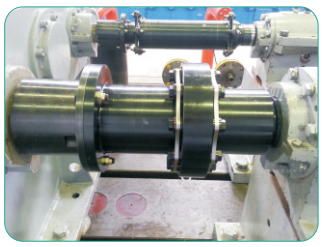
LJQ series is recommended for use in low speed applications, especially for those equipments directly driven by a motor or motor through reducer. For such applications, in order to improve the efficiency of assembly and disassembly, TRUMY recommend a small clearance fit, with a set screw on the top of the key to fit the axial position of the hub. The bole tolerance of TRUMY standard hub is F7, so a shaft tolerance of h6, js6, k6 or m6 is recommended.

For a little higher speed use, LJQ coupling must be dynamically balanced, see the max. speed list in the technical data table. In this case, TRUMY recommend a light interference fit, and the standard hub bole is cut to H7 tolerance, so a shaft tolerance of n6, p6, r6 or s6 is recommended. Hub with interference fit is generally installed by heating, and the heating temperature is not more than 250℃.

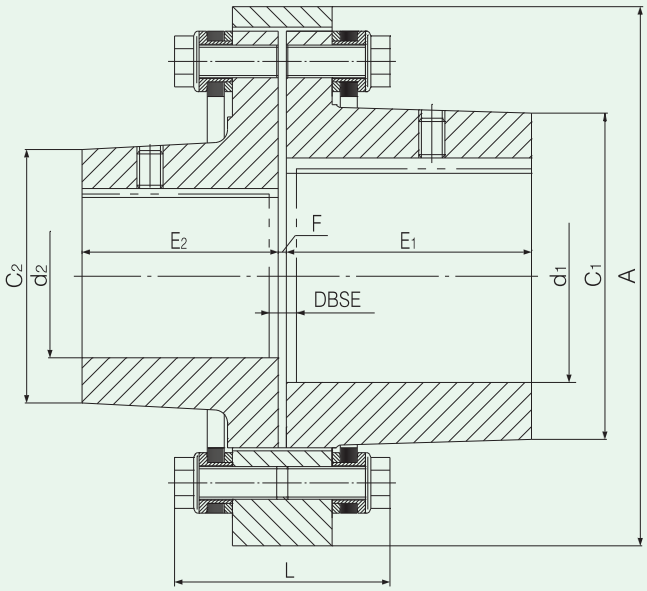
INSTRUCTIONS FOR HUB SELECTION

- The design of TRUMY standard hub has fully considered the material’s strength, it can meet most application needs. TRUMY standard hub is your preferred selection in order to get the best price and delivery time.
- The keyway of TRUMY standard hub is according to the standard of GB 1095.
- If the application speed is bellow the max. unbalanced speed, hub with F7 tolerance is recommended to use, otherwise, H7 hub used.
- Customized hub can also be supplied, please consult our sales engineer when needed.





COUPLING TECHNICAL DATA



Dimension in mm

Coupling type	Continuous torque Rating Nm	Max. speed(r/min)		Max. flange diameter A	Max. bore diameter d_{max}	Distance between flange ends (DBFE) F	Range of distance between shaft ends (DBSE)	L	Total weight※ Kg	Angular misalignment		Axial displacement	
		Unbalanced	Balanced							Max. Deg	Restoring moment Nm/deg	Max. ± mm	Axial force N
LJQ–130	1250	3600	5400	170	65	5	≤25	78.4	8.8	0.5	710	2.0	385
LJQ–270	2500	3600	5400	216	80	5	≤25	98.4	16.4		987	2.4	590
LJQ–580	5600	3000	4500	260	100	5	≤25	115.6	29.7		1059	2.4	600
LJQ–1500	14000	1800	3600	325	130	5	≤25	140.8	59.8		4645	3.0	1440
LJQ–2700	25000	1800	3000	380	160	10	≤50	184.0	115.2		7330	3.8	2940
LJQ–4200	40000	1500	2500	440	190	10	≤50	226.8	188.5		8983	4.8	4740
LJQ–6600	63000	1500	2200	505	220	10	≤50	259.6	295.1		9067	5.5	5550

※The total weight is based on two large hubs cut to the max. bore diameter d_{max}.

STANDARD HUB DIMENSION & WEIGHT

Dimension in mm

Coupling type	Small HUB				Large HUB			
	max.d_2	C_2	E_2	Weight with max. bore, Kg	max.d_1	C_1	E_1	Weight with max. bore, Kg
LJQ–130	—	—	—	—	65	88	80	2.6
LJQ–270	65	88	80	3.9	80	108	100	5.1
LJQ–580	80	108	100	7.2	100	138	120	9.8
LJQ–1500	100	138	120	14.4	130	178	160	20.6
LJQ–2700	130	190	160	29.9	160	230	190	38.6
LJQ–4200	160	230	190	49.8	190	270	230	63.5
LJQ–6600	190	270	230	81.3	220	320	260	104.4

SELECTION PROCEDURE

Whenever you have questions about coupling selection, please contact TRUMY sale engineers. Jointly selecting TRUMY couplings by both supply and demand sides is recommended.

1. According to driving and driven machines and operation conditions, select a service factor K from the service factor table.
2. Determine coupling calculation power rating P_c, $P_c = P \times K$

   where: P_c – calculation power (Kw);

   P – transmitting power (Kw). Taking into account that the driven machine may work under overload conditions, suggest that P is calculated according to the power value of the driving machine;

   K – service factor.
3. Calculate transmitting torque of the coupling, $T = 9549 \times P_c / n$

   where: T– torque(N.m); n– rated or normal working speed (r/min).
4. Following the guide to coupling selection, tentatively select coupling type according to the conditions T ≤ Continuous torque rating and $n_{max} \leq$ max. speed, where n_{max} is the maximum working speed of the machine set.
5. Check the operating conditions:

a. Check up the coupling continuous torque rating with the requirements of the machines. For the machines starting frequently and those with big start–up shock , the starting torque should be checked. For the machines equipped with brake apparatus, the braking torque should be checked. For power generation packages or machines driven by synchronous motors , the transient torque associated with generator short torque or the cyclic torque associated with synchronous motor start–up should be checked. If necessary, select the types with higher parameter values or select other coupling series.

b. Check up the coupling type selected with the requirement for max. allowable shaft diameter. If necessary, select the types with higher parameter values or select other coupling series.

c. Check up the distance between shaft ends (DBSE) with the allowable DBSE range of the coupling type selected. LJQ is a standardized design coupling, the distance between two hub flanges has a fixed design of 5 or 10mm. The hub position can be adjusted according to the actual DBSE, but it should never exceed the max. value allowed. (see fig.3)

d. Check up the capacity to accommodate axial displacement and angular misalignment of the coupling selected with requirements of the machines. If necessary, select the types with higher parameter values or select other coupling series. For the machines with larger thermal expansion the coupling may be processed by cold pre–stretching so that the coupling works in a small deformation state when the machines are thermally balanced in operation.

SERVICE FACTORS

Duty	Driven machine	Driving machine		
		Electromotor, steam or gas turbines	Steam engine or water turbine	Internal combustion engine
Constant torque	Centrifugal pumps, light conveyors, alternators, light fans	1.0*	1.5	3.0
Slight torque fluctuations	Machine tools, screw compressor, screw pumps, liquid ring compressors, rotary dryers	1.5	2.0	3.0
Substantial torque fluctuations	Reciprocating pumps, low viscosity mixers, cranes, winches	2.0	2.5	4.0
Exceptionally high torque fluctuations	Rotary presses, reciprocating compressors, high viscosity mixers, marine propellers	3.0	3.5	5.0

* For the gear box the value of the factor 1.25 may be adopted, for direct electromotor start–up –1.5.
If the customer can not find the corresponding types of driving or driven machines recommended in the table, please select the service factors from AGMA514.02 or consult TRUMY sales engineer.

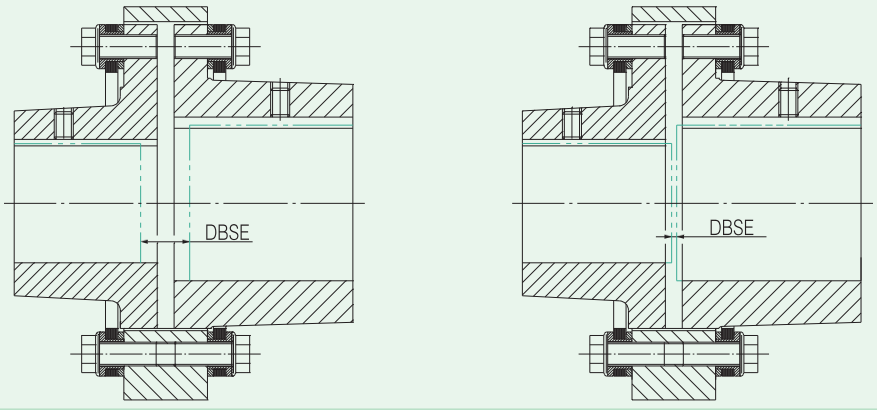


Fig.3 Hub position on the shaft can be adjusted

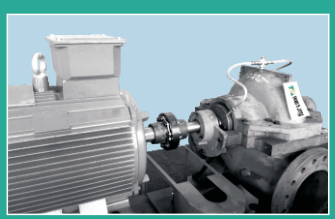
◈ THE FOLLOWING TRUMY DISC COUPLINGS CAN ALSO BE USED FOR CLOSE-COUPLED-SHAFTS APPLICATIONS:

DJ4series small power compact disc couplings (max. continuous torque rating 2000Nm)

TDJ series hub reversed type disc couplings

L series link type disc couplings

◈ WHENEVER YOU HAVE QUESTIONS ABOUT COUPLING SELECTION, PLEASE CONSULT OUR SALES ENGINEER.



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