

## Torque wrench with permanent ratchet

Magnifying window scale enables easy, accurate read-off.
Strong, reversible ratchet, 32 teeth, $11.25^{\circ}$ pivot range.
A spring-loaded ball ensures the sockets are firmly attached and cannot fall off. The release mechanism enables sockets to be removed and changed quickly at the push of a button.

The required torque is quickly set via a pull-out setting knob in the handle.

When the preset torque is attained, the wrench produces both audible and tactile signals.
Right-hand turn for controlled screw tightening.
Accuracy is in accordance with
Measuring Range in $\mathrm{Nm}=$ Newton-Metre
DIN/ISO 6789.1993, EN26789.1994
User friendly designed, comfortable handle
Chromium-plated
With test certificate in accordance with DIN/ISO 6789.1993, EN26789.1994

| Art. Code | EAN-Code 731415+ | $\mathscr{F}$ | Capacity | Gradua <br> Scale | Handle | Drive <br> © | Length mm | $\Delta_{9} \Delta$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 7451-20 | 1845452 | 1 | 2-20 Nm | 1 Nm | 0.1 Nm | 3/8" | 355 | 900 |
| 7451-100 | 1845469 | 1 | $10-100 \mathrm{Nm}$ | 5 Nm | 0.5 Nm | 3/8" | 418 | 1000 |
| 7851-200 | 1845476 | 1 | $20-200 \mathrm{Nm}$ | 10 Nm | 1 Nm | 1/2" | 515 | 1300 |
| 7851-340 | 1845483 | 1 | $70-340 \mathrm{Nm}$ | 20 Nm | 2 Nm | 1/2" | 515 | 1300 |



## Torque wrench for interchangeable insert tools

For all assembly jobs, especially where access with conventional sockets is not possible.

Right-hand turn for controlled screw tightening (the torque wrench can also be used for controlled left screw tightening, when turned over by $180^{\circ}$ ).

Accuracy is in accordance with
DIN/ISO 6789.1993, EN26789.1994.
The right torque readings at a glance

Measuring Range in Nm = Newton-Metre

| Art. Code | EAN-Code 731415+ | 8 | Capacity | Gradua Scale | Handle | Insert <br> $\square$ mm | Length mm | $\Delta_{9} \Delta$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6852-20 | 1845490 | 1 | 2-20 Nm | 1 Nm | 0.1 Nm | $9 \times 12$ | 355 | 800 |
| 7452-100 | 1845506 | 1 | $10-100 \mathrm{Nm}$ | 5 Nm | 0.5 Nm | $9 \times 12$ | 380 | 900 |
| 7852-200 | 1845513 | 1 | 20-200 Nm | 10 Nm | 1 Nm | $14 \times 18$ | 493 | 1300 |
| 7852-340 | 1845520 | 1 | $70-340 \mathrm{Nm}$ | 20 Nm | 2 Nm | $14 \times 18$ | 493 | 1300 |



## Calculating scale settings where an extension arm is used with the torque wrench

Each torque wrench has been specifically designed for a specific maximum scale reading and tested at this level. For various reasons, it may be necessary in practice to add an extension arm.
To this end it is necessary to adjust the programming.
The required settings may be calculated using the following formula: $\quad C=\frac{L 1 \times T}{L 1+B}$
$\mathrm{L} 1=$ Length of the lever arm on the torque wrench itself
7451-DEMO-KIT
B = Distance between the two pivot centres after attaching the extension
$\mathrm{T}=$ Tightening torque of the bolt
$C=$ Setting value
Example:
$\mathrm{L} 1=425 \mathrm{~mm}$
$B=40 \mathrm{~mm}$
$\mathrm{T}=20 \mathrm{Nm}$
$C=\frac{0,425 \times 20}{0,425+0,040}=\frac{8,5}{0,465}=18,28$
$\mathrm{C}=$ ?
$C=18,28 \mathrm{Nm}$


## Torque Angle Gauge

Automotive manufacturers prescribe both torque and rotational angle settings for fastening elements used in vehicles. Angle controlled torquing gives initially "snug" torque, then turns the fastener a step further to the optimum torquing angle. Torque is measured to the maximum safe working load, while preventing overtorquing and damage to the fasteners.

Large, easy to read scale with oil resistant, non-reflective surface. The angle indicator clearly indicates the angular reading.
The adjustable reference arm is firmly attached to a non-moving part of the machine and prevents the scale turning.

| Art.-Code | EAN-Code 731415+ | 8 | Drive | $\Delta_{9} \Delta$ |
| :---: | :---: | :---: | :---: | :---: |
| 7851-DW | 1846602 | 1 | 1/2" | 155 |
| 8951-DW | 1846619 | 1 | 3/4" | 520 |


$1 / 2$ " O female square drive on the input side.
$1 / 2^{\prime \prime}$ (1) male square drive on the output side.

$3 / 4$ " - female square drive on the input side.
$3 / 4$ " © male square drive on the output side.

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