VALVE REBUILDING: Rev 2007

Guidelines For Rebuild Of McKenzie Valve / Union Tank Car Ball Valves
www.McKenzieValve.com

- Exercise normal safety precautions for commodity involved.
- Before disassembly, cycle valve several times to relieve any residual pressure.
- Disassemble valve completely.
- Discard soft parts
- Use OEM provided replacement parts only

Valve Type	Repair Kit	Soft Parts to Discard
2” Angle Ball Valve	501731	O-ring, (2) seats, stem seal, retainer seal and packing.
2” or 3” Flanged:	501732 / 501733	O-ring, (2) seats, stem seal, retainer seal and packing.
4” Internal Ball Valve / Reg Port w/O-Ring	501734 / 507399	O-ring, (2) seats, stem seal, retainer seal and packing.
4” Low Profile Reg. Port w/o O-Ring	503406 / 504083	(2) stem seals, (2) seats, retainer seal and packing.
4” Low Profile Full Port (current model)	505446 / 505447	(2) stem seals, (2) seats, retainer seal and packing.

- Inspect for galled threads, bent parts, and wear and corrosion damage. Inspect valve body for scratches in sealing surfaces and carefully remove any excess scale or debris.
- Pre-Assemble
  - **2” or 3” Flanged:**
    Pre-assemble body and retainer with no seats or seals in place. Hand tighten to metal-to-metal fit. Apply mark across retainer and valve flange to note point of metal fit. Disassemble.
  - **All Other Valves:**
    No Pre-Assembly Required
- Reassemble
  - **4” Low Profile Valves without O-Rings:**
    Install Garlock 3500 (tan) stem seal first, (closest to the ball) then Grafoil® GHL (silver) on the stem then place stem in body. Install packing from the top of the stem. Apply light coat of suitable silicone-base lubricant to Teflon seats and seals to facilitate assembly and initial operation. Wipe excess clean.
  - **All Other Valves:**
    Reassemble valve using new soft parts contained in kit. Apply light coat of suitable silicone-base lubricant to Teflon seats and seals to facilitate assembly and initial operation. Wipe excess clean.
- Ensure ball is lined up in fully open position before installation and tightening of retainer.
  - **2” Angle Ball Valve**
    Apply light coat of anti-seize lubricant to threads of retainer. Wipe excess clean.
    Tighten retainer until 270-300 in-lb. of torque required to rotate valve stem. NOTE: Metal-to-metal is not achieved between retainer and valve body.
    Tighten stem nut to 50 ft-lb.
  - **2” or 3” Flanged:**
    Apply light coat of anti-seize lubricant to threads of retainer. Wipe excess clean.
    Tighten retainer until metal-to-metal achieved between retainer and valve body by matching up previous marks. **NOTE:** No torque value specified.
    For 2" valve, tighten stem nut to 50 ft-lb. For 3", tighten stem nut to 75 ft-lb.
  - **4” Low Profile Full Port / 4” Low Profile Regular Port (with or without O-Ring)**
    Tighten retainer socket head cap screws evenly using criss-cross pattern until metal-to-metal fit achieved between retainer and valve body. Torque retainer cap screws to 100 ft-lb. Tighten stem nut to 125 ft-lb.
  - **4” Internal Ball Valve**
    Tighten retainer socket head cap screws evenly using criss-cross pattern until metal-to-metal fit achieved between retainer and valve body. Torque retainer cap screws to 480 in-lb. Tighten stem nut to 125 ft-lb
- Open and close valve slowly to confirm it operates freely.
- Store valve overnight in fully open position, then re-tighten valve retainer. Re-tighten valve stem nut. **Do not store valve in partially open position.**
- Test valve in closed position, and in open position with plug applied, at pressure to which it will be subjected in service.