



RADIAL

TORQUE TOOLS



BOLTING GUIDE



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About Radial Torque Tools

Radial Torque Tools B.V., located in Soest, The Netherlands, is the exclusive master distributor for RAD Torque Systems for the European, Central Asian, and North African market. Besides deliveries of RAD torque wrenches and parts, Radial also provides quick repair, calibration, and tool engineering services. For this, Radial's fully trained staff has the latest technology at their disposal in their brand new and world class facility in Soest.

Our mission

"To be the recognized leader in controlled bolting solutions that outperforms customers' expectations whilst caring for our employees, stakeholders, and environment."

RAD Torque Systems

All RAD torque wrenches are manufactured by the Canadian company RAD Torque Systems and have proven to be successful globally in industries such as oil & gas, petrochemical, mining, aerospace, power generation and manufacturing. RAD continues to invest in the latest design and production technology to achieve the highest level of innovation, quality and performance. RAD's focus on producing the lightest and most compact planetary gear driven torque wrenches has resulted in multiple patents and a market leading position.

RAD has an ISO/IEC 17025 calibration Laboratory certification which ensures maximum quality control and full calibration traceability. All tools are designed according to CE-standards and are produced in Abbotsford BC, Canada.

Complementary solutions

In addition to the RAD products, Radial also provides complementary torque products in order to provide a comprehensive torque product solution. These products are manual torque wrenches by TrackWrench® and custom solutions under the RTT brand.



Together with our team in Soest and our suppliers we stand for providing quality products and services. Should you have any remarks or recommendations, feel free to contact me or our team.

A handwritten signature in black ink, appearing to read "Marcel Birkhoff".

Marcel Birkhoff



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Made in Canada

RAD Torque Systems is a leading Canadian manufacturer of pneumatic, battery powered, and electronic pistol grip torque wrenches which are marketed under the RAD trademark. For 30 years, RAD Torque Systems designs and produces as much as possible in house to ensure production flexibility and the best product quality.

RAD products have proven to be successful all over the world in industries such as oil & gas, petrochemical, mining, aerospace, power generation, and manufacturing. With RAD Torque Systems massive brand new (2022) production facility in Abbotsford BC, RAD will be able to further expand its lead in reduction gear torque wrenches.

RAD Torque Systems features an ISO/IEC 17025 certified calibration Laboratory ensuring maximum quality control and full calibration traceability.



How it's made



About RAD Torque Systems

For over three decades, RAD Torque Systems has manufactured pneumatic, battery-powered, and electronic pistol-grip torque wrenches. As a fully Canadian-owned and operated business, we take pride in our commitment to quality, a principle that resonates throughout our operations. Our dedication extends beyond manufacturing outstanding tools; we stand by the quality of our products from conception through production and well into the years following their initial use.

Today, RAD Torque Systems is the trusted name globally for advanced industrial bolting solutions. Our comprehensive range of torque tools serve a diverse range of industries including oil & gas, petrochemical, mining, aerospace, power generation, and manufacturing.

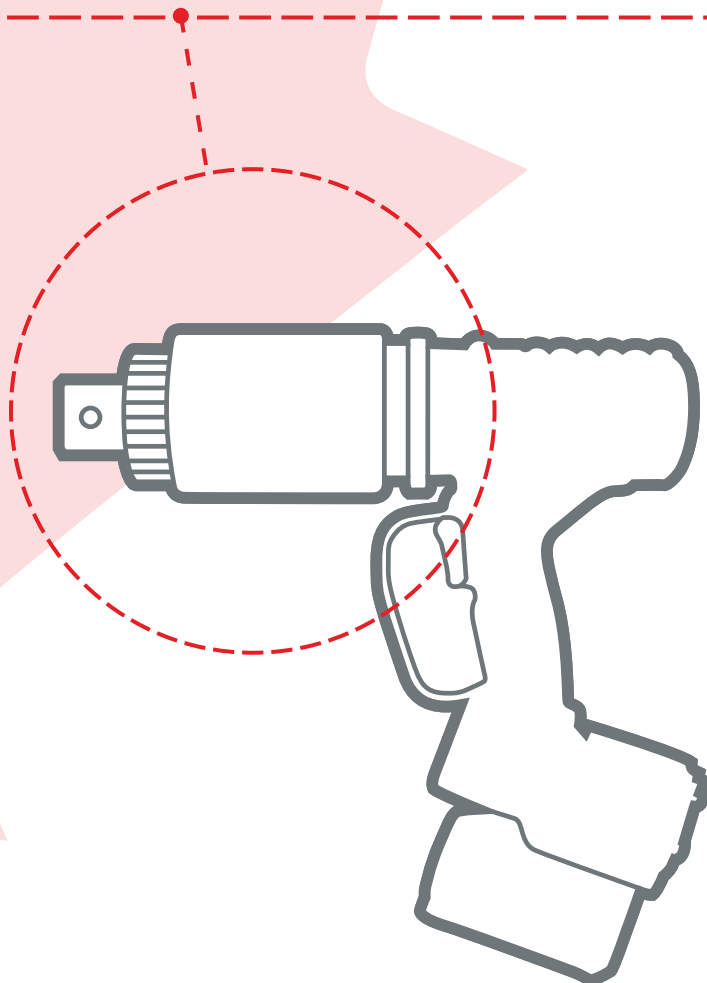
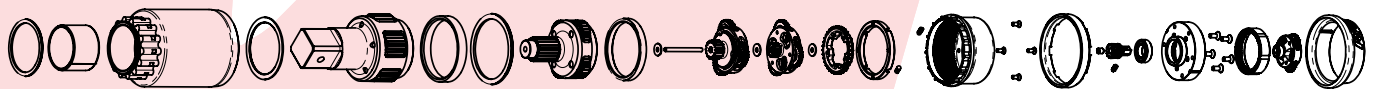
As a company we are dedicated to innovating new technologies for our customers. This dedication has resulted in groundbreaking products such as the world's first patented battery torque wrench, the E-RAD and our Smart Sockets™.

We are proud of our partnership with Radial Torque Tools, serving as our master distributor for the European, Central Asian, and North African markets. Their dedicated team and state-of-the-art facility ensure our customers get the best service and maintenance of our products, reflecting our shared commitment to excellence.

Together with Radial, we are not just providing tools; we are delivering a promise of quality, reliability, and innovation. We invite you to join us on this journey, where precision meets excellence.

Sincerely,

Dan Provost
Founder & President, RAD Torque Systems



BATTERY SERIES

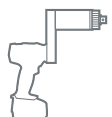
10 B-RAD SELECT

Torque range: 50 - 7.000 Nm



12 B-RAD OFFSET

Torque range: 50 - 7.000 Nm



14 B-RAD EGX-R

Torque range: 170 - 1.400 Nm



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Torque range: 30 - 7.000 Nm

IRTT
EXCLUSIVE



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Torque range: 70 - 7.000 Nm



20 B-RAD X

Torque range: 400 - 15.000 Nm



22 SDM BATTERY

Torque range: 40 - 1.400 Nm

IRTT
EXCLUSIVE

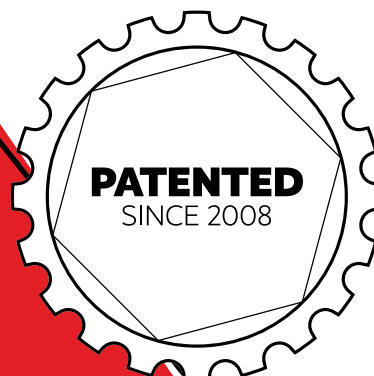


About the Battery series

RAD battery-operated torque wrenches in the B-RAD series are unsurpassed thanks to their high torque capacity, low weight and compactness. RAD has a wide model range in high torque battery multipliers.

Over the years, RAD and Radial have invested a lot in the development of battery torque wrenches, which has resulted in many innovations. Radial offers the widest model range in the industry, from basic torque control to transducer control, with multiple gearbox iterations. The power that RAD's current battery torque wrenches can deliver (up to 15.000 Nm!) was unimaginable a few years ago, as was the enormous capacity of the lithium-ion batteries.

RAD: Inventor of the battery torque wrench in 2008.



**RAD: Inventor of world's first
battery torque wrench in 2008**



RADIAL
TORQUE TOOLS



B-RAD-S SERIES:

HIGH ACCURACY WITH DATALOGGING AND STRAIN
GAUGE TORQUE TRANSDUCER TECHNOLOGY



TOOL KITS INCLUDE:

- Reaction arm and retaining rings
- User manual
- Calibration certificate
- Weatherproof storage case
- QR code for safety instructions
- Two 18V/5.2 Ah batteries with fast charger (For the B-RAD 4000 & 7000: 1 x 5.5 Ah and 1 x 8.0 Ah)
- Swivelling tool handle & hanger (For the B-RAD 4000 & 7000 only)



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Highlighted feature: **SIMPLE & PRECISE TORQUE SELECTION**

Simple + precise torque selection with two simple buttons to increase or decrease the torque value by 10, 100 or 1.000 Nm. The set torque value is clearly visible on the four-digit display.



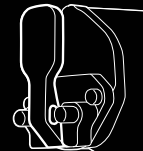
B-RAD SELECT
video



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B-RAD SELECT



FEATURES:

- Brushless motor
- Digital torque settings
- Available in single and automatic 2-speed gearbox
- Controlled bolting – repeatability of +/- 3%
- Extremely low noise level –only 65 dB
- Automatic reaction arm release
- Possibility to set torque in 1-50 levels as well as settings per 10 Nm
- Lithium-ion 18V battery technology

WHERE USED

- Tower cranes
- Steel construction
- Civil engineering



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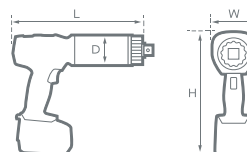


Torque range: 50 – 7.000 Nm

B-RAD SELECT series torque wrenches offer high torque output and reliability combined with uncompromised cordless freedom.

Cordless torque!

The **B-RAD SELECT** is especially suitable for installation and service jobs where electricity or compressed air are not available. Besides this, the **B-RAD SELECT** is also an ideal tool for load strapping. The number of cycles per battery depends on stud length, lubrication and temperature.



Toolkit	Tool	Drive size	Torque (Nm)		Speed	Weight	Dimensions (mm)			
Number	Model	Inches	Min	Max	RPM	Kg*	L	D	W	H
30213	B-RAD SELECT 275	½"	50	270	47,0	3,2	228	63	67	262
29594	B-RAD SELECT 275	¾"	50	270	47,0	3,2	228	63	67	262
28264	B-RAD SELECT 700	¾"	170	700	21,5	3,5	231	63	67	262
28266	B-RAD SELECT 1400	¾"	270	1.400	10,5	3,5	231	63	67	262
28267	B-RAD SELECT 1400-2	¾"	540	1.400	71,0	4,3	279	63	67	262
28268	B-RAD SELECT 2000	1"	400	2.000	6,0	4,0	244	69	69	262
28269	B-RAD SELECT 2000-2	1"	400	2.000	19,5	4,9	298	69	69	262
28270	B-RAD SELECT 4000	1"	800	4.000	3,0	6,0	285	81	81	266
28271	B-RAD SELECT 4000-2	1"	800	4.000	19,0	6,7	337	81	81	266
28272	B-RAD SELECT 7000	1½"	1.350	7.000	2,1	8,8	295	95	95	272

Repeatability of 3%

*Weight is with battery, without reaction arm



TOOL KITS INCLUDE:

- Reaction arm and retaining rings
- User manual
- Calibration certificate
- Weatherproof storage case
- QR code for safety instructions
- Two 18V / 5.2 Ah batteries with fast charger (For the B-RAD OFFSET 4000 & 7000: 1x 5.5 Ah and 1x 8.0 Ah)
- Swivelling tool handle & hanger (For the B-RAD 4000 & 7000 only)



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Highlighted feature: **ACCESSIBILITY**

The B-RAD OFFSET offers all the features that make RAD battery tools so popular. With one major difference: the torque multiplier is placed in an offset position, so that the wrench can be used to tighten bolts in tight and difficult to reach spaces.



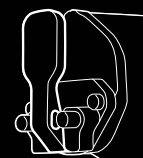
B-RAD OFFSET
video



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B-RAD OFFSET



FEATURES:

- Brushless motor
- Digital torque settings
- Controlled bolting – repeatability of +/- 3%
- Extremely low noise level – only 65 dB
- Automatic reaction arm release
- Possibility to set torque in 1-50 levels as well as settings per 10 Nm
- Lithium-ion 18V battery technology

WHERE USED

- Tower cranes
- Steel construction
- Civil engineering



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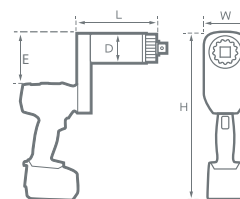


Torque range: 50 – 7.000 Nm

The **B-RAD OFFSET** is based on the standard **B-RAD SELECT** series and has all the same features that have made these torque wrenches so popular. There is one main difference: the torque multiplier is placed out of line with the motor with an offset link, and as a result, it reduces the total tool length above the bolt with 105 mm.

This provides operators with a more versatile tool as it enables them to use the wrench in places where bolts cannot be tightened with standard wrenches. The **B-RAD OFFSET** is calibrated including the offset link, so no conversion tables are needed, unlike conventional “add-on” offset links.

In addition, it is worth knowing that the offset link can be retrofitted on any standard **B-RAD SELECT** model.



Toolkit	Tool	Drive size	Torque (Nm)		Speed	Weight	Dimensions (mm)				
Number	Model	Inches	Min	Max	RPM	Kg*	L	D	W	H	E
201024	B-RAD OFFSET 275	1/2"	50	270	48,0	3,6	151	63	83	345	83
201025	B-RAD OFFSET 275	3/4"	50	270	48,0	3,6	151	63	83	345	83
201026	B-RAD OFFSET 700	3/4"	170	700	21,5	3,9	155	63	83	345	83
201027	B-RAD OFFSET 1400	3/4"	270	1.400	10,5	3,9	165	63	83	345	83
201029	B-RAD OFFSET 2000	1"	400	2.000	6,0	4,4	172	69	83	348	86
201031	B-RAD OFFSET 4000	1"	800	4.000	3,0	6,4	208	81	83	354	92
201033	B-RAD OFFSET 7000	1 1/2"	1.350	7.000	2,1	9,2	230	95	95	362	100

Repeatability of 3%

*Weight is with battery, without reaction arm



TOOL KITS INCLUDE:

- Reaction arm and retaining rings
- Two 18V / 5.2 Ah batteries with fast charger
- User manual
- Calibration certificate
- Weatherproof storage case
- QR code for Safety instructions



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Highlighted feature: **ERGONOMICS**

Simple + precise torque selection with two simple buttons to increase or decrease the torque value by 10, 100 or 1.000 Nm. The set torque value is clearly visible on the four-digit display. The extended positioning of the torque multiplier and the tool handle enable using these tools at floor height while standing



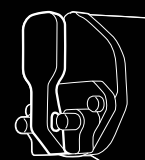
B-RAD EGX-R
video



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B-RAD EGX-R



FEATURES:

- Brushless motor
- Digital torque settings
- Available in single and automatic 2-speed gearbox
- Controlled bolting – repeatability of +/- 3%
- Extremely low noise level –only 65 dB
- Automatic reaction arm release
- Possibility to set torque in 1-50 levels as well as settings per 10 Nm
- Lithium-ion 18V battery technology

WHERE USED

- Rail construction
- Steel construction
- Civil engineering



Torque range: 170 – 1.400 Nm

Another addition to the standard **B-RAD SELECT** range is the extended reach version: **EGX-R**. The **EGX-R** is the ideal wrench for working effortlessly in a standing position or for jobs above your head.

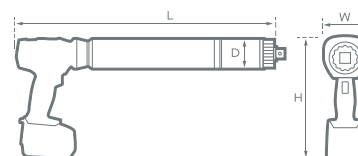
Having difficulties tightening a deeply recessed bolt? With the **B-RAD EGX-R** you can likely reach it!

The **EGX-R** has especially been designed to increase ergonomics. With its very low weight and with an extra adjustable handle, you can assume the perfect working position. No more back aches, tired arms or working on your knees. Due to the large distance to the reaction arm, pinching risks are practically eliminated and therefore the **EGX-R** is extremely safe.

The **B-RAD EGX-R** series offers the same features as the standard **B-RAD SELECT** and the robust extension can be ordered separately as well, making it possible to retrofit it on a standard **B-RAD SELECT**.

Given the applications, the **EGX-R** is only available for the 700 Nm and 1400 (-2) Nm multipliers.

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Toolkit	Tool	Drive size	Torque (Nm)		Speed	Weight	Dimensions (mm)			
Number	Model	Inches	Min	Max	RPM	Kg*	L	D	W	H
33184	B-RAD EGX-R 700	3/4"	170	700	21,5	8,2	630	63	67	262
30854	B-RAD EGX-R 1400	3/4"	270	1.400	10,5	8,2	630	63	67	262
32449	B-RAD EGX-R 1400-2	3/4"	540	1.400	71,0	9,0	680	63	67	266

Repeatability of 3%

*Weight is with battery, without reaction arm



TOOL KITS INCLUDE:

- Reaction arm and retaining rings
- User manual
- Calibration certificate
- Weatherproof storage case
- QR code for safety instructions
- Two 18V / 5.2 Ah batteries with fast charger (For the B-RAD OFFSET 4000 & 7000: 1x 5.5 Ah and 1x 8.0 Ah)
- Swivelling tool handle & hanger (For the B-RAD 4000 & 7000 only)



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Highlighted feature: **ProTight™**

The MB-RAD and B-RAD-S in combination with ProTight™ instruct the user what the prescribed procedure is for each bolt and what torque and/or angular rotation is required. ProTight™ ensures that bolts are torqued in the correct sequence, and that no bolts can be 'missed'.



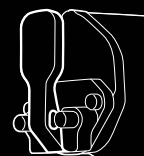
ProTight
video



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FEATURES:

- Brushless motor
- Torque + angle limits
- Data logging with GPS location
- Bluetooth connectivity
- Torque check function
- Bolt counter
- Torque control in anticlockwise rotation
- Extremely low noise level – only 65 dB
- Selectable menu languages
- Intelligent counter for life cycle and maintenance
- Repeatability +/- 3%
- Lithium-ion 18V battery technology

WHERE USED

- Tower cranes
- Steel construction
- Construction equipment

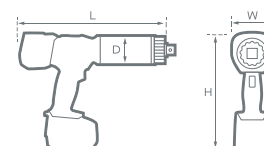


Torque range: 30 – 7.000 Nm

The **MB-RAD Series** torque wrenches are a professional range of torque wrenches for the more demanding user. Now with data logging via bluetooth and advanced bolting options such as a smart bolt counter and torque + angle limits.

The included torque check function is very handy and popular for auditing critical bolt connections.

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Toolkit	Tool	Drive size	Torque (Nm)		Speed	Weight	Dimensions (mm)			
Number	Model	Inches	Min	Max	RPM	Kg*	L	D	W	H
200919	MB-RAD 300	½"	30	300	47,0	3,5	258	63	69	262
200920	MB-RAD 300	¾"	30	300	47,0	3,5	258	63	69	262
200921	MB-RAD 700	¾"	70	700	21,5	3,7	261	63	69	262
200922	MB-RAD 1400	¾"	140	1.400	10,5	3,7	270	63	69	262
200924	MB-RAD 2000	1"	200	2.000	6,0	4,3	275	69	69	262
200926	MB-RAD 4000	1"	400	4.000	3,0	6,1	315	81	81	268
200928	MB-RAD 7000	1½"	700	7.000	2,1	8,8	325	95	95	275

Repeatability of 3%

*Weight is with battery, without reaction arm



TOOL KITS INCLUDE:

- Reaction arm and retaining rings
- Two 18V / 5.2 Ah batteries with fast charger (For the B-RAD 4000-S & 7000-S: 1x 5.5 Ah and 1x 8.0 Ah)
- User manual
- Calibration certificate
- Weatherproof storage case
- QR code for safety instructions



More info on page 38

Highlighted feature: **TRANSDUCER CONTROLLED**

B-RAD-S battery torque wrenches are equipped with torque transducer technology which constantly measures and adjusts the torque output (closed loop). This makes these tools insensitive to changing bolt conditions such as temperature, gearbox wear and joint hardness.



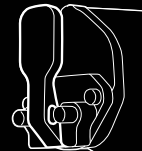
B-RAD-S
video



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B-RAD-S



FEATURES:

- Brushless motor
- Torque transducer
- Torque + angle limits
- Data logging
- Bluetooth connectivity
- Torque check function
- Bolt counter
- Torque control in anticlockwise rotation
- Selectable menu languages
- Intelligent counter for life cycle and maintenance
- Extremely low noise level – only 65 dB
- Lithium-ion 18V battery technology

WHERE USED

- Tower cranes
- Steel construction
- Construction equipment



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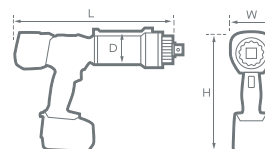


Torque range: 70 – 7.000 Nm

The new **B-RAD-S battery** torque wrench is equipped with a built-in torque transducer that adjusts its power and precisely shuts-off based on its measurements on the bolt during tightening. The proven strain gauge technology makes the torque wrench insensitive to changing conditions, such as gearbox wear, temperature and joint hardness. Due to the built-in transducer, this torque wrench tightens bolts according to the VDI/VDE 2862-2 standards.

Cordless torque!

Unlike competitors' wrenches that measure the gearbox input torque, the **B-RAD-S** measures the torque applied on the bolt. Any losses through gearbox wear or damage will have no effect on the applied torque.



Toolkit	Tool	Drive size	Torque (Nm)		Speed	Weight	Dimensions (mm)			
Number	Model	Inches	Min	Max	RPM	Kg*	L	D	W	H
31801	B-RAD 700-S	3/4"	70	700	21,5	4,3	311	70	70	269
31803	B-RAD 1400-S	3/4"	140	1.400	10,5	4,3	311	70	70	269
31805	B-RAD 2000-S	1"	200	2.000	6,0	4,9	321	76	76	269
31807	B-RAD 4000-S	1"	400	4.000	3,0	7,2	337	88	88	273
31809	B-RAD 7000-S	1½"	700	7.000	2,1	9,8	362	102	102	279

Repeatability of 2%

*Weight is with battery, without reaction arm



TOOL KITS INCLUDE:

- Reaction arm and retaining rings
- Swivelling tool handle & hanger
- Two 18V / 8.0 Ah batteries with fast charger
- User manual
- Calibration certificate
- Weatherproof storage case
- QR code for safety instructions



More info on page 62

Highlighted feature: **BUILT-IN DOUBLE SAFETY BUTTON**

The all-new B-RAD X cordless torque wrenches offer an impressive maximum torque of 15.000 Nm. Several safety enhancing features are available such as a standard handguard for added operator protection, a two-hand start and a latch lock to protect the battery from falling from heights.



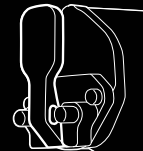
B-RAD X
video



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B-RAD X



FEATURES:

- Brushless DC motor for added durability and accuracy
- Torque & angle
- Redesigned anti-fatigue trigger switch
- Standard handguard for added operator protection
- Two-hand start
- 4-button interface with high contrast LED display
- Advanced cooling system
- Digital bolt counter
- Designed for LiHD batteries only
- Latch lock to protect battery from accidental unlocking



WHERE USED

- Tower cranes
- Wind industry
- Civil engineering

Designed for
LiHD batteries only

Torque & angle

Torque range: 400 – 15.000 Nm

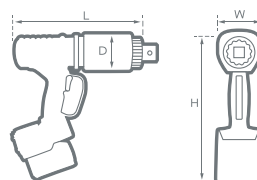
The most powerful cordless torque tool on the market!

RAD Torque Systems raises the bar once again with the new **B-RAD X** Series of cordless torque wrenches. The latest generation of RAD cordless torque wrenches has an impressive maximum torque of 15.000 Nm.

Building off RAD Torque's patented and world-renowned gearbox technology, the **B-RAD X** captures attention with its sleek new white design and rubber grip, a new high-performance motor, and its various features.

Fastening bolts in remote locations will now be easier for big industry as the cordless **B-RAD X** gives companies better mobility to torque and tension large bolts with less equipment to haul, without compromising power or accuracy.

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Toolkit	Tool	Drive size	Torque (Nm)		Speed	Weight	Dimensions (mm)			
Number	Model	Inches	Min	Max	RPM	Kg*	L	D	W	H
30984	B-RAD X 4000	1"	340	4.000	3,8	7,8	298	83	89	349
30657	B-RAD X 7000	1½"	700	7.000	2,4	10,5	318	95	95	362
30659	B-RAD X 10K	1½"	1.000	10.850	1,7	13,8	349	108	108	369
30661	B-RAD X 15K	1½"	1.500	15.000	1,2	19,3	387	127	127	375

Repeatability of 3%

*Weight is with battery, without reaction arm



TOOL KITS INCLUDE:

- Reaction arm and retaining rings
- Two 18V / 5.6 Ah batteries with fast charger
- User manual
- Calibration certificate
- Weatherproof storage case
- QR code for safety instructions



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Highlighted feature: **ACCESSIBILITY**

For applications where tool access to the bolt is limited, RAD's SDM (Small Diameter Multiplier) Gearboxes provide you with a solution. The RAD SDM series was developed for the aerospace industry, specifically for use in small spaces.



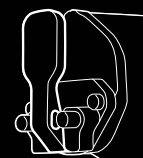
SDM BATTERY
video



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SDM BATTERY

RTT[®] EXCLUSIVE



FEATURES:

- Brushless motor
- Latest lithium-ion 18V battery technology
- Torque control in anticlockwise rotation
- Multi-level password protection
- Includes Angle of turn function.

WHERE USED

- Rail industry
- Wind industry
- Civil engineering



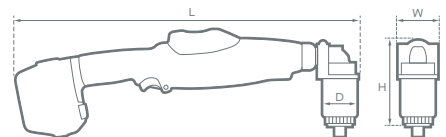
Torque range: 40 – 1.400 Nm

Miniature size, giant performance

RAD had originally designed the **SDM (Small Diameter Multiplier)** gearboxes for the aerospace industry where tool access is limited and quality and precision standards are high. Because of the compact design, the **SDM** gearboxes can be a real solution for applications where tool access to the bolt is very restricted and relatively high torque is needed.

The low weight and small size reduce operator fatigue and eliminate the use of large and tiresome manual torque wrenches. Combined with a quality nutrunner, the **SDM** Series provide repetitive precision with excellent durability thanks to clever materials and smart bearing technology.

Accessories on page 40



Toolkit	Tool	Drive size	Torque (Nm)		Speed	Weight	Dimensions (mm)			
Number	Model	Inches	Min	Max	RPM	Kg*	L	D	W	H
400201	SDM BATTERY 340P	½"	40	340	12	3,2	468	53	53	104
400202	SDM BATTERY 680P	¾"	70	680	12	3,3	468	53	53	118
400203	SDM BATTERY 1400P	¾"	130	1.400	12	4,5	475	63	63	138
400204	SDM BATTERY OFFSET 1400P	¾"	130	1.400	12	5,3	532	63	76	83

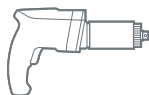
Repeatability of 3%

*Weight is with battery, without reaction arm

ELECTRIC SERIES

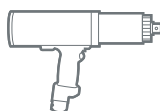
26 V-RAD SELECT

Torque range: 140 - 4.000 Nm



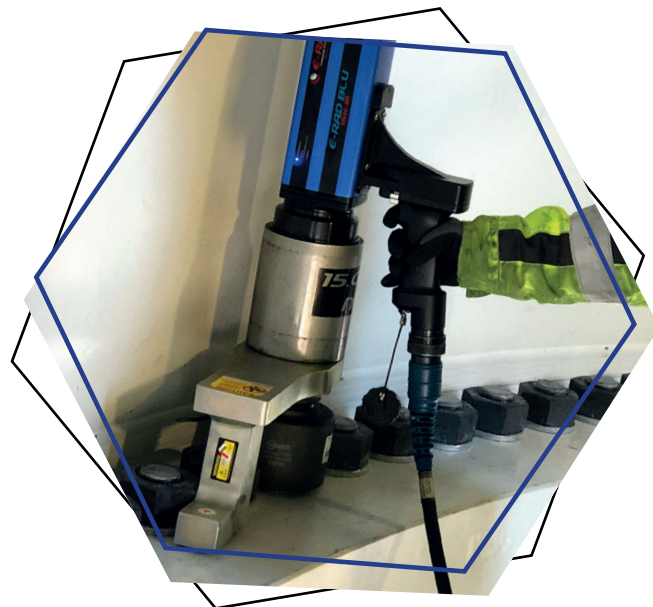
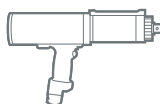
28 E-RAD BLU

Torque range: 135 - 16.500 Nm



30 E-RAD BLU-S

Torque range: 135 - 15.000 Nm



About the Electric series

Radial offers various models electric wrenches based on usage, work environment and functionalities.

V-RAD SELECT

V-RAD SELECT torque wrenches are a lightweight and economical solution with basic digital torque settings. A perfect solution for intermittent use with three models up to 4.000 Nm. An excellent tool for industries such as machine building, steel construction, and general maintenance.

E-RAD

Our most famous and professional corded solution is the E-RAD series. With a separate control box to reduce the tool weight for the operator it is our fastest and most durable electric torque wrench. It has advanced options for different tightening strategies, user modes and datalogging. The

transducer equipped E-RAD-S is perfect for production applications, while the standard E-RAD is ideally suited for continuous heavy duty outdoor use. The E-RAD is the standard "go to" machine for the wind industry but also a perfect solution for other steel construction and production line applications.



ELECTRIC

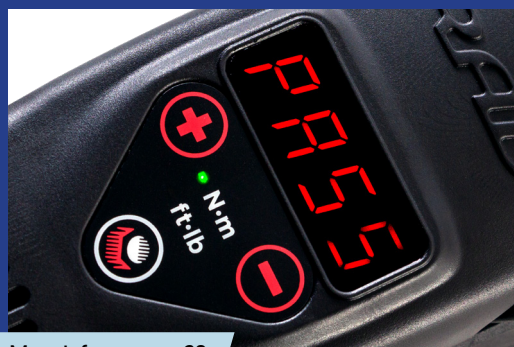


E-RAD BLU SERIES:

INDUSTRIAL QUALITY AND SPEED FOR
MAXIMUM BOLTING COST REDUCTION

**TOOL KITS INCLUDE:**

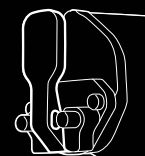
- Reaction arm and retaining rings
- Weatherproof storage case
- Calibration certificate
- User manual
- QR code for safety instructions



More info on page 38

Highlighted feature:
CLEAR, PASS
AND FAIL

The V-RAD SELECT shares the same two simple buttons with the B-RAD SELECT to increase or decrease the torque by 10, 100 or 1,000 Nm. The compact and lightweight torque tool is set via the clear numerical display.

V-RAD SELECT
videoFeature comparison
Page 38Accessories
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V-RAD SELECT



FEATURES:

- The V-RAD SELECT shares the same two simple buttons with the B-RAD SELECT to increase or decrease the torque by 10 Nm
- Various functions can be set via the numerical display
- Equal power in forward and reverse
- Compact and lightweight
- Advanced ultra-durable electric motor design
- "Pass" / "Fail" indication

WHERE USED

- Tower cranes
- Steel construction
- Civil engineering

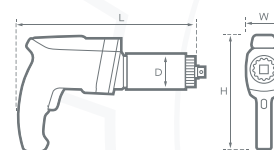


Torque range: 140 – 4.000 Nm

The **V-RAD SELECT** electric series is the economic **RAD electric** torque wrench used for the installation or removal of heavy duty fasteners, where speed, power, and high safety standards are required. The **V-RAD SELECT** shares the same two simple buttons with the **B-RAD SELECT** to increase or decrease the torque by 10 Nm.

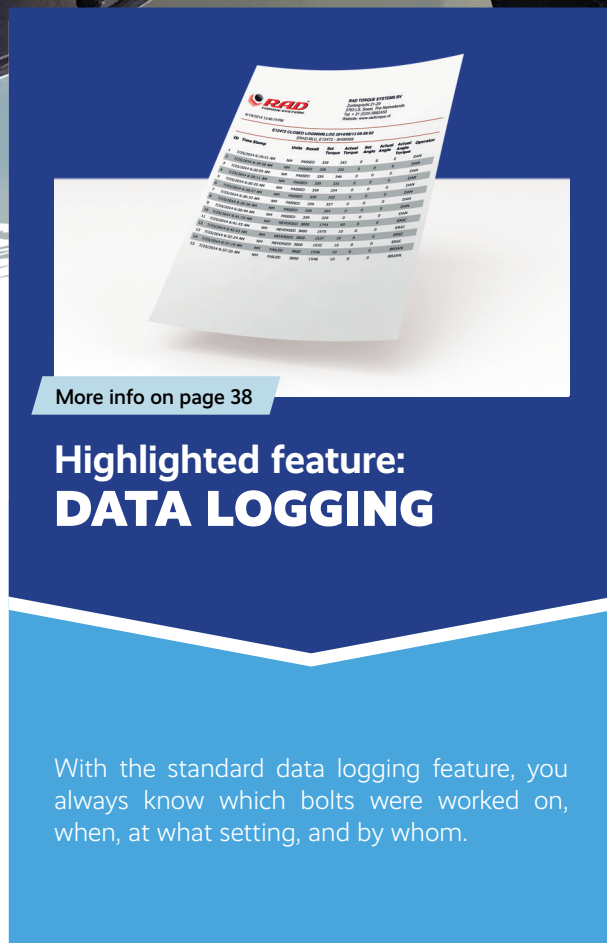
V-RAD's are very light, compact and simple to use.

Accessories on page 40



Toolkit	Tool	Drive size	Torque (Nm)		Speed	Weight	Dimensions (mm)			
Number	Model	Inches	Min	Max	RPM	Kg	L	D	W	H
25633	V-RAD SELECT 1400	3/4"	140	1.400	10	3,9	304	64	78	205
25634	V-RAD SELECT 2000	1"	200	2.000	6	4,2	304	69	78	205
25636	V-RAD SELECT 4000	1"	400	4.000	3	6,2	338	81	78	205

Repeatability of 4%

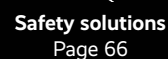
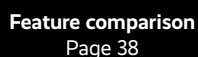
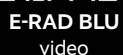


- Reaction arm and retaining rings
- Weatherproof storage case
- Controller cable 4,6 meter
- Digital torque controller case
- Data logging software
- User manual
- Calibration certificate
- QR code for safety instructions

More info on page 38

Highlighted feature: **DATA LOGGING**

With the standard data logging feature, you always know which bolts were worked on, when, at what setting, and by whom.



E-RAD BLU



FEATURES:

- Multiple wrenches can be used in combination with one controller. Reducing cost when multiple wrench sizes are needed
- Bluetooth connectivity with RAD Smart Socket™ for transducer verified bolt connection calibration
- Highly advanced data logging capabilities and torque wrench management features
- High speed and productivity
- Military grade single cable connection system
- Also available in 90° and offset version



ADDITIONAL FEATURES:

- Password protection on 3 user levels: basic, intermediate and advanced
- Operator identification – Ensures traceability of each torque sequence performed
- Capable of torque and angle bolting sequence
- LED indicator lights (Pass/Fail) – Located on both sides, these visual signals indicate the status of torque procedure for maximum accuracy
- Controlled bolting – repeatability of +/- 2%
- Extremely low noise level – only 75 dB

WHERE USED

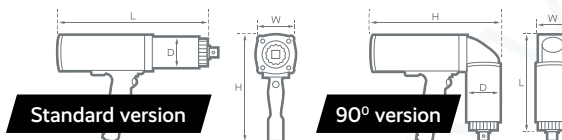
- Wind tower installation
- Steel construction
- Civil engineering

Torque range: 135 – 16.500 Nm

E-RAD BLU series precision torque wrench tools are designed to provide a high accuracy for high torque assembly applications.

These advanced electronic pistol grip torque wrenches combine the legendary RAD gearbox design and AC Servo motor technology to reduce bolting time up to 300% when compared to conventional hydraulic wrenches. Built and designed for heavy duty industrial usage.

Accessories on page 40



Toolkit	Tool	Drive size	Torque (Nm)		Speed	Weight	Dimensions (mm)			
Number	Model	Inches	Min	Max	RPM	Kg	L	D	W	H
21985	E-RAD BLU 950	3/4"	135	950	30,0	5,5	340	65	78	275
21985	E-RAD BLU 2000	1"	270	2.000	16,0	5,9	337	69	76	275
21986	E-RAD BLU 3400	1"	340	3.400	10,0	7,6	380	76	78	275
22434	E-RAD BLU 3400-90°	1"	340	3.400	12,0	8,3	210	76	78	300
21987	E-RAD BLU 4000	1"	675	4.000	8,5	11,0	430	86	88	287
200415	E-RAD BLU 4000	1½"	675	4.500	8,5	11,0	430	86	88	287
21988	E-RAD BLU 8000	1½"	1.350	8.000	4,5	13,5	430	100	100	295
21989	E-RAD BLU 10K	1½"	2.000	10.000	3,0	15,0	430	105	105	297
24224	E-RAD BLU 15K	1½"	4.000	15.000	2,3	20,0	465	127	127	306
25307	E-RAD BLU 15K	2½"	4.000	16.500	2,3	20,1	465	127	127	306

Repeatability of 2%



TOOL KITS INCLUDE:

- Reaction arm and retaining rings
- Weatherproof storage case
- Controller cable 4,6 meter
- Digital torque controller case
- Data logging software
- User manual
- Calibration certificate
- QR code for safety instructions



More info on page 38

Highlighted feature: TORQUE TRANSDUCER

The E-RAD-S is equipped with a torque transducer. This torque transducer is based on RAD's own strain gauge technology, which is mounted at the front of the gearbox, enabling very precise torque measurement on the bolt. This measurement is insensitive to deviations caused by gearbox wear and tear, lubrication and bolt condition. The E-RAD-S will therefore perform excellently in varying bolt conditions, the so called soft and hard joints.



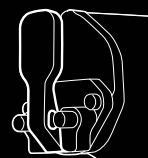
E-RAD BLU-S
video



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E-RAD BLU-S



FEATURES:

- Highly advanced data logging and Tool Management features
- Built in transducer
- Password protection on 3 user levels: basic, intermediate and advanced
- Operator identification – Ensures traceability of each torque sequence performed
- Capable of torque and angle bolting sequence
- LED indicator lights (Pass/Fail) – Located on both sides, these visual signals indicate the status of torque procedure for maximum accuracy
- Controlled bolting – repeatability of +/- 2%, accuracy of transducer +/- 1%
- Extremely low noise level – only 75 dB

WHERE USED

- Line production
- Steel construction
- Civil engineering



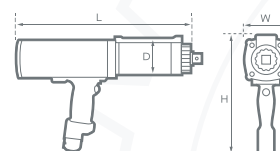
Torque range: 135 – 15.000 Nm

The most accurate high torque wrench on the market!

The **E-RAD BLU-S** is equipped with an integrated torque transducer that measures the tightening torque on the bolt connection during tightening. This system eliminates all joint sensitivity.

This ensures that the operator is always assured that the achieved tightening torque is correct, regardless of the bolt connection, lubrication, bolt type, etc. The tightening torque displayed on the control box display is therefore the actual measured tightening torque on the bolt.

Accessories on page 42



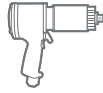
Toolkit	Tool	Drive size	Torque (Nm)		Speed	Weight	Dimensions (mm)			
Number	Model	Inches	Min	Max	RPM	Kg	L	D	W	H
26937	E-RAD BLU 950-S	3/4"	135	950	30,0	5,9	380	72	78	275
26938	E-RAD BLU 3400-S	1"	340	3.400	10,0	8,6	412	87	87	275
22759	E-RAD BLU 4000-S	1"	675	4.000	8,5	11,1	451	95	95	291
25282	E-RAD BLU 8000-S	1½"	1.350	8.000	4,5	15,7	450	111	111	300
26939	E-RAD BLU 10K-S	1½"	2.000	10.000	3,0	15,4	471	114	114	302
29315	E-RAD BLU 15K-S	1½"	4.000	15.000	2,3	20,0	508	132	132	309

Repeatability of 2%

PNEUMATIC SERIES

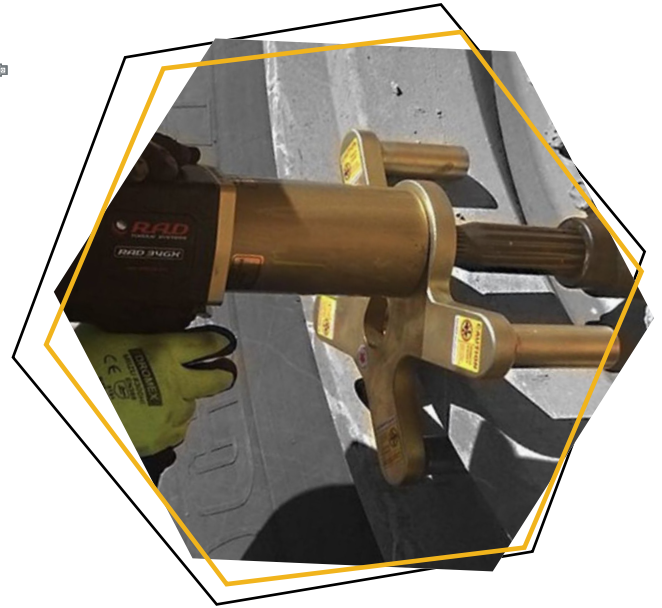
34 SINGLE & 2-SPEED

Torque range: 35 - 15.000 Nm



36 WHEEL NUT BOLTING

Torque range: 275 - 2.450 Nm



About the Pneumatic series

Extreme duty torque wrenches for heavy duty applications! In addition to the high tightening and loosening speed, the pneumatic series offers the advantage of very quick and easy positioning of the reaction arm on the application.



RAD DX SERIES:
THE UNBREAKABLE AND LIGHTWEIGHT
PRODUCTIVITY CHAMPION!



TOOL KITS INCLUDE:

- Reaction arm and retaining rings
- Lubricating oil for the FRL unit 3.6 meter hose
- User manual
- Lightweight FRL unit
- Calibration certificate
- QR code for safety instructions



More info on page 90

Highlighted feature: ATEX

With the optional ATEX kit, RAD pneumatic torque wrenches can be used in explosion hazardous environments. The applicable ATEX certification is suitable for zones 1, 2, 21 and 22.



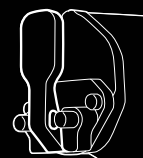
single & 2-speed
video



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SINGLE & 2-SPEED



FEATURES:

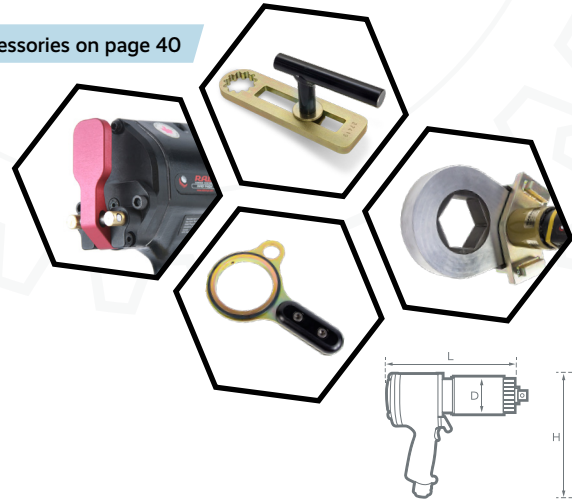
- The best power to weight ratio
- Cast aluminium housing
- Large torque range (min-max)
- High reliability
- Very compact design resulting in lower weight and better accessibility
- Unique fully automatic gearbox design, eliminating the time manual switch between high and low speed gear (2-speed only)
- Controlled bolting – repeatability of +/- 3%
- Extremely low noise level – only 80 dB

WHERE USED

- Oil and gas industry
- Steel construction
- Civil engineering



Accessories on page 40



Torque range: 35 – 15.000 Nm

Extreme duty torque wrenches for heavy duty applications! RAD torque wrenches incorporate a precision engineered high speed gearbox designed for faster run down and quick reaction point positioning on time sensitive bolting applications. Nearly 30 years of experience in gearbox engineering and design has brought about RAD's latest generation in planetary gearboxes. Designed for extreme duty use in a variety of industries worldwide.

Toolkit	Tool	Drive size	Torque (Nm)		Speed	Weight	Dimensions (mm)			
Number	Model	Inches	Min	Max	RPM	Kg	L	D	W	H
19157	100 SL	½"	35	100	275,0	2,1	161	60	70	228
15134	275 SL	¾"	50	275	90,0	2,2	167	60	70	228
13573	475 SL	¾"	70	475	65,0	2,4	167	61	70	228
13575	475 SL-2	¾"	150	475	270,0	3,7	228	60	70	228
13539	10 GX	¾"	150	950	30,0	3,6	228	63	70	228
13549	14 GX	¾"	275	1.400	20,0	3,8	228	63	70	228
19774	14 GX-2	¾"	450	1.400	85,0	4,5	261	63	70	228
19135	20 DX	1"	400	2.000	10,0	4,0	203	69	70	228
19775	20 DX-2	1"	700	2.000	50,0	4,7	251	69	70	228
13565	34 GX	1"	700	3.400	9,0	6,1	240	78	83	241
19776	34 GX-2	1"	950	3.400	44,0	7,5	305	78	83	241
24717	40 DX	1"	1.200	4.000	8,0	6,7	254	81	83	241
24952	40 DX-2	1"	1.400	4.000	49,0	7,3	309	81	83	241
13571	46 GX	1"	1.400	4.600	12,0	12,0	317	86	94	264
26133	70 DX	1½"	2.000	7.000	6,7	10,6	285	95	95	264
15805	80 DX	1½"	2.700	8.000	6,6	12,4	348	101	101	269
23229	110 DX	1½"	3.400	11.000	4,0	13,7	308	108	108	272
26153	150 DX	1½"	5.500	15.000	3,0	18,9	353	127	127	281

Repeatability of 3%



TOOL KITS INCLUDE:

- Reaction arm and retaining rings
- Lubricating oil for the FRL unit
- 3.6 meter hose
- User manual
- Lightweight FRL unit
- Tool storage case
- Calibration certificate
- QR code for safety instructions



More info on page 46

Highlighted feature: **NOSE EXTENSION KIT**

The fixed nose extension was developed exclusively for extreme duty maintenance of mining haul trucks from 50-400 ton capacities and front end loaders. The extended nose allows safe access of virtually all wheel configurations found on today's heavy equipment.



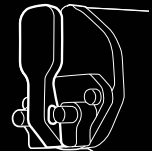
Wheel nut bolting
video



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Safety solutions
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Wheel Nut Bolting



FEATURES:

- Extended gearbox design for accessing recessed bolts
- The best power to weight ratio
- Cast aluminium housing
- Large torque range (min-max)
- High reliability
- Very compact design resulting in lower weight and better accessibility
- With range of special reaction arms for various wheel configurations
- Very precise, no need for final torque check
- Low noise level – only 80 dB

WHERE USED

- Truck and trailer wheels bolts
- Mining vehicles
- Construction equipment

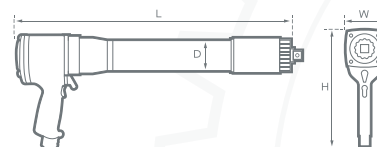


Torque range: 275 – 2.450 Nm

Accidents caused by incorrectly tightened wheel nuts are considered a serious problem in the industry. Especially impact wrenches are notorious for causing these problems, while at the same time they increase the risk of HAVS (Hand Arm Vibration Syndrome) related injuries.

RAD planetary gear torque wrenches are vibration free and offer the accuracy to prevent accidentally under – and over tightening. Wheel bolts are always tightened to the correct torque. The extended drive shaft allows the user to reach deep-set bolts effortlessly. In addition, various types of reaction arms can be placed on the nose extension.

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Toolkit	Tool	Drive size	Torque (Nm)		Speed	Weight	Dimensions (mm)			
Number	Model	Inches	Min	Max	RPM	Kg	L	D	W	H
13541	10 GX-R	3/4"	400	950	115,0	5,4	345	63	70	228
19340	14 GX-NX	3/4"	275	1.400	20,0	7,0	518	63	70	228
20809	20 NDX-R	1"	400	2.000	10,0	7,2	513	69	70	228
19340	20 DX-NX	1"	400	2.000	10,0	7,2	513	69	70	228
13563	2400 NGX-R	1"	700	2.450	10,0	12,4	515	76	83	241

Repeatability of 3%

FEATURE COMPARISON

Overview of the common features of RAD torque wrenches. All toolkits are CE certified, non impacting and feature 360° rotatable pistol grips for added safety.

	 B-RAD SELECT 50 - 7.000 Nm	 B-RAD OFFSET 50 - 7.000 Nm	 B-RAD EGX-R 170 - 1.400 Nm	 B-RAD X 400 - 15.000 Nm	 MB-RAD 30 - 7.000 Nm
 Digital torque setting	✓	✓	✓	✓	✓
 Automatic 2-speed	✓*	✓*	✓*	✗	✓*
 Lithium-ion battery	✓	✓	✓	✓	✓
 EX approved	✗	✗	✗	✗	✗
 Bluetooth connectivity	✗	✗	✗	✗	✓
 Torque + angle function	✗	✗	✗	✓	✓
 Software data exchange	✗	✗	✗	✗	✓
 Torque check	✗	✗	✗	✗	✓
 Torque transducer	✗	✗	✗	✗	✗

* optional

 B-RAD-S 70 - 7.000 Nm	 V-RAD SELECT 140 - 4.000 Nm	 E-RAD BLU 135 - 16.500 Nm	 E-RAD BLU-S 135 - 15.000 Nm	 Single & 2-speed 35 - 15.000 Nm	 Wheel Nut Bolting 400 - 2.450 Nm
✓	✓	✓	✓	✗	✗
✗	✗	✗	✗	✓*	✓
✓	✗	✗	✗	✗	✗
✗	✗	✗	✗	✓*	✓*
✓	✗	✓	✓	✗	✗
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✓	✗	✓	✓	✗	✗
✓	✗	✓	✓	✗	✗
✓	✗	✗	✓	✗	✗

Accessories

- 42 **Offset Multipliers**
Max torque: 5.000 Nm
- 44 **Nose Extensions**
For battery, electric and pneumatic torque wrenches
- 45 **SDM Gearboxes**
Max torque: 1.400 Nm
- 46 **Smart Sockets™**
Torque range: 200 - 24.400 Nm
- 48 **Reaction Arms**
Overview
- 51 **Impact Sockets**
Across flats: 17 mm up to 110 mm
- 52 **Calibration Systems**
Torque range: 100 - 24.400 Nm
- 54 **Backup Wrenches**
Hex size: 36 mm – 80 mm
- 55 **Remote Pendant Controls**
For electric and pneumatic torque wrenches
- 56 **Reaction Lock Washer**
Bolt size: M16 - M48
- 58 **Safety Backup Washer**
Bolt size: M16 - M48
- 59 **Torque Tool Flange Roller**
For battery and electric torque wrenches



Accessories

In order to make full use of your RAD toolkit, we have developed a number of accessories. These range from (non) standard sockets and reaction arms, to offset gearboxes, and safety enhancing products.

In addition, Radial is able to design and make your special socket, reaction arm, or safety feature.

Reaction arms



OFFSET MULTIPLIERS

For applications where space for tool placement is limited, the CT, CX, HX Offset multipliers can provide you with a solution. The CT, CX, HX Offset multipliers simply extend the torque wrench's reach to the bolt, enabling the operator to precisely tighten the bolt.

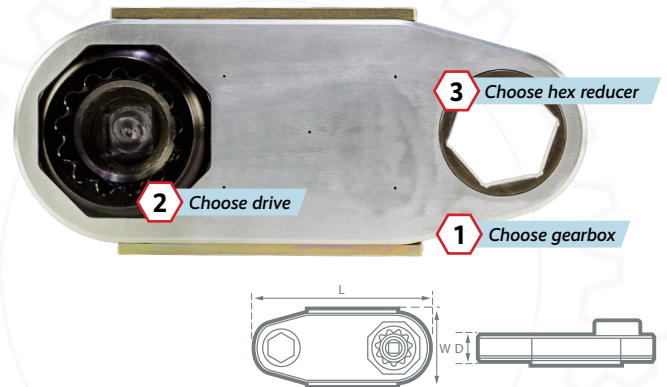
CX Offset Multipliers

The CX Offset Multipliers series can be used with different tool sizes thanks to the interchangeable drive insert.

At the same time the output side can be adapted to different sizes by using hexagon insert reducers. The versatile CX Offset Multipliers series can be used to tighten bolts up to 5.000 Nm, with a maximum Hex size of 65 mm. The CX Offset Multipliers series is designed to work with several types of RAD torque wrenches. The CX Offset can be used up to the 40 DX Gearbox and reacts off the side of the Offset Gearbox.

The order process for the CX Offset Multiplier consists of 3 steps:

- Step 1: Choose the type of CX Offset Multipliers.
- Step 2: Choose the connection of the torque wrench with which the CX Offset Multipliers will be used.
- Step 3: Choose a hex reducer to make the CX Offset Multipliers applicable for different bolt sizes.



1. Choose gearbox

Gearbox	Tool	Square drive			Weight	Dimensions MM			
Prod.No.	Suitable for	Inches	Max output	Torque ratio	Kg	L	H	W	D
27978	14 GX to 40 DX	1"	3.400 Nm	1:1	6,7	324	n/a	44	41
28540	34 GX to 40 DX	1"	5.000 Nm	1:1.42	11,6	400	n/a	44	54

2. Choose drive

Gearbox	Tool	Square drive
Prod.No.	Suitable for	Gearbox
11537*	RAD 100 SL, RAD 275 SL, RAD 475 SL, B-RAD SELECT 275, B-RAD SELECT 475, V-RAD 6	27978
16155*	RAD 10 GX, RAD 14 GX, E-RAD BLU 950, B-RAD SELECT 700(-2), B-RAD SELECT 1400(-2), V-RAD 14	27978
26994	RAD 20 GX, E-RAD BLU 2000, B-RAD SELECT 950-2, B-RAD SELECT 2000(-2), V-RAD 20	27978
13034	RAD 34 GX, E-RAD BLU 3400, V-RAD 31,	27978
27853	RAD 40 DX, B-RAD SELECT 4000(-2)	27978
28532	RAD 34 GX, E-RAD BLU 3400, V-RAD 31,	28540
28531	RAD 40 DX, B-RAD SELECT 4000(-2)	28540

*Square drive insert 1" to 3/4" included (PN:11749)

3. Choose hex reducer (if required)

Prod.No.	From	To
200444	50 mm	30 mm
200443	50 mm	32 mm
200442	50 mm	36 mm
200441	50 mm	41 mm
200440	50 mm	46 mm
200897	65 mm	36 mm
200901	65 mm	41 mm
200902	65 mm	46 mm
200903	65 mm	50 mm
200904	65 mm	55 mm
200905	65 mm	60 mm



HX Offset Multipliers

For plate heat exchanger applications, RAD has engineered a special solution: the HX Offset Multipliers series.

The HX Offset Multipliers series is designed to work with several types of RAD torque wrenches.

The HX Offset Multiplier is designed with a 2:1 ratio for tightening plate heat exchangers. The 2:1 ratio works very well with RAD automatic 2-speed Gearboxes as rundown will be very fast. Depending on the application, pneumatic or electric tools can be used. For extended use, RAD advises pneumatic torque wrenches.

The order process for the HX Offset Multiplier consists of 3 steps:

- Step 1: Choose the type of HX Offset Multiplier.
- Step 2: Choose the reaction arm of the torque wrench with which the HX Offset Multiplier will be used.
- Step 3: Choose a hex reducer to make the HX Offset Multiplier applicable for different bolt sizes.



1. Choose gearbox

Gearbox	Tool	Square drive				Weight	Dimensions MM			
Prod.No.	Model	Inches	Max input	Max output	Torque ratio	Kg	L	H	W	D
24404	55 mm	3/4"	1.900 Nm	3.500 Nm	1:1.86	6,8	410	175	266	42
22541	65 mm	1"	1.900 Nm	3.500 Nm	1:1.86	6,7	410	175	266	42
16550	80 mm	1"	1.900 Nm	3.500 Nm	1:1.86	6,6	410	175	266	42

2. Choose reaction arm

Gearbox	Tool	HX Offset
Prod.No.	Suitable for	Gearbox
16920	10 GX, 14 GX, V-RAD 14, (M)B-RAD SELECT 700, (M)B-RAD 1400(-2)	24404 / 22541 / 16550
23120	B-RAD SELECT 950-2, 20 DX, (M)B-RAD 2000(-2)	24404 / 22541 / 16550
24611	34 GX	24404 / 22541 / 16550

3. Choose hex reducer (if required)

Prod.No.	From	To
200906	55 mm	36 mm
200837	55 mm	46 mm
200897	65 mm	36 mm
200901	65 mm	41 mm
200902	65 mm	46 mm
200903	65 mm	50 mm
200904	65 mm	55 mm
200905	65 mm	60 mm
200819	80 mm	24 mm

Prod.No.	From	To
200862	80 mm	30 mm
200863	80 mm	36 mm
200835	80 mm	46 mm
200858	80 mm	50 mm
200830	80 mm	55 mm
200831	80 mm	60 mm
200832	80 mm	65 mm
200857	80 mm	70 mm
200834	80 mm	75 mm

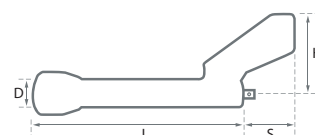
Intergraded Offset link for (M)B-RAD (SELECT)

Prod.No.	Tool
29785	275, 700, 1400, 2000
29788	4000
29789	7000



NOSE EXTENSIONS

RAD Nose Extensions are designed with flexibility in mind for reaching deep recessed bolts. The Nose Extensions slide on to the end of the RAD gearbox and are easily locked in place. On the Nose Extension itself, various reaction arms can be fitted. For wheel bolts, a paddle style reaction arm is mostly used. For maximum versatility the NX kits are advised.



Standard	Reaction arm	Dimensions MM				Paddle reaction arm	Standard reaction arm
Prod.No.	Suitable for	H	L	D	S	Prod.no.	Prod.no.
14195	14 GX	n/a	324	44	n/a	13512	11842
14200	14 GX	n/a	400	44	n/a	13512	11842
14205	14 GX	n/a	476	44	n/a	13512	11842
18185	20 DX	n/a	349	51	n/a	20153	19772
19058	20 DX	n/a	400	51	n/a	20153	19772
19059	20 DX	n/a	476	51	n/a	20153	19772
12096	34 GX	127	330	51	83	Fixed	Fixed
12061	34 GX	127	406	51	83	Fixed	Fixed
12097	34 GX	127	470	51	83	Fixed	Fixed
27641	40 DX	n/a	305	51	n/a	13484	13484
27643	40 DX	n/a	381	51	n/a	13484	13484
27651	40 DX	n/a	457	51	n/a	13484	13484
11750	46 GX	142	318	51	86	Fixed	n/a
11751	46 GX	142	394	51	86	Fixed	n/a
11752	46 GX	142	470	51	86	Fixed	n/a

SDM GEARBOXES



Max torque: 1.400 Nm

SDM Gearboxes

For applications where tool access to the bolt is limited, RAD's SDM (Small Diameter Multiplier) Gearboxes can provide you with a solution.

The low weight and size of the SDM reduce operator fatigue and eliminate the use of large and tiresome manual torque wrenches. Combined with a quality nutrunner, the SDM series provide repetitive precision with excellent durability thanks to clever materials and smart bearing technology.

SDM gearboxes can be combined with standard industry nutrunners (pneumatic, battery, electric) and have a maximum torque output of up to 1.400 Nm. Final torque and

RPM depend on the chosen SDM gearbox model, its ratio and the capacity of the chosen nutrunner. Torque accuracy and repeatability will depend on the chosen nutrunner.

Radial also offers the SDM Gearboxes as a complete toolkit. This is a turnkey SDM combined with an angled battery nutrunner.

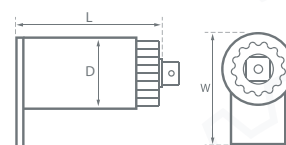
More info on page 23



All SDM Gearboxes are delivered with:

- Standard tombstone mounting plate

Note: Reaction arm not included.



Standard	Tool	out:in	Torque (Nm)	Input drive	Output drive	Weight	Dimensions MM		
Prod.No.	Model	Ratio	Max output	Inches	Inches	Kg	L	D	W
28490	SDM Gearbox 340	1:23	340	1/4"	1/2"	0,3	55	48	48
28530	SDM Gearbox 340	1:23	340	3/8"	1/2"	0,3	55	48	48
28520	SDM Gearbox 340	1:23	340	1/4"	3/4"	0,3	55	48	48
28570	SDM Gearbox 680	1:23	680	3/8"	3/4"	0,4	55	48	48
28550	SDM Gearbox 340	1:65	340	1/4"	1/2"	0,3	69	48	48
28560	SDM Gearbox 340	1:65	340	3/8"	1/2"	0,3	69	48	48
28480	SDM Gearbox 680	1:65	680	1/4"	3/4"	0,4	69	48	48
28510	SDM Gearbox 680	1:65	680	3/8"	3/4"	0,4	69	48	48
28470	SDM Gearbox 680	1:93	680	1/4"	3/4"	0,4	69	48	48
28500	SDM Gearbox 680	1:93	680	3/8"	3/4"	0,4	69	48	48
12914	SDM Gearbox 1400	1:128	1.400	1/4"	3/4"	2,1	93	63	63
15506	SDM Gearbox 1400	1:128	1.400	3/8"	3/4"	2,1	93	63	63
29280	SDM Gearbox 1400 OFFSET	1:131	1.400	3/8"	3/4"	2,9	89	125	76

SMART SOCKETS™

Torque range: 200 - 24.400 Nm

Smart Sockets™

The RAD Smart Socket™ Series are patented torque measurement sockets from 29 mm – 110 mm. These sockets are able to measure the actual torque applied to the bolted joint with a maximum deviation of less than 1%.

Uses RAD's transducer technology implemented in a custom socket in order to measure the actual torque applied to the bolt during a torque cycle. By innovative design, the Smart Socket™ is no larger than a standard socket. Its compact size and innovative technology make the Smart Socket™ a perfect audit tool for inspecting bolted joints and can function as a master calibration for various torque tools.

Besides precisely measuring the tightening torque, the Smart Socket™ is also capable of data logging all bolting activities, which can be downloaded via free Windows software.

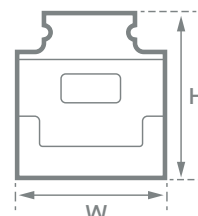
The RAD Smart Sockets™ are calibrated on RAD's weight and beam system in RAD's ISO 17025 certified calibration facility.

All RAD Smart Sockets™ include:

- Locking pin and o-ring
- USB charger
- Weatherproof storage case
- User manual
- Calibration certificate



Bluetooth
connectivity



Toolkit	Tool	Drive size	Torque (Nm)		Weight	Dimension MM	
Prod.No.	Model	Inches	Min	Max	Kg	W	H
26936	Smart Socket™ 29 mm	¾"	200	- 2.000	1,4	72	87
26931	Smart Socket™ 30 mm	¾"	200	- 2.000	1,4	72	87
20879	Smart Socket™ 33 mm	1"	200	- 2.000	1,6	72	100
21363	Smart Socket™ 36 mm	1"	200	- 2.000	1,4	72	90
22158	Smart Socket™ 41 mm	1"	200	- 2.000	1,3	72	87
20880	Smart Socket™ 46 mm	1"	200	- 2.000	1,3	72	87
20881	Smart Socket™ 50 mm	1"	460	- 4.600	1,7	86	89
20882	Smart Socket™ 55 mm	1"	460	- 4.600	1,6	86	89
20883	Smart Socket™ 60 mm	1"	460	- 4.600	1,5	86	89
23690	Smart Socket™ 65 mm	1½"	1.080	- 10.800	5,0	115	121
28722	Smart Socket™ 70 mm	1½"	1.080	- 10.800	3,8	105	121
21911	Smart Socket™ 75 mm	1½"	1.080	- 10.800	4,4	115	121
20885	Smart Socket™ 80 mm	1½"	1.080	- 10.800	4,3	115	121
25657	Smart Socket™ 90 mm	1½"	1.620	- 16.200	5,8	131	126
25658	Smart Socket™ 100 mm	1½"	1.620	- 16.200	7,0	146	132
33773	Smart Socket™ 100 mm	2½"	2.440	- 24.400	9,6	145	165
31339	Smart Socket™ 110 mm	1½"	1.620	- 16.200	8,0	131	140

Magnetic insert reducers

As an accessory RAD can provide you with hex reducer inserts in order to use the Smart Socket™ for more sizes. These reducers can be used on all Smart Sockets™ and all impact sockets. The great thing is that they are magnetic so they won't accidentally fall out.

Prod.No.	Reducer insert	Hex
200820	Socket 46 mm	24 mm
200821	Socket 46 mm	27 mm
200822	Socket 46 mm	30 mm
200823	Socket 46 mm	32 mm
200824	Socket 46 mm	36 mm
200825	Socket 46 mm	41 mm
200838	Socket 50 mm	46 mm
200447	Socket 50 mm	41 mm
200866	Socket 50 mm	36 mm
200448	Socket 50 mm	32 mm
200837	Socket 55 mm	46 mm
200826	Socket 60 mm	41 mm
200827	Socket 60 mm	46 mm
200828	Socket 60 mm	50 mm
200829	Socket 60 mm	55 mm
200897	Socket 65 mm	36 mm
200901	Socket 65 mm	41 mm
200902	Socket 65 mm	46 mm
200903	Socket 65 mm	50 mm
200904	Socket 65 mm	55 mm
200833	Socket 75 mm	65 mm
200830	Socket 80 mm	55 mm
200835	Socket 80 mm	46 mm
200830	Socket 80 mm	55 mm
200831	Socket 80 mm	60 mm
200832	Socket 80 mm	65 mm
200833	Socket 80 mm	70 mm
200834	Socket 80 mm	75 mm
200851	Socket 95 mm	75 mm
200852	Socket 95 mm	85 mm
300133	Socket 100 mm	60 mm
300134	Socket 100 mm	80 mm



Bolt Test Bench PN: 19342
Maximum capacity 6.500 Nm

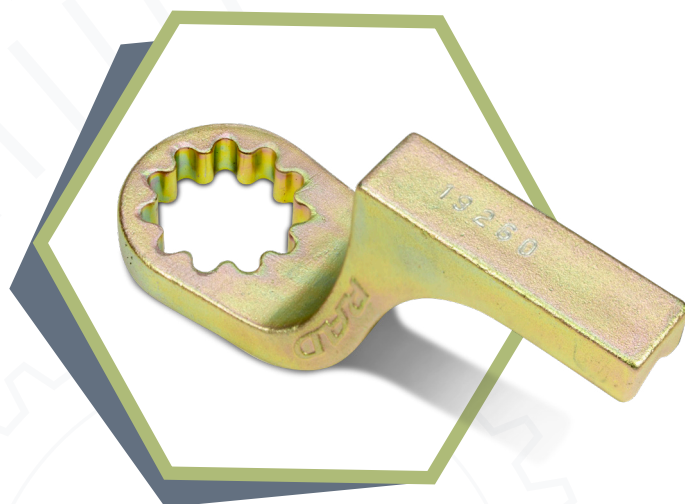
REACTION ARMS

Standard reaction arms:

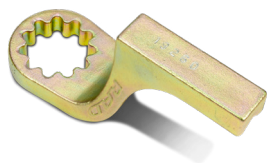
All RAD torque wrenches come with a standard reaction arm to absorb the counterforce while torquing a bolt. These arms are designed for the most common applications.

Custom reaction arms:

If a standard reaction arm is not suitable for the job, Radial is able to quickly provide you with custom engineered reaction arms, fully within safety standards.



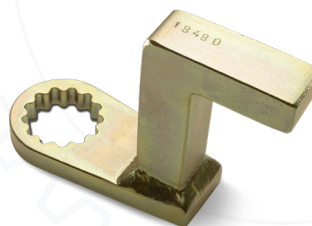
Please double check before ordering if the standard arm is suitable for your job.



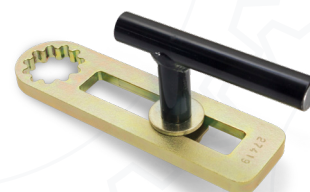
STANDARD



BLANK



DEEP SOCKET



SLIDING

Battery

Tool Model	Standard	Deep socket	Double ended arm	Blank	Safety sliding reaction arm	Retaining ring
(M)B-RAD (SELECT / OFFSET) 275 & 300 (-S)	10686	10687	10688	10036	21243	10306
(M)B-RAD (SELECT / OFFSET / EGX-R) 700 (-S)	19260	13367	13368	13364	25243	12733
(M)B-RAD (SELECT / OFFSET / EGX-R) 1400 (-S) (-2)	19260	13367	13368	13364	25243	12733
(M)B-RAD (SELECT / OFFSET) 2000 (-S) (-2)	23325	18480	19094	17888	25242	17367
(M)B-RAD (SELECT / OFFSET / X) 4000 (-S) (-2)	24639	24814	19094	17888	25242	12733
(M)B-RAD (SELECT / OFFSET / X) 7000	25665	26118	26119	26120	n/a	21455
B-RAD X 10K	23144	13508	13509	13505	n/a	11930
B-RAD X 15K	25664	26157	26158	26159	n/a	18301
SDM Battery 340P	301158	28761	28762	33170	28774	14360
SDM Battery 680P	301158	28761	28762	33170	28774	14360
SDM Battery 1400P	19260	13367	13368	13364	25243	12733
SDM Battery OFFSET 1400P	19260	13367	13368	13364	25243	12733

Electric

Tool Model	Standard	Deep socket	Double ended arm	Blank	Safety sliding reaction arm	Retaining ring
MV-RAD 6	10686	10687	10688	10036	21243	10306
(M)V-RAD (SELECT) 14 & 1400	19260	13367	13368	13364	25243	12733
(M)V-RAD (SELECT) 20 & 2000	14213	18480	19094	17888	25242	17367
MV-RAD 34	20120	18251	10516	10513	27504	10509
(M)V-RAD (SELECT) 40 & 4000	27022	24814	25437	24813	29430	21474
MV-RAD 45	17748	11534	11533	11530	25990	11350
MV-RAD 70	25286	26118	26119	26120	n/a	21455
MV-RAD 80	15840	15788	15790	15373	n/a	15367
MV-RAD 110	23144	13508	13509	13505	n/a	11930
E-RAD (BLU) 950 (-S)	19260	13367	13368	13364	25243	12733
E-RAD (BLU) 2000	14213	18480	19094	17888	25242	17367
E-RAD (BLU) 3400 (-S)	20120	18251	10516	10513	27504	10509
E-RAD (BLU) 4000 (-S)	17748	11534	11533	11530	29430	11350
E-RAD (BLU) 8000 (-S)	15840	15788	15790	16260	n/a	15367
E-RAD BLU 10K (-S)	23144	13508	13509	13505	n/a	11930
E-RAD BLU 15K (-S)	23776	34947	26158	26159	n/a	18301

Pneumatic

Tool Model	Standard	Deep socket	Double ended arm	Blank	Safety sliding reaction arm	Retaining ring
RAD 275 SL (-2)	10686	10687	10688	10036	26594	10306
RAD 475 SL (-2)	10686	10687	10688	10036	26594	10306
RAD 10 GX (-2)	19260	13367	13368	13364	25243	12733
RAD 10 GX-R	13512	12902	n/a	13773	n/a	12733
RAD 14 GX (-2)	19260	13367	13368	13364	25243	12733
RAD 14 GX-NX	13512	12902	n/a	13773	n/a	12733
RAD 20 DX (-2)	14213	18480	19094	17888	25242	17367
RAD 20 DX-NX	19772	n/a	n/a	n/a	n/a	n/a
RAD 20 NDX-R	19772	n/a	n/a	n/a	n/a	n/a
RAD 2400 NG	10004	10007	10009	10005	24283	10014
RAD 2400 NGX-R	13484	13515	13516	13513	n/a	13476
RAD 34 GX (-2)	20120	18251	10516	10513	27504	10509
RAD 40 DX (-2)	27022	24814	25437	24813	29430	21474
RAD 46 GX	17748	11534	11533	11530	25990	11350
RAD 70 DX	25286	26118	26119	26120	n/a	21455
RAD 80 DX	15840	15788	15790	15373	n/a	15367
RAD 110 DX	23144	13508	13509	13505	n/a	11930
RAD 115 GX	23144	13508	13509	13505	n/a	11930
RAD 150 DX	23776	34947	26158	26159	n/a	18301

SDM Battery

Tool Model	Standard	Deep socket	Double ended arm	Blank	Safety sliding reaction arm	Retaining ring
SDM Battery 340P	301158	28761	28762	33170	28774	14360
SDM Battery 680P	301158	28761	28762	33170	28774	14360
SDM Battery 1400P (OFF-SET)	19260	13367	13368	13364	n/a	12733

Accessories

Tool Model	Standard	Deep socket	Double ended arm	Blank	Safety sliding reaction arm	Retaining ring
Nose Extension for 14 GX	11842	13512	n/a	n/a	21292	12733
Nose Extension for 20 DX	19772	20153	n/a	n/a	n/a	12733
Nose Extension for 40 DX	13515	13484	n/a	n/a	n/a	13476

Sliding reaction arms

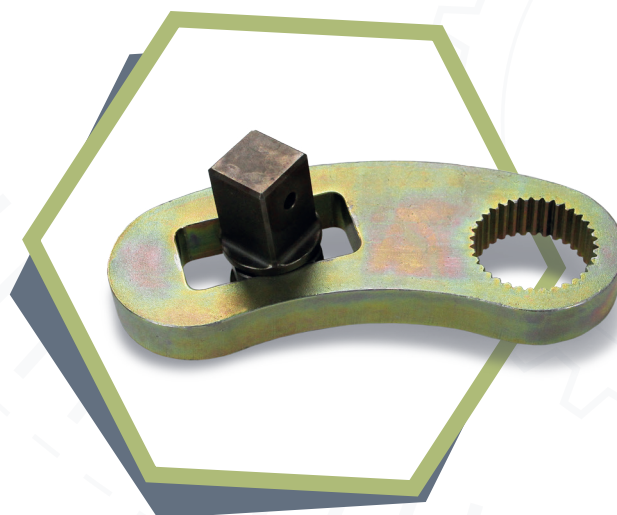
Tool Model	Square drive	Prod.No.	Min. slide	Max. slide
(M)B-RAD (SELECT / OFFSET / EGX-R) 275 & 300 (-S), MV-RAD 6, RAD 275 & 475 SL (-2)	¾"	26594	50 mm	130 mm
(M)B-RAD (SELECT / OFFSET / EGX-R) 700 & 1400 (-S), SDM Battery 1400P (OFFSET), (M)V-RAD (SELECT) 14 & 1400, E-RAD (BLU) 950 (-S), RAD 10 & 14 GX (-2)	¾"	25243	75 mm	180 mm
(M)B-RAD (SELECT / OFFSET) 2000 (-S) (-2), (M)V-RAD (SELECT) 20 & 2000, E-RAD (BLU) 2000, RAD 20 DX (-2)	1"	25242	76 mm	200 mm
RAD 2400 NG	¾"	24283	70 mm	100 mm
(M)V-RAD 34, E-RAD BLU 3400 (-S), RAD 34 GX	1"	27504	80 mm	180 mm
(M)B-RAD (SELECT / OFFSET / X) 4000 (-S) (-2), (M)V-RAD (SELECT) 40 & 4000, RAD 40 DX (-2)	1"	29430	76 mm	190 mm
MV-RAD 45, E-RAD BLU 4000 (-S), RAD 46 GX	1"	25990	75 mm	250 mm

All sliding reaction arms can be adapted to the specific application. If you have specific goals, please fill out the download form from our website or consult your Radial contact.

Custom made reaction arms

If a standard reaction arm is not suitable for the job, Radial is able to quickly provide you with custom engineered reaction arms, fully within safety standards.

In addition to this, blank weldable reaction arms can be supplied for quick and easy customization.



IMPACT SOCKETS



To complete your toolkit, Radial offers a wide variety of impact sockets, available in metric and imperial sizes. All impact sockets are made of hardened steel and manufactured according to Radial's high quality standards. The impact sockets are equipped with a locking pin and an O-ring.

Radial's standard metric impact socket range can be found below. For other sizes, please consult your Radial contact person.

Prod.No.	Size MM	Type	Square drive
200680	17MM	6PT	1/2"
300152	19MM	6PT	1/2"
200681	22MM	6PT	1/2"
300153	24MM	6PT	1/2"
200682	27MM	6PT	1/2"
200683	30MM	6PT	1/2"
300097	32MM	6PT	1/2"
200187	17MM	6PT	3/4"
200188	19MM	6PT	3/4"
200189	22MM	6PT	3/4"
200190	24MM	6PT	3/4"
200210	27MM	6PT	3/4"
300137	29MM	6PT	3/4"
200211	30MM	6PT	3/4"
200212	32MM	6PT	3/4"
200004	36MM	6PT	3/4"
200005	41MM	6PT	3/4"
200006	46MM	6PT	3/4"
200216	50MM	6PT	3/4"
200222	27MM	6PT	1"
200223	30MM	6PT	1"
200224	32MM	6PT	1"
200225	33MM	6PT	1"
200227	36MM	6PT	1"
200228	38MM	6PT	1"
200229	41MM	6PT	1"
200230	46MM	6PT	1"
200007	50MM	6PT	1"
200008	55MM	6PT	1"
200009	60MM	6PT	1"
200010	65MM	6PT	1"
200231	70MM	6PT	1"

Prod.No.	Size MM	Type	Square drive
200233	36MM	6PT	1½"
200234	38MM	6PT	1½"
200235	41MM	6PT	1½"
200251	46MM	6PT	1½"
200237	50MM	6PT	1½"
200238	55MM	6PT	1½"
200297	60MM	6PT	1½"
200196	65MM	6PT	1½"
300052	70MM	6PT	1½"
200197	75MM	6PT	1½"
200241	80MM	6PT	1½"
200198	85MM	6PT	1½"
200298	90MM	6PT	1½"
200199	95MM	6PT	1½"
300053	100MM	6PT	1½"
300060	105MM	6PT	1½"
200209	110MM	6PT	1½"
200435	80MM	6PT	2½"
200247	90MM	6PT	2½"
200438	110MM	6PT	2½"

CALIBRATION SYSTEMS

RAD Transducer series

Torque range: 100 - 24.400 Nm

The accuracy and the repeatability of RAD Calibration benches have earned them an excellent reputation in calibration laboratories around the world. The RAD Tube Style Calibration System was specially designed to calibrate RAD (and similar) torque wrenches. With the Tube Style bench design RAD was able to further reduce torque deflection, therefore increasing the accuracy of the torque reading. The specially designed reaction arm slot allows for much faster calibration of tools.

The system is available in five sizes which can be equipped with two transducer sizes depending on the required torque. The calibration values can be read directly from the transducer screen. In addition, the calibration values can be read and stored by linking the RAD transducer to the supplied tablet using the RAD calibration software.

The RAD Calibration System consists of the Tube Style bench, the transducer, the simulation joint, impact sockets and a preinstalled laptop with the requisite RAD calibration software.

The small calibration systems include:

- RAD Transducer
- Tube Style bench
- Simulation joint
- Washers
- Impact socket
- Pre-installed Windows laptop
- ISO 17025 accredited calibration certificate

The large calibration systems include:

- RAD Smart Socket™ 100 mm / 24.400 Nm
- Tube Style bench
- Simulation joint
- Washers
- Optional pre-installed Windows laptop
- ISO 17025 accredited calibration certificate

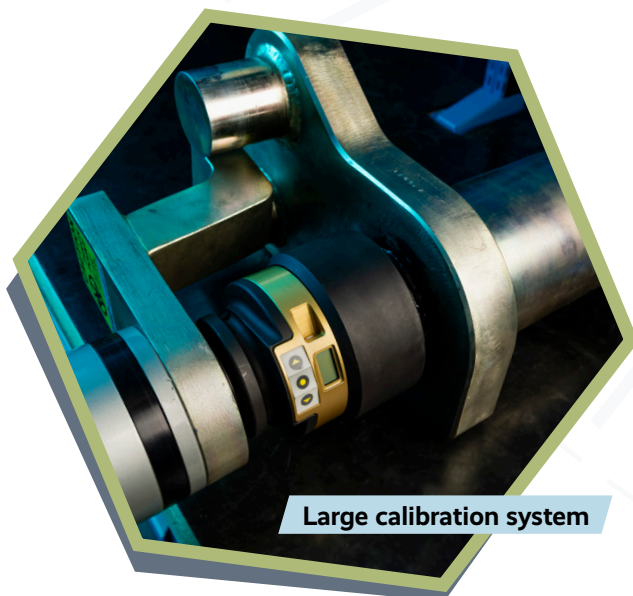


Prod.No.	Model ft.lbs / Nm	Drive size	Torque range	Weight	Dim. L	Dim. H	Dim. W
23442	RAD 1500/2000 CALIBRATION SYSTEM	1"	100 - 2.000 Nm	13,6 Kg	247 mm	138 mm	281 mm
23443	RAD 3500/4750 CALIBRATION SYSTEM	1"	250 - 4.750 Nm	28,9 Kg	368 mm	177 mm	332 mm
23444	RAD 7000/9500 CALIBRATION SYSTEM	1½"	475 - 9.500 Nm	29,3 Kg	368 mm	177 mm	332 mm
30526	RAD 12K/16K CALIBRATION SYSTEM	1½"	800 - 16.200 Nm	106,5 Kg	383 mm	270 mm	501 mm
33736	RAD 18K/24K CALIBRATION SYSTEM*	2½"	1200 - 24.400 Nm	106,5 Kg	383 mm	270 mm	501 mm

*Must be used with a deep reaction arm.

FEATURES:

- Torque range up to 24.400 Nm
- Fully traceable calibration system, with recognized ISO 17025 calibration certificate
- Screen on transducer / Smart Socket™ makes it easy to read calibration value



Large calibration system



Small calibration system

Mobile Calibration System (MCS) EXCLUSIVE

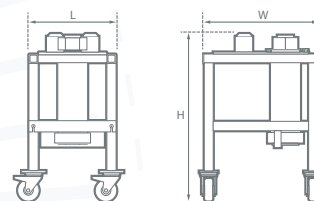
Torque range: 4.000 - 16.200 Nm

For larger capacity torque tools, Radial can provide the MCS calibration bench; This mobile calibration system utilizes standard M72 bolts and the ISO 17025 certified RAD Smart Socket™. With the vertical tool position and the use of standard bolts, this calibration setup closely mimics real-life field applications, such as wind tower flange connections. It features excellent ergonomics due to its vertical calibration position and is highly mobile, thanks to its four caster wheels. In addition to calibrating continuous rotation tools, the MCS is also suitable for static calibrations with a torque range of 1.100 Nm up to 16.200 Nm.



The Mobile Calibration System include:

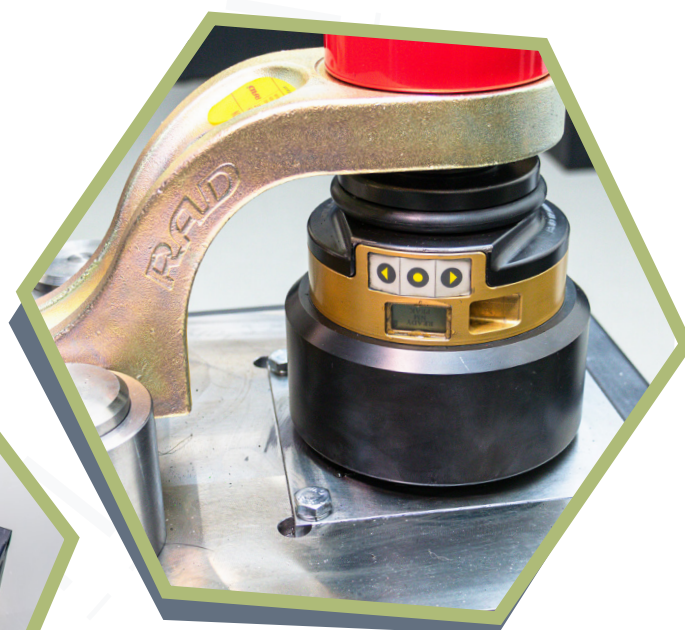
- Bench with bolt set and castor wheels
- RAD Smart Socket™ 110 mm / 16.200 Nm
- 2 additional M72 bolts, washer and nuts
- 1 additional wear plate
- Molykote grease
- Calibration certificate of transducer
- Pre-installed Android tablet
- Including calibration or verification software templates



Prod.No.	Model ft.lbs / Nm	Torque range	Weight	Dim. L	Dim. H	Dim. W
301100	RTT® 12K/16K Mobile Calibration System	4.000 - 16.200 Nm	120 Kg	384	743	504

FEATURES:

- Torque range up to 16.200 Nm
- Fully traceable calibration system, with recognized ISO 17025 calibration certificate



BACKUP WRENCHES

A backup wrench will prevent rotation of the bolt or stud when the nut is being tightened. There is no need to hold the backup wrench in place during tightening, which makes bolting jobs a lot safer. Although the backup wrench will be locked in place after tightening, it can be easily removed by loosening the small hex bolt. Compared to conventional methods with crowbars or spanners with hammers, this solution is substantially safer, especially at high load joints.

The backup wrench consists of two parts: the handle and a spanner cartridge.

FEATURES:

- Hands free operation
- Lightweight
- Robust and flexible
- Mechanical operation - not hydraulic
- Easy and simple to release after mounting the bolt connection
- Maintenance free



The backup wrenches from Radial are available as a complete set or per hex size.

Complete set

Prod.No.	Hex size	Hex type
300754	36 mm - 80 mm	12PT

The set will be supplied in a weatherproof case.

Choose separate handle and cartridges

1. Choose handle

Prod.No.	Model	Suitable for
300789	Handle	36 mm - 80 mm

2. Choose cartridges

Prod.No.	Hex size	Hex type
300790	36 mm	12PT
300791	41 mm	12PT
300792	46 mm	12PT
300793	50 mm	12PT
300794	55 mm	12PT
300795	60 mm	12PT
300796	65 mm	12PT
300797	70 mm	12PT
300798	75 mm	12PT
300799	80 mm	12PT

REMOTE PENDANT CONTROLS



Remote Pendant Controls

For applications where it is required that the operator is distanced from the torque operation, or to enable automated bolt tightening, RAD offers the option of Remote Pendant controls for various models.

Pneumatic:

Commonly used for high pressure valve testing, the Remote Pendant Control allows forward and reverse operation from a distance of up to 10 meters. This allows the valves to be operated safely.



PN: 10180

E-RAD/E-RAD-S:

For the E-RAD Series we offer a special Remote Pendant Control to operate the E-RAD remotely by means of a remote control with a 10 meter cable. The remote control connection on the E-RAD control box is usually used to connect the E-RAD to a robot for automated bolt tightening systems.



PN: 26836

REACTION LOCK WASHER

Reaction arm free bolting

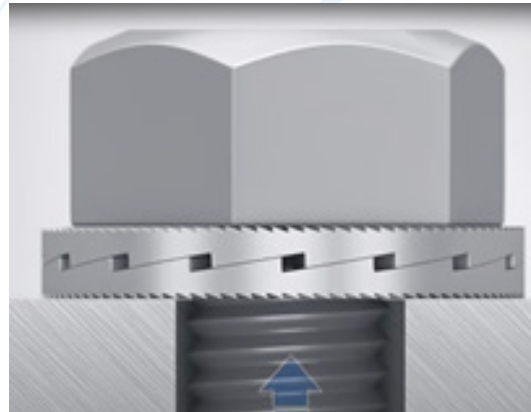
The Reaction Lock Washer is a dual-washer wedge lock system which prevents bolt loosening and avoids the use of a reaction arm during bolting of high torque fasteners with RAD Torque Wrenches.

HOW IT WORKS

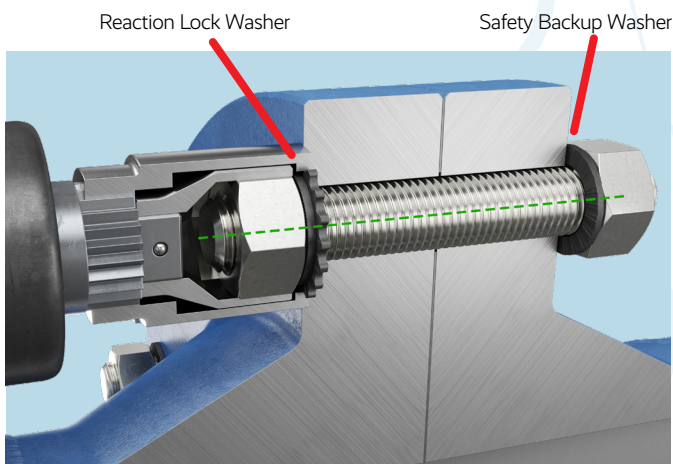
The reaction forces generated by high torque tools are normally countered with reaction arms. This is not necessary with the new Reaction Lock Washer system. Due to the special dual socket that interlocks with the serpentine-shaped outer contour of the Reaction Lock Washer, the tightening torque is introduced axially on the bolt during tightening. During this process, the washers' grooves grip the surface underneath and allows the reaction forces to be transferred through the socket's outer casing. At the same time, it offers an effective and permanent protection against self-loosening due to vibration and dynamic loads that can occur in machines and systems during operation.

ADVANTAGES

- Quick and Easy! No need for additional reaction arms.
- Ideally suited for tight spaces.
- Increases operator safety: No moving parts, prevents finger pinching injuries.
- Easy and quick: Reaction Lock Washers are already glued in pairs.
- Precise tightening due to low friction coefficient variation.
- Permanent protection against self-loosening of the bolt or nut because of dual-ring wedge-lock system.
- Reaction sockets adapted to easily fit most RAD torque wrenches.
- Can still be loosened with traditional tools with reaction arm.
- Can be used on most RAD Torque wrenches up to 8.000 Nm.



HEICO-LOCK® prevents self-loosening.



Use of Reaction Lock Washer in combination with a Safety Backup Washer.



Reaction Lock Washers		RAD Reaction Sockets	Across flange	Drive size
Prod.No.	Model	Model	A/F	Inches
222660	Expected soon	RRS 275 - A/F 22MM - SD ¾"	22MM	¾"
222661	RRW M16	RRS 275 - A/F 24MM - SD ¾"	24MM	¾"
222662	RRW M16	RRS 700 - 1400 - A/F 24MM - SD ¾"	24MM	¾"
222663	Expected soon	RRS 700 - 1400 - A/F 27MM - SD ¾"	27MM	¾"
222664	RRW M20	RRS 700 - 1400 - A/F 30MM - SD ¾"	30MM	¾"
222665	RRW M24	RRS 700 - 1400 - A/F 36MM - SD ¾"	36MM	¾"
222666	RRW M27	RRS 700 - 1400 - A/F 41MM - SD ¾"	41MM	¾"
222667	RRW M30	RRS 700 - 1400 - A/F 46MM - SD ¾"	46MM	¾"
222668	RRW M30	RRS 2000 - A/F 46MM - SD 1"	46MM	1"
222669	Expected soon	RRS 2000 - A/F 50MM - SD 1"	50MM	1"
222670	RRW M36	RRS 2000 - A/F 55MM - SD 1"	55MM	1"
222671	Expected soon	RRS 4000 - A/F 50MM - SD 1"	50MM	1"
222672	RRW M36	RRS 4000 - A/F 55MM - SD 1"	55MM	1"
222673	Expected soon	RRS 4000 - A/F 60MM - SD 1"	60MM	1"
222674	RRW M42	RRS 4000 - A/F 65MM - SD 1"	65MM	1"
222675	RRW M36	RRS 7000 - A/F 55MM - SD 1½"	55MM	1½"
222676	Expected soon	RRS 7000 - A/F 60MM - SD 1½"	60MM	1½"
222677	RRW M42	RRS 7000 - A/F 65MM - SD 1½"	65MM	1½"
222678	RRW M45	RRS 7000 - A/F 70MM - SD 1½"	70MM	1½"
222679	Expected soon	RRS 8000 - A/F 60MM - SD 1½"	60MM	1½"
222680	RRW M42	RRS 8000 - A/F 65MM - SD 1½"	65MM	1½"
222681	RRW M45	RRS 8000 - A/F 70MM - SD 1½"	70MM	1½"
222682	RRW M48	RRS 8000 - A/F 75MM - SD 1½"	75MM	1½"
222683	Expected soon	RRS 8000 - A/F 80MM - SD 1½"	80MM	1½"

TECHNICAL DATA

- Anti-loosening device based on the HEICO-LOCK®.
- Wedge Locking System certified according to DIN 25201.
- Material: 1.1191 (C45E) with black zinc flake coating (flZnnc)
- Hardness: 485±25 HV 0,3.
- Corrosion resistance: min.1,000 h in NSS-test according to ISO 9227.
- Suitable for high-strength bolts and nuts up to strength class 12.9 or 12.
- Bending moment and reaction arm free tightening method
- Available dimensions: M16 - M48 (5/8"- 1 ¾")
- Special sizes, materials and coatings available on request



SAFETY BACKUP WASHER

THE INNOVATIVE SAFETY BACKUP WASHER

The Safety Backup Washer are the ideal solution for counter-holding large bolted joints that are tightened with RAD Battery, electric, or pneumatic torque tools. This innovative washer prevents the bolt/nut from turning on the passive side during the tightening process.

ADVANTAGES

- No additional counter-holding measures or second person required for bolted joint assembly.
- Immediate, effective locking even at low preload forces.
- Ideal for installation in confined spaces.
- Tightening and loosening possible with access from only one side.
- Friction based positive locking.
- Prevention of accidents, no spanners or backup wrenches needed!

DESIGN AND FUNCTION

The Safety Backup Washer is a single washer with wave-shaped locking ribs on both sides, which was specially designed for use with Reaction Lock Washers to prevent the passive side from rotating in through-bolt connections during torque tightening.

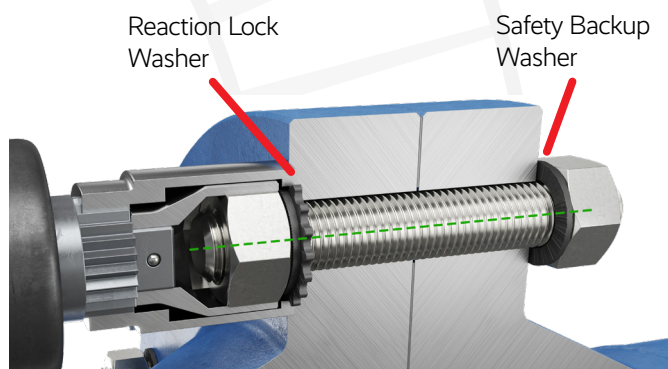


Due to the arrangement of the locking ribs and the wave-shaped design of the Safety Backup Washer, a positive friction/form fit is created even with low tightening forces.

The bolted joint is tightened from the active side. Additional locking with a wrench by a second person or with the help of special tools is unnecessary thanks to the use of the Safety Backup Washer therefore making it safer as well.

TECHNICAL DATA

- Backup-washer for use with Reaction Lock Washer.
- Material: 1.1191 (C45E) with black zinc flake coating (flZnnc).
- Hardness: 485±25 HV0,3.
- Corrosion resistance: min.1,000 h in NSS-test according to ISO 9227.
- Suitable for high-strength bolts and nuts up to strength class 12.9.
- Available dimensions: M16 - M48 (5/8" - 1 3/4").
- Other sizes, materials and coatings available on request.



Use of Safety Backup Washer in combination with a Reaction Lock Washer.

Safety Backup Washers			Reaction Lock Washers		
Prod.No.	Model	A/F	Prod.No.	Model	A/F
222640	BUW M16 - A/F 24MM	24MM	222620	RRW M16 - A/F 24MM	24MM
222641	BUW M18 - A/F 27MM	27MM	222621	RRW M18 - A/F 27MM	27MM
222642	BUW M20 - A/F 30MM	30MM	222622	RRW M20 - A/F 30MM	30MM
222643	BUW M24 - A/F 36MM	36MM	222623	RRW M24 - A/F 36MM	36MM
222644	BUW M27 - A/F 41MM	41MM	222624	RRW M27 - A/F 41MM	41MM
222645	BUW M30 - A/F 46MM	46MM	222625	RRW M30 - A/F 46MM	46MM
222646	BUW M33 - A/F 50MM	50MM	222626	RRW M33 - A/F 50MM	50MM
222647	BUW M36 - A/F 55MM	55MM	222627	RRW M36 - A/F 55MM	55MM
222648	BUW M39 - A/F 60MM	60MM	222628	RRW M39 - A/F 60MM	60MM
222649	BUW M42 - A/F 65MM	65MM	222629	RRW M42 - A/F 65MM	65MM
222650	BUW M45 - A/F 70MM	70MM	222630	RRW M45 - A/F 70MM	70MM
222651	BUW M48 - A/F 75MM	75MM	222631	RRW M48 - A/F 75MM	75MM

TORQUE TOOL FLANGE ROLLER



As modern wind towers continue to grow in output and size, so do the dimensions of their components and the tools used for their erection and maintenance.

In order to facilitate the handling of the bolting tools that are used during the tightening process, Radial Torque Tools has developed the "Torque Tool Flange Roller". This device negates the need for the operator to lift heavy bolting tools from bolt to bolt during the bolting process and reduces operator fatigue dramatically when tightening the countless flange bolts in the wind tower.

Applicability

The roller can be used with various models of RAD Torque wrenches such as the E-RAD and B-RAD X Series, which are able to tighten tower bolts ranging from M42 up to M72. The roller itself weighs in at only 12 kg and can be easily transported and assembled up tower in minutes. The roller can be used more or less wherever the RAD torque tool normally fits as the roller sits lower than the torque tool itself and it hardly extends to the front of the tower flange. In addition, the flange roller is not or hardly deeper than the flange on which it rolls.

Installation method

The roller can be installed in a safe and simple manner: The RAD torque tool is placed as usual on the flange with the traditional reaction arm and socket whereafter the roller

can be placed and locked manually from the front around the RAD multipliers' gearbox. After this, safety catches to prevent toppling of the system need to be adjusted to the bolt height and flange dimensions. If needed, the wheels can be aligned easily to precisely track the curvature of the flange. The entire process only takes 2-3 minutes to set up.

Main advantages

Greatly reduces operator fatigue and increases safety and speed. Standard RAD torque tools can be used, no modifications needed. Mechanical simplicity: easy onsite repair and cable free system. The roller can be adjusted to a wide range of flange dimensions and is free of cables.

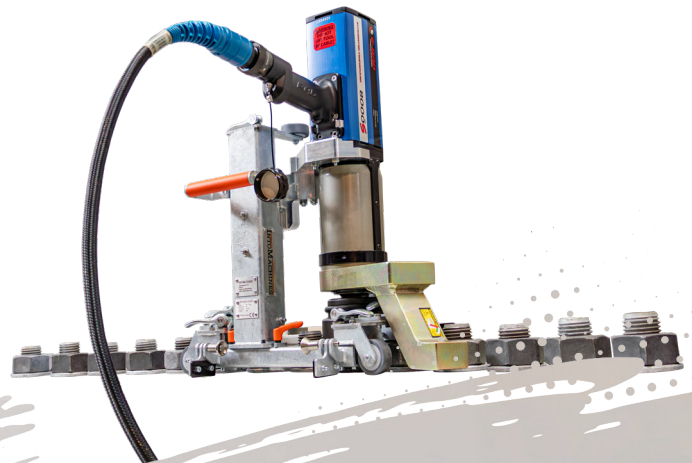
The Torque Tool Flange Roller system contains the following items:

- Roller
- Transportation case

Available models:

- Part. No.: 200803
E-RAD 8000 / B-RAD X 7000
- Part. No.: 200804
E-RAD 15K / B-RAD X 15K

Torque Tool Flange Roller
video



SAFETY

Ergonomics and safety are very important during the design phase of any new RAD tool. We believe that safety features should not impede workplace efficiency and speed but should make workers aware of the risks involved in working with powerful tools.

Investing in ergonomic and safety enhancing products is a wise decision since it will increase workers' safety substantially.



Ergonomics

Safety accessories are available to help reduce operator fatigue & prevent accidental tool operation.



Productivity

We have a variety of safety accessories to meet multiple needs, which help to keep workers safe and results in no injury downtime or lost time due to inspections.



Reliability

Reliability is safety, and this is our priority when designing and manufacturing safety accessories.

Tool safety features:

- Low noise level
- Non impacting
- 360° pistolgrip rotation.

In addition, all RAD torque wrenches include:

- QR code for safety instructions
- Warnings and attention notifications on tool and case
- Operators' manual.

Available ergonomic and safety enhancing products:

- Special Reaction Arms
- Double Safety Trigger Solutions
- Trigger and Hand Guards
- Tool Hangers

Ergonomic features:

- RAD's patented planetary gear reduction drive system delivers 88 times less vibration than impact wrenches. No risk of HAVS injuries (Hand-Arm-Vibration-Syndrome) and the pistol grip trigger/control reduces operator fatigue.
- RAD's low profile reaction arm eliminates all the operational load on the operator.

SPECIAL REACTION ARMS

All RAD tools include a standard reaction arm. In addition to this, you can order special reaction arms to ensure correct reaction for different applications.



All safety sliding reaction arms can be customized to fit the application. If you have specific measurements, please consult your Radial contact person.



SAFETY SOLUTIONS

These systems dramatically reduce the pinching risk with the reaction arm as they force the operator to always have two hands on the tool.

The Double Safety Buttons can be retrofitted on existing RAD torque wrenches.

Double Safety Button for B-RAD - option

All B-RAD torque wrenches can optionally be equipped with a “Double Safety Button”. This optional safety system consists of an extra button on the topside of the tool which need to be pressed simultaneously with the trigger to start operation of the tool.

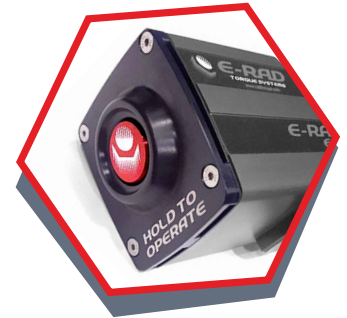
Prod.No.	Double safety button model	Note	Suitable for
25949	B-RAD SELECT Double Safety Button	Hardware only	All B-RADs
25950	B-RAD SELECT Double Safety Button	Mounted on tool	All B-RADs
33501	B-RAD SELECT Smart Safety Button	Hardware only	All B-RADs
33502	B-RAD SELECT Smart Safety Button	Hardware only	Upgrade for all B-RADs with PN: 25950



Double Safety Button for E-RAD - option

The Double Safety Button for E-RAD torque wrenches is an extra button on the backside of the tool which needs to be pressed simultaneously with the trigger to start operation of the tool.

Prod.No.	Double safety button model	Suitable for
28797	Double Safety Button	E-RAD 950, 2000 and 3400
28795	Double Safety Button	E-RAD 4000, 8K, 10K and 15K



Double Safety Trigger for Pneumatic - option

The Double Safety Trigger for all RAD pneumatic series torque wrenches is an extra valve on the back of the tool which needs to be pressed simultaneously with the trigger to start operation of the tool.

Prod.No.	Double safety button model	Suitable for
200142	Double Safety Trigger - NPW 120	100 SL, 275 SL, 475 SL, 10 GX, 14 GX, 20 DX
200143	Double Safety Trigger - NPW 180	34 GX, 40 DX
200144	Double Safety Trigger - NPW 200	46 GX, 70 DX, 80 DX, 110 DX, 150 DX



Trigger and Hand Guard - option

The anodized aluminium hand guard kit keeps the operator's hand protected during the bolting job and can be retrofitted on existing pneumatic tools.

Another item in our range of ergonomic and safety enhancing features is the trigger guard that protects the trigger from accidentally being pressed and the torque wrench being activated.

Prod.No.	Hand guard kit model	Suitable for
21436	Hand guard kit - NPW 120	100 SL, 275 SL, 475 SL, 10 GX, 14 GX, 20 DX
21437	Hand guard kit - NPW 180	34 GX, 40 DX
21600	Hand guard kit - NPW 200	46 GX, 70 DX, 110 DX, 150 DX
21605	Hand guard kit - NPW 200	80 DX
12084	Trigger safety lever	All pneumatic wrenches



Tool Handle & Hanger - option

The RAD tool handle & hanger is an extra handle that can be mounted on the gearbox of a RAD torque wrench for improved ergonomics.

This optional accessory can be ordered with all RAD torque wrenches, except the B-RAD-S and E-RAD-S because of the cable duct on the gearbox to power the built-in transducer. The tool Handles & Hangers are included in all battery torque wrenches from 4.000 Nm up.

Prod.No.	Suitable for
19827	RAD 475 SL, 10 & 14 GX / B-RAD 100 & 475 / (M)B-RAD (SELECT) 275, 700 & 1400 / V-RAD 6, 14 & 1400 / E-RAD BLU 950
19825	RAD 20 DX / (M)B-RAD (SELECT) 950 & 2000 / V-RAD (SELECT) 2000 / E-RAD BLU 2000
19823	RAD 34 GX / V-RAD 31, 34 & 3400 / E-RAD BLU 3400
26751	RAD 40 DX / (M)B-RAD (SELECT) 4000 / V-RAD SELECT 4000
19821	RAD 46 GX / E-RAD BLU 4000 /
26674	RAD 70 DX / MV-RAD 70 / (M)B-RAD (SELECT) (X) 7000
19819	RAD 80 DX / E-RAD BLU 8000 /
22931	RAD 110 DX / E-RAD BLU 10K / B-RAD X 10K
19817	RAD 115 GX
26634	RAD 150 DX / E-RAD BLU 15K / B-RAD X 15K



Rear Handle for B-RAD X - option

Prod.No.	Suitable for
30391	B-RAD X 4000 / B-RAD X 7000 / B-RAD X 10K / B-RAD X 15K



Top Handle for B-RAD X - option

Prod.No.	Suitable for
30392	B-RAD X 4000 / B-RAD X 7000 / B-RAD X 10K
33592	B-RAD X 15K



Trigger guard kit for E-RAD - included

Prod.No.	Suitable for
21889	E-RAD safety trigger guard



PERSONAL SAFETY TIPS

- a. **Stay alert, watch what you are doing, and use common sense when operating a power tool.**
Do not use a power tool while you are tired or under the influence of drugs, alcohol, or medication.
A moment of inattention while operating power tools may result in serious personal injury.
- b. **Use personal protective equipment and always wear eye protection.**
Protective equipment such as a dust mask, non-skid safety shoes, hard hat, and used in appropriate conditions will reduce personal injuries.
- c. **Prevent unintentional starting. Ensure the switch is in the off position before connecting to a power source and/or battery pack, picking up, or carrying the tool.**
Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.
- d. **Remove any adjusting wrench before turning the power tool on.**
A wrench left close to a rotating part of the wrench may result in personal injury.
- e. **Do not overreach. Always keep proper footing and balance.**
This enables better control of the power tool in unexpected situations.
- f. **Dress properly. Do not wear loose clothing or jewelry.**
Keep your hair, clothing, and gloves away from moving parts.
- g. **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.**
A careless action can cause severe injury within a fraction of a second.
- h. **Keep hands away from the reaction arm at all times.**
Keep your hands clear of the reaction arm and joint when the tool is in operation.

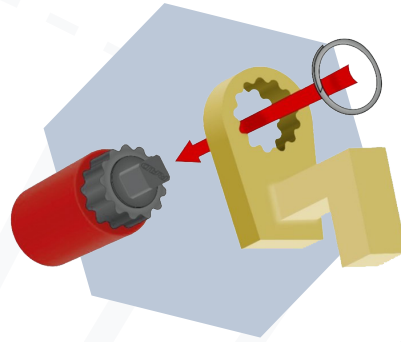


USE OF REACTION ARMS

Please contact Radial Torque Tools B.V. or your local RAD Authorized Distributor for information on custom reaction arms.

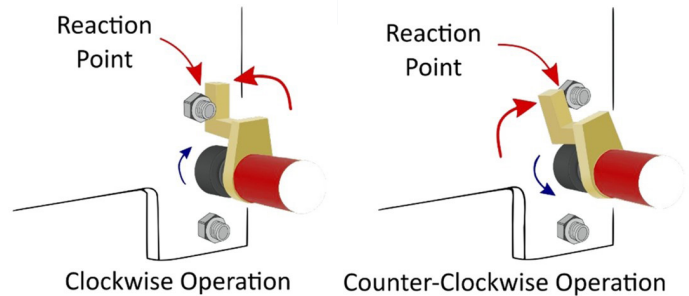
INSTALLING THE REACTION ARM

Slide the reaction arm onto the serpentine fitting and secure the retaining ring to hold the reaction arm in place. Couple the socket and square drive together with a dowel pin and secure with a rubber o-ring.



REACTION POINTS

Make sure that the reaction arm is in contact with a solid reaction point before you operate the tool. When the tool is in operation, the reaction arm rotates in the opposite direction to the output square drive and must be allowed to rest squarely against a solid object or surface adjacent to the bolt to be tightened.



Personal Safety

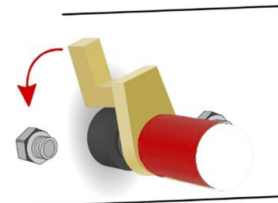


CAUTION!

Keep your hands clear of the reaction arm and joint when the tool is in operation.



Pinch Point



Reaction arm height

Ensure that the height of the socket is even with the height of the reaction arm.

CORRECT:

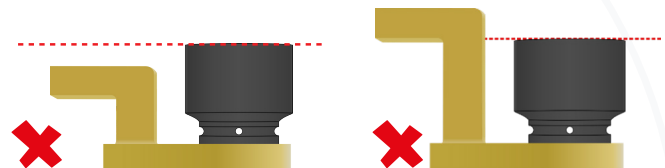
The reaction arm and socket are even.



The height of the socket cannot be shorter or longer than the height of the reaction arm.

INCORRECT:

The leg of the reaction arm is too short in the left image and too long in the right image.



Reaction arm foot

Ensure that the foot of the reaction arm aligns with the reaction point.

CORRECT:

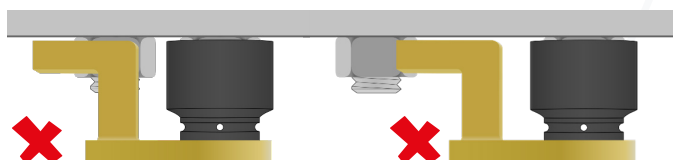
The foot of the reaction arm aligns with the reaction point.



The length of the foot cannot be shorter or longer than the reaction point.

INCORRECT:

The reaction point is too close in the left image and too far in the right image. Do not react against the heel of the reaction arm.



About TrackWrench®

For accurately tightening smaller size bolts, Radial has developed a range of digital manual torque wrenches marketed under the name TrackWrench®. A logical step in meeting the needs of our customers and complementing the RAD range that covers the larger bolt sizes and torques. TrackWrench® products are assembled in Europe and Taiwan and shipped to the customer from our warehouse in The Netherlands. The TrackWrench® solutions are aimed at the professional user and feature advanced functionalities such as datalogging and different tightening strategies. All TrackWrench® torque wrenches are equipped with a torque transducer and have no mechanical, and inaccurate, click system to increase accuracy and reduce the risk of overtorquing.

With our experienced team in the Netherlands, all TrackWrench® customers can rely on quick professional service, know-how and technical support.





EcoTorq-Series – Mini

EcoTorq-Series – Standard

EcoTorq-Series – Angle

EcoTorq-Series

Budget friendly with great specs for the demanding user of torque wrenches. Suitable for rugged conditions and ergonomically designed for repetitive use.

Software Solutions

- Uploader
- RS232 ParaWriter

BlueTorq-Series

Advanced bi-directional torque wrenches with large OLED screen and optional with Bluetooth and vibrating handle.

Software Solutions

- PC Front-End Software
- MasterTorque / CustomTorque
- WheelTorque / BatchCapture Software

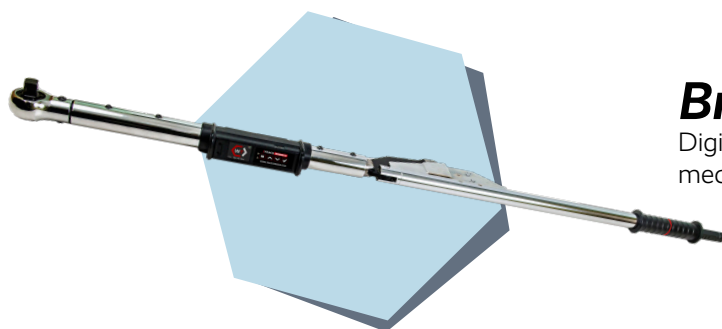


BlueTorq-Series – Super

BlueTorq-Series – Auditor

Vibrating handle upgrade

PN: 222360



BreakTorq-Series

Digital and mechanical torque wrench with breaking mechanism and torque transducer.



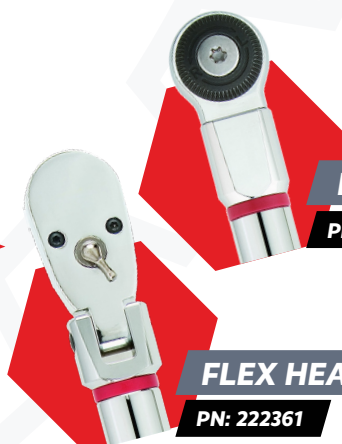
Optional: Wireless Upgrade

- Bluetooth Open Protocol
- 2-Way Bluetooth
Send & Receive

Optional: Vibrating handle

- When torque is reached

Option: Head Upgrade



ISO HEAD

PN: 222360

FLEX HEAD

PN: 222361

TrackWrench®

70 EcoTorq-Series
Torque range: 0.3 - 850 Nm



72 BlueTorq-Series
Torque range: 1 - 2.000 Nm



74 BreakTorq-Series
Torque range: 300 - 1.000 Nm



76 Verification
Test, validation & calibrate



78 Accessories



80 Open ends head



About TrackWrench®

In order to meet the necessities of our customers with low torque applications, Radial offers an extensive range of digital torque wrenches and accessories under the TrackWrench® name.

TrackWrench® products are assembled in Europe and Taiwan and shipped worldwide to customers from Soest, The Netherlands. With our experienced team in The Netherlands, all TrackWrench® customers can rely on quick professional service, know-how and technical facilities.

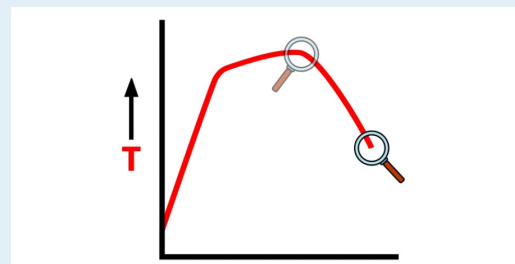
**DIGITAL CONTROL WHICH
ELIMINATES QUALITY ISSUES
COMMON WITH “CLICKER” WRENCHES**

TrackWrench® applied on engine



Highlighted feature: **TRACK**

The torque applied is constantly tracked and displayed on the OLED display of the torque wrench. When the torque is released, the torque value displayed on the display will return to zero. Ready for the next torque application.



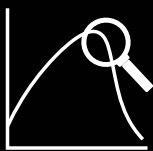
More info on page 84

EcoTorq-Series

Feature	Mini	Standard	Angle
Track	Yes	Yes	Yes
Peak	Yes	Yes	Yes
Presets	9	9	9
Torque & Angle	No	No	Yes
Data storage	250	250	250
Head	Fixed	Fixed/ISO/Flex	Fixed/ISO/Flex
Communication	Yes	Yes	Yes
Torque confirmation buzzer	Yes	Yes	Yes
Torque confirmation LEDs	2	2	12



What's in the box
video



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EcoTorq-Series

Torque range: 0.3 – 850 Nm

Budget friendly with great specs for the demanding torque wrench user. Suitable for rugged conditions and ergonomically designed for repetitive use.

With the digital torque reading, overtorque is eliminated; a common problem with traditional click wrenches.

EcoTorq-Series – The economic choice

- Robust bi-directional fixed ratchet head (Mini only)
- Optional Flexible and ISO (Standard & Angle only)
- Maximum deviation +/- 2% cw, +/- 3% ccw
- Torque only
- Non click
- Includes datalog software
- Strain gauge technology for maximum accuracy.



Accessories on page 78



LIGHT + DURABLE

Suitable for rugged conditions. Ergonomically designed for repetitive use.

TRACEABLE

Transfer data via USB to PC software.

FEEDBACK

Buzzer for Pass/Fail signaling visual indication by LEDs.

QUICK CONTROL

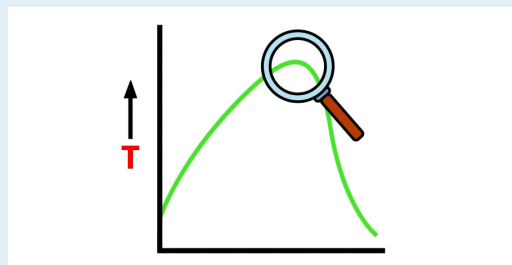
LCD display showing torque values accompanied by 5 control buttons for quick access.

Toolkit	Tool			Torque (Nm)	Ratches	Length	Weight
Model	PN Mini	PN Standard	PN Angle	Range	Inches	mm	Kg
EDW006	222300	-	-	0.3-0.6	1/4"	216	0,2
EDW012	222301	-	-	0.6-12	1/4"	216	0,2
EDW020	222302	-	-	1-20	1/4"	216	0,2
EDW030	222303	222306	222318	1.5-30	1/4"	216	0,2
EDW060	222304	-	-	3-60	3/8"	290	0,3
EDW085	222305	-	-	4.25-85	1/2"	290	0,3
EDW135	-	222309	222321	6.8-135	3/8"	415	n/a
EDW200	-	222312	222324	10-200	1/2"	530	n/a
EDW340	-	222315	222327	17-340	1/2"	650	n/a
EDW500	-	222348	222330	25-500	3/8"	950	n/a
EDW850	-	222349	222331	42.5-850	3/8"	1200	n/a



Highlighted feature: **PEAK**

Peak mode captures and holds the value of the maximum torque that is applied during the bolting job. Store the results directly to the memory of the torque wrench with just one button or continue to the next torque application right away.



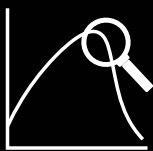
More info on page 84

BlueTorq-Series

Feature	Super	Auditor
Track Torque	Yes	Yes
Peak	Yes	Yes
Presets	99	99
Torque & Angle	No	Yes
Just Move	No	Yes
Just Angle	No	Yes
PC Software	Yes	Yes
Operator Restriction Mode	Yes	Yes
Data storage	2049	2049



What's in the box
video



Feature comparison
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BlueTorq-Series

Torque range: 1 – 2.000 Nm

Advanced bi-directional torque wrenches with large OLED screen and optional with Bluetooth and vibrating handle for the professional user.

With the digital torque reading, overtorque is eliminated; a common problem with traditional click wrenches.

BlueTorq-Series – The professional's choice

- Robust bi-directional interchangeable ratchet head
- Maximum allowed deviation +/- 1% of actual measurement reading
- Torque only and Torque & Angle modes available – see model selection table below
- Custom factory setting with ratchet rotated 90° for vertical applications
- Battery life: 180 hrs
- Languages: English, German, French, Spanish, Italian, Russian, Polish, Portuguese, Chinese
- Units: Nm, ozf.in, lbf.in, lbf.ft, kgf.cm, kgf.m



Accessories on page 78

Compatible with:

Pro Tight



SMART + EASY

Packed full of intelligent features. Easy to master.

LIGHT + DURABLE

Suitable for rugged conditions. Ergonomically designed for repetitive use.

CLEAR + DISTINCT

Bright OLED display with progress bar & buzzer for pass/fail signalling.

TRACEABLE

Transfer data via USB to PC software or upgrade to one of the wireless options.

Toolkit	Tool		Torque (Nm)	Ratches	Length	Weight
Model	PN Super	PN Auditor	Range	Inches	mm	Kg
DW010	221070	221076	1-10	1/4"	410	0,9
DW020	221088	221094	2-20	1/4"	410	0,9
DW050	221106	221112	5-50	3/8"	410	0,9
DW100	221124	221130	10-100	3/8"	410	0,9
DW200	221142	221148	20-200	1/2"	625	1,3
DW340	221160	221166	34-340	1/2"	625	1,3
DW600	221178	221184	60-600	3/4"	1250	4,0
DW800	221196	221202	80-800	3/4"	1360	6,0
DW1000	221232	221238	100-1.000	3/4"	1360	6,0
DW1500	221250	221256	150-1.500	1"	1600	8,0
DW2000	221269	221275	200-2.000	1"	1600	8,0



Highlighted feature: **BREAK MECHANISM**

The breaking mechanism mitigates risk of overtorque due to an ingenious mechanism that breaks when the desired torque is reached. The breaking point is adjustable from 350 Nm to 1000 Nm and the final torque will be displayed on the OLED display of the BreakTorq.



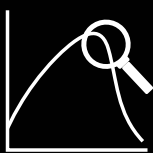
More info on page 84

BreakTorq-Series

Feature	Digital
Track	Yes
Peak	Yes
Presets	99
PC Software	Yes



BREAK MECHANISM
video



Feature comparison
Page 82



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BreakTorq-Series

Torque range: 300 – 1.000 Nm

Digital and mechanical torque wrench with breaking mechanism. To prevent overtightening on high torque levels.

BreakTorq-Series – Break with tradition

- Robust bi-directional interchangeable ratchet head
- Maximum allowed deviation +/- 1% of actual measurement reading
- Breaking repeatability +/- 4%
- Record “as found” results
- Capture set torque for full traceability
- Breaking angle of 20°
- Battery life: 180 hrs
- Includes Wheeltorque software
- Languages: English, German, French, Spanish, Italian, Russian, Polish, Portuguese, Chinese
- Units: Nm, ozf.in, lbf.in, lbf.ft, kgf.cm, kgf.m



Accessories on page 78



SMART + EASY

Packed full of intelligent features. Easy to master.

LIGHT + DURABLE

Suitable for rugged conditions. Ergonomically designed for repetitive use.

CLEAR + DISTINCT

Bright OLED display with progress bar & buzzer for pass/fail signalling.

TRACEABLE

Transfer data via USB to PC software or upgrade to one of the wireless options.

Toolkit		Tool		Torque (Nm)	Ratches	Length	Weight
Model	PN	Range	Inches	mm	Kg		
DBW1000	221290	300-1.000	1"	1370	8,8		

VERIFICATION

Torque testing equipment

Our solution for daily verification of the accuracy of your manual torque wrenches.

Torque range: 1 – 2.000 Nm

Suitable for digital and mechanical torque wrenches with or without breaking mechanism.



Digital Torque Tester
DTT010
Range: 1 – 10 Nm



Digital Torque Tester
DTT020
Range: 2 – 20 Nm



Digital Torque Tester
DTT050
Range: 5 – 50 Nm



Digital Torque Tester
DTT100
Range: 10 – 100 Nm



Digital Torque Tester
DTT200
Range: 20 – 200 Nm



Digital Torque Tester
DTT340
Range: 34 – 340 Nm



Digital Torque Tester
DTT600
Range: 60 – 600 Nm



Digital Torque Tester
DTT800
Range: 80 – 800 Nm



Digital Torque Tester
DTT1000
Range: 100 – 1.000 Nm



Digital Torque Tester
DTT1500
Range: 15 – 1.500 Nm



Digital Torque Tester
DTT2000
Range: 200 – 2.000 Nm



Torque Tester Display
TTD
PN: 221020

Digital Torque Testers

Feature	DTT	BTT
Track	Yes	Yes
Peak	Yes	Yes
Presets	99	99
Click Torque	Yes	Yes
Dynamic Preset	Yes	Yes
PC Software	Yes	Yes

Toolkit	Torque (Nm)	Socket	Height	Weight
Model	Range	Inches	mm	Kg
DTT010	1-10	1/4"	75	0,9
DTT020	2-20	1/4"	75	0,9
DTT050	5-50	3/8"	120	0,9
DTT100	10-100	3/8"	120	0,9
DTT200	20-200	1/2"	120	1,3
DTT340	34-340	1/2"	120	1,3
DTT600	60-600	3/4"	135	4,0
DTT800	80-800	3/4"	147	6,0
DTT1000	100-1.000	3/4"	147	6,0
DTT1500	150-1.500	1"	177	8,0
DTT2000	200-2.000	1"	177	8,0

Calibration Equipment – Straightforward compliance

- Integrated display (BTT only)
- TTD display interchangeable (DTT only)
- Maximum deviation +/- 0.5% of actual reading
- Torque test using torque presets
- Capture first peak & dynamic peak
- Test continuous-drive tools (max.1200 RPM) & hand-driven torque tools
- Languages: English, German, French, Spanish, Italian, Russian, Polish, Portuguese, Chinese
- Units: Nm, ozf.in, lbf.in, lbf.ft, kgf.cm, kgf.m
- Optional bluetooth

BTT



Benchtype Torque Tester
BTT050
Range: 5 – 50Nm



Benchtype Torque Tester
BTT135
Range: 13.5 – 135 Nm



Benchtype Torque Tester
BTT020
Range: 2 – 20 Nm



Benchtype Torque Tester
BTT200
Range: 20 – 200 Nm



Benchtype Torque Tester
BTT340
Range: 34 – 340 Nm



Benchtype Torque Tester
BTT1000
Range: 100 – 1.000 Nm



Benchtype Torque Tester
BTT1500
Range: 150 – 1.500 Nm

SMART + EASY

Packed with intelligent features.
Easy to master.

CLEAR + DISTINCT

Bright OLED display with
progress bar & buzzer for
pass/fail LED signaling
(Torque Tester Display).

ROBUST + ACCURATE

Advanced materials suitable for
rigorous use and highly
accurate testing.

TRACEABLE

Transfer data via USB to PC
software or upgrade to one
of our wireless options.

Toolkit	Torque (Nm)	Socket	Height	Weight
Model	Range	Inches	mm	Kg
BTT020	2-20 Nm	1/4"	88 mm	n/a
BTT050	5-50 Nm	3/8"	88 mm	n/a
BTT135	13.5-135 Nm	3/8"	88 mm	n/a
BTT200	20-200 Nm	1/2"	88 mm	n/a
BTT340	34-340 Nm	1/2"	88 mm	n/a
BTT1000	100-1.000 Nm	1"	88 mm	n/a
BTT1500	150-1.500 Nm	1"	88 mm	n/a

SOCKETS

1/4" WERA SOCKET SET

5mm – 13mm

Part number: 200708



- 9-piece socket set on Velcro strap, 1/4" drive.
- Both for manual and machine use.
- The cap is securely fastened by means of a smooth turning mechanism and can be loosened with a slight twisting movement.
- With "Take it easy" toolfinder: Color coding by size.
- Suitable for mounting on the wall, on your belt, on a workshop trolley or on the WERA2GO tool clamping system.

Scope of supply:

Belt + Velcro

Socket assortment:

•1 x 5.0 x 23.0	•1 x 10.0 x 23.0
•1 x 5.5 x 23.0	•1 x 11.0 x 23.0
•1 x 6.0 x 23.0	•1 x 12.0 x 23.0
•1 x 7.0 x 23.0	•1 x 13.0 x 23.0
•1 x 8.0 x 23.0	

3/8" WERA SOCKET SET

8mm – 19mm

Part number: 200710



- 9-piece socket set on Velcro strap, 1/4" drive.
- Both for manual and machine use.
- The cap is securely fastened by means of a smooth turning mechanism and can be loosened with a slight twisting movement.
- With "Take it easy" toolfinder: Color coding by size.
- Suitable for mounting on the wall, on your belt, on a workshop trolley or on the WERA2GO tool clamping system.

Scope of supply:

Belt + Velcro

Socket assortment:

•1 x 8.0 x 29.0	•1 x 16.0 x 29.0
•1 x 10.0 x 29.0	•1 x 17.0 x 29.0
•1 x 12.0 x 29.0	•1 x 18.0 x 29.0
•1 x 13.0 x 29.0	•1 x 19.0 x 29.0
•1 x 15.0 x 29.0	

1/2" WERA SOCKET SET

10mm – 19mm

Part number: 200712



- 9-piece socket set on Velcro strap, 3/8" drive.
- Both for manual and machine use.
- The cap is securely fastened by means of a smooth turning mechanism and can be loosened with a slight twisting movement.
- With "Take it easy" toolfinder: Color coding by size.
- Suitable for mounting on the wall, on your belt, on a workshop trolley or on the WERA2GO tool clamping system.

Scope of supply:

Pencil case + Velcro

Socket assortment:

•1 x 10.0 x 37.0	•1 x 15.0 x 37.0
•1 x 11.0 x 37.0	•1 x 16.0 x 37.0
•1 x 12.0 x 37.0	•1 x 17.0 x 37.0
•1 x 13.0 x 37.0	•1 x 18.0 x 37.0
•1 x 14.0 x 37.0	•1 x 19.0 x 37.0

1/4" WERA ALLEN SET

2mm – 8mm

Part number: 200709



- 8-piece socket set on Velcro strap, 1/4" drive.
- Hexagon socket bit caps with retention function for hexagon socket/hexagon socket screws
- The cap is securely fastened by means of a smooth turning mechanism and can be loosened with a slight twisting movement.
- With "Take it easy" toolfinder: Color coding by size.
- Suitable for mounting on the wall, on your belt, on a workshop trolley or on the WERA2GO tool clamping system.

Scope of supply:

Belt + Velcro

Socket assortment:

·1 x 2.0 x 28.0	·1 x 5.0 x 28.0HF
·1 x 2.5 x 28.0	·1 x 6.0 x 28.0HF
·1 x 3.0 x 28.0HF	·1 x 7.0 x 28.0HF
·1 x 4.0 x 28.0HF	·1 x 8.0 x 28.0HF

3/8" WERA ALLEN SET

3mm – 10mm

Part number: 200711



- 8-piece socket set on Velcro strap, 1/4" drive.
- Hexagon socket bit caps with retention function for hexagon socket/hexagon socket screws
- The cap is securely fastened by means of a smooth turning mechanism and can be loosened with a slight twisting movement.
- With "Take it easy" toolfinder: Color coding by size.
- Suitable for mounting on the wall, on your belt, on a workshop trolley or on the WERA2GO tool clamping system.

Scope of supply:

Belt + Velcro

Socket assortment:

·1 x 3.0 x 35.0HF	·1 x 7.0 x 38.5HF
·1 x 4.0 x 35.0HF	·1 x 8.0 x 38.5HF
·1 x 5.0 x 35.0HF	·1 x 9.0 x 38.5HF
·1 x 6.0 x 35.0HF	·1 x 10.0 x 38.5HF

1/2" WERA ALLEN SET

4mm – 10mm

Part number: 200713



- 6-piece socket set on Velcro strap, 1/2" drive.
- Both for manual and machine use.
- The cap is securely fastened by means of a smooth turning mechanism and can be loosened with a slight twisting movement.
- With "Take it easy" toolfinder: Color coding by size.
- Suitable for mounting on the wall, on your belt, on a workshop trolley or on the WERA2GO tool clamping system.

Scope of supply:

Pencil case + Velcro

Socket assortment:

·1 x 4.0 x 60.0HF	·1 x 7.0 x 60.0HF
·1 x 5.0 x 60.0HF	·1 x 8.0 x 60.0HF
·1 x 6.0 x 60.0HF	·1 x 10.0 x 60.0HF

For 3/4" and 1" sockets see page 51

OPEN END HEADS

Prod.No.	Open end head size	End fitting ISO shank size
221300	6 mm	9x12
221301	7 mm	9x12
221302	8 mm	9x12
221303	9 mm	9x12
221304	10 mm	9x12
221305	11 mm	9x12
221306	12 mm	9x12
221307	13 mm	9x12
221308	14 mm	9x12
221309	15 mm	9x12
221310	16 mm	9x12
221311	17 mm	9x12
221312	18 mm	9x12
221313	19 mm	9x12
221314	20 mm	9x12
221315	21 mm	9x12
221316	22 mm	9x12
221317	23 mm	9x12
221318	24 mm	9x12
221319	25 mm	9x12
221320	26 mm	9x12
221321	27 mm	9x12
221322	28 mm	9x12
221323	29 mm	9x12
221324	30 mm	9x12
221325	31 mm	9x12
221326	32 mm	9x12
221327	33 mm	9x12
221328	34 mm	9x12
221329	35 mm	9x12
221330	36 mm	9x12
221331	37 mm	9x12
221332	38 mm	9x12
221333	41 mm	9x12
221334	45 mm	9x12
221335	46 mm	9x12
221336	49 mm	9x12
221337	50 mm	9x12
221338	52 mm	9x12
221339	55 mm	9x12
221340	60 mm	9x12
221341	65 mm	9x12
221342	67 mm	9x12
221343	80 mm	9x12

Prod.No.	Open end head size	End fitting ISO shank size
221400	8 mm	14x18
221401	9 mm	14x18
221402	10 mm	14x18
221403	11 mm	14x18
221404	12 mm	14x18
221405	13 mm	14x18
221406	14 mm	14x18
221407	15 mm	14x18
221408	16 mm	14x18
221409	17 mm	14x18
221410	18 mm	14x18
221411	19 mm	14x18
221412	20 mm	14x18
221413	21 mm	14x18
221414	22 mm	14x18
221415	23 mm	14x18
221416	24 mm	14x18
221417	25 mm	14x18
221418	26 mm	14x18
221419	27 mm	14x18
221420	28 mm	14x18
221421	29 mm	14x18
221422	30 mm	14x18
221423	32 mm	14x18
221424	33 mm	14x18
221425	34 mm	14x18
221426	35 mm	14x18
221427	36 mm	14x18
221428	37 mm	14x18
221429	38 mm	14x18
221430	39 mm	14x18
221431	40 mm	14x18
221432	41 mm	14x18
221433	42 mm	14x18
221434	43 mm	14x18
221435	44 mm	14x18
221436	45 mm	14x18
221437	46 mm	14x18
221438	48 mm	14x18
221439	49 mm	14x18
221440	50 mm	14x18
221441	52 mm	14x18
221442	55 mm	14x18
221443	57 mm	14x18
221444	60 mm	14x18
221445	65 mm	14x18
221446	70 mm	14x18
221447	72 mm	14x18
221448	75 mm	14x18
221449	80 mm	14x18
221450	90 mm	14x18

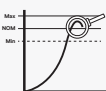
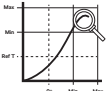
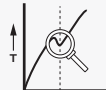
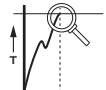
Prod.No.	Open end head size	End fitting ISO shank size
221500	19 mm	24x32
221501	20 mm	24x32
221502	22 mm	24x32
221503	24 mm	24x32
221504	27 mm	24x32
221505	28 mm	24x32
221506	30 mm	24x32
221507	32 mm	24x32
221508	34 mm	24x32
221509	36mm	24x32
221510	38 mm	24x32
221511	41 mm	24x32
221512	45 mm	24x32
221513	46 mm	24x32
221514	50mm	24x32
221515	55 mm	24x32
221516	57 mm	24x32
221517	60 mm	24x32
221518	62 mm	24x32
221519	65 mm	24x32
221520	67 mm	24x32
221521	68 mm	24x32
221522	70 mm	24x32
221523	75 mm	24x32
221524	80 mm	24x32
221525	85 mm	24x32
221526	95 mm	24x32

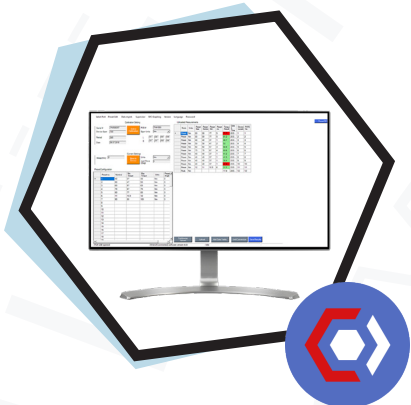
Prod.No.	Open end head size	End fitting ISO shank size
221600	27 mm	27x36
221601	30 mm	27x36
221602	32 mm	27x36
221603	34 mm	27x36
221604	36 mm	27x36
221605	38 mm	27x36
221606	41 mm	27x36
221607	45 mm	27x36
221608	46 mm	27x36
221609	50 mm	27x36
221610	55 mm	27x36
221611	60 mm	27x36
221612	65 mm	27x36
221613	70 mm	27x36
221614	75 mm	27x36
221615	80 mm	27x36
221616	85 mm	27x36
221617	90 mm	27x36
221618	95 mm	27x36
221619	100 mm	27x36



FEATURE COMPARISON

Below an overview of the software features on TrackWrench® manual torque wrenches. All wrenches are CE certified, digital, and bi-directional.

	 EcoTorq-Series 0.3 - 850 Nm	 BlueTorq-Series 1 - 2.000 Nm	 BreakTorq-Series 300 - 1.000 Nm
 Track Torque	✓	✓	✓
 Peak Torque	✓	✓	✓
 Preset Torque	✓	✓	✓
 Preset Torque + Angle	✓	✓	✓
 Just Move	✗	✓	✗
 Just Angle	✗	✓	✗
 PC FrontEnd	✗	✓	✓
 WheelTorque/ BatchCapture	✗	✓	✓
 MasterTorque/ CustomTorque	✗	✓	✓
 Uploader/ RS232 ParaWriter	✓	✗	✗

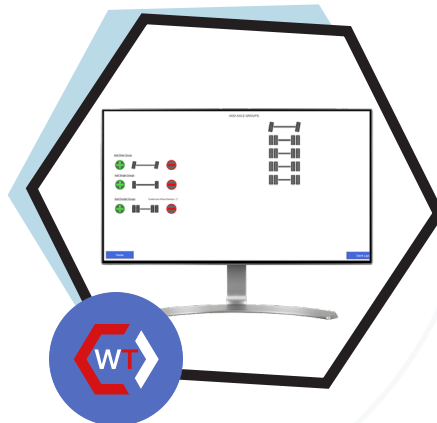


PC Front-End Software (BlueTorq Series Only)

Our digital torque wrench comes standard with our PC FrontEnd. Features include statistical process control, export options and wireless communication.

Wheel-Torque Software (BlueTorq Series Only)

A revolution in wheel-torque management & safety. Features include add vehicle, configure axle groups, configure stud settings and follow nut sequence.



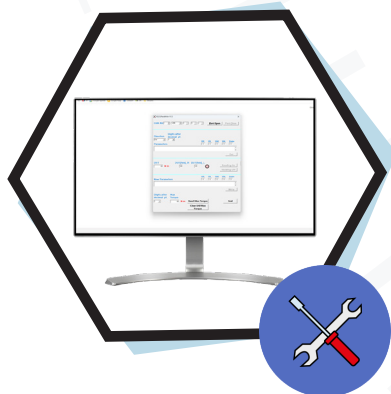
BatchCapture Software (BlueTorq Series Only)

BatchCapture is part of the WheelTorque program. Features include create smart present, load smart present and export smart preset.

MasterTorque / CustomTorque (EcoTorq Series Only)

MasterTorque allows users to manage user accounts, and create customized tightening sequences. The software supports adding application-specific images and defining bolt configurations visually.

Once set up, it guides the operator step-by-step through the tightening process and logs the results. MasterTorque also enables report printing and integrates personal branding options.



Uploader / RS232 ParaWriter

The RS232 ParaWriter is Windows software that transfers torque data from the digitale torque wrench to a PC via an RS-232 port. It allows easy export of up to 250 readings for analysis.

RTT special solutions

Next to the well-known line up of RAD products, Radial Torque Tools also offers a range of tailor-made complementary tools and accessories for challenging bolting jobs.

Think of safety accessories, Industry 4.0 solutions, custom reaction arms and specially adapted RAD tools. Below is a list of these "RTT" solutions which are marked with the special logo throughout this catalogue.

RTT Tools:

MB-RAD series

SDM battery series

RTT Accessories:

B-RAD Drop Prevention

Torque Tool Flange Roller

Pneumatic Double Safety Trigger

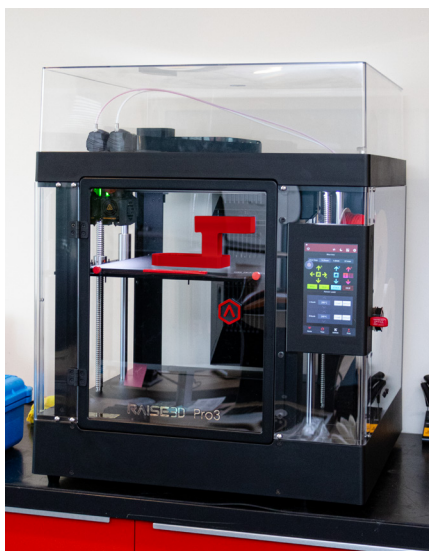
Pneumatic ATEX

Impact Sockets

ProTight™ for MB RAD / TrackWrench®

3D Printing

In addition to the above off-the-shelf solutions, Radial offers a comprehensive reaction arm design service. On request, our engineering department designs custom reaction arms with our 3D software and performs strength and safety calculations. In addition, we have recently extended this process with on demand 3D printing of reaction arm prototypes for precise fitment on the application.



RTT PRODUCTS

MB-RAD



Double Safety Trigger



ATEX



SDM Battery



Battery Drop Prevention



Torque Tool Flange Roller



ProTight™



ProTight™

MB-RAD and B-RAD-S with process control software

Radial Torque Tools B.V. is proud to announce its cooperation with ProSuite®, the software developing company for ProTight™ bolting process control.

As a result, the MB-RAD and B-RAD-S work with ProTight™, a combination that provides complete control over the bolt tightening process.

Instructs the user per bolt what the prescribed procedure is and what tightening torque and/or angular rotation is required. This ensures that each bolt is at the prescribed torque, that bolts are torqued in the correct sequence, and that no bolts can be 'missed'. In addition, every action is logged in the system so that everything can be found and checked afterwards.

Open protocol

The MB-RAD and B-RAD-S wrenches are able to connect with ProTight™ by means of enabling the open protocol option in the tool menu.

With this option enabled, the MB-RAD and B-RAD-S can exchange data with the ProTight™ program. The ProTight™ software runs on a laptop or Windows equipped tablet (connects through Wi-Fi or LAN). After successful connection of the system, a bolting job can be configured by setting torque/angle pre-sets in the MB-RAD and B-RAD-S. In the ProTight™ program, it is possible to configure the bolting sequence as well with a barcode and to specify the operator. For "live" viewing and data logging, a connection to the customers' network can be configured. All actions are also stored in the customer's production management system so that it is always possible to check afterwards how the work has been carried out.

Error free operation

The ProTight™ system ensures that the operator will be precisely instructed how to use the MB-RAD and B-RAD-S so that all bolts are tightened according to procedure and each job can be logged live in the customers' ERP system for 100% traceability.

ProTight™ actively controls the MB-RAD and B-RAD-S based on the scanned barcode, and subsequently engages the correct torque preset in the MB-RAD and B-RAD-S. It then visually indicates the required actions and bolting sequence on screen and counts whether all bolts have been tightened. During the bolting process, the operator is visually and audibly updated on the status of the job in progress.

If bolts have been skipped or are tightened for a second time, ProTight™ detects this and forces the operator to take action. If an error alarm is ignored by the operator, the job will not be completed correctly and the printed sticker will indicate an incomplete job.

If later this sticker is scanned again, the system will indicate which bolt still has to be tightened before it will print the OK sticker. In this way the system is still flexible and all results are directly visible with the sticker on the final product. Without scanning a correct job, the MB-RAD and B-RAD-S remain disabled by the program so that mistakes are prevented.

The end result is that there is 100% certainty that the job has been done correctly, and with the clear visual instruction, a non-trained operator can learn the job very quickly.



ProTight™

ProTight™ system consists of the following components:



- MB-RAD / B-RAD-S – all torque models, with the latest software update
- ProTight™ software
- Barcode scanner, label printer, USB Hub, Stack light and Bluetooth receiver (can be delivered in a case).

INDUSTRY4.0

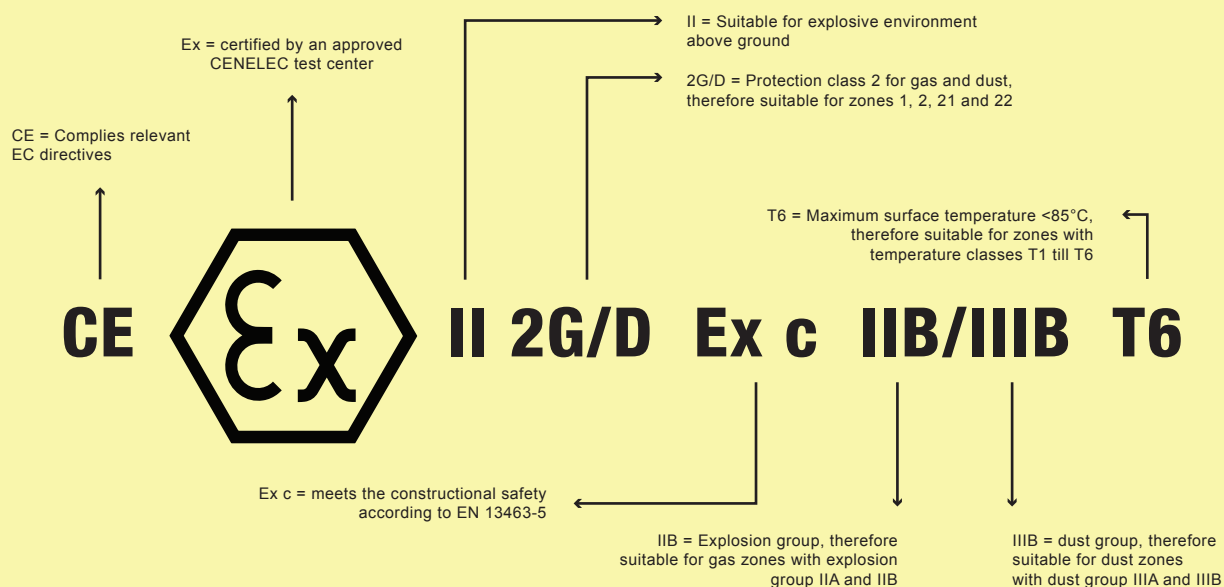
ATEX CERTIFICATION

In order to increase safety in explosion hazardous environments, Radial has developed an ATEX kit which can be optionally ordered or retrofitted on your existing RAD pneumatic toolkit.

RAD ATEX pneumatic torque wrenches have been independently tested and approved by Bureau Veritas. Their recommendations and RAD's subsequent tool modifications have resulted in the below classification, which means our tools can be officially used in ATEX zones 1, 2, 21 and 22.

This classification makes the tool suitable for most applications in Oil & Gas and Petrochemical industries.

The Radial ATEX kit is completely grounded, has non static hoses and connectors and is tested according to protocol before delivery. Each set comes with a test certificate.



Registration number: LCIE 15 AR 039



ATEX CERTIFICATION

TRAINING PROGRAMS

To optimize worker safety, productivity and bolting knowledge, Radial is ready to assist our customers and distributors with several custom-made training programs for using, maintaining or promoting Radial products.

Here below an overview of the training programs we offer. Please contact your sales representative for more details and scheduling.

Training description	Duration	Group size	Cost p.p.	Location	Including
Controlled bolting theory & practice	Full day	Min 2, max 5	250,- Euro	Radial Training Centre	Lunch, certificate, training booklet
Bolting Safety training	Half day	Min 2, max 5	150,- Euro	Onsite or Radial Training Centre	Certificate, training booklet
On site application training	Half day	Min 2, max 8	150,- Euro	Onsite only	Certificate, training booklet
Distributor sales training	Full day	Min 2, max 5	250,- Euro	Radial Training Centre	Lunch, certificate, training booklet
Distributor social media training	Half day	Min 1, max 4	250,- Euro	Onsite or Radial Training Centre	Certificate, training booklet
Tool repair training	Half day	Min 1, max 4	150,- Euro	Radial Training Centre	Certificate, training booklet
Tool repair training XL	Full day	Min 1, max 4	250,- Euro	Radial Training Centre	Certificate, training booklet, lunch
Tool calibration training	Half day	Min 1, max 4	200,- Euro	Radial Training Centre	Certificate, training booklet

For onsite training requests, please note that travel and accommodation cost for the trainer will be charged. Prices as mentioned are per person, for distributors the usual discount code 1 applies.

Training hours Radial Training Centre

Half day : 09.00 till 12.30
 Full day training : 09.00 till 12.30 – 13.15 till 16.15
 Location : Soest, The Netherlands





RADIAL TRAINING PROGRAMS

REPAIR & CALIBRATION SERVICE

Since 2011, we have been authorized by RAD Torque in Canada to service RAD tools. Over the years, our equipment and team have become even more professionalized. With the opening of our new facility in Soest in 2023, we now have a truly state-of-the-art repair and calibration center.

Authorized Repair & Calibration Department

Our services include factory-approved calibrations, gearbox overhauls, electronics repairs, and the processing of warranty cases on behalf of RAD. All RAD tools undergo repair by factory-trained technicians who use original RAD spare parts, and the repairs are accompanied by a 3-month warranty.

Equipped with specialized tools for gearbox opening and electronic testing equipment, our technicians facilitate efficient and professional repairs. Given our responsibility for distributing RAD tools and spare parts throughout Europe, Central Asia, and North Africa we maintain a substantial inventory of spare parts to ensure swift repair services.



Torque Multiplier Calibration up to 24.400 Nm

Our calibration services cover torque multipliers up to 24.400 Nm. All RAD calibrations adhere to factory standards and are performed on our dynamic calibration benches within our controlled climate calibration room. We utilize cutting-edge measurement technology to simulate real-world applications and conditions. In some cases, we employ the customer's own bolts to calibrate their wrench, ensuring the highest possible accuracy.

Torque Transducers

Every year, all of our torque transducers undergo calibration using 'Weight and Beam' systems at the ISO 17025 certified NWT calibration laboratory in Canada. Additionally, we crosscheck our transducers in-house on a weekly basis. Our capabilities extend to dynamic and static calibrations up to 24.400 Nm.

Please note that we do not provide calibration services for pressure gauges.





Manual Torque Wrenches ISO 6789

In our calibration room, we also perform calibrations on manual torque wrenches, adhering to ISO 6789 standards. Our certified calibration benches enable us to calibrate and verify various brands and types of manual wrenches, including clicker, dial, break, digital, and more.

Additionally, we offer repair services for all TrackWrench® models. If a wrench is deemed non-repairable, we can provide a replacement unit.

Certification for Electrical Equipment: NEN 3140

In accordance with the European NEN 3140 standard, all electrical tools which are used in professional settings must be annually checked for electrical safety. At Radial, we include a NEN 3140 inspection for all the tools we repair and calibrate.



OutSmart - Online Service Tracker

Embracing a paperless approach, our service department allows customers to submit repair or calibration requests seamlessly through the 'OutSmart' section on our website. Upon entering your repair job, you can easily track its status as it advances through our repair process. Each repair is digitally stored, complete with photos, and an automated repair estimate is automatically forwarded to the customer. Furthermore, each tool is stored with a comprehensive digital service history, encompassing certificates and relevant information.

TORQUE TOOL RENTAL

Our rental range consists of battery powered and electric torque wrenches from 50 – 15.000 Nm. In addition to the wrenches listed below, Radial has an extensive range of reaction arms, sockets and safety accessories.

If your company is located in the Benelux, please take a look at the rental form or e-mail your phone number and we call you back. If you want to rent a RAD torque wrench and you are not located in the Benelux, please contact your local RAD authorised reseller.

A large part of the Radial product portfolio is available for rent. See the below for the products in the rental service.

Short and long term rental.

The tools are available for rental periods with a minimum of 2 days or for several weeks or even months. Contact our rental department at rental@radialtorque.eu for a quotation that fits your needs.

Rent to buy

In case you have rented one or more tools and wish to purchase a tool we offer a discount to use part of the paid rental fees for purchasing a new tool.

Reasons to rent

- No capital investment needed
- Repairs, maintenance and calibration are taken care of
- Torque tool need is only a couple of times per year
- To cover a higher or lower torque range than your existing tool range
- For an extended test to find the best tool for the job.



Battery

Prod.No.	Model	Bolt sizes	Range
29594RD	B-RAD SELECT 275	M10 - M20	50 - 250 Nm
28264RD	B-RAD SELECT 700	M16 - M27	170 - 700 Nm
28266RD	B-RAD SELECT 1400	M20 - M33	540 - 1.400 Nm
28268RD	B-RAD SELECT 2000	M24 - M36	400 - 2.000 Nm
28270RD	B-RAD SELECT 4000	M27 - M42	800 - 4.000 Nm
28272RD	B-RAD SELECT 7000	M36 - M56	1.350 - 7.000 Nm
200921RD	MB-RAD 700	M10 - M20	70 - 700 Nm
200922RD	MB-RAD 1400	M16 - M27	140 - 1.400 Nm
200924RD	MB-RAD 2000	M24 - M36	200 - 2.000 Nm
200926RD	MB-RAD 4000	M27 - M42	400 - 4.000 Nm
200928RD	MB-RAD 7000	M36 - M56	700 - 7.000 Nm
30984RD	B-RAD X 4000	M27 - M42	400 - 4.000 Nm
30657RD	B-RAD X 7000	M36 - M56	700 - 7.000 Nm
30659RD	B-RAD X 10K	M45 - M56	1.000 - 10.850 Nm
30661RD	B-RAD X 15K	M56 - M72	1.500 - 15.000 Nm

*Includes storage case, reaction arm, 2 batteries with charger, manual and safety instructions.

Electric

Prod.No.	Model	Bolt sizes	Range
25634RD	MV-RAD 20	M24 - M36	215 - 2000 Nm
200282RD	MV-RAD 34-90°	M24 - M36	340 - 3.400 Nm
200284RD	MV-RAD 45	M27 - M42	450 - 4.500 Nm
200345RD	MV-RAD 70-90°	M30 - M48	700 - 7.000 Nm
200286RD	MV-RAD 80	M36 - M56	800 - 8.000 Nm
21985RD	E-RAD BLU 950	M16 - M26	135 - 950 Nm
21986RD	E-RAD BLU 3400	M24 - M36	340 - 3.400 Nm
21987RD	E-RAD BLU 4000 (1")	M27 - M42	675 - 4.500 Nm
21988RD	E-RAD BLU 8000	M36 - M52	1.385 - 8.100 Nm
21989RD	E-RAD BLU 10K	M45 - M56	2.000 - 10.000 Nm
24224RD	E-RAD BLU 15K	M56 - M72	4.000 - 15.000 Nm

*Including storage case, reaction arm, manual and safety instructions.



Pneumatic

Prod.No.	Model	Bolt sizes	Range
13549RD	RAD 14 GX	M20 - M33	275 - 1.400 Nm
19135RD	RAD 20 DX	M20 - M36	400 - 2.000 Nm
13571RD	RAD 46 GX	M30 - M48	1.200 - 4.000 Nm
15805RD	RAD 80 DX	M36 - M56	2.700 - 8.000 Nm

*Includes storage case, FRL, reaction arm, manual and safety instructions.

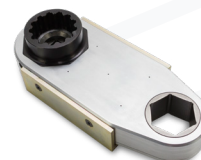


All pneumatic torque wrenches can be rented with ATEX certification.

Offset Multipliers

Prod.No.	Model
16550RD	HX Offset Multiplier - 80 mm AF
27486RD	CX Offset Multiplier - 46 mm AF
27978RD	CX Offset Multiplier - 50 mm AF
28540RD	CX Offset Multiplier - 65 mm AF

*Including storage case, tool insert (max. 4.000 Nm gearbox) and reaction arm (HX only).



Impact sockets

Prod.No.	Model	Drive size
On request	24 mm to 46 mm	3/4"
On request	50 mm to 65 mm	1"
On request	70 mm to 85 mm	1,5"
On request	90 mm to 110 mm	1,5"



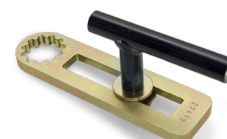
Hexagon socket caps

Prod.No.	Model
On request	17 mm to 27 mm



Sliding reaction arms

Prod.No.	Model
25243RD	For 700, 1.000 and 1.400 Nm RAD torque wrenches
25242RD	For 2.000 Nm RAD torque wrenches
25987RD	For 3.400 and 4.000 Nm RAD torque wrenches



Backup wrenches

Prod.No.	Hex size
300172RD	No-Flog® 36 mm & 41 mm
300136RD	No-Flog® 46 mm & 50 mm
300133RD	No-Flog® 55 mm & 60 mm
300173RD	No-Flog® 65 mm & 70 mm
300134RD	No-Flog® 75 mm & 80 mm
300130RD	No-Flog® 95 mm & 100 mm
300128RD	No-Flog® 105 mm & 100 mm

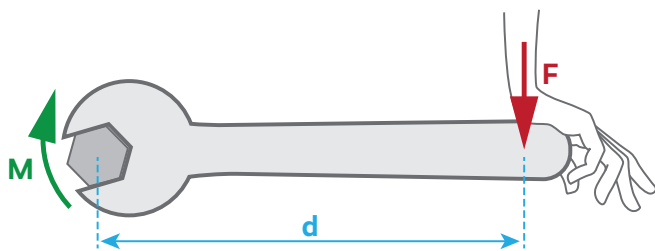


Prices are per business day. Weekends are not calculated.

TORQUE PRINCIPLES

Torque

Torque is the measure of rotational force applied to an object that causes it to rotate around an axis. The unit of torque is Newton-meter (Nm) in the International System of Units (SI). In the imperial system, it is commonly measured in foot-pounds (ft-lb).



If you apply a force (F) of 10 kilograms at the end of a 1 meter long wrench (d), you create a torque (M) of 100 Nm.

Preload

Bolt preload is the amount of tension that is applied to a bolt. The purpose of bolt preload is to create a clamping force that holds the joint components together. It helps to prevent the bolts from loosening due to vibration or thermal changes, and to maintain the stability and integrity of the bolted joint connection.

Torque tightening

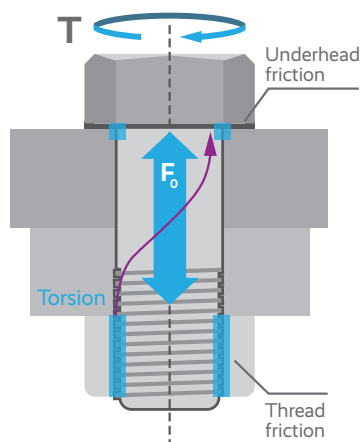
Torque tightening is the process of applying a specific torque (or rotational force) to a fastener such as a bolt or nut, in order to secure two or more parts together with a specific level of clamping force.

When the right amount of torque is applied, the bolt is stretched just so that it can act as a spring to hold separate steel parts together. Too little torque: parts aren't properly tightened, too much torque: can lead to bolt failure. Both making it structurally unsafe.

There are several factors that can affect the amount of torque needed to tighten a bolt:

- **Bolt size and material:** the size and material of the bolt will determine how much force is required to tighten it to the desired level. Larger bolts and nuts made of harder materials will typically require more torque.
- **Surface condition:** the condition of the surfaces that the bolt is being tightened against can also affect the amount of torque needed. Surfaces that are rough, dirty, or corroded will require more torque to tighten the bolt.
- **Lubrication:** the use of a lubricant, such as oil or grease, can reduce friction and lower the amount of torque needed to tighten a bolt at the desired clamp load.
- **Friction:** friction between the bolt and the threads, as well as between the bolt head and the material it is being tightened against, will affect the amount of torque required. Higher levels of friction will require more torque to tighten the bolt.

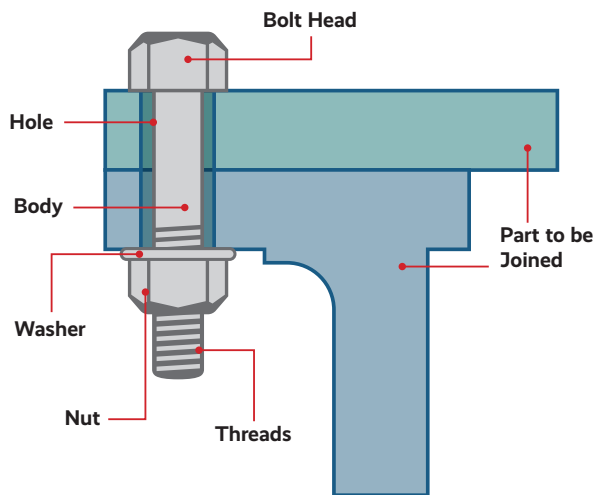
In general, it is important to use the proper torque specification for a given bolt to ensure that it is tightened to the correct level for safe and reliable performance.



Up to 50% of applied torque is needed to overcome underhead friction

+/- 40% of applied torque is needed to overcome thread friction

+/- 10% to 20% of torque is available to apply preload



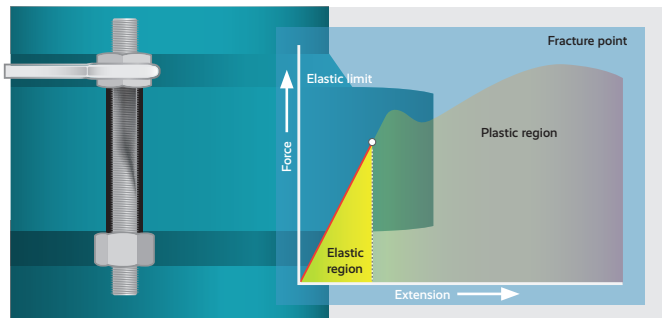
Bolted connections

Bolted connections refer to a type of mechanical fastening in which two or more parts are joined together by the use of bolts. In this method, the bolts are inserted through holes in the parts to be connected, and then secured in place by tightening nuts onto the threaded ends of the bolts. Bolted connections are used in a wide range of applications, including construction, engineering, and manufacturing, where a secure, reliable connection is needed.

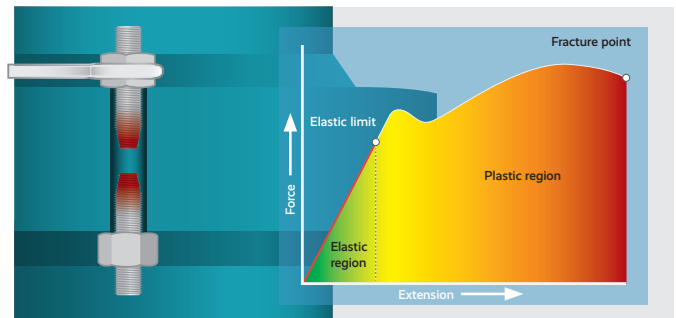
The goal of torquing bolts and nuts is to join two or more structural components in a steel structure and to generate preload, which creates the aforementioned clamping force so that separate parts of the construction remain clamped together.

Hooke's law

Simply put, Hooke's law states that the extension of a spring (or a bolt) is in direct proportion with the load added to it, as long as this load remains in the elastic region and does not exceed the elastic limit which causes the bolt to deform permanently. If this extension is continued the bolt will finally reach its fracture point and break. A correctly tightened bolted joint can sustain millions of load cycles without problems.



Hooke's Law states that a bolt behaves elastically until it reaches its elastic limit.



Beyond this point it permanently deforms leading to bolt failure.

INDUSTRY 4.0

Since the late 1700s manufacturing has evolved through four industrial revolutions:

The First Industrial Revolution

The first industrial revolution occurred from around 1770 to about 1830. During this period, the focus of manufacturing evolved from manual labor by people and work animals to more optimized labor performed through the use of steam and water power.

The Second Industrial Revolution

Around the start of the 20th century, the world entered a second industrial revolution with the use of electricity in factories. During the second industrial revolution mass production solutions such as the assembly line were introduced.

The Third Industrial Revolution

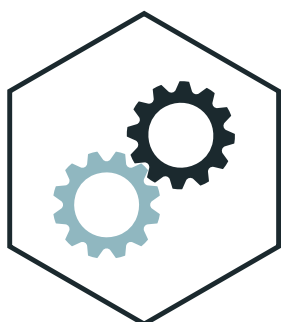
In the 1960s, the third industrial revolution emerged, with the rise of electronics, computers, robotics and more advanced telecommunications.

The Fourth Industrial Revolution, a.k.a. Industry 4.0

In the past few decades, a fourth industrial revolution has emerged, known as Industry 4.0. Industry 4.0 introduces interconnectivity through the Internet of Things (IoT), access to real-time data, machine learning and the introduction of cyber-physical systems.

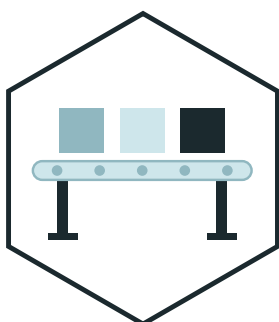
Industry 4.0 offers a more comprehensive, interlinked, and holistic approach to manufacturing. It connects the physical with the digital, and offers connectedness and access to real-time insight across processes, situations, products, and people.

The Four Industrial Revolutions



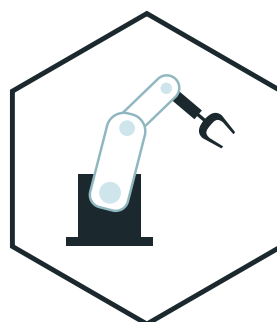
Industry 1.0

Mechanization and the introduction of steam and water power



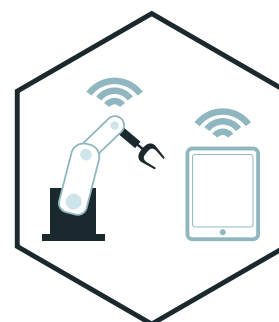
Industry 2.0

Mass production assembly lines using electric power



Industry 3.0

automated production, computers, IT-systems and robotics



Industry 4.0

The Smart Factory. Autonomous systems, IoT, machine learning

Industry 4.0 optimizes the computerization of Industry 3.0

Computers were introduced in Industry 3.0 as an entirely new technology. Today, with the advance of Industry 4.0, computers are connected and communicate with each other. A combination of cyber-physical systems, artificial intelligence (AI), the Internet of Things and access to real-time data make Industry 4.0 a reality.

As a result of the support of smart machines that keep getting smarter as they get access to more data, production and maintenance become more efficient, while, to top it off, producing less waste than before. These things combined are the true power of Industry 4.0.

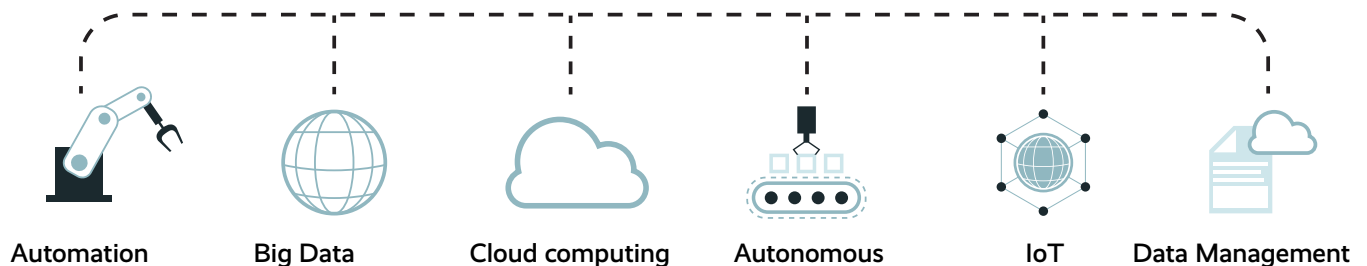
Industry 4.0 benefits

Industry 4.0 is the transformation of traditional industrial and manufacturing methods into automated and interconnected systems capable of continuous improvement and automation.

Industry 4.0 provides:

- Faster manufacturing
- Fewer quality issues: the use of sensors and real-time data analysis in Industry 4.0 systems allows for real-time monitoring and control of industrial processes, which can lead to improved quality and reduced defects.
- Lower overall operating costs
- Lower maintenance costs
- Lower waste production
- Real-time inspection possibilities
- Faster response to customer needs
- Increased knowledge sharing and collaborative working
- Better data management: the integration of IoT and data technologies in Industry 4.0 systems allows for the collection and analysis of vast amounts of data, which can lead to improved decision-making and enhanced performance.

Industry 4.0



4.0 Solutions by Radial

Radial offers several products that are ready for Industry 4.0, with properties such as Wi-Fi connection, Bluetooth, data logging, and real-time monitoring.



WINDPOWER

Torque wrenches are essential in the wind energy industry. These torque wrenches can easily tighten bolts and nuts to the right torque and ensure an increase in efficiency and quality.

Our torque wrenches have been used in the wind industry for years to tighten bolts and nuts to the right torque and to prevent breakage. Accuracy, speed and ergonomics are experienced daily by our customers in the most diverse torque wrench applications within this industry.

Discover everything about our torque tools and wind energy solutions.



E-RAD electric wrenches



Flange connection

Whether it is hot or cold, you can always rely on our tools to accurately torque tower flange bolts. The specified tightening torque must be achieved, but not exceeded. We are happy to advise you which type offers you the most time savings compared to traditional methods.

E-RAD electric wrenches



Torquing bolts in slewing bearings

Want to tighten more than 100 bolts in the shortest possible time, including clear reporting in PDF format? E-RAD is the solution for a slewing ring bearing!

E-RAD electric wrenches



Hub assembly

The hub is the important link between the huge blades and the nacelle. The critical bolt connections in the hub can be secured with the E-RAD using the torque and angle method.

MINING

All over the world RAD torque wrenches are known as the go-to tools for bolting jobs on dump trucks, bulldozers, shovels and other vehicles used in the mining industry. RAD planetary gear torque wrenches are vibration free and have the accuracy to prevent accidentally under – and over tightening. The fixed nose extensions are ideal for reaching recessed wheel nut studs and where tool clearance is a problem.



Pneumatic torque wrenches



Wheel nut bolting

Accidents caused by incorrectly tightened wheel nuts are considered a serious problem in the industry. The RAD wheel nut bolting series were designed with one job in mind: wheel nut bolting where torque control is a must. The RAD fixed nose extension (-R) was developed exclusively for extreme duty maintenance of mining haul trucks from 50-400 ton capacities and front end loaders. The extended nose allows safe access of virtually all wheel configurations found on today's heavy equipment.

Pneumatic torque wrenches



Flywheel

RAD torque wrenches are perfectly suitable for all kinds of bolting jobs, such as loosening and quickly and accurately fastening of flywheel bolts.

Pneumatic torque wrenches



Tracks

Thanks to their robustness RAD torque wrenches are a popular solution for torquing jobs on tracks. Bolts can be easily loosened and accurately fastened without the vibration and noise of an impact wrench.

OIL & GAS AND PETROCHEMICAL

In the oil & gas and petrochemical industries accurately torqued bolts are of high importance. It is crucial that the bolted connections are tightened to an accurate torque and that this work can be carried out quickly, efficiently and safely.

Radial supplies various RAD torque wrenches and valve actuators for use in the oil & gas industry and petrochemical industry.

The torque wrenches from RAD are very suitable for torquing bolts on, for example, flanges.

Both the battery-powered and pneumatic versions are widely used around the world for these types of applications.

Bolted flange joints

RAD torque wrenches are used all over the world to torque flange bolts. RAD tools don't produce vibrations, and without the need of heavy hydraulic pumps it's easy to see why these tools are so popular.

Gas turbine

RAD has been a major player in the oil & gas industry for almost 30 years. RAD battery torque wrenches deliver up to 15.000 Nm and RAD pneumatic torque wrenches up to 15.000 Nm. The pneumatic series are also available in ATEX version.

B-RAD battery wrenches



Opening and closing handwheels

With a B-RAD 275 battery-powered torque wrench equipped with a reaction arm and revolution counter, handwheels can be quickly opened and closed without any physical effort, and set with the correct force at the proper torque.

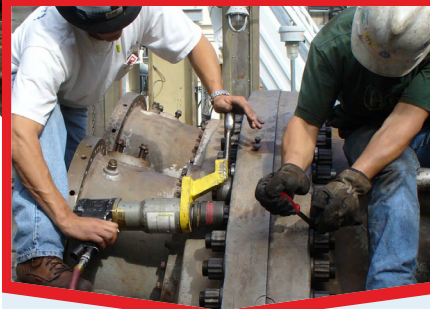
Pneumatic torque wrenches



Bolted flange joints

With the best torque wrenches, such as those from RAD, bolted connections in flanges can be quickly and accurately torqued and loosened. The flange fitter can achieve the tightening torque of a bolt or nut without noise, vibration and without having to use slow hydraulic equipment with accompanying heavy pumps.

Pneumatic torque wrenches



Gas turbine

RAD is a major provider in the oil and gas sector, with over 30 years of experience. Our products, such as the battery torque wrenches with a capacity of up to 15.000 Nm, and the pneumatic torque wrenches with a capacity of up to 15.000 Nm, are of high quality. The pneumatic RAD wrenches are also available in ATEX version.

OFFSHORE

In offshore applications high downtime costs are a major factor. For this reason fast, safe and accurate bolting is of major importance in this industry. Radial offers a wide range of RAD torque wrenches for the offshore industrie. These tools bring a great cost reduction because of the huge time savings that result from using them.

TP sea fastening and installation of offshore wind turbines

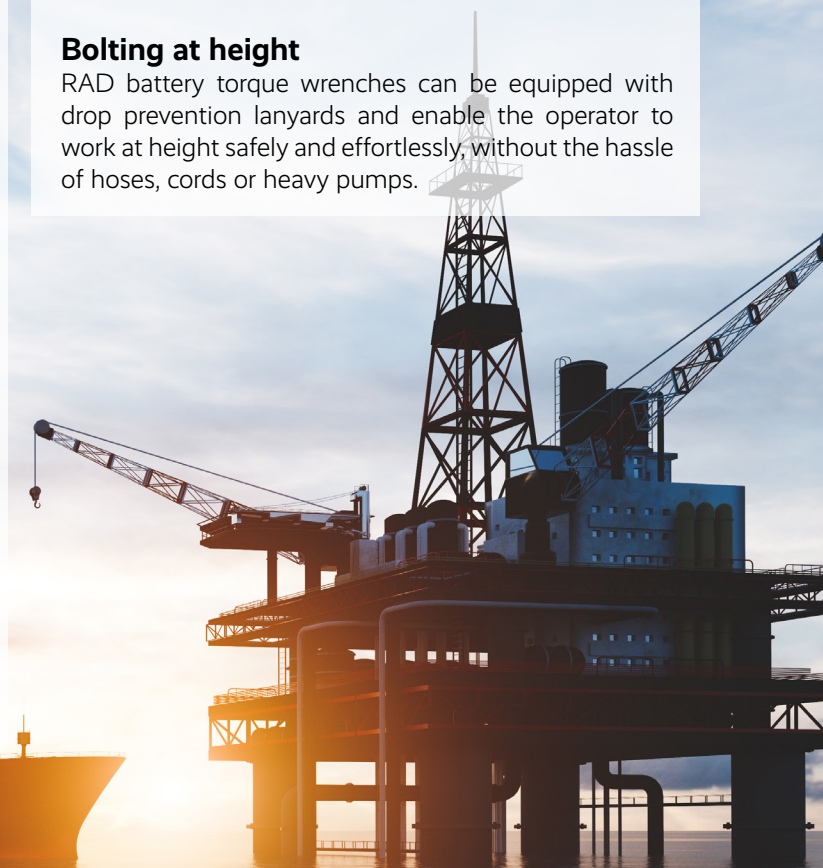
RAD torque wrenches are widely used for bolting jobs for transport and assembly of offshore wind turbines. RAD tools are robust, fast, and accurate and can be used in all weather conditions.

Cable carousel

The construction of cable carousels requires accurate torquing of hundreds of heavy bolts. RAD torque wrenches are mobile, fast and accurate and can be used in all weather conditions. These are some examples why RAD tools are used worldwide for this application.

Bolting at height

RAD battery torque wrenches can be equipped with drop prevention lanyards and enable the operator to work at height safely and effortlessly, without the hassle of hoses, cords or heavy pumps.



E-RAD electric wrenches



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B-RAD battery wrenches



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STEEL CONSTRUCTION

Nowadays, in steel construction, a choice is made between welded connections or bolted connections. When we talk about bolted connections in steel construction, we are talking about large quantities of bolts that have to be tightened at a certain torque. This is done with torque wrenches.

Due to their ease of use, speed, accuracy, light weight, low noise production and compact dimensions, RAD torque wrenches are particularly suitable for steel construction.

For example, the E-RAD is often used to torque thousands of heavy bolts. The battery series B-RAD offers the advantage of quick and easy use without cords, pumps or hoses. Yet hundreds of bolts can be torqued per battery charge!

E-RAD electric wrenches



Torquing 45.000 bolts on a large vertical-lift bridge

When building in steel construction, the bolt connections must be fastened accurately. This was also the case with the new Botlek bridge on the A15, the heaviest and highest lifting bridge in Europe. 45.000 bolts were quickly tightened with RAD electric and battery torque wrenches.

B-RAD battery wrenches



Working at height with RAD battery torque wrenches: no cables or hoses required

The B-RAD series torque wrenches offer torques up to 15.000 Nm. If desired, they can be equipped with safety-enhancing accessories. Think of fall protection equipment. These types of accessories are indispensable when working safely at height.

B-RAD battery wrenches



Automatic 2-speed versions (optional)

The battery torque wrenches from the B-RAD series can also be supplied in an automatic 2-speed version. The wrench then rotates at high speed until higher torque is required and then automatically switches to the high torque position, and vice versa, to loosen the bolted connections of the steel structure.

CIVIL ENGINEERING

In industries such as bridge construction and railway construction, bolted connections that have to be accurately torqued are very common. Preferably, of course, with equipment that is as mobile as possible. And preferably without cables, hoses, noise or vibrations. Radial supplies RAD torque wrenches that meet all these requirements.

B-RAD battery wrenches



Building temporary modular bridges quickly and safely

The battery-operated B-RAD series is the ideal tool for quickly constructing a temporary modular bridge while amply meeting all requirements in terms of safety and accuracy.

B-RAD battery wrenches



Railway construction and maintenance

The B-RAD EGX-R (an extended version of the B-RAD cordless torque wrench) makes it very easy to tighten bolts at ground level while standing. Without vibrations and exhaust gases and with a very low noise production (only 65 dB), this tool enables you to continue working at night. Thanks to the extended version, bolted connections can also be mounted or dismantled at 'ceiling height'.

B-RAD battery wrenches



Emergency repair highway bridge

The B-RAD battery torque wrench is ideal for carrying out maintenance on bridges quickly and safely. For example, several dozen B-RAD battery torque wrenches were used for the emergency repair of a large highway bridge on one of the main highways in the Netherlands. The ease of use and the speed of the B-RAD resulted in the fact that the job was completed no less than 2 weeks earlier than estimated. As a result, heavy freight traffic on the bridge was quickly resumed and the temporary restrictions on transport could be lifted earlier than expected.

TOWER CRANES

When erecting tower cranes, dozens of heavy bolts must be tightened to relatively high torques. To guarantee the stability of the crane when lifting loads and to minimize wind influences, accuracy is very important. And when disassembling the crane, these bolts must also be loosened again.

A battery torque wrench is the ideal tool which prevents having to work with hoses and cables and slow and heavy machines high up in the crane. Radial supplies various types of RAD battery torque wrenches that are very suitable for this job.



B-RAD battery wrenches



Assembly of tower cranes

During the erection of tower cranes, dozens of bolted connections have to be torqued accurately. RAD cordless torque wrenches are the ideal tools for this: up to 15.000 Nm, without clumsy cables or hoses, and without having to use heavy pumps.

B-RAD battery wrenches



RAD torque wrenches: also suitable for disassembly!

We also offer torque multipliers in an offset position, allowing the wrench to tighten bolts more easily in tight and hard-to-reach spaces. With this adjustment, the B-RAD OFFSET wrenches fit in places where standard wrenches cannot be used.

B-RAD battery wrenches



Also ideal for other bolting jobs

RAD battery torque wrenches are also suitable for other bolted connections that are found in cranes. On top of that, thanks to the robustness of RAD products, these torque wrenches are also suitable for loosening tightened bolts.

MARINE DIESEL, BUILDING, REPAIR AND OVERHAUL

When building, repairing or overhauling marine diesel engines, bolts have to be torqued with high accuracy. Radial offers various RAD electric and battery powered torque wrenches that have been very popular in this industry for years.

Both the very easy to use cordless B-RAD series (torque range from 35 Nm to 7.000 Nm) and the 230V series MV-RAD (65 Nm to 11.000 Nm) and E-RAD (135 Nm to 16.500 Nm) are used in this industry by many satisfied users.

B-RAD battery wrenches



Cylinder head bolts, torque and angle

The MB-RAD cordless torque wrench is the ideal tool for loosening and tightening head bolts. Countless diesel overhaul companies have been working with this tool for years with great satisfaction as it can do torque + angle tightening.

B-RAD battery wrenches



Diesel Overhaul, accurate tightening torques of great importance

Effortlessly loosening and fastening bolts in marine diesel engines becomes an easy job thanks to B-RAD battery torque wrenches. Accurate torque (and angle) can be applied with 1 finger on the trigger, just as easily as previously tightened bolts can be loosened.

E-RAD electric wrenches



RAD torque wrenches, the worldwide choice for marine diesel engine building

RAD torque wrenches, the worldwide choice for marine diesel engine building. RAD torque wrenches are used internationally for the construction of marine diesel engines. A range of solutions is on offer: electric torque wrenches with a straight or a 90 degrees multiplier gearbox, transducer controlled tools, simple or advanced battery operated torque wrenches, tools operating at low torques or tools operating at more than 10.000 Nm, you name it.



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