



SERVICE, INSPECTION AND MAINTENANCE OF RICO MASTS

SAFETY:

IT IS OF THE UTMOST IMPORTANCE THAT ANY INSPECTION, INSTALLATION, ASSEMBLY AND DISASSEMBLY BE DONE BY TRAINED, QUALIFIED PERSONNEL. GOOD SAFETY PRACTICE INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

- USE PROPER TOOLS IN GOOD CONDITION.
- EMPLOY PROPER LIFTING TECHNIQUES.
- NEVER WORK ALONE.
- CHAINS & SLINGS USED FOR LIFTING MUST BE APPROVED FOR THE PURPOSE, AND MUST BE CAPABLE OF SAFELY SUPPORTING THE LOAD.
- IF WORKING WITH CARRIAGE RAISED, MAST RAILS TO BE CHAINED TOGETHER.
- ALWAYS CHOCK WHEELS, AND CHAIN MAST RAIL SECTIONS TOGETHER DURING SERVICE.
- KEEP CLEAR OF MAST WHEN CYCLING MAST ASSEMBLY.
- REMOVE ANY OBJECTS WHICH COULD INTERFERE WITH OPERATION OF MAST.
- IF FASTENER CONDITION IS IN DOUBT, DISCARD AND REPLACE.
- NEVER REPLACE ORIGINAL FASTENERS WITH LESSER GRADE FASTENERS.
- ALWAYS USE FACTORY SPECIFIED PARTS.
- DISASSEMBLE AND REASSEMBLE MAST IN HORIZONTAL POSITION ONLY, USING A RIGID WORK SURFACE.
- CYCLE TESTING SHOULD ONLY BE PERFORMED IN AREAS WITH ADEQUATE SIDE AND OVERHEAD CLEARANCE, AND AWAY FROM ELECTRICAL WIRES OR EQUIPMENT.
- NEVER STAND OR WORK UNDER FORKS.

TYPE OF SERVICE:

- 1) INSTALLATION
- 2) MAINTENANCE & REPAIRS
- 3) INSPECTION

UPON INSTALLATION OF MAST, CHECK THE FOLLOWING:

- 1) MISSING OR DAMAGED PARTS – REPLACE IMMEDIATELY
- 2) LUBRICATION FITTINGS – INITIAL GREASE
- 3) CONNECTING HOSES – PROTECT FROM DAMAGE OR ABRASION
- 4) LEAKING HOSES / FITTINGS / CYLINDERS

INSPECTION METHODS – PERFORM AT ALL MAINTENANCE INTERVALS:

- 1) VISUAL
- 2) MECHANICAL CYCLING
- 3) HYDRAULIC CYCLING
- 4) OTHER

MAINTENANCE INTERVALS:

- 1) EVERY 50 HOURS OR WEEKLY – DAILY LUBRICATION AND GREASE CHAIN ROLLERS WHERE APPLICABLE
- 2) AFTER INITIAL 100 HOURS – INSPECT MAST HOSES & FITTINGS AS WELL AS CYLINDER SEALS FOR LEAKAGE
- 3) EVERY 250 HOURS OR MONTHLY – GREASE MAIN PIVOT SHAFT, INSPECT MAST & CARRIAGE CHAINS FOR WEAR AND STRETCH. INSPECT HOSES & FITTINGS FOR DAMAGE. DAILY LUBRICATION, LUBE MAST & CARRIAGE CHAINS. INSPECT AND LUBRICATE CHAINS MORE FREQUENTLY IN HOSTILE ENVIRONMENTS.
- 4) EVERY 500 HOURS OR 6 MONTHS – INSPECT MAST CHAINS FOR WEAR AND STRETCH, DAILY LUBRICATION, 250 HOUR MAINTENANCE
- 5) EVERY 2000 HOURS OR YEARLY – EVALUATE COMPLETE MAST ASSEMBLY FOR LOAD ROLLER WEAR & RE-SHIM MAST ASSEMBLY AND CARRIAGE IF NECESSARY – SEE MAST ASSEMBLY PROCEDURE. INSPECT MAST & CARRIAGE CHAINS FOR WEAR AND STRETCH. INSPECT HOSES & FITTINGS FOR DAMAGE. INSPECT LOAD ROLLERS & CHAIN ROLLERS FOR EXCESSIVE WEAR AND INSPECT CYLINDER SEALS FOR LEAKAGE. IF INSPECTION OF COMPLETE MAST IS SATISFACTORY, PERFORM DAILY LUBRICATION AND LUBRICATE CHAINS.
- 6) REPAIR OR REPLACE ANY LEAKING, DAMAGED OR MISSING PARTS, REGARDLESS OF SERVICE INTERVAL,
- 7) PERFORM COMPLETE CHAIN INSPECTION WHENEVER AN OVERLOAD SITUATION IS ENCOUNTERED
- 8) PERFORM COMPLETE BEARING INSPECTION WHENEVER A SEVERE IMPACT SITUATION IS ENCOUNTERED
- 9) PERFORM COMPLETE INSPECTION IF A MAST OR CARRIAGE HAS COME INTO CONTACT WITH ELECTRICAL WIRES OR EQUIPMENT

CHAINS – INSPECTION (REF. ASME B29.8-2002 SECTION A6):

- 1) VERIFY THAT ALL CONNECTOR PINS AND COTTER PINS ARE IN PLACE
- 2) INSPECT EACH CHAIN ASSEMBLY FOR DAMAGE AND EXCESSIVE WEAR. REPLACE CHAIN IF ANY OF THE FOLLOWING ARE EVIDENT – CRACKED OR BROKEN LINK PLATES, ELONGATED CONNECTOR PIN HOLES, WORN EDGES OF THE OUTSIDE LINKS OR PIN ENDS, MISSING LINK PLATES, TIGHT JOINTS, CORROSION, OR IF PINS ARE TURNED OR PROTRUDE ABNORMALLY
- 3) INSPECT CHAIN FOR ELONGATION – REPLACE WHEN ANY GIVEN TEST SECTION OF CHAIN HAS ELONGATED 3% NOTE: IT IS IMPORTANT TO INSPECT THE SHEAVE ROLLING AREA OF CHAIN
- 4) INSPECT CHAINS FOR EXCESSIVE WEAR ON ROLLING EDGES – REPLACE WHEN LINK PLATE HEIGHT IS WORN 5% NOTE: IT IS IMPORTANT TO INSPECT THE SHEAVE ROLLING AREA OF CHAIN
- 5) INSPECT CHAIN ANCHORS AND CONNECTOR PINS FOR DAMAGE, WEAR OR MISALIGNMENT. REPLACE ANY DAMAGED CHAIN ANCHORS OR PINS

CHAINS – SERVICE (REF. ASME B29.8-2002 SECTION A2):

- 1) VERIFY CLEANLINESS OF CHAIN ASSEMBLY – BRUSH CLEANING IS RECOMMENDED, AVOID PAINTING CHAIN
- 2) LUBRICATE CHAIN – USE GENEROUS AMOUNT OF GOOD QUALITY SAE #40 OIL OR AN APPROPRIATE CHAIN LUBRICANT SUITABLE FOR THE SERVICE APPLICATION. ENSURE ADEQUATE PENETRATION OF LUBRICANT INTO CHAIN JOINTS

CHAINS – GENERAL (REF. ASME B29.8-2002 SUPPLEMENTARY INFORMATION, APPENDIX A)

LOAD ROLLERS, THRUST ROLLERS – GENERAL:

- 1) INSPECTION – VISUAL (REPLACE IF THE ANY OF THE FOLLOWING ARE EVIDENT) :
 - a. WORN, DAMAGED OR LEAKING SEALS
 - b. EVIDENCE OF BROKEN OR DAMAGED BEARINGS
- 2) INSPECTION – MECHANICAL:
 - a. ENSURE THAT LOAD ROLLERS CAN ROTATE FREELY – REPLACE ANY SEIZED OR STICKING ROLLERS
 - b. EXCESSIVE WEAR – REPLACE ANY WOBBLING OR SQUEALING ROLLERS.

HOSES – GENERAL:

- 1) INSPECTION – VISUAL:
 - a. REPLACE ANY HOSE SHOWING ANY OF THE FOLLOWING: BLISTERED, BULGED OR TORN OUTER COVERING, ABRASION OR BURN DAMAGE, EXPOSED STEEL BRAID, KINKING OR CRUSHING, PINHOLES OR OTHER SOURCES OF LEAKING. CORRECT ANY CONDITIONS, WHICH COULD CAUSE DAMAGE TO HOSES
- 2) INSPECTION – UNDER HYDRAULIC LOAD:
 - a. LOOK FOR ANY LEAKS – TIGHTEN OR REPLACE HOSE



b. LOOK FOR EVIDENCE OF ABNORMAL DISTORTION – REPLACE HOSE

OTHER:

1) FORK SHAFTS:

- a. INSPECT FOR BENDING, GOUGES OR SEVERE CORROSION – REPLACE SHAFT(S).

MISC. FASTENER TORQUES: (if equipped)

- RAIL STOP BOLTS – 150 FT LB
- CHAIN SHEAVE PIN BOLTS – 20 FT LB
- FREELIFT CYLINDER MOUNTING BOLTS – 75 FT LB
- MANIFOLD MOUNTING BOLTS – 30 FT LB
- LIFT CYLINDER RETAINING BOLTS – 100 FT LB
- FREELIFT CYLINDER HEAD MOUNTING BOLT – 30 FT LB
- FREELIFT CHAIN GUARD BOLTS – 15 FT LB
- LOAD BACKREST MOUNTING BOLTS – 150 FT LB
- SHAFT KEEPER BOLTS – 150 FT LB

NOTE: RICO RESERVES THE RIGHT TO UPDATE THIS DOCUMENT AS IT DEEMS NECESSARY.