

ENGINEER TO ORDER

SPECIAL PROJECT INFORMATION SHEET



Project Description	Torque & angle valve testing kit with AC servo drives		
Date created	February 2020	Project Number	Q4835 + Q4835.01/2

INTRODUCTION & APPLICATION

Testing of ball valves requiring cyclical rotation 0-90° / 90-0°, whilst recording torque vs angle data. Torque range of 70-100,000 N.m is required to cover a family of valve sizes. The test must be remotely controlled from outside of the test chamber, where the test valve is pressurised.

SOLUTION



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

- Torque range required covered by 3 tool sizes i.e. No.5 (2% FSD Calibration), No.11 & No.14.
- Test data capture and output in CSV format onto external USB drive, for the generation of customer test reports & graphs. Real time data streaming via RS232 serial port.
- AC servo drives for increased control and lower noise.
- Controller Q4746.01 can operate AC servo drive tools or pneumatic tools (via solenoid valves).
- Controller input ports available for customer pressure, temperature and proximity sensors.
- Automatic recognition of Smart enabled transducers.

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SPECIAL PROJECT INFORMATION SHEET



Project Description	Torque & angle valve testing kit with pneumatic drives		
Date created	June 2020	Project Number	Q4881

INTRODUCTION & APPLICATION

Testing of valves / actuators with cyclical rotation forward & reverse, whilst recording torque vs angle data. Torque range of 100-2,000 N.m is required to cover a family of valve sizes. The test must be remotely controlled from outside of the test chamber, where the test valve is pressurised.

SOLUTION



Tool controller Q4673 with 10" HMI & remote pendant 61142.1000



PTS-72-1000 remote 180273.B06 fitted with torque & angle transducer 50846.LOGA

PTS-72-2000 remote 180275.B08 fitted with torque & angle transducer 50848.LOGA



Twin solenoid valve assembly # 60310 for 72 remote tools

Lubro control unit, leads & connectors not shown

TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

- Torque range / application required 2 tool & transducer sizes i.e. PTS-72-1000 & PTS-72-2000.
- Supplied in 2 phases i.e. Phase 1 Q4881 - 1,000 N.m / Phase 2 Q4881.01 - 2,000 N.m.
- Test data capture and output in CSV format onto external USB drive, for the generation of customer test reports & graphs. Real time data streaming via RS232 serial port.
- See tool controller data sheet Q4673 for more details of features.
- Other torque ranges up to 300,000 N.m are available, please enquire.

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SPECIAL PROJECT INFORMATION SHEET



Project Description	ET2 with remote control panel & separate trigger switch		
Date created	January 2019	Project Number	Q4523

INTRODUCTION & APPLICATION

Manufacturing assembly line torque & angle bolt tightening station.
Remote operated electric torque tool required having up to 6,000 N.m torque capacity with angle.

SOLUTION

EvoTorque2-119-6000 tool modified as follows: -

- Display module removed (but used in below remote control panel).
- Blanking plate fitted in lieu of display, and housing sockets for trigger & communication leads.
- Handle indexing (relative to gearbox) locked.

Special control panel housing the ET2 display module taken from ET2 tool & 3.5m communication lead.
Remote trigger handle assembly & 3.5m lead.
Standard cranked reaction used (contacts vertical ribs on yellow sections).



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

Supply of a kit for integration into customer assembly machinery (having emergency stop isolator).
Fits to customer manipulator arm.
Second trigger switch could be supplied for two handed start function if preferred.
Other sizes of ET2 can be supplied for similar remote operation applications (see Q4940 for ET-72-1350).

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SPECIAL PROJECT INFORMATION SHEET



Project Description	Custom Class 7 multiplier kit with hydraulic latching		
Date created	August 2016	Project Number	Q3730

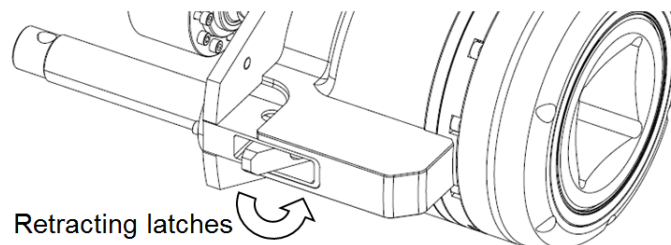
INTRODUCTION & APPLICATION

Oil & gas industry requirement for a custom Class 7 torque multiplier kit with hydraulic latching, for integration into a pressure compensated subsea intervention tool.

SOLUTION

Custom torque multiplier kit comprising: -

- Custom class 7 nose housing with 2-stage torque multiplication gearing.
- HT5 / 5 torque multiplier & connecting input shaft.
- Hydraulic latching system with fail-safe spring return cylinders.



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

Class 7; 34,000 N.m (25,000 lbf.ft) with 61:1 torque multiplication.
Customised nose to suit end user's special receptacle (non-standard narrow reaction wings).
Sealed for use to 3,000m (except input end), for connection to customer pressure compensation system.
High strength, lightweight materials for total weight in air of 59.9 Kg.

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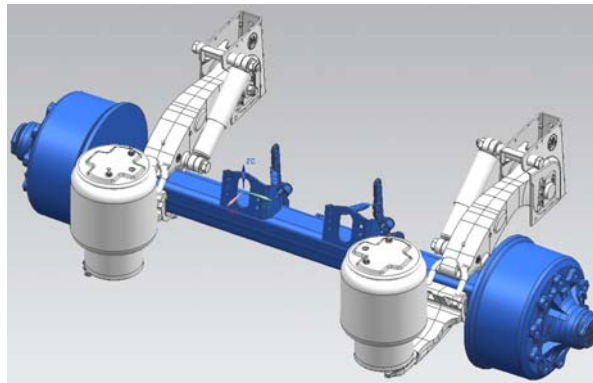
SPECIAL PROJECT INFORMATION SHEET



Project Description	Offset gearbox for PTM-52		
Date created	December 2016	Project Number	Q3949

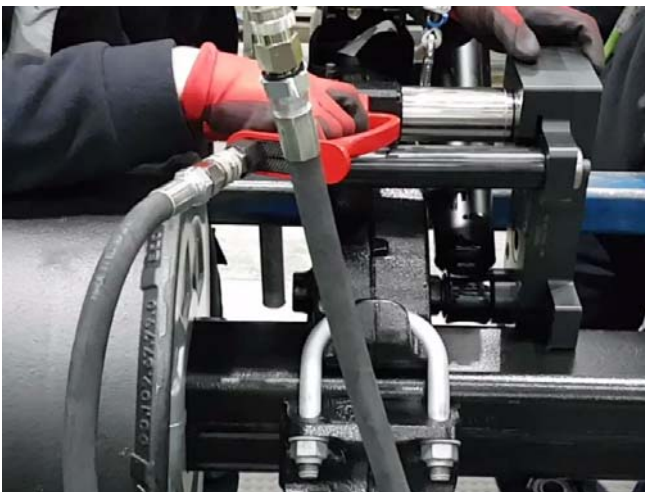
INTRODUCTION & APPLICATION

Commercial vehicle trailer manufacturer requires improved tooling to torque tighten various axle assembly M24 bolts, where access is restricted.



SOLUTION

Pneutorque PTM-52-800-B fitted with a 4-gear offset gearbox having integral post & lug reactions to suit the various applications, operating at 550 N.m typical torque.



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

4-gear offset gearbox having 205.74mm offset distance and 800 N.m maximum torque capacity.
36mm female hexagon output drive, with 1:1 (*nominal*) torque ratio.
13.0 Kg approx. weight with Xylan coated steel casings, and hardened steel gears running in bearings.

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SPECIAL PROJECT INFORMATION SHEET



Project Description	Offset gearbox to fit PTS-72-2000 for Train traction links		
Date created	December 2017	Project Number	Q4191

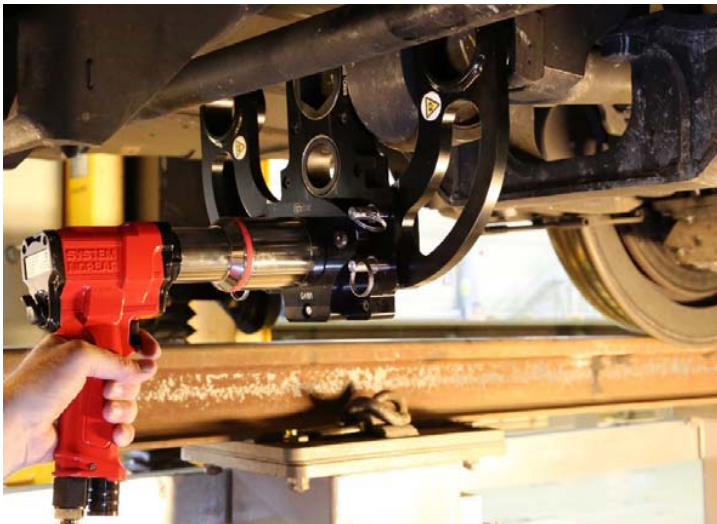
INTRODUCTION & APPLICATION

Railway maintenance application for removal & re-fitting of train traction link bolts, where bolt access is obstructed by the anti-roll bar.



SOLUTION

PTS-72-2000 with offset gearbox kit.



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

M36 – 55mm A/F hexagon head bolts tighten to 980 N.m / untighten at up to 2,000 N.m.
Q4191 kit includes offset gearbox having 3 gears, 177.8mm offset distance, LH & RH reaction arms, PTS-72-2000 & Lubro control unit # 16074.

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SPECIAL PROJECT INFORMATION SHEET



Project Description	Torque Reactions for use on Speedloc II Clamps		
Date created	May 2019	Project Number	See table below

INTRODUCTION & APPLICATION

Oil & gas industry requirement to torque tighten Speedloc II clamps on wellheads.



SOLUTION

Special torque reactions to fit Norbar HandTorque & Powered torque tools.



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

Norbar reaction part no.	Speedloc II Clamp model	Max. torque	To fit tool type
Q2982	SL-213	3,500 N.m	92-4000
Q3314	SL-213	4,000 N.m	92-4000
Q3016	SL-218	2,800 N.m	92-4000
Q4639.01	SL-215/SL-222	4,500 N.m	HT-60
Q4639.02	SL-210	4,500 N.m	HT-60

Please contact Norbar for equipment to suit other clamp sizes & tool models.

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SPECIAL PROJECT INFORMATION SHEET



Project Description	Tower crane reactions to fit ET-92-4000 + ET-119-6000		
Date created	May 2018	Project Number	Q3767 + Q4397

INTRODUCTION & APPLICATION

Tower crane assembly using Norbar EvoTorque tool, where standard cranked reaction doesn't suit.



SOLUTION

Special reactions designed to fit inside the 'I' section beams.



Q3767



Q4397



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

Q3767: ET-92 - 4,000 N.m max.
Q4397: ET-119 - 6,000 N.m max.

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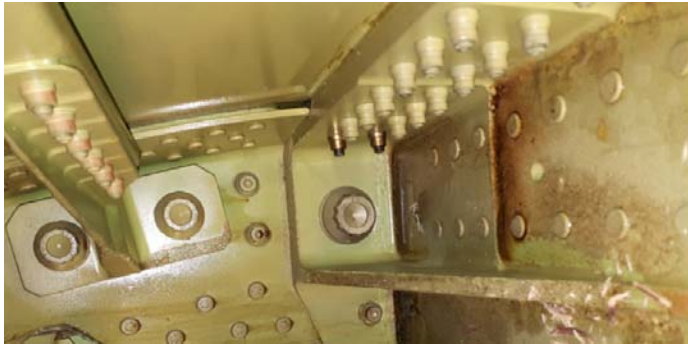
SPECIAL PROJECT INFORMATION SHEET



Project Description	Special reactions & output drives to fit PTS-72-2000		
Date created	December 2017	Project Number	Q4290

INTRODUCTION & APPLICATION

Aircraft maintenance internal bolting applications up to 2,000 N.m, with difficult access, and where standard reactions do not suit.



SOLUTION

PneuTorque PTS-72-2000 pneumatic torque tool, Lubro control unit, special reactions & output drives.



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

Special reactions are interchangeable with standard reaction.

Special 1-1/16" & 1-3/16" female bi-hex. output drives are interchangeable with standard square drive.

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SPECIAL PROJECT INFORMATION SHEET



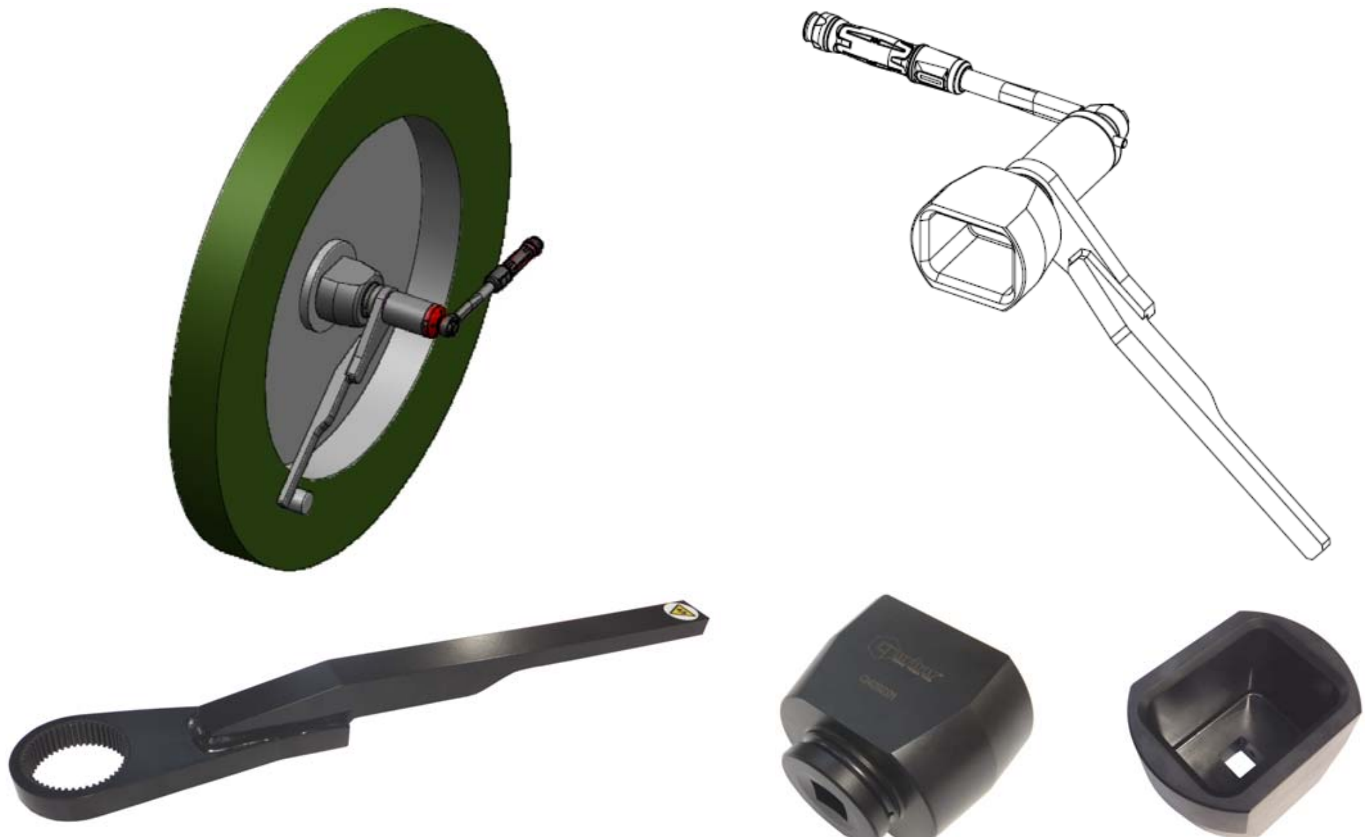
Project Description	Special reaction & socket for HT-72-2000		
Date created	March 2018	Project Number	Q4292

INTRODUCTION & APPLICATION

Ceramics industry maintenance requirement to tighten mill centre nut weekly to 1,700 N.m.



SOLUTION



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

Special reaction arm & 1" square drive socket for use with HT-72-2000 27:1 & Model 100 torque wrench.

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SPECIAL PROJECT INFORMATION SHEET



Project Description	Stainless steel double sided flat reaction to fit 72-1000 remote tool		
Date created	December 2017	Project Number	Q4333

INTRODUCTION & APPLICATION

Pharmaceutical industry requirement to remotely test vacuum pump valves.

SOLUTION

PneuTorque 72-1000 remote tool fitted with a stainless steel double sided flat reaction plate, having lugs to suit customer's part, and machined all over to fine surface finish.



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

Supplied with material certification.
Custom reactions can be supplied in a variety of materials and finishes to suit customer's application.

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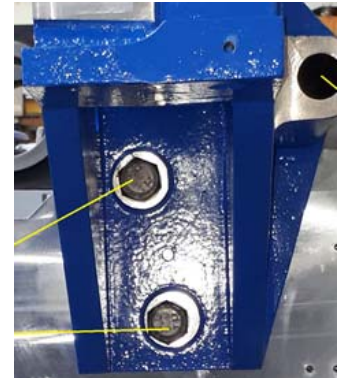
SPECIAL PROJECT INFORMATION SHEET



Project Description	PTS-72-1350 based kit with special attachments		
Date created	October 2018	Project Number	Q4337

INTRODUCTION & APPLICATION

Machine manufacturer requires a safer and more accurate bolting method up to 1,350 N.m, as their current hand tool process has resulted in a number of injuries. Some example applications shown below.



SOLUTION

PneuTorque PTS-72-1350 pneumatic torque tool, Lubro control unit, set of special reactions, nose extension and offset gearbox/reaction, all housed in a wheeled case with custom foam insert.



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

Please contact Norbar with your application details for special torque tightening solutions.

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SPECIAL PROJECT INFORMATION SHEET



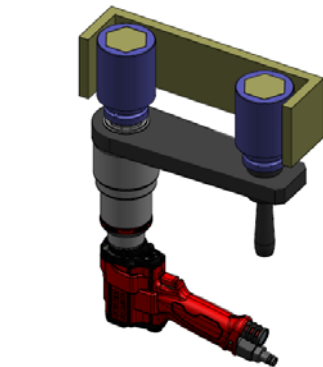
Project Description	Set of special reactions to fit PTS-92-4000 for Locomotive use		
Date created	October 2018	Project Number	Q4463

INTRODUCTION & APPLICATION

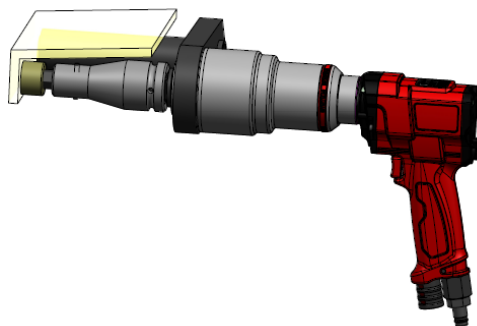
Railway industry maintenance requirement for bolting / unbolting fuel tank & traction motor to locomotive.



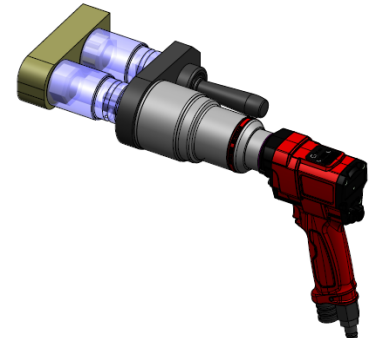
SOLUTION



Application 1



Application 2



Application 3

TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

- Application 1) Q4463.01 Sliding reaction with 1.0" slave square & 220-230mm CRS travel, 4,000 N.m.
 - Application 2) Q4463.02 Fixed slave tube reaction with 40mm bore at 140mm CRS, 1,000 N.m.
+ Special 19mm male hexagon drive with 1" female square, 1,000 N.m.
 - Application 3) Q4463.03 Sliding reaction with 1.0" slave square & 80-84mm CRS travel, 1,000 N.m.
- All reactions to fit 92-4000 series tool.

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SPECIAL PROJECT INFORMATION SHEET



Project Description	Double sided flat reaction for Class 4 receptacle / ET2-92-4000		
Date created	November 2018	Project Number	Q4557

INTRODUCTION & APPLICATION

Manual topside operation of a subsea valve via an API 17H Class 4 / ISO 13628-8 rotary torque receptacle. Higher than Class 4 standard torque of 4,000 N.m.



SOLUTION

Double sided flat reaction with outer profile to engage in the Class 4 receptacle slots. Mounting spline to suit 92-series tools.



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

EvoTorque ET2-92-4000 tool fitted with special double sided steel reaction & customer's socket.

Norbar also offer a Class 4 Aluminium reaction rated to 2,000 N.m to fit 72-series tools, part # 19214. Class 4 reaction noses with supported drive shaft / socket are also available for remote valve operation.

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SPECIAL PROJECT INFORMATION SHEET



Project Description	Special reaction & drive adaption for EBT-2700		
Date created	November 2019	Project Number	Q4725

INTRODUCTION & APPLICATION

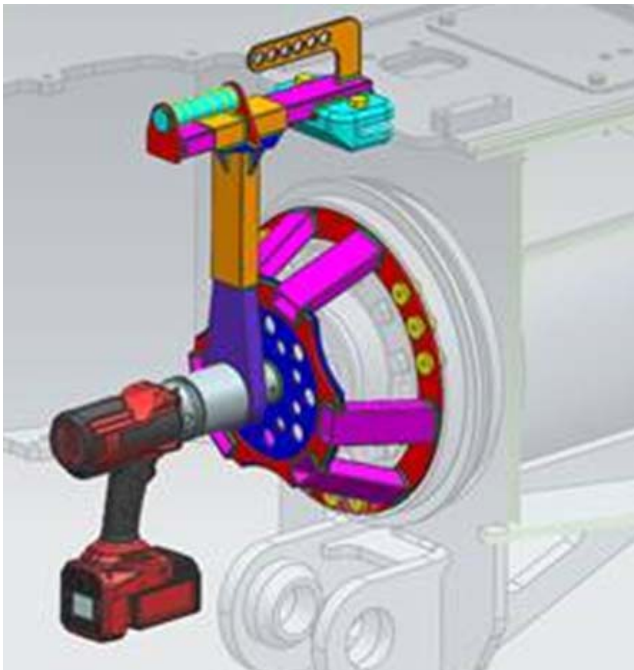
Off-highway articulated vehicle application for torque tightening a slew ring.
Requires a safe powered solution.

SOLUTION

EBT-2700 with special drive and reaction.

Special drive engages slew ring via 9x drive dogs.

Torque reaction is taken from the vehicle frame and incorporates spring loaded travel.



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

Each element < 10 Kg. for ease of handling.

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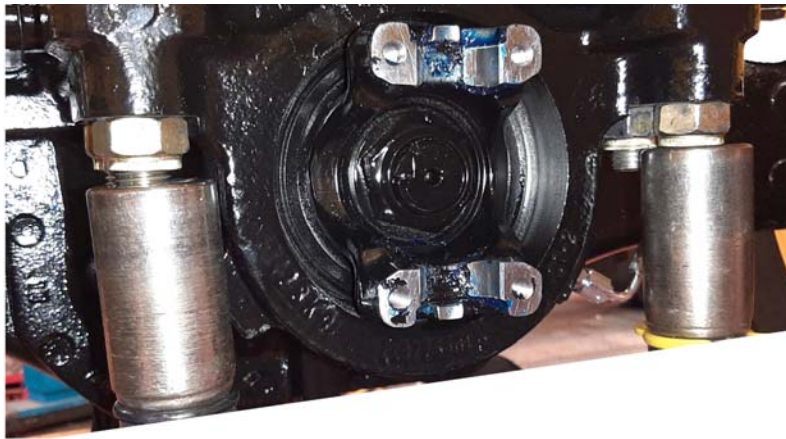
SPECIAL PROJECT INFORMATION SHEET



Project Description	Reaction with fixed long reach slave tube to fit PTM-52-500		
Date created	December 2019	Project Number	Q4789

INTRODUCTION & APPLICATION

Off-highway vehicle rear axle bolting application with long reach (140mm long socket).
M24 36mm A/F hexagon head bolts at 240mm centres, torque tighten to 400 N.m.
Improvement on current high noise and vibration impact wrench method required.



SOLUTION



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

PneuTorque PTM-52-500 with low (77 dBA) noise and low vibration, fitted with special reaction having fixed slave socket and grip for ease of use.

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SPECIAL PROJECT INFORMATION SHEET



Project Description	Special reaction for off-highway vehicle axle bolting		
Date created	April 2020	Project Number	Q4805

INTRODUCTION & APPLICATION

Off-highway vehicle front & rear axle bolting with pairs of M24 36mm A/F hexagon head bolts at 180 or 280mm centres (front or rear), torque tighten to 621 N.m.
Requirement for one tool and reaction that can easily change-over between the two centres.

SOLUTION

Q4805 reaction slave socket fits into either of two positions i.e. 180 / 280mm centres to the tool axis, and is retained via a quick-release detent pin. Reaction is taken from the adjacent bolt head to that being tightened.



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

PneuTorque PTM-52-800 fitted with special reaction Q4805 & with Lubro control unit #16074.

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SPECIAL PROJECT INFORMATION SHEET



Project Description	Custom reactions for PT / HT 7 & 9		
Date created	July 2017	Project Number	Q - various

INTRODUCTION & APPLICATION

Various applications requiring non-standard versions of PT / HT 7 & 9 square tubular style reactions.

SOLUTION



Q1398 (Q2683) Extended reaction foot for PT/HT 9



Q2767 Extended reaction foot for PT/HT 7



Q3338 Extended reaction arm for PT/HT 9



Q4108 Double sided reaction arm for PT/HT 9

TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

Project #	Description	To fit tool	Max. torque	Change to standard
Q1398 (Q2683)	Extended reach reaction foot	PT/HT 9	9,500 N.m	+55mm reach
Q2767	Extended reach reaction foot	PT/HT 7	6,000 N.m	+67.2mm reach
Q3338	Extended reaction arm	PT/HT 9	9,500 N.m	+200mm length
Q4108	Double sided reaction arm	PT/HT 9	9,500 N.m	Std. length both sides

The above are examples designed for specific application usage. Other sizes and types are available. Please contact Norbar with your application requirements for suitability confirmation before ordering.

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SPECIAL PROJECT INFORMATION SHEET



Project Description	Extended reach torque wrenches		
Date created	July 2018	Project Number	Q4102 / Q4367

INTRODUCTION & APPLICATION

Long reach torque wrenches required for difficult access applications.
Q4102 is an application requiring reach into machinery.
Q4367 is a nuclear industry application.

SOLUTION

Q4102

Model 60 torque handle # 11167, 16mm female to male stainless steel extension having 750mm CRS # Q4102.01, reversible ratchet with 16mm spigot # 29830 and UKAS accredited system calibration.



Q4367.01

Model 100 torque handle based assembly with fabricated tubular 16mm female to male extension & 1/2" square push through ratchet, all pre-set to 108 N.m & for 950mm overall CRS. Fitted with green cap.

Q4367.02

As Q4367.01 except pre-set to 85 N.m & fitted with yellow cap.



TECHNICAL SPECIFICATION / DATA HIGHLIGHTS

Special extensions and end fittings can be engineered to suit customer applications.

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SPECIAL PROJECT INFORMATION SHEET



Project Description	NorTronic electronic torque wrench with extension for 500 N.m		
Date created	December 2019	Project Number	Q4818/Q4611/Q3166

INTRODUCTION & APPLICATION

Railway clamp applications requiring bolt torque data logging at up to 500 N.m.

SOLUTION

NorTronic ® 330 less standard ratchet end i.e. with 16mm male spigot.
Fitted with a Q4611 special extension bar to increase torque to 500 N.m.
Ratchet end fitting with push-through 3/4" square drive & 22mm spigot # 29972.
Alternative large spanner ends with 22mm spigot can also be fitted to Q4611 extension (e.g. Q3166).
Torque data is displayed on the tool, and can also be sent via Wireless connection or Bluetooth to Norbar TDS software loaded on customer's PC / device.



440 N.m version with special 30 A/F ring spanner end shown (SP00005 / Q3166)



Q4611 500 N.m extension bar (16mm female to 22mm male spigots).

TECHNICAL SPECIFICATION/DATA HIGHLIGHTS

The customer can log the torque (and angle) data against their device GPS position and time of reading. The NorTronic is supplied with standard calibration to 330 N.m, and centres adjustment can be made in the NorTronic software giving resulting range of 50-500 N.m.