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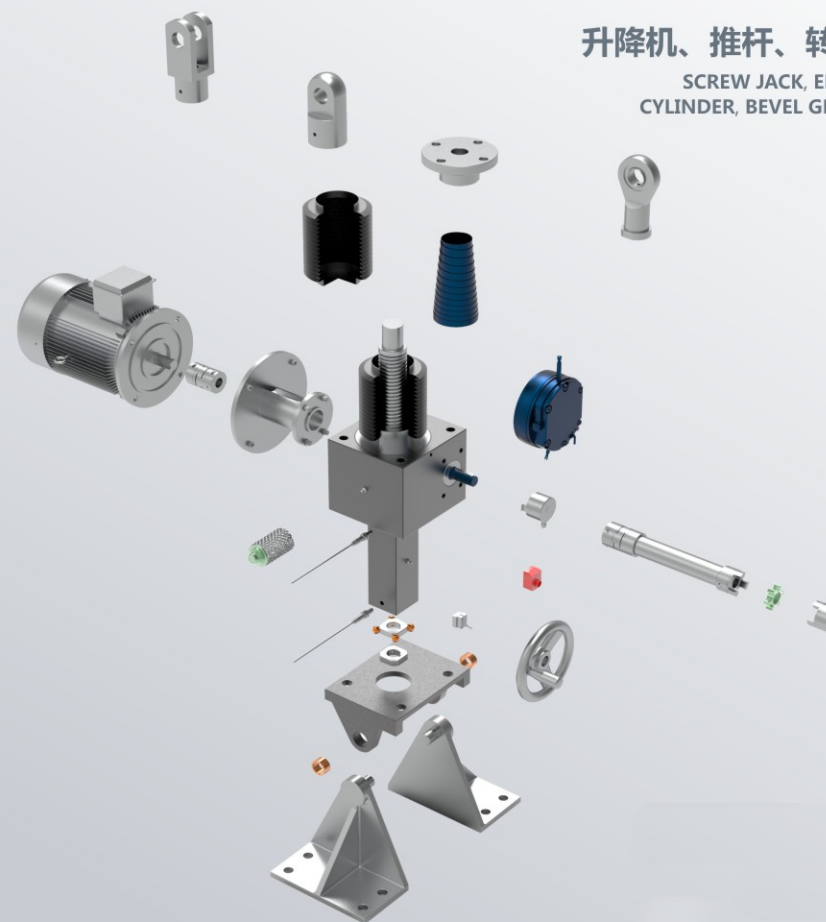
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产品操作手册

PRODUCT
OPERATION MANUAL

升降机、推杆、转向器

SCREW JACK, ELECTRIC
CYLINDER, BEVEL GEARBOX



精耕传动

GOLDGUN TRANSMISSIONS

手册索引目录

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1. 关于此操作手册 / About this operation manual

1.1. 此操作说明书为产品系列中针对升降机、推杆、转向器产品的一部分。请在使用设备前仔细阅读此操作说明书。在设备使用期间，请保证此操作手册的完整。

1.1. This operating manual is part of product range for screw jack, electronic cylinder and bevel gearbox. Please read this operating manual carefully before using the device. During the use of the equipment, please ensure the integrity of this operation manual.

1.2. 符号示意 / Symbols

符号 symbol	含义 meaning
 WARNING	人身危害personal hazard 如忽视将导致死亡或重伤。Neglect will result in death or serious injury.
 CAUTION	人身危害personal hazard 如忽视可能导致轻伤。Minor injury may result if ignored. 避免造成财物损失的说明Instructions for avoiding property damage
 NOTE	用于理解或优化工作程序的注释 Notes for understanding or optimizing working procedures

2. 安全说明 / Safety Instructions

丝杆升降机按现代标准生产并符合安全法规。但是在使用期间仍可能导致用户或第三方的生命危险，或导致对丝杆升降机的损坏。请在产品选型范围内正确选型，并保证使用场景中在允许工况范围内并得到有效的使用维保措施。

Screw jack are produced to modern standards and comply with safety regulations. However, it may still cause danger to the life of the user or third parties, or cause damage to screw jack during use. Please select the correct model within the product selection range, and ensure that the use scenario is within the allowable working condition range and effective maintenance measures are obtained.

丝杆升降机只能在良好的技术条件并符合此操作手册的条件下使用。如有任何故障，请及时消除。请不要对丝杆升降机进行任何未经授权的拆解、维修、改装。

Screw jack may only be used in good technical condition and in compliance with this operating manual. If there is any fault, please eliminate it in time. Please do not perform any unauthorized disassembly, repair or modification of Screw jack.

2.1. 用途use

丝杆升降机、推杆产品只适用于在规定的起重能力范围内的托起，降落，倾卸和推拉运动，用户有责任确保其正确使用。丝杆升降机只能应用于此种情况下并在我们的目录和选型手册规定的限制下使用。

Screw jack and linear cylinder products are only suitable for lifting, lowering, dumping and push-pull movements within the specified lifting capacity range, and it is the user's responsibility to ensure that they are used correctly. Spindle lifts should only be used in this case and within the limits specified in our catalogues and selection manuals.

转向器产品实现力的转向与分配，通过速比的选择同事可增大扭矩，请使用时按选型手册允许的转速、扭矩范围内使用。

Bevel gearbox products realize the steering and distribution of force, and the torque can be increased by selecting the speed ratio. Please use it within the range of rotation speed and torque allowed by the selection manual.

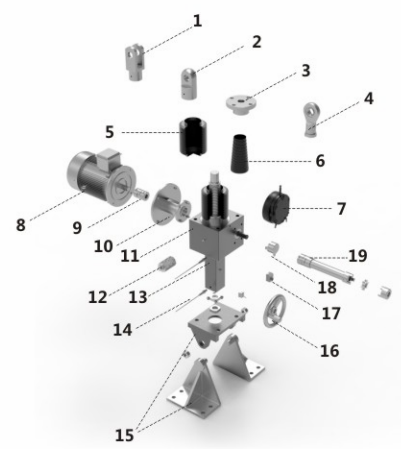
2.2. 使用公司的责任 / Using the company's responsibility

请确保产品的操作和维护符合此操作手册和用户国家适用的法律法规。确保人员Please ensure that the operation and maintenance of products comply with this manual and the applicable laws and regulations of the user's country. make sure the staff

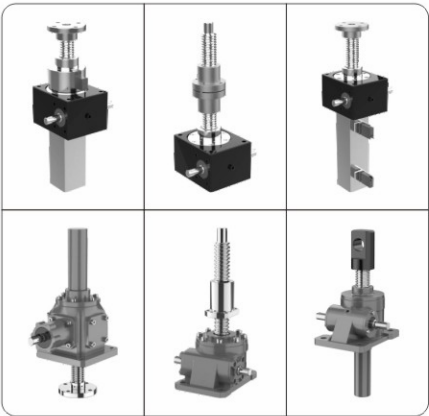
- 在授权的情况下操作。
- Operate products under authorized conditions.
- 经过培训并且有完成份内工作的资格
- Trained and qualified to do the job.
- 已经阅读并理解此操作手册
- have read and understood this operating manual
- 了解适用的安全条例并且
- Know the applicable safety regulations and
- 穿戴个人防护装备(安全手套、安全帽和安全鞋)。
- Wear personal protective equipment (safety gloves, hard hat and safety shoes).

3. 产品结构描述 / Product structure description

3.1. 升降机结构 / Screw jack structure

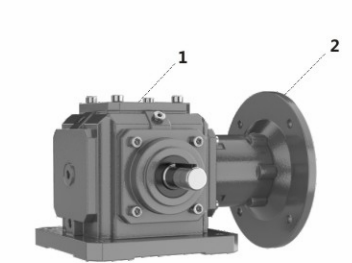


- 1. 插销型头部 Pin head
- 2. 栓孔型头部 Bolt-and-hole head
- 3. 法兰型头部 Flange head
- 4. 关节轴承头部 Joint bearing head
- 5. 伸缩防护套 Telescopic protective sleeve
- 6. 钢卷防护套 Steel coil protective cover
- 7. 刹车器 Brake
- 8. 电机 Motor
- 9. 联轴器 Coupling
- 10. 过渡法兰 Transition flange



- 11. 主机蜗轮箱 Main engine worm gear box
- 12. 自动润滑注油器 Automatic lubricating oiler
- 13. 防护套 Protective cover
- 14. 限位开关 Limit switch
- 15. 铰接底座 Hinged base
- 16. 手轮 Handwheel
- 17. 计数器 Counter
- 18. 编码器 Encoder
- 19. 联轴器连杆套件 Coupling connecting rod kit

3.2. 转向器结构/Bevel gearbox structure



- 1. 箱体主机 Housing
- 2. 输入法兰 input flange



4. 运输和存储 / Shipping and Storage

4.1. 运输 / transport

⚠ WARNING 货物坠落！cargo drop！ 货物掉落可能导致重伤 Dropping cargo can cause serious injury - 确保使用的专用吊装绳索、吊钩并牢固连接确保不会滑落。 Make sure you use a dedicated hoisting rope, hook, and a secure connection to ensure it doesn't slip. - 不要在悬吊吊装物下停留。 Do not stay under suspended loads. - 穿戴个人防护装备。 wear personal protective equipment.	⚠ CAUTION 重量大！heavy weight！ - 重量 超过25 公斤及以上部件容易引起的搬运伤害，请正确搬运重型物件（最多每人 25 公斤） - Weight Over 25kg and above parts are easy to cause handling injury, please handle heavy objects correctly (up to 25kg per person)
⚠ CAUTION 产品的损坏！Damage to products! - 收到货物后，检查包装是否有损坏迹象。 - Upon receipt of the goods, check the packaging for signs of damage. - 不要使产品掉落，并避免它受到撞击。 - Do not drop the product and avoid it being hit. - 尽量使用合适的起重装置。 - Try to use suitable lifting gear. 折弯丝杆的风险！Risk of bending the lead screw! - 为避运输搬运过程中对丝杆造成的损伤、弯曲变形，请务必保证过程中的小心。 - In order to avoid damage and bending deformation of the lead screw during transportation, please be careful during the process.	

4.2. 存储 / storage

⚠ CAUTION 存储不当！Improper storage! 腐蚀损害corrosion damage - 存放在封闭干燥的空间内。 - Store in a closed dry space. - 不要长时间存放在即使有遮蔽但仍有外部空气流通的区域。 - Do not store for a long time in an area with outside ventilation even if it is covered. - 在收到货物后一年内完成调试工作。 - Complete the commissioning work within one year after receiving the goods.
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5. 安装 / Install

⚠ CAUTION

割伤，绊倒和挤压危险！

- 关掉整个系统并确保它不会重新开启。
- 允许有经验并受过培训的人员来执行工作。
- 穿戴个人防护装备。

Cut, trip and crush hazard!

- Turn off the entire system and make sure it doesn't turn back on.
- Allow experienced and trained personnel to perform the work.
- Wear personal protective equipment.

锋利边缘！

- 割伤危险。
 - 戴上安全手套。
- Sharp edges!
- Cut hazard.
 - Wear safety gloves.

⚠ CAUTION

产生冲击力！造成整个系统和丝杆升降机的材料损坏。

请保证满足以下安装条件：

- 限位开关没有超限。
- 关于平行度和角度公差：见 5.1 章节。
- 所有元件的回转和运动方向都正确。
- 保证活动与固定件之间的安全距离。

Make an impact! Material damage to the entire system and lead screw lift.

Please ensure that the following installation conditions are met:

- The limit switch is not overrun.
- For parallelism and angular tolerances: see chapter 5.1.
- The rotation and direction of movement of all elements are correct.
- Guarantee a safe distance between movable and fixed parts.

缺少自锁！

由于丝杆与滚珠传动装置 KGT 之间缺少自锁引起的整个系统和丝杆升降机的材料损坏。

- 使用制动马达。
- 采用丝杆过行程防脱保护器或防旋转结构 Z。
- 尤其是垂直安装应用，确保在安装过程中丝杆或者螺母都已拧紧。

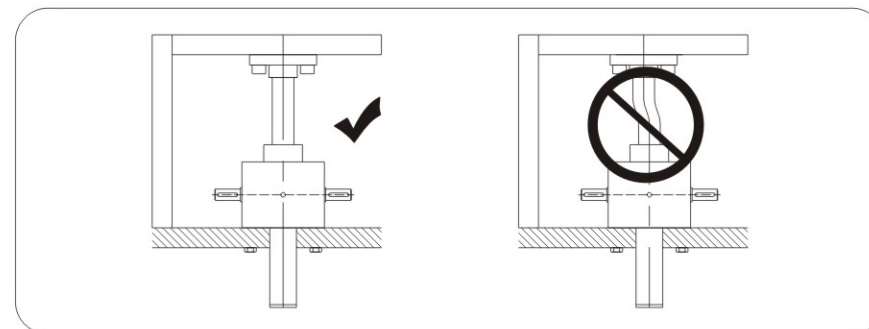
Lack of self-locking!

Material damage to the entire system and the lead screw lift due to the lack of self-locking between the lead screw and the ball gear KGT.

- Use a brake motor.
- Adopt lead screw overtravel anti-drop protector or anti-rotation structure Z.
- Especially for vertical installation applications, make sure that the lead screw or nut is tightened during installation.

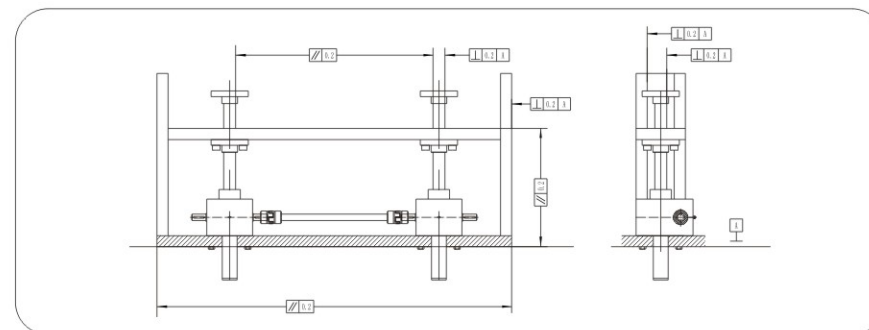
5.1. ★确保螺旋千斤顶的螺杆或者螺旋千斤顶上不承受侧向负载。

Make sure there is no side load on the screw jack screw or on the screw jack.



★不允许丝杆承受径向（侧面）力。

Radial (lateral) forces are not allowed on the lead screw.



★安装时，必须保证底座平面度、丝杆平行度、同轴度。

During installation, the flatness of the base, the parallelism of the screw, and the coaxiality must be guaranteed.

5.2. 确保安装前，产品组件以及设备安装台面清洁、无磕碰损伤，对产品输入部分采用手动或借用工具进行手动旋转输入，确定没有卡阻等异常后再进行安装工作。

6.2. Ensure that the product components and equipment installation table are clean and free from bump damage before installation. Use manual or borrowed tools to manually rotate the input part of the product, and ensure that there is no abnormality such as jamming before installation.

5.3. 连接轴与联轴器的装配 / Assembly of connecting shaft and coupling

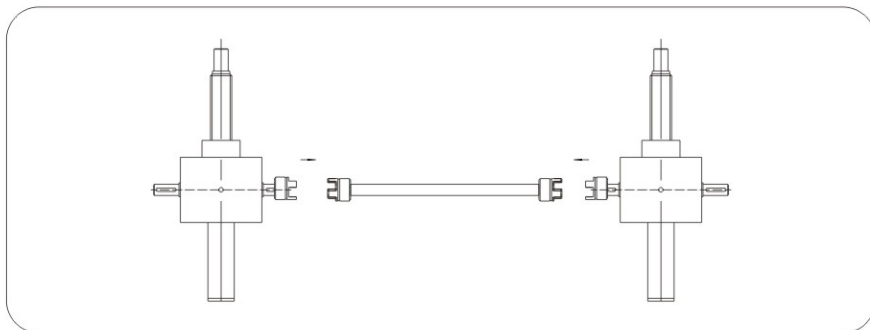
连接的丝杆升降机必须完整安装，锥齿轮传动装置必须安装在适当的位置，装配联轴器的時候，先不要固定升降机和转向器的底座以便调整位置逐步锁紧螺栓，最终锁紧螺栓后务必转动输入轴端，确定轴能转动无不正常卡阻情况后方为正常状态。

将连接轴置于轴伸长部分上（丝杆升降机或锥齿轮转向器）。检查齿轮箱是否被正确水平放置。

The connected screw jack must be completely installed, and the bevel gear drive must be installed in a proper position. When assembling the coupling, do not fix the base of the lift and steering gear first so as to adjust the position and gradually tighten the bolts. After the final tightening of the bolts, be sure to Rotate the input shaft end and make sure that the bearing can rotate without abnormal jamming and it is in a normal state.

Place the connecting shaft on the shaft extension (screw jack or bevel gearbox).

Check that the gearbox is positioned correctly and horizontally



5.4.单机或整个升降平台装配完成后务必检查去除必要组件以外的杂物。并对升降机部分的丝杆进行润滑剂的涂抹，以使丝杆属于润滑状态。

After the single machine or the whole lifting platform is assembled, be sure to check and remove the sundries other than the necessary components. Apply lubricant to the lead screw of the elevator part, so that the lead screw is in a lubricated state.

6.1. 关于连接电气 / About connecting electrical



CAUTION

电击危险！Danger of electric shock!

电击会导致死亡或重伤，只允许有经验的电工在带电环境中工作。遵照以下基本规则：

Electric shock can cause death or serious injury. Only experienced electricians are allowed to work in a live environment. Follow these basic rules:

- 系统断电。 - The system is powered off.
- 保证它不会重新开启。 - Guarantee it won't turn back on.
- 确保所有相位都不带电。 - Make sure all phases are de-energized.
- 接地并使系统短路。 - Ground and short the system.

6.2. 电机 / motor

电机的安装，打开电机接线盒，按照附带的连接布线图进行接线操作。接线时必须保证进电电源属于关闭无电状态。

For the installation of the motor, open the motor junction box and perform wiring operations according to the attached wiring diagram. When wiring, it must be ensured that the incoming power supply is turned off and has no electricity.

6.3. 试运行 / test run



CAUTION

由于没有对齐和丝杆的垂直平行度的装配引起的侧向力，会对整个升降机系统造成严重的破坏。

- 如果对齐方式不正确：移位矫正对齐方式。

- 重新试运行。

Lateral forces due to assembly without alignment and vertical parallelism of the lead screw can wreak havoc on the entire elevator system.

- If the alignment is incorrect: Shift corrects the alignment.

- Retry the run.

产生冲击力！Make an impact!

可能会损坏丝杆升降机或转向器。

May damage screw jack or bevel gearbox.

- 确保限位开关（可选）和端轴承没有超限。

- Make sure the limit switches (optional) and end bearings are not overrun.

- 确保附件不会与其他部件产生冲突。

- Make sure the attachment does not conflict with other parts.

在整个行程两个方向上运行螺旋千斤顶。当操作时，按以下步骤：

- 小心缓慢运行螺旋千斤顶。
- 尽量在没有负载或者小负载下运行。
- 电流消耗应在正常范围内并且恒定。电流大的波动表示对齐有误或者存在压力。
- 监控温度并防止过热，特别是行程长和持续运行多次时。
- 防止运行越过限位开关（可选）。

Run the screw jack in both directions throughout the stroke. When operating, follow these steps:

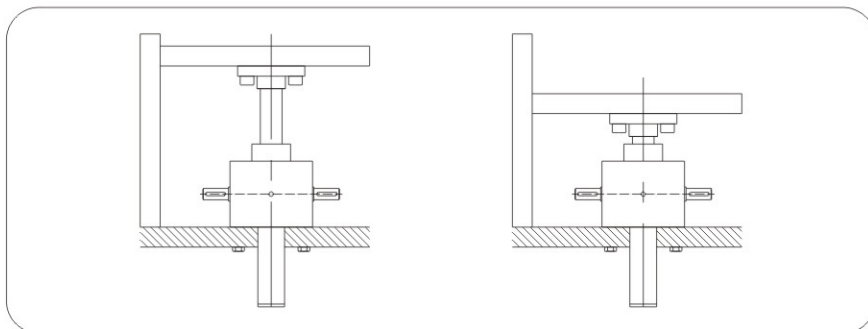
- Run the screw jack carefully and slowly.
- Try to run under no load or light load.
- Current consumption should be within the normal range and constant. Large fluctuations in current indicate misalignment or stress.
- Monitor temperature and prevent overheating, especially with long strokes and continuous runs.
- Prevent travel beyond limit switches (optional).

6.4. 移位矫正 / Displacement correction

运行时出现有异常的如卡阻、异响、过电流等必要的情况下，可以适当对组件进行矫正对齐的操作。

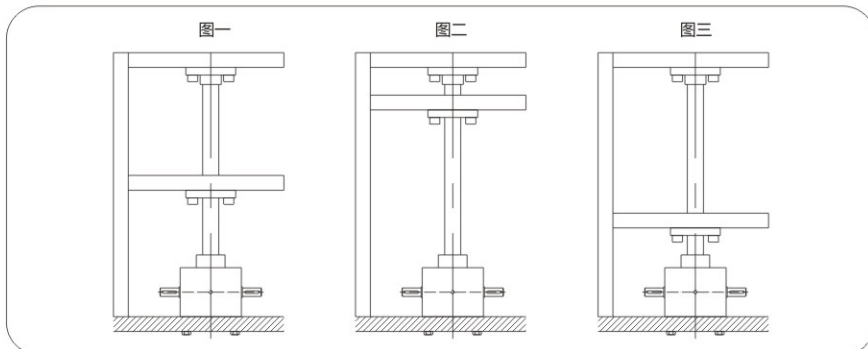
If there are abnormal situations such as jamming, abnormal noise, overcurrent, etc. during operation, the components can be properly corrected and aligned.

1型机构丝杆升降的 : Type 1 screw translating:



1. 松开位于齿轮箱壳体上和螺杆末端的固定螺栓。
Loosen the retaining bolts on the gearbox housing and at the end of the threaded rod
2. 完全退回千斤顶。Fully return the jack
3. 拧紧固定螺栓。Tighten the fixing bolts
4. 重复试运行 Repeat the test run

2型机构螺母升降的 : Type 2 nut traveling



1. 将螺母移到中间 (图1)。
2. 松开位于齿轮箱壳体上和丝杆端部平面轴承上的固定螺栓。
3. 将螺母延伸到靠近平面轴承 (图2) 的前方。
4. 拧紧端平面轴承固定螺栓。
5. 将螺母退回到靠近齿轮箱 (图3) 的前方。
6. 拧紧箱体上的固定螺栓。
7. 重复试运行
1. Move the nut to the middle (Picture 1).
2. Loosen the fixing bolts on the gearbox housing and on the flat bearing at the end of the lead screw.
3. Extend the nut near the front of the flat bearing (fig. 2).

4. Tighten the end plane bearing fixing bolts.
5. Back the nut back near the front of the gearbox (Figure 3).
6. Tighten the fixing bolts on the box.
7. Repeat the test run

6.5. 调试 / debugging

⚠ CAUTION

产生冲击力，将会损坏产品。The impact force will damage product.

- 确保限位开关 (可选) 和端轴承不会超限。
- Make sure the limit switch (optional) and end bearing are not overrun.
- 确保附件不会与其它部件产生冲突。
- Make sure that the attachment does not conflict with other parts.

1. 再一次检查所有螺丝是否拧紧。
2. 在操作负载下执行一次试运行。当操作时，遵照以下步骤：
 - 扭矩必须恒定。
 - 电流消耗必须恒定。
 - 操作温度必须在正常范围内。
 - 限位开关 (如果安装) 或者端轴承必须不能超限。
3. 在中等负载下前两个运转小时后再次润滑螺杆。
4. 通常情况下试运转为齿轮箱和螺杆的 20 到 50 个运转小时之间。在这个阶段一定会出现更大的扭矩和更高的操作温度。试运转阶段的扭矩可能会比后续的操作过程中大到 50%。
1. Double check that all screws are tight.
2. Perform a test run under operating load. When operating, follow these steps:
 - Torque must be constant.
 - Current consumption must be constant.
 - The operating temperature must be within the normal range.
 - Limit switches (if installed) or end bearings must not be overrun.
3. Relubricate the screw after the first two operating hours under moderate load.
4. A typical test run is between 20 and 50 operating hours of the gearbox and screw. Greater torque and higher operating temperatures are bound to occur at this stage. The torque during the commissioning phase may be up to 50% higher than during subsequent operation.

7. 操作维护 / Operation and maintenance

⚠ WARNING

在危险区域内的升降运动！重伤或死亡。
Lifting movements in hazardous areas! Serious injury or death.

- 离开危险区域并确保设备安全。
- Leave the danger zone and keep the equipment safe.

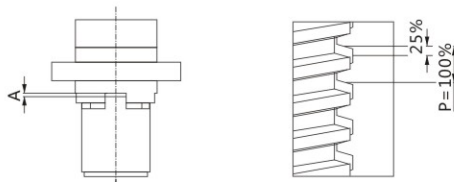
7.1. 检查维护 / Inspection and maintenance

7.1.1. 为了操作无误，必须定期检查 丝杆升降机：

- 人工检查时，务必关掉设备，确保不会对人员造成安全影响。
- 应该在第一个月内进行第一次检查，更多的检查应至少每年执行二次。
- 对于有安全螺母装置的，务必检查磨损情况，允许最大磨损量为螺距的25%，如下图所示（A点尺寸出厂有标准值，以此做磨损尺寸对比）：

7.1.1.1. In order to operate correctly, screw jack must be checked regularly:

- During manual inspection, be sure to turn off the equipment to ensure that there is no safety impact on personnel.
- The first inspection should be carried out within the first month and further inspections should be carried out at least twice a year.
- For those with safety nut device, be sure to check the wear condition, the maximum allowable wear amount is 25% of the thread pitch, as shown in the figure below (the size of point A has a standard value from the factory, so as to compare the wear size):



7.1.2. 在开机运行时，对一下项目进行检查：

- 针对润滑、各连接部件紧固状态、部件磨损情况等逐一检查并清洁润滑。
- 设备整体运行的温升、电流是否在允许范围内并电流状态稳定。
- 运行的平稳性无振动、抖动情况。
- 温度在允许范围内。

7.1.2. When starting up, check the following items:

- Check, clean and lubricate one by one for lubrication, the tightening state of each connecting part, and the wear of parts.
- Whether the temperature rise and current of the overall operation of the equipment are within the allowable range and the current state is stable.
- Stability of operation without vibration and shaking.
- The temperature is within the allowable range.

7.2. 润滑 / Lubrication

7.2.1. 良好的润滑效果和正确润滑油品的选用对丝杆升降机的正确操作和适用寿命都是至关重要的。

Good lubricating effect and selection of correct lubricating oil are crucial to the correct operation and service life of screw jack.

7.2.2. 以下为各升降机、推杆、转向器产品的润滑剂牌号：

The following are the lubricant grades of screw jack, electronic cylinder, and bevel gearbox products:

产品类别 Product Category	系列 series	润滑品类 Lubricants	推荐品牌 Recommended Brand
升降机、推杆 screw jack, electronic cylinder	NDJ\HK\NDM\SWL/LAP	1#/2#合成润滑脂 1#/2# synthetic grease	美孚、壳牌、 Mobil, Shell
伞齿轮升降机 Bevel gear screw jack	NDL	1#/2#合成润滑脂 1#/2# synthetic grease	美孚、壳牌、 Mobil, Shell
转向器150Nm以下 bevel gearbox below 150Nm	T、HD	00#合成润滑脂 00# synthetic grease	美孚、壳牌、 Mobil, Shell
转向器150Nm以上 bevel gearbox above 150Nm	T、HD	220#/320#合成润滑油 220#/320# Synthetic lubricating oil	美孚、壳牌、 Mobil, Shell

7.2.3. 升降机和推杆产品的箱体为开放式设计（除定制类产品），箱体内部部皆为润滑脂润滑，检查补偿时用专用注油枪，打入适量油脂。

7.2.3. The box body of screw jack and electronic cylinder products is of open design (except for customized products), and the interior of the box body is lubricated with grease. When checking and compensating, use special oil filling to grab a proper amount of grease.

7.2.4. 转向器产品分扭矩段进行不同介质的润滑，润滑剂用量见下表：

7.2.4. The bevel gearbox products are lubricated with different media in different torque sections. The amount of lubricant is shown in the following table:

型号model	剂量dose	型号model	剂量dose
T2	0.15L	HD09	0.5L
T4	0.6L	HD11	0.8L
T6	1L	HD17	1.2L
T7	1.5L	HD21	2.1L
T8	2.5L	HD24	3.5L
T10	4.2L	HD28	6.5L
T12	8L		
T16	13.5L		
T20	25L		
T25	40L		

7.2.5. 升降机的丝杆部分，必须按要求定期润滑，润滑养护参考下表：

The screw part of the elevator must be regularly lubricated as required. Refer to the following table for lubrication and maintenance:

程序program	周期cycle
再次润滑丝杆Lubricate the screw again	每 500 个双向行程Every 500 bidirectional strokes
清洁丝杆并重新润滑 Clean the lead screw and re-grease	如果螺杆不洁净If the screw is not clean
	正常操作时每年二次Twice a year during normal operation
	在洁净情况下每年一次Once a year under clean conditions

★ 润滑周期依应用实际情况来判定，监控润滑脂状态，并据此确定周期。

★ The lubricating cycle is determined according to the actual situation of the application, monitoring the state of the grease, and determining the cycle accordingly.

7.2.6. 升降机、推杆等主机部分每6个月进行一次油脂润滑的补充，在箱体注油口位置采用注油枪注入。转向器产品每使用1500小时，进行一次换油操作。

The main parts of the lifting and linear actuator et. Should be supplemented with lubricant grease every 6 months. The lubricant grease is injected from oil filling hole of housing by the grease gun. The spiral bevel gearbox should be replaced the lubricant grease every 1500 hours.

7.2.7. 补偿润滑时的操作警示：Operation warning during compensation lubrication:

 WARNING
升降行程区域内丝杆行程内 确保润滑操作时，操作人员不会在升降行程的范围内，否则会照成挤压甚至人生伤害。 - 关掉整个系统并保证它不会重新开启。 - 升降机在行程最长时进行润滑的操作。 - 采用毛刷在丝杆的不同部位进行均匀的涂抹。 - 对于安装后的润滑：依次在几个位置润滑，这样整个螺杆就得到均衡地润滑。 Within the lift stroke area Within the lead screw lift stroke Make sure that the operator will not be within the range of the lifting stroke during the lubricating operation, otherwise it will be squeezed or even injured. - Turn off the entire system and make sure it doesn't turn back on. - The lifter is lubricated at the longest stroke. - Apply evenly on different parts of the screw with a brush. - For post-installation lubrication: lubricate several locations in sequence so that the entire screw is lubricated evenly.



CAUTION

不适合的润滑脂，会造成丝杆的损坏

- 不要多用润滑脂。
- 不要混合不同品类的润滑脂。
- 当更换润滑脂时：先清洁螺杆再重新润滑。
- 请尽量采用品牌 润滑脂

Unsuitable grease will cause damage to the screw

- Don't use too much grease.
- Do not mix different types of grease.
- When changing the grease: clean the screw first and then re-grease.
- Please try to use brand grease



NOTE

对于不同的应用有不同的润滑脂。There are different greases for different applications.

- 高温 - high temperature
- 低温 - low temperature
- 食品加工工业 - Food processing industry
- 重型应用 - Heavy duty applications
- 其他 - other

涉及以上类型的，请咨询 提供专业的建议。

Involving the above types, please consult to provide professional advice.

7.2.8. 滚珠丝杆润滑维护 / Ball screw lubrication maintenance

程序program	周期cycle
再次润滑螺杆 Relubricate the screw	如果负载大，在 100 个有效工作小时后 If the load is heavy, after 100 valid working hours
	如果正常或轻负载，在 300 个有效工作小时后 If normal or light load, after 300 valid operating hours
清洁丝杆并重新润滑 Clean the lead screw and re-grease	如果丝杆不洁净If the lead screw is not clean

滚珠丝杆表面油脂涂抹的参考标准为？平均1cm丝杆外径用1ml油脂量。在涂抹油脂前必须保证丝杆的清洁。

What is the reference standard for grease application on the surface of the ball screw? The average 1cm outer diameter of the screw rod uses 1ml of grease. The screw must be clean before applying grease.

8. 一般故障的处理 / Troubleshooting in general

8.1. 常见故障的分析 / Analysis of common faults

错误mistake	可能原因possible reason	处理方法Approach
丝杆噪声过大或震动 The screw is too noisy or vibrates	没有正确润滑丝杆，产生滑动粘滞。 The lead screw is not lubricated properly, resulting in sliding sticking.	- 换一种润滑脂：- Change to another grease: - 具有高粘度基油- Has a high viscosity base oil - 具有添加剂 - with additives - 可能含有固体润滑剂 - may contain solid lubricants
	系统几何误差 System geometric error	- 检查是否对齐：- Check for alignment: - 螺杆间平行度 - Parallelism between screws - 螺杆与导轨间平行度 - Parallelism between screw and guide rail - 接触面（齿轮箱，螺母，法兰等）的角度对其情况 to its condition
	螺杆细长 slender screw	- 如有可能，请为螺杆轴承提供附加的支架加固设计。 - If possible, provide additional bracket reinforcement designs for the screw bearings
	螺杆温度过高（大约高于90 °C） Excessive screw temperature (approximately above 90 °C)	- 检查操作参数，缩短工作周期或者减小负载。 - Check the operating parameters, shorten the duty cycle or reduce the load. 请咨询NUODUN诺顿，提供专业的建议。 Please consult NUODUN for professional advice.
	螺杆达到共振频率 The screw reaches the resonance frequency	- 改变转速：变快或者变慢（在限制值内）。 - Change speed: faster or slower (within limits).
	负载过大overload	- 在走合期减小负载。 - Reduce the load during the run-in period.
梯形螺纹的高度磨损 High wear of trapezoidal threads	系统传来的振动 Vibration from the system	- 在移动螺母下方安装塑料或橡胶垫（用于 R 型） - Install a plastic or rubber gasket under the moving nut (for R type)
	螺杆不洁净 The screw is not clean	- 清洁螺杆并重新润滑。 - Clean the screw and re-lubricate. - 缩短润滑周期。 - Shorten the lubrication cycle.
	螺杆润滑脂选用不当 Improper selection of screw grease	- 检查螺杆润滑脂，请咨询，提供专业的建议。（关于负载，转速，等） - Check screw grease, please consult for professional advice. (regarding load, speed, etc.) - 如有必要请清洁螺杆并重新润滑。 - Clean and re-grease the screw if necessary.
联轴器或者连接轴有噪音 Coupling or connecting shaft is noisy	缺少润滑脂 lack of grease	- 如有必要请清洁螺杆并重新润滑。 - Clean and re-grease the screw if necessary. - 缩短润滑周期。 - Shorten the lubrication cycle.
	联轴器橡胶体产生摩擦 Coupling rubber body produces friction	- 用凡士林或者塑溶润滑脂润滑联轴器橡胶体。 - Lubricate the coupling rubber body with petroleum jelly or plastisol grease.
	超过允许偏差 Exceed the allowable deviation	- 检查对齐情况并且尽量校正。 - Check the alignment and try to correct it.

错误mistake	可能原因possible reason	处理方法Approach
轴封圈轻微漏油 Shaft seal ring slightly leaking oil	轻微漏油 Minor oil leak	- 某些少量漏油是正常的并且不是技术问题。 - Some small oil leaks are normal and not a technical problem. - 清理掉泄露的油液并持续监测。 - Clean up leaking oil and monitor continuously.
严重漏油 serious oil spill	轴封圈失效或者齿轮箱内部压力过大 The shaft seal ring fails or the pressure inside the gearbox is too high	联系请咨询，并发送照片记录。 Contact Please consult and send a photo record.

8.2. 长时间停机后的重启 / Restart after prolonged downtime

长时间停机后重新启动前，必须检查产品外观锈蚀、丝杆锈蚀情况并进行清洁润滑维护，并对主齿轮或者蜗轮箱进行手动检查，确定输入轴正常可以旋转并重新补偿润滑剂后方可进行试运行

Before restarting after a long-term shutdown, it is necessary to check the appearance of the product for rust, the rust of the lead screw, clean and lubricate the maintenance, and manually check the main gear or worm gear box to confirm that the input shaft can rotate normally and re-compensate the lubricant before proceeding.