

CONTENTS

- Receiving Procedures
- Warranty
- Safety Information
- Machine Description
- Assembly and Installation Instructions
- Operating Instructions
- Maintenance

Receiving Procedures

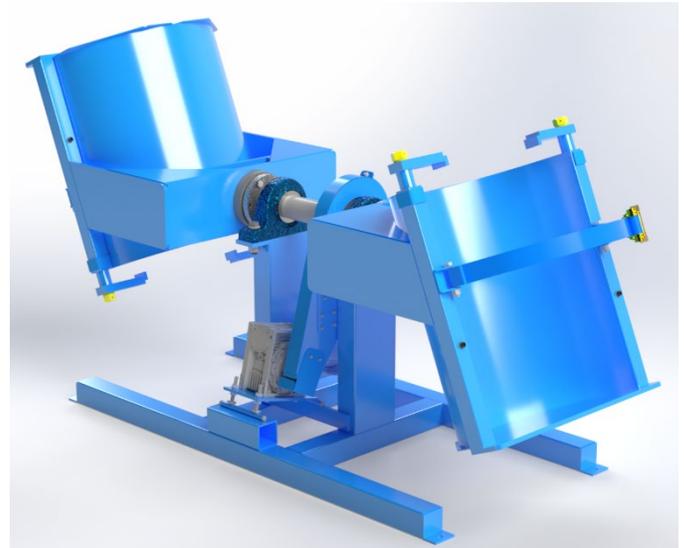
Every Morse drum handler is inspected prior to shipping. However, damage may be incurred during transit.

- 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. 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.

Review the Material Safety Data Sheet(s) for the material(s) in the drum(s) and take all necessary precautions. Safety shoes, work gloves, hard hat and other personal protective devices are recommended.

Prior to initial use, inspect all moving parts and test rotation of drum holder. Inspect drum holder for proper operation. Perform necessary inspections, operator training, etc.



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.

		<p>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 Tumbler. Morse Drum Tumblers do not comply with OSHA unless they are installed in accordance 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." Safety Enclosure Kit with Interlock can be ordered for any MORSE drum tumbler.</p>
	<p>WARNING - The 2-309 Series is designed to rotate two steel, plastic or fiber drums weighing up to 800 Lb. (363 kg) each, ranging from 18" to 23.5" (45.7 to 59.7 cm) in diameter and from 29" to 37" (74 to 94 cm) in height. DO NOT attempt to handle any other type of drum or object. DO NOT exceed the weight capacity of 800 Lb. (363 kg) per drum.</p>	
	<p>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.</p>	
	<p>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.</p>	
	<p>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, alterations may result in injury to operator or machine.</p>	
	<p>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.</p>	
	<p>CAUTION - Wear safety shoes with non-slip soles and hard toe protection.</p>	
	<p>CAUTION - DO NOT allow drum to impact on floor, ground, etc.</p>	
	<p>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</p>	

Machine Description

Morse 2-309 Series Drum Tumblers are designed to receive an upright steel, plastic or fiber drum and rotate the drum "corner-over-corner" at 14 RPM, based on a 60Hz, 1750 RPM AC motor. Drum RPM decreases to 12 with a 50Hz motor.



Maximum full drum capacity is 800 Lb. (363 kg) per drum. Capacity is derated to 400 Lb. (181 kg) for a half-full drum. Half-full Capacity is an indication of the capacity for tilting a bottom-heavy drum. A partially full drum with an unbalanced and shifting load is harder to tilt than a full drum.

Drum Holder - The drum holder is the component on the Drum Tumbler that securely holds the drum for rotating. The drum holder features a web strap and ratchet mechanism for tightening around the middle of the drum and two top clamps for holding the drum end-to-end.



WARNING - DO NOT exceed these ratings. Exceeding these ratings or handling a drum other than those mentioned above is unsafe and could result in equipment damage, excessive wear, motor overload and shortened service life of transmission components.

Important

1. Review the Material Safety Data Sheet(s) for the material(s) in the drum(s) and take all necessary precautions. Safety shoes, work gloves, hard hat and other personal protective devices are recommended.
2. Please read all instructions thoroughly before attempting to operate your new Morse drum tumbler.
3. When loading, unloading, operating, or maintaining your MORSE drum tumbler, always use care and good judgment. Maintain secure footing and a firm hold. Keep hands and loose clothing away from all moving parts. Never allow anyone to be below any part of a raised drum handler or drum. Read operating instructions and review the pictures in the sales brochure before operation.

Assembly and Installation Instructions

The base has four holes spaced 27" wide x 62.5" long (68.6 cm wide x 158.8 cm long). Morse recommends the Drum Tumbler be secured to the floor using 5/8" x 3" lag bolts.

Install all Morse Drum Tumblers in accordance with OSHA, CSA, CE requirements for enclosure and safety interlock, etc. Drum Tumbler must automatically turn off when enclosure door is opened.

Control Station - Morse Control Packages are sold separately.

Making Connections:

- For air motor powered Tumbler, 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 supply airlines are of sufficient size to provide proper air volume. The air motor requires 60 scfm and 40 to 60 psi of compressed air. The proper air pressure will depend on weight of drum.

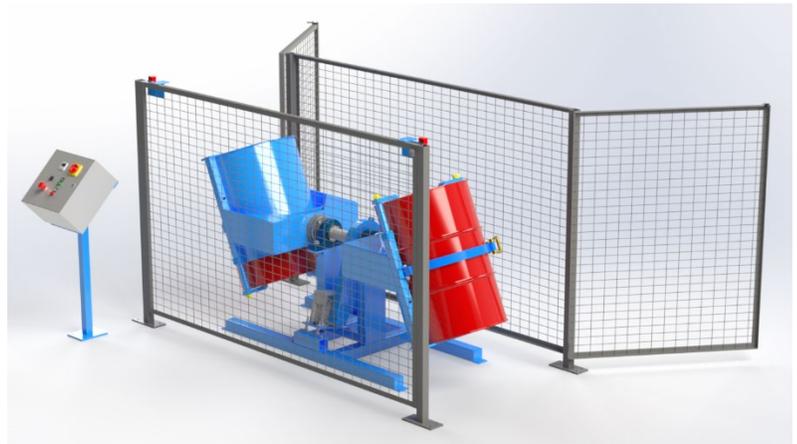
See Air Motor Technical Info online at:
<https://morsedrum.com/ops/PLAIR.pdf>

Install all Morse Rotators in accordance with local requirements for enclosure and safety interlock, etc. One way to accomplish this is with a Morse enclosure with safety interlock, so the rotator automatically turns off when enclosure door is opened. Power connections and motor controls must also comply with applicable local codes.

For OSHA compliance in the USA, see OSHA subpart O.1910.212(a)(4) "Barrels, containers, and drums. 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."



Morse Control Packages (sold separately) include appropriate Control Station for each model



Operating Instructions

Loading a Drum

1. Swing ratchet clear of drum holder opening. Loosen top clamps to full open position (see figure 5.1).
2. Load drum with hoist using appropriate drum lifting equipment, such as model 92 Drum Lifter. Guide drum so it tilts back and seats into drum holder as it is lowered.

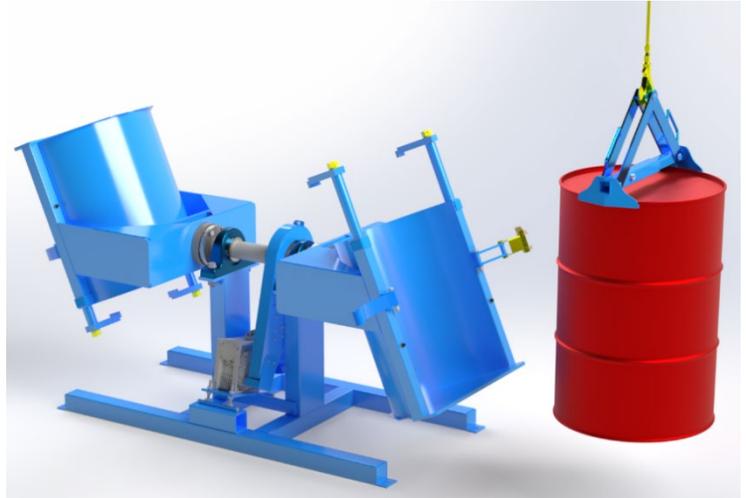


Figure 5.1

3. A variety of drum handling methods can be used to set a drum into the drum holder. Ensure that drum is fully seated against the back of drum holder (see figure 5.2).



Figure 5.2

4. Drape web strap across face of drum. Thread strap through slot in ratchet. Operate ratchet to tighten strap around drum (see figure 5.3).



Figure 5.3

5. Turn top clamps with provided hand crank until they tighten against top of drum (see figure 5.4). Be sure to tighten BOTH top clamps.



Figure 5.4

Rotating a Drum

1. After ensuring that the drum is securely fastened into the drum holder, close the guard enclosure to engage interlock switch.
2. Turn the motor on.
For air motor version, open the air shutoff ball valve.

Unloading a Drum

Ensure the drum is in upright position to unload.

1. Squeeze the ratchet release lever and open all the way to unlock, then release the tension on the strap. Allow enough slack in the strap in order to remove from ratchet.
2. Loosen top clamps with hand crank and swing clear of drum.
3. Remove drum with appropriate drum handling equipment.

Preventative Maintenance

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

1. Replace any parts that show signs of wear.
2. Inspect oil level in gear box / speed reducer and fill with high quality, synthetic lubricant for gears if necessary. Use Enduratex EP 460 synthetic oil or equivalent. The speed reducer has been filled and tested prior to shipment. After operating a new machine for 1500 hours, the housing should be thoroughly flushed out and new oil added to fill the housing to the oil level plug. The oil should be changed every 5000 operating hours thereafter or more often if operating conditions cause condensation or moisture resulting in sludge formation inside housing. See Gear Box Operator's Manual for more oil information.
3. Lubricate all moving parts including: bearings, ratchet, and threaded rod.
 - Pillow Block Bearings: Grease every 6-12 months in ordinary environment, grease monthly in dirty conditions. See [Bearing Lubrication Sheet](#) for grease types and fill amounts.
 - Drive chain: Grease every 6-12 months with multiservice lubricant (I.e. Whitmore's [Surtac® 2000 HD](#))
 - Clamp Screws: Grease every 6-12 months with multiservice lubricant (I.e. Whitmore's [Surtac® 2000 HD](#))
4. Periodically inspect all moving parts, framework, and floor mounting fasteners for signs of wear, fatigue, or loosening.
5. The web strap should be removed from service and replaced if any of the following are visible:
 - Acid or caustic damage
 - Melting or charring of any part of the strap
 - Holes, tears, cuts, snags or embedded articles
 - Broken or worn stitching in load bearing splices
 - Excessive abrasive wear

AC Control Packages (sold separately)

NON-Explosion Proof AC Control Box

Explosion Proof AC Control Box



NON-explosion proof AC Control Packages (sold separately) include control box with timer, start and stop buttons, emergency stop button and lockable main disconnect. 309-1 control packages offer fixed speed of 14 rpm. 309-3 control packages (shown) offer variable speed control from 2 to 20 rpm.



Explosion Proof AC Control Packages (sold separately) include control box with start and stop buttons and run / jog selector switch.

AIR Controls Included with Model 309-A



Air Control Package (included with model 2-309-A) includes Filter, Regulator, Lubricator (FRL) and on / off valve. Drum Tumbler rotates drum at 14 RPM and allows you to vary RPM with air flow and pressure.