

Lift Mast Bolt Safety Bulletin

Contact JBT Corporation's Product Service and Support at 800-362-2280 if you have any questions about this safety bulletin or the actions required as described in this bulletin.

A. Description

JBT Corporation Automated Systems has been notified there may be a potential safety issue involving bolts securing the lift mast. Replacing these bolts will prevent this potential safety issue.

This safety bulletin is being issued to notify our customers who own and operate our AGVs and SGVs to replace existing **Lift Mast Bolts** for

B. Compliance

Strict compliance with this Mast Bolt Replacement Procedure detailed in this Safety Bulletin in Sections C and D is required for every JBT Self Guided Vehicle (SGV) Hydraulic Lift that contains these mast bolts.

Adherence to this Safety bulletin is **MANDATORY** for all **AGV, AGV2000, SGV3000 or SGV4000** Self Guided Hydraulic Lift Vehicles.

Share this new Lift Mast Bolt Replacement Procedure with all personnel who work with AGVs and SGVs.

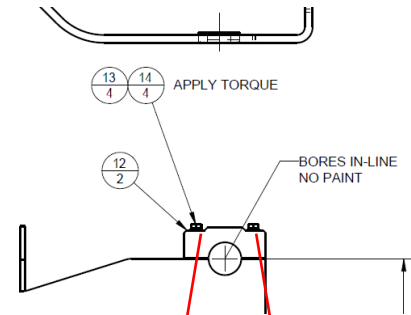


Figure 1 Self Guided Hydraulic Lift Mast Bolts (2) each side

WARNING:

FAILURE TO FOLLOW THESE INSTRUCTIONS MAY CAUSE INJURY TO MAINTENANCE PERSONNEL AND/OR OPERATION PERSONNEL AND COULD CAUSE DAMAGE TO SGVs or AGVs



Figure 2 JBT Automated and Self Guided Hydraulic Lift Vehicles

C. Lift Mast Bolts

There are two **Lift Mast Bolts** on each side of the lift mast, securing the trunnion bearing to the vehicle frame.

JBT recommends replacing the existing Lift Mast Bolts with new higher-grade bolts in addition to a lock washer.

These new lift mast bolts must be torqued every **1000 operating or Drive Hours**. See next page for specific torque values.

Contact JBT Product Sales and Services for a **free Mast Bolt kit** at SGVSafe@jbt.com. Please include the number of vehicles on site and shipping address.



C. Lift Mast Bolts (cont'd)

Materials Needed:

Personal Protective Equipment:

Safety Glasses, Safety Shoes, Work Gloves

Torque Wrench – rated to at least 230 ft/lbs (311 N*M)

Lock Washer, size see chart below for size.

Mast Bolts – use these replacement bolts:



Torque Values referenced per Fastenal recommendation for K= 0.20 Zinc and dry conditions, where K is the estimated torque co-efficient.

Existing Mast Bolt Size	New Lock washer	Replacement Mast Bolt Size	JBT Part No.	Torque Setting
M10 SCREW HEX HEAD CAP X 1.5 X 70mm GR 8.8 JBT Part No. M006-110-070	10mm	M10 Hex Head Cap Screw x 1.5 x 70 mm, class 10.9	M008-110-070	53 ft*lbs or 72 N*M
M12 SCREW CAP HEX SOC 1.75 X CLASS 12.9 JBT Part No. M342-112-060	12mm	No Replacement Needed		108 ft*lbs or 147 N*M
M16 SCREW HEX HEAD X 2 X 100mm HI STR GR 5 JBT Part No. M006-116-100HS5	16mm	M16 Hex Head Cap Screw x 2 x 105mm, class 10.9	M008-116-105	230 ft*bs or 312 N*M

DANGER

Remove load from the vehicle. Use manual pendant to lower lift to the floor.

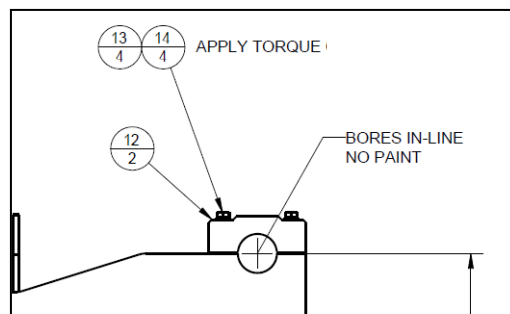
DANGER

D. Replace Mast Bolts

Replace (4) **Mast bolts with lock washers with bolts specified above**, two on either side.

Add witness marks to allow bolt torque to be monitored visually. If the bolts move off the witness mark, re-torque.

Use chart above for specific **torque value** and tighten **all (4) Mast bolts with torque wrench** - see drawing below for details.

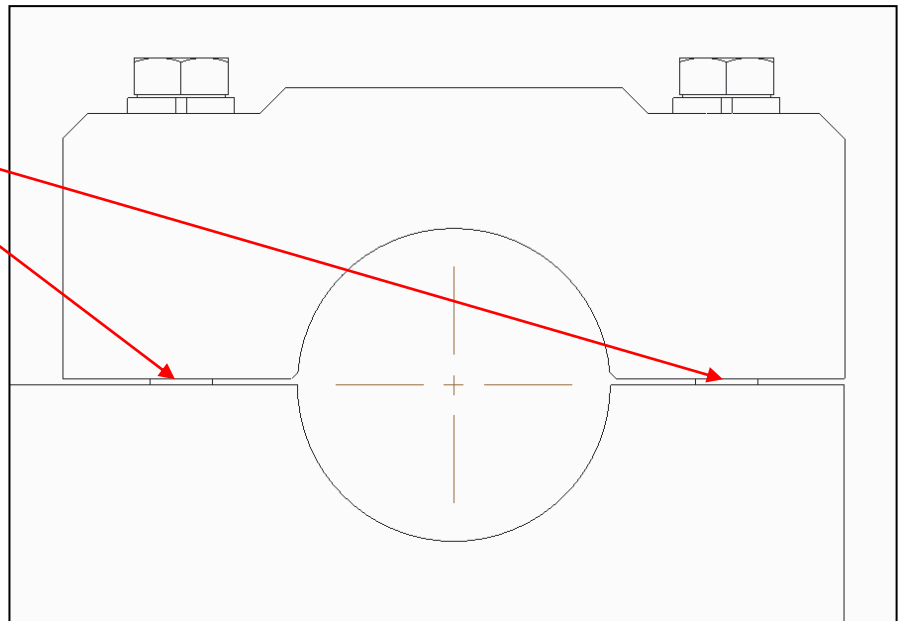


See next page for further details.

D. Replace Mast Bolts (cont'd)

Tighten each bolt gradually over several steps according to the following sequence:

1. Remove original two bolts.
2. Insert two replacement bolts and lock washers.
3. Hand-tighten both replacement bolts. Use a torque wrench for the next several steps.
4. Tighten both bolts to the **first torque value** in the chart (25 ft*lbs for M10 or M12, 50ft*lbs for M16).
5. Tighten each bolt again, to the **second torque value** in the chart below. (35, 50, or 100 ft*lbs).
6. Continue tightening the replacement bolts, alternating through the third, 4th and 5th or last torque value.
7. Ensure this gap is even on both sides as shown here:



Follow the table below for the torque sequence. Each bolt needs to be tightened to the same torque value before moving on to the next torque value. For example, tighten by hand then tighten both bolts to 25 ft*lbs before moving on to 35, then 45, and finally 53 ft*lbs. Tighten both bolts on one side before moving to the other side of the vehicle and ensure an even gap exists per step 7 after above tightening sequence.

Bolt Size	1 st Torque Value [ft*lbs] [N*M]		2 nd Torque Value [ft*lbs] [N*M]		3 rd Torque Value [ft*lbs] [N*M]		4 th Torque Value [ft*lbs] [N*M]		5 th Torque Value [ft*lbs] [N*M]	
M10	25	34	35	48	45	61	53	72	n/a	
M12	25	34	50	68	75	102	90	122	108	146
M16	50	68	100	122	150	203	200	271	230	176

Add to Preventive Maintenance Checklist:

Check torque value for Lift Mast Bolts every 1000 operating or Drive Hours.
Add witness marks as shown.

