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Operating Instructions
Micrometer Adjustable Torque Wrench Series (SDR, SD, & CCM Models)

Sturtevant Richmont micrometer adjustable torque wrenches are designed & manufactured to provide consistent and rapid user-selectable torque in a variety of manufacturing and maintenance operations. They meet or exceed ASME B107.14M and ISO 6789. These wrenches are accurate to +/- 4% of indicated value from 20% to 100% of capacity.

The Ratchet and Square Drive tools operate & deliver torque in one direction only, as indicated by the arrow on the case (Figure 1). The wrench will not indicate torque but can be used in the reverse direction, provided you do not exceed the rated capacity of the wrench. The Dovetail series can be used in either direction with the same accuracy by removing the head and turning the wrench 180 degrees.

Figure 1

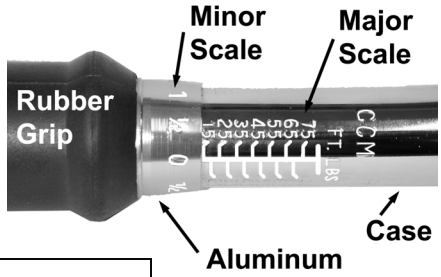


Figure 2

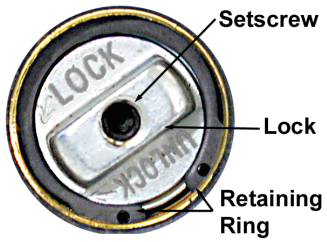


Figure 3

To set the desired torque:

The case (Figures 1 & 2) is engraved with graduations (major scale) and the aluminum grip with increments (minor scale). The torque setting is the sum of the largest graduation below the end of the aluminum grip plus the increment aligned with the centerline of the graduations. One complete revolution of the grip is equal to one graduation on the major scale.

To set the desired torque, rotate the grip lock (Figure 3) in the unlock direction until the grip can be readily rotated. Next, grasp the case firmly with one hand and rotate the rubber grip clockwise (CW) to increase torque or counter-clockwise (CCW) to decrease torque. Once the desired torque has been set, lock the grip lock by rotating it in the lock direction until it stops. Recheck torque to confirm proper setting.

To use the torque wrench:

1) Attach appropriate fastener engagement device (socket, S/R interchangeable head, etc.) to the wrench. *Note*: It is imperative the fastener engagement device maintain the same lever length as was used during calibration. Failure to maintain lever length will cause applied torque to differ from set torque.
2) Engage the fastener while holding the wrench perpendicular to the axis of the fastener.
3) Grip the center of the vinyl grip and with a steady force pull in the direction of the arrow on the case.
4) Continue to pull the wrench until an audible/tactile impulse (the “click”) is experienced.
5) Stop pulling immediately to prevent over torquing.

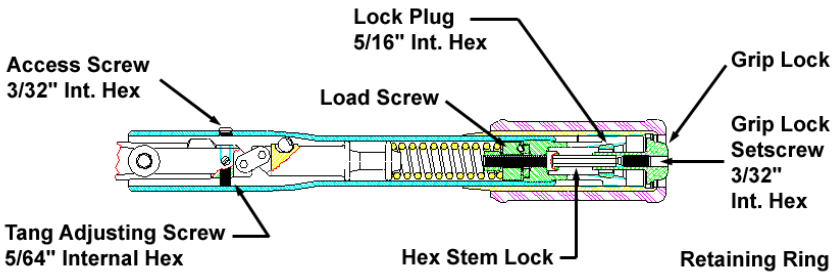
CARE & CLEANING

Always store wrench in a clean dry environment. **Do Not** immerse wrench in cleaning fluids. It is further suggested that if the wrench is to sit idle for very long periods of time it should be set to its lowest setting.

Calibration Instructions

Required Equipment: Torque analyzer or tester accurate to 1% of indicated value or better, four (4) hex keys (5/64”, 3/32”, 5/32”, & 5/16”), and a torch*. *Required only if solder used on grip lock or access screw.

Figure 4



Procedure (Refer to Figures 1 through 4 for component location and nomenclature):

1) Determine current performance to standard.
   a) Test wrench on torque analyzer/tester.
      i) Cycle wrench at 50% of capacity a minimum of three times.
      ii) Set wrench to 20% of capacity, cycle three (3) times and record readings.
      iii) Set wrench to 60% of capacity, cycle three (3) times and record readings.
      iv) Set wrench to 100% of capacity, cycle three (3) times and record readings.
   b) Compare readings to tolerance for each torque level.
      i) If wrench is within tolerance, it may be returned to service.
      ii) If wrench is out-of-tolerance, go to next step.
2) Calibrate wrench.
   a) Remove rubber grip.
   b) If solder was used to preclude access to grip lock and or access screw, remove solder. Do NOT touch grip, grip lock, or screw until cool. If solder not used, go directly to next step.
   c) Remove access screw.
   d) Loosen setscrew in grip lock until it protrudes approximately 1/8" above top of lock.
   e) Depress grip lock to remove pressure on retaining ring.
   f) Remove retaining ring.
   g) Remove grip lock and hex stem lock.
   h) Rotate aluminum grip to 100% of capacity (highest graduation + 0 on increment).
   i) Place wrench on torque analyzer/tester, click several times, note values obtained.
   j) Adjust wrench.
      i) If readings are above tolerance, turn tang adjustment screw slightly CW, then repeat step 2i.
      ii) If readings are below tolerance, turn tang adjustment screw slightly CCW, then repeat step 2i.
      iii) If readings are in tolerance, go to next step.
   k) Rotate grip and adjust torque to 20% of capacity (lowest graduation + 0 on increment).
   l) Place wrench on torque analyzer/tester, click several times, note values obtained.
      i) If out-of-tolerance, go to next step.
      ii) If in tolerance, check at 60% and 100% of capacity.
   m) Rotate grip CW or CCW enough clicks to bring into tolerance at 20% of scale.
   n) Lock load screw by rotating internal 5/32" internal hex screw in the CCW direction.
   o) Use 5/16" hex key to remove lock plug by rotating in the CCW direction.
   p) Rotate grip until it aligns with lowest graduation (20% of capacity).
   q) Replace lock plug and unlock load screw.
   r) Return to step 2h.
   s) Replace hex stem, grip lock, and retaining ring.
   t) Tighten setscrew in grip lock until it lightly touches bottom, then back off ¾ to 1 turn.
   u) Replace access screw and rubber grip.

REPAIR PARTS, SERVICE, & CALIBRATION

Repair parts can be ordered through your local S/R distributor. For the name of a local S/R distributor, please contact us using the information on the front of this document. Factory repair and NIST-traceable certification, can be obtained by sending the wrench and your instructions to us at the factory address on the front of this sheet.

CAUTION

1. Safety glasses should be worn when using any hand tool.
2. Never exceed the rated torque of the tool.
3. Assure fastener engagement device properly engages fastener.
4. Never use cheater bars to increase leverage.
5. Use hand tools only for their intended purpose.