

# COIL MOUNTER SERVICE & REPLACEMENT PARTS MANUAL

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This Service and Replacement Part Manual applies to the following Bushman AvonTec machinery:

Product Type:                   Hydraulic Coil Mounter  
Model Number:  
Rated Load Capacity:  
WBE Serial Number:  
Registered User:  
Date Shipped:

For warranty, service, and replacement parts information please call your local dealer or Bushman AvonTec at 800-558-7850.

## **RESPONSIBILITIES OF OWNERS/USERS OF COIL MOUNTERS**

1. Deflection. It is the responsibility of the user/purchaser to advise the manufacturer where deflection may be critical to the operation
2. Inspection and Maintenance. The machine shall be inspected and maintained in proper working order in accordance with the manufacturer's operating / maintenance manual and safe operating practices.
3. Removal from Service. Any machine not in safe operating condition shall be removed from service until it is repaired to the original manufacturer's standards.
4. Repairs. All repairs shall be made by authorized personnel in conformance to the manufacturer's instructions.
5. Operators. Only trained and authorized personnel shall be permitted to operate

the machine.

5.1 Before Operation. Before using the machine, the operator shall have:

- (1) Read and/or have explained and understood, the manufacturer's operating instructions and safety rules, or be trained by a qualified person.
- (2) Inspected the machine for proper operation and condition. Any suspect item shall be carefully examined and a determination made by a qualified person as to whether it constitutes a safety hazard. All unsafe items shall be corrected before further use of the machine.

5.2 During Operation. The machine shall be used only in accordance with its intended use and within the manufacturer's limitations and safety rules.

- (1) Do not overload the machine.
- (2) Ensure that all safety devices are operational that all warning labels are in place.

6. Modifications and Alterations. Modifications or alterations of these machines shall be made only with the written permission of the original manufacturer. These changes shall be in conformance with all applicable provisions of the standard covering the safety requirements for coil mounters and general machinery and shall be at least as safe as the equipment was before modification. These changes shall also satisfy all safety recommendations of the original equipment manufacturer for the particular application of the machine.

## **INSTALLATION INSTRUCTIONS**

### UNLOADING

This machine is equipped with four lifting brackets mounted to the base frame. Use these lifting brackets for unloading the machine and positioning it in its working position.

### INSTALLATION

Bushman AvonTec coil mounters are normally shipped completely assembled and ready to install.

1. The coil mounter should be bolted in position prior to use.

2. The base frame of the machine is provided with hold down brackets for this purpose. Use ½" diameter grade 8 bolts or equivalent to ensure that the machine is mounted firmly in position and bolted to the floor. The machine should be leveled with shims prior to bolt down, and a good quality grout must be used under the machine frame once it is bolted in place. **Supervision should check the positioning of the machine as stated below prior to bolt down.**
3. The alignment of the coil mouter with the de-reeler is most important. Ensure that the centerline of the coil mouter is in line with that of the mandrel of the de-reeler. The coil mouter must also be square to the mandrel and the feed direction of the coil.
4. The position of the coil mouter relative to the de-reeler is shown in the accompanying drawings. It is most important that these dimensions are followed to ensure the V-saddle on the coil mouter is correctly positioned relative to the center line of the coil when being placed on the mandrel.
5. The electrical disconnect switch in the electrical enclosure must be connected to the incoming electrical feed following applicable local and national electrical codes by a qualified person. Connect the power leads to the fused disconnect switch. If the pump runs in reverse, it may be necessary to reverse the L-1 and L-3 leads.
6. Once the unit is connected electrically, the hydraulic circuit should be checked to see that all hydraulic lines are charged with fluid, and that there is sufficient hydraulic fluid in the reservoir on the power unit. (The unit was shipped with oil in the system, and looking at the sight glass in the oil reservoir should confirm whether additional oil is required.
7. When all hydraulic lines have been charged, the unit may be operated from the main control panel. **Familiarize yourself with the machine and its controls before attempting to start the machine.** Ensure that all air is purged from the hydraulic system before attempting to load the machine.
8. The coil mouter is supplied with "dead man" type controls that require the operator to keep the various push buttons depressed throughout the particular operation being activated.

## Coil Mounter Safety Summary

**WARNING!** Ensure that all operators and maintenance personnel working with the equipment have read and/or had explained, and understand these safety instructions before operating or performing work on the equipment.

Failure to heed these instructions can possibly lead to severe personal injury.

1. Keep clear of the machinery at all times, and particularly when it is operating.
2. Do not climb or ride on the machine.
3. Ensure that all safety guards and limit switches are in place, and are in working order.
4. Do not enter area under the machine unless the machine has been electrically locked and tagged out, and the tilting cradle is firmly down against the stops at the end of one of its load/unload positions.
5. Ensure that the tilting platform is firmly clamped in position and that it cannot move during servicing and maintenance operations.
6. Should it be necessary for operational reasons to be on one of the tilting platform surfaces, always use the correct ladders, safety harnesses, and other safety equipment necessary to protect persons from falling from unprotected heights.
7. Do not bump the tilting platforms with the product being rotated or tilted, or with cranes, crane hooks, or lift trucks. Shock loads may cause failure of the system components and could cause unexpected movement of the platform and injury to persons.
8. Never try to lubricate moving machinery - ensure lockout and tagout procedures used before all lubrication and maintenance.
9. Use extreme caution at all times when loading and unloading the machine to ensure that the load is always in a secure mode. Ensure that loads are correctly seated in the V-saddle fixture before removing cranes, slings etc.
10. Do not overload the machine - see the rated capacity on the serial plate.
11. Do not rotate loads that project over front edge of the platform - ensure all loads are centrally placed and even from side to side.



## Description of the Equipment

The Bushman AvonTec coil mouter is a purpose built machine for loading large coils of metal onto the mandrel of a de-reeler machine.

The coil mouter accepts coils of metal, usually on a pallet, which is loaded to the horizontal tilting platform of the machine. Provision is made to secure the coil to the coil mouter by a securing strap that is placed around the circumference of the coil and tightened by a tensioning ratchet. The coil is then tipped through 90 degrees until it is vertical by two hydraulic cylinders mounted in the base of the machine that push the platforms in a circle around a central pivot point.

There is a pallet pocket in the one platform into which the empty pallet slides as the coil is tipped.

In the vertical position, the coil is now resting on a V-saddle that can be moved away from the pallet by a hydraulic cylinder. The coil mouters for the U.S. Mint are equipped with a four load cell weighing system that allows the coil to be weighed in the vertical position. The controls for the weighing system allow the scale to be calibrated to register a net weight of the coil, and the weight is shown in pounds on a digital read out mounted above the instrument panel.

The whole coil mouter machine is mounted on four captured wheels in a base frame that acts as a guide rail. A long hydraulic cylinder mounted in the base moves the whole machine towards and away from the de-reeler.

The one platform of the coil mouter on which the V-saddle is mounted is also equipped with a sliding mast on wheels moving in a channel frame. Two hydraulic cylinders move this mast, causing it to lift and lower. This action is used to lower the coil onto the mandrel, or to remove a coil from the mandrel. The combination of the machine moving forward, and the lowering of the V-saddle allow accurate positioning of the coil on the mandrel.

The whole machine is powered by a hydraulic power unit mounted in the base of the machine. This consists of an electric motor driving a hydraulic pump, with an oil reservoir and filter, and control valves that are activated by the push buttons on the main control panel or the auxiliary pendant control.

The main electrical panel is mounted on the side of the machine with a fused disconnect switch. The power in-feed is brought to this main switch. A cable carrier carries electrical power and control cables to the power unit and control station. The control voltage is 120 volts.



Push button controls activate the various functions through hydraulic control valves and cylinders. The push button controls are of the "dead man" type, which require the push button to be held in to continue activating each function of the machine.

The machine has a selector switch that allows three of the machine functions to be in either "fast" or "slow" speed - these are "machine forward and reverse", "saddle in & out", and "coil saddle up & down". The platform tilt action is at one speed.

The main control panel with the weigh indicator is on the load side of the machine. An auxiliary control is on a pendant on the other side of the machine. This pendant duplicates the control buttons on the main control panel. A selector switch allows the operator to determine which control will be used.

## DAILY OPERATOR CHECKS

1. Check around machine to ensure that it is in a safe condition to operate and that there are no loose objects on the tracks, tilting platform, moving V-saddle. Check also that all guards and safety devices are in position, that safety labels are clear and legible, and that there are no oil leaks or loose electrical wires.  
**Should any of the above problems exist, do not operate the machine, and have it checked by an authorized maintenance person.**
2. Operate the machine through one cycle before loading the machine.
3. During this unloaded test observe the machine for smoothness of operation.
4. Should there be any unusual jerkiness in operation or unusual sounds made by the machine, do not operate the machine and have the machine checked by a qualified maintenance person.

## OPERATION

1. Before operating the coil mounter, ensure that you have read and understood the Safety Summary earlier in this manual.
2. Before operating the machine ensure that the load is centered, correctly positioned, and secured to the platform of the coil mounter with the tie down straps provided.
3. Use the "Tilt Up" push button to activate the machine and rotate the coil from the

horizontal to the vertical. You must hold the push button. If you release the push button, the tilting platform will stop in an intermediate position.

4. **WARNING!** It is dangerous to leave a coil mounter in an intermediate tilted position - if this is necessary for any reason, ensure that correct blocking procedures are used to avoid persons being close to the machine or where they can be struck by the machine if the tilting platforms move.
5. Rotate the coil until it is vertical and positioned on the V-saddle. The machine will stop automatically when it reaches the vertical position. If the coil is smaller than the pallet on which it is loaded, the coil will slide down until it is held by the V-saddle. The machine is designed for this purpose.
6. Move the V-saddle with the coil away from the pallet which is now retained in a vertical position in the pallet pocket. This is done by using the "Saddle Out" "Saddle In" push buttons. It is now possible to weigh the coil using the **"Weighing procedure"** - see sheet detailing this later in this section.
7. Once the coil has been weighed, the center of the coil should be aligned with the center of the mandrel of the de-reeler. Use the "Coil saddle up" and "Coil saddle down" push buttons to control this motion.
8. Note that the machine is equipped on the control panel and pendant with a selector switch that allows for selection of "Fast" or "Slow" speed. By turning the selector switch you can choose to have the lift and lower speed fast or slow. This will assist you to accurately line up the coil center with the mandrel.
9. Once the coil is lined up with the center of the mandrel you can use the "Forward" and "Reverse" push buttons to move the coil mounter and its load towards or away from the de-reeler. The "Fast" and "Slow" selector also works with the "Forward" and "Reverse" motion, so you can accurately locate the coil on the mandrel. It may also be necessary to use the "Saddle In" "Saddle Out" to position the coil in the correct place. The speed selector switch works with this motion as well.
10. Once the coil is correctly positioned relative to the mandrel, use the "Coil saddle down" push button to lower the coil onto the mandrel. The mandrel will now be supporting the weight of the coil. Lower the V-saddle some more to be well clear of the coil.
11. The coil should now be on the mandrel and the coil mounter saddle should be below it and clear.

12. Push the "Reverse" push button until the coil mounter stops in the normal load position.
13. Push the "Saddle in" button until the V-platform returns to its load position.
14. Push the "Tilt down" button to return the tilt platform to the load position. The coil mounter is now ready for removal of the pallet and the loading of another coil.
15. Should it be necessary to unload a coil from the de-reeler, the above actions should be reversed.

## **MAINTENANCE INSTRUCTIONS**

**DANGER!** Before performing any maintenance or repair work on the machine, secure the machine by blocking the machine to keep the tilt platforms in position.

### **SECURING THE MACHINE FOR MAINTENANCE AND REPAIR**

1. Remove all loads from the machine
2. Use sturdy wooden or other beams to block the platforms in position so that they cannot move.
3. Lock and tag out all machine controls using approved procedures to ensure that none of the machine controls may be used.
4. It should now be safe to enter below the machine and perform routine maintenance procedures.
5. Should it be necessary to remove any components such as hydraulic cylinders, hoses, and limit switches it will be necessary to securely block the machine in position before removing these components. This work should only be done by authorized and trained personnel. If unsure as the methods to use, always contact the factory at 800-558-7850 before proceeding.
6. After completing maintenance on the machine, reverse the above procedure to restore the machine to operational use.



## ADJUSTMENT

The limit switches have a certain amount of adjustment in them and can be adjusted to stop the rotation slightly before the limit of travel has been reached. This can be done by changing the position of the operating arm of the limit switch. At no time should this be adjusted to extend rotation beyond the 90 degree limit of rotation, as this would cause damage to the hydraulic system. The relief valve is pre-set at the factory to open at approximately 100 p.s. l. above the maximum operating pressure of the system, and it requires no further adjustment.

## LUBRICATION

1. The machine is equipped with aluminum-bronze bearings at all pivot points where components rotate.
2. All lubrication points are equipped with zerk fittings, and capped with a red plastic cap for ease of identification of each lubricating point.
3. Under normal conditions of use all lubricating points should be flushed with grease every two months. In addition to providing lubrication to the bearing surfaces, flushing with grease assists in removing dirt and other foreign matter from the bearings.
4. **RECOMMENDED GREASE**  
Sunoco Multi-Purpose 2 E P industrial grease or equivalent.

## HYDRAULIC OIL

1. Replace the hydraulic oil filter at least annually.
2. If the oil level in the reservoir should become low, evidenced by a noisy pump and the coil mounter not reaching its full limit of travel, then oil should be added to the reservoir. The following hydraulic oil should be used:

MEDIUM M S NON- FOAMING APPROXIMATELY 200 SSU VISCOSITY @ 100 DEG. F. WITH ANTI-CORROSION AND ANTI-OXIDATION PROPERTIES.



## STATEMENT OF LIMITED WARRANTY

### COIL MOUNTERS

Bushman AvonTec products mentioned above are warranted for **one (1)** year from date of shipment to the original purchaser. Batteries, power heads, and other major components not manufactured by Bushman AvonTec will be warranted according to the suppliers' normal warranty.

Warranty does not cover maintenance items, including but not limited to, lubricating grease and oils, filters, or minor adjustments, or any items that show evidence of neglect, overload, abuse, accident, or inadequate maintenance. It is the user's responsibility to maintain the products in accordance with Bushman AvonTec's recommended schedule of maintenance as outlined in the owner's manual.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, PERFORMANCE, OR OTHERWISE.

Bushman AvonTec's obligation under its warranty is strictly and exclusively limited to the repair or replacement free of charge at the address to which the products are to be delivered of such components of the products as are found to be defective in material or workmanship on the condition the Buyer gives prompt notice to Bushman AvonTec of any claimed breach of warranty within the warranty period. Bushman AvonTec shall have the right to remedy such defects at such time or times as may be reasonable in terms of the availability to Bushman AvonTec of qualified service men and replacement or repair parts, the location of the products, etc., and the repair or replacement of such components shall not extend the applicable warranty period in any manner. It is understood that the foregoing recites the entire liability of Bushman AvonTec arising out of warranties, representations, instructions, descriptions, or otherwise. Bushman AvonTec reserves the right to satisfy its warranty obligations in full by the payment of all sums paid by the Buyer for the products, and the Buyer shall thereupon return the products to Bushman AvonTec. It is understood that the warranty is not assignable without Bushman AvonTec's written approval. THE FOREGOING IS THE FULL EXTENT OF THE RESPONSIBILITY OF BUSHMAN AVONTEC AND IN NO EVENT SHALL BUSHMAN AVONTEC BE LIABLE FOR CLAIMS (BASED UPON BREACH OF EXPRESS OR IMPLIED WARRANTY, NEGLIGENCE, OR OTHERWISE) FOR ANY OTHER DAMAGES WHETHER DIRECT, IMMEDIATE, INCIDENTAL, FORESEEABLE, CONSEQUENTIAL OR SPECIAL, INCLUDING DAMAGES ARISING OUT OF PERSONAL INJURIES, OR LOST PROFITS.

Bushman AvonTec reserves the right to make changes in its statement of limited warranty at any time in the future.

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