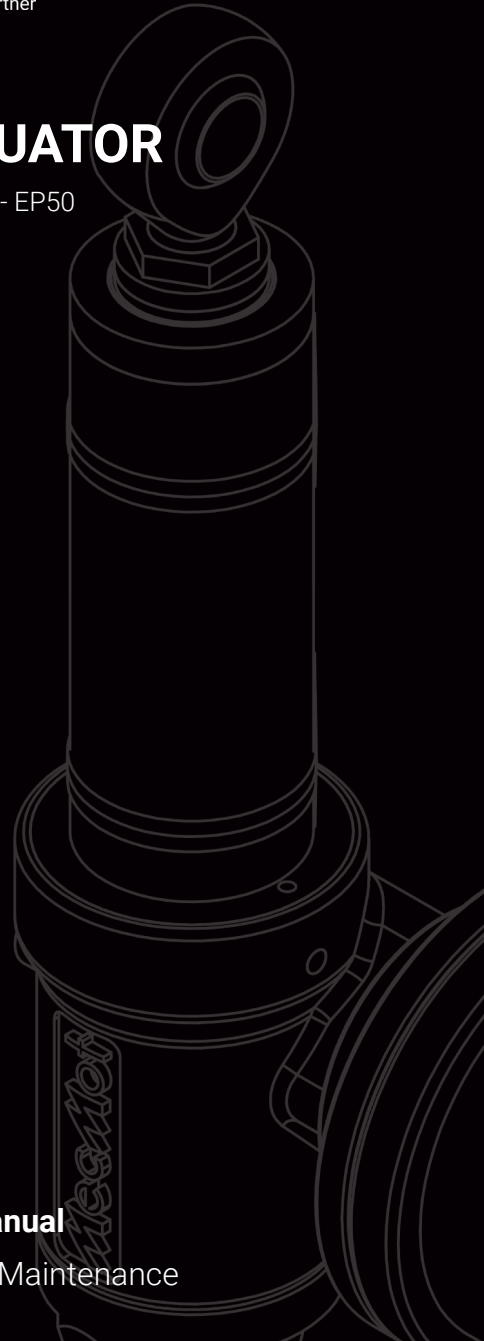


LINEAR ACTUATOR

EP6 - EP10 - EP25 - EP50



Instruction Manual

Installation-Operation-Maintenance

About Us:

Setting out with the principle of providing world-class solutions to its customers using the latest technologies, MecMot has quickly created value in its sector and managed to become one of the leading companies.

MecMot, which started its operations in a 25 m² design office in 2017, provides product supply to many countries in the world today with its 30+ expert staff, high production capacity and wide stock infrastructure.

MecMot, which has proven itself in design and production, also provides special product production to its customers in line with their requests and needs with its high quality standards.

Product:

- Screw Jack
- Bevel Gearbox
- Linear Actuator



MecMot Catalog QR Kode

Contact:

Mecmot Linear Machine Systems Industry and Trade Ltd. Co.

Ankara Rd. Vadi St, Akturk Industrial Estate

No:6/ A24-A25-A26, Kurtkoy, Pendik/ İstanbul, Türkiye

Phone: +90 216 807 20 17

info@mecmot.com | www.mecmot.com



This instruction manual provides essential information for long-term use of the product. Before the installation, operation and maintenance of each product, this manual should be read. Disregard to comply with the installation, use and maintenance instructions in this manual would result in the termination of the warranty conditions of the product. MecMot will not be held responsible for any damage arising from the failure to comply with the instructions.

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1. General Precautions

The instruction manual should be ready and available to the installation personnel or the company. The manual should be passed to any subsequent owner or user of the equipment and the instructions that should be followed during installation, operating, or maintenance should be explained to *end user clearly.

*End User: The user who will be operating the installed product. This manual should be read before product opening and should be complied with.







CAUTION

Failure to comply with the below listed precautions will completely relieve the manufacturer from any liability for damage caused to persons and / or property.

- Transportation, replacement, use, operating, maintenance, and inspection of the product should be held by trained and experienced engineers.
- Do not use the product for any purpose other than these intended purposes indicated in this manual.
- The manufacturer accepts no liability in case of unauthorized conversions of the product.
- The personnel that is responsible for operating should be trained and qualified for the respective work, have read and understood this instruction manual.

1.1 Symbols and Definitions

| | |
|--|---|
|  Danger | Failure to comply with this warning <u>will</u> lead to serious danger for the personnel such as death or serious injuries. |
|  Warning | Failure to comply with this warning <u>may</u> lead to serious danger for the personnel such as death or serious injuries. |
|  Coution | Failure to comply with this warning may lead to minor injuries. |
|  Note | Notes for understanding or optimizing working processes. |

1.2 Standard Product Operating Conditions

In order to ensure that the product operates at maximum efficiency with a long life, the below indicated instructions should be complied with.

1.2.1 Use for the Intended Purpose

Linear Actuator is suitable only for lifting, lowering, tilting, position and advancing movements within the specified lifting capacity ranges. The user is responsible to ensure correct use.

1.2.2 Operating Environment

Operation temperature range is between -10 to +60° C. Relative humidity range is 10 - 90 % non-condensing.

1.2.3 Lifting Load

It is the max static load that could be applied. Products can be used within the scope and limits specified in our catalogues and brochures. This amount is also indicated on the label of the products.

1.3 Duties of the Operating Company

Ensure that the linear actuator should be operated and maintained only in compliance with this instruction manual and the rules and regulations applicable in the country of use.

Ensure that the personnel responsible for operating the linear actuator are authorized, trained and qualified for the respective work. The personnel should read and understand this instruction manual. The personnel should know the applicable safety rules and wear personal safety equipment.

2. Scope of Supply

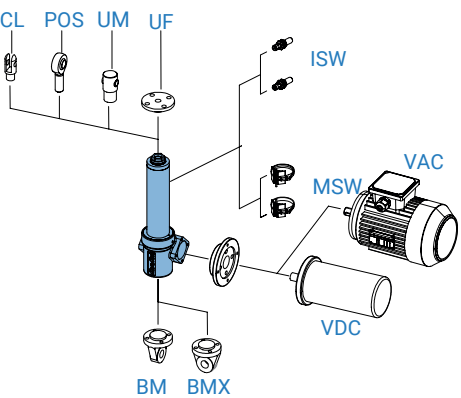
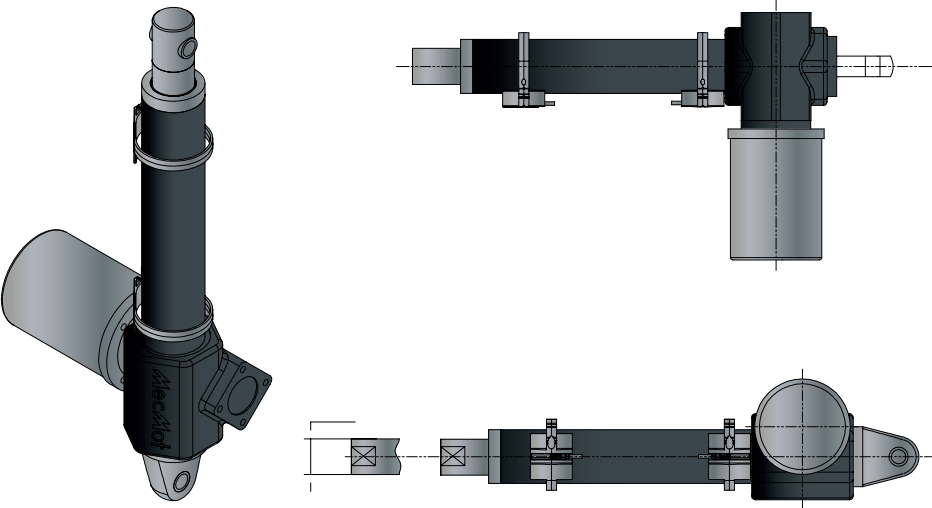
The linear actuator is delivered in a secure wooden box in order to prevent possible damage in transit. In case of a shock and impact, the foam material inside prevents the products from contacting with each other inside the case.








The scope of supply of the linear actuator includes the parts below;

- MecMot Linear Actuator
- Instruction Manual
- Catalogue

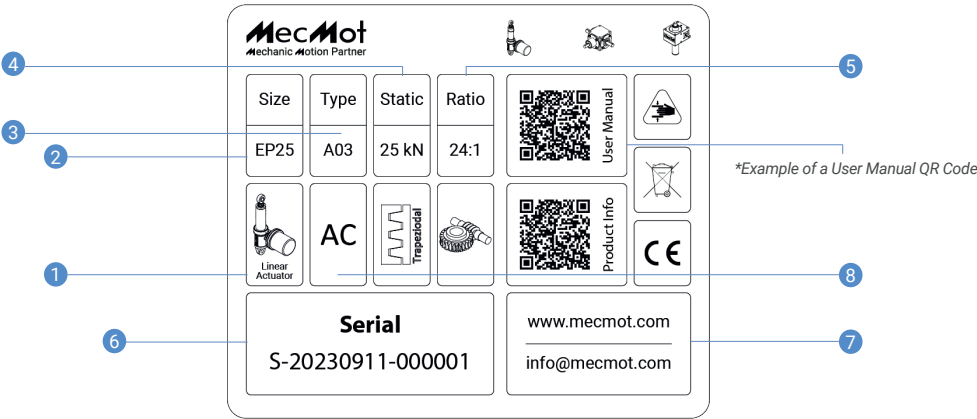
3. Description of the Product

3.1 Overview



-  V1-Double output without motor
-  V2-Right output without motor
-  V3-Left output without motor
-  V4-Left output with motor flange
-  V5-Right output with motor flange
-  V6-Left motor flange - right output
-  V7-Right motor flange - left output

3.2 Rating Plate



*Example of MecMot Screw Jack Rating Plate

1. Product Name
2. Product Size
3. Product Type
4. Maximum Static Load
5. Ratio
6. Serial Number (Production end Date / Warranty Start Date - Order Code)
7. MecMot Contact Data
8. Motor Type

3.3 Order Code

| | 10 | A01 | 200 | UM | BM | MSW | V6 | KK | ... |
|----|----|-----|-----|----|----|-----|----|----|-----|
| EP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

1. Linear Actuator Size

6 - 10 - 25 - 50

2. Version

A01 - A02 - A03 - A04 - A05 - A11 - A21
A31 - A41 - A51

3. Stroke

100 - 200 - 300 - 400 - 500 - 600 - 700
800

4. Front Attachment

UM - UF - CR - POS

5. Rear Attachment Position

BM - Standart
BMX - 90°

6. Stroke end Switches

ISW - Inductive promity switches
MSW - Magnetic Switches
ASW - Electric Switches

7. Actuator Input

V1 - Double output without motor
V2 - Right output without motor
V3 - Left output without motor
V4 - Left output with motor flange
V5 - Right output with motor flange
V6 - Left motor flange - right output
V7 - Right motor flange - left output

8. Accessories

SN - Safety nut
KK - Bellow

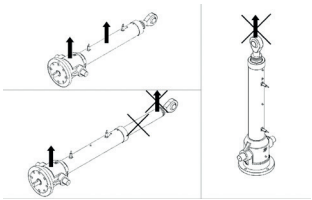
9. Other Specifications

Example: Low noise
Push rod stainless steel

4. Transport and Storage

4.1 Transport

During transit, falling loads may lead to serious injuries. In order to prevent possible damage;





CAUTION

- Wear personal safety equipment.
- Do not remain under a suspended load. Pay attention to the product during the handling and transport since the product might drop or reverse.
- Always use lifting bolts or other suitable lifting equipment in order to prevent damages and / or injuries caused by the damaged product, by falling or slipping of the product.
- For lifting and transporting the linear actuator, the push rod must be in retracted position.
- When transporting the product with attached motor, always provide support for the motor, or remove the motor before transporting the product.
- Lift the linear actuator from the housing and outer tube using suitable slings.
- Do not lift the actuator from the push rod and / or the motor.
- The spindle inside the actuator is not self-locking. Never lift the linear actuator upright from the push rod as the linear actuator could be back driven by its own weight.
- Prevent the actuator from swinging during lifting operations.



WARNING

- On receipt, check the packaging for signs of damage
- Use suitable load lifting equipment
- The end user is responsible for any damage that occurs during the transportation.



DANGER

- Do not step under a lifted product. Falling loads may lead to serious injuries and / or death.

4.2 Storage



CAUTION

The storage life of MecMot linear actuator is one year.

The environmental conditions of the storage:

- Do not store areas with humidity
- Do not store outside.
- The product should not contact with chemicals that may cause corrosion and should be kept out.
- The product has been applied corrosion protection oil on its surface. This oil should not be removed. If removed, the corrosion protection oil should be applied.

** For other storage conditions and storage times, please contact MecMot.*

5. Installation



WARNING

- Allow only skilled and trained personnel to perform the work.
- Switch off the entire system and secure it against switching on again.
- Wear personal safety equipment before installation.
- Wear safety gloves for the sharp edges of the product.

Check the following instructions when you connect the product to a load or a motor. Conditions to be considered during the installation of the product.

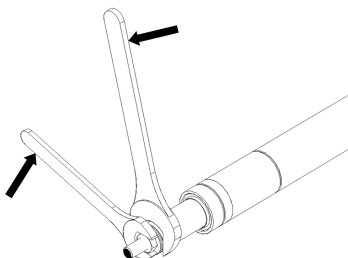


CAUTION

- Switch off the entire system and secure it against switching on again.
- Before installing the product on the machine, pay attention to the directions of rotation. Rotating in the wrong direction may cause an accident or damage.
- Before proceeding to the electric connection, make sure the supply voltage is turned off.
- Before turning-on the motor and during the operation, make sure the electric connections and the mechanical connections of the actuator are tightened and stable.
- Make sure the mechanical and electrical safety protection of the machine are on.
- Temperature of the external surface of motors can reach high temperatures during operation. Hot surfaces on actuator can cause burns and should not be touched.

5-1 Installation of rod end fitting elements

- To install a mounting element on the rod end threaded bore, use a wrench flat on the rod end to counterhold the locking torque.
- In case of actuator equipped with (anti-rotation) device: do not transfer any torque to the piston rod.
- In case of torque transfer into the actuator with AR device, the internal mechanical components can be damaged.
- Fix the threaded element with Loctite.
- To unmount the element, heat the threaded area to unlock it.
- Unscrew the fitting element counterholding the torque with a wrench flat on the rod end.



6. Trial Running

6.1 Operating Precautions



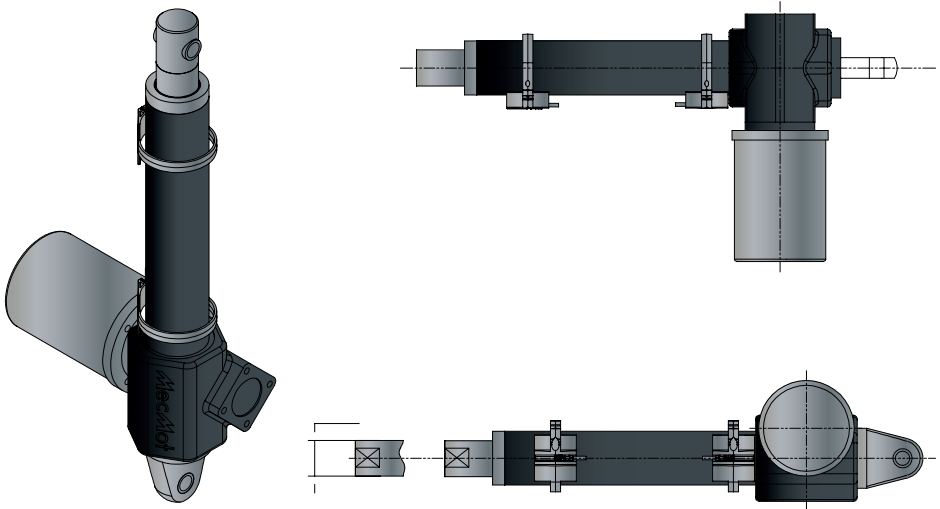
DANGER

- All mechanical and electrical protection must be installed and activated to prevent damage to persons or property.
- Running against mechanical stop causes serious damages to the components of the linear actuator.



CAUTION

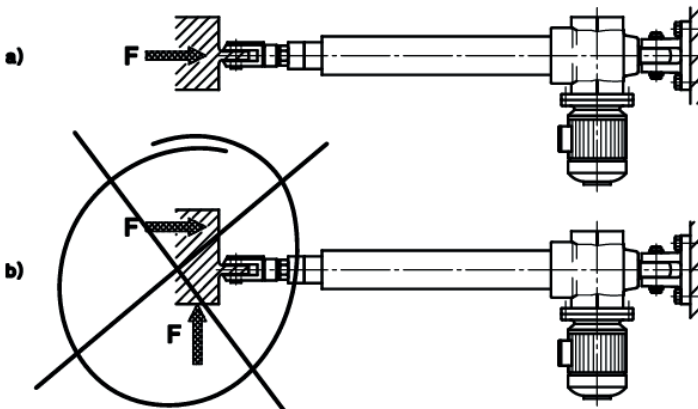
- Check that all plant fixing elements are well machined and cleaned.
- Ensure that all plant fixing elements fit the dimensions of the actuators fixing elements.
- If the length of the actuator has to be changed (push rod more retracted or extended) during installation, power the motor with limited speed and torque values, in order to avoid possible damages in case of a mechanical stop is reached.
- In case of actuators without anti-rotation device and/or electrical limit switches device, it is possible to manually screw/unscrew the push rod to change the length of the actuator.
- Off-set load leads to side-forces on actuator axis causing unexpected wear, lubricant loss and non-regular operation.
- If actuator is equipped with limit switches devices, ensure they are connected and working before turning on the motor, in order to avoid any mechanical end-stops.
- Make sure that the push rod will start traveling in the correct direction and limit switches are correctly adjusted. Turn on the motor "step-by-step" to check all this.
- All wiring of actuator (motor and stroke control devices) must be done with power switched off. If not, both operator and actuator are at risk.
- When actuators are equipped with single-phase motors, capacitors must be discharged before ant operation.
- In case limit switches are already adjusted, be careful because manual rotation of push-rod will cause adjustment loss.
- Do not set the length of the linear actuator over its extreme values;
"Lc" = Retracted Actuator CB
"La" = Extended Actuator CB



*The dimensions are specified in the MecMot Catalogue supplied with the actuator.

When running the linear actuator, comply with the following:

- Fit the linear actuator to the plant in order to have only axial load applied to the actuator.
- Check the correct alignment between front and rear pins: they must be parallel.
- Check the correct alignment between the actuator and the moving parts.



7. Commissioning

MecMot Linear Actuators are supplied lubricated and ready to be used. Before to start commissioning and activation, the following checks must be carried out;

- Check the shifting direction. Ensure if the push rod shifting direction is compatible to the indications on the control unit, by powering the electric motor on very briefly.
- For the linear actuator without anti-rotation device: to allow the translation of the rod end, the push rod rotation must be reacted by using external guides.

Check the extreme working positions as follows;

- Check if the extreme dimensions of the actuator "Lc" and "La" are compatible with extreme positions of the plant component that has to be moved.
- Measure the initial length of the actuator, then run the actuator gradually from the control unit, in order to reach the plant to its more distant extreme position.
- Check continuously the current actuator length during the motion.
- Repeat the same procedure for the other extreme position.
- In order to avoid damages, do not travel over the extreme stroke values lc and la!
- Do not reach stroke end mechanical stop!

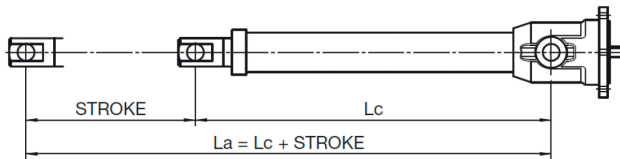


Figure 6.9 – "Lc" and "La" dimensions

When running the linear actuator, comply with the following:

- Run the linear actuator slowly and carefully.
- Carry out some complete working cycles, increasing gradually the load, until full load is reached.
- Carry out one complete working cycle, without load, adjusting the previously set limit switch positions if necessary.
- Current consumption should be within the normal range, and should be constant. Major fluctuations indicate alignment errors and stresses.
- Monitor the temperature and avoid overheating, especially where the travel is long and multiple runs are performed successively.
- Avoid overrunning the limit switch (optional).



CAUTION

- If you notice anything abnormal, stop operation immediately in order to prevent injury, fire and/or product damage.
- Do not operate the product at a load exceeding its nominal capacity in order to prevent injury, fire, and/or product damage.
- Do not operate the product at a cycle exceeding its nominal capacity in order to prevent injury, fire, and/or product damage.
- If you would assemble the product without our recommended design, contact your distributor or our service department.
- Leakage of lubricating oil or grease may cause injury and/or product damage. Check lubricating oil or grease.

8. Maintenance

8.1 Inspection

The MecMot Linear Actuator must be inspected regularly for smooth operation;

- The first inspection should be no later than after 1 month.
- Further inspections should be performed at least annually
- Record the inspections.
- If necessary, perform troubleshooting.
- If problems cannot be localized and rectified, contact MecMot.

8.2 Visual Check

A safe area should be provided for visual inspection.

- Visually check;
 - Running without jerking and vibration
 - No excessive noise
 - Constant current consumption
 - Temperature rises within the permissible range.

8.3 Lubrication

The gearbox is filled with synthetic oil by removing the oil plug on the housing. The spindle of the linear actuator must be completely disassembled and greased.

- After a long period out of use, the product must be operated two or three times a month to prevent the interior from corrosion.
- Install an oil pan or take other adequate precautions against possible oil leakage that may occur due to mechanical failure or the end of product life.
- For lubrication, switch off the entire system and secure it against switching on again. Make sure that the surface to be greased is clean. When using a grease gun for greasing, make sure that sufficient freedom of movement is available for the entire travel.
- Make sure the grease is distributed evenly. For a better result, distribute the oil on the thread properly by moving the nut.



CAUTION

- While working in the lifting travel zone of linear actuator, be aware of the danger of death, serious injury or crush hazard.
- When using a grease gun for greasing, make sure that sufficient freedom of movement is available for the entire travel.
- If there is insufficient freedom of movement, switch off the entire system and secure it against switching on again.
- When installed: Grease successively in several positions, so that the spindle is evenly greased.



WARNING

- Before lubrication, switch off the entire system and secure it against switching on again.
- Make sure that the surface to be greased is clean.
- Make sure the grease is distributed evenly. For a better result, distribute the oil on the thread properly by moving the nut.
- After a long period out of use, the product must be operated two or three times a month to prevent the interior from corrosion.
- Install an oil pan or take other adequate precautions against possible oil leakage that may occur due to mechanical failure or the end of product life.



NOTE

The spindle of a linear actuator must be greased regularly as required.

- The interval for greasing the spindle of a linear actuator is 2000 hours.
- The interval for greasing the gearbox is 8000 hours.

Below is the grease used for MecMot Linear Actuators;

Gearbox: Synthetic Lithium Grease -EP2 SHD 220 Synthetic Litium Grease

Trapeziodal Screw: Sentinel SL-OG Synthetic Open Gear Grease



WARNING

- Do not use lubricants different from those above mentioned.
- Do not mix grease.
- Do not use multi-purpose grease.
- Unsuitable grease will damage to the product.
- When changing the grease: Clean the spindle then regrease it.
- If necessary, use special grease.
- Use only greases that are approved by MecMot.
- For further support, contact MecMot.

9. Disposal

- The MecMot Linear Actuator satisfies the current standards and regulations for disposal of end-of-life equipment.
- It contains no poisonous substances which demand the taking of special precautions.
- Correct disposal and recycling should be entrusted to a professional disposal company.
- The following materials will require disposal:
- Bronze/copper (bevel gear, nuts etc.)
- Steel parts (coated with environmentally-friendly paints or coatings)
- Lubricants
- Anodized aluminum (parts)
- Plastic parts (seals etc.)

NOTE

- The warranty becomes void if the linear actuator is dismantled.
- Allow the MecMot Linear Actuator to be dismantled only by personnel authorized by MecMot.

10. Instructions in Case of Fire

- Bevel gear drive is filled with synthetic or mineral oil, and is not explosive.
- If the linear actuator is located in an environment object to fire, pay attention to the following:

Suitable firefighting and personal safety equipment

Keep fire extinguishers like carbon dioxide, powder, foam, etc. at an accessible distance around the linear actuator.

Do not use unsuitable extinguishing materials. (Do not try to extinguish it with water.)

WARNING

- High temperature may generate flammable steam, so you can use protective ventilation plugs.

11. Quality Documents

11.1 CE Certificate

S.N. 264270

ATTESTATION OF COMPLIANCE

Nu.: 290824092001

Name and address of attestation owner: MECMOT LINEER MAKİNA SİST. SAN. VE TİC. LTD. ŞTİ.
DES SAN. SİT. C28 BLOK 118. SK. NO.17 ÜMRANIYE, İSTANBUL, TÜRKİYE

Name and address of Manufacturer: MECMOT LINEER MAKİNA SİST. SAN. VE TİC. LTD. ŞTİ.
DES SAN. SİT. C28 BLOK 118. SK. NO.17 ÜMRANIYE, İSTANBUL, TÜRKİYE

Product name: LINEAR ACTUATOR

Trademark(s): 
Mechanic Motion Partner

Product type: EP10

Variants: EP10-TR5-0350-POS-BM, EP6, EP25, EP50, EP100, EP150, EP250, EP350.

Applied directive(s): 2006/42/EC Machinery Directive

Applied standard(s): EN ISO 12100:2010, EN 60204-1:2018, EN ISO 14120:2015, EN ISO 13854:2019.

TESTPLUS confirms type which is mentioned above according to the [Annex I] Essential Health and Safety Regulations of 2006/42/EC Machinery Directive with inspection report. This attestation of compliance does not abrogate the compulsory of the manufacturer to issue declaration of conformity. Manufacturer must ensure that assessment of conformity with internal checks on the manufacture of above product according to the Annex VIII of 2006/42/EC. Other relevant directives have to be observed. This attestation was issued on voluntary basis of manufacturer.

Report(s) nu.: 290824092001

Issue date: 17.09.2024

Expiry date: 16.09.2029

The manufacturer shall keep copy of Attestation of Compliance, EU declaration of conformity, its annexes and additions together with technical documentation at the disposal of national authorities for ten years after the product has been placed on the market. The manufacturer shall affix the CE marking to each individual product that is in conformity with the type described in this Attestation of Compliance and satisfies the applicable requirements of related directive.

Check attestation
for validity




Okan METİN
Technical Manager
İstanbul, 17.09.2024



TESTPLUS TEKNİK KONTROL VE BELGELENDİRME TİC. LTD. ŞTİ.
Abdurrahmangazi Mah. Ebubekir Cad. No.34/15
Sancaktepe, İstanbul, Türkiye
info@testplus.com.tr

TP.VC.FR15.01

11.2 ECA Certificate



**ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ
ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ**



Заявитель ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ "МОСКОВСКАЯ
СЕРТИФИКАЦИОННАЯ КОМПАНИЯ АЛЪЯНС"
Место нахождения (адрес юридического лица) и адрес места осуществления деятельности: 127474, Россия,
г. Москва, Дмитровское шоссе, д.60, помещ. V, ком.15
Основной государственный регистрационный номер 1177746341244.
Телефон: 89660172980 Адрес электронной почты: info@mnsk-cert.ru
в лице Генерального директора Гусарова Антона Сергеевича
заявляет, что Линейный привод, модели: EP10-TRS-0350-POS-BM, EP6, EP10, EP25, EP50, EP100, EP150,
EP250, EP350.
Винтовой домкрат, модели: VK50-VH-S-B, VK5, VK10, VK25, VK50, VK100, VK150, VK250, VK350,
VK500.
Торговой марки: MecMot.
Изготовитель MECMOT LINEER MAKINA SIST. SAN. TIC. LTD. STI.
Место нахождения (адрес юридического лица) и адрес места осуществления деятельности по изготовлению
продукции: Турция, AKTURK SANAYI DUNYASI SEYHLI MAH. ANKARA CAD. VADI SOK. NO: 6/A IC
KAPI NO: A25-A26 KURTKOY, PENDIK, ISTANBUL
Код (коды) ТН ВЭД ЕАЭС: 8425420000
Серийный выпуск
соответствует требованиям
Технического регламента Таможенного союза "О безопасности машин и оборудования" (ТР ТС 010/2011)

Декларация о соответствии принята на основании
Протокола испытаний № AG1756 от 18.09.2024 года, выданного ОБЩЕСТВА С ОГРАНИЧЕННОЙ
ОТВЕТСТВЕННОСТЬЮ «ГЕФЕСТ» (регистрационный номер аттестата аккредитации РОСС
RU.32623.ИЛ11)

Схема декларирования соответствия: 1д

Дополнительная информация

ГОСТ 12.2.003-91 "Система стандартов безопасности труда. Оборудование производственное. Общие
требования безопасности". Срок хранения (службы, годности) указан в прилагаемой к продукции
товаросопроводительной и/или эксплуатационной документации. Декларация соответствия
распространяется на продукцию, изготовленную с даты изготовления отобранных образцов (проб)
продукции, прошедших исследования (испытания) и измерения, указанную в акте(ах) отбора.

Декларация о соответствии действительна с даты регистрации по 17.09.2029 включительно.



М.П.

Гусаров Антон Сергеевич

(Ф.И.О. заявителя)

Регистрационный номер декларации о соответствии: ЕАЭС N RU Д-ТР.РА08.В.48838/24

Дата регистрация декларации о соответствии: 18.09.2024

