viiplus

轴承选择 Bearing Selection

VIIPLUS 公司根据不同的工况条件设计了不同的轴承材料。一般来说,用户在使用和设计时应当根 据轴承的使用温度、承载面压、线速度、耐磨性能要求、运动类型、安装情况、轴承成本等各方面因素综合考 虑。 VIIPLUS have developed kinds of bearing material According to difference work condition .The user can select the material the material base on bearing work environment, load, speed, wear resistance resistance request, moving method, etc.

面压计算 Bearing Load:

▶ 直套、翻边产品 Cylidrncal bushes, flange bushes

F=轴承承载植Load(N) $P = \frac{F}{d \times L} (N/mm^2)$ d=轴径 Shaft (mm) L=轴承长度 Bearing Length (mm) ▶ 止推垫片 Thrust washer F=垫片承载植Load(N) $P = \frac{4F}{\pi (D^2 - d^2)} (N/mm^2)$ d=垫片外径 Shaft (mm) L=垫片内径 Bearing Length (mm)



由于受配合间隙、材料强度、轴承倒角、内部油槽等原因的影响、轴承的真正承载面压(P)会大于理论计算值(P) As the factor of clearance, bushes chamfer, oil groove etc., The actually load(P) is higher than theory of calculation(P)

线速度计算 Bearing Load:

▶ 旋转运动 Rotating motion

 $V = \frac{\pi \times d \times n}{1000 \times 60} (m/s^2)$ ▶ 摇摆运动 Oscillating motion

 $\frac{1000\times360\times60}{1000\times360\times60} \,(\text{m/s}^2)$

 $\pi \ \times d \times C \times \ \theta$

V=

d=轴径 Shaft (mm) C=摇摆频率 frequency (次数/分) $\theta =$ 摇摆角度 Oscillating angle

d=轴径 Shaft (mm)

n=转数/分 Rpm

往复运动 Rotating motion

$$V = \frac{2s \times c}{60} (m/s)$$

s=行程长度 Stoke distance (m) c=往复频率 frequency (次数/分)

$PV値计算PV=P \times V(N/mm^2 \times m/s)$

PV是指轴承在一定的承载和线速度条件下的乘积之和, PV值与轴承的使用寿命成反比例关系。因此建议设计时尽量使用比较 低的安全的PV值,以确保轴承会有更长的寿命。同时在选择材料时也要注意不能超过承载、线速度、使用温度等极限值、并 尽可能地小。

PV is the product of the specific bearing load P and the sliding speed V which is very important design date. We recommend design lower PV value will leads to longer service life. Also don' t exceed the max. of material load, speed, temp. and lower if possible.

安装注意事顶 Installation:

装配前应确保座孔内表面光洁无异物以免装配时划伤。 装配时应采用芯轴慢慢压入,禁入直接敲打轴套以免产 生变形。座孔设计时如需采用易变形材料如铝合金或座 孔壁厚较薄时,请予以说明,以免压装时使座孔变形为 了使装配更简单且不会破坏耐磨层、轴的端面必须有倒 角圆滑过度, 轴的材质建议为轴承钢表面淬火处理 HRC45、表面粗糙度为Ra1.6~1.8,表面也可镀硬铬、有 可能的话,请在轴表面涂上油脂以缩短轴套走合期。非 卷制类厚壁轴承建议使用液氮冷冻。

The bearing, housing and fitting tools must be kept clean during fitting. Please give special notice to us if you adopt the soft material for housing produce. To make fitting easy, the shaft ends should be chamfered.



33