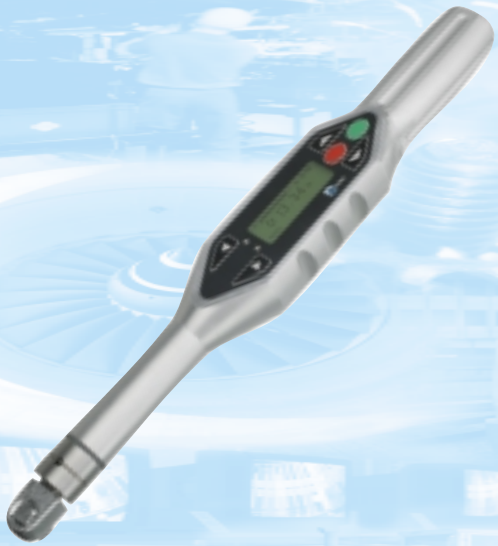
IQWrench *Opta*

Digital torque & angle wrench



Key Features

- **Torque range 1Nm to 1500Nm**
- **Light, ergonomic design with large memory**
- **Advanced SPC capabilities including multiple torque graphs**
- **Choice of visual, physical and audible alarms**
- **Choice of wireless options available**
- **Bi-directional communication with your PC/network**
- **Automatic tool head recognition**

Product Overview

IQWrench *Opta* is a high specification digital torque and angle wrench with modular software.

The IQWrench *Opta* is a powerful, smart torque tool which is essential in both the Quality Audit and Assembly environments. Depending on customer needs, the IQWrench *Opta* can be configured as either a basic tool or an advanced data collection system. Flexibility is enhanced as the software in the IQWrench *Opta* can be upgraded almost as soon as a change is required.

The IQWrench *Opta* allows easy recording and storage of critical data: User, Time, Results and Process

IQWrench *Opta* was designed to ensure straightforward and intuitive handling for the operator. It is designed to be point of load insensitive, which means that the operator can be assured of correct measurement however the wrench is held and torque is applied – particularly useful in limited access situation.

For non-standard tool heads, the IQWrench *Opta* has a length compensation function to ensure the correct reading is displayed. The IQWrench *Opta* automatically calculates and displays the correct torque after the user has entered the length from the end of the wrench to the middle of the head of the bolt. The use of tool head adapters with various lengths can be automated by using the IQWrench *Opta*'s ID function. Torque tasks and tightening instructions (Jobs), can be disabled until the correct ID adapter is attached.

The IQWrench *Opta* features three measurement modes, Track, Peak and Audit. The above modes, except for Track, have the facility to set-up upper and lower control limits plus additional control limits. With the Angle function, Peak can be measured as either the 1st or 2nd parameter. The torque and fastener status is indicated by physical, visual and audible alarms.

The rugged, but light tool can be used on a stand alone basis or as part of a sophisticated production control system. IQWrench *Opta* communicates bi-directionally via *Opta* Comms or the *Opta* Management platform. Setting parameters for the wrench is easy and downloading data to your PC/network is assured. There is no need to manually record torque readings and considerable time savings can be achieved. All IQWrench settings can be password protected.

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Specifications

Functional Attributes	
Special features	Integrated data collector and wrench Point of load independent Real time visual representation of torque or angle with bar graph Communicates with your PC System Wide range of interchangeable attachments Auto ID of special adaptors Extra length compensations Multi graph storage Job Lockout
Integral display	Complete system – no need for separate readout
Physical measurements	Bi-directional torque (clockwise calibration unless otherwise requested), auto sense of right or left hand torque and angle values
Measurement units	Nm, Ncm, kgfcm, kgfm, ozfin, lbfin, lbfft
Measurement modes	Track – real time torque Peak (Auto-reset) – display and capture of highest torque value during the cycle; direction determined by setting; value overwritten when new cycle started (i.e. threshold torque exceeded) Angle - angle measurement can be used as 1st or 2nd controlling parameters Yield - angle and torque are simultaneously used as controlling parameters Audit - for testing of pre-fixed joints: measures torque after a defined angle
Measurement parameters	Torque & angle threshold; Upper/Lower Specification Limits (USL can be up to 100% of nominal rating); Additional Upper/Lower Control Limits
Cycle status indication	Bar graph giving real time visual representation of torque or angle Arrow icon in Display indicating HI/OK/LO torque status Tri-colour LED indicating HI/OK/LO torque status (front & back of unit) Acoustic Signal/Audible buzzer indicating HI/OK/LO torque status
Data storage	200 reading memory of both parameter values with time and date stamp User selectable autostore / store prompt Up to 50,000 readings in Quick store mode, dependent on settings Up to 50 graphs can be stored, dependent on settings
Print modes	Via *Opta*Comms communication software Single reading or page mode with header including serial number and recalibration date via RS 232 to serial printers or RS232 Terminal Emulators
PC compatibility	Via *Opta*Comms communication software
Operating languages	Czech; English; French; Flemish; German; Italian; Spanish; Swedish; Turkish Option to set comma or decimal point as separator for numeric values Easily toggled languages
Calibration Reminder	Visible indication of wrench calibration datemeasurement units Nm, Ncm, kgfcm, kgfm, ozfin, lbfin, lbfft

Accessories List

Item	***Order code***
Bluetooth Module	IQMD1-0000-BLT
Charging/Comms Cradle USB	IQCR1-0000-USB
Replacement Cable USB	A1090260
Charging/Comms Cradle RS232	IQCR1-0000-232
Replacement Cable RS232	A109184
Battery (Additional rechargable LiPolymer)	A1080159
External Battery Charger	A1080154
Advanced SPC Software (*Opta* Comms Plus)	OM-900-99-CR-0-0

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Physical Attributes

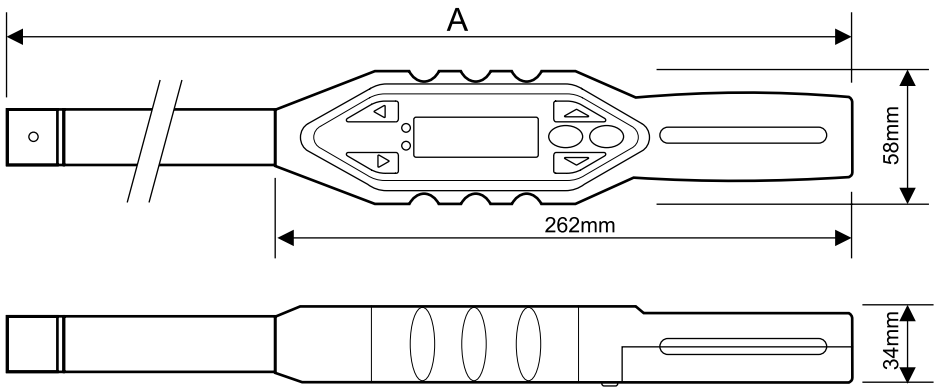
Calibration	Issued with calibration certificate traceable to National and International Standards. **Standard Crane calibration:** 10 points; single direction (clockwise unless otherwise requested); 10% to 100% of nominal torque. **Bi-direction Crane calibration:** 10 points; each direction; from 10% to 100% of nominal torque. Recalibration is recommended every 12 months. The calibration due date is stored in memory and is included in the output header. A lockout option is available to prevent usage after the calibration date has expired.
Construction	Point of load independent Shaft material: Steel Housing: Aluminium Overload capacity: 125% rated torque Square Drives fitted with pin and spring socket retainer DIN sockets have quick release function
Display	Backlit graphic LCD display with backlight auto off to save power
Keypad	Easy clean membrane keypad with 6 function keys
Auto zero	Auto zero on entering measurement mode. Display indication of excessive zero offset.
Power/Battery	Li Polymer 3.7V battery - 2000 mAh capacity
Power Management	User selectable Auto Power Off : Minutes1, 2, 5, 10, 20, 30, 40, 60; 16 hours; never Battery charge status bar
Useable battery life	8 hours typical usage
Charge time	4 hours charge
Input/output ports	LEMO connector Wireless Communication (Optional) Battery charge: Via charging/comms cradle
Printer compatibility	Via RS232 output: 40/80columns
Processor	Embedded processor
Zero stability	< ± 0.1% FSD/°C
Static accuracy	± 0.5% FSD
Operating environment	Temperature: +5C to +40C Ingress Protection rating: IP40. Can be used outdoors
Angle Measurement	+/- 1°
Warranty	12 months parts and labour against faulty workmanship or materials

Shipping list

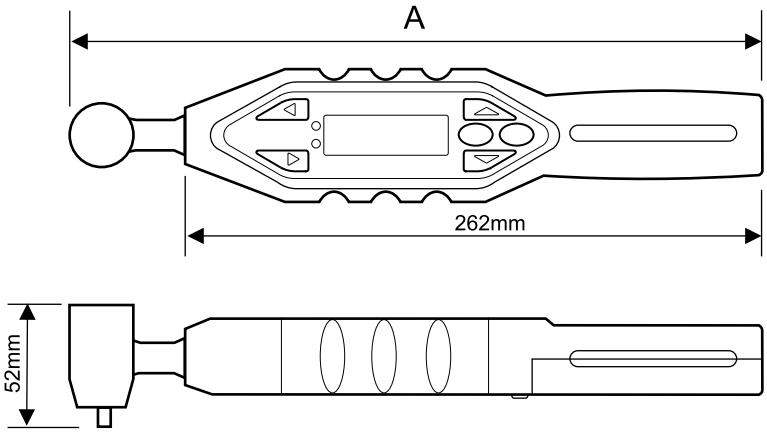
IQWrench *Opta* unit
Carry case + storage tube for wrench
Calibration certificate
Quickstart Guide
User Manual
Charging/Communication cradle with charger & mains lead
USB or RS232 cable
Opta *Comms* software

Weights & Dimensions

Wrench Dimensions – DIN Version (25 to 340 Nm)

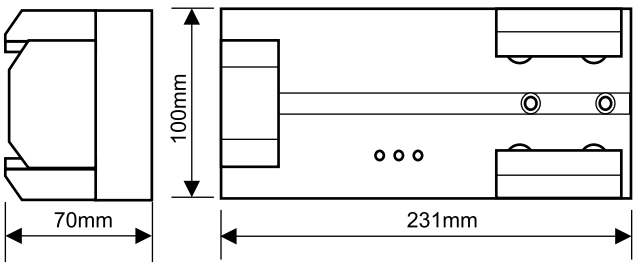


Wrench Dimensions – Square Head Version(10 Nm to 1500 Nm)



Wrench Size	Dim A	Weight
10 Nm & 25 Nm Fixed Head	313 mm	890 gms
25 Nm	368 mm	960 gms
75 Nm	382 mm	1030 gms
180 Nm	600 mm	1546 gms
340 Nm	775 mm	2012 gms
500 Nm Fixed Head	1025 mm	4700 gms
750 Nm Fixed Head	1165 mm	5600 gms
1500 Nm	1908 mm	Call Crane

Cradle Dimensions



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IQWrench Comparison Chart

Function	Basic + Audit	Basic + Angle	Advanced	Advanced + Angle
Measurement Modes				
Track torque mode	●	●	●	●
Peak torque mode	●	●	●	●
Peak + Angle as secondary parameter		●		●
Audit (Move-on) mode	●	●		●
Yield mode				●
Audible & visual indication of torque status				
Upper and Lower Specification Limits	●	●	●	●
Data Storage & Transfer				
Store and view up to 200 date and time stamped readings (with/without prompt)	●	●	●	●
Download/printout up to 200 date and time stamped readings with setup parameters and wrench serial number.	●	●	●	●
Bluetooth replacing serial communications	Option	Option	Option	Option
Statistical Analysis				
Basic statistical analysis	●	●	●	●
Advanced statistical analysis	●	●	●	●
Assignable Torque Characteristics				
Set up torque characteristics from PC			●	●
Predefined jobs with target torque			●	●
Predefined jobs with angle as a second parameter				●
Organise jobs into rounds for scheduling			●	●
Definable number of subgroups within job			●	●
Definable number of readings within subgroup			●	●
Other Functionality				
Password security with user lists			●	●
Job, Subgroup and reference comment			●	●
Store and upload graphs of multiple traces			●	●
Future proof - upgradeable with new software	●	●	●	●
Data traceable to user and wrench			●	●
Date and time stamped readings	●	●	●	●
Programmable adaptor length	●	●	●	●
Auto tool ID	Option	Option	●	●

Order Codes

DIN Version	Order Code	Nominal torque Nm	Imperial (inlbf)
10 Nm Basic + Audit	IQ BW 1 – 0010 – N DN	10	7.4
10 Nm Basic with angle	IQ BW 1 – 0010 – A DN	10	7.4
10 Nm Advanced	IQ AW 1 – 0010 – N DN	10	7.4
10 Nm Advanced with angle	IQ AW 1 – 0010 – A DN	10	7.4
25 Nm Basic + Audit	IQ BW 1 – 0025 – N DN	25	18.4
25 Nm Basic with angle	IQ BW 1 – 0025 – A DN	25	18.4
25 Nm Advanced	IQ AW 1 – 0025 – N DN	25	18.4
25 Nm Advanced with angle	IQ AW 1 – 0025 – A DN	25	18.4
75 Nm Basic + Audit	IQ BW 1 – 0075 – N DN	75	55.3
75 Nm Basic with angle	IQ BW 1 – 0075 – A DN	75	55.3
75 Nm Advanced	IQ AW 1 – 0075 – N DN	75	55.3
75 Nm Advanced with angle	IQ AW 1 – 0075 – A DN	75	55.3
180 Nm Basic + Audit	IQ BW 1 – 0180 – N DN	180	132.7
180 Nm Basic with angle	IQ BW 1 – 0180 – A DN	180	132.7
180 Nm Advanced	IQ AW 1 – 0180 – N DN	180	132.7
180 Nm Advanced with angle	IQ AW 1 – 0180 – A DN	180	132.7
340 Nm Basic + Audit	IQ BW 1 – 0340 – N DN	340	250.6
340 Nm Basic with angle	IQ BW 1 – 0340 – A DN	340	250.6
340 Nm Advanced	IQ AW 1 – 0340 – N DN	340	250.6
340 Nm Advanced with angle	IQ AW 1 – 0340 – A DN	340	250.6
Sturtenvant Richmont (Dovetail)	**Order code**		
10 Nm Basic + Audit	IQ BW 1 – 0010 – N SR	10	7.4
10 Nm Basic with angle	IQ BW 1 – 0010 – A SR	10	7.4
10 Nm Advanced	IQ AW 1 – 0010 – N SR	10	7.4
10 Nm Advanced with angle	IQ AW 1 – 0010 – A SR	10	7.4
25 Nm Basic + Audit	IQ BW 1 – 0025 – N SR	25	18.4
25 Nm Basic with angle	IQ BW 1 – 0025 – A SR	25	18.4
25 Nm Advanced	IQ AW 1 – 0025 – N SR	25	18.4
25 Nm Advanced with angle	IQ AW 1 – 0025 – A SR	25	18.4
75 Nm Basic + Audit	IQ BW 1 – 0075 – N SR	75	55.3
75 Nm Basic with angle	IQ BW 1 – 0075 – A SR	75	55.3
75 Nm Advanced	IQ AW 1 – 0075 – N SR	75	55.3
75 Nm Advanced with angle	IQ AW 1 – 0075 – A SR	75	55.3
180 Nm Basic + Audit	IQ BW 1 – 0180 – N SR	180	132.7
180 Nm Basic with angle	IQ BW 1 – 0180 – A SR	180	132.7
180 Nm Advanced	IQ AW 1 – 0180 – N SR	180	132.7
180 Nm Advanced with angle	IQ AW 1 – 0180 – A SR	180	132.7
340 Nm Basic + Audit	IQ BW 1 – 0340 – N SR	340	250.6
340 Nm Basic with angle	IQ BW 1 – 0340 – A SR	340	250.6
340 Nm Advanced	IQ AW 1 – 0340 – N SR	340	250.6
340 Nm Advanced with angle	IQ AW 1 – 0340 – A SR	340	250.6
Square Head	**Order code**		
10 Nm Basic + Audit	IQ BW 1 – 0010 – N ST	10	7.4
10 Nm Basic with angle	IQ BW 1 – 0010 – A ST	10	7.4
10 Nm Advanced	IQ AW 1 – 0010 – N ST	10	7.4
10 Nm Advanced with angle	IQ AW 1 – 0010 – A ST	10	7.4
25 Nm Basic + Audit	IQ BW 1 – 0025 – N ST	25	18.4
25 Nm Basic with angle	IQ BW 1 – 0025 – A ST	25	18.4
25 Nm Advanced	IQ AW 1 – 0025 – N ST	25	18.4
25 Nm Advanced with angle	IQ AW 1 – 0025 – A ST	25	18.4
500 Nm Basic + Audit	IQ BW 1 – 0500 – N ST	500	368.4
500 Nm Basic with angle	IQ BW 1 – 0500 – A ST	500	368.4
500 Nm Advanced	IQ AW 1 – 0500 – N 00	500	368.4
500 Nm Advanced with angle	IQ AW 1 – 0500 – A ST	500	368.4
750 Nm Basic + Audit	IQ BW 1 – 0750 – N ST	750	552.7
750 Nm Basic with angle	IQ BW 1 – 0750 – A ST	750	552.7
750 Nm Advanced	IQ AW 1 – 0750 – N ST	750	552.7
750 Nm Advanced with angle	IQ AW 1 – 0750 – A ST	750	552.7
1500 Nm Basic + Audit	IQ BW 1 – 1500 – N ST	1500	1105.4
1500 Nm Basic with angle	IQ BW 1 – 1500 – A ST	1500	1105.4
1500 Nm Advanced	IQ AW 1 – 1500 – N ST	1500	1105.4
1500 Nm Advanced with angle	IQ AW 1 – 1500 – A ST	1500	1105.4

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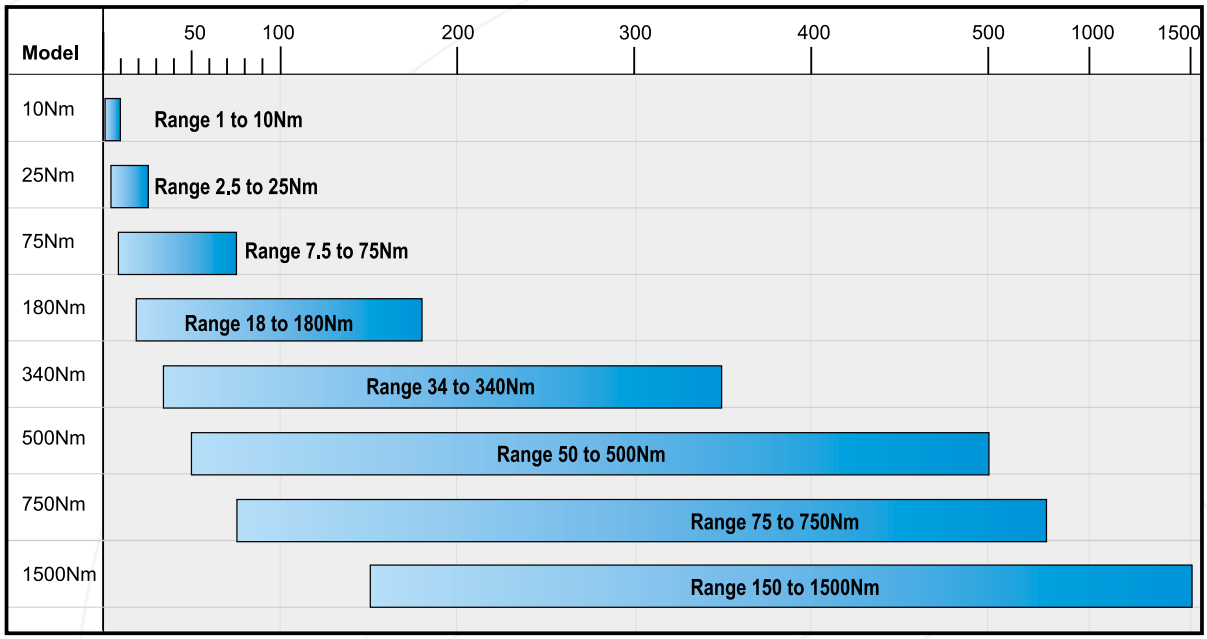
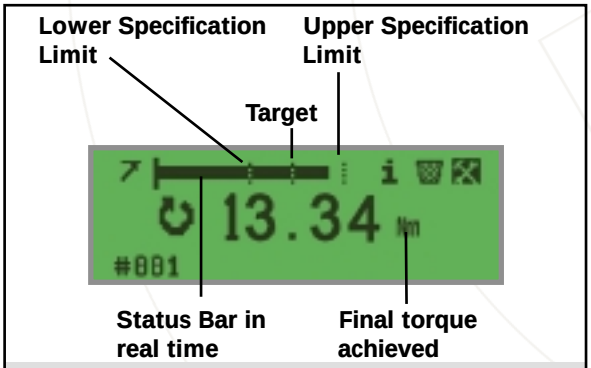
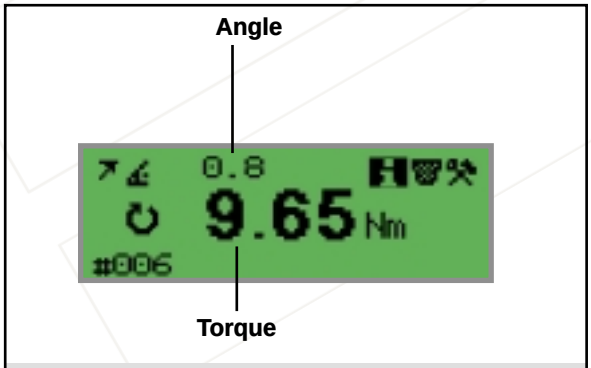
Range Comparison Chart



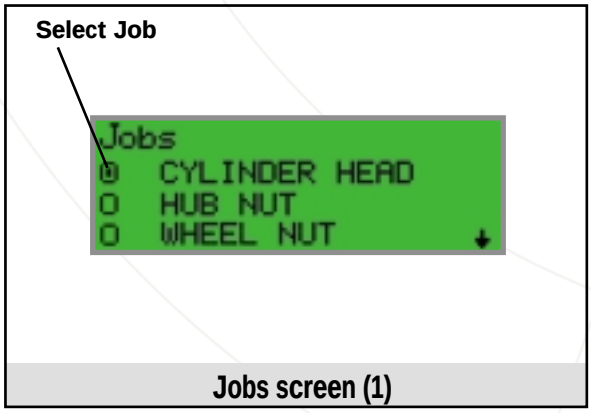
Typical Screenshots



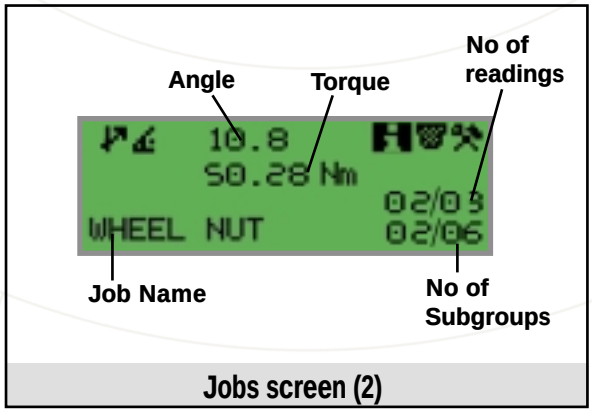
Quick Store mode with real time status bar



Peak mode / Torque and Angle measurement



Jobs screen (1)

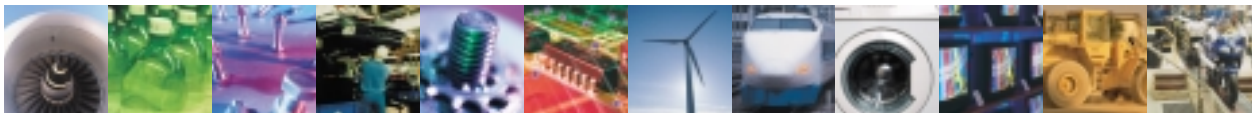


Jobs screen (2)

Calibration service

Crane Electronics Ltd operates a calibration laboratory accredited by UKAS, the UK Accreditation Service. All Crane products are issued with a calibration certificate traceable to National and International Standards. It is recommended that torque instrumentation is recalibrated at least every 12 months.

Crane Electronics Ltd operates a policy of continuous product development and improvement, and so technical specifications may change without notice. Please clarify with Crane or your distributor that you are referring to the latest technical data sheet.



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The force in torque management

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