

INSERTION & RETRACTION INSTRUCTIONS FOR HAND INSERTION TOOLS

MODELS: LP-200FHT, LP-750HT, M-1A, M-1HT, MM-15HT (HYBRID), MM-50 (HYBRID), AND MM-50HT (HYBRID).

The ATCO line of Hand Insertion Tools have provided a safe and reliable method of inserting corrosion coupons, injection atomizers, quills, sampler probes, siphons, ER probes, LPR probes, optical sensors, and temperature probes, into pressurized process pipelines and vessels for 25 years. The light weight compact tools are designed to mount to a full bore process isolation valve and inserted and retracted by hand. The appropriate model of tool must be chosen based on **Maximum Operating Pressures (for safe Hand Insertion process pressures may require a reduction), Maximum Allowable Operating Pressures (MAOP), and Maximum Allowable Temperatures.**

MODELS: *HT designates adjustable grafoil packing.

LP-200FHT (3/8" OD Probe/Rod) 200 psi MOP 200 psi MAOP 300 Degrees F.

LP-750HT (3/8" OD Probe / Rod) 750 psi MOP 750 psi MAOP 300 Degrees F.

M-1A (1/4" OD Rod) 1000 psi MOP 1500psi MAOP 100 Degrees F,

M-1HT (1/4" OD Rod) 1000 psi MOP 1500 psi MAOP 300 Degrees F.

MM-15HT (5/8" OD Probe) 200 psi MOP 1500 psi MAOP 300 Degrees F.

MM-15HT (1/2" OD Probe/Rod) 500 psi MOP 1500 psi MAOP 300 Degrees F.

MM-15HT (3/8" Rod) 750 psi MOP 1500 psi MAOP 300 Degrees F.

MM-15HT(1/4" OD Rod) 1000 psi MOP 1500 psi MAOP 300 Degrees F.

MM-50 (3/8" OD Probe) 750 psi MOP 5000 psi MAOP 100 Degrees F.

MM-50 (3/8" OD Rod) 750 psi MOP 7500 psi MAOP 100 Degrees F.

MM-50 (1/4" Rod) 1000 psi MOP 7500 psi MAOP 100 Degrees F.

MM-50 (3/8" OD Probe) 750 psi MOP 5000 psi MAOP 100 Degrees F.

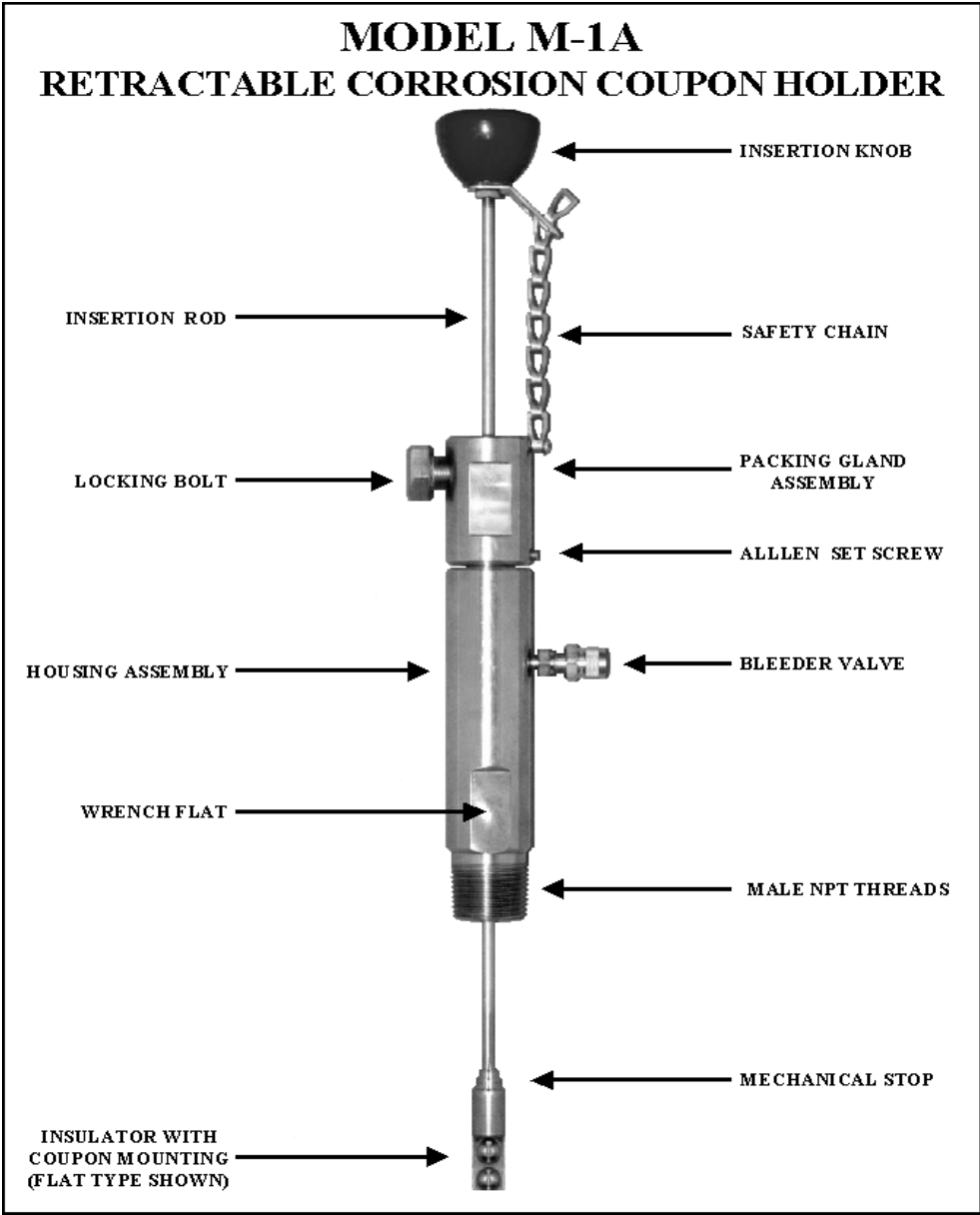
MM-50HT (3/8" OD Rod) 750 psi MOP 5000 psi MAOP 300 Degrees F.

MM-50HT (1/4" Rod) 1000 psi MOP 5000 psi MAOP 300 Degrees F.

The model MM-15HT (Hybrid) tool is used for Temperature Probes, ER / LPR Probes, and Optical Sensors.

MM-15HT, MM-50HT, and MM-50 while typically are insertable with mechanical tools they are also available in a hand insertable configuration designated by (Hybrid) after the model number.

Pipeline connections available on the hand tools: 1/2" – 2" Male or Female NPT and Flanged.



INSERTION INSTRUCTIONS

- 1) Measure from the top of the process isolation valve to the zone within the pipeline or vessel where the probe / rod tip is required.
- 2) Loosen the 5/8" locking bolt, remove the safety chain from clasp and push the hand knob or handle down to maximum Insertion
- 3) Measure from the probe / rod tip upward and mark with a permanent marker the same measurement determined from step 1. Measure with a corrosion coupon installed if applicable.
- 4) Pull the probe / rod up to maximum retraction at the welded mechanical stop and tighten 5/8" lock bolt (hand tight).
- 5) Attach the tool to the process isolation valve and make sure the bleeder valve is closed.
- 6) Slowly open the process isolation valve.

On HT models, watch the base of the probe / rod at the packing gland assembly for leaks. If a leak is present, loosen the 1/4"-20 lock bolt on the packing gland assembly and slowly turn the packing gland assembly clockwise just until leak stops and tighten the 1/4"-20 lock bolt. CAUTION: Tightening the packing gland assembly past the leak stage will actually grip the probe / rod requiring more force to insert.

- 7) With a firm grip on the hand knob or handle (CAUTION: Never stand over the top of the tool while inserting), slowly loosen the 5/8" lock bolt, and push the probe / rod down through the process isolation valve to the mark made in step 1. Chain clasp should be above the chain when insertion is completed. Turn probe / rod clockwise while inserting if required for alignment.
- 8) Tighten the 5/8" lock bolt with 35 – 40 pounds of torque.
- 9) Pull the safety chain through the chain clasp tight (minimum slack present) and secure.

RETRACTION INSTRUCTIONS

- 1) Prior to beginning retraction, check the safety chain for tightness. If the chain cannot be removed from the clasp, check the 5/8" lock bolt which may have vibrated loose (insufficient torque was applied during insertion process).
- 2) With a firm grip on the hand knob or handle (CAUTION: Never stand over the top of the tool while retracting), remove the safety chain from the clasp. NEVER REMOVE YOUR FIRM GRIP WHILE THE SAFETY CHAIN IS REMOVED OR OVERLY SLACK.
- 3) Slowly loosen the 5/8" lock bolt, controlling the retraction speed with your hand grip, allow the probe / rod to travel out of the process through the process isolation valve until it stops at the welded mechanical stop. (CAUTION: On HT models, you must feel the probe / rod stop at the welded mechanical stop. The packing gland assembly may be overly tight applying friction to the probe / rod. Turning the probe / rod clockwise slowly while retracting should allow for maximum retraction. CAUTION: Never loosen the packing gland assembly while under pressure, to release grafoil seal tension, without the 5/8" lock bolt tight and the safety chain in the clasp without slack.
- 4) Once full extraction is achieved, tighten the 5/8" lock bolt (hand tight is sufficient).
- 5) Slowly close the process isolation valve.
- 6) Slowly open the bleeder valve on the tool and release all pressure and process media.
- 7) Remove the tool from the process isolation valve.