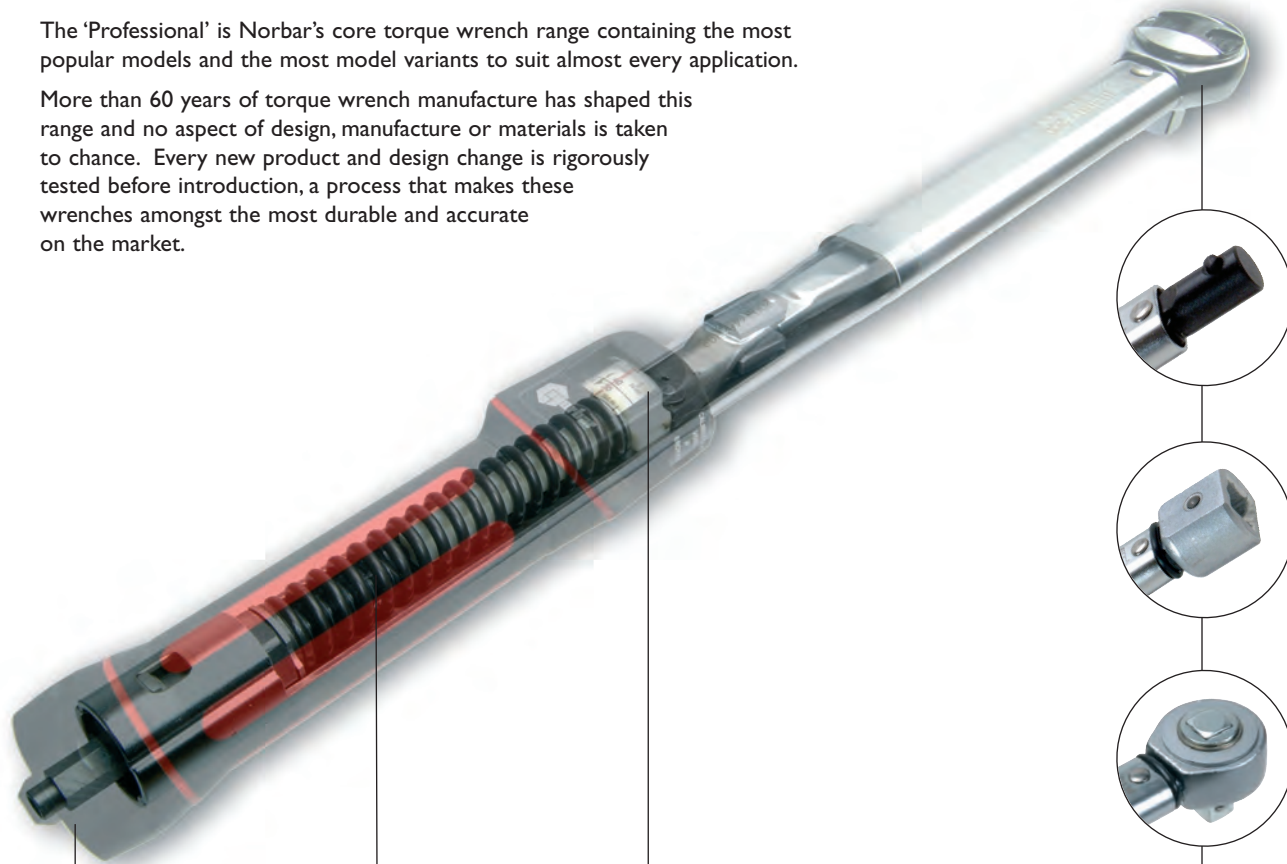


## Professional Torque Wrench

The 'Professional' is Norbar's core torque wrench range containing the most popular models and the most model variants to suit almost every application.

More than 60 years of torque wrench manufacture has shaped this range and no aspect of design, manufacture or materials is taken to chance. Every new product and design change is rigorously tested before introduction, a process that makes these wrenches amongst the most durable and accurate on the market.



### Adjustment Lock

A robust lock prevents accidental adjustment of the wrench during use. Fingertip light adjustment comes from the best design and materials.

### Torque Mechanism

Norbar's accurate mechanism has been developed and enhanced over a 40 year period and several million examples have been produced. Less parts to maintain than 'pivot block' mechanisms. Simple calibration adjustments without disassembly.

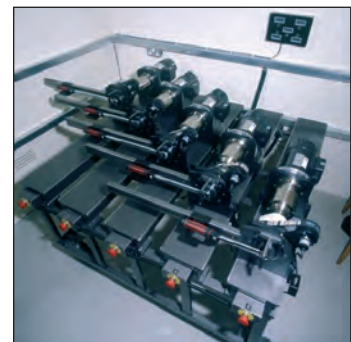
### Torque Scale

Unique 'harmonic drive' scale mechanism allows a long scale length and therefore accurate and error free setting.

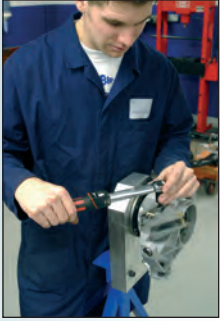


### Ratchets

The Professional torque wrench is available with a choice of ratchets and as a 'Torque Handle' for interchangeable fittings.



Norbar 5 station tester is used for durability and benchmark testing.



## Professional Torque Wrench 'Automotive' Ratchet Models

The Professional torque wrench offers an ideal combination of accuracy, robust construction, comfort and ease of use.

The reversible ratchets on these models are designed with compact dimensions and a narrow engagement angle resulting from the 72 tooth pattern. These features make the wrench ideal for use in the confined spaces of modern motor vehicles and many other applications.

- Accuracy of  $\pm 3\%$  of reading exceeds all international standards for torque wrenches.
- Every wrench is supplied with a calibration certificate to satisfy the requirements of ISO 9000:2000.
- Soft feel handle provides excellent grip even in oily conditions.
- Handle material and lens resist all chemicals in common automotive, industrial and aviation use.
- Locking mechanism prevents accidental adjustment of the wrench during operation.
- Long scale graduated in N.m and lbf.ft allows for foolproof and accurate setting.
- Supplied in moulded box for storage and protection.



### Ratchet Adjustables - Automotive Ratchet

Model	Square Drive	Part No.	Range		Ratchet Diameter	Engagements per revolution	Length	Weight
	in		N.m	lbf.ft	mm		mm	Kg
60	$\frac{3}{8}$	13010	8 – 60	5 – 45	31	72	307	0.6
60	$\frac{1}{2}$	13011	8 – 60	5 – 45	31	72	307	0.6
100	$\frac{3}{8}$	13012	20 – 100	15 – 80	31	72	347	0.7
100	$\frac{1}{2}$	13013	20 – 100	15 – 80	31	72	347	0.7
200	$\frac{1}{2}$	13014	40 – 200	30 – 150	41	72	443	1.0

## Professional Torque Wrench 'Industrial' Ratchet Models

These wrenches offer the same outstanding features as those on the previous page but with a wider model range – up to 400 N.m – and a different ratchet concept.

The push-through ratchets on these models are robustly engineered for strength and durability. The strength and high wear resistance comes from the design of the tooth pattern while a principle of offset ratchet pawls gives a narrow engagement angle of 5° on wrenches up to and including Model 200 and 6° on Models 300 to 400.

The push through square drive is not only a robust design but allows the wrench to be used for torque control in both the clockwise and anti clockwise directions. Please note that the 3/4" square drive of the Model 400 has to be removed and re-inserted on the other side of the ratchet head rather than pushed through.



### Ratchet Adjustables - Industrial Ratchet N.m/lbf.ft Models

Model	Square Drive	Part No.	Range		Ratchet Diameter	Length	Weight
	in		N.m	lbf.ft	mm	mm	Kg
60	3/8	13042	8 – 60	5 – 45	35	312	0.66
60	1/2	13043	8 – 60	5 – 45	40	320	0.74
100	3/8	13044	20 – 100	15 – 80	35	353	0.73
100	1/2	13045	20 – 100	15 – 80	40	359	0.80
200	1/2	13046	40 – 200	30 – 150	42	442	1.01
300	1/2	13047	60 – 300	45 – 220	49	570	1.38
330	1/2	13049	60 – 330	45 – 250	49	683	1.50
400	3/4	13050	80 – 400	60 – 300	49	683	2.09

### lbf.in Models

Model	Range
	lbf.in
13075	70 - 530
13076	70 - 530
13077	100 - 800
13078	100 - 800
13079	400 - 1800
13080	500 - 2500
13082	500 - 3000
13083	700 - 3500

All other features as table to the left.