

250 NW 34th St.
Okeechobee, Fl. 34972

Gorham Fabrications Inc.

Office: (863) 763-9677

Fax: (863) 763-9685

8/22/02

Service Bulletin on Gorham Gravity Storm

To: All Gravity Storm Owners

RE: Modification to Shock Swivel Block Assembly

It has recently come to our attention that the 5/16" nylon lock nut holding the shock swivel block assembly to the 5/16" eyebolt could possibly come loose. Gorham Fabrications, Inc. has determined to prevent this situation the following modifications must be made to all Gravity Storm shock swivel block assemblies.

1. Remove 5/16" eyebolt from assembly and remove standard 5/16" nut (closest to eye).
2. Drill 7/64" hole 1/4" back from the threaded end of the 5/16" eyebolt.
3. Thread 5/16" half nut or thin nut to replace 5/16" standard nut.
4. Replace swivel block with bearing facing away from the eye of the eyebolt.
5. Place 5/16" standard flat washer over bearing.
6. If your assembly doesn't already have a 5/16" x 1.5" O.D. fender washer, one must be added during reassembly (See enclosed model.) Place 5/16" x 1.5" O.D. Fender washer over standard flat washer.
7. The existing 5/16" nylon lock nut must be replaced with a 5/16" castle nut.
8. Place 1/16" x 3/4" cotter key through hole to hold 5/16" castle nut in place. Spread tail ends around nut. (See enclosed model.)

These modifications must be made and confirmation returned to our office by Sept. 6, 2002.

Thank you,

Kale Gorham
President Gorham Fabrications Inc.

Att: Kale Gorham

Confirmation of Required Modifications

On swivel block assemblies

8/22/02

I have been notified and all required modifications to Gravity Storm shock swivel block assemblies have been made in compliance with Gorham Fabrications, Inc. instructions. I am aware that these modifications must be made by Sept. 6, 2002.

These modifications were made on _____, 2002 to Gravity Storm serial # _____.

Owner

Please fill out and fax this to our office (863) 763-9685 immediately SAME DAY upon completion of these modifications.

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3/20/03

Service Bulletin on Gorham Gravity Storm

TO: All Gorham Gravity Storm Owners/Operators

RE: Modification to Winch Drum Shaft w/ropes

Part: Clamp-on Shaft Collar, 7/8" ID X 1 5/8" OD X 1/2" width

We have recently modified the winch drum assembly by installing a clamp-on shaft collar next to the drum, under the rope knot to keep the drum from possibly shifting toward the bearing plate and compromising the rope knot. Enclosed are the collars for this update, for installation use the following procedure:

1. Remove the set screws from the collar.
2. Place collar around shaft, as close as possible to the drum.
3. Tighten set screws to 10 lbs. of torque.

This **MUST** be done immediately. When you complete this modification **PLEASE** fill and sign the following page and fax it back to me so I may update your file.

Thank you,

Kale Gorham
President Gorham Fabrications Inc.

Attach. #3

Confirmation of Required Modifications

I have been notified and all required modifications to Gravity Storm Winch Drum assemblies have been made in compliance with Gorham Fabrications, Inc. instructions.

These modifications were made on _____, 2003 to Gravity Storm serial # .

Owner

Please fill out and fax this to our office (863) 763-9685 immediately SAME DAY upon completion of these modifications.

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4/8/03

Service Bulletin on Gorham Gravity Storm

TO: All Gorham Gravity Storm Owners/Operators

RE: Modification to rope attachment to winch drum.

Parts: 1/4" U-bolt, lock washers, nuts.

Tools Required: Drill, 3/16" bit, 9/32" bit, assorted sockets & wrenches.

Knots in the tail end of the rope are no longer acceptable. You must retrofit your winch drum to the U-bolt style clamps. To complete this process we provide you with a jig tool, U-bolts w/ lock-washers & nuts, and instructional pictures. Follow these simple steps:

1. Untie knot in rope and remove it from drum.
2. Rotate winch drums until the thru-hole is to an accessible side of the bearing tower.
3. Remove entire winch system from base by removing the (4) 3/8" bolts.
4. Place the jig directly in line with the hole on the outer edge of drum and tighten bolt to hold in place. (Pic. A)
5. Drill 3/16" pilot holes. (Pic. B)
6. Remove jig. Oversize 3/16" hole to 9/32".
7. Install U-bolts with U on outside of drum, lock-washers and nuts on inside. Just start the nuts DO NOT TIGHTEN.
8. Replace winch system to base with (4) 3/8" bolts.
9. Thread rope from inside of drum push out thru-hole, straight up through U-bolt to edge of drum. Tighten U-bolt snugly (7.5 lbs. of torque.) (Pic. C)

USE CAUTION: U-bolts are not hardened steel they can easily be sheared off if over-tightened. We have included a couple extras in case this happens. BE SURE TO LEAVE ONE WRAP ON THE DRUM WHEN YOKE IS IN NORMAL LOADING AND UNLOADING POSITION. (WHICH MEANS THE (2) TOP PULLEYS ARE CRADLED IN THE RUNNING CABLES ABOUT 3 INCHES BELOW THE EYEBOLT IN BOTTOM OF HUB.)

10. Using a hacksaw cut off excess of U-bolt behind the nut.

CAUTION NOTE: Leave at least 1, but NO MORE THAN 2 wraps around the winch drum. This keeps the rope centered away the U-bolt nuts to keep your rope from chafing or wearing out prematurely. If your ropes are too short to have required wrap(s) and still maintain the proper position of the yoke, you may extend the lengths by adding one or more 5/16" (or larger) threaded link(s) between the eye end of the rope and the yoke.

Thank you,

Kale Gorham
President, Gorham Fabrications, Inc.

Confirmation of Required Modifications

Re: Winch rope U-bolt attachment modification

**MUST BE COMPLETED AND CONFIRMED
BY 4/21/03.**

I have been notified and all required modifications to Gravity Storm Winch Drum assemblies:

1. Collar clamp installation. (3/20/03)
2. U-Bolt rope attachment. (4/9/03)

have been made in compliance with Gorham Fabrications, Inc. instructions.

These modifications were made on _____, 2003 to Gravity Storm serial # _____.

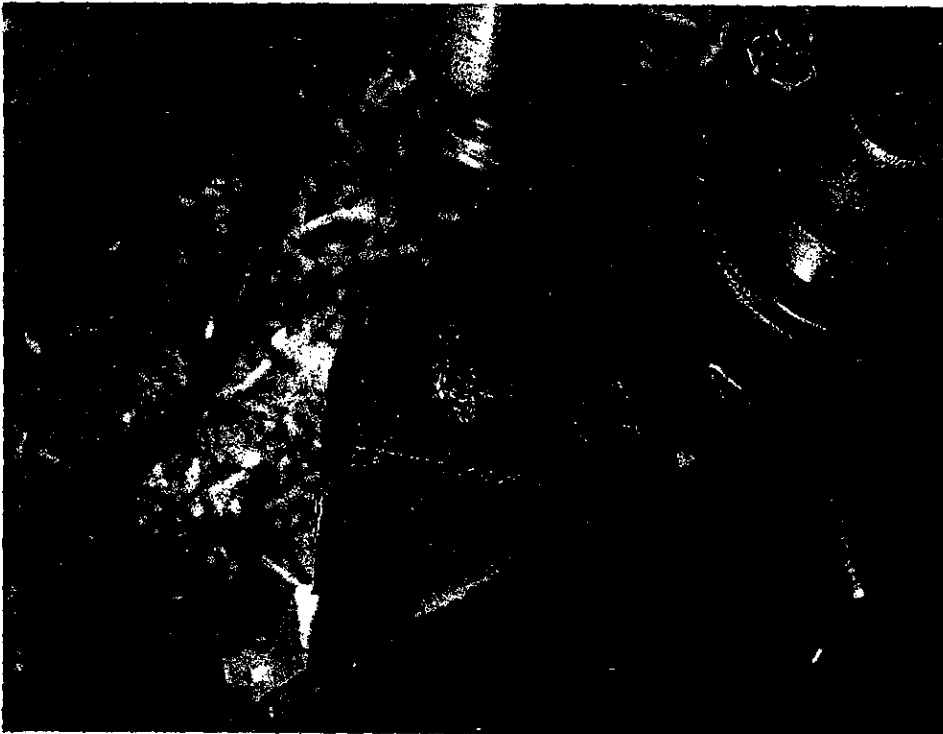
Owner / Operator

Please fill out and fax this to our office (863) 763-9685 immediately SAME DAY upon completion of these modifications or no later than 4/21/03.

Picture A

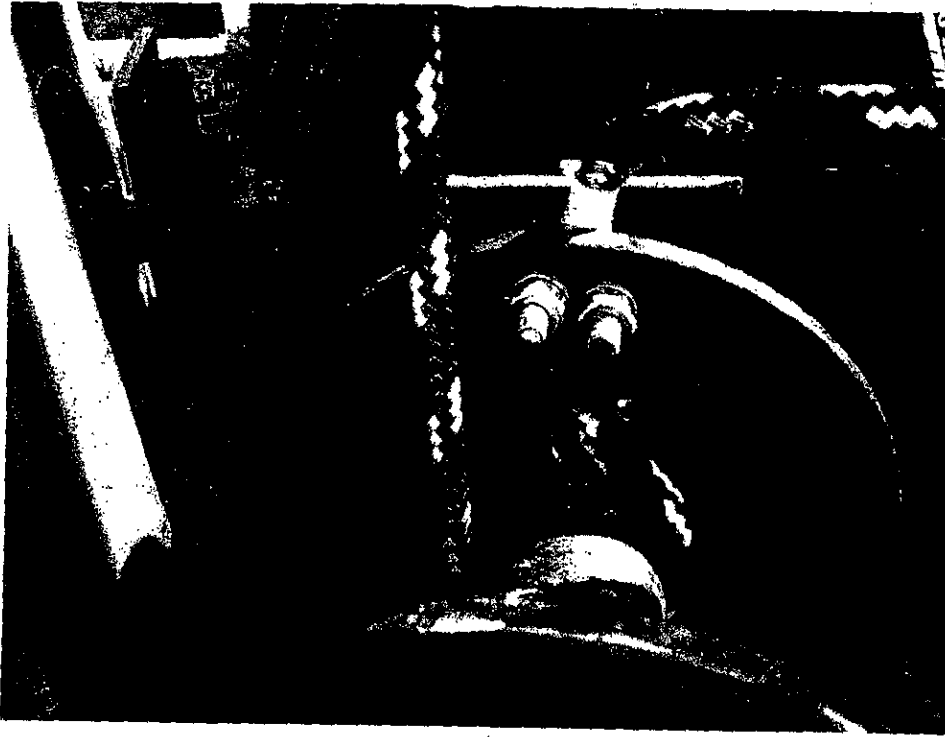


Picture B



Drill both 3/16" holes in drum, then remove jig and follow through w/ 9/32" bit.

Picture C



Leave at least 1 wrap but no more than 2 wraps on drum.
Use hacksaw to cut off excess ends of bolts behind nuts and
file off rough edges.

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1/16/04

Service Bulletin on Gorham Gravity Storm

To: All Gravity Storm Owners

RE: Mandatory Speed Reducer Oil Changes

Gorham Fabrication is making Speed Reducer oil changes mandatory twice a year (season): Once in April and again in October. You must maintain accurate records of these changes.

Oil level must be checked every week (accurate records kept). Use the Speed Reducer Chart in your Manual or the one being sent with this bulletin. Use the "Worm Under" configuration in the upper right-hand corner which clearly specifies 20 ounces of oil.

The reason for this bulletin is that Worm Gear wear has been noted due to the fact that oil level has not been maintained. This may cause excessive wear and, eventually, gear failure. The reason we are requiring the oil to be changed twice a year is so you can monitor the quality of the oil. If brass or steel filings come out with the oil, you have gear wear.

Check gear wear by removing bearing cover cap on opposite side of winch drum. Four (4) 7/16" bolts hold this cap on. Use a light to visually inspect gears. Gears should have a squared-off end on teeth and worm gear. If teeth or worm gears are worn, they will have a sharper edge to them. You can compare the gears with ones on another speed reducer that has clean oil. If there is any doubt - don't use speed reducer. We recommend you send the speed reducer to us for inspection. We will advise replacement if necessary.

If operator should hear any unusual noise or vibration - - STOP
USING THE WINCH AT THAT STATION. Change electric motor with

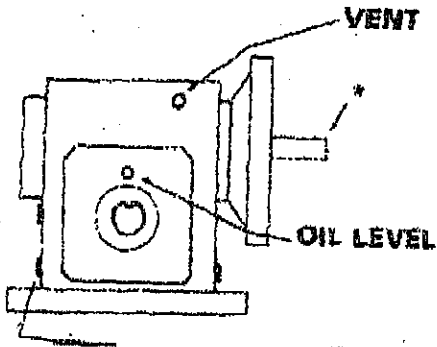
one from another station. If noise persists then the speed reducer must be checked.

If you have any questions in regards to this update, please contact us. We will be happy to answer any questions you have.

Thank you,

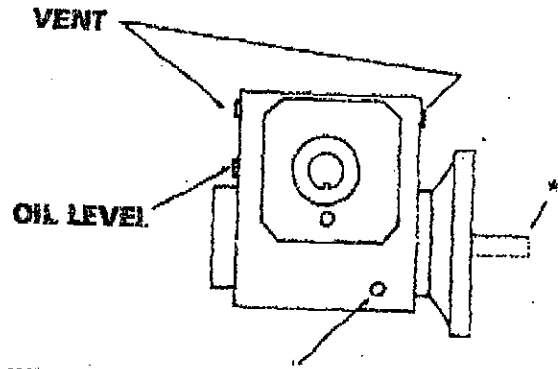
Kale Gorham, President
Gorham Fabrications, Inc.

SPEED REDUCERS



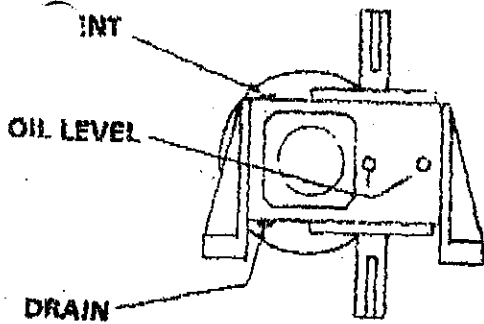
WORM OVER

Approximate oil capacity 15 ounces, fill to oil level plug.



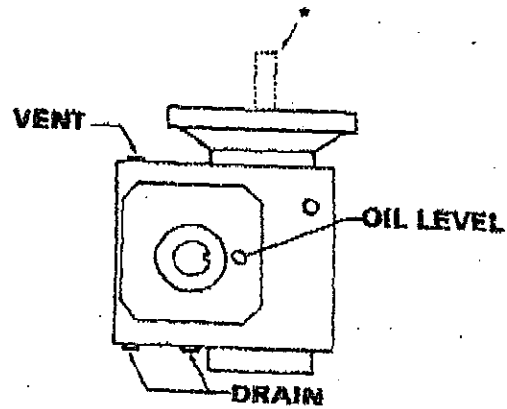
WORM UNDER

Approximate oil capacity 20 ounces, fill to oil level plug.



VERTICAL OUTPUT

Approximate oil capacity 14 ounces, fill to oil level plug.



VERTICAL INPUT

Approximate oil capacity 12 ounces, fill to oil level plug.

Figure 12 - Location of Vent, Oil Level, and Drain Plugs for each Reducer Mounting Position
(For Indirect and Direct Mount Units)
*Input Shaft for Indirect Mounting