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六. JRSS 丝杆升降机 JRSS Screw Jack

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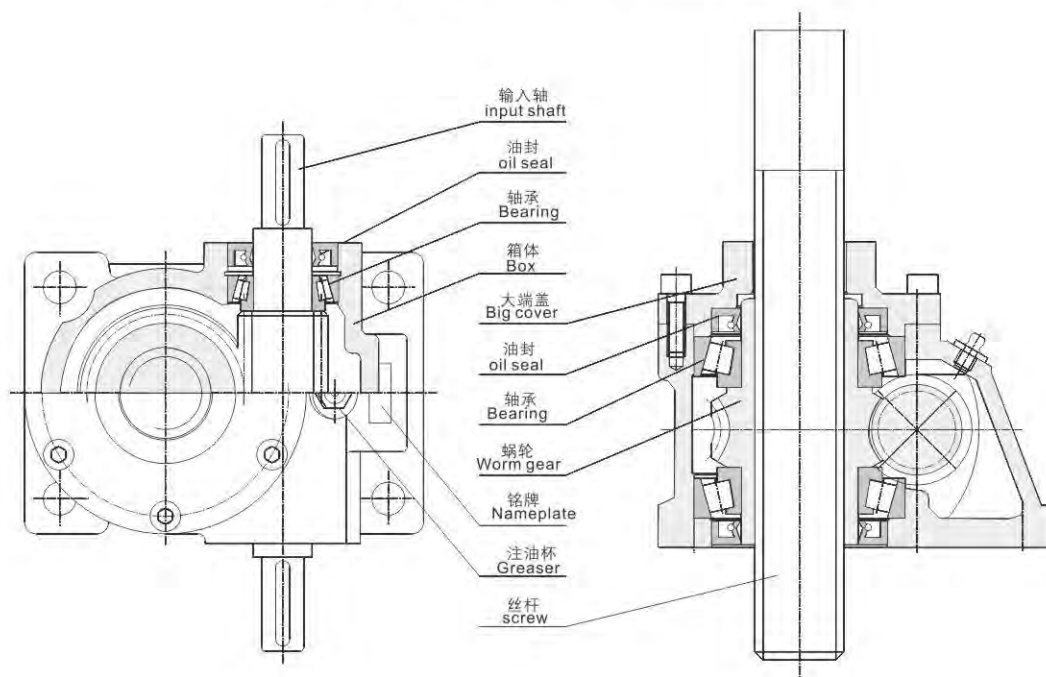
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1. 产品结构 Products Structure



2. 型号说明 Model Description

J RSS D 100 - 12 A R 300 - B - P

1 2 3 4 5 6 7 8 9 10

1 企业代码 J-杰牌传动 Enterprise code J-JIE Drive	2 产品代码 RSS-丝杆升降机 Products code RSS-worm gear linear actuator	3 输入轴联接方式 D-带电机法兰 无代码-基本型 Connector of input shaft D-with motor flange Non-code-basic	4 规格 用蜗轮副中心距表示 100 Specification Expressed by the center distance of a pair of Worm gear 100	5 传动比 12 Transmission ratio 12
6 安装方式代码 A、B-基本型 C、D-止旋构造型 E、F-活动螺母构造型 详见“4.3安装方式” Mounting Option code A,B-Basic Model C,D-Screw fluctuate without rotation E,F-Screw rotate without fluctuation more information from 4.3 Mounting option	7 丝杆头部形式代码 Code of screw head R 型 (圆柱式) R-Column type H 型 (栓孔式) H-Bolt hole type S 型 (螺纹式) S-Screw type T 型 (顶板式) T-Coping type 详见“产品图片” 注: 安装方式E、F时无此代码 Notes: Non-code-E,F mounting option	8 丝杆行程 300mm Stroke of screw 300mm 共有100、200、300、400、500、600、800、1000mm 8种规格, 根据使用情况选择, 如需要其它长度行程, 也可定做EF结构为TL尺寸 Total 8 species model:100 200 300 400 500 600 800 1000mm choose according to using situation, if other model needed, canbe made to order The size of EF structure is TL	9 轴指向 shaft direction JRSS系列共有A、B、C三种 JRSSD系列共有A、B、C、D四种 详见“轴指向表示” JRSS series have A,B and C three species JRSSD series have A,B,C and D four species	10 护管 safeguard pipe P-带护管 P-With safeguard pipe 无代码-不带护管 Non-code-without safeguard pipe 注: 安装方式E、F时无此代码 Notes: Non-code-E,F mounting option

3. 产品说明

Product Description

杰牌JRSS丝杆升降机, 拥有自主知识产权, 产品具有结构紧凑、升降平稳、高可靠性和安全自锁等亮点, 包括JRSS丝杆升降机、JRSB滚珠丝杆升降机等全系列产品。

杰牌JRSS丝杆升降机, 通过完整产品策划与设计 and 全价值链精益生产最优方案实施, 推进精益生产、建设智能工厂, 实现研产供销服一体化, 以满足客户对快速响应的需求。

杰牌JRSS丝杆升降机, 遵循模块化和最优化设计理念, 全系列产品包括实心轴输入接口、IEC电机输入接口, 圆柱式丝杆头部模块、栓孔式丝杆头部模块、螺纹式丝杆头部模块、顶板式丝杆头部模块, 底脚安装、法兰安装等输入接口、输出模块和安装型式, 同时支持多台丝杆升降机、锥齿轮转向器和不同型号规格减速机的模块化组合与集成, 并可根据客户提供整体升降方案。

杰牌为全球好客户做好产品!

JRSS screw Jacks with independent intellectual property rights, is featured with compact structure, stable lifting, high reliability and safety self-locking. It includes JRSS screw Jack and JRSB ball screw Jack.

JRSS screw Jack promotes lean production, builds intelligent factories, and realizes the integration of research, production, supply, marketing and service, so as to meet customers' demand for rapid response through complete product planning and design such as "core product-extreme technology, peripheral product-extreme service, external product-extreme experience" and the implementation of the optimal plan of lean production in the whole value chain such as "product planning, design validation, processing test, assembly test, warehouse logistics, sales service, information system, HR, operation plan, strategy planning".

JRSS screw Jack follows the concept of modular and optimized design. It includes solid shaft input interface, IEC electric motor input interface, cylindrical screw head module, bolt-hole type screw head module, screw type screw head module, top plate type screw head module, foot mounting, and flange mounting. At the same time, it supports the modular combination and integration of multi-screw Jacks, JRTM right angle bevel gear and gear motor of different models and specifications. And it can be customized in design and manufacturing according to customer needs.

JIE Drive provides great products for great clients across the world!



4. 选型说明

Selection Description

4.1 杰牌传动JRSS产品选型表



使用工况:

应用行业:

环境温度:

海拔高度:

起停频率:

负载时间: ☐15% ☐25% ☐40% ☐60% ☐100%

现用品牌:

存在问题:

设备名称:

环境湿度:

使用场地: ☐室内 ☐室外

运行时间:

现用型号:

需改进项:

产品信息:

包装附件类:

包装材质: ☐纸箱 ☐木箱 ☐纸箱+木箱

箱贴唛头: ☐中文 ☐英文

相关资料: ☐合格证 ☐出厂检验报告 ☐中文说明书 ☐英文说明书

附件清单: ☐护管 ☐三防布 ☐螺母 ☐无

外观标识类:

油漆颜色: ☐JMR-01 ☐JMG-01 ☐JGB-01 ☐RAL2002 ☐RAL5015 ☐RAL9003 ☐RAL7045 ☐RAL7031

防腐等级: ☐标准 ☐JS1 ☐JS2 ☐JS3 ☐JS4

铭牌要求: ☐中文 ☐英文

安装尺寸类:

产品类型: ☐JRSS ☐JRSSD

安装方式: ☐A ☐B ☐C ☐D ☐E ☐F (见附图)

丝杆头部型式 (E、F安装方式无此项): ☐无 ☐R ☐H ☐S ☐T (见附图)

轴指向: ☐A ☐B ☐C ☐D (见附图)

联动方式: ☐单台 ☐两台联动 ☐四台联动 ☐八台联动

性能指标类:

传动比: $i =$ _____ 输出扭矩 (Nm): _____ 使用系数: _____

输入转速: ☐1800r/min ☐1500r/min ☐900r/min ☐600r/min ☐300r/min

起升速度: _____ mm/min

总起升重量: _____ kg

有效行程: ☐100mm ☐200mm ☐300mm ☐500mm ☐600mm ☐800mm ☐1000mm

电机类型: ☐标准电机 ☐变频电机 ☐防爆电机 ☐辊道电机 ☐起重电机 ☐伺服电机

电机极数: ☐2 ☐4 ☐6 ☐8

电机功率: _____ kW

额定电压: ☐220/380V ☐380/660V

电机基频: ☐50Hz ☐60Hz ☐87Hz

绝缘等级: ☐F ☐H

防护等级: ☐IP54 ☐IP55

工作制: ☐S1 ☐S3-40%

冷却方式: ☐IC410 ☐IC411 ☐IC416

能效等级: ☐3级 (IE2) ☐2级 (IE3)

旋转方向: ☐顺时针 ☐逆时针

制动电压: ☐DC 24V ☐AC 220V ☐AC 380V

制动器响应: ☐普通 ☐快速

释放装置: ☐手柄释放HR ☐螺钉释放HF ☐无

风机电压: ☐DC 24V ☐AC 220V (1~) ☐AC 380V (1~) ☐AC 220/380V (3~)

风机频率: ☐50Hz ☐60Hz

释放装置与接线盒角度 (从轴伸端看顺时针): ☐0° ☐90° ☐180° ☐270° (见附图)

产品型号:

定制信息:

包装附件类:

外观标识类:

安装尺寸类:

性能指标类:

售后服务类:

服务信息:

售前服务:

培训咨询: ☐选型培训 ☐应用培训 ☐使用维护设计选型: ☐参与设计 ☐设计校核 ☐产品选型需求确认: ☐工况确认 ☐产品确认 ☐服务确认售中服务: ☐驻厂全检 ☐过程抽检 ☐出厂检验售后服务: ☐安装调试 ☐检测维护 ☐备品备件**商务信息:**

运输方式:

交付地点:

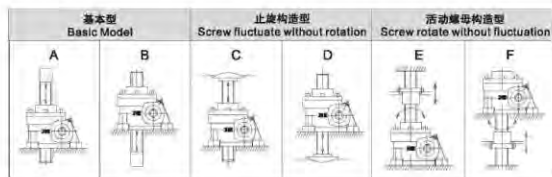
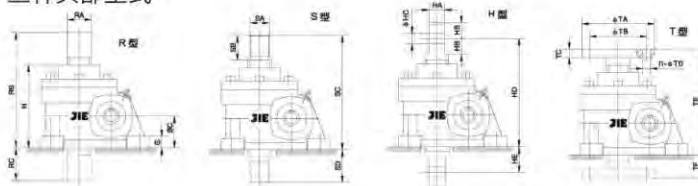
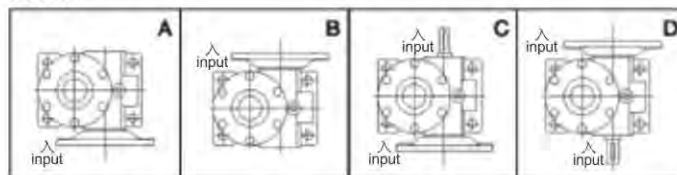
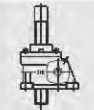
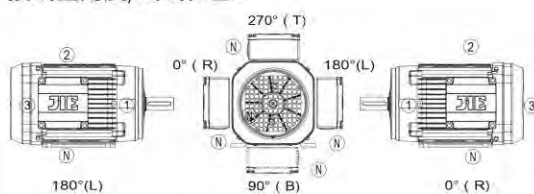
交付时间:

订单数量:

结算价格:

附图:

安装方式:

**丝杆头部型式****轴指向****接线盒角度/出线位置:**

Selection Table of JIE JRSS Products



Conditions of use:

Application industry:

Ambient temperature:

Altitude:

Start-stop frequency:

Load time: ☐15% ☐25% ☐40% ☐60% ☐100%

Current brand:

Existing problem:

Equipment name:

Ambient humidity:

Site of use: ☐indoor ☐outdoor

Running time:

Current model:

Items needing improvement:

Product information:

Packing accessories:

Packaging material: ☐Carton ☐Wooden case ☐Carton + Wooden case Case mark: ☐Chinese ☐English

Relevant data: ☐Certificate of conformity ☐Ex-factory inspection report ☐Chinese operating instruction
☐English operating instruction

List of accessories: ☐Protection tube ☐Dust-proof fabric ☐Nut ☐None

Appearance identification:

Paint color: ☐JMR-01 ☐JMG-01 ☐JGB-01 ☐RAL2002 ☐RAL5015 ☐RAL9003 ☐RAL7045 ☐RAL7031

Nameplate requirement: ☐Chinese ☐English

Anti-corrosive grade: ☐Standard ☐JS1 ☐JS2 ☐JS3 ☐JS4

Installation dimension:

Product model: ☐JRSS ☐JRSSD

Mount position: ☐A ☐B ☐C ☐D ☐E ☐F(see attached figure)

Type of screw head (not applicable for E and F mount position): ☐None ☐R ☐H ☐S ☐T (see attached figure)

Shaft direction: ☐A ☐B ☐C ☐D (see attached figure)

Linkage mode: ☐Single ☐Two ☐Four ☐Eight

Performance indicators:

Transmission ratio: $i=$ _____ Output torque (Nm): _____ Service factor: _____

Input speed: ☐1800r/min ☐1500r/min ☐900r/min ☐600r/min ☐300r/min

Lifting speed: _____mm/min

Total lifting weight: _____kg

Effective stroke: ☐100mm ☐200mm ☐300mm ☐500mm ☐600mm ☐800mm ☐1000mm

Type of motor: ☐Standard motor ☐Frequency conversion motor ☐Explosion-proof motor ☐Roller motor
☐Lifting motor ☐Servo motor

Rated power: _____kW

Pole number: ☐2 ☐4 ☐6 ☐8

Rated voltage: ☐220/380V ☐380/660V

Motor frequency: ☐50Hz ☐60Hz ☐87Hz

Insulation grade: ☐F ☐H

Protection grade: ☐IP55 ☐IP56

Working system: ☐S1 ☐S3-40%

Cooling mode: ☐IC410 ☐IC411 ☐IC416

Energy efficiency class: ☐IE2 ☐IE3

Direction of rotation: ☐Clockwise ☐Counterclockwise

Braking voltage: ☐DC 24V ☐AC 220V ☐AC 380V

Brake response: ☐Ordinary ☐Fast

Release device: ☐Handle release HR ☐Screw release HF ☐None

Fan voltage: ☐DC 24V ☐AC 220V (1~) ☐AC 220V (1~) ☐AC 380V (3~)

Fan frequency: ☐50Hz ☐60Hz

Angle between release device and terminal box (clockwise from the end of shaft extension):

☐0° ☐90° ☐180° ☐270° (see attached figure)

Product model:

Customized information:

Packaging:

Appearance:

Installation dimension:

Performance indicators:

After-sales service:

Service information:

Pre-sales service:

Training consulting: ☐ Type selection training ☐ Application training ☐ Use and maintenanceDesign selection: ☐ Participate in design ☐ Design verification ☐ Product selectionDemand confirmation: ☐ Working condition confirmation ☐ Product confirmation ☐ Service confirmationIn-sales service: ☐ On-site full inspection ☐ Process sampling ☐ Ex-factory inspectionAfter-sales service: ☐ Installation and commissioning ☐ Testing and maintenance ☐ Spare parts**Business information:**

Transportation:

Delivery place:

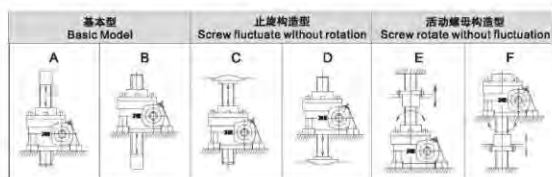
Delivery time:

Order quantity:

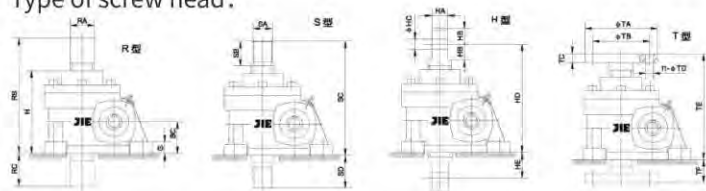
Settlement price:

Attached figure:

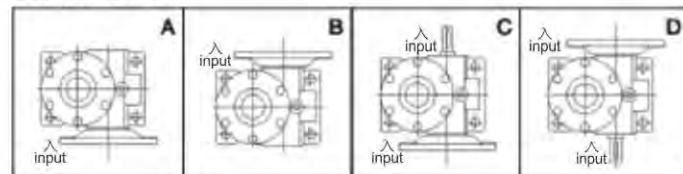
Mount position:



Type of screw head:

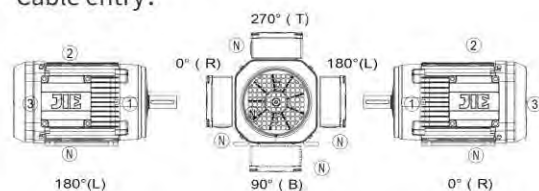


Shaft direction:



Terminal box angle:

Cable entry:



4.2 选型要素 Selection points

4.2.1 总当量载荷计算

Calculate total current load

$$W_s = W_{\max} \times f_s$$

W_s --当量载荷 $W_{\max}$ --最大载荷 f_s --使用系数 (详见附表1)

W_s --current load $W_{\max}$ --max load f_s --using coefficient (more information from table1)



表1 使用系数 f_s
Table 1 using coefficient(f_s)

使用工况 using situation	平稳载荷, 负荷惯性小 Smooth load; light load inertia	轻微冲击载荷, 负荷惯性中等 light shock load; mid load inertia	强冲击负荷, 负荷惯性大 strong shock load; heavy load inertia
使用系数 using coefficient	1.0~1.3	1.3~1.5	1.5~3.0

4.2.2 单台升降机当量载荷的计算

Calculate current load of unit screw lifter

$$W = W_s / (S \times f_d)$$

W --单台当量载荷 W_s --当量载荷 S --联动台数 f_d --联动系数 (详见附表2)

W --unit current load W_s --current load S --linkage quantity

f_d --linkage coefficient (more information from table 2)

表2 联动系数 f_d
Table 2 linkage coefficient(f_d)

联动台数 Linkage quantity	1	2	3	4	5-8
使用系数 Using coefficient	1	0.9	0.9	0.8	0.7

4.2.3 暂定升降机型号

Choose screw model

根据载重、升降速度、行程、驱动源暂时选定升降机型号 (详情可参考“5、选型参数”)。

Choose screw model according to capacity, lifting speed, stroke and drive fountainhead.

4.2.4 丝杆行程选定

Option stroke of screw

在充分考虑丝杆运动惯性、各种顶端输出部件等各种情况下, 选择有充分余量的丝杆行程。

丝杆计算 (详见表3, 丝杆行程用L表示, 单位: mm)

Choose adequate stroke of screw with concerning enough screw movement inertia.

Calculate screw (more information from table 3)

表3 丝杆计算
Table 3 screw calculate

型号	丝杆直径	护管长	丝杆头部S型 "S" type screw end		丝杆头部H型 "H" type screw end		丝杆头部R型 "R" type screw end		丝杆头部T型 "T" type screw end	
Model	Screw dia	length of protect pipe	总长=L+SC Total length=L+SC	牙长=总长-SD Tooth length=Total length-SD	总长=L+HB+HD Total length=L+HB+HD	牙长=总长-HB+HE Tooth length=Total length-HB+HE	总长=L+RB Total length=L+RB	牙长=总长-RC Tooth length=Total length-RC	总长=L+TE Total length=L+TE	牙长=总长-TF Tooth length=Total length-TF
JRSS35	Tr26 × 5	L+55	L+150	总长 -40 Total length-40	L+20+165	总长-20-55 Total length-20-55	L+165	总长 -55 Total length-55	L+135	总长 -25 Total length-25
JRSS40	Tr32 × 6	L+60	L+180	总长 -50 Total length-50	L+25+195	总长-25-65 Total length-25-65	L+195	总长 -65 Total length-65	L+160	总长 -30 Total length-30
JRSS50	Tr38 × 6	L+60	L+180	总长 -50 Total length-50	L+25+195	总长-25-65 Total length-25-65	L+195	总长 -65 Total length-65	L+160	总长 -30 Total length-30
JRSS60	Tr46 × 8	L+65	L+220	总长 -60 Total length-60	L+32+255	总长-32-95 Total length-32-95	L+225	总长 -65 Total length-65	L+200	总长 -40 Total length-40
JRSS60B	Tr52 × 8	L+65	L+220	总长 -60 Total length-60	L+32+255	总长-32-95 Total length-32-95	L+225	总长 -65 Total length-65	L+210	总长 -50 Total length-50
JRSS70	Tr65 × 10	L+75	L+260	总长 -80 Total length-80	L+35+295	总长-35-115 Total length-35-115	L+250	总长 -70 Total length-70	L+235	总长 -55 Total length-55
JRSS100	Tr75 × 12	L+85	L+300	总长 -80 Total length-80	L+44+355	总长-44-135 Total length-44-135	L+295	总长 -75 Total length-75	L+285	总长 -65 Total length-65
JRSS120	Tr80 × 12	L+85	L+360	总长 -100 Total length-100	L+54+410	总长-54-150 Total length-54-150	L+355	总长 -95 Total length-95	L+330	总长 -70 Total length-70
JRSS130	Tr90 × 14	L+110	L+435	总长 -120 Total length-120	L+64+480	总长-64-165 Total length-64-165	L+430	总长 -115 Total length-115	L+390	总长 -75 Total length-75
JRSS150	Tr100 × 16	L+130	L+495	总长 -150 Total length-150	L+70+545	总长-70-200 Total length-70-200	L+485	总长 -140 Total length-140	L+445	总长 -100 Total length-100

4.2.5 丝杆稳定性校核

Check screw stability

$$P_{cr}=f_m \times (d^2/L_a)^2$$

应确保 $P_{cr} > W \times S_f$ (一般 $S_f=4$)

$$P_{cr}=f_m \times (d^2/L_a)^2 \quad \text{Should insure } P_{cr} > W \times S_f (\text{usual } S_f=4)$$

P_{cr} --丝杆临界载荷(N) f_m --长度系数(详见附表4) d --丝杆底径(mm)(详见附表5)

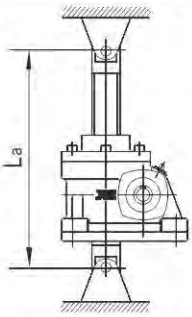
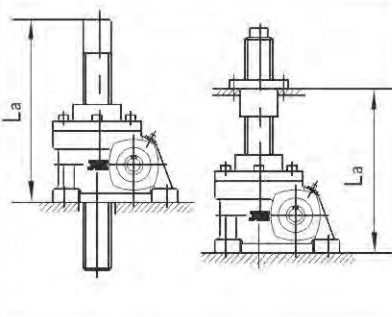
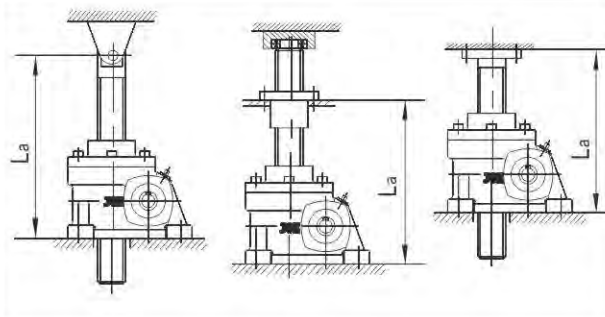
L_a --作用点间距离(mm) W --单台升降机当量载荷(N) S_f --安全系数(一般取4)

P_{cr} --Screw critical loading(N) f_m -- Length coefficient(more information from table 4)

d -- Diameter of screw bottom(mm)(more information from table 5) L_a --Working length(mm)

W --Current load of unit screw lifter(N) S_f -- Security coefficient(usual $S_f=4$)

表4 长度系数(f_m)
Table 4 Length coefficient

					
两端支撑 $f_m=10 \times 10^{-4}$ Two ends sustained		底座固定,轴端自由 $f_m=2.5 \times 10^{-4}$ Baseplate fixed, shaft end free		底座固定,轴端支撑或固定 $f_m=20 \times 10^{-4}$ Baseplate fixed, shaft end sustained or fixed	



4.2.6 丝杆转速校核

Check screw speed

$$n_c = 96 \times 10^6 \times f_n \times d / L_b^2$$

应确保 $n_c > n_1 / i$

should insure $n_c > n_1 / i$

n_c --丝杆临界转速(r/min) f_n --支撑系数(详见附表6) d --丝杆底径(mm) (详见附表5)

L_b --支撑间距离(mm) n_1 --输入转速(r/min) i --传动比

n_c --Permissible rotation speed of screw (r/min); f_n --Sustain coefficient (more information from table 6);

d --Diameter of screw bottom(mm)(more information from table 5);

L_b --The distance between sustain(mm). n_1 --Input speed(r/min); i --Transmission ratio;



4.2.7 输入功率校核

Check input power

$$p = n_1 \times p_1 \times W / (9549 \times 2\pi \times i \times \eta)$$

应确保 $P < P_{\text{额}}$

should insure $p < p_{\text{rated}}$

p --所需输入功率(kW) n_1 --输入转速(r/min) p_1 --丝杆螺距(mm)

W --单台升降机当量载荷(kN) π --圆周率 i --传动比 η --综合效率

P --Needed input power(kW); n_1 --Input shaft screwing speed(r/min); p_1 --Axial pitch distance(mm)

w --Current load(kN); π --pi i --Transmission ratio η --General efficiency

表5 丝杆底径
Table 5 Diameter of screw bottom

型 号 Model	JRSS35	JRSS40	JRSS50	JRSS60	JRSS60B	JRSS70	JRSS100	JRSS120	JRSS130	JRSS150
丝 杆 底 径 Diameter of screwing bottom	20.5	25	31	37	43	54	62	67	74	82

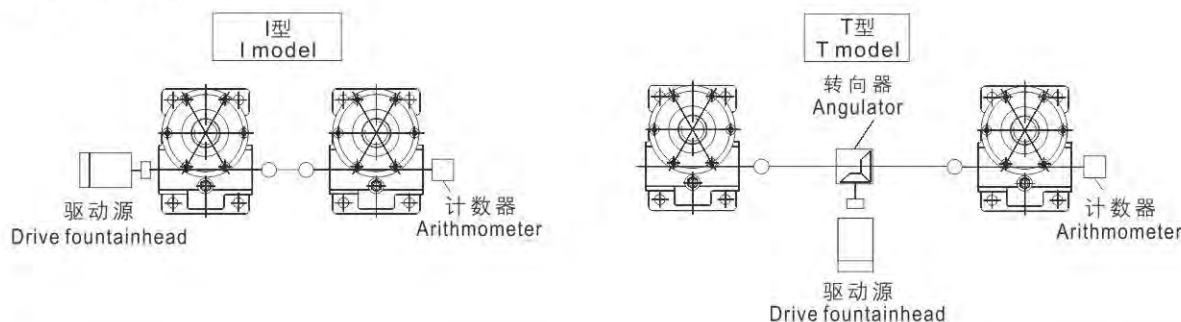
表6 支撑系数 f_n
Table 6 Sustain coefficient(f_n)

轴端自由 $f_n = 0.36$ Shaft end free	轴端支撑 $f_n = 1.56$ Shaft end fixed

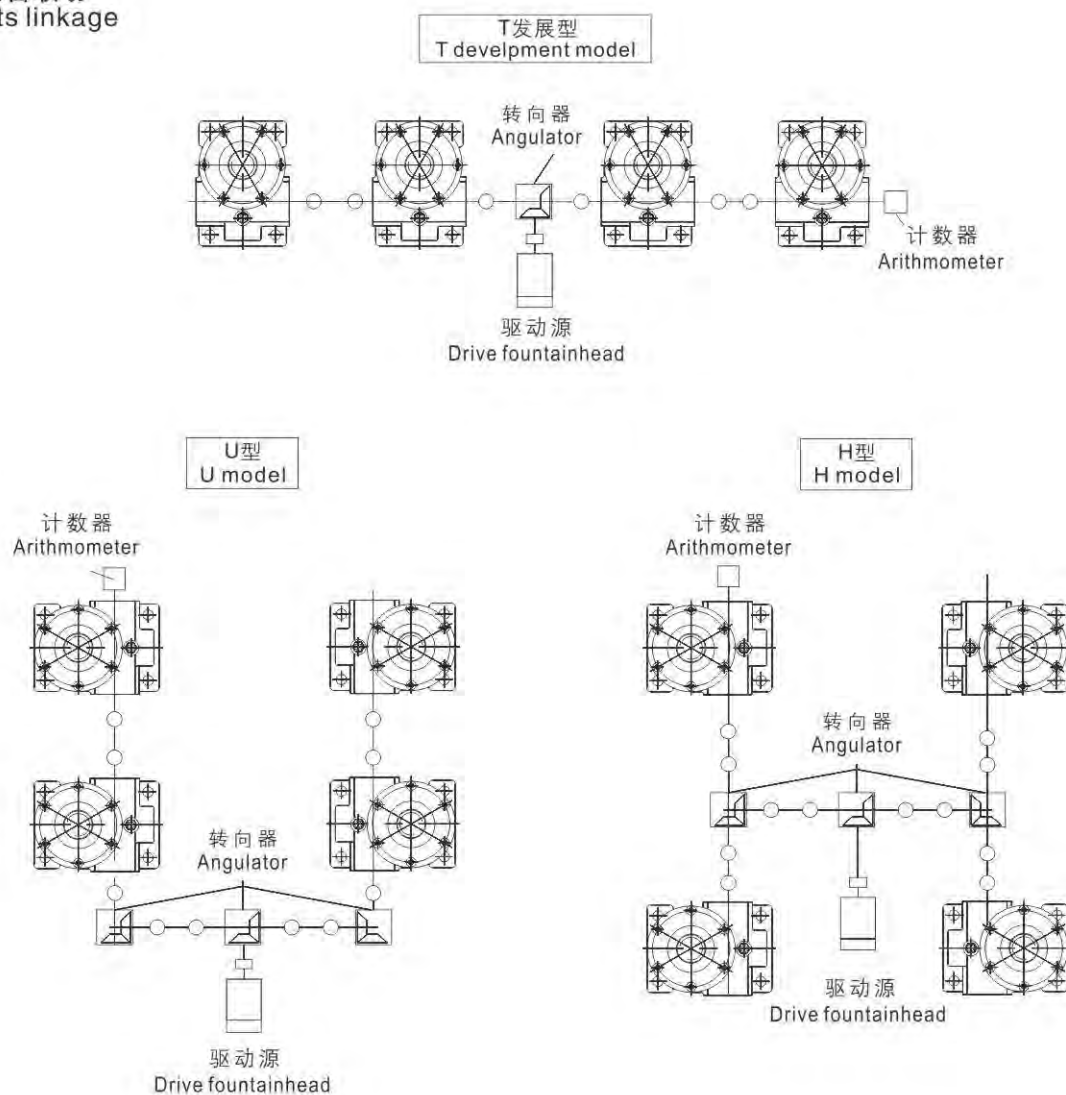
4.3 选型示例 Selection example

4.3.1 两台联动

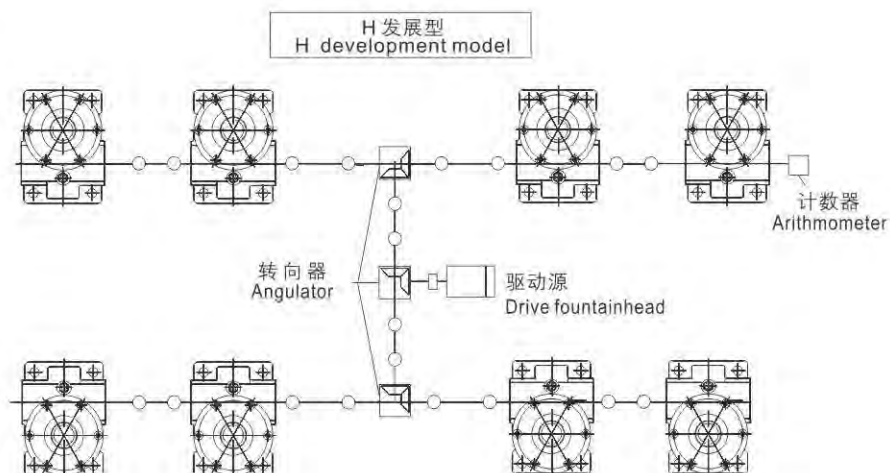
Two sets linkage

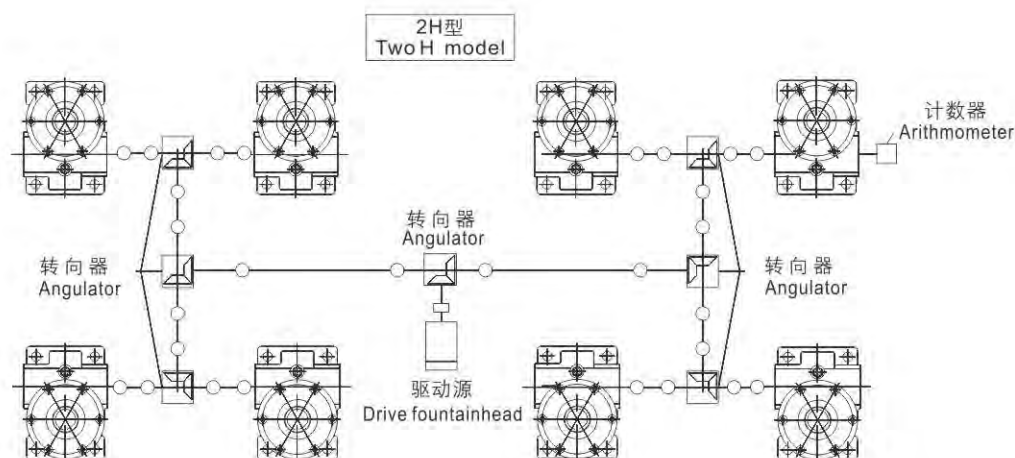


4.3.2 四台联动 Four sets linkage



4.3.3 八台联动 Eight sets linkage





4.4 安装方式 Mounting Option

基本型 Basic Model		止旋构造型 Screw fluctuate without rotation		活动螺母构造型 Screw rotate without fluctuation	
A	B	C	D	E	F

说明：

Explanation:

- 1、基本形式：螺母(蜗轮)转动丝杆上下移动，此为普通型升降机安装方式。

Basic Model: Screw fluctuate with rotation. This is the installation for basic screw lifter.

※注意：丝杆在升降时，会产生旋转力，所以必须做好防止旋转的措施。

※ Notice: There will be rotation force when screw is ascending and descending. So it's need to prevent rotation.

- 2、止旋构造型：适用于顶端无连接下运转等各种不能实现防止旋转的场合。

Screw fluctuate without rotation: work under the situation (without connection on the top, etc.) Which can't prevent from rotating.

- 3、若想在有限的空间增长行程，可选用活动螺母(由用户自行设计制造配丝杆)构造型。此构造为丝杆旋转，活动螺母移动。若行程较长时，轴端应采用支撑方式，可得到很好的传动效果，

Screw rotate with travelling nut: This type is suitable for narrow space. If it has long stroke, shaft end should be supported for better transmission.

5. 技术参数

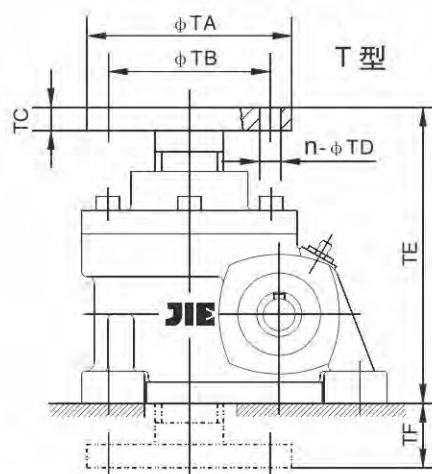
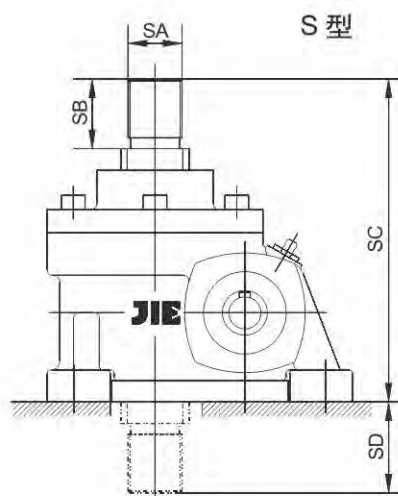
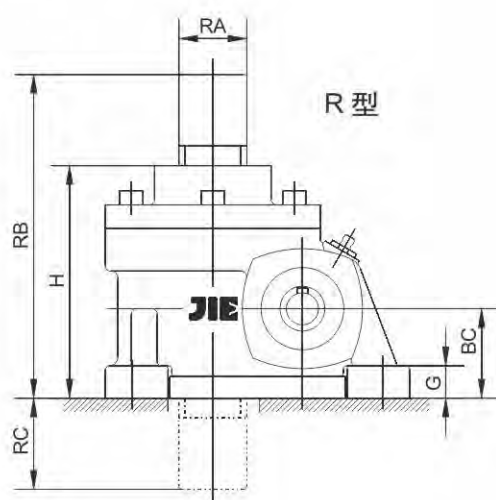
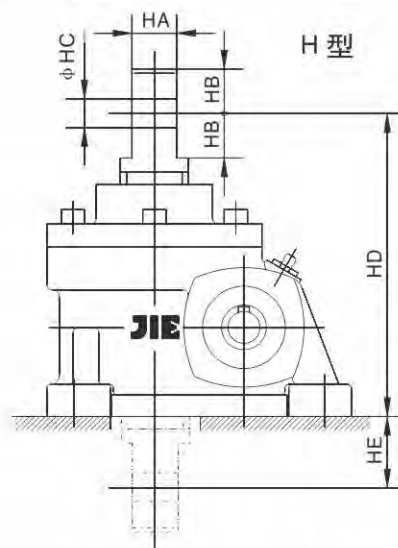
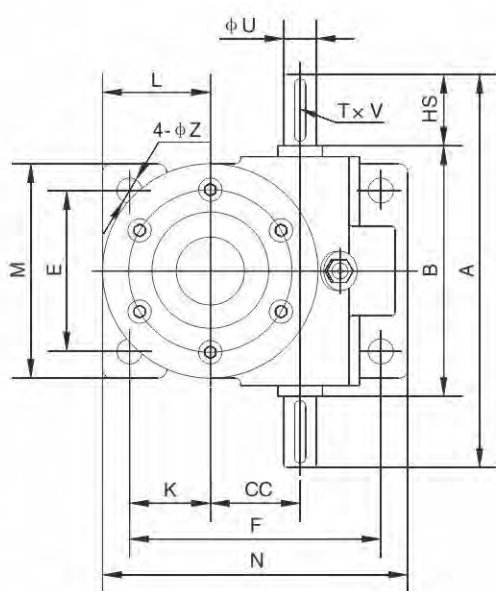
Technical Specifications

型 号 规 格 Model size	传 动 比 Transmission ratio	入力轴转速 1800r/min Input shaft revolution speed 1800r/min			入力轴转速 1500r/min Input shaft revolution speed 1500r/min			入力轴转速 1200r/min Input shaft revolution speed 1200r/min			入力轴转速 900r/min Input shaft revolution speed 900r/min			入力轴转速 600r/min Input shaft revolution speed 600r/min			入力轴转速 300r/min Input shaft revolution speed 300r/min		
		入功率 (kW) Input power (kW)	起升力 (kg) Lifter force (kg)	起升速度 (m/min) Hoist speed (m/min)	入功率 (kW) Input power (kW)	起升力 (kg) Lifter force (kg)	起升速度 (m/min) Hoist speed (m/min)	入功率 (kW) Input power (kW)	起升力 (kg) Lifter force (kg)	起升速度 (m/min) Hoist speed (m/min)	入功率 (kW) Input power (kW)	起升力 (kg) Lifter force (kg)	起升速度 (m/min) Hoist speed (m/min)	入功率 (kW) Input power (kW)	起升力 (kg) Lifter force (kg)	起升速度 (m/min) Hoist speed (m/min)	入功率 (kW) Input power (kW)	起升力 (kg) Lifter force (kg)	起升速度 (m/min) Hoist speed (m/min)
JRSS35	1/5	0.69	500	1.80	0.64	550	1.50	0.65	700	1.20	0.63	900	0.90	0.46	1000	0.60	0.37	1000	0.30
	1/10	0.37	500	0.90	0.37	550	0.75	0.37	700	0.60	0.37	950	0.45	0.37	1000	0.30	0.19	1350	0.15
	1/20	0.37	600	0.45	0.37	700	0.38	0.37	900	0.30	0.37	1200	0.23	0.19	1350	0.15	0.19	1350	0.08
JRSS40	1/6	0.98	700	1.80	0.93	800	1.50	0.88	950	1.20	0.91	1300	0.90	0.84	1800	0.60	0.42	1800	0.30
	1/12	0.66	950	0.90	0.64	1100	0.75	0.61	1300	0.60	0.57	1650	0.45	0.46	2000	0.30	0.37	2000	0.15
	1/24	0.37	950	0.45	0.37	1100	0.38	0.37	1300	0.30	0.37	1650	0.23	0.37	2000	0.15	0.19	2000	0.08
JRSS50	1/6	1.39	900	1.80	1.28	1000	1.50	1.24	1200	1.20	1.16	1500	0.90	0.87	1700	0.60	0.54	2100	0.30
	1/12	1.10	1350	0.90	1.01	1500	0.75	0.98	1800	0.60	0.87	2150	0.45	0.58	2150	0.30	0.37	2500	0.15
	1/24	0.78	1800	0.45	0.72	2000	0.38	0.69	2400	0.30	0.55	2550	0.23	0.42	2900	0.15	0.37	2850	0.08
JRSS60	1/8	2.12	1300	1.80	1.97	1450	1.50	1.85	1700	1.20	1.72	2100	0.90	1.66	3050	0.60	1.31	4800	0.30
	1/16	1.12	1300	0.90	1.04	1450	0.75	0.98	1700	0.60	0.95	2200	0.45	0.87	3050	0.30	0.69	4800	0.15
	1/32	0.80	1750	0.45	0.75	1950	0.38	0.69	2250	0.30	0.64	2800	0.23	0.63	4100	0.15	0.48	6400	0.08
JRSS60B	1/8	2.00	1300	1.80	1.86	1450	1.50	1.75	1700	1.20	1.62	2100	0.90	1.57	3050	0.60	1.24	4800	0.30
	1/16	1.06	1300	0.90	0.98	1450	0.75	0.93	1700	0.60	0.89	2200	0.45	0.83	3050	0.30	0.65	4800	0.15
	1/32	0.75	1750	0.45	0.70	1950	0.38	0.65	2250	0.30	0.61	2800	0.23	0.59	4100	0.15	0.46	6400	0.08
JRSS70	1/10	2.66	1400	1.80	2.42	1850	1.50	2.25	1950	1.20	2.12	2450	0.90	1.93	3350	0.60	1.41	4900	0.30
	1/20	1.42	1600	0.90	1.47	1850	0.75	1.37	2250	0.60	1.28	2800	0.45	1.18	3850	0.30	0.86	5600	0.15
	1/40	1.14	2400	0.45	1.17	2800	0.38	1.09	3350	0.30	1.07	4400	0.23	0.93	5750	0.15	0.69	8400	0.08
JRSS100	1/12	3.62	1850	1.80	3.51	2150	1.50	3.39	2600	1.20	3.18	3250	0.90	2.94	4500	0.60	2.09	6400	0.30
	1/18	2.65	1900	1.20	2.68	2300	1.00	2.57	2750	0.80	2.45	3500	0.60	2.19	4700	0.40	1.56	6700	0.20
	1/36	1.66	2200	0.60	1.63	2600	0.50	1.60	3200	0.40	1.47	3900	0.30	1.36	5400	0.20	1.20	9600	0.10
JRSS120	1/12	4.15	1975	1.80	4.02	2300	1.50	3.81	2725	1.20	3.80	3625	0.90	3.48	4975	0.60	2.48	7050	0.30
	1/18	3.20	2125	1.20	3.20	2550	1.00	3.04	3025	0.80	3.03	4025	0.60	2.74	5450	0.40	1.94	7725	0.20
	1/36	2.14	2625	0.60	2.07	3050	0.50	1.98	3650	0.40	1.99	4875	0.30	1.80	6600	0.20	1.40	10300	0.10
JRSS130	1/7	9.47	2100	3.60	9.17	2450	3.00	9.02	2850	2.40	8.58	4000	1.80	8.20	5450	1.20	5.84	7750	0.60
	1/14	5.76	2350	1.80	5.71	2800	1.50	5.57	3300	1.20	5.39	4550	0.90	5.06	6200	0.60	3.57	8750	0.30
	1/28	4.07	3050	0.90	3.89	3500	0.75	3.91	4100	0.60	3.65	5850	0.45	3.48	7800	0.30	2.45	11000	0.15
JRSS150	1/8	16.3	3500	3.60	16.1	4000	3.00	15.8	5400	2.40	15.1	7100	1.80	14.8	9850	1.20	9.70	12950	0.60
	1/16	11.7	4300	1.80	11.6	5400	1.50	10.5	7200	1.20	11.00	9450	0.90	9.62	11800	0.60	7.08	17350	0.30
	1/32	8.65	5500	0.90	9.55	6800	0.75	7.35	10000	0.60	7.53	14300	0.45	7.02	15750	0.30	5.80	26050	0.15

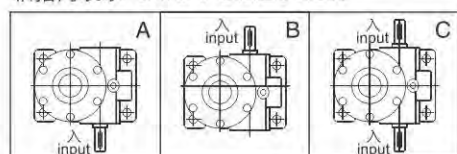


6. 安装尺寸 Mounting Dimensions

6.1 JRSS 安装尺寸 Mounting Dimensions of JRSS



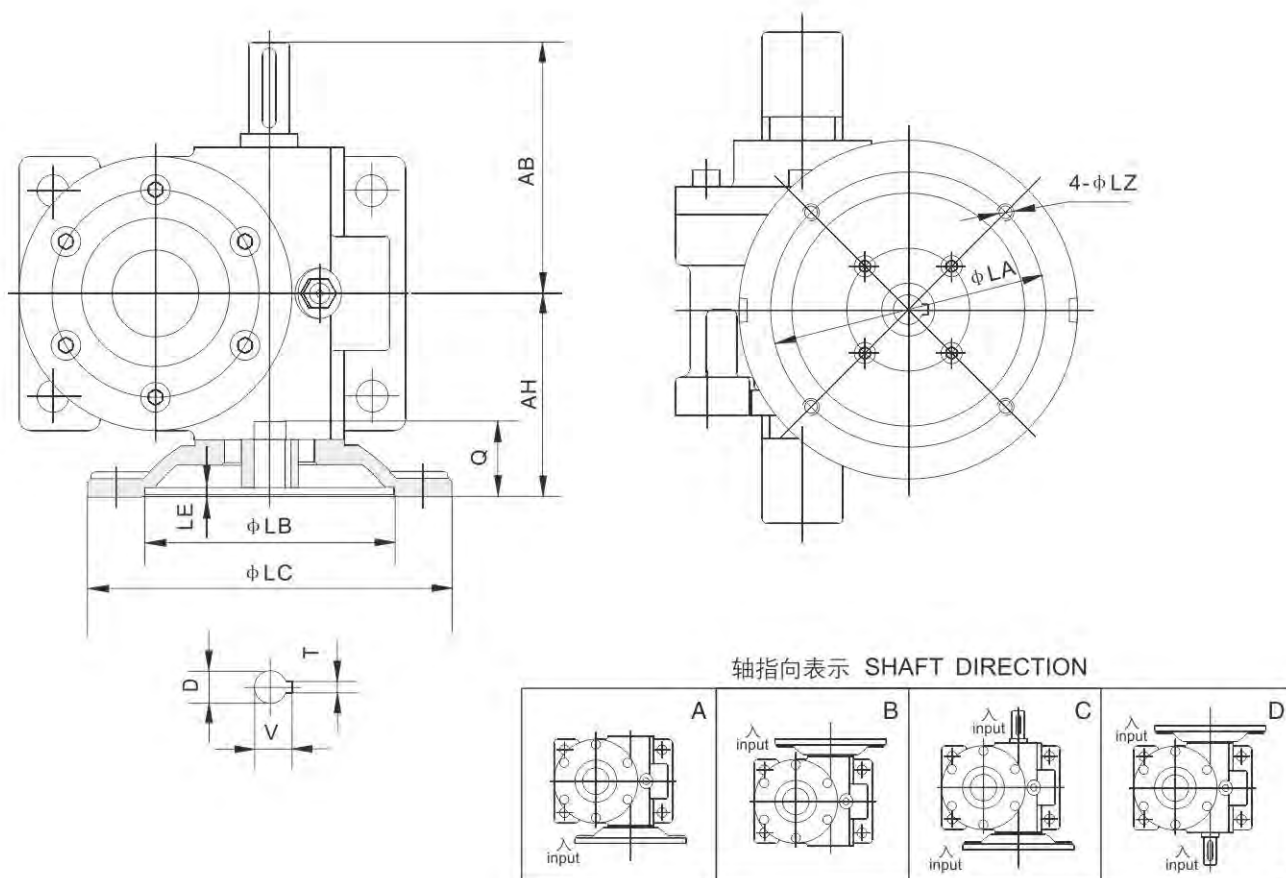
轴指向表示 SHAFT DIRECTION



型 号 规 格 Model size	A B HS	E F Z	BC G H	CC K	Tr	L M N	U T×V	丝杆头部型式 Type of screw head							
								R 型 RA RB RC	H 型		S 型		T 型		
									HA HB HC	HD HE	SA SC SD	SB TC	TA TB TC	n-TD TE TF	
JRSS35	170	66	40	35	Tr26×5	50	15	26	16	165	M16×1.5	28	88	4-φ10	
	110	111	15	38		90		165	20			150	70	135	
	30	12	110			135	5×3	55	12	55		40	10	25	
JRSS40	220	80	50	40	Tr32×6	57	18	32	20	195	M22×1.5	32	98	4-φ10	
	140	125	18	42		110		195	25			180	80	160	
	40	12	130			155	6×3.5	65	14	65		50	13	30	
JRSS50	220	90	50	50	Tr38×6	60	18	38	25	195	M30×1.5	35	114	4-φ12	
	140	140	18	45		120		195	25			180	90	160	
	40	14	130			170	6×3.5	65	16	65		50	13	30	
JRSS60	256	100	60	60	Tr46×8	90	25	46	32	255	M33×1.5	40	138	4-φ14	
	176	190	20	70		140		225	32			220	100	200	
	40	18	160			230	8×4	65	20	95		60	16	40	
JRSS60B	264	110	60	60	Tr52×8	90	25	52	36	255	M39×1.5	45	148	4-φ18	
	184	190	20	70		150		225	32			220	110	210	
	40	18	160			230	8×4	65	24	95		60	20	50	
JRSS70	316	140	70	70	Tr65×10	95	28	65	44	295	M45×1.5	55	178	4-φ21	
	216	210	25	75		180		250	35			260	125	235	
	50	18	180			250	8×4	70	26	115		80	25	55	
JRSS100	390	190	85	100	Tr75×12	110	32	75	56	355	M60×2	65	188	4-φ21	
	260	260	30	85		230		295	44			300	140	285	
	65	22	220			310	10×5	75	35	135		80	28	65	
JRSS120	420	210	100	120	Tr80×12	130	35	80	60	410	M64×2	70	218	4-φ25	
	290	305	30	105		260		355	54			360	170	330	
	65	22	260			355	10×5	95	38	150		100	30	70	
JRSS130	480	240	120	130	Tr90×14	160	45	90	70	480	M76×2	75	248	4-φ27	
	340	355	30	130		300		430	64			435	200	390	
	70	22	315			415	14×5.5	115	45	165		120	32	75	
JRSS150	550	250	125	150	Tr100×16	170	50	100	80	545	M90×2	100	358	6-φ27	
	360	385	35	135		320		485	70			495	280	445	
	95	27	345			455	14×5.5	140	55	200		150	35	100	

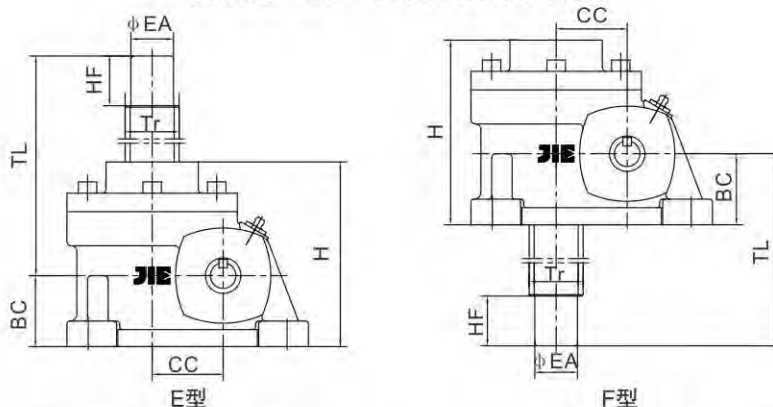


6.2 JRSSD 安装尺寸 Installation Dimensions of JRSSD



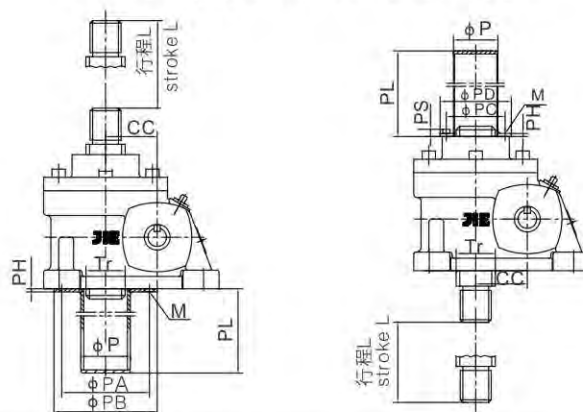
型号规格 Model size	法兰规格 Flange size	AB	AH	LA	LB	LC	LE	LZ	D	Q	T×V
JRSSD40	71B5	110	72	130	110	160	4	M8	φ 14	34	5×16.3
JRSSD50	71B5	110	80	130	110	160	4	M8	φ 14	34	5×16.3
JRSSD60	80B5	128	100	165	130	200	4.5	M10	φ 19	43	6×21.8
JRSSD60B	80B5	132	100	165	130	200	4.5	M10	φ 19	43	6×21.8
JRSSD70	90B5	158	118	165	130	200	4.5	M10	φ 24	52	8×27.3
JRSSD100	100/112B5	195	150	215	180	250	5	M12	φ 28	63	8×31.3
JRSSD120	100/112B5	210	165	215	180	250	5	M12	φ 28	63	8×31.3
JRSSD130	132B5	240	194	265	230	300	5	M12	φ 38	83	10×41.3
JRSSD150	132B5	275	218	265	230	300	5	M12	φ 38	83	10×41.3

6.3 JRSS-EF安装尺寸 JRSS-EF installation size



规格型号 Model size	尺寸size	CC	Tr	H	BC	HF	EA	E型		F型	
								丝杆总长 screw length	螺纹有效长度 effective thread length	丝杆总长 screw length	螺纹有效长度 effective thread length
JRSS35		35	Tr26x5	110	40	28	20	TL+21	TL-98	TL+30	TL-86
JRSS40		40	Tr32x6	130	50	32	25	TL+30	TL-112	TL+33	TL-104
JRSS50		50	Tr38x6	130	50	35	30	TL+26	TL-115	TL+33	TL-104
JRSS60		60	Tr46x8	160	60	40	35	TL+30	TL-140	TL+43	TL-120
JRSS60B		60	Tr52x8	160	60	45	40	TL+30	TL-145	TL+43	TL-130
JRSS70		70	Tr65x10	180	70	55	50	TL+33	TL-165	TL+41	TL-155
JRSS100		100	Tr75x12	220	85	65	60	TL+45	TL-200	TL+53	TL-150
JRSS120		120	Tr80x12	260	100	70	65	TL+49	TL-230	TL+42	TL-170
JRSS130		130	Tr90x14	315	120	75	70	TL+67	TL-270	TL+32	TL-230
JRSS150		150	Tr100x16	345	125	100	80	TL+61	TL-320	TL+58	TL-225

6.4 护管安装尺寸 Protect pipe installation size



规格型号 Model size	尺寸size	CC	Tr	ϕP	ϕPA	ϕPB	ϕPC	ϕPD	PH	PS	PL	M
JRSS35		35	Tr26x5	30	62	74	38.5	48	3	7	L+55	M4
JRSS40		40	Tr32x6	36	80	92	47	58	3	8	L+60	M5
JRSS50		50	Tr38x6	46	85	100	55	67	3	8	L+60	M5
JRSS60		60	Tr46x8	52.5	104	120	63.5	77	3	9	L+65	M6
JRSS60B		60	Tr52x8	60	115	130	72	86	3	9	L+65	M6
JRSS70		70	Tr65x10	72.5	132	148	83	96	3	9	L+75	M6
JRSS100		100	Tr75x12	86	160	180	98	112	3	9	L+85	M6
JRSS120		120	Tr80x12	96	160	180	116	130	4	9	L+85	M6
JRSS130		130	Tr90x14	102	160	180	120	142	6	14	L+110	M8
JRSS150		150	Tr100x16	115	180	200	135	160	6	14	L+130	M8

7. 使用说明 Operating Instructions

7.1 产品说明 Product Introduction



- 7.1.1 JRSS系列丝杆升降机(又名千斤顶);
JRSS series worm gear screw lifter (other name is Jack);
- 7.1.2 具有结构紧凑、体积小的特点;
Compact structure, small size;
- 7.1.3 安装方便、形式多;
Easy mounting, varied types;
- 7.1.4 可靠性高、寿命长;
High reliability. Long service life;
- 7.1.5 具有起升、下降及借助辅件推进、翻转等多种功能;
With the function of ascending, descending, thrusting, overturning;
- 7.1.6 可单台使用, 也可多台组成使用;
Can be applied in one unit or multiple units;
- 7.1.7 动力源广泛, 可用电动机或其它动力直接带动, 也可以用手动;
Wide motivity. It can be driven by electrical motor and manual force;
- 7.1.8 通常用于低速重载的场合。广泛应用于冶金、机械、建筑、水利、医疗、化工等各个行业。
It is usually used in low speed situation, widely used in the fields of metallurgy, mechanical, construction, chemical, irrigation works, medical treatment.

7.2 使用注意事项 Notices of usage

- 7.2.1 请严格按承载能力表选择合适的传动比和与之对应的具有充分裕度的载荷的升降机;
Select the model with proper transmission ratio and load.
- 7.2.2 升降机工作时应控制减速机表面和升降螺母表面温度在-15℃~80℃;
The surface temperature of gearbox and nut should be controlled in -15℃~80℃ when the screw lifter is working.
- 7.2.3 升降机不得连续运转, 单台升降机的负荷时间率(T%)以30分钟为单位计算, 不得超过20%;
The screw lifter cannot work all the time. The unit is thirty mins for duty ratio of unit one and can not exceed 20%.

$$\text{负荷时间率 } T\% = \frac{\text{1动作周期的工作时间}}{\text{1动作周期的工作时间} + \text{1动作周期的停歇时间}} \times 100\%$$

Time under working/cycle Time under working/cycle + interval/cycle

- 7.2.4 必须保证有充足的驱动源动力;
Insure adequate drive fountainhead.
- 7.2.5 升降机理论上有自锁功能, 但在振动冲击较大的场合会造成自锁功能失灵, 请务必加制动装置;
Theoretically screw has self-lock function, but the self-lock function may not work in heavy shock condition;

7.2.6 升降机使用环境： Using situation for screw lifter.

使用环境 Using situation	室内无雨水侵入的场所 No rain and water
周围空气 Ambient air	灰尘为一般工厂状况 Dust: usual condition for mill
环境湿度 Ambient temperature	-15℃~40℃
相对湿度 Comparative humidity	85%以下 Below 85%

7.2.7 升降机工作时一般不允许有横向载荷，若有横向载荷时，请加导向装置。 Transverse load is not allowed when screw lifter is working . If transverse load occurred, please add direction setting.



8. 油品润滑 Lubricant

8.1 润滑油（脂）选用表

Lubricants for reducer used in can be chosen as the table below

蜗杆转速(r/min) Worm shaft speed(r/min)	润滑油（脂）类型 Lubricant
1500~1800	ISO VG680
300~1500	NLGI 1或NLGI 2

注：合成锂基润滑脂温度范围-20℃ ~ 100℃

Note: The temperature range of synthetic lime-sode basic lubricant grease ZNLGI 1 or NLGI 2 is -20℃~100℃

8.2 润滑油（脂）注油量(L) Lubricants capacity(L)

型号 Type	JRSS35	JRSS40	JRSS50	JRSS60	JRSS60B	JRSS70	JRSS100	JRSS120	JRSS130	JRSS150
规格 Size										
注油量 Lubricant capacity	0.06	0.1	0.2	0.35	0.4	0.5	1.5	2.2	3.5	4.0

9. 故障分析

Malfunctions Analysis



故障情况 Fault Description	故障原因 Reasons	解决办法 Solutions
振 动 Vibration	原动机与升降机连接不当 Improper connection among prime mover and lifter	调整至适当位置，重新正确固紧 Adjust to proper position
	蜗轮副齿部磨损或损伤 Tooth surface of worm gear sets worn-out or damaged	更换蜗轮副（需要时请咨询杰牌） Replace worm gear sets (We will cooperate with you when necessary)
	轴承磨损 Bearing worn-out	更换轴承 Replace bearing
	螺栓松脱 Bolt loose	固紧螺栓 Tighten screw
异 响 Noise	轴承损伤或间隙过大 Bearing damaged or too large clearance	更换轴承 Replace bearing
	蜗轮副啮合不良 Worm gear sets mesh badly	修整齿面或更换蜗轮副（需要时请咨询杰牌） Mend tooth surface or replace worm gear sets (please contact to us)
	润滑油（脂）过少 Lubricant shortage	补加润滑油(脂) Fill in adequate oil as indication
漏 油 Oil leakage	油封唇口磨损 Oil seal lip worn-out	更换油封 Replace oil seal
	油封档轴颈磨损 Shaft of oil seal area worn-out	更换输入轴或蜗轮 Replace input or worm gear
蜗轮副齿面 磨损过快 Tooth surface of worm gear set abrade extra-quickly	超负荷运转 Over load	调整至适当负荷 Adjust to proper loading
	润滑油（脂）不符合要求 Lubricant oil not according with requirement	按油品润滑更换润滑油（脂） Replace proper lubricant oil
	润滑油（脂）过少 Lubricant shortage	补加润滑油（脂） Fill adequate oil as indication
	未按规定适时换油，润滑油劣化 Not replacing lubricant oil in time according to requirement, oil deteriorates	按规定要求适时换油 Replacing oil in time according to requiremen
	运转温度过高 Overheating while running	采取合适措施，降低环境温度 Adopting proper measures to make environment temperature fall
丝杆副齿面 磨损过快 Screw surface of worm gear sets abrade extra-quickly	超负荷运转 Over loading	调整至适当负荷 Adjust to proper loading
	润滑脂干枯或变质 Lubricant shortage or gone bad	去污擦净，重新加润滑脂 Washover dirty oil and refill proper lubricant
	有横向载荷 There is transverse load	加导向装置 Add direction setting

注：如果发生其他故障无法解决时，请咨询杰牌。

Note: If other faults not listed above occur ,please contact to us at any moment .We will supply thorough consultation and service.

七. JRTM 锥齿轮转向器

JRTM Bevel Steering Gear

分 目 录

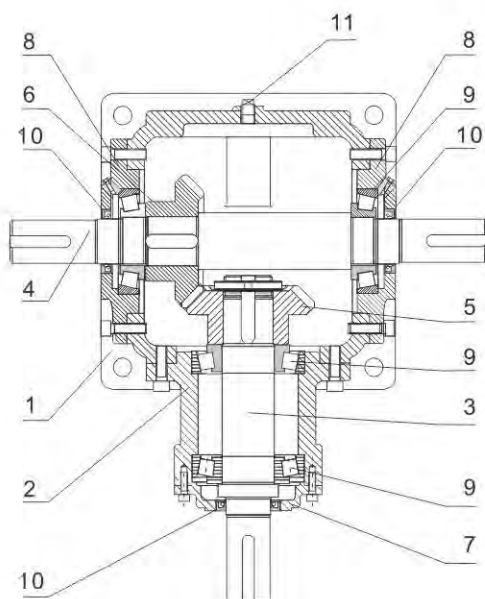
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1. 产品结构 Products Structure



1、机座	Housing
2、横轴座	Housing of input shaft
3、横轴	Input shaft
4、纵轴	Output shaft
5、横轴锥齿轮	Drive spiral bevel gear
6、纵轴锥齿轮	Driven spiral bevel gear
7、端盖	Bearing seat of input shaft
8、端盖	Bearing seat of output shaft
9、轴承	Bearing
10、油封	Oil Seal
11、油镜	Oil gauge

2. 型号说明 Model Description

J - RTM - 06 - 1:1 - I-LRO - B₃

1

2

3

4

5

6

1
企业代码
J-杰牌传动
Enterprise code
J-JIE Drive

2
产品代码
Product Code
RTM-锥齿轮转向器
RTM-bevel steering gear

3
规格
Specification

4
传动比
Transmission ratio
增速: 1: 2 减速: 2: 1
Multiplier:1:2 Reducer:2:1

5
轴配置
Shaft arrangement

6
安装方法
Mounting position

3. 产品说明

Product Description

杰牌JRTM锥齿轮转向器,拥有自主知识产权,产品采用铸铁箱体,具有坚固耐用、运转平稳、高效率 and 长寿命等亮点,包括JRTM通用型和JRTM+精密型等全系列产品。

杰牌JRTM锥齿轮转向器,通过完整产品策划与设计 and 全价值链精益生产最优方案实施,推进精益生产、建设智能工厂,实现研产供销服一体化,以满足客户对快速响应的需求。

杰牌JRTM锥齿轮转向器,遵循模块化和最优化设计理念。产品包括实心轴输入接口,实心轴输出模块,底脚安装、多面安装等输入接口、输出模块 and 安装型式,同时支持多台锥齿轮转向器、丝杆升降机和不同型号规格减速机的模块化组合与集成,并可根据客户提供整体升降方案。

杰牌为全球好客户做好产品!



JRTM bevel steering gear with independent intellectual property rights. The product uses the cast iron housing, which is durable and features smooth running, high efficiency and long service life. It includes JRTM universal and JRTM precision models.

JRTM bevel steering gear promotes lean production, builds intelligent factories, and realizes the integration of research, production, supply, marketing and service, so as to meet customers' demand for rapid response through complete product planning and design such as "core product-extreme technology, peripheral product-extreme service, external product-extreme experience" and the implementation of the optimal plan of lean production in the whole value chain such as "product planning, design validation, processing test, assembly test, warehouse logistics, sales service, information system, HR, operation plan, strategy planning".

JRTM bevel steering gear follows the concept of modular and optimized design. It includes solid shaft input interface, solid shaft output module, foot mounting, and multifaceted mounting. At the same time, it supports the modular combination and integration of multi-right angle bevel gear unit, screw jack and gear motors of different models and specifications. And it can provide an overall lifting solution according to customer needs.

JIE Drive provides great products for great clients across the world!

4. 选型说明

Selection Description

4.1 杰牌传动JRTM产品选型表

使用工况:

应用行业:

设备名称:

环境温度:

环境湿度:

海拔高度:

使用场地: ☐ 室内 ☐ 室外

起停频率:

运行时间:

负载时间: ☐ 15% ☐ 25% ☐ 40% ☐ 60% ☐ 100%

现用品牌:

现用型号:

存在问题:

需改进项:

产品信息:

包装附件类:

包装材质: ☐ 纸箱 ☐ 木箱 ☐ 纸箱+木箱

箱贴唛头: ☐ 中文 ☐ 英文

相关资料: ☐ 合格证 ☐ 出厂检验报告

外观标识类:

油漆颜色: ☐ JMR-01 ☐ JMG-01 ☐ JGB-01 ☐ RAL2002 ☐ RAL5015 ☐ RAL9003 ☐ RAL7045 ☐ RAL7031

防腐等级: ☐ 标准 ☐ JS1 ☐ JS2 ☐ JS3 ☐ JS4

铭牌要求: ☐ 中文 ☐ 英文

安装尺寸类:

产品类型: ☐ JRTM

安装方式: ☐ B3 ☐ B6 ☐ B7 ☐ B8 ☐ V5 ☐ V6 (见附图)

轴配置及旋转方向: ☐ I-LR ☐ I-R ☐ I-L ☐ I-LR-O ☐ I-R-O ☐ I-L-O

☐ I-UD ☐ I-U ☐ I-D ☐ I-UD-O ☐ I-U-O ☐ I-D-O

☐ U-LR ☐ U-R ☐ U-L ☐ U-LR-O ☐ U-R-O ☐ U-L-O

☐ D-LR ☐ D-R ☐ D-L ☐ D-LR-O ☐ D-R-O ☐ D-L-O

☐ I-I-LR ☐ I-I-R ☐ I-I-L ☐ I-I-LR-O ☐ I-I-R-O ☐ I-I-L-O

☐ I-I-UD ☐ I-I-U ☐ I-I-D ☐ I-I-UD-O ☐ I-I-U-O ☐ I-I-D-O

☐ U-D-LR ☐ U-D-R ☐ U-D-L ☐ U-D-LR-O ☐ U-D-R-O ☐ U-D-L-O

联动方式: ☐ 单台 ☐ 两台联动 ☐ 三台联动 ☐ 四台联

性能指标类:

传动比: $i =$ _____ 输出扭矩 (Nm): _____ 使用系数: _____

输入转速: ☐ 1450r/min ☐ 1150r/min ☐ 870r/min ☐ 580r/min ☐ 400r/min ☐ 300r/min ☐ 200r/min

☐ 100r/min ☐ 10/min

产品型号:



定制信息：

包装附件类：

外观标识类：

安装尺寸类：

性能指标类：

售后服务类：

服务信息：

售前服务：

培训咨询：☐选型培训 ☐应用培训 ☐使用维护

设计选型：☐参与设计 ☐设计校核 ☐产品选型

需求确认：☐工况确认 ☐产品确认 ☐服务确认

售中服务：☐驻厂全检 ☐过程抽检 ☐出厂检验

售后服务：☐安装调试 ☐检测维护 ☐备品备件

商务信息：

运输方式：

交付地点：

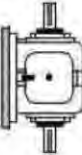
交付时间：

订单数量：

结算价格：

附图：

安装方式：

 B3	 B6	 V5
 B8	 B7	 V6



Selection Table of JIE JRTM Products

Conditions of use:

Application industry:

Equipment name:

Ambient temperature:

Ambient humidity:

Altitude:

Site of use: ☐indoor ☐outdoor

Start-stop frequency:

Running time:

Load time: ☐15% ☐25% ☐40% ☐60% ☐100%

Current brand:

Current model:

Existing problem:

Items needing improvement:

Product information:

Packing accessories:

Packaging material: ☐Carton ☐Wooden case ☐Carton + Wooden case Case mark: ☐Chinese ☐English

Relevant data: ☐Certificate of conformity ☐Ex-factory inspection report ☐Chinese operating instruction

☐English operating instruction

List of accessories: ☐Torque arm ☐Protective cover ☐Single output shaft ☐Double output shaft ☐Base

Appearance identification:

Paint color: ☐JMR-01 ☐JMG-01 ☐JGB-01 ☐RAL2002 ☐RAL5015 ☐RAL9003 ☐RAL7045 ☐RAL7031

Nameplate requirement: ☐Chinese ☐English

Installation dimension:

Product model: ☐JRTM

Mount position: ☐B3 ☐B6 ☐B7 ☐B8 ☐V5 ☐V6

Shaft configuration and Direction of rotation:

☐I-LR ☐I-R ☐I-L ☐I-LR-O ☐I-R-O ☐I-L-O

☐I-UD ☐I-U ☐I-D ☐I-UD-O ☐I-U-O ☐I-D-O

☐U-LR ☐U-R ☐U-L ☐U-LR-O ☐U-R-O ☐U-L-O

☐D-LR ☐D-R ☐D-L ☐D-LR-O ☐D-R-O ☐D-L-O

☐I-I-LR ☐I-I-R ☐I-I-L ☐I-I-LR-O ☐I-I-R-O ☐I-I-L-O

☐I-I-UD ☐I-I-U ☐I-I-D ☐I-I-UD-O ☐I-I-U-O ☐I-I-D-O

☐U-D-LR ☐U-D-R ☐U-D-L ☐U-D-LR-O ☐U-D-R-O ☐U-D-L-O

Linkage mode: ☐Single station ☐Two linkage ☐Three linkage ☐Four linkage

Performance indicators:

Transmission ratio: $i=$ _____ Output torque (Nm): _____ Service factor: _____

Input speed: ☐1450r/min ☐1150r/min ☐870r/min ☐580r/min ☐400r/min ☐300r/min ☐200r/min

☐100r/min ☐10/min

Product model:



Customized information:

Packaging:

Appearance:

Installation dimension:

Performance indicators:

After-sales service:

Service information:

Pre-sales service:

Training consulting: ☐ Type selection training ☐ Application training ☐ Use and maintenanceDesign selection: ☐ Participate in design ☐ Design verification ☐ Product selectionDemand confirmation: ☐ Working condition confirmation ☐ Product confirmation ☐ Service confirmationIn-sales service: ☐ On-site full inspection ☐ Process sampling ☐ Ex-factory inspectionAfter-sales service: ☐ Installation and commissioning ☐ Testing and maintenance ☐ Spare parts**Business information:**

Transportation:

Delivery place:

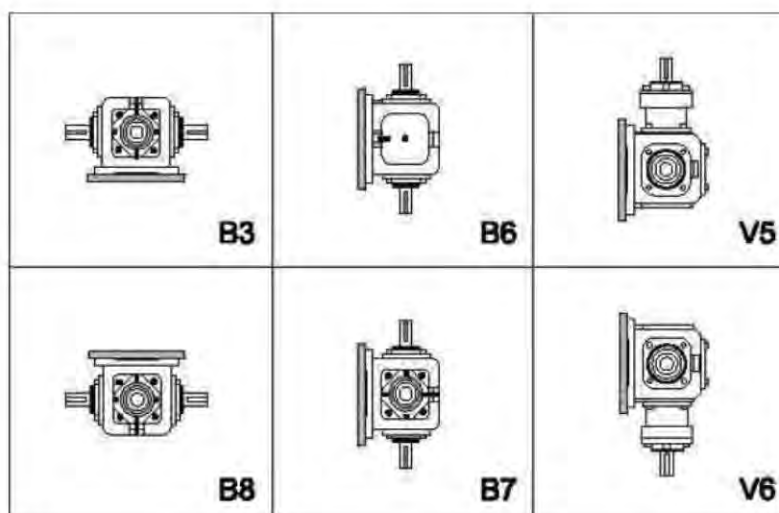
Delivery time:

Order quantity:

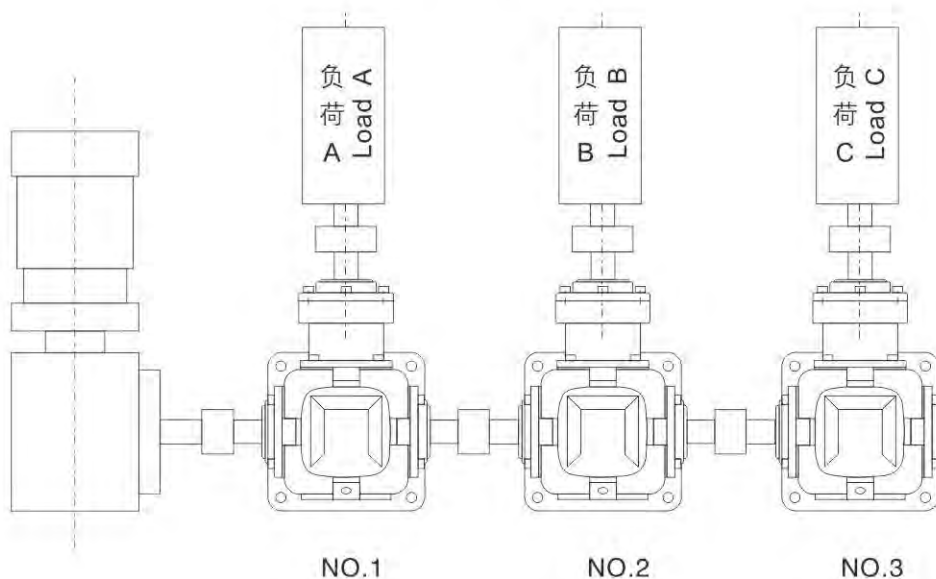
Settlement price:

Attached figure:

Mount position:



4.2 选型要素 Selection points



3台负载全部为196Nm，一般冲击，每天连续工作8小时，即使用系数 $f_s=1.25$ ，斜齿轮输入轴转速300r/min，速比全部为1:1。

根据公式：每台转向器本身所需的负载 $MN2 \geq M2 \times f_s = 196 \times 1.25 = 245\text{Nm}$

※1号转向器

因1号转向器本身的负载为245Nm，而2号、3号转向器需通过1号转向器传递扭矩。

所以1号转向器应承担的负载为：245Nm + 245Nm + 245Nm = 735Nm，依据传动能力表，应选JRTM12。

※2号转向器

除本身的负载245Nm，还需传递3号转向器的扭矩。所以总负载应为245Nm + 245Nm = 490Nm，依据传动能力表，应选JRTM10。

※3号转向器

由于仅一个负载C进行运转，即所需负载在245Nm 以上即可，依据传动能力表可选JRTM08。

Torque values of three gear reducers are 196Nm, uniform impulsire force, operate continuous for 8 hours per day, that is, useful factor $f_s=1.25$, input speed of 300rpm, ratio of 1:1.

Calculate according to formula:

Required torque of any of gearbox MN2 is equal to 245Nm or larger.

No.1 gear reducer

No.1 gear reducer carry torque 245Nm, but No.2 and No.3 gear reducer need transfer torque through No.1, Consequently No.1 gear reducer should carry torque 735Nm(245Nm+245Nm+245Nm), select J-RTM12. according to transmission capacity table.

No.2 gear reducer

No.3 gear reducer still transfers torque of No.3gear reducer besides torque of245Nm, so, the total torque is 490Nm (245Nm+245Nm), select JRTM10 according to transmission capacity table.

No.3 gear reducer

Required torque is more than 245Nm because of only load C according to transmission capacity Table select JRTM 08.

5. 技术参数

Technical Specifications

i_N	n1 (r/min)	JRTM02		JRTM04		JRTM06		JRTM07		JRTM08	
		MN2 (Nm)	PN (kW)	MN2 (Nm)	PN (kW)	MN2 (Nm)	PN (kW)	MN2 (Nm)	PN (kW)	MN2 (Nm)	PN (kW)
1:1	1450	11.6	1.79	31.9	4.94	96.0	14.9	142	22.0	294	45.6
	1150	11.7	1.43	34.1	4.19	103	12.7	150	18.4	305	37.5
	870	12.1	1.12	37.2	3.46	113	10.5	164	15.2	312	29.0
	580	12.1	0.747	39.5	2.45	119	7.35	184	11.4	319	19.8
	400	12.3	0.524	40.2	1.72	122	5.20	195	8.34	326	14.0
	300	12.3	0.396	40.5	1.30	123	3.93	198	6.35	331	10.6
	200	12.4	0.226	41.2	0.880	124	2.66	201	4.30	338	7.23
	100	12.7	0.136	41.9	0.448	127	1.36	206	2.20	346	3.70
	10	13.0	0.014	43.0	0.046	132	0.141	214	0.228	361	0.386
1.5:1	1450					117	12.1	145	15.0	185	19.1
	1150					122	9.96	147	12.0	188	15.4
	870					123	7.66	150	9.30	191	11.8
	580					126	5.23	153	6.32	197	8.14
	400					128	3.66	155	4.41	200	5.70
	300					129	2.77	157	3.35	203	4.34
	200					131	1.87	160	2.28	204	2.91
	100					134	0.957	163	1.16	210	1.49
	10					139	0.099	169	0.12	218	0.155
2:1	1450	12.1	0.94	42.8	3.32	102	7.90	137	10.6	180	14.0
	1150	12	0.74	43.4	2.67	104	6.39	139	8.55	183	11.3
	870	12	0.56	43.8	2.04	105	4.88	141	6.56	187	8.70
	580	11.9	0.37	44.4	1.38	108	3.34	144	4.47	191	5.92
	400	12.2	0.26	45.1	0.96	109	2.33	146	3.12	194	4.15
	300	11.9	0.19	45.5	0.73	110	1.76	148	2.37	196	3.14
	200	12.2	0.13	46.1	0.49	111	1.18	149	1.59	198	2.12
	100	11.2	0.06	46.6	0.25	114	0.608	152	0.812	202	1.08
	10	28.1	0.015	48.5	0.026	116	0.062	157	0.084	209	0.112
2.5:1	1450					96.2	5.97	113	6.99	184	11.4
	1150					97.2	4.78	115	5.64	185	9.11
	870					99.0	3.68	116	4.30	188	7.00
	580					100.0	2.48	118	2.92	192	4.76
	400					100.9	1.73	120	2.05	195	3.34
	300					102.9	1.32	121	1.55	197	2.53
	200					103.9	0.888	123	1.05	200	1.71
	100					104.9	0.448	123	0.528	203	0.867
	10					107.8	0.046	126	0.054	208	0.089
3:1	1450					93.6	4.84	105	5.42	159	8.20
	1150					94.8	3.88	106	4.34	160	6.55
	870					95.9	2.97	108	3.34	163	5.04
	580					97.6	2.02	109	2.25	166	3.42
	400					99.0	1.41	111	1.58	168	2.39
	300					100	1.07	111	1.18	169	1.80
	200					100	0.712	113	0.803	171	1.22
	100					102	0.363	115	0.409	173	0.618
	10					104	0.037	118	0.042	179	0.064
4:1	1450					80.6	3.12	93.4	3.62	124	4.80
	1150					81.5	2.50	94.3	2.90	125	3.83
	870					82.4	1.92	95.9	2.23	127	2.95
	580					84.1	1.30	96.9	1.50	129	2.00
	400					85.1	0.91	98.7	1.05	131	1.40
	300					86.1	0.69	98.3	0.79	131	1.05
	200					86.0	0.46	101	0.54	134	0.71
	100					87.7	0.23	101	0.27	135	0.36
	10					89.3	0.02	101	0.03	140	0.04
5:1	1450					52.0	1.61	57.4	1.78	68.7	2.13
	1150					52.5	1.29	58.0	1.43	69.2	1.70
	870					53.2	0.99	59.0	1.10	70.4	1.31
	580					54.2	0.67	59.6	0.74	71.7	0.89
	400					54.9	0.47	60.7	0.52	72.6	0.62
	300					55.5	0.36	60.4	0.39	72.9	0.47
	200					55.4	0.24	61.7	0.26	74.1	0.32
	100					56.5	0.12	62.9	0.13	75.1	0.16
	10					57.6	0.01	64.5	0.01	77.8	0.02

1、横轴转速未达到10r/min时，请使用10r/min的数据。

2、 以上有灰色标识的规格定货，横轴输入转速超过1450r/min时，请咨询杰牌。





i_N	n1 (r/min)	JRTM10		JRTM12		JRTM16		JRTM20		JRTM25	
		MN2 (Nm)	PN (kW)	MN2 (Nm)	PN (kW)	MN2 (Nm)	PN (kW)	MN2 (Nm)	PN (kW)	MN2 (Nm)	PN (kW)
1:1	1450	421	65.3	619	96.0	1019	163				
	1150	453	55.7	665	81.1	1098	139	1842	234		
	870	479	44.6	726	67.5	1186	114	2009	193	3489	335
	580	493	30.6	802	49.7	1343	85.9	2274	145	3940	252
	400	504	21.5	821	35.1	1499	66.1	2538	112	4410	195
	300	513	16.4	835	26.8	1637	54.1	2744	90.8	4792	159
	200	521	11.1	852	18.2	1784	39.3	3126	69.0	5390	119
	100	535	5.72	875	9.36	1842	20.3	3205	35.3	5439	60.0
1.5:1	10	561	0.599	919	0.983	1940	2.14	3205	3.53	5713	6.30
	1450	374	38.7	564	58.3						
	1150	380	31.2	601	49.2						
	870	389	24.1	656	40.7						
	580	396	16.4	699	28.9						
	400	406	11.6	711	20.3						
	300	411	8.78	724	15.5						
	200	417	5.95	736	10.5						
2:1	100	426	3.04	754	5.37						
	10	443	0.316	785	0.56						
	1450	305	23.6	516	40.0	921	73.7	1578	126		
	1150	309	19.0	516	31.7	938	59.5	1607	102	3146	199
	870	315	14.6	516	24.0	958	46.0	1646	79.0	3224	155
	580	322	10.0	524	16.3	980	31.3	1695	54.2	3332	107
	400	328	7.02	538	11.5	1000	22.0	1725	38.0	3420	75.4
	300	332	5.33	543	8.71	1009	16.7	1754	29.0	3479	57.5
2.5:1	200	338	3.61	551	5.89	1029	11.3	1784	19.7	3557	39.2
	100	344	1.84	563	3.01	1058	5.84	1833	10.1	3646	20.1
	10	357	0.191	586	0.313	1098	0.605	1921	1.06	3822	2.11
	1450	293	18.2	507	31.4						
	1150	298	14.7	514	25.3						
	870	302	11.2	523	19.5						
	580	310	7.68	535	13.3						
	400	315	5.38	545	9.32						
3:1	300	317	4.06	552	7.08						
	200	321	2.75	560	4.79						
	100	326	1.40	568	2.43						
	10	336	0.144	588	0.251						
	1450	270	14.0	458	23.6	904	48.2	1529	82.3	2935	158
	1150	275	11.3	464	19.0	920	38.9	1561	66.6	3045	130
	870	279	8.66	469	14.6	940	30.1	1598	51.6	3135	101
	580	285	5.89	480	9.92	960	20.4	1644	35.4	3246	69.9
4:1	400	288	4.11	490	6.98	978	14.4	1672	24.8	3317	49.3
	300	291	3.11	495	5.29	990	10.9	1701	18.9	3372	37.6
	200	294	2.10	501	3.57	1005	7.38	1733	12.9	3449	25.6
	100	300	1.07	510	1.82	1038	3.82	1777	6.60	3537	13.1
	10	308	0.110	527	0.188	1076	0.40	1865	0.69	3713	1.4
	1450	241	9.35	434	16.8	850	34.3	1452	58.7	2798	113
	1150	246	7.54	441	13.5	865	27.7	1483	47.5	2892	92.6
	870	249	5.78	448	10.4	884	21.4	1518	36.8	2978	72.2
5:1	580	254	3.93	456	7.07	902	14.6	1562	25.2	3084	49.8
	400	257	2.74	465	4.97	919	10.2	1588	17.7	3151	35.1
	300	259	2.08	470	3.77	930	7.8	1616	13.5	3204	26.8
	200	262	1.40	476	2.54	944	5.3	1646	9.17	3276	18.2
	100	267	0.71	485	1.30	976	2.7	1688	4.70	3360	9.36
	10	275	0.07	501	0.13	1011	0.3	1772	0.49	3527	0.98
	1450	136	4.21	296	9.18	814	26.3	1391	44.9	2631	85.0
	1150	138	3.39	301	7.39	828	21.2	1420	36.4	2771	71.0
5:1	870	140	2.60	305	5.68	847	16.4	1454	28.2	2853	55.3
	580	143	1.77	311	3.86	864	11.2	1496	19.3	2954	38.2
	400	144	1.23	318	2.72	881	7.85	1521	13.6	3018	26.9
	300	146	0.93	321	2.06	891	5.96	1548	10.3	3069	20.5
	200	148	0.63	325	1.39	905	4.03	1577	7.03	3138	14.0
	100	150	0.32	331	0.71	935	2.08	1617	3.60	3218	7.17
	10	155	0.03	342	0.07	969	0.22	1697	0.38	3378	0.75

1、If speed is less than 10rpm, please choose 10rpm.

2、 When order the model with ash sign or that input speed is more than 1450rpm, Please consult JIE for details.

JRTM 锥齿轮转向器径向力Fr(N)表
JRTM series Fr(N) table

i_N	n1 (r/min)	JRTM02		JRTM04		JRTM06		JRTM07		JRTM08		JRTM10		JRTM12		JRTM16		JRTM20		JRTM25	
		横轴 Input shaft	纵轴 Output shaft	横轴 Input shaft	纵轴 Output shaft	横轴 Input shaft	纵轴 Output shaft	横轴 Input shaft	纵轴 Output shaft	横轴 Input shaft	纵轴 Output shaft	横轴 Input shaft	纵轴 Output shaft	横轴 Input shaft	纵轴 Output shaft	横轴 Input shaft	纵轴 Output shaft	横轴 Input shaft	纵轴 Output shaft	横轴 Input shaft	纵轴 Output shaft
1:1	1450	265	216	833	951	1911	2450	2450	3136	3234	3381	4165	4508	5096	5586	10633	10976				
	1150	323	235	882	1029	2058	2597	2744	3234	3479	3626	4459	4851	5488	6076	11368	11760	15386	15608		
	870	402	255	960	1127	2205	2842	2989	3381	3773	3969	4851	5292	5880	6566	12446	12740	16660	17150	24794	25480
	580	549	314	1078	1323	2499	3185	3381	3822	4263	4459	5488	5880	6713	7301	14014	14504	18816	19404	28028	28910
	400	637	353	1372	1715	3185	3528	4018	4900	4851	5978	6272	7056	7742	8134	15680	16170	21070	21756	31360	32340
	300	696	392	1519	1960	3430	3528	4410	5537	5243	6958	6713	7987	8232	9065	17150	17640	23422	24108	34300	35280
	200	784	441	1911	1960	3430	3528	5096	6272	7889	8820	8575	9604	9261	10290	19600	19894	25970	26754	38612	39788
	100	980	588	1911	1960	3430	3528	5096	6272	8428	8820	9996	11760	11368	12593	22540	22540	28420	32928	39200	49000
	10	980	588	1911	1960	3430	3528	5096	6272	8428	8820	9996	11760	11858	14504	22540	22540	28420	33320	39200	49000
1.5:1	1450			1078	1960	2548	2842	3430	5390	4361	7987	5194	9212	5978	10486	5978	12152	7693	14602		
	1150			1078	1960	3038	3087	4067	5978	5096	8820	6174	10486	7252	12152	6419	13083	8771	17934	12985	24647
	870			1078	1960	3430	3332	4753	6076	6076	8820	7448	11760	8869	14504	6958	14210	9506	19453	13573	29400
	580			1078	1960	3430	3528	5096	6174	7644	8820	9555	11760	11466	14504	7840	16072	10780	22001	15680	33222
	400			1078	1960	3430	3528	5096	6272	8428	8820	9996	11760	11858	14504	8820	17934	12005	24598	17542	37142
	300			1078	1960	3430	3528	5096	6272	8428	8820	9996	11760	11858	14504	9604	19600	13132	27342	19159	40474
	200			1078	1960	3430	3528	5096	6272	8428	8820	9996	11760	11858	14504	10829	22148	14798	30282	21658	45766
	100			1078	1960	3430	3528	5096	6272	8428	8820	9996	11760	11858	14504	13328	22540	18228	33320	26656	49000
	10			1078	1960	3430	3528	5096	6272	8428	8820	9996	11760	11858	14504	22540	22540	28420	33320	39200	49000

备注：各规格更低的输出转速按以上最大的Fr值。

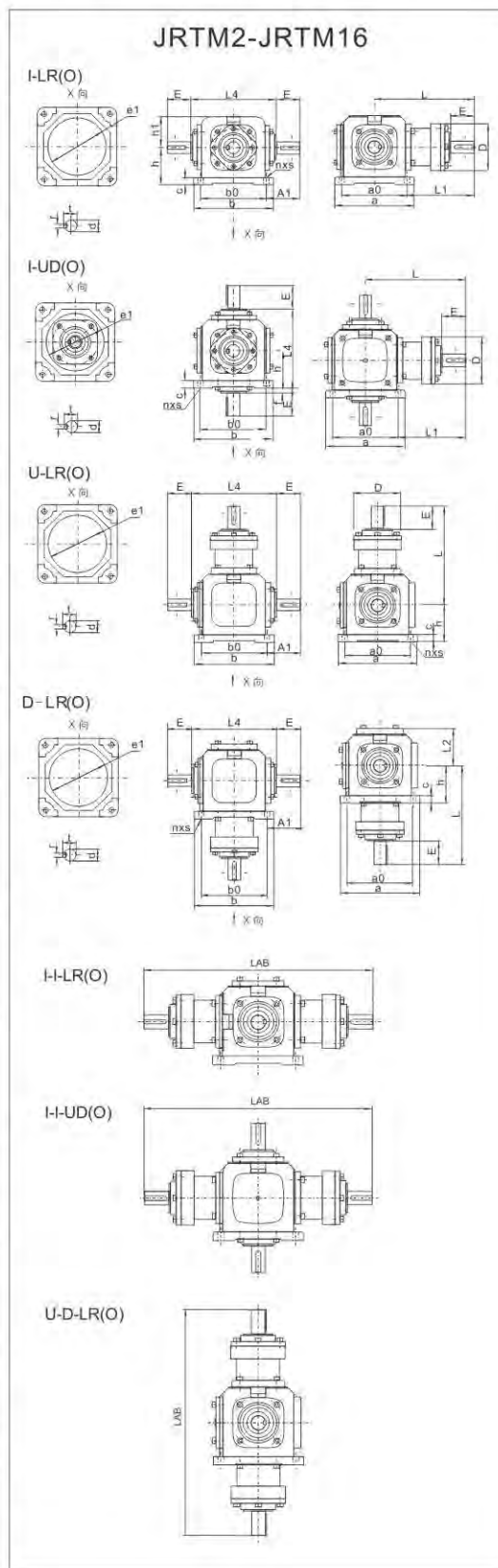
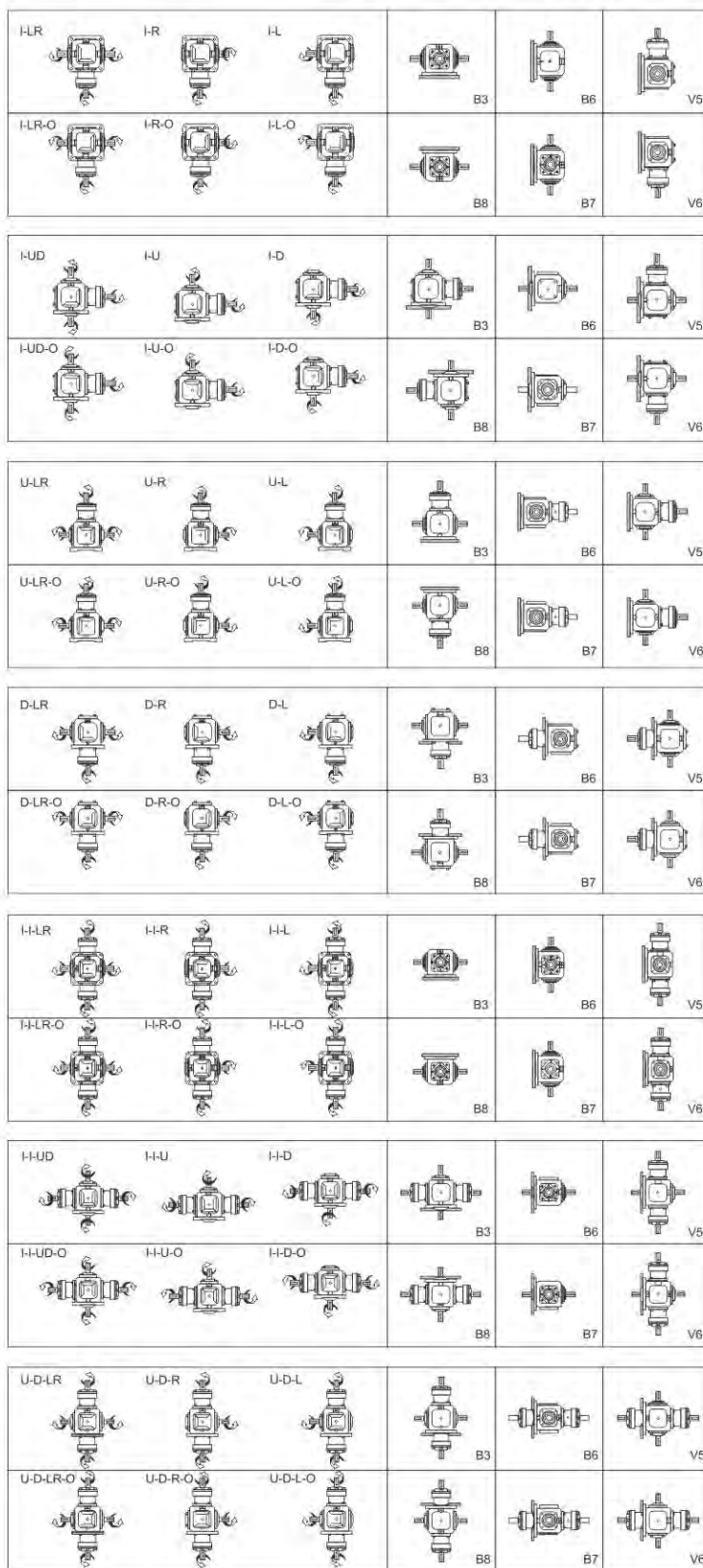
Notes: If there is lower output speed, please choose the maximum Fr in the above table.

JRTM 产品重量
JRTM series weight table

Type	JRTM02	JRTM04	JRTM06	JRTM07	JRTM08	JRTM10	JRTM12	JRTM16	JRTM20	JRTM25
m(kg)	2	11	22.5	34	51	80	125	195	302	500

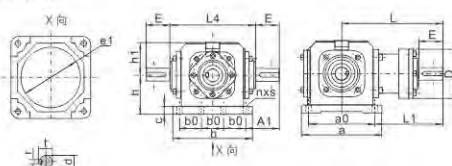


6. 安装尺寸 Mounting Dimensions

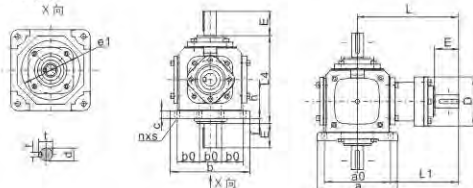


JRTM20-JRTM25

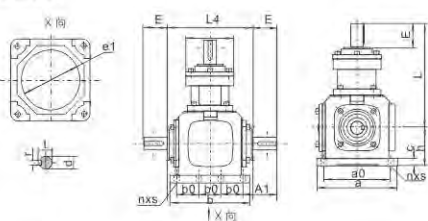
I-LR(O)



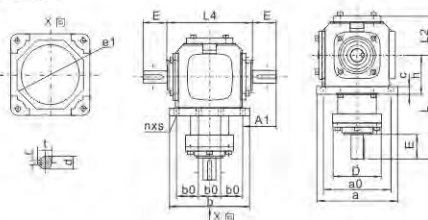
I-UD(O)



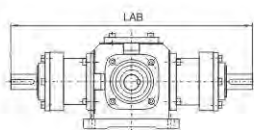
U-LR(O)



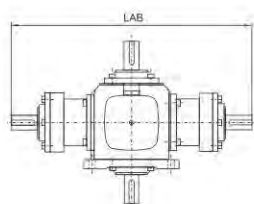
U-LR(O)



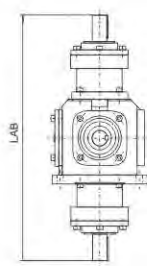
I-LR(O)



I-UD(O)



U-D-LR(O)



	JRTM2	JRTM4	JRTM6	JRTM7	JRTM8	JRTM10	JRTM12	JRTM16	JRTM20	JRTM25
A1	48	53.5	81	88	110.5	120	130	150	195	235
a	100	155	190	210	235	285	340	390	490	580
a0	84	125	152	174	195	240	290	330	430	520
b	100	155	190	210	235	285	340	390	410	480
b0	84	125	152	174	195	240	290	330	110	130
C	10	17	17	20	22	25	32	40	40	40
D	58	76	115	125	150	155	168	193	220	270
d(h7)	15	19	25	32	40	45	50	60	72	85
E	33	38	50	62	75	90	100	105	105	130
61(H8)/X深	94x3	155x5	190x5	220x5	250x5	305x5	370x5	420x7	360x10	430x10
f	5	2	17	13	18	10	0	10	10	10
h	52	76	90	100	115	140	175	200	245	290
h1	40	60	76	87	98	118	165	186	217	255
L	124	180	222	265	308	360	415	455	545	660
L1	82	117.5	146	178	210.5	240	270	290	330	400
L2	52	76	89.5	99	114.5	138	165	186	217	255
L4	114	156	214	226	266	300	350	420	510	600
LAB	/	360	444	530	616	720	830	/	/	/
n	4	4	4	4	4	4	4	4	8	8
r	5	6	8	10	12	14	14	18	20	22
s	9	10.5	14	14	14	16	21	21	21	24
t	17	21.5	28	35	43	48.5	53.5	64	76.5	90



7. 使用说明 Operating Instructions

7.1 安装注意事项 Notices of installation

7.1.1 减速机须安装在平整坚固的底座上，底脚螺栓必须紧固、防震。

The base-plate must be plane and stoutness, and the base-bolts must be screwed down and shockproof.

7.1.2 原动机 -- 减速机 -- 工作机的各联接轴伸，安装后必须互相准确对准轴线。

The connecting shafts of prime mover, reducer and operation device must be coaxial after installation.

7.1.3 减速机输入端及输出端轴伸外径尺寸公差均按 h6 制作，与之相配的联轴器、皮带轮、链轮等传动件内孔须按合适的尺寸公差配制，避免装配过紧损坏轴承，装配过松影响正常动力传递。

The diameter tolerance zone of input and output shafts is h6, the holes of fittings (such as couplings, belt-pulley, sprocket wheel and so on)must properly mate the shaft, which prevents bearing from breakage because of over-tight mate or avoid effecting normal power transmission because of over-loose mate.

7.1.4 链轮、齿轮等传动件装上轴伸时，应尽量靠近轴承，以减少轴伸弯曲应力。

Drivers such as sprocket wheel and gear must be fitted close to bearings in order to reduce bending stress of hanging shaft.



7.2 使用注意事项 Notices of usage

7.2.1 使用前应注意检查减速机型式结构、机座号、传动比、输入轴结构、输出轴结构、输入轴输出轴指向和回转方向是否符合使用要求。

Before using, please check carefully whether the reducer model, distance, transmission ratio, input connecting method, output shaft structure, input and output shaft direction and revolving direction accord with requirement.

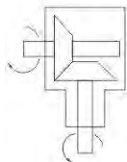
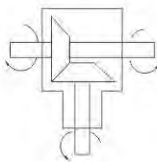
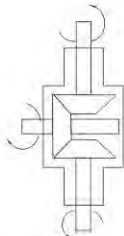
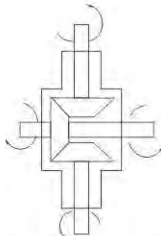
7.2.2 出厂时减速机已加好润滑油，用户无须加油。首次运行500小时后请更换润滑油，以后每隔约2500小时或6个月这两者中较早的时间进行更换。

According to the requirement of "lubricant" in the product manual, please fill proper category and brand lub-ricant. And then screw on the vent-plug, uncork the small cone-plug of vent-plug. Only after doing these, reducer is ready for starting up running. The proper brand and adequate lubricant oil is required; replacing oil in time conforming to the request of product manual is also necessary, especially after using first 100 hours, it is required refilling new oil.

7.2.3 使用过程中发生不正常情况时，应及时停机检查，可参照“故障分析”表处理。(减速机的油温最高允许达到95℃，在此温度界限下，只要油温不再上升，可以放心使用)。

When abnormal circumstances occur, please stop and check reducer per "Malfunctions Analysis"(allowa-ble highest oil temperature is 95℃, under this temperature limit, if oil temperature no more goes up, please let reducer continue running).

7.3 转向功能 Function of rotation

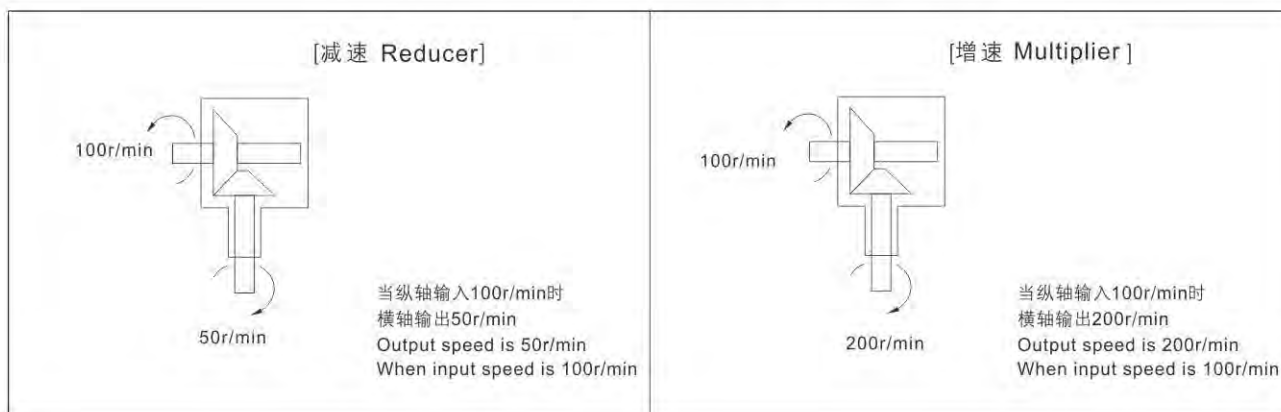
1 横 轴 Input shaft		2 横 轴 Input shaft	
2轴2-extended shaft	3轴3-extended shaft	3轴3-extended shaft	4轴4-extended shaft
			

说明：当输入轴旋转方向改变，输出轴相应改变。

Specification: Direction of rotation of output shaft varies with that of input shaft.

7.4 转向功能注意事项(1:1传动比时无关系)

Pay attention to the ratio when fixing the input side
(there is nothing in case of ratio of 1:1)



8. 油品润滑 Lubricant

8.1 润滑油选用表

Lubricants for reducer used in can be chosen as the table below

横轴转速 Input shaft speed (r/min)	周围温度 Environment temperature		横轴转速 Input shaft speed (r/min)	周围温度 Environment temperature	
	-10℃~30℃	30℃~50℃		-10℃~30℃	30℃~50℃
200~1450	ISO VG150	ISO VG200	< 200	ISO VG220	ISO VG320

8.2 润滑油注油量(L) Lubricants capacity(L)

规格 Size	JRTM02	JRTM04	JRTM06	JRTM07	JRTM08	JRTM10	JRTM12	JRTM16	JRTM20	JRTM25
注油量 Lubricant capacity	0.15	0.9	1.2	2	2.8	5.2	8.6	11	22	40

注：因安装方式不同，油量会存在不一致，注油时结合油镜查看是否注油充足。

Annotate: If other faults not listed above occur, please contact with us at any moment, we will supply thorough consultation and service.

9. 故障分析

Malfunctions Analysis

故障情况 Fault Description	故障原因 Reasons	解决办法 Solutions
过热 Overheating	原动机、减速机、工作机连接不当 Improper connection among prime mover, reducer and the operation device	调整至适当位置，使三者相联轴线同轴 Adjust to proper position
	超负荷运转 Overloading	适当调整负荷 Adjust to proper load
	油封过度磨擦 Over friction of oil seals	在油封唇口处滴润滑油 Drop lubricant at oil seal
	润滑油过少或过多 Lubricant oil overmuch or shortage	按油标指示点调整油量 Adjust to proper oil quantity as indication
	润滑油杂质多或润滑性差 Much impurity in oil or inferior oil	更换合适新油 Refill proper oil
振动 Vibration	原动机、减速机、工作机固定不良 Prime mover, reducer and the operation device mount badly	查出固定不良部位，正确固紧 Find out the bad place, tighten it
	锥齿轮副齿部磨损或损伤 Tooth surface of worm gear sets worn-out or damaged	更换锥齿轮副（需要时请咨询杰牌） Replace worm gear sets (we will cooperate with you when necessary)
	轴承磨损 Bearing worn-out	更换轴承 Replace Bearing
	螺栓松脱 Bolt loose	固紧螺栓 Tighten Screw
异响 Noise	轴承损伤或间隙过大 Bearing damaged or too large clearance	更换轴承 Replace Bearing
	锥齿轮副啮合不良 Worm gear sets mesh badly	修整齿面或更换锥齿轮副（需要时请咨询杰牌） Mend tooth surface or replace worm gear sets (please contact to us)
	润滑油不足 Lubricant oil shortage	按油标指示点补加润滑油 Fill in adequate oil as indication
	机体内有异物 Foreign object in box	倒净润滑油带出异物，重加清洁润滑油 Discharge all the oil in order to put out foreign object, and refill clean oil
漏油 Oil leakage	油封唇口磨损 Oil seal lip worn-out	更换油封 Replace oil seal
	油封档轴颈磨损 Shaft of oil seal area worn-out	更换输出轴或输入轴 Replace input or output shaft
	油量过多 Too much oil	按油标指示点调整油量 Discharge adequate oil as indication
	放油螺塞未旋紧 Oil screw plug loose	螺纹处加密封胶、旋紧螺塞 Tighten oil screw plug
	油标破损 Oil gauge damaged	更换油标 Replace oil gauge
锥齿轮副齿面 磨损过快 Tooth surface of worm gear sets abrade extra-quickly	超负荷运转 Overload	调整至适当负荷 Adjust to proper loading
	润滑油不符合要求 Lubricant oil not according with requirement	更换合适的润滑油 Replace proper lubricant oil
	润滑油不足 Lubricant oil shortage	按油标指示点加足润滑油 Fill adequate oil as indication
	未按规定适时换油，润滑油劣化 Not replacing lubricant oil in time according to requirement, oil deteriorates	按规定要求适时换油 Replacing oil in time according to requirement
	运转温度过高 Overheating while running	1. 按“过热”故障处理 2. 采取合适措施，降低环境温度 1. Deal with it as "Overheating" 2. Adopting proper measures to make environment temperature fall

注：如果发生其他故障无法解决时，请咨询杰牌。

Annotate: If other faults not listed above occur, please contact with us at any moment, we will supply thorough consultation and service.