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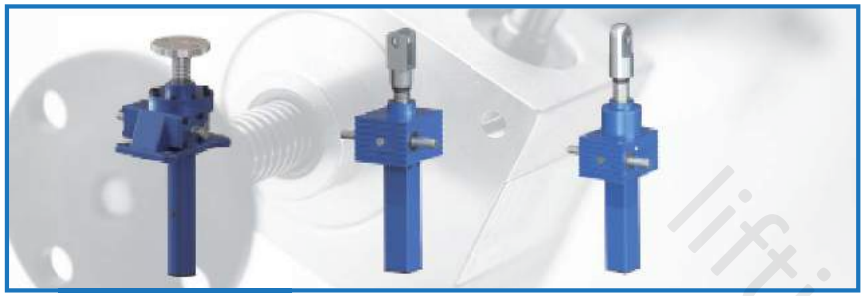
Machine Screw Jack Description



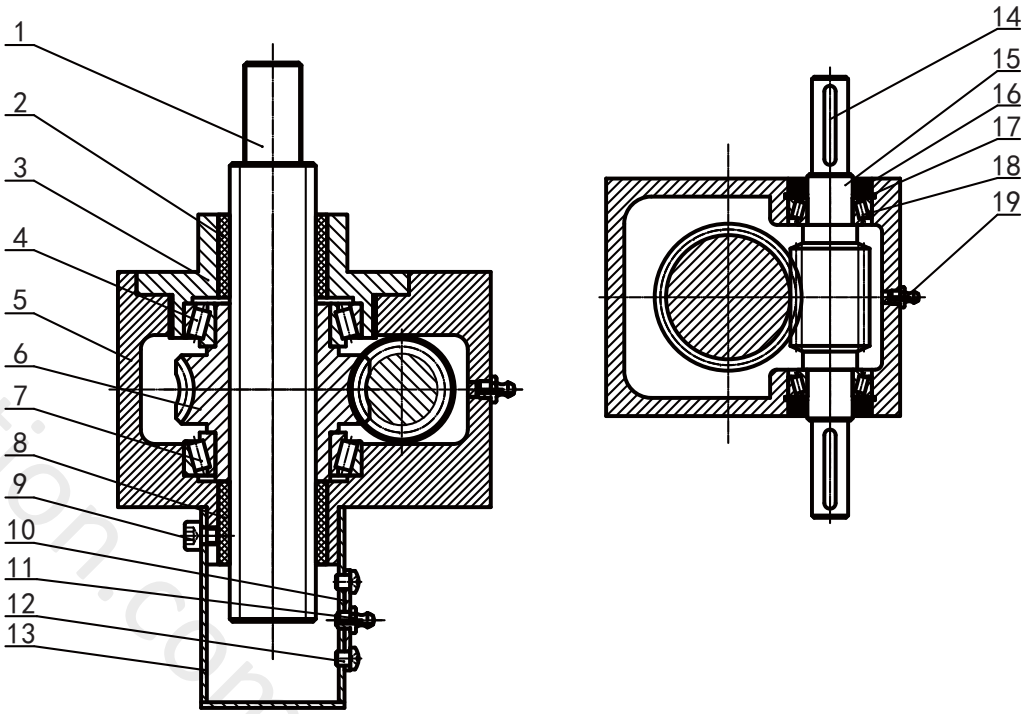
Products Description

Worm gear screw jack is a mechatronics motion execution unit which cleverly combined electric motor, reducer system and lead screw transmission etc. together. It can be used alone, but also can be used multiple combinations, through bevel gearboxes, couplings, connecting shafts Etc combine together, it can accurately control mechanism' lifting, reciprocating, flip and other movement. Can replace the traditional hydraulic and pneumatic transmission in many occasions. Worm gear screw jack can self-locking and the lifting load capacity is from 2.5KN to 1000KN, is widely used in solar energy, metallurgy, food,Water conservancy and other industries.

Products Advantages

(1) Good rigidity, Accurate positioning, Usually Self-locking after power outage.
(2) The system is simple and compact, eliminating the need for complex valve, fuel tank and piping systems.
(3) Small noise, no fluid leakage, the small environmental pollution.
(4) Due to the speed reduction mechanism, the system can transmit large torque with smaller motors power.
(5) Can constitute the closed-loop servo control system, realizes the automatic control.
(6) Mechanical precision, compact design, durable, less maintenance time, long service life.
(7) Using standard components, assembly is simple, saving time and effort.
(8) Easier to install, longer run times, more efficient due to heat dissipation, so extended lubrication intervals.

LMK Cubic Machine Screw Jack Structure Drawings



Drawings 1

1. Trapezoidal Screw	2. Guide Sleeve I	3. Upper End Cover	4. Bearing I
5. Jack Housing	6. Worm Gear	7. Bearing II	8. Guide Sleeve II
9. Bolt I	10. Grease Fitting Gasket		11. Grease Fitting I
12. Bolt II	13. Protective Tube	14. Flat Key	15. Worm Shaft
16. Oil Seal	17. Bearings Circlip	18. Bearing III	19. Grease Fitting I I

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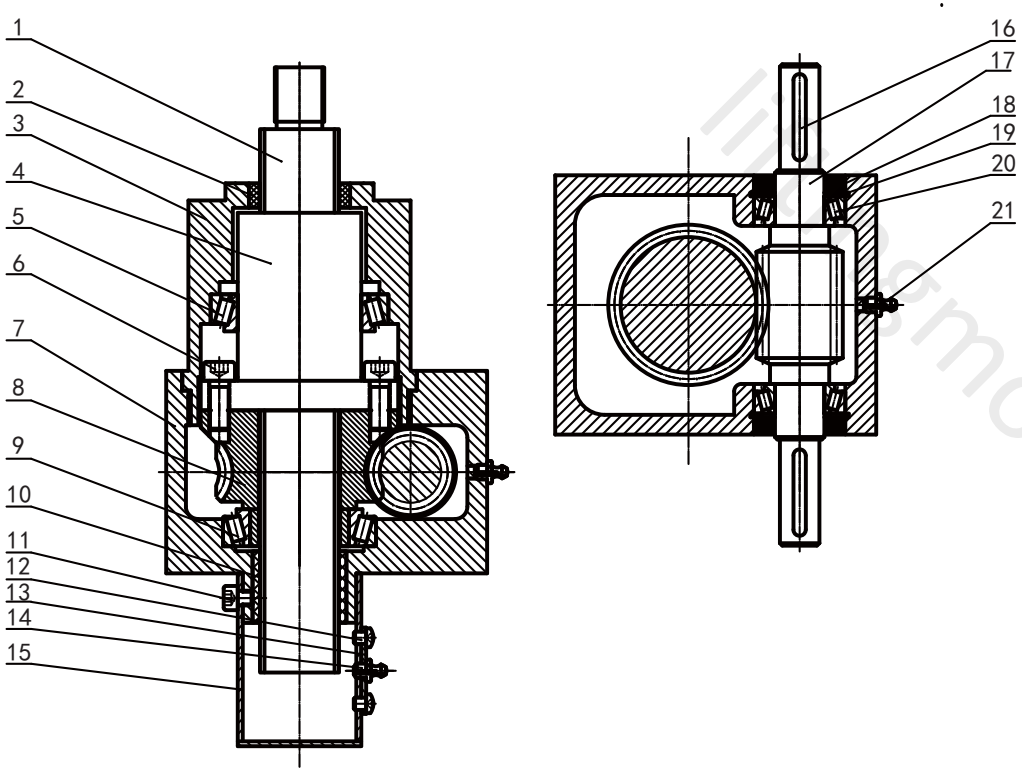
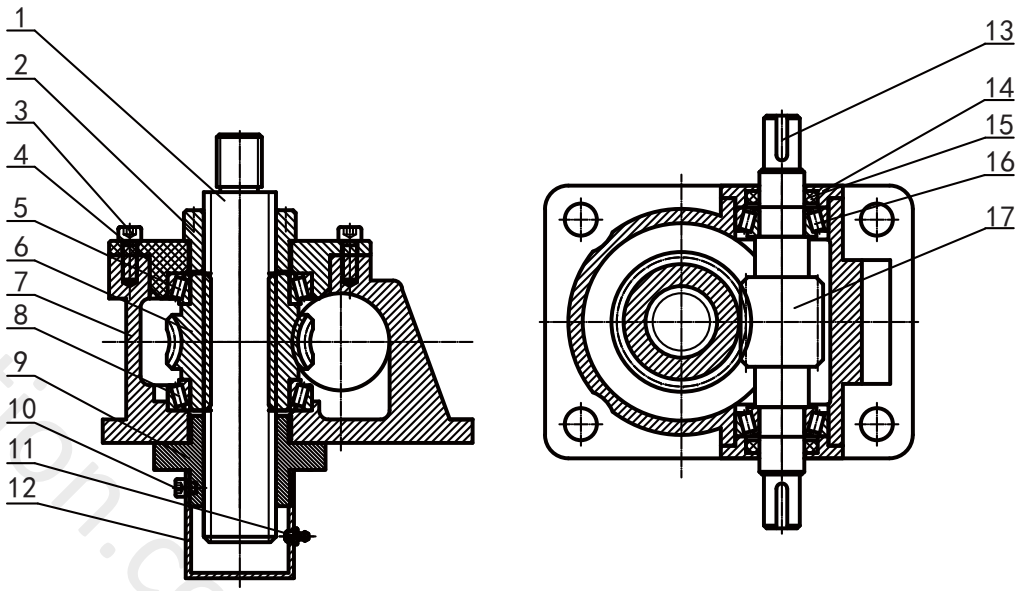
LMK Cubic Ball Screw Jack Structure Drawings



Drawings 2

1. Ball Screw	2. Guide Sleeve I	3. Upper End Cover	4. Ball Nut
5. Bearing I	6. Bolt I	7. Jack Housing	8. Worm Gear
9. Bearing II	10.Guide Sleeve	11. Bolt II	12. Bolt III
13. Grease Fitting	Gasket	14. Grease Fitting I	15. Protective Tube
16. Flat Key	17. Worm Shaft	18. Oil Seal	19. Worm Shaft Circlip
20. Bearing III	21. Grease Fitting II		

LMS/LMM Machine Screw Jack Structure Drawings



Drawings 3

1.Trapezoidal Screw	2. Guide Sleeve	3. Bolt I	4. Upper End Cover
5. Bearing I	6. Worm Gear	7. Jack Housing	8. Bearing II
9. Locating sleeve	10. Bolt II	11.Grease Fitting	12. Protective Tube
13. Flat Key	14. Worm End Cover	15. Oil Seal	16. Bearing III
17. Worm Shaft			

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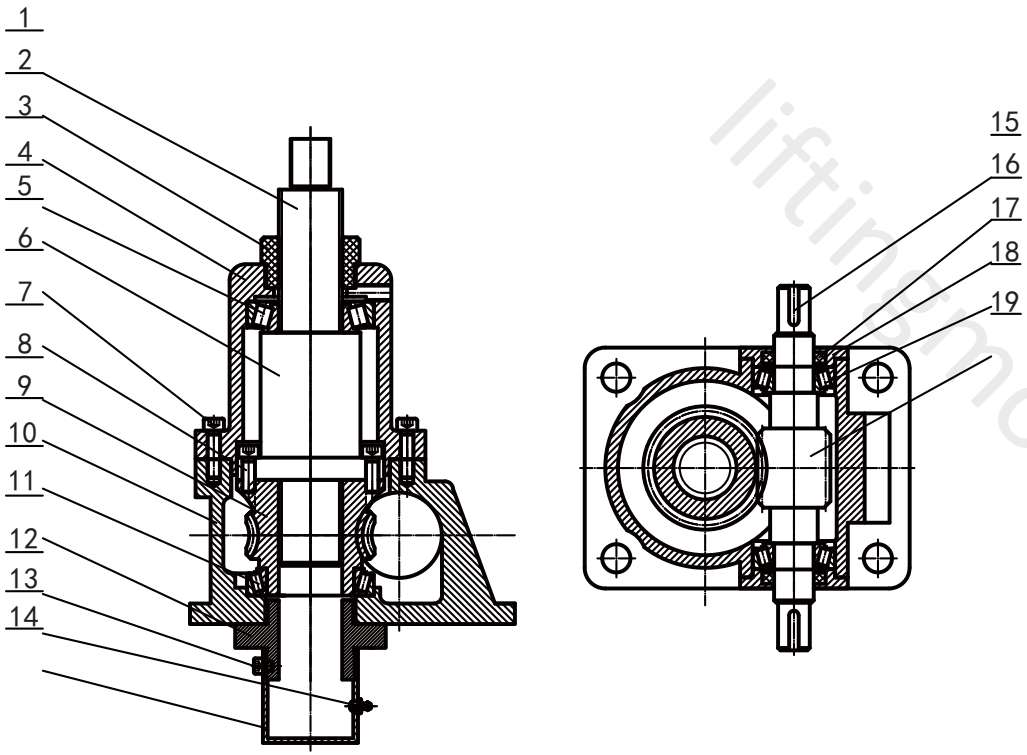
LMB Ball Screw Jack Structure Drawings



Drawings 4

1. Ball Screw
2. Guide Sleeve I
3. Upper End Cover
4. Bearing I
5. Ball Nut
6. Bolt I
7. Bolt II
8. Worm Gear
9. Jack Housing
10. Bearing II
11. Locating sleeve
12. Bolt III
13. Grease Fitting
14. Protective Tube
15. Flat Key
16. Oil Seal
17. Worm End Cover
18. Bearing III
19. Worm Shaft

Precautions for Use

(1) Selecting the screw jack model, regardless of static load, dynamic load, the impact load shall not exceed its maximum allowable load, selecting the screw jack with sufficient capacity according to the safety factor, the stroke and the stability of the screw jack.

(2) Be sure to pay attention to the lifting screw shaft speed and load to match, for screw jack' maximum allowable load, allow external load, allow the screw shaft rotation speed and other items for verification, if more than the products data will cause the screw jack equipment of major damage

(3) The using ambient temperature is commonly - 15 ℃ -- 80 ℃, when the ambient temperature is lower than 0 ℃, Grease should be heated above 0 ° C before starting, low temperature and high temperature should use appropriate grease according to the ambient temperature, when the ambient temperature is more than the permissible temperature, please contact our engineer.

Use place: indoor without rain
Ambient Air: Factory with not too much dust
Relative humidity: less than 85%
If the environmental humidity is big or have rain, we can custom stainless steel screw jack according to customer requirements

(4) maximum allowable input shaft speed is 1500r/min.

(5)Screw jack can not be operated continuously, single screw jack load time rate (%ED) is calculated by 30 minutes, the trapezoidal screw jack load time rate shall not exceed 20% ED, the ball screw jack load time rate shall not exceed 30% ED.

load time rate (%ED)=1 action cycle of the working time/ (1 action cycle of the working time+1 action cycle of idle time)×100%

(6) Must ensure sufficient driving power source

(7) Trapezoidal screw jack has the self-locking function, but working in larger vibration impact will cause self-locking function failure, so you need to add a braking device or select a drive source with brake.

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Ball screw jack does not have a self-locking function, in order to prevent the reverse caused by the axial load and lifting screw self-weight, you must add a braking device or select a drive source with brake, making good guide post for the ball screw jack,Make sure the braking torque is greater than the holding torque.

(8) When the screw jack is working, artificial forced shutdown should not be conducted, otherwise will make the screw jack received badly damaged condition.

(9) The lifting mechanism designed according to industrial use, is not recommended for manned use

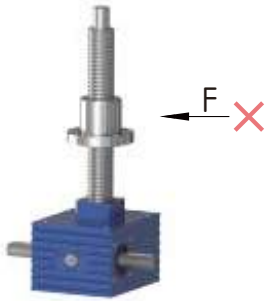
Installation Requirements

(1) Base installation, please calibration the center line height, couplings connection, please calibration coaxiality. When flexible coupling connection, Floating amount shall not exceed the couplings' allowed range, when rigid connection, shall ensure the Installation connection' shape connection position tolerances. (drawings 5, drawings 6)

Drawings 5

Drawings 6

(2) During the screw jack installation, should ensure the absolute vertical of the screw jack and the mounting surface, external lateral force upon screw jack is prohibited, the lifting screw is only subjected to axial forces. (drawings 7)



Drawings 7

(3) When installation the housing of screw jack, we should consider the worm gear housing under the static load and impact load of the housing rigidity, reasonable installation, avoid the body mounting holes for a damaged.

(4) When screw jack installation, we should install guide device reasonably according to site working condition, should ensure no any lateral force imposed on the lifting screw. (drawings 8)

Drawings 8

(5) Screw jack housing must be firmly installed in the machinery equipment to avoid loosening or vibration.

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(6)Before installing the screw jack, drive source and equipment, we should check the deviation dimensions of shaft diameter, aperture, key and keyway to avoid assemble too tight damage the bearing and assemble too loose affect the power transmission.

(7)When using the motor direct-connected the screw jack, if the motor weight is too large, please set up support device. (drawings 9)

Drawings 9

(8)When the sprockets, gears and other transmission parts mount the shaft extension, should be close to the bearing to reduce the axial extension bending stress.

(9) Install bolts generally adopt 8.8 high strength bolts.

Using and Maintenance

(1)Please add 0 # or 1 # lithium grease before using the screw jack (Refueling capacity, please refer below sheet), we should also daub the lithium grease on the lifting screw and traveling nut. (Special working environment, oil grade, please contact with our technical staff.)

Model	LMK2.5	LMK5	LMK10	LMK20	LMK50	LMK80
Oil content	0.05	0.1	0.15	0.25	0.35	0.5
Model	LMK100	LMK 200	LMK 300	LMK 450	LMK 700	LMK1000
Oil content	0.6	0.75	1.0	1.5	2.0	2.5

Model	LMM1	LMM2.5	LMM5	LMM10	LMM15	LMM20
Oil content	0.08	0.1	0.25	0.5	0.6	0.75
Model	LMM30	LMM50	LMM75	LMM100		
Oil content	1.25	2.1	2.5	2.8		

(2) Before testing the screw jack, please make good limit position and confirm lifting screw rotate direction to prevent lifting screw go out or go top to the housing, causing damage.

(3) According to the use of the operating conditions, you should be regularly add grease.

(4) Work found in abnormal situation should stop check, can not continue to work until identify troubleshooting. Always check the grease situation, pay attention to make up the oil, timely replacement of metamorphic oil.

(5) Because the worm gear and nut are easy to wear, during using process, please regularly check the wear of worm gear and nuts to avoid accidents.

(6) The screw jack should be always kept clean, outside surface shall not accumulate dust to avoid affect heat dissipation.

Storage: Store in a dry ventilation, room temperature environment. When the storage time is more than 3 months, you should be done anti-rust treatment. When the screw jack storage time is more than one year, please check whether the oil seal is aging and whether oil deterioration.

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Failure Causes and Exclusion

Problems	Failure Causes	Solution Method
Vibration	Driving source Improper connected to the screw jack	Adjust to the appropriate position, re-fastening
	Worm gear pair tooth surface wear or damage	Replace the worm gear
	Bearing wear	Replace the bearing
	Bolt fall off	Fastening bolts
Noise	Bearing damage or clearance is too large	Replace the bearing
	Not good worm gear meshing	Replace the worm gear
	Too little grease	Add grease
Oil spills	Seal lip wear	Replace the Oil seal
	Oil seal shaft neck wear	Replace the input shaft or worm gear
Worm gear tooth surface wear too fast	Overload operation	Adjusted to the appropriate load
	Grease is not in conformity with the requirements	Replace the grease
	Too little grease	Add grease
	Not replace grease timely, grease deterioration	Add grease timely
	Operation temperature is too high	Reduce the environment temperature

Problems	Failure Causes	Solution Method
Lifting screw tooth surface wear too fast	Overload operation	Adjusted to the appropriate load
	Grease is dry or deteriorated	Remove metamorphic grease and refill
	With lateral load	Add guide device
Screw jack can not start up	Beyond the maximum load	Reduce the load or use big model screw jack
	Drive source is too small	Increase the drive source
	Difficulty Installation	Adjust the screw jack mounting surface, workpiece and guide