

聯軸器之特性

FEATURES

設計上的確認事項

Confirmations on Design

依據機械特性、系統運作來選用適合的聯軸器型式：

An appropriate coupling is selected according to mechanical properties and operation of the system:

●扭力的大小 Torque :

聯軸器的扭力應為傳動扭力最大值的兩倍。例：若傳動扭力值為5N.m，則應選擇扭力值10N.m(型錄標示為“一般扭力”區)，選擇聯軸器時，不應超過容許扭力值。材質以鋼質的扭力為佳。

The torque of a coupling must be twice the maximum of the transmission torque. For example: if the drive torque is 5N.m, you should select a torque of 10N.m (labeled "general torque" on the catalog). In selecting the coupling, it should be within the permissible torque. The steel torque is the best.

●撓性與剛性 Flexible and rigid:

撓性聯軸器可吸收平行偏差、角度偏差、軸向偏差；剛性聯軸器則無此特性，因此兩軸的精準度必需非常高，否則易造成軸心斷裂。

Flexible coupling can absorb parallel deviation, angle deviation and axial deviation. Rigid coupling does not have this function; therefore, in using rigid coupling, the accuracies of the two axes must be very high. Otherwise, fracture of the axes can easily happen.

●使用的環境 Application environment :

需慎選聯軸器之材質是否堪負荷高低溫、耐酸鹼、空間大小…等。

It needs to take into account whether the selected coupling is suitable for the environment of high and low temperature, acid-base, space size, etc.

●有無背隙 With/without backlash :

中間有橡膠之緩衝材均有背隙的存在，要判斷機構是否可承受背隙。

Whenever the rubber cushion is available in the middle, the coupling experiences backlash; whether the body can withstand the backlash needs to be determined.

●絕緣性 Insulation :

需選擇工程塑膠類聯軸器才可絕緣。

Only engineering plastic couplings have insulation function.

●抗震性 Shock resistance :

聯軸器中間有工程塑膠、橡膠之材質較易吸收震動；中間為金屬彈片次之；剛性聯軸器則毫無抗震性。

When the coupling contains engineering plastic or rubber materials in the middle, its shock resistance is better, followed by coupling with metal sheets, and then rigid coupling without shock resistance function.

●可承受選大轉速 High speed resistance :

設計上請參考規格表中的容許值，否則易影響聯軸器壽命。

In design, please refer to the permissible values in the specifications or the lifespan of the coupling will be shortened.

●孔徑範圍是否適用 Applicable aperture range :

請選擇型錄內所載的容許孔徑為主，過大、過小或兩端差距太大，可能損及軸心、導致斷裂。

Please select couplings within the permissible apertures described in the catalog. Couplings with too large or too small aperture or too big a gap between both ends may damage the axes or lead to fracture.

聯軸器的異常情形

Abnormalities of coupling

聯軸器是一種不需保養的構件，平常只需注意聯軸器是否有磨損或疲勞的徵兆、螺絲是否鬆動、異常雜音及振動搖擺的情形發生，若有異常，請立刻停止運轉，確認中心是否有校正準確、慣性是否過大、螺絲有無鎖緊。為了提昇機構的壽命，在更換下一個聯軸器之前，先了解其造成損壞的原因，再來選擇更適合的聯軸器。

The coupling is a maintenance-free component but attention needs to be paid to the following : whether the coupling has signs of wear or fatigue ; whether the screw is loose, or has abnormal noise and vibration. In case of please shut down the machines

to confirm whether the center is calibrated, whether the inertia is too large and whether the screws are locked. To extend the lifespan of the coupling, please find the reason for the damage before replacing with new coupling, and then select a more suitable coupling.

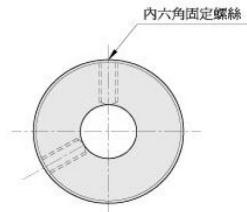
聯軸器的固定方式

Fixing of Coupling

●止付螺絲固定式 Fixed by set screw :

係以四根固定止付螺絲以90°或120°角固定於軸心上，體積小、安裝容易、成本低，但因機械長時間的轉動、衝擊而使螺絲鬆脫、軸心表面容易有螺絲壓痕、拆卸困難。此固定方式成本低。

The method is to fix the coupling with four set screws to the axes at 90° or 120°, characterized by small size, easy to install and low cost; however, the long-term rotation and impact of the machines may loosen the screws, leave screw marks on the axis surface and lead to difficult disassembly. Low-cost is the advantage of this method.

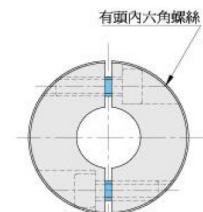


圖一 固定螺絲式 Set screw type

●夾緊式 Fixed by clamping :

聯軸器雙邊各有切開之溝槽形成彈性作用，並在夾軸兩邊插入二或四支有頭內六角螺絲，使溝槽縮緊住軸心；拆卸容易、不易損傷軸心，有較佳的穩定、保持力。

Both sides of the coupling have cut grooves that are flexible; two or four socket head screws are inserted into two sides of the clamp to allow the groove to tighten the axes. The method has the advantages of easy disassembly, protection of axis, and better stability and maintaining.

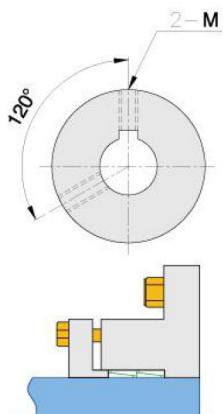


圖二. 夾緊式 clamp type

●鍵槽型 Keyway :

止付螺絲固定式及夾緊式皆可加工鍵槽，利用鍵的嵌合，防止滑動，適合高扭矩之機構。

Both the method of fixation by set screw and fixation by clamping allow the processing of keyways. The inoculating of keyways can prevent sliding, which is suitable for machines with high torques.



●免鍵式壓環固定式 Fixed by free-button compression ring :

利用壓環逼緊軸心，以致收合夾緊。

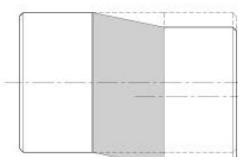
The compression ring is used to tighten the axes in order to clamp the axes.

聯軸器偏差調整

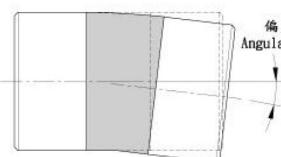
Adjustment of Deviation

聯軸器容許微量偏差，偏差過大會造成聯軸器及軸心斷裂，因此在機械組裝時，請注意精度平衡校正的動作，以利安裝、延長使用壽命，以提高機械效率。

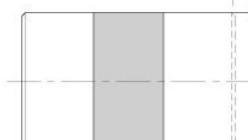
The coupling allows minor deviation; large deviation may cause breakdown of the coupling and the axes; therefore, during assembly, more attention should be paid to precision flat correction, which facilitates the installation and lifespan, and increases the utilization ratio of machines.



偏心
Eccentricity



偏角
Angularity



軸向位差
End-play