



Quality Assurance in Tightening

Quality assurance – your competitive edge!

A loose or improperly tightened joint in any assembly operation can cause serious problems and have far-reaching consequences for end-users and manufacturers alike.

To ensure the right quality of your company's products, Atlas Copco has developed a comprehensive quality assurance system to meet torque, angle and pulse measurement requirements for all types of fastening tools.

Contents

Page

ACTA 400	148
ACTA 3000	149

ToolsTalk ACTA	149
BLM 5000	150
BLM Torque Supervisor	150
QRTT transducers	151
IRTT transducers	151
SRTT transducers	152
MRTT transducers	152
ACTA MT transducers	154
BLM TPT, μ -Tester	155
BLM LABwrench	156
BLM LABwrench Gyro	156
BLM LINEwrench	157
BLM Joint Simulator Bench 3860 / 3890	158

QUALITY ASSURANCE IN TIGHTENING

Torque Readouts

ACTA 400

The ACTA 400 provides you with "Easy to use" torque measurement equipment, which is the perfect solution if you do not need a complete tool management system.

ACTA 400 TT, Torque tester

The ideal solution for testing lower torque assembly tools. The ACTA 400 TT has an integrated torque transducer. With the exchangeable test joints on top, the system is complete.

ACTA 400 IT, Inline tester

This is the flexible solution. ACTA 400 IT can connect to all Atlas Copco transducers to measure dynamic and static torque. With the small, portable ACTA 400 IT unit you can also perform a quick and easy check of your tools' performance directly on the applications.

Data storage

The ACTA 400 has a data memory recording 200 time-stamped measurements. With the included PC software, data can be transferred to your computer via the USB interface for printing or storage in Excel.



ACTA 400 TT

Model	Measure range		Ordering No.
	Nm	ft lb	
ACTA 400 TT 1-106	0.2 - 1	0.15 - 0.7	8092 1173 01
ACTA 400 TT 4-106	0.8 - 4	0.6 - 3.0	8092 1173 04
ACTA 400 TT 12-106	2.4 - 12	1.8 - 8.9	8092 1173 12
ACTA 400 TT 30-110	6 - 30	4.4 - 22	8092 1173 30

Test joints ACTA 400 TT

Screw	Range		Stiffness	Ordering No.	
	Nm	ft lb		Test joint	Service kit**
M4	1	0.7	Soft	4145 0984 80*	4081 2039 90*
M4	1	0.7	Hard	4145 0984 83	-
M6	4	3.0	Soft	4145 0984 82*	4081 2040 90*
M6	4	3.0	Hard	4145 0984 85	-
M6	12	8.9	Soft	4145 0985 80*	4081 2041 90*
M6	12	8.9	Hard	4145 0985 82	-
M8	12	8.9	Soft	4145 0985 81	4081 2042 90
M8	12	8.9	Hard	4145 0985 83	-
M8	30	22	Soft	4145 0986 80*	4081 2043 90*
M8	30	22	Hard	4145 0986 82	-
M10	30	22	Soft	4145 0986 81	4081 2044 90
M10	30	22	Hard	4145 0986 83	-

* Included with the ACTA 400 TT.

** 5 screws and 5 nuts are included in the kit.

ACTA 400 IT

Model	Ordering No.
ACTA 400 IT	8092 1172 20

ACCESSORIES for ACTA 400 TT / IT

	Ordering No.
ACTA 400 TT Aluminum carry case	4222 1200 00
ACTA 400 IT Aluminum carry case	4222 1200 01

QUALITY ASSURANCE IN TIGHTENING

Data Analyzers

ACTA 3000

The ACTA 3000 complemented by the PC program ToolsTalk ACTA provides you with a complete tool database in which you have easy access to all the information you need regarding torque measuring and analysing. The system cuts tool administration costs and systematically controls the status of your tools during their entire life cycle. It keeps track of tightening data, calibration data, service history, application analyses, purchase details, supplier information, etc. It controls and reminds when it is time for tool calibration and/or preventive maintenance (PM).

All data stored per tool in one place!
ACTA 3000 comes in three different models and can be upgraded depending on your needs:

Basic

Measures torque and angle. You can calibrate your tools and check basic statistics.

QC – Quality Control

Calculates all advanced statistics, including SPC, and has a database of up to 1000 tools/joints. This database includes information regarding tool programming, tightening and events.

AA – Advanced Analysis

This is the complete quality system. It offers all the above and shows an advanced tightening trace for joint analysis.

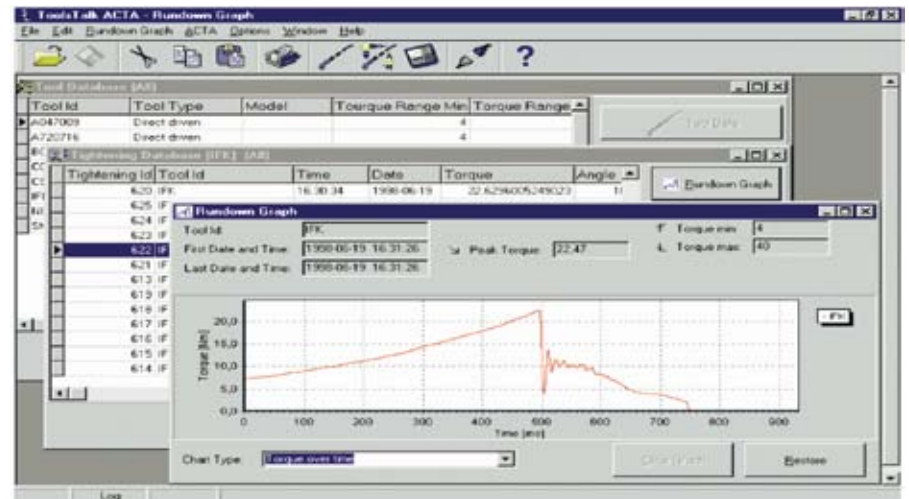


Model	Ordering No.
ACTA 3000 – Basic	8092 1133 20
ACTA 3000 – QC	8092 1133 30
ACTA 3000 – AA	8092 1133 40

ACTA 3000 software upgrades	Ordering No.
ACTA 3000 software upgrade to generation 2.xx	8092 1147 02
ACTA 3000 software upgrades (including generation 2.xx)	
B to QC (8092 1133 20 to 8092 1133 30)	8092 1149 07
B to AA (8092 1133 20 to 8092 1133 40)	8092 1149 18
QC to AA (8092 1133 30 to 8092 1133 40)	8092 1149 26

ToolsTalk ACTA

The PC program ToolsTalk ACTA completes the quality assurance system to calculate and provide all the information you want regarding your tools. In ToolsTalk ACTA you manage your tools in a tool database, a tightening database and a supplier database. It enables advanced statistics/SPC and graphs.



Model	Ordering No.
ToolsTalk ACTA Single PC	8092 1136 01
ToolsTalk ACTA Network 5 users	8092 1136 05
ToolsTalk ACTA Network 10 users	8092 1136 10
ToolsTalk ACTA Network 20 users	8092 1136 20
ToolsTalk ACTA Network 50 users	8092 1136 50

Cable included.
Microsoft Windows NT4, 2000 or XP operating system.

ToolsTalk ACTA software upgrades to generation 2.xx	Ordering No.
1 user	8092 1148 01
5 users	8092 1148 05
10 users	8092 1148 10
20 users	8092 1148 20

QUALITY ASSURANCE IN TIGHTENING

Data Analyzers

BLM 5000

The BLM 5000 Dual Analyzer is the optimal tool for providing threaded fastener quality assurance throughout assembly plants. With two simultaneously read input channels, the user has the ability to evaluate two tightening operations at the same time. Additionally, the BLM 5000 can be used for tool calibration and tightening analysis. It features:

- Runs on a low power PC using Windows CE.
- Equipped with 3 USB ports, RS232 and a network port.
- A clear 10.4" colour touch screen display.
- Calculates minimums, maximums, averages, standard deviation and Cp/Cpk values. The BLM 5000 displays the data collected and the X/R charts.
- Data can be exchanged with Torque Supervisor.
- Can collect data from residual torque checks.
- Analysis of joint/Angle/Preload.
- Simultaneous measurement of the tool transducer and a reference transducer.



- 2 channels simultaneously evaluate multi-spindles. It can be connected to Atlas Copco QRTT/IRTT transducers.
- Two channels simultaneously reading torque/angle rotary transducers in mV/V or preamplified ± 5 V.

ACCESSORIES

Model	Description	Ordering No.
BLM 5000 DA	Dual Analyser	8059 0955 50
Additional battery BLM 5000	Li-Ion 10.8V 5,8 Ah	8059 0929 50
Rigid case BLM 5000	Rigid metal case	8059 0929 51
TPT Friction software	Software for friction coefficient μ	8059 0929 52

BLM Torque Supervisor

Software for Tool, Tightening and Joint Analysis

The software BLM Torque Supervisor is the ideal program for handling tool, tightening and joint analysis. It automatically keeps track of calibration due date schedules for power tools and torque wrenches, as well as supervising the complete tool stock within the factory. It manages and collects data from residual torque checks done on the assembly line as well as tool checks done at the tool crib and supervises statistics for each tool and application.

The software can be installed either on a single pc station or on multi factory stations in the factory network.

BLM Torque Supervisor Light

The BLM Supervisor Light is the perfect software for users who want to control their tools in production.

BLM Torque Supervisor Full

The BLM Supervisor Full is the extended software program for tools and tightening management. In addition to the features included in the BLM Torque Supervisor Light, it has a complete Tightening and Joint database. This keeps the user informed of the availability of the direct link between the factory's tools and its applications. It also compiles statistics for specific tool operations on specific joints, including residual torque SPC. Its compatibility with other Atlas Copco BLM instruments makes data sharing possible for analysis and control.

BLM Torque Supervisor Client Server

The BLM Torque Supervisor Client Server is the complete software program for tools and tightening management. With the client server function, it is possible to send information on which tools and/or applications are to be checked from a user's server. Data is automatically sent to each connected Torque Supervisor Client program installed at various stations. Following checks, data is sent back to the Torque Supervisor Server installation where statistical process control (SPC) is automatically performed. All connected stations can thus be updated with new data in real time.

Model	Ordering No.
Torque Supervisor version Full	8059 0981 00
Torque Supervisor version Light	8059 0981 01
Torque Supervisor version Client, installed on JSB	8059 0981 03
Torque Supervisor version Server, installed at server	8060 0981 04
Torque Supervisor upgrade from version Light to Full	8061 0981 06

QUALITY ASSURANCE IN TIGHTENING

Transducers

QRTT

Transducers used for QMX and ETX nutrunner as well as for fixtured Tensor tool calibration. This transducer enables an easy and fast set-up with highest system accuracy. By using the QRTT, no special test adaptation device between the spindle and the product itself is needed.



Model	Drive square in	For QMX spindle	Rated capacity		Ordering No.
			Nm	ft lb	
QRTT 20 Nm kit	3/8	42	2 - 20	1.5 - 15	8092 1164 13
QRTT 75 Nm kit	3/8	42	7.5 - 75	5.5 - 55	8092 1164 18
QRTT 200 Nm kit	1/2	50	20 - 200	15 - 150	8092 1164 23
QRTT 500 Nm kit	3/4	62	50 - 500	37 - 369	8092 1164 28
QRTT 1000 Nm kit	1	80, 90	100 - 1000	75 - 750	8092 1164 33

IRTT – in-line rotary torque and torque/angle transducers

The ACTA 3000 automatically reads the memory in Atlas Copco IRTT torque transducers. No manual calibration is needed. The IRTT has very high readout accuracy and is available in torque or torque/angle versions.



Model	Drive		Rated capacity		Ordering No.	Model	Drive		Rated capacity		Ordering No.
	Hex in	Square in	Nm	ft lb			Hex in	Square in	Nm	ft lb	
Torque models						Torque/angle models					
IRTT 5-I06	1/4		5	4	8092 1129 05	IRTT 1A-I06	1/2		1	0.8	8092 1130 96
IRTT 20-I06	1/4		20	15	8092 1129 10	IRTT 2A-I06	1/2		2	1.5	8092 1130 01
IRTT 20-06		1/4	20	15	8092 1129 15	IRTT 5A-I06	1/4		5	4	8092 1130 06
IRTT 25-10		3/8	25	18	8092 1129 20	IRTT 5A-06		1/4	5	4	8092 1130 08
IRTT 75-10		3/8	75	55	8092 1129 25	IRTT 20A-I06	1/4		20	15	8092 1130 11
IRTT 180-13		1/2	180	133	8092 1129 30	IRTT 20A-06		1/4	20	15	8092 1130 16
IRTT 500-20		3/4	500	369	8092 1129 35	IRTT 25A-10		3/8	25	18	8092 1130 21
IRTT 750-25		1	750	553	8092 1129 40	IRTT 75A-10		3/8	75	55	8092 1130 26
IRTT 1400-25		1	1400	1033	8092 1129 45	IRTT 180A-13		1/2	180	133	8092 1130 31
						IRTT 500A-20		3/4	500	369	8092 1130 36
						IRTT 750A-25		1	750	553	8092 1130 41
						IRTT 1400A-25		1	1400	1033	8092 1130 46
						IRTT 3000A-38		1	3000	2200	8092 1130 52
						IRTT 5000A-38		1 1/2	5000	3685	8092 1130 56

NOTE: All IRTT are equipped with 19-pin connector.

QUALITY ASSURANCE IN TIGHTENING

Transducers

SRTT – stationary reaction torque transducers

The stationary torque transducers are designed for fixturing where a rotary action is not desired during a measurement. All static torque transducers feature a built-in memory for fast auto-calibration with ACTA 400 and ACTA 3000.



Model	Square drive in	Capacity		Ordering No.
		Nm	ft lb	
SRTT 0.5-06	1/4	0.5	0.4	8092 1143 15
SRTT 2-06	1/4	2	1.5	8092 1143 20
SRTT 5-06	1/4	5	4	8092 1143 25
SRTT 25-10	3/8	25	18	8092 1143 30
SRTT 75-13	1/2	75	55	8092 1143 35
SRTT 180-13	1/2	180	133	8092 1143 40
SRTT 500-20	3/4	500	369	8092 1143 45
SRTT 1400-25	1	1400	1033	8092 1143 50

Test joint for SRTT

Model	Size	Stiffness	Range		Ordering No.
			Nm	ft lb	
TJ SRTT H 25-10	3/8	Hard	25	18	4220 2451 80
TJ SRTT S 25-10	3/8	Soft	25	18	4220 2451 81
TJ SRTT H 75-10	1/2	Hard	75	55	4220 2659 80
TJ SRTT S 75-10	1/2	Soft	75	55	4220 2659 81
TJ SRTT H 180-13	1/2	Hard	180	133	4220 2660 80
TJ SRTT S 180-13	1/2	Soft	180	133	4220 2660 81

MRTT – manual wrench torque transducer

Designed to measure static torque on higher torque applications. The torque wrench features an LED indicator for low/OK/high torque. It has a unique square drive, which rotates free and is locked when pushed in.



Model	Square drive in	Capacity		Ordering No.
		Nm	ft lb	
MRTT 25-06S ^a	3/8	25	18	8092 1145 32
MRTT 75-13S ^a	1/2	75	55	8092 1145 37
MRTT 180-13S ^a	1/2	180	133	8092 1145 42
MRTT-I 680-20S ^b	3/4	680	510	8092 1164 52

^a Suggested cable 4145 0971 03 (3 m curled cable) see below.

^b Works only with cable type 4145 0965 03.

QUALITY ASSURANCE IN TIGHTENING

Transducers

MRTT – manual screwdriver torque transducer

The MRTT screwdriver is designed to measure static torque on low torque applications. All MRTTs feature a built-in memory for fast auto-calibration with ACTA 400 and ACTA 3000.



Model	Drive hex in	Capacity		Ordering No.
		Nm	ft lb	
MRTT 2-I06	1/4	2.5	1.8	8092 1144 21
MRTT 7-I06	1/4	7.5	5.5	8092 1144 26

Transducer cable

The cable needed for all transducers (except MRTT screwdriver where cable is included).

Cables

Length	Ordering No.
1 m	4145 0982 01
3 m	4145 0982 03
5 m	4145 0982 05
3 m curled cable	4145 0971 03

For usage of non Atlas Copco transducers one of the following cables are required.

Model	Ordering No.
Industrial style Transducer cable 3 m 19 - 4	4145 0965 03
Industrial style Transducer cable 3 m 19 - 6	4145 0968 03
Industrial style Transducer cable 3 m 19 - 10	4145 0967 03

Cables for ToolsTalk ACTA

Length	Ordering No.
ToolsTalk ACTA cable 3 m	4222 0546 03
ToolsTalk ACTA cable 5 m	4222 0546 05

ACCESSORIES

Model	Ordering No.
Demo cases	
ACTA 3000	4222 0527 00
ACTA 3000, with solid filling	4222 0527 01
Battery units	
ACTA 3000, 7.2V/3.8 Ah	4222 0368 00
ACTA 3000, 7.2V/9.5 Ah	4222 0927 80
ACTA 3000, 7.2V/15 Ah	4222 0928 80
Battery charger	
ACTA 3000, external charger	4222 0964 80

QUALITY ASSURANCE IN TIGHTENING

MicroTorque transducers

Quality assurance system – sharpening your competitive edge.

To ensure the highest quality of your fastening – and ultimately your company's products – Atlas Copco has developed a comprehensive quality assurance system for micro torques. The controller-cable-transducer package provides fast, accurate and reliable measurement of critical parameters.

ACTA MT Features:

Measures torque and angle. You can calibrate your tools and check basic statistics.

- Auto-recognition of torque/force sensor
- Data transfer via serial interface (RS232-C)
- Graphical recording of data via PC
- Digital peak-value memory
- Multilingual dialog box control
- Overload protection



Model	Capacity		Drive	Overall length mm	Ordering No.
	Ncm	in lb			
Torque In-Line rotary transducer					
MT TR 2	2	0.18	Ø 3h8 mm	76	8432 0820 29
MT TR 5	5	0.44	Ø 3h8 mm	76	8432 0820 30
MT TR 10	10	0.88	Ø 5h8 mm	76	8432 0820 31
MT TR 20	20	1.77	Ø 5h8 mm	76	8432 0820 32
MT TR 50	50	4.42	1/4"	105	8432 0820 33
MT TR 100	100	8.85	1/4"	105	8432 0820 34
MT TR 200	200	17.70	1/4"	105	8432 0820 35
MT TR 500	500	44.25	1/4"	105	8432 0820 36
Torque/Angle In-Line rotary transducer					
MT TRA 2	2	0.18	Ø 3h8 mm	76	8432 0820 41
MT TRA 5	5	0.44	Ø 3h8 mm	76	8432 0820 42
MT TRA 10	10	0.88	Ø 5h8 mm	76	8432 0820 43
MT TRA 20	20	1.77	Ø 5h8 mm	76	8432 0820 44
MT TRA 50	50	4.42	1/4"	105	8432 0820 45
MT TRA 100	100	8.85	1/4"	105	8432 0820 46
MT TRA 200	200	17.70	1/4"	105	8432 0820 47
MT TRA 500	500	44.25	1/4"	105	8432 0820 48
Stationary torque transducer					
MT TS 1	1	0.09	Ø 3H7	81	8432 0820 18
MT TS 2	2	0.18	Ø 3H7	81	8432 0820 19
MT TS 5	5	0.44	Ø 3H7	81	8432 0820 20
MT TS 10	10	0.88	Ø 3H7	81	8432 0820 21
MT TS 20	20	1.77	1/4"	81	8432 0820 22
MT TS 50	50	4.42	1/4"	98	8432 0820 23
MT TS 100	100	8.85	1/4"	98	8432 0820 24
MT TS 200	200	17.70	1/4"	98	8432 0820 25
MT TS 500	500	44.25	1/4"	111	8432 0820 52
Manual Screwdriver torque transducer					
MT TH 1	1	0.09	Ø 3H7	115	8432 0820 10
MT TH 2	2	0.18	Ø 3H7	115	8432 0820 11
MT TH 5	5	0.44	Ø 3H7	115	8432 0820 12
MT TH 10	10	0.88	Ø 3H7	115	8432 0820 13
MT TH 20	20	1.77	1/4"	115	8432 0820 14
MT TH 50	50	4.42	1/4"	124	8432 0820 15
MT TH 100	100	8.85	1/4"	124	8432 0820 16
MT TH 200	200	17.70	1/4"	124	8432 0820 17

Quality Assurance System

Model	Ordering No.
Controller – ACTA MT	8432 0820 01
Transducer cable	8432 0830 35
Software – Tools Graph ACTA MT (for graph analys)	8432 0830 46
RS232 cable ACTA MT	8432 0831 39

QUALITY ASSURANCE IN TIGHTENING

Friction coefficient Analyzer

BLM TPT – Torque Preload Transducer

During bolt tightening, the preload achieved depends not just on the torque applied but also on the friction coefficient μ . The friction coefficient may vary, depending on coatings, lubricants, geometry errors, finishing, etc. All these factors dramatically influence joint reliability. It is necessary to check μ in a fast and easy way. The ability to test in the production line also provides an immediate response and reduces the risk of overloading lab resources.

The BLM TPT torque and preload transducer connected to the two channel BLM 5000 analyzer provides a fast and easy evaluation of total μ .

- If μ is too low the preload will be higher than predicted and could generate bolt failure.
- If μ is too high the preload could be low, causing the bolt to come loosen and fail.

BLM TPT transducers are supplied with a complete set of adapters to test bolts of different lengths. Bolts can be tested with the original nut or with standard threaded hardened adapters. The test set-up is simple and fast. With only three transducers (TPT 25, TPT 200 and TPT 2000), it is possible to measure screws from size M3 to M24. The two-channel BLM 5000 analyzer has special software, supplied as an option, for evaluating μ according to the norm EN ISO16047 standard.

BLM μ Tester

The BLM μ Tester is a complete set for measuring the friction coefficient. In addition to being used in the tool crib, it can be used along the line for a fast and easy fastener evaluation. The advantages of using a bench are many: portable measuring equipment, "all in one" complete and ready, PC with touch screen, already fixed transducer, adapter kit in the drawer. Built-in battery charger, operating time >16 hours. The μ Tester 25 and 200 can be supplied with additional transducers. It is not possible to have TPT 2000 on a bench due to high torque. If a TPT 2000 is requested, then this transducer must be mounted separately on a fixed table.



The adapter kit provide all needed accessories to test bolts of different diameters, pitches and lengths. Bolts can be tested with the original nut used in production, or with the supplied hardened threaded adapter. Spacers allow testing bolts of different lengths. For each size of bolt, there are three adapter plates

available: one flat, one to be used with washers and one designed for customer made plates. Adapter kits 25 and 200 are supplied in a wooden case. For the BLM μ Tester, the adapters are stored in the drawers. The kit for TPT 2000 is supplied in a heavy duty trolley due to the weight and size of the parts.



BLM μ Tester



Standard adapter kit

Model	Description	Ordering No.
BLM TPT 25 / 25	Torque Preload Transducer 25 Nm, 25 kN	8059 0948 29
BLM TPT 200 / 100	Torque Preload Transducer 200 Nm, 100 kN	8059 0948 51
BLM TPT 2000 / 400	Torque Preload Transducer 2000 Nm, 400 kN	8059 0948 84
Adapters kit for TPT 25 / 25	Standard adapters kit for TPT 25 / 25 (M3 to M6)	8059 0949 00
Adapters kit for TPT 200 / 100	Standard adapters kit for TPT 200 / 100 (M8 to M14)	8059 0949 10
Adapters kit for TPT 2000 / 400	Standard adapters kit for TPT 2000 / 400 (M16 to M24)	8059 0949 20
BLM μ Tester - 25	Mobile Bench for μ Evaluation, includes TPT and adapter kit	8059 0966 00
BLM μ Tester - 200	Mobile Bench for μ Evaluation, includes TPT and adapter kit	8059 0966 10

QUALITY ASSURANCE IN TIGHTENING

Wrenches

Atlas Copco BLM LABwrench

The BLM LABwrench enables effective quality control through measurement of residual torque and evaluation of the measurement data. The tool features a clear and easy-to-use graphics/text display.

If your intended use is quality control only (residual torque check), then LABwrench will be ideal for your needs. It has all the features of the LABwrench Gyro, except the gyroscope.

- Graphics/text display together with simple, intuitive software icons.
- Alarm function pre-settable in three different thresholds, with three LED's (yellow, green, red) and buzzer.
- The end head of the LABwrench can be used with reversible ratchet or



spanners where a socket cannot be used.

- Serial output RS232 for connection to a printer or PC.

- The LABwrench can work "stand alone" or connected to Torque Supervisor software.

Model	Drive mm	Ratchet in	Capacity		Weight		Length L mm	Width w mm	Thickness		Ordering No.
			Nm	lb ft	kg	lb			T mm	T1 mm	
LAB30-10 ^a	9x12	3/8	30	22	1.6	3.5	500	75	40	18	8059 0901 30
LAB50-10 ^a	9x12	3/8	50	36	1.6	3.5	500	75	40	18	8059 0901 36
LAB100-13 ^a	9x12	1/2	100	73	1.6	3.5	500	75	40	18	8059 0901 45
LAB150-13 ^a	14x18	1/2	150	110	2	4.5	570	75	40	22	8059 0901 48
LAB250-13 ^a	14x18	1/2	250	180	2	4.5	570	75	40	22	8059 0901 54
LAB400-20	14x18	3/4	400	300	2	4.5	740	75	40	22	8059 0901 60
LAB600-20	21x26	3/4	600	440	3.2	7	1000	75	40	30	8059 0901 66

^a Not length dependent.

Atlas Copco BLM LABwrench Gyro

The BLM LABwrench Gyro is an advanced, multi-purpose electronic torque/angle wrench capable of performing a variety of functions in lab, quality control and tightening applications.

For **lab use** this includes joint analysis to understand the behaviour and stiffness of the joint, thus obtaining the information needed to check tightening parameters and reproduce the joint on a BLM Joint Simulator Bench or carry out troubleshooting in the case of a critical joint.

Within **quality control** for measuring residual torque automatically.

For **tightening purposes** with different strategy within torque limits, with torque target and angle control, tightening with torque + angle or tightening to yield.

The BLM LABwrench Gyro features an innovative angle rotation measurement system based on an advanced electronic gyroscope requiring no reference arm. The graphic/text display and simple intuitive software with icons make it extremely easy to use.



tive software with icons make it extremely easy to use.

- Torque/angle measurement. Graphic display to illustrate curves (torque/angle – torque/time)
- The end head of the LABwrench Gyro can be used with reversible ratchet or spanners where socket cannot be used.

- Multi-purpose: joint analysis, quality control or tightening with different strategies.
- Advanced electronic gyroscope for angle measurement.

Model	Drive mm	Ratchet in	Capacity		Weight		Length L mm	Width w mm	Thickness		Ordering No.
			Nm	lb ft	kg	lb			T mm	T1 mm	
LAB30-10G ^a	9x12	3/8	30	22	1.7	3.6	530	75	40	18	8059 0902 30
LAB50-10G ^a	9x12	3/8	50	36	1.7	3.6	530	75	40	18	8059 0902 36
LAB100-13G ^a	9x12	1/2	100	73	1.7	3.6	530	75	40	18	8059 0902 45
LAB150-13G ^a	14x18	1/2	150	110	2.1	4.6	600	75	40	22	8059 0902 48
LAB250-13G ^a	14x18	1/2	250	180	2.1	4.6	600	75	40	22	8059 0902 54
LAB400-20G	14x18	3/4	400	300	2.1	4.6	770	75	40	22	8059 0902 60
LAB600-20G	21x26	3/4	600	440	3.3	7.1	1030	75	40	30	8059 0902 66

^a Not length dependent.

QUALITY ASSURANCE IN TIGHTENING

Wrenches

Atlas Copco BLM LINEwrench

On modern assembly lines there is a need to maintain traceability even during the time it takes to set up the right back-up tool. The BLM LINEwrench provides an immediate back-up that guarantees accuracy and traceability in such situations. Furthermore, fault repair stations at the end of the line have a negative effect on the task of storing the results obtained during production. This is because component loosening and retightening is normally carried out there using mechanical torque wrenches.

The BLM LINEwrench also provides a very good system for tightening joints not accessible to nutrunners as well as a flexible system appropriate for special production of high tech products.



- Security through unique patented socket recognition.
- Wireless communication.
- Integrated barcode scanner.
- End head with reversible ratchet or spanners.
- Angle reading via electronic gyroscope.
- Programming via RS232.
- Various tightening strategies available.

Model	Drive mm	Ratchet in	Capacity		Weight		Length L mm	Width w mm	Thickness		Ordering No.
			Nm	lb ft	kg	lb			T mm	T1 mm	
LINE R 30-10	9x12	3/8	30	22	1.5	3.5	500	55	45	20	8059 0903 30
LINE R 50-10	9x12	3/8	50	36	1.6	3.6	500	55	45	20	8059 0903 36
LINE R 70-13	9x12	1/2	70	52	1.6	3.6	500	55	45	20	8059 0903 39
LINE R 100-13	9X12	1/2	100	73	1.6	3.6	550	55	45	20	8059 0903 45
LINE R 150-13	14x18	1/2	150	110	2	4.6	550	55	45	24	8059 0903 48
LINE R 250-13	14x18	1/2	250	180	2	4.6	650	55	45	24	8059 0903 54
LINE R 400-20	14x18	3/4	400	300	2.7	4.6	800	55	45	24	8059 0903 60
LINE R 600-20	21x26	3/4	600	440	3.3	7.1	900	55	45	32	8059 0903 66
LINE W 30-10	9x12	3/8	30	22	1.5	3.5	500	55	45	20	8059 0904 30
LINE W 50-10	9x12	3/8	50	36	1.6	3.6	500	55	45	20	8059 0904 36
LINE W 70-13	9x12	1/2	70	52	1.6	3.6	500	55	45	20	8059 0904 39
LINE W 100-13	9X12	1/2	100	73	1.6	3.6	550	55	45	20	8059 0904 45
LINE W 150-13	14x18	1/2	150	110	2	4.6	550	55	45	24	8059 0904 48
LINE W 250-13	14x18	1/2	250	180	2	4.6	650	55	45	24	8059 0904 54
LINE W 400-20	14x18	3/4	400	300	2.7	4.6	800	55	45	24	8059 0904 60
LINE W 600-20	21x26	3/4	600	440	3.3	7.1	900	55	45	32	8059 0904 66
LINE WP 30-10	9x12	3/8	30	22	1.7	3.6	500	70	50	20	8059 0905 30
LINE WP 50-10	9x12	3/8	50	36	1.8	4	500	70	50	20	8059 0905 36
LINE WP 70-13	9x12	1/2	70	52	1.8	4	500	70	50	20	8059 0905 39
LINE WP 100-13	9X12	1/2	100	73	1.8	4	550	70	50	20	8059 0905 45
LINE WP 150-13	14x18	1/2	150	110	2.2	4.8	550	70	50	24	8059 0905 48
LINE WP 250-13	14x18	1/2	250	180	2.2	4.8	650	70	50	24	8059 0905 54
LINE WP 400-20	14x18	3/4	400	300	2.9	4.8	800	70	50	24	8059 0905 60
LINE WP 600-20	21x26	3/4	600	440	3.4	7.5	900	70	50	32	8059 0905 66
LINE WPB 30-10	9x12	3/8	30	22	1.7	3.6	500	70	50	20	8059 0906 30
LINE WPB 50-10	9x12	3/8	50	36	1.8	4	500	70	50	20	8059 0906 36
LINE WPB 70-13	9x12	1/2	70	52	1.8	4	500	70	50	20	8059 0906 39
LINE WPB 100-13	9X12	1/2	100	73	1.8	4	550	70	50	20	8059 0906 45
LINE WPB 150-13	14x18	1/2	150	110	2.2	4.8	550	70	50	24	8059 0906 48
LINE WPB 250-13	14x18	1/2	250	180	2.2	4.8	650	70	50	24	8059 0906 54
LINE WPB 400-20	14x18	3/4	400	300	2.9	4.8	800	70	50	24	8059 0906 60
LINE WPB 600-20	21x26	3/4	600	440	3.4	7.5	900	70	50	32	8059 0906 66

LINE R

LINE R has an embedded set of RS232 contacts.



LINE W

Standard model with WI-FI.



LINE WP

With WI-FI and rubber protection.



LINE WPB

With WI-FI and rubber protection and Bar Code scanner.

QUALITY ASSURANCE IN TIGHTENING

Test Benches

BLM Joint Simulator Bench 3860

The BLM Joint Simulator Bench 3860 provides maximum tool evaluation flexibility. DC electric, clutch, impulse and battery tools as well as torque wrenches can be evaluated. The hydraulic brakes simulate the behaviour of a real joint, reproducing the stiffness from hard to soft. This allows the tool to be tested in accordance with VDI/VDE 2647. Machine capability (Cm, Cmk) can be tested quickly and easily under real shopfloor conditions without the need to run tests on the product on the line that would interfere with production.

- Large LCD touchscreen, intuitive and easy to use.
- Efficient hydraulic pump fills the pressure accumulator in just 15 seconds reducing battery drain.
- Innovative braking system with three patents for tool joint simulation. The patents are:
 - Innovative cylinder/actuator
 - Thin steel disk for very low inertia
 - Brakes are in carbon and work in oil for very smooth action

Connector panel manages all operator connections such as external in-line torque transducers, printers, Ethernet, USB and serial.

BLM Joint Simulator Bench 3890

The BLM Joint Simulator Bench 3890 is specially designed for heavy duty appli-



cations such as testing production torque tools in the tool crib. It has the same characteristics as the BLM 3860 but is also fitted with a cooling system.

ISO test fixture

This optional fixture can be provided with the Joint Simulator Bench to make torque wrench testing easy and accurate. With dial indicating or electronic wrenches, it is easy to maintain the desired torque with this fixture. During click wrench

testing, the fixture reduces operator influence and allows the final torque to be approached slowly and smoothly as recommended in the ISO 6789. The fixture can be extended out from the Joint Simulator Bench to match the length of the torque wrench being calibrated.

Model	Hydraulic brakes, range		ISO rig	Spindle fixture holder	Dimensions length x width x height	Ordering No.
	Nm	lb ft				
Mobile benches						
JSB 3860-250	1 - 250	0.8 - 150	–	–	1000 x 550 x 920	8059 0962 00
JSB 3860-250 ISO	1 - 250	0.8 - 150	yes	–	1150 x 550 x 920	8059 0962 30
JSB 3860-500 ISO	1 - 500	0.8 - 365	yes	–	1150 x 550 x 920	8059 0962 35
JSB 3860-1000 ISO	1 - 1000	0.8 - 735	yes	–	1400 x 700 x 950	8059 0962 40
JSB 3860-2000 ISO	1 - 2000	0.8 - 1470	yes	–	1400 x 700 x 950	8059 0962 50
Fix benches						
JSB 3890-500 SH	1 - 500	0.8 - 365	–	yes	2100 x 850 x 1000	8059 0963 00
JSB 3890-2000 SH	1 - 2000	0.8 - 1470	–	yes	2300 x 900 x 1000	8059 0963 50