

# TLS

## Preset Torque Limiting Screwdrivers (Internally Adjustable)

### KEY FEATURES

Designed and manufactured to meet or exceed the accuracy and repeatability requirements of ISO 6789:2003 ( $\pm 6\%$  of setting).

Various models that range from 0.7 ozf.in to 120 lbf.in.

Precision radial ball clutch "slips-free" when the preset torque is reached preventing overtorquing.

Thrust bearings insure that the torque setting is independent of any end load applied by the operator.

All models provide bi-directional operation and are calibrated in either the CW or CCW direction.

Four different colored lightweight aluminum handles allow color coding of specific torque values in production areas (TLS1360 - Black only).

### FEATURES TLS-IFR

The design action of the standard TLS cammed screwdriver is such that when the tool reaches its preset torque value the mechanism disengages from the drive thus limiting the torque applied. Further rotation of the screwdriver handle resets the mechanism ready for the next torquing operation. The IFR models eliminates any small reaction during resetting.

All IFR models are "impact-free" when the cam resets.

Screwdriver is torque limiting in the CW direction only.

CCW operation available upon request.

### FEATURES TLS-OWC

One-way clutch system is designed for the screwdriver to apply torque in one direction and lockup in the opposite direction for easy screw removal.

Ideal for maintenance and refurbishing applications.

Screwdriver is torque limiting in the CW direction only.

CCW operation available upon request.

1/4" male square drive models available upon request.

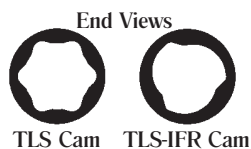


### EASY TORQUE ADJUSTMENT

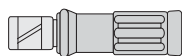
Tamper-proof internal adjustment. No external adjustment scale - must be preset using a torque analyzer.



### SMA Connector Bit



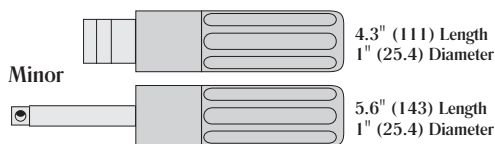
End Views  
TLS Cam TLS-IFR Cam



Micro Minimaster 3" (76) Length  
.7" (18) Diameter



Minimaster 4.1" (104) Length  
.7" (18) Diameter



Minor

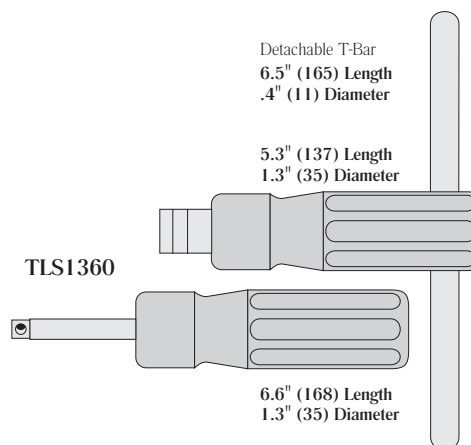
4.3" (111) Length  
1" (25.4) Diameter

5.6" (143) Length  
1" (25.4) Diameter

Standard

5" (127) Length  
1.3" (35) Diameter

6.2" (159) Length  
1.3" (35) Diameter



TLS1360

Detachable T-Bar  
6.5" (165) Length  
.4" (11) Diameter

5.3" (137) Length  
1.3" (35) Diameter

6.6" (168) Length  
1.3" (35) Diameter

| Model                       | 1/4" Male Square Drives |                | 1/4" Female Hex Drives |                |                | Color | Torque Ranges        |               |                   | Weight        |         |             |         |
|-----------------------------|-------------------------|----------------|------------------------|----------------|----------------|-------|----------------------|---------------|-------------------|---------------|---------|-------------|---------|
|                             | TLS Item #              | TLS-IFR Item # | TLS Item #             | TLS-IFR Item # | TLS-OWC Item # |       | American             | S.I.          | Metric            | TLS & IFR oz. | IFR gm. | TLS OWC oz. | OWC gm. |
| Micro Minimaster (TLS0022M) | -                       | -              | 020083                 | -              | -              | Red   | 3 - 32 ozf.in        | 2 - 22 cN.m   | 0.2 - 2.2 kgf.cm  | 1.8           | 50      | -           | -       |
| Minimaster (TLS0022)        | -                       | -              | 020074                 | -              | 020289         | Gold  | 0.7 - 32 ozf.in      | 0.5 - 22 cN.m | 0.05 - 2.2 kgf.cm | 2.5           | 72      | 3           | 86      |
| Minor (TLS0135)             | 020062                  | 020465         | 020066                 | 020464         | 020298         | Blue  | 3 ozf.in - 12 lbf.in | 2 - 135 cN.m  | 0.2 - 13.7 kgf.cm | 7.4           | 210     | 7.9         | 224     |
|                             | 020063                  | 020467         | 020067                 | 020466         | 020301         | Gold  |                      |               |                   |               |         |             |         |
|                             | 020064                  | 020469         | 020068                 | 020468         | 020299         | Green |                      |               |                   |               |         |             |         |
|                             | 020065                  | 020471         | 020069                 | 020470         | 020300         | Red   |                      |               |                   |               |         |             |         |
| Standard (TLS0406)          | 020075                  | 020473         | 020079                 | 020472         | 020302         | Blue  | 8 ozf.in - 36 lbf.in | 6 - 406 cN.m  | 0.6 - 41 kgf.cm   | 9.9           | 280     | 10.4        | 294     |
|                             | 020076                  | 020475         | 020080                 | 020476         | 020304         | Gold  |                      |               |                   |               |         |             |         |
|                             | 020077                  | 020477         | 020081                 | 020478         | 020293         | Green |                      |               |                   |               |         |             |         |
|                             | 020078                  | 020479         | 020082                 | 020480         | 020303         | Red   |                      |               |                   |               |         |             |         |
| TLS1360                     | 020060                  | 020481         | 020061                 | 020482         | 020290         | Black | 10 - 120 lbf.in      | 1 - 13.6 N.m  | 10.5 - 138 kgf.cm | 11.5          | 325     | 12          | 339     |