FLANGE MOUNTED TRANSDUCERS (FMT)

Calibration details

4	FMT
50676.xxx	30 - 1,500 N·m, ½", ¾" + 1" sq. dr.
50682.xxx	20 - 1,000 lbf·ft, ½", ¾" + 1" sq. dr.

12	
TD1.CCW	Counter-clockwise calibration for FMT & STB when ordered with new unit

xxx Indicates .LOG or .IND versions, please see page page 89.
* If using this transducer with a Series 1 TST or TTT (Part No.s 43198 - 43201) or a Pro-Log Display instrument, please contact Norbar.

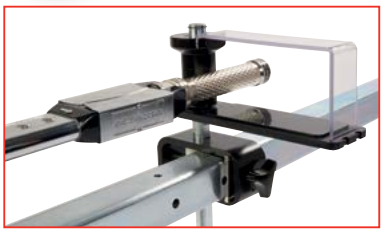
Includes integral transducer lead with connector to suit TST, TTT and T-Box™ 2. Additional lengths can be accommodated, consult Norbar for details.

FMT 1,500 N·m

ISO 3000 LOADER

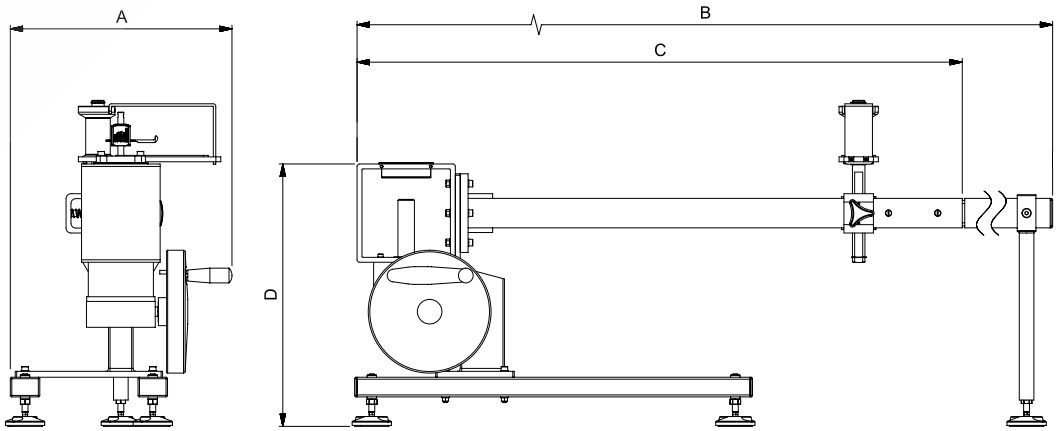
These loaders allow torque wrenches to be tested or calibrated to relevant ISO standards when used in an appropriate temperature controlled environment. Their function is to take full advantage of the accuracy of Norbar's torque measuring system by reducing operator induced variations in the calibration process.

- The high ratio, 1250:1 gearbox allows high torques to be applied with minimal effort
- Used with a T-Box™ 2 instrument, the timer feature will allow the rate of torque application to meet the requirement of ISO6789:2017
- The design allows for easy interchange of transducers using the Norbar Static Transducer system
- Floating reaction point minimises side loads on the wrench. It is a requirement of ISO6789:2017 that parasitic forces on the wrench under test are minimised
- Reaction extension bar allows wrenches up to 2,200 mm to be tested. This can be removed to save space. Wrenches up to 1,100 mm can be tested when the extension bar is not fitted



4	TORQUE WRENCH LOADERS
20505	Loader, ISO 3,000 N·m
20506	Motorised ISO 3,000 N·m
20606	Short Length Reaction Plate Assembly

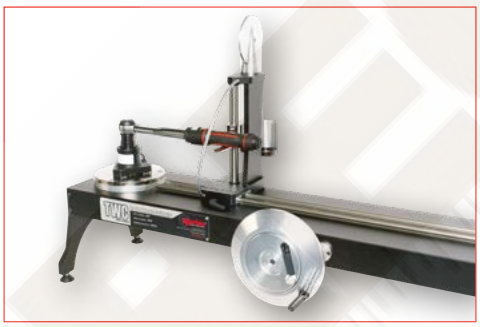
Model		ISO 3000 N·m	Motorised ISO 3000 N·m
Part Number		20505	20506
Dimensions (mm)	A	451	363
	B	2,440	2,440
	C	1,232	1,232
	D	534	554
Weight (kg)		55.0	40.0



TORQUE WRENCH CALIBRATOR - MANUAL

Torque Wrench Calibrator (TWC) 400 N·m Manual

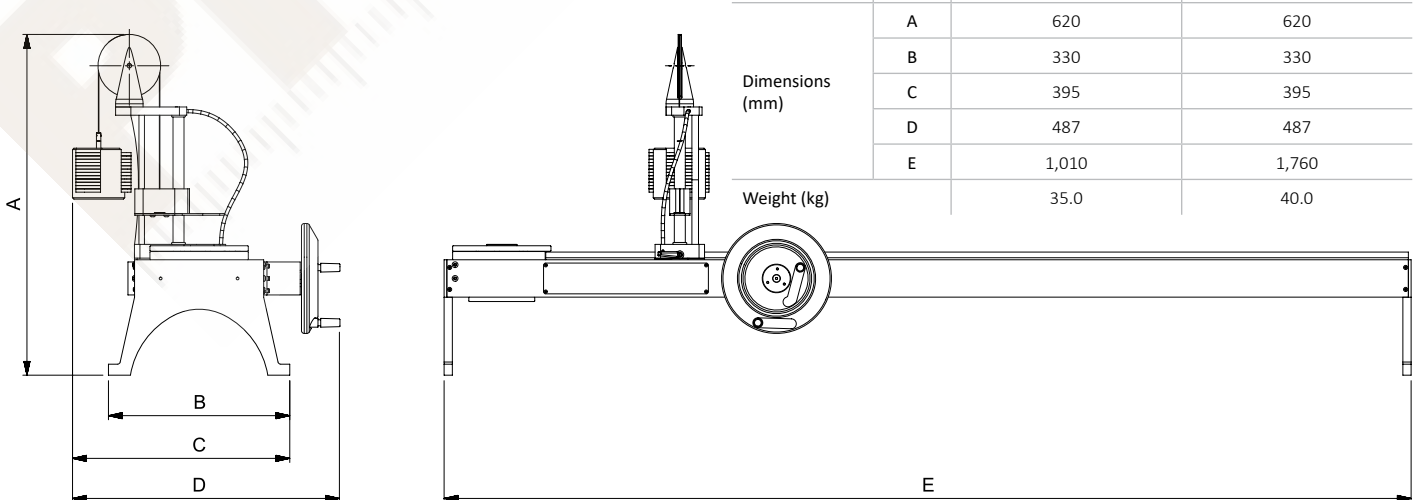
- Enables torque wrench calibration or testing in accordance with ISO 6789-2:2017 if used with T-Box™ 2
- Also in accordance with BS EN 26789:2003, ISO 6789-1:2017
- Counterbalance Reaction system is designed to support the weight of the wrench so that the weight does not become a parasitic force within the calibration system. The floating nature of the support means that the wrench is able to find its own natural level rather than being constrained as in many other loading devices. Any such constraint will be a parasitic force within the system (Patents apply)
- Lightweight alloy construction ensures the TWC is easily transported, making it well suited for mobile laboratory applications
- Two speed gearbox designed for a sufficient balance of speed and control by allowing for both fast loading of the torque wrench and a slower more precise loading
- Works with Flange Mounted Transducers, Static Transducers (when using part number: 60318), T-Box™ 2, TST, TTT and Pro-Test (when using part number: 60323)
- During calibration the TWC maintains a fixed position on the handle of the torque wrench
- Rotating transducer design ensures that the load is applied 90° to the torque wrench handle. The benefit of this precise alignment is that forces are applied squarely to the load point of the handle
- When testing for conformity or calibrating to ISO6789:2017 any transducer must not be used below 5% of its capacity when used with TWC. This statement does not apply to a TWC when used in a accredited laboratory



Torque Wrench Calibrator (TWC) Manual shown with a Flange Mounted Transducer and a Model 100 torque wrench (not included)

4	TORQUE WRENCH CALIBRATOR (TWC)
60331	Torque Wrench Calibrator 400 N·m Manual
60332	Torque Wrench Calibrator 1,500 N·m Manual

Model		TWC 400	TWC 1500
Part Number		60331	60332
Wrench Length (Torque Radius)	Min	135	135
	Max	750	1,500
Dimensions (mm)	A	620	620
	B	330	330
	C	395	395
	D	487	487
	E	1,010	1,760
Weight (kg)		35.0	40.0



Patented in the UK, Germany, France and Italy (EP2864745) and in the USA (US9921122).

TORQUE WRENCH CALIBRATOR - ANCILLARIES

There are a wide range of accessories available for the TWC that will allow the user greater flexibility.

- 60322 Quick Release Kit allows for a more streamlined and efficient calibration laboratory
- 60324 Hexagon Adaptor Kit for use with the TWC Manual allows users to speed up the workflow by implementing their own solution to rapidly manoeuvre the wrench up to the reaction point
- 60330 Offset Angle Plate Kit allows for greater flexibility when calibrating fixed head torque wrenches

8	TWC ANCILLARIES
60318	Static Transducer Support Kit
60319	Short Length Reaction Post
60322*	Quick Release FMT Kit
60323	Pro-Test and Static Torque Block Adaptor Kit
60324	Hexagon Adaptor Kit
60325	TWC Greasing Kit
60326	TWC Bench Mounting Kit
60327+	FMT 2 to FMT 25 Adaptor Kit
60329	3 kg Mass Weight
60330	Offset Angle Plate Kit
62352	TWC CBR Cable
29214	1" Male to ¾" Female Flanged Square Drive Adaptor
29215	1" Male to ½" Female Flanged Square Drive Adaptor
29216	1" Male to ⅜" Female Flanged Square Drive Adaptor
29217	1" Male to ¼" Female Flanged Square Drive Adaptor

* Kit contains two Quick Release FMT plates
+ 60327 is essential for users of FMTs that are 25 N·m/250 lbf·in and smaller

60318 Static Transducer Support Kit and 60319 Short Length Reaction Post

60318

60319

60322 Quick Release FMT Kit

60330 Offset Angle Plate Kit

29214 Flanged Square Drive Adaptor

60329 3 kg Mass Weight

60327 FMT 2 to FMT 25 Adaptor Kit

TORQUE WRENCH CALIBRATOR - AUTO

Calibration details

For a complete torque wrench calibration system, just add the transducer range appropriate for the wrenches you wish to calibrate and accessories from page 99.

- Enables torque wrench calibration or testing in accordance with ISO 6789:2017 Part 1 and 2
- Counterbalance Reaction system is designed to support the weight of the wrench so that the weight does not become a parasitic force within the calibration system. The floating nature of the support means that the wrench is able to find its own natural level rather than being constrained as in many other loading devices. Any such constraint will be a parasitic force within the system (Patents apply)
- Lightweight alloy construction ensures the TWC is easily transported, making it well suited for mobile laboratory applications
- Works with Flange Mounted Transducers and Static Transducers
- During calibration, the TWC maintains a fixed position on the handle of the torque wrench
- Rotating transducer design ensures that the load is applied 90° to the torque wrench handle. The benefit of this precise alignment is that forces are applied squarely to the load point of the handle
- Supplied with a powerful yet simple touchscreen User Interface (UI) (keyboard and mouse also supported if desired)
- Flexible tool template system; minimises number of templates required to cover a wide range of tools, aiding efficient use
- Programmable calibration workflow for each template, can be pre-set to ISO compliant flow for the given tool for a faster set-up or can also support bespoke workflows

- Calibration job management; book calibrations, track progress of previous bookings and resume them
- Automated management of calibration and conformance workflows for non-indicating tools
- Intelligent rate control system ensures fast cycling of tools while maintaining compliance with 2017 standards
- Environmental monitoring (humidity/temperature) to assist compliance with calibration standards
- Automated management of uncertainty data for ISO 6789-2:2017 calibrations, guiding the user through the process using dynamically generated instructions based on the current tool's ISO classification and workflow
- Inbuilt data analysis and certification generation seamlessly move from calibration/conformance procedure to certificate generation, no third-party software required
- A substantial amount of inbuilt storage allowing for several years' worth of calibration data through normal use
- The TWC control Box is supported by a UKAS accredited certificate of calibration, we remain one of the few manufacturers in the world that issue a UKAS accredited calibration certificate both for the instrument and for the torque transducer. In doing so, customers can swap combinations of instrument and transducer while retaining complete traceability
- When testing for conformity or calibrating to ISO6789:2017 any transducer must not be used below 5% of its capacity when used with TWC. This statement does not apply to a TWC when used in a accredited laboratory

5	TORQUE WRENCH CALIBRATOR (TWC)
60312	Torque Wrench Calibrator 400 N·m Auto
60313	Torque Wrench Calibrator 1,500 N·m Auto

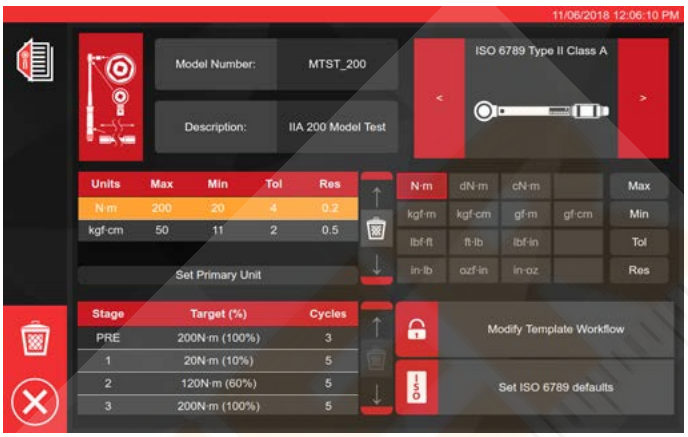
Torque Wrench Calibrator (TWC) Auto shown with a Professional Model 200 and a Static Transducer with support kit (not included)

TORQUE WRENCH CALIBRATOR - AUTO

Calibration details

Software Screen Shots:

Main menu



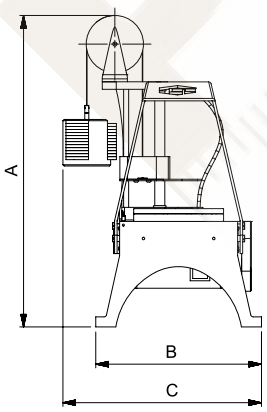
Tool template editor

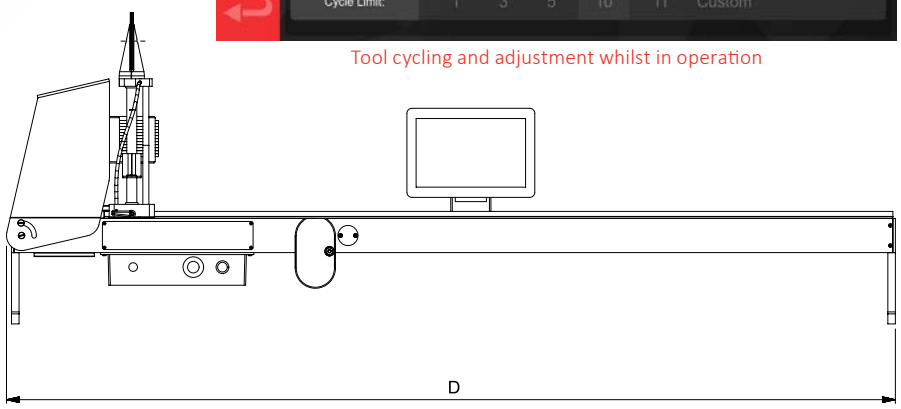
Calibration job booking / editor

Tool cycling and adjustment

Model		TWC Auto 400	TWC Auto 1500
Part Number		60312	60313
Wrench Length (Torque Radius)	Min	135	135
	Max	750	1,500
Dimensions (mm)	A	620	620
	B	330	330
	C	395	395
	D	1,019	1,769
Weight (kg)		40.0	45.0

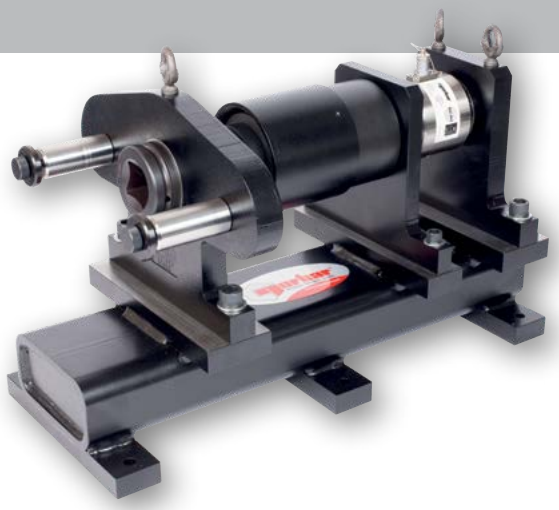
Tool cycling and adjustment whilst in operation

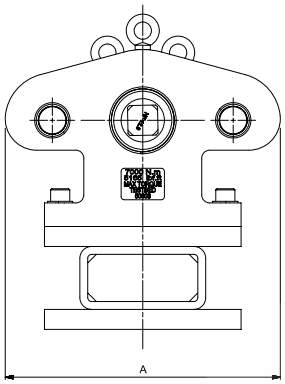


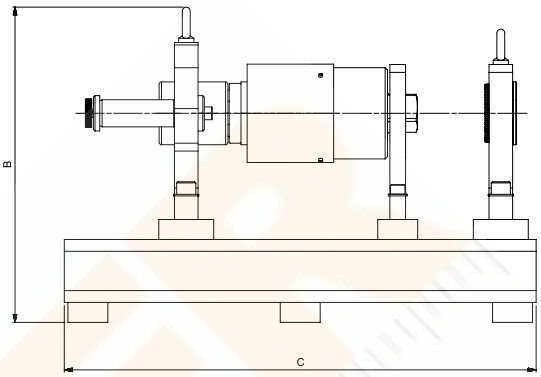


Patented in the UK, Germany, France and Italy (EP2864745) and in the USA (US9921122).

TEST RIGS AND FIXTURES







Power Tool Test Rig shown with 1½" M/F Static Transducer (not included)

4	ET/EBT/PT POWER TOOL TEST RIG
50800	7,000 N·m ET, EBT, PT Power Tool Test Rig (supplied with the 8 reaction plates on page page 104 (excluding blank reaction plate) and ¾", 1" and 1½" sq. dr. adaptors)
50803	7,000 N·m ET, EBT, PT Power Tool Test Rig without Reaction Plates (supplied with ¾", 1" and 1½" sq. dr. adaptors)

Note: The static transducer 50669.LOG does not come supplied as standard with the tool test rig. The standard range of 700 - 7,000 N·m will not cover the full powered multiplier range, additional calibration may be required, please see below:

12	
	ADDCALPOINTS.NEW Additional calibration steps below 10% of rated capacity to 2% for transducers up to 7,000 N·m (5,000 lbf·ft) when ordered with new unit

Model		Power Tool Test Rig
Part Number		50800 50803
Dimensions (mm)	A	350
	B	401
	C	600
Weight (kg)		TBC

The Angle Test Fixture calibration hub can be used when re-calibrating the Angle feature of your torque wrench.

This fixture has pre-determined angle increments that enable the user to set and verify the Angle output of their wrench making corrections where required.

9	ANGLE TEST FIXTURE
60351	Angle Test Fixture

The Norbar Joint Simulation Rundown Assemblies are designed to simulate the working conditions of screwed or bolted joints. Used in conjunction with a Norbar transducer and display instrument, the output of torque controlled power tools can be measured against a range of simulated joint rates, from hard through to soft.

4	JOINT SIMULATION RUNDOWN ASSEMBLIES
50313	0.2 - 2 N·m (2 - 20 lbf·in)
50251	2 - 10 N·m (20 - 100 lbf·in)
50252	5 - 50 N·m (5 - 50 lbf·ft)
50253	10 - 100 N·m (10 - 100 lbf·ft)
50254*	100 - 500 N·m (100 - 500 lbf·ft)

The above are for use with Norbar static square to square transducers and bench stands, see page 89 & page 90.

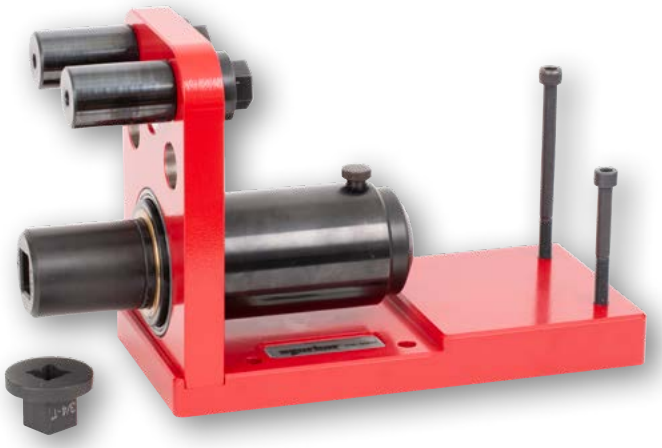
* To be used with large frame size bench stands, all others to be used with small frame bench stands.

NOTE: Spare washer stacks are available for use with Joint Simulation Rundown Assemblies, contact Norbar

50693	10 - 140 N·m (10 - 100 lbf·ft)
50694	100 - 700 N·m (70 - 500 lbf·ft)

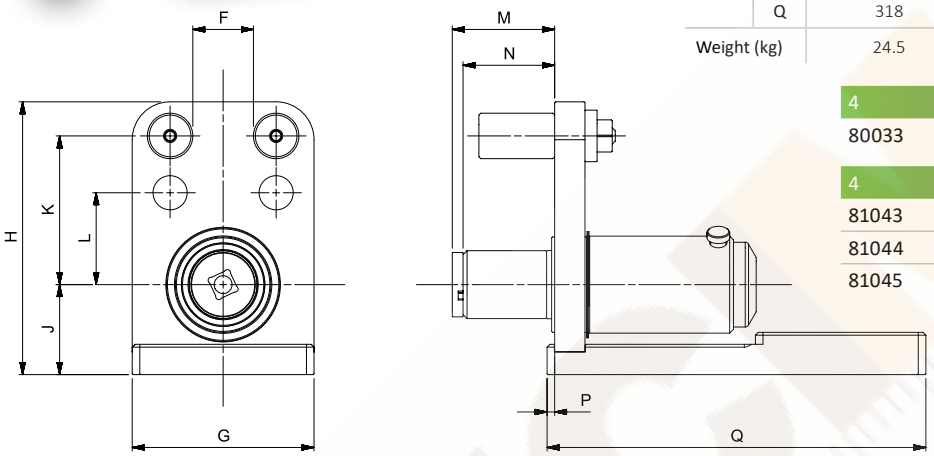
The above are for use with the Norbar Smart Torque Block (STB) 1000.

TEST RIGS AND FIXTURES



Model		Power Tool Test Fixture for TruCheck 2
Part Number		80033
	F	51
	G	152
	H	229
	J	75
	K	125
	L	77
	M	86
	N	76
	P	6
	Q	318
Weight (kg)		24.5

The Power Tool Test Fixture for TruCheck™ 2 is a simple, robust device that allows non-impacting power tools up to 2,100 N·m to be tested. A system comprises the Test Fixture with a TruCheck™ 2 Plus (to be ordered separately), either the 1,100 N·m or 2,100 N·m models, depending on the torque capacity required. The universal torque reaction arrangement will suit reaction arms supplied as standard with most Norbar and other pneumatic, electric and cordless torque tools.



4	POWER TOOL TEST FIXTURE FOR TRUCHECK 2
80033	Power Tool Test Fixture for use with TruCheck 2

4	80033 SPARE PARTS
81043	Spacer Sleeve
81044	Bellville Washer Stack (pack of 8 washers)
81045	Replacement Rundown Screw & Nut

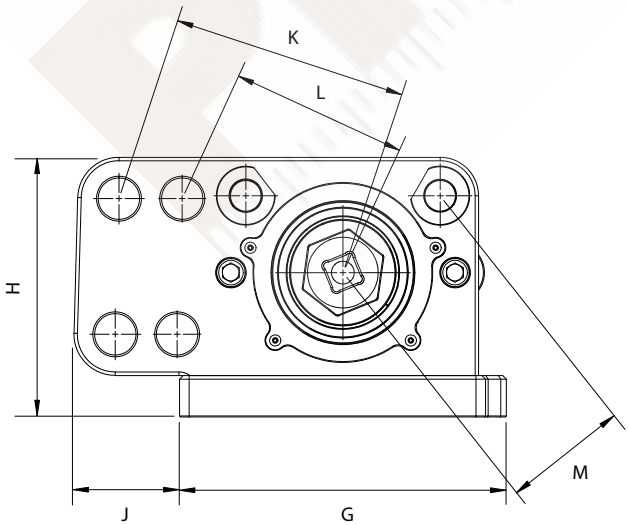
NOTE: This test Fixture is not suitable for TruCheck™ version 1.

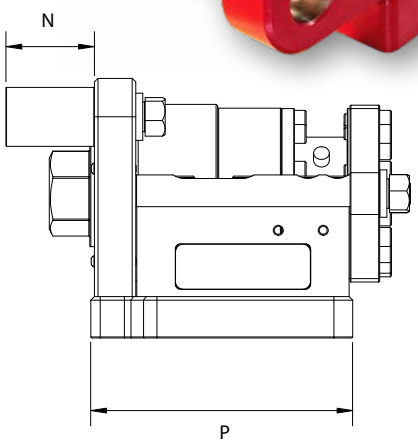
For tools with continuous rotation it is recommended they are tested on a rig with a simulated joint.

Norbar test fixtures use custom machined rundown elements for extended life and smooth operation.

NOTE: The test fixture needs to be connected to an appropriate Norbar instrument.

4	POWER TOOL TEST FIXTURE
80036	Power Tool Test Fixture and Annular Transducer Kit (up to 8,100 N·m/6,000 lbf·ft)





Model		Power Tool Test Fixture
Part Number		80036
	G	277
	H	220
	J	90
	K	200
	L	150
	M	105
	N	75
	P	206
Weight (kg)		TBC