MAGNUM TARPER

US Patents and Patent Pending

Owner’s Manual

FOR ASSISTANCE
CALL 252-291-2141

ATTENTION DISTRIBUTOR: DO NOT DISCARD, Please forward to customer
Along with warranty registration when unit is delivered and hang driver operation
Tag in cab around hoist controls

WARNING: If incorrectly used, this equipment can cause injury!

5-2008
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section Description</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 1  Operation</td>
<td>2</td>
</tr>
<tr>
<td>Part 2  Overview</td>
<td>3-4</td>
</tr>
<tr>
<td>Part 3  Magnum Packing List</td>
<td>5</td>
</tr>
<tr>
<td>Part 4  Gantry Installation</td>
<td>6-7</td>
</tr>
<tr>
<td>Part 5  Modular Installation</td>
<td>8</td>
</tr>
<tr>
<td>Part 6  Side Arm Installation</td>
<td>9</td>
</tr>
<tr>
<td>Part 7  Plumbing</td>
<td>10-12</td>
</tr>
<tr>
<td>Part 8  Final Adjustment &amp; Maintenance</td>
<td>13-15</td>
</tr>
<tr>
<td>Part 9  Tarp Replacement</td>
<td>16-17</td>
</tr>
<tr>
<td>Part 9  Warranty</td>
<td>18</td>
</tr>
</tbody>
</table>

COVER OPERATION

TO COVER:

1. Raise side arms and extend upper arms to raise roller up between cab and container
2. Raise gantry above container (OPTIONAL)
3. Once the roller is past the front of the container, continue to hold joystick in the covering direction and cover container.
4. Position the roller so it will **REST ON THE TOP REAR EDGE OF THE CONTAINER BUT BELOW 13'6". POWER DOWN THE ROLLER AGAINST THE TAILGATE.** This helps to keep the roller from bouncing up and down against the container while going down the road. If powered against the tailgate, the roller should ride tightly against the container as the truck goes down the road.
5. Flip the tarp side flaps down and secure them as needed.
6. Lower gantry down to just under container edge (Optional)

TO UNCOVER:

7. Un-secure the side flaps, if anchored down.
8. Raise the (optional) gantry over the front edge of the container.
9. Extend the upper arms to get roller off of container.
10. Bring the side arms forward and clear the front top edge of the container and then retract the upper arms to set the roller in the cradle.
11. Lower gantry (OPTIONAL)
12. **POSITION THE ARMS SO THAT THE WEIGHT OF THE ROLLER IS RESTING ON THE BOTTOM OF THE CRADLE AND NOT ON THE ARMS!** This keeps the arms from bending downward.
## MAGNUM CRATE CONTENTS

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<td>SF4 Gussets for Brackets</td>
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<tr>
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<td>4</td>
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GANTRY INSTALLATION

1. Check for clearance between cab, exhaust, and hoist.
2. You need a minimum of 7” clearance between hoist and cab to mount the gantry.
3. Sit gantry on top of chassis, flex U-bolts apart, slide in from bottom of chassis into mounting plate holes, and attach the 5/8” U-bolts with the 5/8” nuts and washers. If this option will not work then a chassis bridge will need to be fabricated for gantry attachment.
4. The closer the roller is to the cab the easier it will be to raise and lower arms. *Note- leave at least one (1”) inch of clearance between cab and gantry.
5. Measure the distance from hoist to gantry. Make sure both gantry legs are the same distance from the hoist and plumb.
6. Mount cradle on top of gantry using the 4) ½” x 1 ¾” bolts. Insert the rubber shims between cradle and gantry uprights. These shims are needed to allow for chassis flex. Be sure to mount the cradle with the ½” bolts and washers through the top and the locknuts on the bottom. Do not over-torque mounting bolts and squish out bushing. Over-torquing bolts will cause cradle to crack and void warranty
7. Place roller assembly into the cradle with the end marked PASSENGER SIDE and TORQUE SHAFT on the PASSENGER SIDE. Bolt the tarp bar to the INSIDE of the cradle with the 5/16” x 2” bolts and locknuts. (See Diagram)
8. NOTE: The shaft end on the passenger side has a FLAT spot. So you can put the supplied wrench on for tensioning.

ADJUSTABLE GANTRY INSTALLATION

1. Check for clearance between cab, exhaust, and hoist.
2. You will need a minimum of 7” clearance between hoist and cab to mount gantry base.
3. Sit gantry base on top of chassis, flex U-bolts apart, slide in from bottom of chassis into mounting plate holes, and attach the 5/8” U-bolts with the 5/8” nuts and washers. If this option will not work then a chassis bridge will need to be fabricated for gantry attachment.
4. The closer the roller is to the cab the easier it will be to raise and lower arms. *Note-leave at least one inch (1”) of clearance between cab and gantry.
5. Measure the distance from hoist to gantry base. Make sure both gantry base’s are the same distance from the hoist and plumb.
6. Insert the gantry inserts into the gantry bases.
7. Mount cradle-G on top of gantry inserts using the 4) ½” x 1 ¾” bolts. Insert the rubber shims between cradle-G and gantry inserts. These shims are needed to allow for chassis flex. Be sure to mount the cradle with the ½” bolts and washers through the top and the nuts with lock washers on the bottom. Do not over-torque mounting bolts and squish out bushing. Over-torquing bolts will cause cradle to crack and void warranty
8. Place roller assembly into the cradle with the end marked PASSENGER SIDE and TORQUE SHAFT on the PASSENGER SIDE. Bolt the tarp bar to the INSIDE of the cradle with the 5/16” x 2” bolts and locknuts.
9. NOTE: The torque shaft end on the passenger side has a FLAT spot. So you can put the supplied wrench on for tensioning.
10. Attach the CD17548 cylinder to the cradle-G clevis with the supplied clevis pin. Attach the base of the cylinder to the female clevis with the supplied clevis pin. Measure the distance between the gantry legs at the cylinder base clevis pad. Cut the HPBCB-A angle to fit this dimension. Weld the HPBCP-A angle to the gantry legs, making sure that the HPBCP-A angle is level and plumb with the truck. Make sure that the gantry legs are level and plumb, weld the 1X52 cross braces to the gantry bases in a criss-cross pattern. This will give the gantry additional bracing for raising and lowering the cradle.
MODULAR INSTALLATION

NOTE: The installation of the Magnum Tarper is very simple. The cylinder placement, hose routing, and lower arm mounting has already been done. The only thing involved is mounting the modular assembly to the truck’s sub-frame.

1. Federal D.O.T. allows for 108” overall width for safety devices. Therefore maximum width for the Magnum Tarper must not exceed 108” overall width. This includes any bolts, nuts, hydraulic fittings, etc. Check with your state and local D.O.T. to determine what standards apply in your area!
2. For example, if the hoist is 35 ½” wide then the following formula will give you your maximum overall width.

\[
108" - 35 \frac{1}{2}" = 72 \frac{1}{2}"
\]
\[
72 \frac{1}{2}" / 2 = 36 \frac{1}{4}" 
\]
maximum width from hoist for each side.
O’Brian recommendation is 36” for each side

3. PIVOT POINT FORMULA EXAMPLE

Take the length of your longest box (22’-24’) and add the length from the front of the box to the center of the gantry uprights (example 1’) then divide by two.

\[
(22' + 1' = 23', 23' / 2 = 11'-9" \text{ or } 24' + 1' = 25', 25' / 2 = 12'-6")
\]
Your pivot point is now 11’-9” or 12’-6” from the center of your gantry uprights to the pivot center of your modular assembly.

Note: Average pivot points fall between 11’-9” and 12’-6”; depending on container length of 22’ – 24’ and distance between container and Gantry.

4. The Modular pivot assemblies are side sensitive; bulkhead fittings and slotted opening go to the inside facing the hoist. The module can be mounted to the sub frame anywhere on their bottom. The modules must be level front to rear, side-to-side, and parallel to the hoist.

5. As a general rule, mount the module as low as possible to clear the container and high enough to change the tires.

(Minimum tire clearance is 2” from bottom of module to top of tire!!)

6. Use the supplied 3” x 3” “L” brackets for mounting the module. You may have to cut either length to get the module level front to rear and side to side. DO NOT WELD TO THE CHASSIS!! THERE MUST BE A PLATE BOLTED TO THE CHASSIS OR USE THE HOIST SUB FRAME TO WELD TO.

7. Use the supplied gussets to finish the modular installation.
1. Slide the lower arm (MSA1020) into the linkage assembly.
2. Slide the upper arm (MUSA1020PA, MUSA1020DR) onto the RSA shaft.
3. Slide the lower arm out AND rotate the upper arm around so that the pivot holes area aligned.

4. Attach the lower arm to the upper arm using the 1”x3 ¼” steel pin with a ¼” hole drilled on one end. Secure the pin to the arm with the ¼” cotter pin.
5. Make sure that the lower arms are level. Slide the lower arm in or out of the linkage assembly to accomplish this. When level, measure the distance from the elbow pivot to the linkage assembly. Make sure that both sides are the same distance and level before drilling.
6. Drill and bolt the lower arm to the linkage assembly using the provided hole as a guide. Secure the lower arm with a 3/8” x 3” counter-sunk bolt.
7. Align the rod end of the 12” stroke cylinder with the lower hole in the upper arm using the provided 1” x 3” steel pin with a ¼” center drilled hole. Secure using a ¼” cotter pin.
8. Attach the base of the cylinder with the 1” x 2 ½” pin and cotter pin.
9. Place enclosed tarp tensioning wrench on passenger side RSA shaft. Torque set screw against the flat side of RSA shaft. Torque the wrench 10-12 turns clockwise. Finish by placing a 5/16” x 1 3/4” bolt through roller shaft and upper arm on Passenger and Driver sides. Finish by tightening the 5/16” locknuts against the bolts.
10. PRACTICE EXTREME CAUTION!!! THE WRENCH COULD SLIDE OUT OF YOUR HANDS, SPIN AROUND AND BREAK WRISTS!!!

11. Install the stabilizer bar (SAEXLPS) between the upper arms using the (4) 3/8” x 2 ¼” bolts and stover nuts. Make sure that the stabilizer bar offset is facing toward the rear.
Hydraulic systems that flow over 50 gpm or require a higher flow priority valve or require mounting priority valve require a higher pressure priority valve. Hydraulic systems over 3000 psi require a.

Installation will vary with configuration of valve & hose.
Hydraulic systems that flow over 50 gpm require a higher flow priority valve or require mounting priority valve. Higher pressure priority valve requires a hydraulic systems over 3000 psi require a.
Hydraulic systems that flow over 50 gpm require a higher flow priority valve (OPT). Hydraulic systems over 3000 psi require a higher pressure priority valve (OPT) or require mounting priority valve downstream using power beyond.

**Plumbing Instructions**

1. Mount the tarper control valve where it is easiest for the driver to operate.
2. Mount the priority valve at a place that is easily accessible for hydraulic lines and maintenance.
3. Disconnect the pump line from the hoist control valve.
4. Plumb the pump line into the 1” o-ring port labeled “P”.
5. Fabricate a hose and plumb from the 1” o-ring port labeled “BF” back to the hoist control valve pump port.
6. Fabricate and plumb a hose from the ½” o-ring port labeled “CF” to the relief valve side of the tarper control valve. The pressure port hydraulic adapter is in the hose kit bag.
7. Fabricate and plumb a hose from the return port of the tarper control valve back to the tank. The return port hydraulic adapter is in the hose kit bag.

**Upper & Lower Arm Plumbing Instructions**

1. Screw 2-3/8” Tee’s onto one end of 2 of the 4-3/8” steel lines.
2. Route the 4-3/8” steel lines down the chassis in a neat manor. Be sure to use the weld/plastic tabs to secure the 3/8” steel lines to the sub assembly, with the T’s toward the rear of the truck (See Diagram).
3. Install the 4-1/4”x1/2” o-ring to male JIC adapters into the control valve work ports.
4. Route the 4, #4 hoses from the control valve work ports to the 3/8” steel lines.
5. Route the #1 Hose from the driver’s side steel line to the rear bulkhead fitting on the driver’s side module.
6. Route the #5 Hose from the passenger side steel line to the forward bulkhead fitting on the passenger side module.
7. Route the #2 Hose from the front bulkhead fitting on the driver’s side to the rear bulkhead fitting on the passenger side. (Yes, this connects the two modules together in series!)
8. The lower cylinders MUST be fully retracted in order to bleed the cylinders of air. DO NOT extend the cylinders until fluid has completely filled all hoses and cylinders!
9. Route the 4-#3 Hoses from the upper cylinders, over and around the main pivot and out through the 1”x3” slot at the front of the module. (See Diagram) From there, route the hoses along the forward support bracket, under the frame and to their respective tees (base port to base port, rod port to rod port). It is VERY important to put the protective sleeving over the hoses wherever a hose enter or exits an arm and/or module. The short sections are for the hose where they enter the arm and exit the module. The long sections are for where the hoses are routed around the main pivot.
10. Start engine, engage the PTO and retract the lower cylinders. If the arms start to rotate, STOP and switch hoses at the control valve work ports.
11. Retract cylinders completely by holding the control valve in the retract position (Make sure that position matches the operation decal). Continue holding the handle in the retract position for 3-5 minutes. This will allow the oil to fill the passenger side cylinder, pressurize the re-phasing port and bypass around the seals filling the crossover hose and then driver’s side cylinder back to the tank. DO NOT crack lines to bleed this part of the hydraulic system.
12. **It is very important that all of the air is bled out of the lower cylinders. If not, the arms will not operate together.**
13. For the upper cylinders, traditional cracking and bleeding the hydraulic lines will work to get out the majority of the air. However, additional bleeding may be required once the cylinder is
completely extended and retracted to get the residual air out of the cylinder.

14. Watch the lower arms during operation to be sure that they are in phase with one another. If the arms are not in phase, retract the cylinders completely and continue to hold for an additional 3-5 minutes. This should completely Rephase the cylinders and purge any residual air out of the hydraulic system.

**FINAL ADJUSTMENTS**

1. Bleed all cylinders by re-phasing the lowers and cracking lines on the uppers. Tighten all hose fittings and check all connections for leaks.
2. If arms do not move together, re-phase lower arms and re-bleed upper cylinders as needed.
3. Apply decals to tarp per decal layout. Hang driver’s operation tag in cab around hoist controls.

**Maintenance**

1. Re-phase lower cylinders if they operate out of synchronization.
2. If arms will not rotate, extend or retract check that the tarp system pressure is set at 2250 psi, and that the overall pressure relief is set at 2350 psi by using the gauge port on the priority valve. The gauge port is labeled with a stamping of “G”
3. Check for hose abrasion on a weekly basis. Repair or replace as needed.
4. Adjust spring tension if tarp is slack or will not roll up.

**OPERATOR TIPS**

1. Do not operate under or near electrical wires.
2. Keep clear of moving parts.
3. Do not allow anyone on the container when the tarper is in operation.
4. If arms stop moving, they may have hit debris in the container. Reverse arm movement, readjust trash/ readjust arms, and recover. This shows that the tarper arms are working properly.
5. If cover rolls to one side when rolling up, it could be because of one of several things.
   - Arm is bent, straighten arm.
   - Gantry is not plumb, straighten gantry.
   - Side arms are not parallel to frame/ hoist. Realign pivot brackets.
   - Cylinders have air in system/ cylinder bypassing. Bleed/ rebuild cylinder.
   - Cover not square at one end or both. If not square, unroll cover and remove tarp clamp from tarp spool on end that is slack. Pull excess cover under tarp clamp and reattach to tarp spool.
   - Wind is blowing tarp in from side. Move truck into the wind.
## DECALS

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TARP REPLACEMENT

OPTION 1 “Most Economical“

1. *For Option 1, you will need to purchase the TARP WRENCH, p/n LW from O’BRIAN.*

2. Operate the tarp system and extend the roller out to it Lowest and farthest position, without a box on the hoist. Position the roller about four feet off the ground.
3. With the aid of a second person, unroll the remaining tarp off the roller and position the “Locking Wrench” so that you can easily remove the old tarp and install the new tarp.
4. Slide the TARP LOCKING WRENCH into the slot on the end of the roller and slowly release the tarp until the Wrench handle is pressed against the stabilizer bar.
5. Remove screws and tarp clamp from roller. Remove old tarp from Cradle by removing the two bolts holding the tarp bar inside the front sleeve of the tarp.
6. Discard the old tarp. Spread out the new tarp onto hoist with the O’BRIAN logo up and close to the Cradle.
7. Re-insert the tarp bar into sleeve of tarp. Center the tarp on the tarp bar and re-attach tarp bar to Cradle.
8. Attach rear end of Tarp to Roller with the Tarp Clamp and Screws. Make sure the tarp is centered.
9. With the aid of a second person, pull on tarp to release the pressure from the wrench. Remove the wrench. Gradually ease the tarp onto the Roller and make sure that the tarp rolls up and that the flaps are folded up under the tarp as it rolls up.
10. Operate the tarp system and place the roller back into the Cradle.

***Note*** If spring pressure is lost, re-tension roller from the FRONT OF THE TRUCK ONLY!!!!
See pretension directions earlier in the book. **DO NOT TRY TO RE-TENSION ROLLER FROM REAR OF TRUCK AS THE SPRING TENSION AT THE REAR IS FAR TOO GREAT***

TARP REPLACEMENT

OPTION 2 “Most Time Consuming”

1. Remove Roller from between Arms and remove old tarp.
2. Spread new tarp on floor with the O’BRIAN logo up and flaps down. (See Diagram).
3. Position Roller on top of tarp, 6”-9” from edge of tarp, at the opposite end of the O’BRIAN logo.
4. The roller shaft will have a machined flat edge on one end. This is the passenger side. Be sure that the passenger side of the roller is on the passenger side of the tarp (opposite end and opposite side of the O’BRIAN logo.
5. Place the end of the tarp around and on top of the roller. Attach the tarp to the roller using the tarp clamp and screws. Use the existing holes if possible. If you have to create new holes, attach the screws on the opposite side of the spring bolt sticking out of the roller.
6. Slide the tarp bar into the sleeve of the tarp and mount back into the Cradle. Make sure that the tarp is centered left to right.
7. Roll tarp tightly around the roller and roll tarp onto roller.
8. Place the Roller into the Cradle with the sleeve and tarp bar coming over the top of the roller and attaching to the inside of the Cr
9. See Tensioning Roller below.

Pre-Tensioning Roller

1. Lay ROLLER AND TARP INTO CRADLE. **Note** **ONLY PRETENSION WITH ROLLER IN CRADLE**
2. Slide Driver's side arm onto the 1" roller shaft.
3. Attach the tarp-tensioning wrench, part number CRANK-C4 (provided in new kits) to the Passenger side's 1” roller shaft. Tighten the wrench screw down tight onto the machined flat surface on the 1” shaft.
4. **FIRMLY HOLD ONTO TARP TENSIONING WRENCH!! FAILURE TO DO SO WILL CAUSE BODILY INJURY!!**
5. Torque the wrench 9-11 complete turns clockwise to pre-tension the roller spring. After you torque the shaft the 9-11 turns, turn the shaft clockwise looking for the hole alignment on the driver’s side. Insert the bolt back into the driver arm and the roller shaft.
6. Remove the wrench from the roller. Install the passenger arm onto the roller arm and reinstall the bolt and nut.
7. Install the stabilizer bar onto the driver and passenger arms.
8. Operate the tarp system to check system.
   a. Does it have enough spring tension to roll tarp up? No, repeat procedure.
   b. Does it roll the tarp straight in or does it roll to one side? (This test is with the arms moving together.) If the tarp rolls to one side with the arms moving together, then you need to remove the slack in the tarp, so that the tarp will roll up even on the roller. If the tarp does roll to one side, then you will need to go back to OPTION 1. Work your way down OPTION1 down to item 6. Remove screws from center to end of tarp clamp on slack side of tarp. Slide the excess tarp past the tarp clamp to remove the excess tarp and then re-screw the tarp down. Now finish out OPTION1.
TARPER WARRANTY
EXCLUSIVE TWENTY-FOUR MONTH LIMITED WARRANTY

O'Brian Tarping Systems warrants only products of its manufacturer against operational failure caused by defective material or workmanship, WHICH OCCURS DURING NORMAL USE WITHIN TWENTY-FOUR (24) MONTHS FROM DATE OF SHIPMENT FROM OUR FACTORY OR IN SERVICE DATE WITH PROPER DOCUMENTATION. The tarp is NOT covered under warranty.

O'Brian Tarping Systems will rebuild or replace at our discretion, all parts of our manufacturer free of charge that our inspection at our factory shows to be defective in accordance with the above paragraph. WRITTEN PERMISSION MUST BE OBTAINED FROM AN AUTHORIZED FACTORY PERSONELL FOR ANY REPAIRS PERFORMED OTHER THAN IN OUR FACTORY.

All products purchased by O'Brian Tarping Systems from an outside vendor shall be covered by warranty of that respective vendor only, and O'Brian Tarping Systems does not participate in or obligate itself to any such warranty.

NO FREIGHT, TRAVEL COSTS, MEALS, LODGING, LOSS OF HYDRAULIC FLUID OR TRUCK DOWN TIME SHALL BE COVERED BY THIS WARRANTY. All labor costs allowed shall be in accordance with O'Brian Tarping Systems established labor rates. In case of alleged defect, product shall be returned to O'Brian with transportation pre-paid.

Any service part sold by O'Brian Tarping Systems shall be warranted for thirty (30) days from date of shipment from our factory or in service date with proper documentation. No credit for labor will be allowed under this warranty if the returned part, upon our inspection, proves to be non-defective.

O'Brian Tarping Systems makes no warranty on any of its equipment used in any way except as it was designed, intended and sold to perform.

This limited warranty is expressly in lieu of all other warranties, expressed or implied, and of all other obligations or liabilities on the part of O'Brian, and it neither assures nor authorizes any other person to assure for it any other liability.

O'Brian Tarping Systems does not assume any liability for loss of product, time or any other inconsequential damages.

All claims shall be processed through your O'Brian Tarping Systems