



INTRODUCTION

This manual has been conceived to give you all necessary information on the "M" type telescopic cylinder line manufactured by "Mailhot Industries Inc." and sold throughout the world. You will find recommendations to follow when either you want to choose, verify or maintain your cylinder.

We believe that such manual is quite important to enhance the quality of service rendered by "Mailhot Industries Inc." and is a commitment to customers. Within a dynamic company as ours, a good knowledge of changes and new needs is essential. Therefore we put a lot of energy and our attention to satisfy our customers is always growing.

GENERAL INFORMATION

To properly maintain in working order your cylinder, it is preferable to install it in a clean and clear area to let the cylinder open at full stroke without obstruction whatsoever or that could misalign tubes.

Without these precautions, the cylinder could be damaged behind repair, scratched or oil losses could occur.

MANUFACTURER REMINDER

Before starting to service you "M" type telescopic cylinder, please verify if the warranty is still valid on your product. Servicing the cylinder without the consent of "Mailhot Industries Inc." and/or with a valid warranty could void it. Please contact the customer's service department to obtain an "R.G.A." at one of the following numbers: St-Jacques Qc (514) 839-3663 or 1-800-563-3663, Guelph Ont. (519) 763-6116 or 1-800-668-6810, Hudson USA (603) 880-9380 or 1-800-MAILHOT, Edmonton Alberta (780) 482-2121 or 1-888-988-2121.

DISCLAIMER

This brochure is intended to be used as a guide to normally maintain your "M" type telescopic cylinder from "Mailhot Industries Inc.". All illustrations and photos should only be used as references for disassembling and reassembling the hydraulic cylinder. "Mailhot Industries Inc " will not be liable and is not responsible for damages due to inadequate tools and for all other damages if wrong or non-recommended replacement parts have been used. Please contact your local "Mailhot Industries Inc" dealer for any interpretation of this manual content.



- Always dump on even ground
- Toujours décharger sur un terrain plat



- Never drive with a raised dump box
- Ne jamais rouler avec la benne levée



- Stay out of the working area of an operating dump body
- Rester hors de la zone de travail lorsque la benne est en opération



- Do not overload and always load evenly
- Ne jamais surcharger et toujours répartir le chargement



- Never be under an unsupported body
- Ne jamais être sous une benne non supportée



Failure to follow these instructions may cause the cylinder's malfunction which may result in death, injuries and/or property damage. Please read carefully Mailhot's maintenance manual before usage.

This cylinder is not designed to be used as a structural member or to be subject to side loads or used under abnormal conditions.

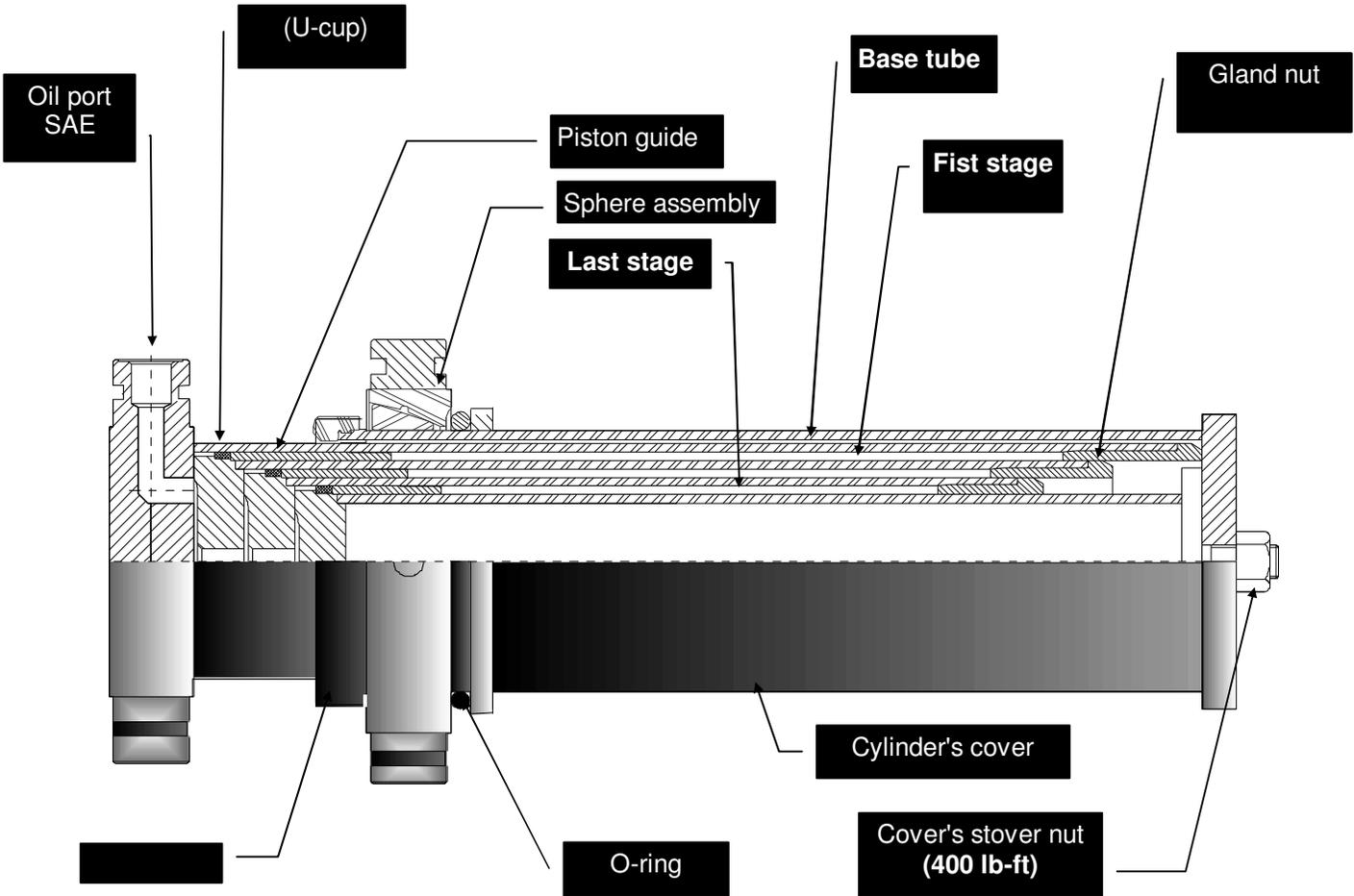
Le non respect de ces consignes peuvent entraîner la défaillance du cylindre pouvant engendrer des dégâts matériels, des blessures et/ou la mort. S'il -vous-plaît vous référer au manuel de service Mailhot avant utilisation.

Ce cylindre n'est pas conçu pour être utilisé comme élément structurel ou pour travailler sous l'effet de charges latérales ou être utilisé sous des conditions anormales.

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Figure 1

"M" type telescopic cylinder parts description





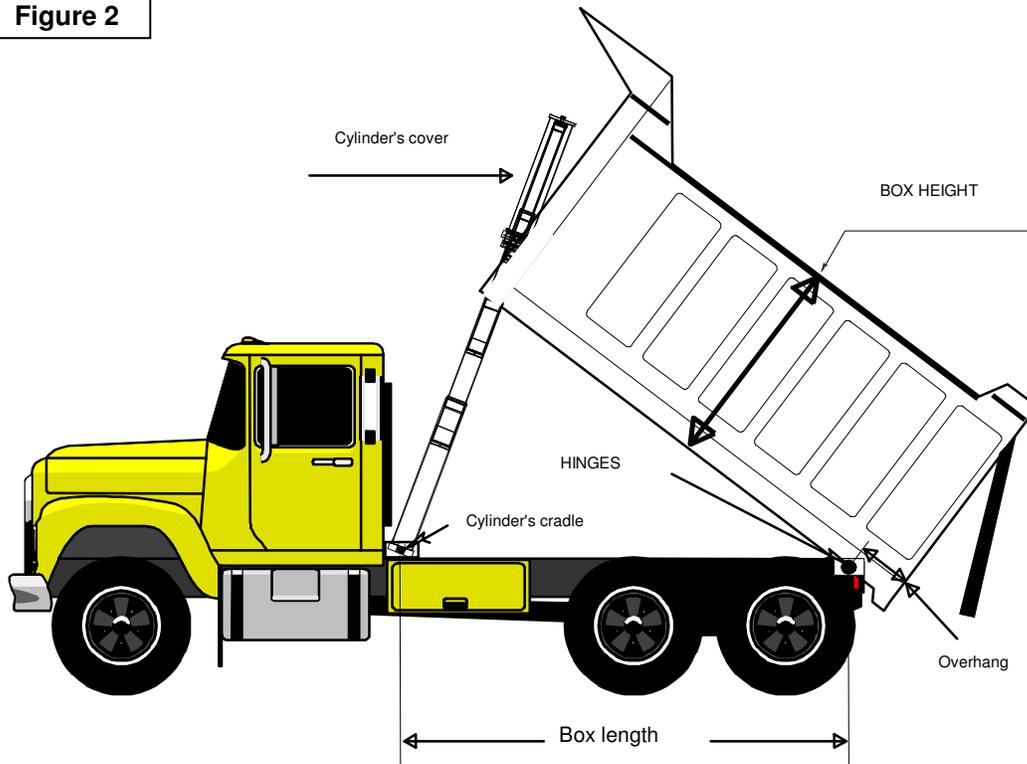
HOW TO CHOOSE OR VERIFY THAT YOUR CYLINDER IS THE ONE MAILHOT INDUSTRIES INC. RECOMMEND

At Mailhot Industries Inc. we manufacture different cylinder types and models for all kind of application since 1956 and our expertise has been growing steadily to ensure you a well adapted cylinder to your needs. Also, with some data, we can determine with our evaluation and application software, all the parameters needed to supply you with the best cylinder that will be adapted to your application.

When you call a "Mailhot Industries Inc." representative, we recommend that you have some parameters handy to permit us to determine the best adapted cylinder to you needs:

Box length:	Total length of the trailer, from center of cylinder base attachment to center of rear hinge.
Overhang:	Distance between center of hinge pin to the end of the box at the rear.
Height of box sides :	Distance between box bottom to the highest point, in the middle of one of the sides.
Working pressure:	Working pressure per square inch (P.S.I.) of the hydraulic installation connected to the cylinder.

Figure 2



With this data in hand, your representative will be able to exactly determine the cylinder type you need for your intended use.



SAFETY FIRST - SUGGESTIONS AND RECOMMENDATIONS ON SAFETY ASPECTS FOR YOUR CYLINDER

VISUAL INSPECTION

When doing your inspection routine, a visual verification is necessary to ensure the good working state of the cylinder and the hydraulic installation to avoid any breakage or leakage that could damage the cylinder or the truck:

- Inspect leaks at the pump, cylinder and hoses.
- Verify tightening to all gland nuts (partial unscrewing, visual damages)
- Inspect the cover pin attachment at the top of the cylinder, the stover nut has to be in place.
- Inspect leaks at oil tank

HANDLING

When it is time to move the cylinder for either installation, removal or to store it away, it is important to handle it with great care. Hard knocking on the outer wall should be considered as a serious damage or should be treated as such. It is necessary to inspect the cylinder to find any scorching, scoring in depth of the metal, leaks to the different stages or any other parts that are damaged. If leaks are visible and the cylinder is rendered unusable, please bring it back to the closest service center for evaluation by one of the qualified technicians. A damaged cylinder installed on a vehicle could likely cause important injuries or even death to the equipment operators.

STORAGE

If the cylinder must be store away, it should be protected from bad weather, direct sunlight and extreme temperature variation. Also, oil ports must be sealed with adapted plugs to avoid dust, water, humidity or any other contaminant to enter into the cylinder. Depending on the length of time spent into storage, some supplemental precautions should be taken. These precautions are showed below;

- A- For a 6 months storage or less, no special precautions others then those stated above are to be taken.
- B- For a storage period between 6 months and less then 12 months, cylinders should be stored vertically.
- C- If storage period is more the 12 months and less then 24 months, pressure test must be done to ensure the good state of seals.
- D- After a storage period of more then 24 months, all seals must be replaced.

If storage facilities are open or non existent, the cylinder should be at least stored vertically and filled with oil.

HYDRAULIC OIL

To obtain optimum performances from your hydraulic installation (pump-cylinder) we recommend to use oil specifically design to be used in hydraulic systems with a viscosity grade between 32 cSt (150 SUS) and 68 cSt (315 SUS) with anti-friction additives. Also, it is important to verify the chemistry of the oil to ensure that the different components and additives are compatibles with all the system's parts exposed to this oil. Since there is a wide range of applications and these ones can be submitted under a variety of climatic conditions, it is important to consult with your hydraulic oil representative to determine which adequate oil will in fact help to prolong the life of your hydraulic system.



SAFETY FIRST - SUGGESTIONS AND RECOMMENDATIONS ON SAFETY ASPECTS FOR YOUR CYLINDER

PRESSURE IN THE CYLINDER

When the cylinder is under pressure, a simple leak could let oil escape at more than 2000 P.S.I. and could lead to serious injuries to the skin because such pressure can puncture it. Loose clothing, safety goggles and working gloves are always suggested when working around a pressured system needing to be serviced.

Also, when disassembling a cylinder, great care must be taken because there is always residual pressure in it. This means that pressure can be trapped in the cylinder, even after it has been unmounted. Most likely, when stages are moving, even unmounted, pressure can built up between stages, especially if an oil port is clogged with contaminants from the bottom of the oil tank. A sudden unclogging of the oil port or a leak in a seal could generate enough pressure to cause a serious injury.



GOOD USE AND LIMITATION OF THE CYLINDER

WARNINGS

- A cylinder is a lifting device only. A cylinder is not a structural component of the truck/box assembly. A cylinder is not and should not be considered as a stabilization device.
- A cylinder should be allowed to do its stroke without any obstacle. There should be nothing in the path of the cylinder that could interfere with its natural movement during loading and unloading operations.
- A cylinder should be installed by qualified people, otherwise, this could lead to serious damage and to put operators risks.
- When operating a cylinder, equipment should be on a leveled ground and all axles should be in the same alignment (trailer trucks should never unloaded in a jack-knifed position.
- Never unload if the ground is not level, too soft or strong winds are presents, resulting in the tilting of the trailer. Lateral movements will result in damages to the cylinder and misalignment of the cylinder's stages, leading to a possible rollover of the truck.
- Never unload if equipment or people are around the area.
- Operator of the equipment should always stay at the controls. If the trailer start to tilt, it should be lowered immediately. Always be careful not to lower the trailer to fast and suddenly stopping it. This will cause a sudden peak in pressure within the cylinder and could damage it.
- Never overload the trailer. Load should be evenly distributed in the trailer in both longitudinal and transversal manner. A load that sticks to the trailer is a high tilting or rollover risk. Operator should lower the box to investigate.
- Never jerk the trailer to release a load stuck. This will increase the constraints to the truck and the cylinder as well. It is preferable to lower the trailer and to use a manual or mechanical mean to unstuck the load. Do not move the truck and/or do sudden stops with cylinder at full extension to unstuck the load.
- Overpressurization of the cylinder must be avoid. This could cause serious injuries or even cause death and/or cause important damages to the cylinder. **Do not operate a cylinder with pressures above 2000 P.S.I. without a written notice and approval of Mailhot Industries Inc.**
- Maintenance of the equipment is the key to have it working to prescribed standards. An inspection round should be a part of the safety rules and helps to detect problems before it can damage cylinder and/or truck.
- Hydraulic oil changes are important. This procedure will avoid contaminants accumulation in the oil tank, leading to obstruct or damage the cylinder.



INSTALLATION OF YOUR CYLINDER – SUGGESTIONS AND RECOMMENDATIONS

To ensure an efficient installation of all the hydraulic circuitry components (Mailhot pump, tank and hoses) it is necessary to do the following recommendations:

Oil tank and pump

-Oil tank should be installed higher then the pump to ensure a positive flow to the oil port. It is important to fill the tank with new and clean hydraulic oil. Oil should also be choose according to temperature and application uses and specifications mentioned in this manual.

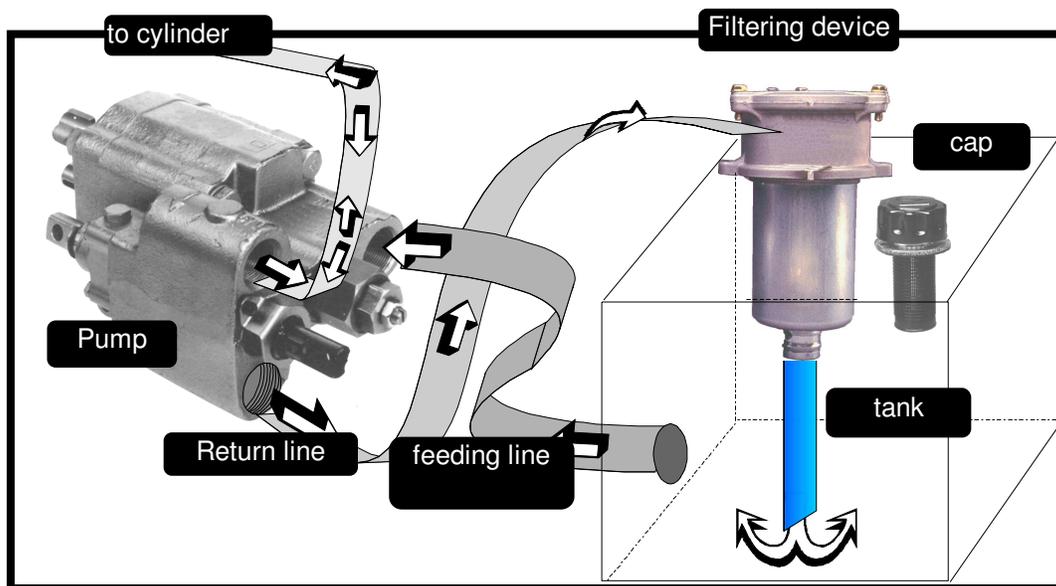
Starting

-When pump and oil tank are installed, pump must be primed by hand before connecting it to the P.T.O. Rotate the shaft manually until the pump is filled with hydraulic oil. **WARNING:** never engage an empty pump.

Filtering device

- It is **highly recommended to install** a filtering device on the oil return line of the hydraulic circuitry. This will protect all the components against contaminants and impurities that could be present in the circuit Ideal dimension of the filtering element should be between 20 microns (700 mesh) and 35 microns (400 mesh). In a concern of limiting problems relatives to installation and desinstallation of the filtering element, we have design a tank-filter assembly (below) that permit easy servicing of replaceable parts. We also recommend to change hydraulic oil at least once a year.

Figure 3





INSTALLATION OF YOUR CYLINDER – SUGGESTIONS AND RECOMMANDATIONS

It is important to pay particular attention to the cylinder parallelism with the truck frame. The cylinder should be well centered, in the vertical axis as well as in the horizontal axis, parallel to the truck frame and should also be perpendicular (90° angle) to the cylinder frame when the body lies on the truck frame. To avoid any damages to the cylinder and to permit a smooth operation, it is recommended to periodically verify the parallelism and the back hinge. Verify the installation parallelism for the cylinder frame with the truck frame. (See figure A et B)

When installing the cylinder, we recommend, to put the cylinder in place and take the measurement of the upper trunnions. Add 1/2" higher and install the block bolts at this place, this will allow to avoid cylinder to bottom out.

Avoid installation of a side holder device (Plastic blocks, rubber rings, etc...). In these cases, the cover would then be propped against the base tube of the cylinder and would score it when extending.

We recommend the use of a stroke limiter to avoid hard collisions at end of stroke. One of the most popular methods is a pump disengagement cable. This device automatically stops the pump just before the end of the stroke..

Another useful device is a body stabilizer. This device allows the body to raise in a parallel axis to the truck, preventing side loading of the cylinder when the truck is on an unlevelled surface or has an uneven load.

IMPORTANT: Ensure that none of the devices described above are in any way altering the movement of the cylinder nor the parallelism of body with the truck frame. Damages could result in case of an improper installation. Please consult your truck body manufacturer to obtain restrictions and recommendations for the installation of such devices.

Figure A

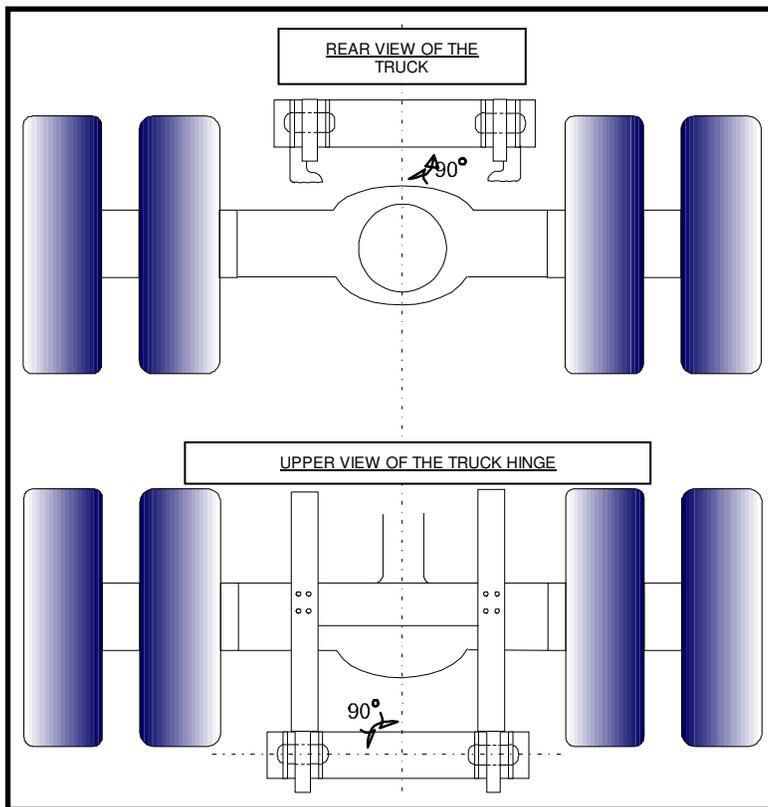
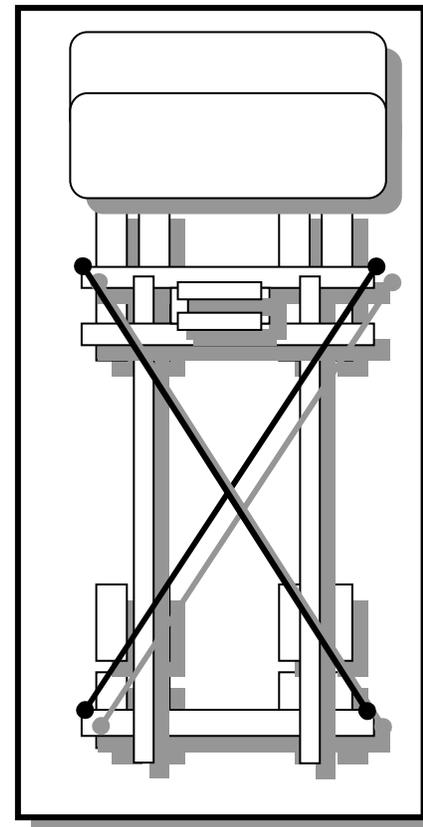


Figure B



When the cylinder is unmounted from the truck, it is suggested to use the following tools to disassemble and reassemble it. To do an adequate maintenance of the cylinder, it is recommended to adapted tools:

- ☞ Instrumentation to take measurements inside the cylinder like a micrometer or a vernier caliper (not shown)
- ☞ Screwdriver with a flat rounded tip (Figure 5)
- ☞ Mailhot key (Figure 6)
- ☞ Chain pliers("Vise-Grip™ "style) (Figure 7)
- ☞ Drill with a 3/16" bit (not shown)
- ☞ 3/16" Pointed punch (Figure 8)
- ☞ 3/16" Flatted punch (Figure 9)
- ☞ Manual or air Ratchet with a 2 1/2 " socket (not shown)
- ☞ Assembling shims (Figure 10)

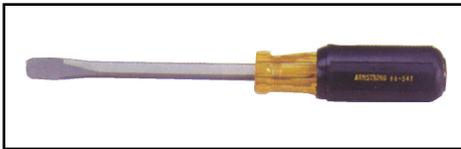


Figure 5

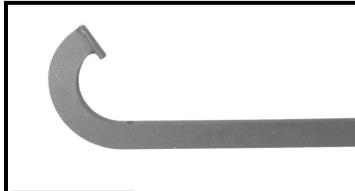


Figure 6



Figure 7

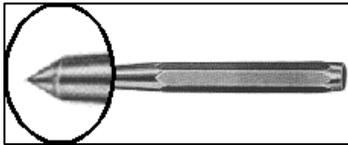


Figure 8

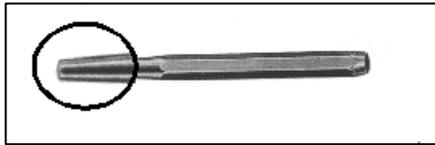


Figure 9



Figure 10

WARNING

It is strongly recommended to take all preventive actions to avoid any accident during the disassembling and reassembling of the cylinder. A passive support is also recommended to hold the truck box in open position at all time during the maintenance operation.

STEP 1

WARNING: Before starting to remove the cylinder from the truck or trailer, take all safety measures like installing a blocking device on the box to prevent it from coming down.

Stop the box in open position. Unscrew bolt at top of the cylinder and then, retract the cylinder. Take off the blocking pins at the base of the cylinder and take the cylinder off the truck..

NOTE: It is possible to leave the cylinder's cover on the truck's box. Do not forget to remove the oil tube.

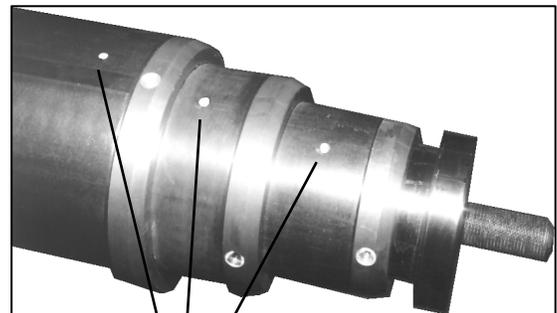
STEP 2

Install the cylinder in a hydraulic bench or some device that will hold it steadily in the middle. Protect the sides with some plastic or rubber cushions. Do not squeeze it to tight, this could damage the roundness of the tube.

NOTE: Because all of the stages should be put apart from the cylinder, it is important to leave an adequate space on the extension side of it to avoid any accident..

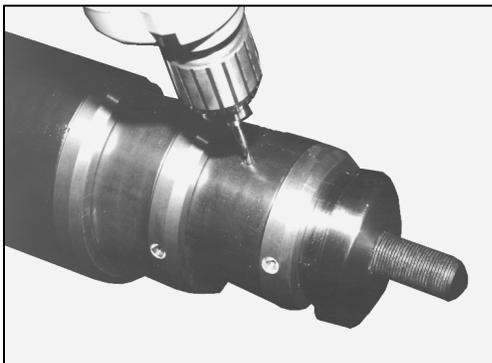
There is dowel pins located close to each inner end of gland nuts. To find them, look for punch marks (2 marks). Align each stages (using the chain pliers) in order to align punch marks, easing the next step.). (figure 11)

Figure 11



DOWEL PINS

Figure 12



STEP 3

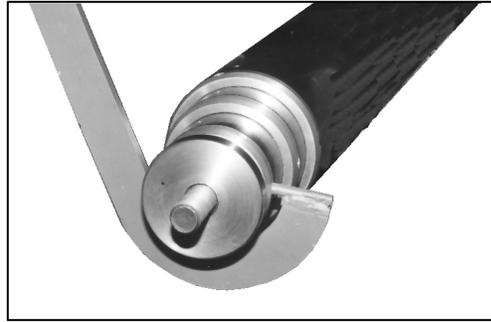
Using the drill and the 3/16" bit, pierce the dowel pin **without going through the brass glands nut.** (figure 12)

Clean the hole thoroughly to ensure there is not metal residue left.

STEP 4

Take a Mailhot key of the needed size and insert the tip in one of the holes in the gland nut (the chain pliers can replace the Mailhot key). Unscrew slowly but firmly the gland nut counterclockwise (from right to left). If you feel an abnormal resistance clean the dowel pin hole more thoroughly.(figure 13)

Figure 13



STEP 5

When the gland nut is unscrewed, slide it further on the section tube, reposition the chain pliers on the tube, carefully avoiding damage to the tube, and slightly rotating the tube with the pliers, take off the tube from the cylinder.(figure 14)

Put the section on a soft and clean place (rags will do).

Repeat steps 3 and 4 for all other section tubes, if needed).

Figure 14

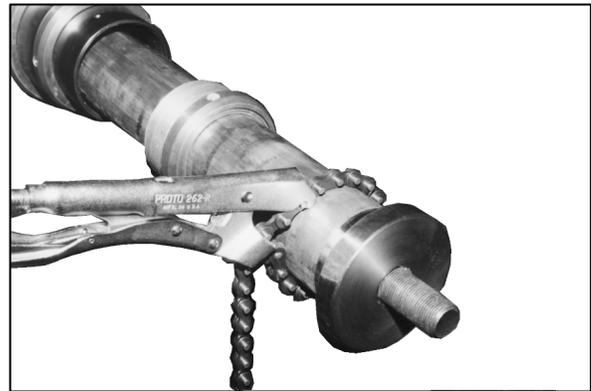
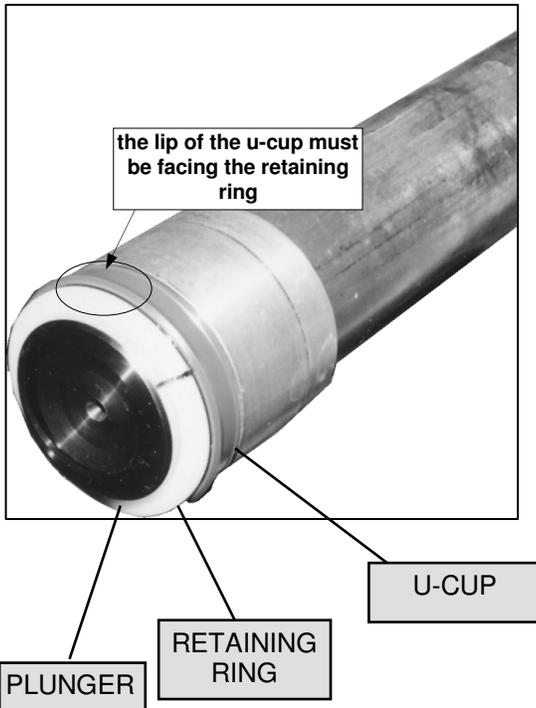


Figure 15



STEP 6

Inspect visually and tactilely each stage tubes. All must be exempt from scores, scorches, flats or cracks, at each part of the section including retaining ring and seal kit.

In case there is some parts to change, you should get a replacement kit according to the cylinder's specifications (Consult your Mailhot representative).

Also inspect all cylinder's tubing to detect any damage that would interfere with normal operation. In case that such damages are found, it is strongly recommended to contact Mailhot Industries Inc or its representative to obtain a complete evaluation of the cylinder and possible solutions to correct or replace parts.

Also inspect gland nut threads to ensure of their integrity and proper state. The inner tolerance for the gland nut must not allow a spacing at more than 0.030".

STEP 7

To change the u-cups and retaining rings, you should start by taking off the retaining ring followed by the u-cup. Normally, these parts can be taken off with hands. It could be possible that one or more parts would be stuck on the plunger. In this case, a flat rounded tip screwdriver can be used. **WARNING:** Verify and take all precaution to avoid scoring the bottom of the groove while extracting the seals..

Replace the u-cup with a new one, paying attention to make sure that the expansion ring is facing toward the groove of the retaining ring. (see figure 15)

Repeat this step for each section tube of the cylinder, id necessary.

STEP 8

To reassemble the cylinder, reinstall it in the hydraulic bench or the retaining device as described in step 2. Be careful not to ovalize the tube while retaining it.

Inspect thoroughly the inside of the tube, particularly where the dowel pin was when the cylinder was taken apart. Remove any metal residue from drilling or metal grind as well.

Install the corresponding assembling shims for the tube diameter onto the tube threads. This will protect the threads and the seals as well. Lubricate the shims with a hydraulic soluble grease, sticking out a little more then the end of the shims.

WARNING: Any sharp edge on the shim will damage your seal

Figure 16



STEP 9

Push in the tube about half way into the other one and take off the shims. Slide in the gland nut and screw it all the way and tight it. (using chain pliers or Mailhot key)

Using the drill and the 3/16" drill bit, make a new hole to install the dowel pin, at about 180° (never closer then 90°) from the old one. The hole should be made at about 1" from the inner edge of the gland nut. When the brass is reached (color of the metal will change) keep on drilling for another 1/16". **(do not use the old hole to install a new dowel pin)**

WARNING: When drilling the hole, take all necessary precautions to ensure not to pierce the gland nut resulting in having a faulty action on the next stage.

WARNING: When drilling the base tube, NEVER align the hole with the trunnion.

After drilling the hole, follow the installation step 10 carefully.

STEP 10

To ensure a good and adequate application of the adhesive, follow these steps:

1. Clean each hole newly drilled with some cleaner like Loctite® "Electrical contact cleaner"
2. Dry the hole with forced air (Air must be coming from a line that contains a filter against contaminants like oil, water etc...).
3. Put a drop of Loctite®680 adhesive in the hole where the dowel pin will be installed. and go to step 11.

NOTE: Put adhesive, insert the dowel pin and lock the sections one after the other to avoid the adhesive dries up before installing the next dowel pin.

STEP 11

Using the 3/16" flated punch, hammer the dowel pin enough to at least equalize it to the tube.(figure 17)

NOTE: Make sure the dowel pin is equal to the tube. If not, you must verify the deepness of the hole and redrill if necessary.

Afterward , using the 3/16" pointed punch, punch metal toward the dowel at least at 2 opposite place close to it (punching must be done at 90° from the cylinder axis)(figure 18). (Take all necessary precaution to avoid deformation or percing of the tube while punching).

Repeat steps 8, 9 and 10 for all sections of the cylinder.

P.S. Fill up old dowel pin holes with a silicon compound, after assembling is done.

Figure 17

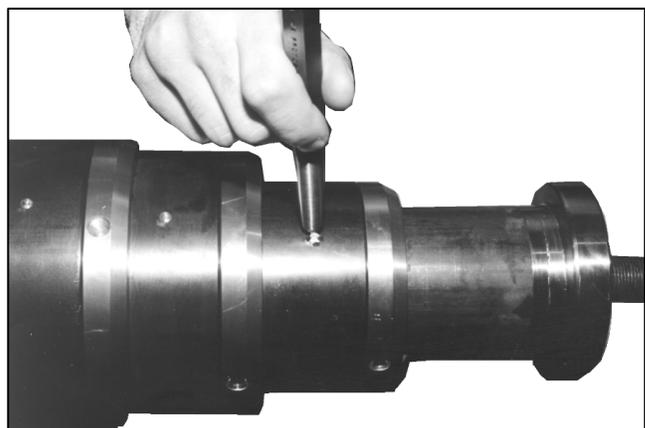
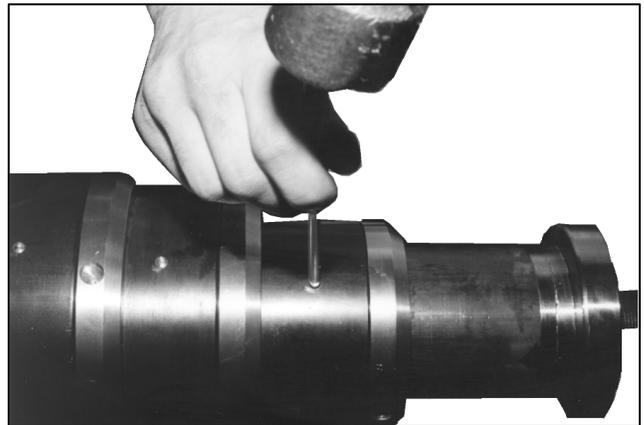


Figure 18

STEP 12

Mount the cylinder on the truck's box and screw the cover's bolt tightly with an air percussion gun. Verify also the base attachment solidity.

Before using this section, ensure that procedure for inspection has been followed in the " Installation of your cylinder – SUGGESTIONS and RECOMMANDATIONS" section of this booklet.

PROBLEMS	PROBABLE CAUSES	SOLUTION
Pressure loss	<ul style="list-style-type: none"> * Safety valve is stuck in open position * Pump is broken 	<ul style="list-style-type: none"> ☞ Clean or replace the safety valve ☞ Change worn-out parts
Noisy pump	<ul style="list-style-type: none"> * Air is infiltrating in the hydraulic circuitry * Pump is running too fast * Pump is misalign with the P.T.O. * Pump is broken 	<ul style="list-style-type: none"> ☞ Look for infiltration and repair. ☞ Verify manufacturer's specifications and adjust ☞ Correct alignment ☞ Change worn-out parts
One or more stages of the cylinder stays open.	<ul style="list-style-type: none"> * Pump flow is too high, plungers and gland nuts are jamming. * Pump is running too fast. 	<ul style="list-style-type: none"> ☞ Verify if the pump is the one recommended for the type of cylinder used. ☞ Use a lower P.T.O. coupling. ☞ Install a limiting device
Cylinder is loosing oil	<ul style="list-style-type: none"> * Misalignment of the cylinder cradle or back hinges. * Wearing of inner tube seals 	<ul style="list-style-type: none"> ☞ Verify and correct alignment. ☞ Change worn-out parts.
The cylinder's cover is damaging some stages.	<ul style="list-style-type: none"> * Misalignment of the cylinder cradle or back hinges. 	<ul style="list-style-type: none"> ☞ Verify and rectify the alignment.
Cylinder opens and closes without a smooth operation	<ul style="list-style-type: none"> * Oil tank is too small for the cylinder capacity. * Internal parts of the cylinder are too worn-out 	<ul style="list-style-type: none"> ☞ Call your Mailhot Industries representative to obtain a tank size recommendation ☞ Verify worn-out parts and replace them.
One of the stage does not work	<ul style="list-style-type: none"> * One of the plunger or gland nut is swelling or not sliding smoothly. * Pressure from the pump is too low. 	<ul style="list-style-type: none"> ☞ Verify and replace worn-out parts. ☞ Verify et readjust pump pressure.

The above table is only a general guide for troubleshooting. If you suspect a more serious problem, it is strongly recommended to contact your Mailhot Industries Inc sales representative. You will be directed to a qualified resource to guide you to find a solution to correct any problem you might encounter with our product.

RECOMMENDED LUBRICANT

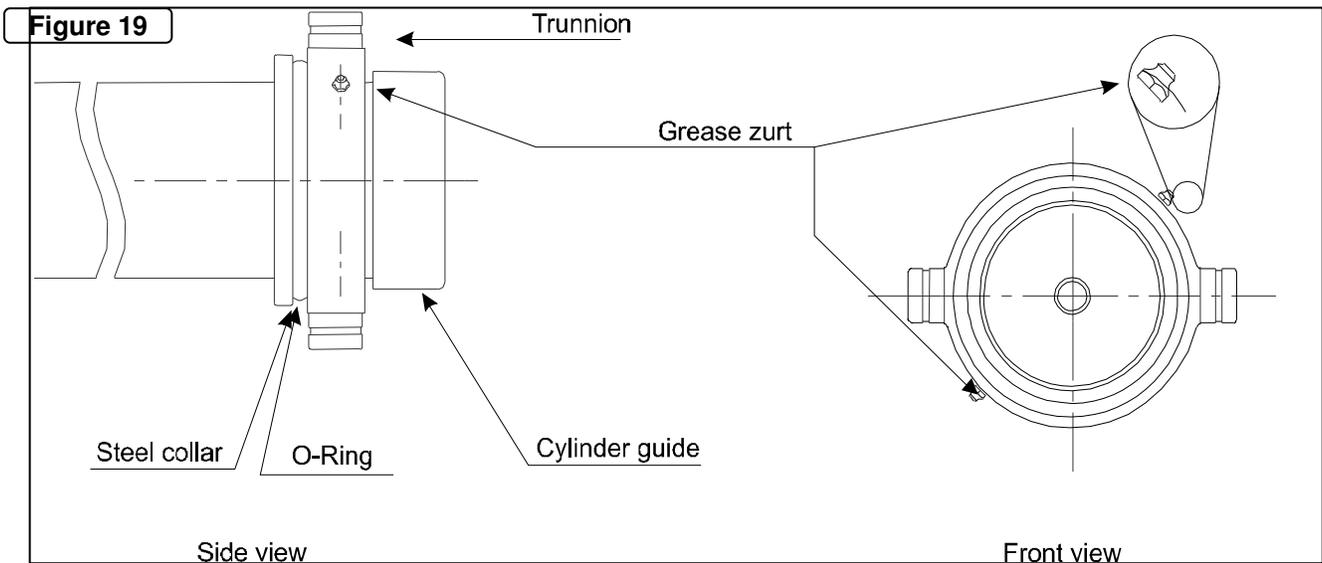
To keep the cylinder cover in good working condition, it is recommended to periodically schedule maintenance and service.

Due to pressure and climate exposure, it is imperative to use high quality lubricant in the trunnion-sphere assembly.

We recommend use of a high viscosity base oil and combination for extreme pressure, anti-wear and anti-corrosion additives plus molybdenum disulfide within soap composition to seal effectively against dust and resist the washing effect of water. The lubricant should include a thickener agent from the lithium complex. This composition is offered, on the market, in viscosity suitable for cold and warm temperature operation. (ex: Application at 5°C and above: Esso Moly H™, below 5°C: Esso EP1 Moly™ or equivalent)

Frequency: Inspect and grease both grease zurts of the trunnion-sphere assembly weekly or more often in heavy-duty service.

PARTS DESCRIPTION





WARRANTY

A) DURATION

Mailhot Industries inc. guaranties starting at the invoicing date :

- 1) Non-nitrided cylinders and components, Mailhot branded hydraulic components and nitrided cylinder's components are covered with a one (1) year period against manufacturing defects or raw material defect.
- 2) Nitrided cylinders are covered for a two (2) years period against all manufacturing or material defects.

B) COVERAGE

- 1) Warranty mentioned in paragraph A applies to defective parts only and actual work done on those parts by Mailhot Industries Inc. employees, at a designated and authorized Mailhot Industries service center, or by a third party, provided there is an agreement between Mailhot Industries Inc. and the buyer. In all these cases, a Return Goods Authorization (R.G.A.) number must be issued by Mailhot Industries Inc. or its authorized representative. Notwithstanding the above, Mailhot Industries Inc. reserves the right to replace, in all or in part, or to credit product covered by this warranty.
- 2) Costs and expenditures caused by the removal and reinstallation of the defective product from "Mailhot Industries inc" are at the buyer's expense. If the product is defective and this defectiveness is covered by the present warranty, Mailhot Industries Inc. will reimburse to the buyer costs according to the agreement negotiated when the Return Goods Authorization number was issued.
- 3) This warranty is ruled with a maximal workmanship allowance according to the case and region. You must call Mailhot Industries Inc. to get all details.
- 4) All product must be returned to Mailhot Industries Inc. or it's authorized representative using ground transportation and prepaid. If the product is defective and this defectiveness is covered with the present warranty, Mailhot Industries Inc will reimburse to the buyer costs of transport has agreed when the Returned Merchandise Authorization number was issued.

C) NON COVERAGE (EXCLUSIONS)

This Mailhot Industries Inc. warranty does not apply at :

- 1) Modification on Mailhot hydraulic components, cylinder and/or it's components;
- 2) Bad maintenance on Mailhot hydraulic components, cylinder and/or it's components;
- 3) Abusive use Mailhot hydraulic components, cylinder and/or it's components;
- 4) Installation or use not according to instructions supplied in maintenance manual for the purchased product;
- 5) Use of Mailhot hydraulic components and/or cylinder and/or components after a defect has been found, a functional defect or any defect that would interfere with the normal use;
- 6) Any non-authorized repair of a Mailhot component and/or cylinder and/or it's components;
- 7) Any damage or defect cause by an impact or accident on the vehicle or the equipment where the Mailhot component and/or cylinder and/or it's component was installed;
- 8) Any Mailhot hydraulic components, cylinder and/or it's components working under excessive working pressure specified by Mailhot Industries Inc.;
- 9) Any Mailhot hydraulic components, cylinder and/or it's components within an hydraulic system not equipped with a filtering system as described in the maintenance manual;
- 10) Any travelling fees from the buyer to verify a related problem to the Mailhot hydraulic components, cylinder and/or it's components;
- 11) Any expenses for lubricant or workshop expenditures
- 12) Any expenses for repainting a Mailhot hydraulic components, cylinder and/or it's components ;
- 13) Omission to prevent within 30 days Mailhot Industries Inc. or it's authorized representative about the knowledge of a defect or breakage of a Mailhot hydraulic components, cylinder and/or it's components;
- 14) Normal wear of seals or wear caused by contamination.;
- 15) Inadequate warehousing of the product.(refer to the maintenance manual)

D) RESPONSIBILITY EXCLUSION

Mailhot Industries Inc. will not be liable for the consequential damages or contingent liabilities, including, but not limited to, loss of life, personal injury, loss of business income, downtime costs and trade, or other commercial loss arising out of the failure of Mailhot cylinder or hydraulic component covered by present warranty.

E) ELECTED PLACE OF RESIDENCE

Mailhot Industries Inc. and the buyer agree, for any and all claims, or lawsuit for any reason whatsoever, in relation with present agreement, to choose the law district of Joliette, province of Quebec, Canada, as the proper place of auditions of claims or lawsuits to the exclusion of any other law district that could have jurisdiction on such claims or lawsuit, as prescribed by the law.