SUPERIOR ENGINEERING INC.
DESIGNER AND MANUFACTURER OF SPECIALTY LIFT TRUCK ATTACHMENTS
WWW.SUPERIORENG.COM 5033 BELTON HWY, ANDERSON SC 29627 800-359-3052

Ram Pole Inspection and Replacement Procedure

Daily Inspections ---- Prior to each day's use

1. With the pole raised to a height between your waist and shoulders, visually check pole for vertical and horizontal bending. Check pole for looseness by manually attempting to gently shake and rotate the pole in the collar. Do not overexert as reasonable, controlled pressure is all that is needed. If bending or looseness is detected, do not use the pole to handle rolls until further evaluation is performed including a deflection check using a 24" carpenter's square as described in **the *Superior Engineering, Inc. Ram Pole Technical Bulletin Figure AA*** on Pages 6 and 7.

   2. Check for proper insertion of the pole into the collar by checking the dimensional values of the pole itself. Please **reference *Chart 1A Pole Length Measurement Chart*** for ascertaining the proper pole length for your ram pole. A longer measurement could indicate the pole is damaged or loose in the collar. Investigate the cause if the pole is sticking out too far and fix before further usage.

Monthly Inspections Recommendations

1. Perform a documented vertical and horizontal deflection check with 24" carpenter's square aligned with the back plate and pole.

2. Perform a documented proper insertion check as described above in the "Daily Inspections" section.

Three Months Inspections Recommendations

1. Remove the pole and inspect for visual deformities.

2. Use penetrant dye to inspect the circumference of the pole from 2 inches inside the collar to 2 inches outside the collar for cracking.

3. Visually inspect and perform a dye penetrant check on and around the collar welds for cracks and corrosion.

4. Visually inspect and perform a dye penetrant inspection on and around the welds that attach the vertical plates to the gussets for cracks and corrosion.

5. Visually and penetrant dye inspect the welds securing the mounting hooks to the vertical plate for cracks and corrosion.

6. When re-installing pole, use new collar clamping bolts, washers, lock washers and nuts as specified in the ***Superior Engineering, Inc. Ram Pole Technical Bulletin*** on Pages 6 and 7.

Ram Pole Inspection and Replacement Procedure Continued

24 Months Inspections Recommendations

1. Replace pole with new, certified pole.

2. When you receive your new ram pole, record the serial number and date of installation in your maintenance records.

3. Dispose of old pole. Do not keep old ram poles for future use.

Monthly Ram Pole Inspection

Month/Year Tested: _____

Tested by:_____

Truck #_____

1. Perform a vertical deflection check with a 24" carpenter's square aligned with the back plate and pole. Reference the ***Superior Engineering, Inc Ram Pole Technical Bulletin Figure AA*** on Pages 6 and 7

   Were the deflection test results within tolerance? Yes / No

2. Check for proper insertion of the pole into the collar by checking the dimensional values of the pole itself. Please **reference *Chart 1A Pole Length Measurement Chart*** for ascertaining the proper pole length for your ram pole. A longer measurement could indicate the pole is damaged or loose in the collar. Investigate the cause if the pole is sticking out too far and fix before further usage.
   .

   Was the proper insertion for the ram ok? Yes / No

If you answered no to any of the above evaluations, was the problem corrected?

Yes-
What corrective action was taken?

No
Why was there no corrective action taken?

Additional Comments:

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Quarterly Ram Pole Inspection

Month/Year Tested: _____

Tested by:_____

Truck #_____

1. Remove pole and inspect to insure that the model number, serial number, and data plate are legible.
   OK? Yes / No
   Condition:

2. Use penetrant dye to inspect the circumference of the pole from 2 inches inside the collar to 2 inches outside the collar for cracking.
   OK? Yes / No
   Condition:

3. Visually and penetrant dye check the collar attachment welds for cracks and corrosion.
   OK? Yes / No
   Condition:

4. Visually and penetrant dye inspect welds attaching the vertical plates to the gussets for cracks and corrosion.
   OK? Yes / No
   Condition:

5. Visually and penetrant dye inspect the welds securing the mounting hooks to the vertical plate for cracks and corrosion.
   OK? Yes / No
   Condition:

6. When re-installing a pole, always use new collar clamping bolts, washers, lock washers and nuts following the instructions presented in the Superior Engineering, Inc. Ram Pole Technical Bulletin.
   OK? Yes / No
   Condition:

Quarterly Ram Pole Inspection Continued….

Ram Pole Inspection:

1. Perform a vertical deflection check with a 24" carpenter's square aligned with the back plate and pole. See **the *Superior Engineering, Inc. Ram Pole Technical Bulletin Figure AA*** on Pages 6 and 7.

   Were the deflection test results within tolerance? Yes / No

2. Check for proper insertion of the pole into the collar by checking the dimensional values of the pole itself. Please **reference *Chart 1A Pole Length Measurement Chart*** for ascertaining the proper pole length for your ram pole. A longer measurement could indicate the pole is damaged or loose in the collar. Investigate the cause if the pole is sticking out too far and fix before further usage.

   Was the proper insertion for the ram ok? Yes / No

If you answered no to any of the above evaluations, was the problem corrected?

Yes-
What corrective action was taken?

No
Why was there no corrective action taken?

RAM POLE SERVICE BULLETIN

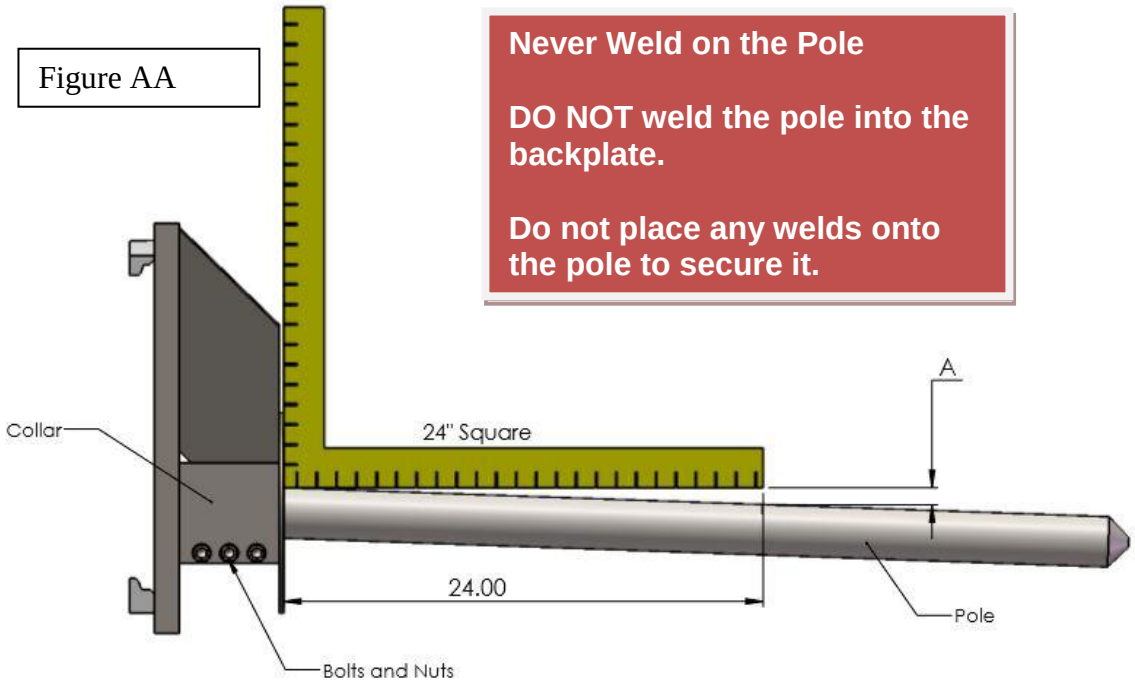
Ram Poles should be checked for deflection at least once every quarter and again yearly to insure safe operating conditions.

Figure AA

Never Weld on the Pole

DO NOT weld the pole into the backplate.

Do not place any welds onto the pole to secure it.



Quarterly Inspection

1. Pole should be inspected for cracks down the whole length of the pole.
2. Pole should be inspected for bending. Dimension A- Up to 3/8 - 1/2 of an inch deflection is acceptable. At this point, the pole should be rotated 180 degrees and the deflection turned to the top. If the deflection exceeds 5/8ths of an inch, replacement is required.
3. When the pole is replaced, all socket head screws, washers and nuts should be replaced at the same time with new* bolts, washers and nuts. *See page 7*
4. All weldments should be visually inspected to see if any cracking has taken place.

Annual Inspection

1. Mounting hooks should be visually inspected and dye penetrant tested for wear or cracked welds.
2. All other weldments should also be visually and dye penetrant inspected for cracking.
3. It is recommended that the use of a natural light flaw detection kit which uses colored dye to reveal cracks and surface flaws in most nonporous material is used. Flaws become visible under natural light and appear as a bright red color. Commonly used for weld inspecting. This is highly recommended

Ram Pole Service Bulletin Continued…..

Potential reasons for bending and failure

1. **Overloading:** Exceeding rated capacity and load center. For instance, if the rating is 2000# at a 60" load center, but the roll is actually 180" long with a 90" load center and weighs 2000#, then you have exceeded the rated load center of 60" because the true load center is 90".
2. **Floor Conditions:** Sub-Standard floor conditions such as potholes and speed bumps contribute to dynamic loading stress to the pole and can cause great issues with pole loading and bending. Continual bouncing causes premature metal fatigue in the pole material.
3. **Improper Training:** An untrained employee with indifference to the correct usage of the pole, such as not inserting the pole all the way into the load causing an extra-long load center, tip loading the unit, using the ram for purposes that the ram is not designed for all examples of an untrained operator or an operator that needs more training.
4. **Impediments and hindrance from surrounding loads**: Lifting rolls from underneath bundles of rolls to the top surface or having additional loads put upon the ram pole due to other loads sitting on top but using the hydraulic force to maneuver the load up through the impediment.
5. **Usage as maintenance devices**: There are multiple other ways that poles can bend or break and in many cases, the pole attachments are used for maintenance and other unauthorized applications without the knowledge or authorization of management.

Pole replacement procedure

1. Loosen nuts from the three retaining bolts, remove and discard pieces. A wedge may be driven into the slotted area on the slotted bottom of the collar to release the pole.
2. Reposition the existing or replacement pole in the collar insuring that the pole (and sleeve if required) is in the maximum depth.
3. If a sleeve is required, first insert sleeve into the collar, insert the pole into the sleeve and drive the pole into the sleeve and collar. A sledgehammer may be necessary to drive the pole fully into the sleeve and collar.
4. Now install the new* bolts and nuts. Torque to 280 foot pounds. Check to be sure that the pole is tight in the collar.
5. In very rare instances, some collars may have worn and will not hold the pole securely. A section of 0.005 - 0.015" shim stock may be needed to decrease the clearance between the pole and collars. If this does not allow the pole to be retained, the back plate must be replaced.

***Bolt and nut specifications for pole retainment**

For poles 1.50" - 2.00" diameter use 3, 5/8-11 x 5 socket head cap screws and 5/8-11 grade 8 nuts. Torque all bolts to 280 foot pounds. *Bolt Kit Part Number is RP-BK-6 can be purchase from Superior Engineering*

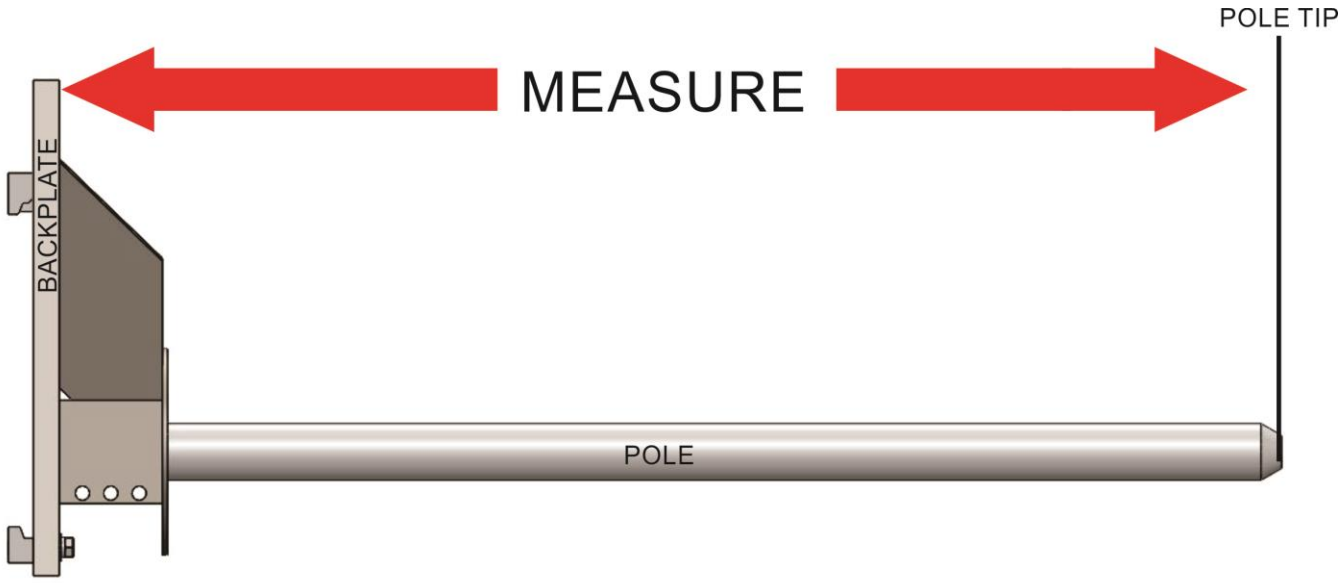
For poles 2.50" - 3.00" diameter use 3, 5/8-11 x 6 socket head cap screws and 5/8-11 grade 8 nuts. Torque all bolts to 280 foot pounds. *Bolt Kit Part Number is RP-BK-6 can be purchase from Superior Engineering*

For poles 3.25" - 3.50" diameter use 3, 5/8-11 x 7 socket head cap screws and 5/8-11 grade 8 nuts. Torque all bolts to 280 foot pounds. *Bolt Kit Part Number is RP-BK-7 can be purchase from Superior Engineering*

If additional help is required, please call 800-359-3052

Chart 1A
Pole Length Measurement Chart

All dimensions are measure from the backplate and includes the mounting collar in the dimension



	Pole Length For Class 2, 3 and 4 Ram Poles																	
Diameter	36	48	60	72	84	96.00	108	120	132	144	156	168	180	192	204	216	228	240
1.50	41.25	53.25	65.25	77.25	89.25	101.25	108	120	132	144	156	168	180	192	204	216	228	240
1.75	41.25	53.25	65.25	77.25	89.25	101.25	108	120	132	144	156	168	180	192	204	216	228	240
2.00	41.25	53.25	65.25	77.25	89.25	101.25	108	120	132	144	156	168	180	192	204	216	228	240
2.50	41.25	53.25	65.25	77.25	89.25	101.25	108	120	132	144	156	168	180	192	204	216	228	240
2.75	41.25	53.25	65.25	77.25	89.25	101.25	108	120	132	144	156	168	180	192	204	216	228	240
3.00	41.25	53.25	65.25	77.25	89.25	101.25	108	120	132	144	156	168	180	192	204	216	228	240
3.25	42.25	54.25	66.25	78.25	90.25	102.25	108	120	132	144	156	168	180	192	204	216	228	240
3.50	42.25	54.25	66.25	78.25	90.25	102.25	108	120	132	144	156	168	180	192	204	216	228	240
4.0" - 6.0"	44.00	56.00	68.00	80.00	92.00	104.00	108	120	132	144	156	168	180	192	204	216	228	240