

ENGINEER TO ORDER FOR THE OIL AND GAS INDUSTRY





ENGINEER TO ORDER

Our wide range of standard equipment notwithstanding, there are applications when something special is required.

As an ISO 9001 accredited company, Norbar will undertake the design and manufacture of special equipment against agreed customer specifications.

These projects range from modified torque wrench end fittings to complete torque and angle control of multi-spindle nut runners. Relevant European safety directives are applied where appropriate, leading to well engineered reliable products that are designed to make tasks safer and easier.

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ENGINEER TO ORDER VALVE ACTUATOR TESTING

- Range of pneumatic tools and torque transducers
- Custom torque reaction / mounting kits & drive adaptors
- Angle encoder and turns counter options
- Instruments to display and capture torque & angle / turns data
- TDMS software for transfer of captured data to customers PC
- Remote operated systems and / or manual control
- Static test rig or topside portable equipment
- Optional Peli-case with custom insert to house complete kit



PT-72-1500 fitted with transducer and turns counter module T-Box instrument & leads for torque & turns data display & capture



Remote operated kit with tool controller & tool shut-off valves



PT-72-500 Remote in operation



Custom tool mounting kit to suit a range of valve types



PT-72 fitted with special valve mounting & drive adaptors

ENGINEER TO ORDER VALVE TESTING

- Tools, torque transducers and torque reactions to ISO 13628-8:2002(E) FIG 18 (API 17D) or other standards
- Angle encoders and turns counters can be incorporated
- Instruments to display and capture torque & angle / turns data
- TDMS software for transfer of data to customer's PC
- Remote operated systems and / or manual control
- Valve cycle testing & exercising options
- Static test rig or topside portable equipment



Portable Peli-case tool controller



Kit peli-case with custom insert



TDMS software for data transfer to customer's PC



Class 2,3 & 4



Up to 300,000 N·m



Pneumatic drive standard optional hydraulic motor drive



Tool controller with T-Box instrument & remote hand pendant



Class 5



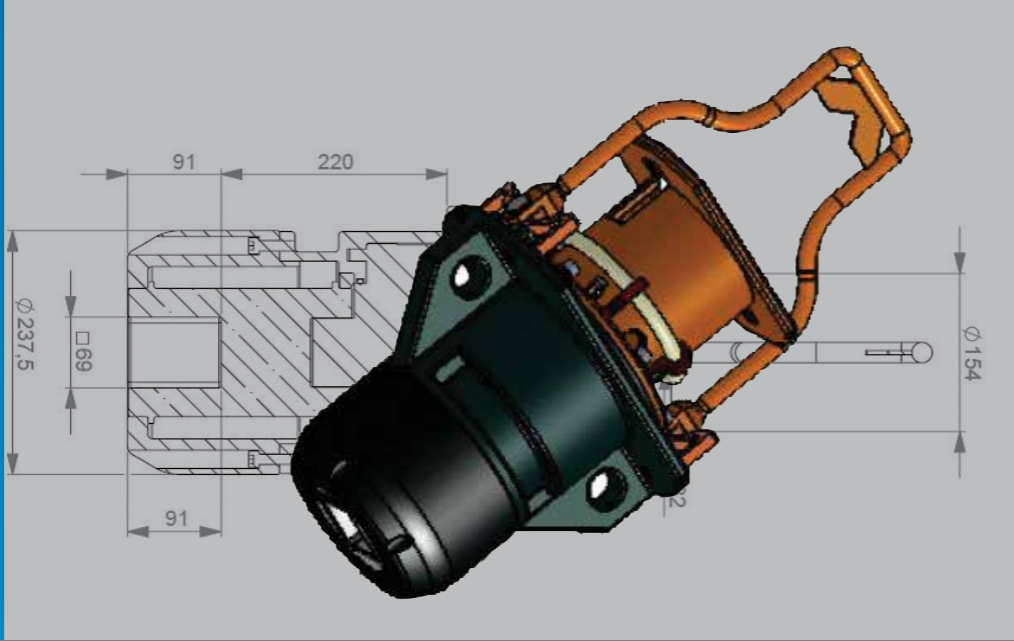
Class 6



Class 7

ENGINEER TO ORDER TORQUE MULTIPLIERS FOR INTEGRATION

- Range of base multiplier sizes up to 300,000 N·m output torque
- Standard or special torque multiplication ratios
- For use in oil filled pressure compensated vessel or with integral pressure compensation
- Bespoke input and output drives
- Grease or oil lubrication versions
- Custom mounting / torque reaction
- Materials and finishes to suit operating environment including stainless steel / super duplex



ENGINEER TO ORDER TRANSDUCERS & CALIBRATION

- Harsh environment & standard torque transducers
- Annular, static & rotary torque transducers, 0.1 – 300,000 N·m
- Transducers with integral angle or turns encoder
- Gauge, wire & calibration of customer transducer shaft / rings
- Hydraulic tool calibration fixtures and kits with tool adaptors, transducers, instruments & leads
- Other instruments, calibration equipment ranges & services available from our UKAS accredited laboratory



HT 5 3,400 N·m 5:1 with keyed input & output drives, grease free



HT 5, 3,400 N·m 25:1 with integral transducer, grease free, oil fill / drain



HT 5 3,400 N·m 5:1, with integral transducer & special keyed input drive



HT 9 5,000 lbf·ft 3.5:1, customer mountings, grease free, oil fill / drain



HT9 9,500 N·m 25:1 with special input & output drives + gear train kit



HT9 9,500 N·m 25:1 with annular transducer, grease free, oil fill / drain



HT 11 20,000 N·m 125:1 with female keyed input, grease free



HT 11 13,500 N·m 5:1 special input drive, grease free, oil fill / drain



HT 12 34,000 N·m (API Class 7), 14.1:1 VR, grease free, oil fill / drain



Harsh environment instrument, standard & special leads



Range of adaptors for Calibration of hydraulic tools



Twin hydraulic tool calibration fixture, 5,000 & 50,000 N·m transducers, for fitment into customer's bench top



300,000 N·m annular transducer to customer specification



Transducer calibration rigs 100,000 N·m rig example



Components for integration into customer test rigs



Instrument kit with adaptors & leads in a custom case



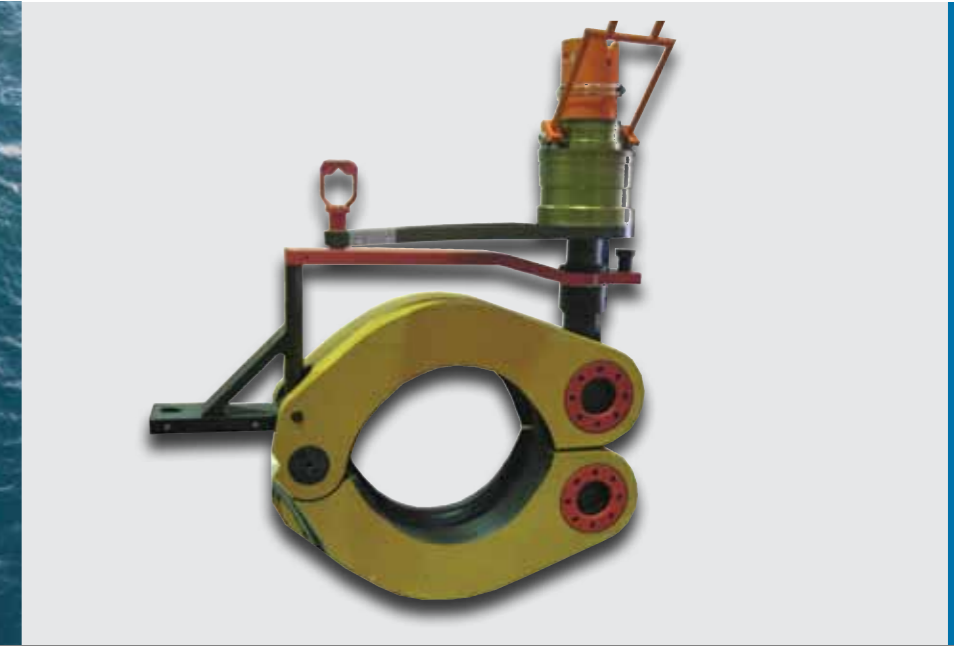
Harsh environment annular & static transducers



Hydraulic tool calibration fixtures, 7,000 / 50,000 / 80,000 N·m range

ENGINEER TO ORDER TORQUE MULTIPLIERS FOR SUB-SEA USE

- Range of base multiplier sizes up to 300,000 N·m output torque
- Standard or special torque multiplication ratios
- Integral pressure compensation options for sub-sea use
- Light weight high strength alloys
- Corrosion resistant stainless steel / super duplex
- Manipulation handles & latching systems
- Kits can be supplied in custom cases



63,000 N·m wet pipe clamp tool



Intervention tool torque verification kits API Class 4 up to Class 7



2,000 N·m 15:1, no grease, with pressure compensation, for ROV sub-sea use



API 17D Class 4-7 & 4-7 Short Wet Intervention Tool, 34,000 N·m



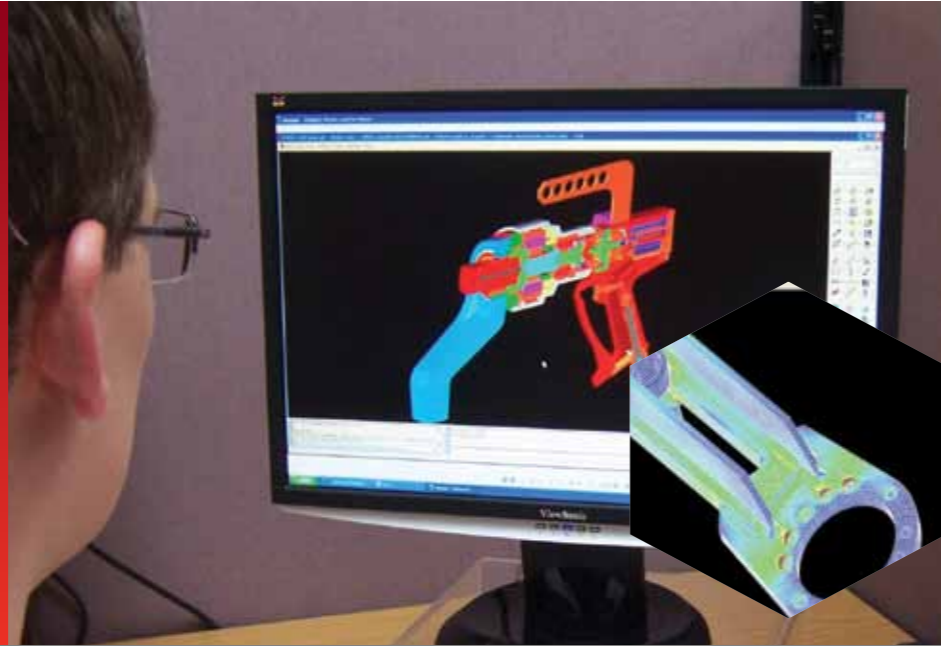
API 17D 4-6/4-7/4-7 short interchangeable kit 34,000 N·m



HT-72 2,000 N·m 25:1, with grease & all external parts stainless steel (restricted use & not sealed for sub-sea)

ENGINEER TO ORDER TORQUE REACTIONS

- To fit tools up to 300,000 N·m output torque
- Materials and finishes to suit application & environment
- Tool & torque reaction kits in custom cases
- 3D CAD & FEA facilities



ENGINEER TO ORDER PNEUMATIC TOOL ADAPTION & BOLTING KITS

- Nose extensions for increased reach with bearing support rigidity
- Offset gearboxes for applications with insufficient tool access
- Special torque reactions – see page 10
- Pneumatic tools with torque & angle control
- Torque & angle display, data capture & storage
- Keep an electronic log of torque & angle tightening against time, date, operator, serial number etc. using TDMS PC software suite



Offset gearbox fitted to 1,350 N·m tool for pipeline flange bolting with restricted access



API Class 2 & 3 reaction kits for valve run-down with hand held tool. See valve testing sheet for full testing kits



Stainless steel torque reaction, 1,000 N·m to mount HT-52



Torque reactions for clamp bolts run-down 20,000 N·m



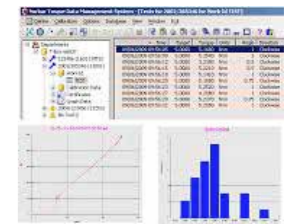
Well head connectors hinged torque reaction 1,100 N·m



Cranked torque reaction, 3,000 N·m, ø45mm slave reaction bore



Torque & angle bolting kit, 2,000 N·m. Tighten to torque & then to specified angle to put bolts into yield



T-Box torque & angle instrument with TDMS software for data recording



860mm Nose extension, cranked torque reaction & 2,000 N·m tool for long reach Wellhead connectors



GLOBAL SERVICE

Norbar is the only torque equipment manufacturer capable of offering tool and instrument recalibration services to the original factory standard on four continents. Our accredited laboratories in Australia, USA and Singapore operate the same equipment and procedures as the UKAS accredited laboratory within our headquarters in the UK. A further Norbar laboratory is in operation in China and our laboratory in India opens in 2014.



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