

## Signal Output Wrench

Rev 1.0 (June 27, 2011)

The Signal Output wrench is a process control tool that sends a signal each time wrench achieves its pre-set torque value. The torque wrench is ideal for production line control or counting function.

### Signal Output Wrench is Comprised of 3 Components



Push Rod Wrench

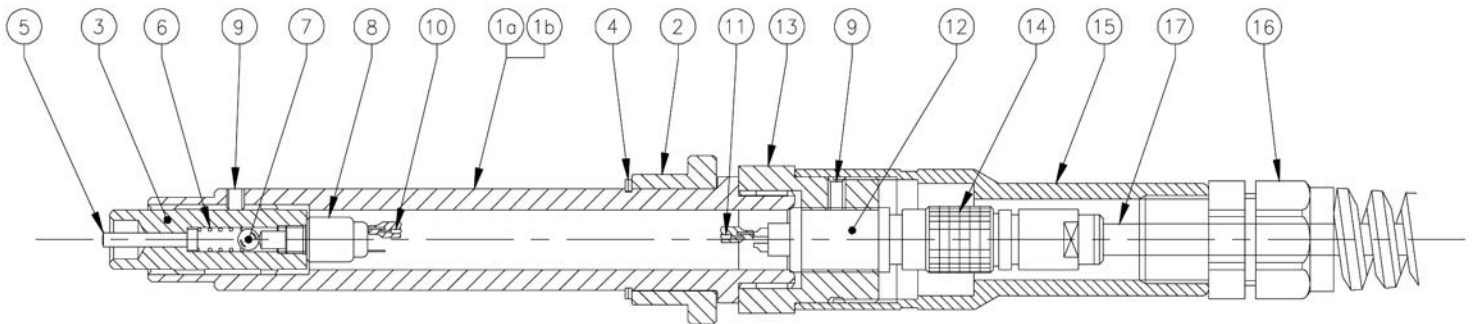
Universal Rotary  
Switch module  
Item # 20-B25900

Straight Cable (pictured)  
Item #20-D94402

### Assembling Signal Output Wrench

1. Select a Push Rod Wrench. Slide the rod of the Universal Rotary Switch module into the end of wrench. Tighten the Universal Rotary Switch onto the wrench using an Open Ended Wrench.
2. Select a Straight Cable or Spiral Cable. Plug-in the Cable to the Universal Rotary Switch module and tighten the cable.

Spiral Cable  
Item #20-D94406



### Adjusting Torque Setting

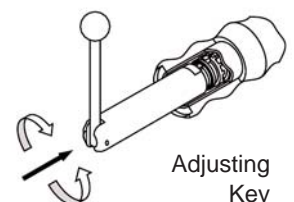
To alter the torque setting of a torque wrench the Universal Rotary Switch must be removed in the following order.

1. Slacken off the Cable Clamp (16) - THIS IS MOST IMPORTANT. Failure to do so will cause irreparable damage.
2. Unscrew Cover (15), moving Cable Clamp (16) with it, and slide both items off the wrench handle.
3. Release Lemo plug (24), disconnecting the whole cable assembly.
4. Remove the Switch module from the handle tube using an Open Ended Wrench.
5. The torque adjusting screw will now be visible inside the wrench handle.



### Adjusting Torque Setting for TSN, STB & TSP

1. Insert special adjusting key.
2. The special adjusting key is an articulated design. When in use the two halves are set at 90°, this allows downward force to be exerted on the Sliding Lock while rotating the Adjusting Screw.
3. Turn clockwise to increase torque and counter clockwise to decrease torque. Do not adjust torque above or below the recommended torque ranges of the wrench model.
4. Check torque setting with a torque tester.
5. Once torque setting is set, tighten the Universal Rotary Switch and Cable back on the wrench .



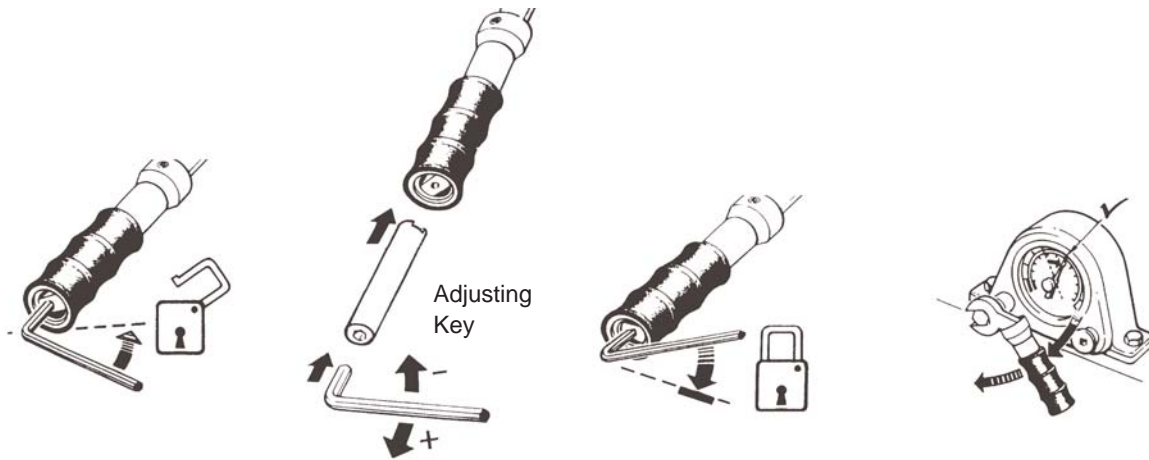
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### Adjusting Torque Setting for MTBN

1. Insert small hex key into set screw in the middle of Torque Adjusting Screw inside the wrench handle.  
Turn counter clockwise to loosen the adjusting torque screw, but do not remove screw.
2. Insert Adjusting Key into wrench handle to the torque adjusting screw. Insert small hex key into the Adjusting Key.  
Turn clockwise to increase torque and counter clockwise to decrease torque. Do not adjust torque setting above or below the recommended torque ranges of the wrench model.
3. Check torque setting with a torque tester.
4. Once torque setting is set, lock torque adjusting screw\* and tighten the Universal Rotary Switch and Cable back on the wrench .

\*Note: - 26.5 lbf.in(3 N.m) torque value for the tighten the Universal Rotary Switch and Cable back on the wrench .



### Calibrating Torque Wrenches

To calibrate torque wrenches either use a torque tester or torque sensor within the range of the torque wrench. For cam-over & break-over torque wrenches calibrate torque in "Peak" mode with a torque tester or torque sensor. Make sure to apply the torque slowly and smoothly.

1. Select a torque tester or torque sensor that covers the torque range of the wrench. Connect wrench to the torque tester or torque sensor using the appropriate adapters as needed.
2. Apply torque clockwise slowly until wrench 'slips' and note reading (For TSN & TSP models)

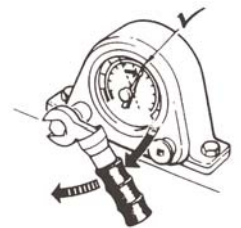
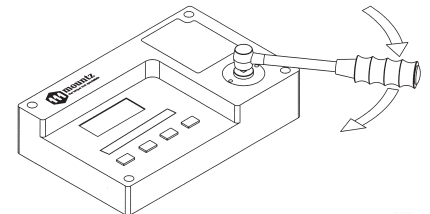
Apply torque clockwise slowly until wrench 'breaks-over' and note reading. (For MTBN & STB models)

3. Adjust wrench to required torque setting as described on page 1 & 2.
4. Test and repeat adjustment as necessary to obtain desired value.
5. Recalibrate torque wrench at prescribed intervals.

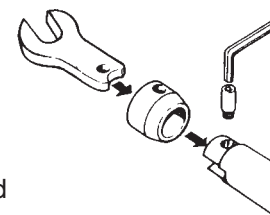
### Placing Heads on Wrench

*For MTBN 2 & 10 Models* - Loosen side pin along the collar with hex key. Slide "head" in between the slit. Slide pin back in and tighten with hex key.

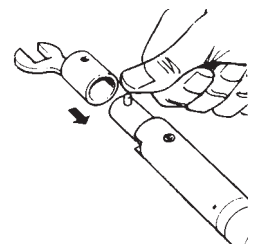
*For STB Models and MTBN 25, 65 & 135 Models* - Slide "head" on to the end of wrench. Align the pin with the head's pin slot.



For MTBN 2 & 10 models



For MTBN 25, 65 & 135 models and STB models



## Signal Output Wrench

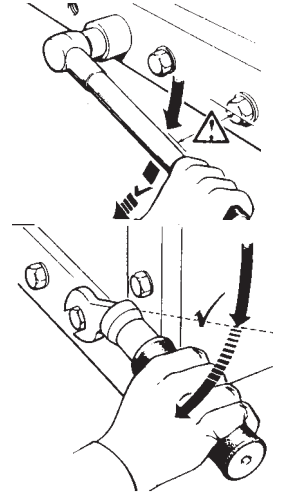
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### Applying Torque for TSN & TSP models

1. Tighten nut or bolt by applying a steady even pull using built in ratchet as necessary. Wrench should be kept at 90 degrees to axis of bolt during tightening. When pre-set torque is reached, the wrench will 'slip.'
2. The wrench will automatically reset itself for the next application.
3. With its unique design, it's impossible to over tighten beyond the preset load.

### Applying Torque for MTBN & STB models

1. Tighten nut or bolt by applying a steady even pull. Wrench should be kept at 90 degrees to axis of bolt during tightening. When pre-set torque is reached, the wrench will 'break.'
2. The wrench will automatically reset itself for the next application.
3. With its unique design, it's impossible to over tighten beyond the preset load.



### Electrical Details

Switch Rating: 100mA 30VDC Max.  
100µA 50mVDC Min.

Switch Status: Normally open, closes when preset torque is achieved.

The wrench can be interfaced with computers, counters, or gate switch.

### Accessory for Signal Output Wrench (Signal Delay Unit - SDU)

Designed to exceed the duration of the electrical circuit completed and guarantee interface quality. It minimizes risk of multiple signals caused by rapid use or variable signal duration. The wall mountable box features adjustable signal duration and LED's to monitor the signal.



### Background

The Signal Output wrenches contain an internal micro-switch rated at 100 mA at 30V d.c. Max. , 100 µA 50 mV d.c . Min. When the tool is operated the Switch is designed to close, or make, completing an electrical circuit.

The length of time that the electrical circuit is operable is dependent on the time a MTBN or STB wrench is held in the "broken" position or, in the case of a TSN or TSP wrench, the circuit life is very short, typically 100 micro-seconds, due to the slipping action of the tool.

Experience has shown that some equipment intended to be activated by the tool switch cannot capture the signal and requires a circuit of longer duration, typically up to 1 second. The SDU allows for a signal of variable duration and also prevents multiple signals if the tool is operated successively very quickly.

### Description

Housed in a wall mountable box the SDU is equipped with three indicator LEDs and requires either 4 x AA batteries (not supplied) or an external power supply (not supplied) Item # 020618.

The external power supply requirements are :

Voltage: 6V d.c . Regulated

Connector: 2.1 mm Jack

Power Jack: Centre Pin Positive, Outside Negative

Internally there is a potentiometer for circuit duration time adjustment and externally a pair of terminals allowing connection to the external device.

## Signal Output Wrench

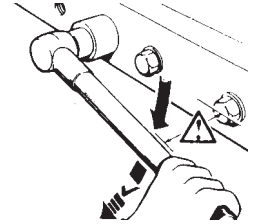
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The LED's signify as follows:

**Red** - this will illuminate when the switch in the torque tool is closed.

**Green** - this will illuminate whilst the SDU is providing a circuit for the external equipment.

**Yellow** - this is a low battery warning LED. It will start to flash during and immediately after operation of the SDU if the battery is low.

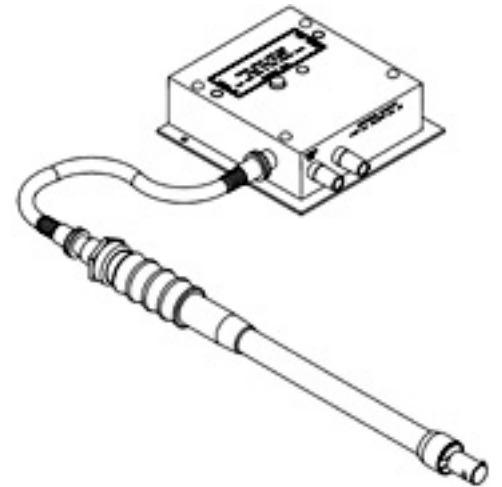


A yellow battery test button is also provided. If the battery is good the yellow LED will illuminate when the button is pressed and will extinguish when the button is released. If the yellow LED continues to flash for 5-10 seconds after button release, the battery is low.

The SDU external contacts are rated at 5 amps for 110 V a.c. or 24 V d.c .

### SDU Operation

1. Remove the back of SDU to gain access to the variable time potentiometer by removing battery pack and gently easing off plastic back. Turning the potentiometer clockwise will increase the circuit life to a maximum of approximately 1.5 seconds.
2. Following initial adjustment of the time delay, reassemble the unit.
3. Either insert 4 x AA batteries taking care to ensure correct polarity (when the battery compartment door is shut, the yellow LED will illuminate briefly to indicate good contact), or connect to external power supply as defined above. (Check Jack Plug polarity). The yellow LED will illuminate briefly when power is first switched on.
4. Connect external equipment to "Signal Out" Terminals (yellow). (Note Contact ratings).
5. Connect the Signal Output Wrench using the Lemo plug provided.
6. When the torque wrench is operated, the Red LED will illuminate. Simultaneously the Green LED will also illuminate and remain lit for the time duration set.
  - If the torque tool is re-operated whilst the green LED is lit, this second signal from the tool will be ignored.
  - If a MTBN or STB wrench is held in the "broken" position, the red LED will remain illuminated, but the external circuit will be broken and the green LED will extinguish at the end of the pre-set time delay.
7. The timing potentiometer can be adjusted to satisfy the requirements of the external equipment being activated.
8. If the Yellow LED starts to flash during operation, the batteries should be changed. Alternatively the condition of the batteries can be checked as above.



### Mountz Calibration & Repair Services

Mountz Inc. features an experienced calibration and repair staff. Our trained technicians can calibrate and repair most any tool. Mountz provides rapid service with quality that you can trust as we offer three state-of-the-art calibration lab and repair facilities that can calibrate up to 20,000 lbf.ft.

With over 45 years of experience, Mountz's in-depth knowledge of torque is reflected in our tool's craftsmanship and our ability to provide solutions to both common and uncommon torque applications. We perform calibrations in accordance with ANSI/NCSL-Z540. Mountz is dedicated solely to the manufacturing, marketing and servicing of high quality torque tools.

Mountz is an ISO 9001 certified and ISO 17025 accredited company.

**Contact**  
**Mountz Inc.**  
**Phone: 408.292.2214**  
**Fax: 408.292.2733**  
**sales@mountztorque.com**  
**www.mountztorque.com**

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