456 Series

Hydra-Lift Drum Rollers

Serial Number 419981 to Current

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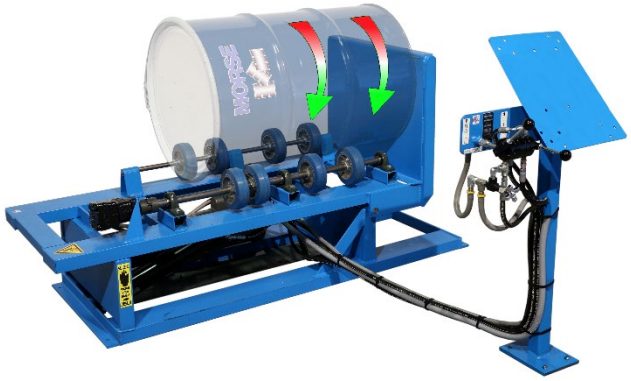


Receiving Procedures

Every Morse drum handler is inspected prior to shipping. However, damage may be incurred during transit.

- Check for visible damage. If you choose to accept damaged freight, always sign noting the damage on the **BILL OF LADING**.
- Document the damage and have the truck driver sign. We recommend keeping a digital camera at your receiving dock for this purpose.
- Open packages expeditiously to check the condition of the goods. There is only a 24 hour window to notify the carrier of any concealed damage.
- **IMMEDIATELY REPORT ALL DAMAGE TO THE SHIPPING COMPANY!** Then you may contact Morse for assistance with your freight claim.
- Morse Manufacturing will not be held responsible for any damaged freight that is not signed for as damaged.

Delivery to non-business addresses without a loading dock result in additional freight charges. Residential delivery fees, inside delivery fees, re-delivery charges, and lift gate services will be added by the truck line, and are non-negotiable.

Limited 2 Year Warranty

Morse drum handling equipment is guaranteed against defects in workmanship or materials for **TWO YEARS** when used properly within its rated capacity. The warranty does not cover wear from normal use or damage from accident or abuse. Motors and other purchased parts carry the warranties of their manufacturers.

For warranty claims, contact your Morse Dealer to obtain a return authorization number, and for return freight advice. Return freight must be prepaid.

In all instances, liability is limited to the purchase price paid or to repairing or replacing the product. Customer assumes liability for any modifications, unauthorized repairs or parts substitution.

Safety Information

While Morse Manufacturing Co. drum handling equipment is engineered for safety and efficiency, a high degree of responsibility must be placed upon the machine operator to follow safe practices, based primarily on common sense, upon which true safety depends.

Failure to follow the safety precautions in this manual can result in personal injury or property damage. Observe the same precautions as with similar machinery where carelessness in operating or maintenance is hazardous to personnel. Carefully read the safety precautions below and throughout this manual.

DANGER - Indicates a situation which, if not avoided, will result in serious injury or death. This signal word is limited to the most extreme situations.

WARNING - Indicates a situation which, if not avoided, could result in serious injury or death.

CAUTION - Indicates a situation which, if not avoided, can result in damage to the machine.

	**DANGER –** Watch Out for Pinch Points. Stay clear of moving parts. Do Not Stand Near any Part of a Rotating Drum or Drum Holder. Operator should remain directly in front of the control station while operating the rotator. Morse Drum Rotators comply with OSHA subpart O, 1910.212 - "General requirements for all machines." "Revolving drums, barrels, and containers shall be guarded by an enclosure which is interlocked with the drive mechanism, so that the barrel, drum, or container cannot revolve unless the guard enclosure is in place." (A safety enclosure is included with each MORSE drum rotator.)
	WARNING - The 456 Series is designed to handle one drum of the types listed in machine description. DO NOT attempt to handle any other type of drum or object. DO NOT exceed the weight capacity.
	WARNING - - Properly Mount to Floor. Do Not put into service without proper floor mounting and leveling. Use the four mounting holes in each corner of the base to anchor to floor.
	WARNING - Do Not Modify the Unit - Under no circumstances should any modifications be made to the Morse machinery without factory authorization. Any modifications may void the warranty. This machine was designed to perform a specific job and alterations may result in injury to operator or machine.
	WARNING – Level Floors Only - For operation only on clean, level floors of suitable bearing capacity. Do not use on sloped surfaces, ramps, irregular or debris strewn floors.
	WARNING - No Loose Fitting Clothing - Wear close-fitting clothing and safety equipment appropriate to the job. Loose fitting clothing may become caught on the machinery and cause severe personal injury.
	CAUTION - Hydraulic Fluid Under Pressure Can Be Hazardous Escaping hydraulic fluid under pressure can penetrate the skin, causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic lines. Keep hands and body away from pinholes and nozzles, which eject fluid under high pressure. Use a piece of cardboard to search for leaks. If an accident occurs, see a doctor immediately and inform them of the nature of the accident.
	CAUTION - Wear Safety Shoes - Wear safety shoes with non-slip soles and hard toe protection.
	CAUTION: DO NOT allow drum to impact on floor.
	WARNING - This product can expose you to chemicals including barium sulfate, cobalt, titanium dioxide, and 2-methylimidazole, which are known to the State of California to cause cancer, and bisphenol-A, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Machine Description

The Morse 456 Series Hydra-Lift Drum Rollers are designed to receive an upright drum at floor level, hydraulically tilt drum to horizontal, and rotate the drum on its side between. It is designed to rotate a steel drum 6" to 28" (15.2 to 71.1 cm) in diameter, and up to 40" (101.6 cm) tall. The maximum liquid capacity is 1000 Lb. (454 kg). Capacity is derated to 400 Lb. (181 kg) for a dry load.

Options

- A 1 to 5 gallon can or pail can be rotated with the optional Idler Attachment (part # 1-5-1) installed.
- A 55-gallon (210 liter) plastic drum can be rotated with the correct POLY option installed.
  - Order Option POLY-456 factory installed on your new 456 Series Drum Roller.
  - Order Option POLY-456FI for field installation of POLY Kit on your existing 456 Series Drum Roller.
- Guard Enclosure Kit - Install all Morse Rotators in accordance with OSHA requirements for enclosure and safety interlock, etc. so the rotator automatically turns off when enclosure door is opened. One way to accomplish this is with a Morse Guard Enclosure with safety interlock.

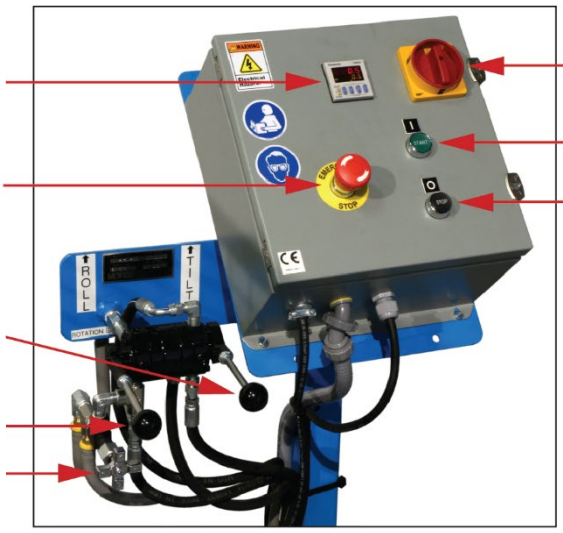
Controls

There are two powered functions for the operator to control. Each function is controlled separately by levers mounted on the control station.

1. The "TILT" function, for vertical positioning of the drum holder. The lever on the right side is the "TILT" control valve. Raising the lever will tilt the drum to vertical. Lowering the lever will tilt the drum to horizontal.

2. The "ROLL" function, or the rotation of the drum holder. The lever on the left side is the "ROLL" control valve. Raising this lever causes the drum to rotate. Lowering the lever away from the operator will stop the drum from rotating.

   The rotation speed can be varied with the metering valve. Turn the valve clockwise to increase speed, counterclockwise to decrease speed down.



Control Station

Machine Unpacking

Carefully remove the top and sides of the crate covering the machine so as not to damage painted surfaces, electrical or hydraulic components. Inspect the machine for visible damage. If damage is noted, follow receiving procedure on page 1. Remove the (4) lag screws connecting the machine base to the pallet. Remove machine from pallet by lifting around the tilt bed assembly. Attach a strap to an overhead crane and raise slowly, as the machine will have a tendency to tilt

Assembly and Installation Instructions

- **IMPORTANT:** Hydra-Lift Rotators are shipped filled with hydraulic fluid (Dexron 3 or equivalent). Replace the **RED** shipping plug from the hydraulic reservoir with the supplied **BLACK** breather, and install hydraulic levers BEFORE operation.
- The base has four 1/2" (1.27 cm) diameter holes spaced 20-3/8" wide x 62-5/8" long (51.75 cm wide x 159.07 cm long). Morse recommends the rotator be secured to the floor using 3/8" x 3" (.95 cm x 7.6 cm) lag bolts (not included).
- Adjust drive and idler wheels to your particular drum.
- Install all Morse Rotators in accordance with OSHA requirements for enclosure and safety interlock, etc. Drum rotator must automatically turn off when enclosure door is opened.
- Control Station – Making Connections

AC Powered Models

- The main power must be wired into the control box.
- Models ordered with non-explosion proof motor and appropriate Morse Control Package have the control box wired to the motor.
- Models ordered with explosion proof motor and appropriate Morse Explosion-Proof Control Package have no wiring from the NEMA 7/9 control box to the motor. Please consult an electrician to complete the wiring.
- Jog the motor to check rotation. Motor fan must turn clockwise.
- To reverse rotation if necessary
  - For 3 phase motors: interchange any two input leads.
  - For 1 phase motors: interchange wires 5 & 8 in junction box.

Air Powered Models

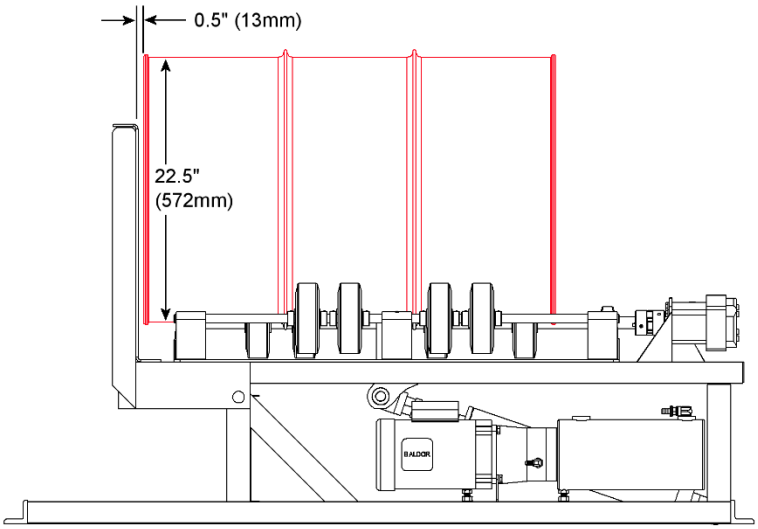
- For air motor powered rotator, a filter, regulator, lubricator is mounted on the control station. A shutoff ball valve is installed on the inlet of the regulator. The air connection should be made at the inlet of this valve.
- Ensure that the supply air lines are of sufficient size to provide proper air volume. The air motor requires 40 scfm, and 40 PSI of compressed air. The proper air pressure will depend on the weight of the drum. See Air Motor Technical Info at: https://morsedrum.com/ops/OMPLAIR(0000-____).pdf

Installation Instructions

Prior to initial operation, lubricate grease fittings.

Adjust drive and idler wheels to your particular drum. Wheels should be positioned to support the drum at its strongest point; adjacent to ribs (see Figure at right). This configuration will also prevent the drum from moving axially. Position wheels on lower drum rib so drum moves away from base plate when rolling operation begins.

1. With provided 1/8" Allen wrench, loosen the two set screws found in each drive wheel hub and the set screw in each collar surrounding the idler wheels.
2. Position wheels along shafts as needed.
3. Tighten set screws.



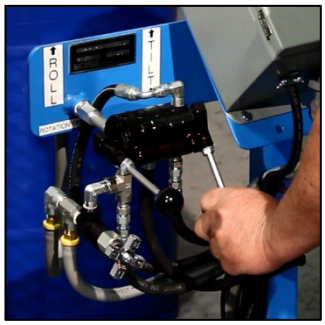
A variety of drum diameters can be accommodated by adjusting the idler plate assembly toward the drive side for smaller diameters and away from the drive side for larger diameters. The plate may be adjusted to allow drive shaft spacing from 8" to 18"(203 to 457 mm). It is preset to the second (outer) set of holes for use with standard 55-gallon (210L) steel drums. To adjust, remove the three idler plate bolts and slide the idler plate assembly to the proper set of mount holes and refasten the mount bolts.

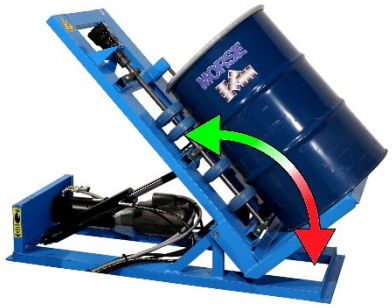
Loading a Drum

1. Raise the "TILT" lever to tilt the load plate to floor level.

2. Place an upright drum onto the load plate with a drum truck or with your crane and a below-hook drum lifter.

3. Lower the “TILT” lever to tilt the drum from upright into horizontal position.





Rotating a Drum

4. After ensuring that the area around the rotator is clear, raise the “ROLL” lever to begin rotation.

5. The drum rotation speed can be varied with the metering valve. Turn the valve clockwise to increase drum 16 RPM. Turn valve counter-clockwise to decrease drum RPM.

Unloading a Drum

Ensure the drum is in vertical upright position to unload. Unload upright drum from the load plate with a drum truck or use a below-hook drum lifter with your crane.

Maintenance

Periodic inspection for the general condition of structural and mechanical components is imperative for safe and efficient operation.

Monthly

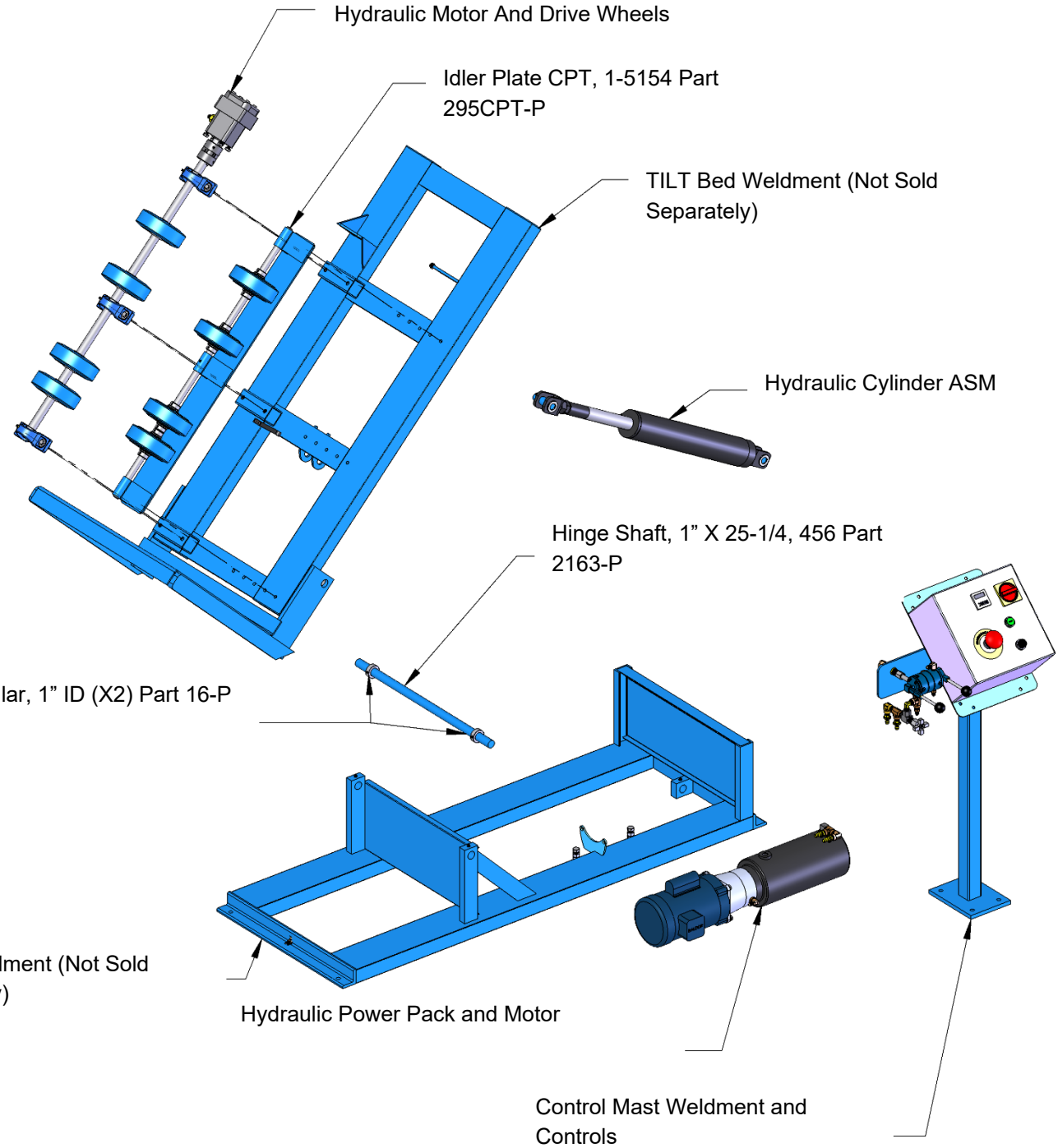
- Inspect the hydraulic system for oil drips, hose damage, or other signs of wear. Inspect the level and condition of the hydraulic fluid. Hydraulic fluid level should be within a ½" of the top of the reservoir when the cylinder is in the relaxed position. Replace any parts that show signs of wear.
- Inspect all moving parts, framework, fasteners and contact areas for signs of wear, fatigue, or loosening.

Every 6 to 12 Months in Ordinary Environment (monthly in dirty conditions)

- Lubricate all moving parts.
- Pillow Block Bearings. See Bearing Lubrication Sheet at: https://morsedrum.com/ops/2654-P_bearing-grease.pdf for grease types and fill amounts.
- Idler wheels: Grease every 6-12 months in ordinary environment, grease monthly in dirty conditions. Any common bearing grease will suffice, (i.e. Shell Alvania)
- Cylinder Clevis and Hinge Shaft: Grease every 6-12 months in ordinary environment, grease monthly in dirty conditions.

Yearly

- Hydraulic Pump: Change oil with ATF Dexron III or equivalent. See maintenance information on page 3 of Hydraulic Pump Sheet at: https://morsedrum.com/ops/PLM404-456-P.pdf for more oil information.


Hydraulic Motor And Drive Wheels
Idler Plate CPT, 1-5154 Part 295CPT-P
TILT Bed Weldment (Not Sold Separately)
Hydraulic Cylinder ASM
Hinge Shaft, 1” X 25-1/4, 456 Part 2163-P
Collar, 1” ID (X2) Part 16-P
Base Weldment (Not Sold Separately)
Hydraulic Power Pack and Motor
Control Mast Weldment and Controls