EMAVA Defence

RADIAL®
TORQUE TOOLS

DEFENCE INDUSTRY INFORMATION

NCAGE numbers

Our tools are recognized and registered within NATO systems and can be ordered using NCAGE numbers, making purchasing quick and easy.
Please note: each individual NATO partner has its own purchasing rules.

B-RAD SELECT

NCAGE	Prod.No. Radial	Tool
30213:H2ND9	30213	B-RAD SELECT 275 - ½" SD
28264:H2ND9	28264	B-RAD SELECT 700
28266:H2ND9	28266	B-RAD SELECT 1400
28267:H2ND9	28267	B-RAD SELECT 1400-2
28268:H2ND9	28268	B-RAD SELECT 2000
28269:H2ND9	28269	B-RAD SELECT 2000-2
28270:H2ND9	28270	B-RAD SELECT 4000
28271:H2ND9	28271	B-RAD SELECT 4000-2
28272:H2ND9	28272	B-RAD SELECT 7000

MB-RAD

NCAGE	Prod.No. Radial	Tool
200919:H2ND9	200919	MB-RAD 300 - 1/2" SD
200921:H2ND9	200921	MB-RAD 700 MB-RAD
200922:H2ND9	200922	1400 MB-RAD 2000
200924:H2ND9	200924	MB-RAD 4000 MB-
200926:H2ND9	200926	RAD 7000
200928:H2ND9	200928	

B-RAD-S

NCAGE	Prod.No. Radial	Tool
31801:H2ND9	31801	B-RAD 700-S
31803:H2ND9	31803	B-RAD 1400-S
31805:H2ND9	31805	B-RAD 2000-S
31807:H2ND9	31807	B-RAD 4000-S
31809:H2ND9	31809	B-RAD 7000-S

B-RAD OFFSET

NCAGE	Prod.No. Radial		Tool
201024:H2ND9	201024	201026	B-RAD OFFSET 275 - 1/2" SD
201026:H2ND9	201027	201028	B-RAD OFFSET 700
201027:H2ND9	201029	201030	B-RAD OFFSET 1400
201028:H2ND9	201031	201032	B-RAD OFFSET 1400-2
201029:H2ND9	201033		B-RAD OFFSET 2000
201030:H2ND9			B-RAD OFFSET 2000-2
201031:H2ND9			B-RAD OFFSET 4000
201032:H2ND9			B-RAD OFFSET 4000-2
201033:H2ND9			B-RAD OFFSET 7000

B-RAD X

NCAGE	Prod.No. Radial	Tool
30657:H2ND9	30657	B-RAD X 7000
30659:H2ND9	30659	B-RAD X 10K
30661:H2ND9	30661	B-RAD X 15K

SDM BATTERY

NCAGE	Prod.No. Radial	Tool
400202:H2ND9	400202 400204	SDM Battery 680P
400204:H2ND9		SDM Battery 1400P OFFSET

NUTRUNNER

NCAGE	Prod.No. Radial	Tool
35000:H2ND9	35000	TRANSDUCER NUTRUNNER 20V - 3/8"

TrackWrench®

NCAGE	Prod.No. Radial	Tool
221203:H2ND9	221203	Benchtype Torque Tester - BTT110BT
221205:H2ND9	221205	Benchtype Torque Tester - BTT200BT
222157:H2ND9	222157	Benchtype Torque Tester - BTT340BT
221112:H2ND9	221112	BlueTorq: Auditor - DWA050
221130:H2ND9	221130	BlueTorq: Auditor - DWA100
221148:H2ND9	221148	BlueTorq: Auditor - DWA200
221166:H2ND9	221166	BlueTorq: Auditor - DWA340

Offset Multiplier

NCAGE	Prod.No.Radial	Tool
27978:H2ND9	27978	CX OFFSET Multiplier - HEX 50MM AF
28540:H2ND9	28540	CX OFFSET Multiplier - HEX 65MM AF

Application description

Torquing of wheel bolts on military vehicles during routine maintenance, tire replacement, or inspection.

System type:
Military trucks and off-road vehicles equipped with heavy-duty wheels – including those with Michelin X off-road tires.
Tools used:
- B-RAD SELECT 1400
- Sliding reaction arm – specially designed for use on wheel bolts

Bolting process for this application:

During maintenance operations on military vehicles, properly torquing the wheel bolts is crucial for safety and operational readiness. The B-RAD SELECT 1400 offers the right balance of power, precision, and mobility. The sliding reaction arm provides a secure and safe reaction point on the wheel bolt. Thanks to its cordless functionality, the tool is ideal for field use.

Application:

TORQUING WHEEL BOLTS ON MILITARY VEHICLES

B-RAD SELECT1400WITH SLIDING REACTIONARM

Advantages of the B-RAD SELECT 1400:

- Accurate torque up to 1.400 Nm – suitable for heavy-duty wheel bolts
- Sliding reaction arm designed for secure placement on wheel rims
- Ideal for mobile use – no compressed air or cords required
- Ergonomic and faster alternative to hand or impact tools
- Digital torque setting with automatic stop prevents over-torquing
- Useful for replacements, inspections, and post-offroad checks.

NCAGE numbers for this application are:

- B-RAD SELECT 1400 - 28266:H2ND9
- Sliding reaction arm - 301052:H2ND9

Application description

Torquing fasteners of SATCOM (satellite communication radar) systems on deck or mast structures of naval vessels.

System type:
SATCOM systems – tactical maritime satellite communication systems for naval deployment.
Tools used:
• SDM Battery 680P
• Sliding reaction arm – purpose-built for SATCOM flange mounting and frame positions.

Bolting process for this application:

Installing SATCOM systems on naval ships requires controlled torque for structural integrity and vibration resistance. The SDM Battery 680P with sliding reaction arm enables accurate, safe torqueing even in difficult-to-reach deck or mast positions. The setup allows torqueing foundation bolts without using hydraulics or external power sources.

Application:

SATCOM SYSTEM INSTALLATION ON NAVAL VESSELS

SDM BATTERY680PWITH SLIDING REACTIONARM

Advantages of the SDM Battery 680P:

- Precise torque up to 680 Nm for critical SATCOM fasteners
- Sliding reaction arm designed for SATCOM flange mounting
- Compact form ideal for elevated or tight installations
- Fully wireless – no cables or hydraulic hoses
- Improves reliability of transmission and reception by correct mounting.

NCAGE numbers for this application are:

- SDM Battery 680P - 400202:H2ND9
- Sliding reaction arm - 301138:H2ND9

RADIAL TORQUE TOOLS

Application description

Manual torqueing of critical fasteners during maintenance on the Goalkeeper Close-In Weapon System (CIWS)

System type:
Goalkeeper CIWS – Autonomous Close-In Weapon System for maritime defense.
Tools used:
• BlueTorq: Auditor – DWA050
• BlueTorq: Auditor – DWA100
• BlueTorq: Auditor – DWA200
• BlueTorq: Auditor – DWA340

Bolting process for this application:

During preventive and corrective maintenance on the Goalkeeper CIWS, it is essential to precisely tighten critical bolts to ensure the weapon system's operational readiness and integrity. The Trackwrench BlueTorq-Series offers the ideal solution.

Application:

TRACKWRENCH FOR GOALKEEPER CIWS MAINTENANCE

Advantages of the TrackWrench®:

- High accuracy: ±3%, suitable for maintenance under military standards
- Bi-directional accuracy tolerance ±1%
- Robust design: Built for extreme operating conditions
- Ergonomic grip: Comfortable handling during prolonged use
- Feedback system with buzzer for ‘Pass’ / ‘Fail’ and LED indicators
- Smart & user-friendly - packed with intelligent features and easy to operate.

NCAGE numbers for this application are:

- BlueTorq: Auditor - DWA050 221112:H2ND9
- BlueTorq: Auditor - DWA100 221130:H2ND9
- BlueTorq: Auditor - DWA200 221148:H2ND9
- BlueTorq: Auditor - DWA340 221166:H2ND9

RADIAL TORQUE TOOLS

Application description

A RAD solution for removing and installing the wheels and/or assembly or disassembly of the rims.

System type:
Wheelbolts Humvee H1.
Tool used:
- B-RAD SELECT 275
- Sliding reaction arm
- RAD 475 SL
- 2x Deep socket – ¾" size – 22mm (imp 7/8")
- Bolt pattern: Star shape – see pictures

Bolting process for this application:

- For installing the wheel, tighten the (8x) inner ring lugnuts @ 122-149 Nm: Follow the star shaped pattern
- For assembling the Rim, tighten the (12x) outer ring lugnuts; First pass of 115 Nm, second pass at 170 Nm.

Application:

WHEELBOLTS HUMVEE H1

B-RAD SELECT 275 OR RAD 475 SL

Advantages using a RAD torque wrench:

- Precise torque tightening +/- 4%
- No need for retorquing
- No destructive hammering like with impact tools
- Very low sound level
- No vibrations
- Very ergonomic tool - lightweight.

NCAGE numbers for this application are:

- B-RAD SELECT 275 - 30213:H2ND9
- RAD 475 - 13573:H2ND9
- Sliding reaction arm - 301052:H2ND9

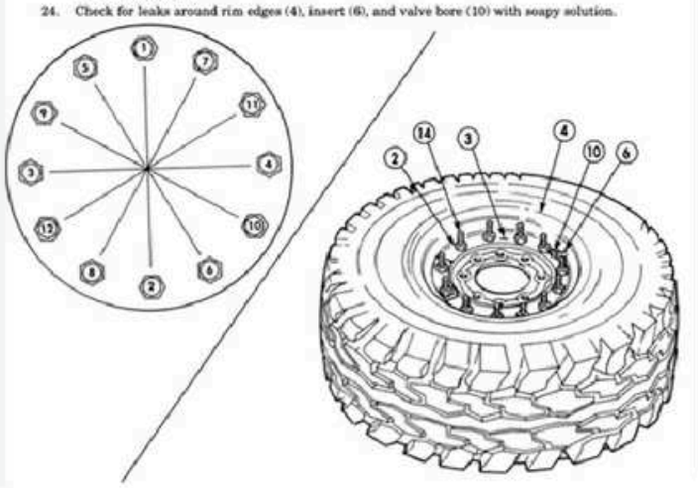
8-4.1. BIAS TIRE, WHEEL, AND RUBBER RUNFLAT MAINTENANCE (Cont'd)

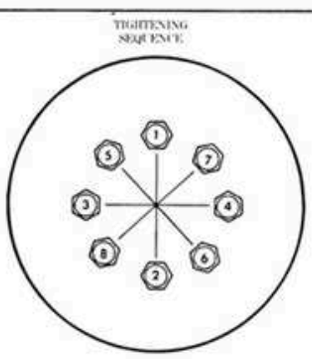
20. Tighten locknuts (2) to 85 lb-ft (115 N-m) in tightening sequence shown.
21. Tighten locknuts (2) to 125 lb-ft (170 N-m) in tightening sequence shown.
22. Check wheel assembly for gaps at each stud (14). Use a 0.0015 in. (0.038 mm) thickness gauge to detect gaps. If gaps are detected, disassemble and reassemble wheel assembly and recheck for gaps. If gaps are still detected, replace outer rim half (3).

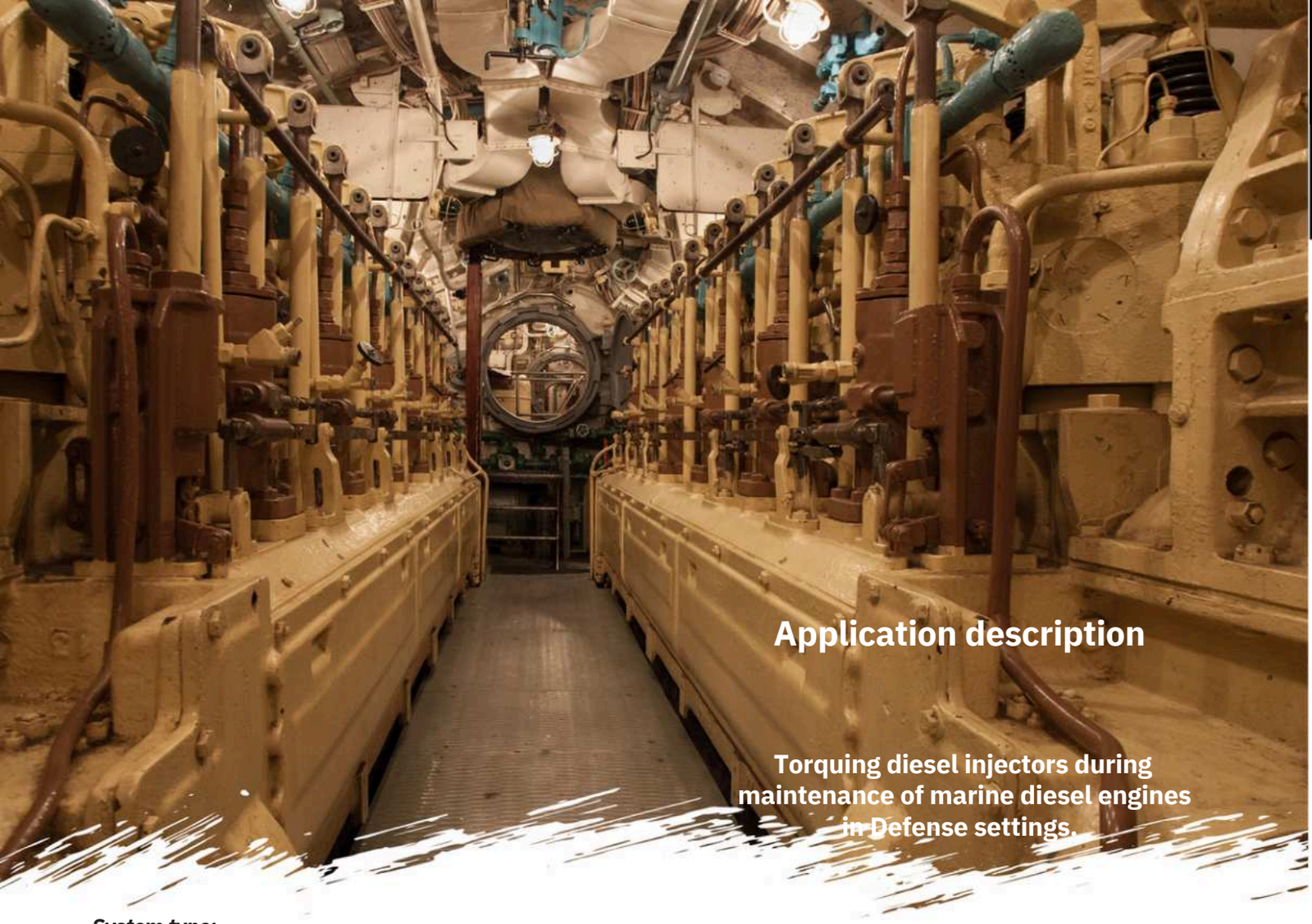
WARNING

- Never inflate a wheel assembly without having checked wheel locknut torques to ensure the wheel locknuts are tightened to specifications. An assembly with improperly tightened locknuts could separate under pressure, resulting in serious injury or death.
- Always use a tire inflation cage for inflation purposes. Stand on one side of the cage, during inflation, never directly in front. Keep hands out of the cage during inflation. Inflate assembly to recommended pressure, using a clip-on air chuck. Do not exceed 50 psi (345 kPa) cold inflation pressure. Failure to follow these instructions may result in serious injury or death.

23. Place assembly in safety cage and inflate front and rear tires to recommended tire pressure (TM 9-2320-280-10).
24. Check for leaks around rim edges (4), insert (6), and valve bore (10) with soapy solution.







Application description

Torquing diesel injectors during maintenance of marine diesel engines in Defense settings.

System type:
Diesel-powered propulsion units and critical systems aboard naval vessels.
Tools used:
• MB-RAD 2000
• CX Offset Multiplier – magnetic reducers for various hex sizes.

Bolting process for this application:

Injector nuts must be torqued with high precision during maintenance. The MB-RAD 2000 combined with the CX Offset Multiplier enables quick, repeatable tightening. The offset makes it possible to reach the injector's hex where a regular socket won't fit. This setup is ideal for torquing a large number of injectors efficiently while maintaining safety, ergonomics, and precision.

Application:

DIESEL INJECTOR MAINTENANCE ON MAN ENGINES

MB-RAD 2000WITH CX OFFSETMULTIPLIER

Advantages of the MB-RAD 2000 with CX OFFSET Multiplier:

- Precise torque control (±3%) for critical injector connections
- CX Offset Multiplier enables access where sockets cannot reach due to hex length
- Robust design for heavy-duty use
- Fully wireless operation.

NCAGE numbers for this application are:

- MB-RAD 2000 - 200924:H2ND9
- CX OFFSET Multiplier - HEX 50MM AF 27978:H2ND9
- CX OFFSET Multiplier - HEX 65MM AF 28540:H2ND9

Application description

Torquing fasteners during general maintenance of marine diesel engines.

System yype: Marine diesel engines – including inline and V-type configurations from manufacturers like MAN, MTU. ***Tools used:*** • MB-RAD Series • B-RAD-S Series • B-RAD SELECT Series • Standard and custom, including sliding reaction arms for hard-to-reach areas.

Bolting process for this application:

During regular and major marine diesel engine maintenance, fasteners such as connecting rod bolts, cylinder head bolts, and bearing caps must be torqued. RAD torque tools like the MB-RAD, B-RAD-S, and B-RAD SELECT Series combined with customized reaction arms such as sliding reaction arms enable fast, ergonomic, and repeatable torqueing. The tools' wireless functionality and digital settings make them ideal for onboard use, where space and safety are crucial.

Application:

RAD TOOLS FOR GENERAL MARINE DIESEL ENGINE MAINTENANCE

B-RAD SELECT,B-RAD-S,OR MB-RAD

Advantages using a RAD torque wrench:

- Accurate torque settings for critical components
- Usable across various engine types and power classes
- Flexible positioning via special reaction arms (e.g., sliding reaction arms)
- Battery-powered – no cables needed, ideal for ship engine rooms
- Improved safety and ergonomics over manual tools.

NCAGE numbers for this application are:

Complete range of battery tools is applicable; see NCAGE numbers on the first pages.

Application description

Torqueing of the leaf spring bolt connections on Scania military vehicles during inspection or (dis)assembly

Vehicle type:
Scania Gryphus 8x8 tactical trucks – heavy military logistics vehicle in operational deployment.
Tools used:
- B-RAD OFFSET 2000
- Sliding reaction arm

Bolting process for this application:

During maintenance on the suspension of Scania military trucks, the leaf springs are removed, replaced, or re-torqued. The bolt connections underneath the spring pack require high and precise torque (1.800 Nm). The B-RAD OFFSET 2000 combined with sliding reaction arm allows this to be done safely, quickly, and with repeatable accuracy. The offset facilitates access near wheel wells and axles, while the slider ensures optimal force absorption.

Application:

TORQUEING LEAF SPRINGS ON SCANIA MILITARY TRUCKS

B-RAD OFFSET2000WITH SLIDING REACTIONARM

Advantages of the B-RAD OFFSET 2000 with sliding reaction arm:

- High torque capacity up to 2.000 Nm for heavy suspension components
- Offset design allows torqueing in tight wheel areas.
- Sliding reaction arm ensures safe and stable reaction point positioning
- Field-ready – fully wireless
- Fast and ergonomic alternative to manual or hydraulic tools
- Usable for inspection, replacement, or reassembly of leaf springs.

NCAGE numbers for this application are:

- B-RAD OFFSET 2000 - 201029:H2ND9
- Sliding reaction arm - 25242:H2ND9

RADIAL TORQUE TOOLS

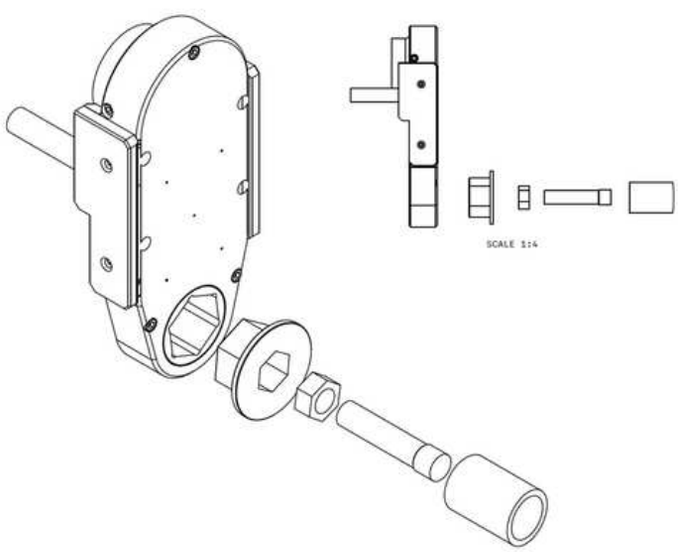
Application description

Dismantling of the motor pin during sterndrive maintenance.

Vessel type:
Fast Raiding, Interception and Special Forces Craft (FRISC) Twin Volvo Penta D6-370 with DPH Drive MST (Marine Specialised Technology), United Kingdom.
Tools used:
- B-RAD SELECT 700
- CX Offset Multiplier including bracket.

Bolting process for this application:

During maintenance and dismantling on the motor sterndrive, it is essential to safely and precisely remove the motor pin. The combination of the B-RAD SELECT 700 with the CX Offset Multiplier including bracket ensures a safe, efficient, and ergonomic process. The CX Offset Multiplier solution allows correct positioning and safe force transfer, even in the confined space around the sterndrive.



Application:

MOTOR PIN DISMANTLING – STERNDRIVE

B-RAD SELECT700WITH CX OFFSETMULTIPLIER

Advantages of the B-RAD SELECT 700:

- Accurate and adjustable torque
- Battery powered - ideal for mobile use
- Compact design - suitable for tight spaces around the sterndrive
- Safe torque transfer using special CX Offset Multiplier bracket
- Ergonomic and fully wireless.

NCAGE number for this application is:

- B-RAD SELECT 700 - 28264:H2ND9
- CX Offset Multiplier including bracket - 301165:H2ND9

RADIAL TORQUE TOOLS

B-RAD X TREME

ADVANTAGES

Comparing the B-RAD X vs. B-RAD SELECT

Better rated repeatability:
B-RAD X at 2% Target vs. B-RAD SELECT at 3%

Faster:
10%- 15% higher RPM and same speed at all torque settings

B-RAD X is rated:
Class I Division 2 Group A, B, C, D T4

Better efficiency:
More torque cycles per charge

Increased torque ranges:
4.000 Nm up to 15.000 Nm

Improved safety features:
- Latch lockout
- Two-hand start operation
- Anti-fatigue trigger
- Integrated handguard

Superior batteries:
Includes higher density batteries. (5.5 Ah vs. 5.2 Ah)

Enhanced ergonomics:
- Better weight distribution
- Improved handle position
- Four-button user interface

More robust:
- More rigid construction
- Less prone to fatigue and failure
- Filtered vents
- Constructed with industrial maerials
- Screen position less prone to damage

Notes

Notes

Notes

RADIAL®
TORQUE TOOLS

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