

Robert Bosch GmbH
 Power Tools Division
 70745 Leinfelden-Echterdingen
 Germany

www.bosch-pt.com

1 609 92A 0CM (2013.12) O / 312 XXX



1 609 92A 0CM

ANGLE EXACT ION 18 V-LI

8-1100 | 15-500 | 23-380 | 30-290 | 30-300 | 40-220 | 50-210 | 60-120

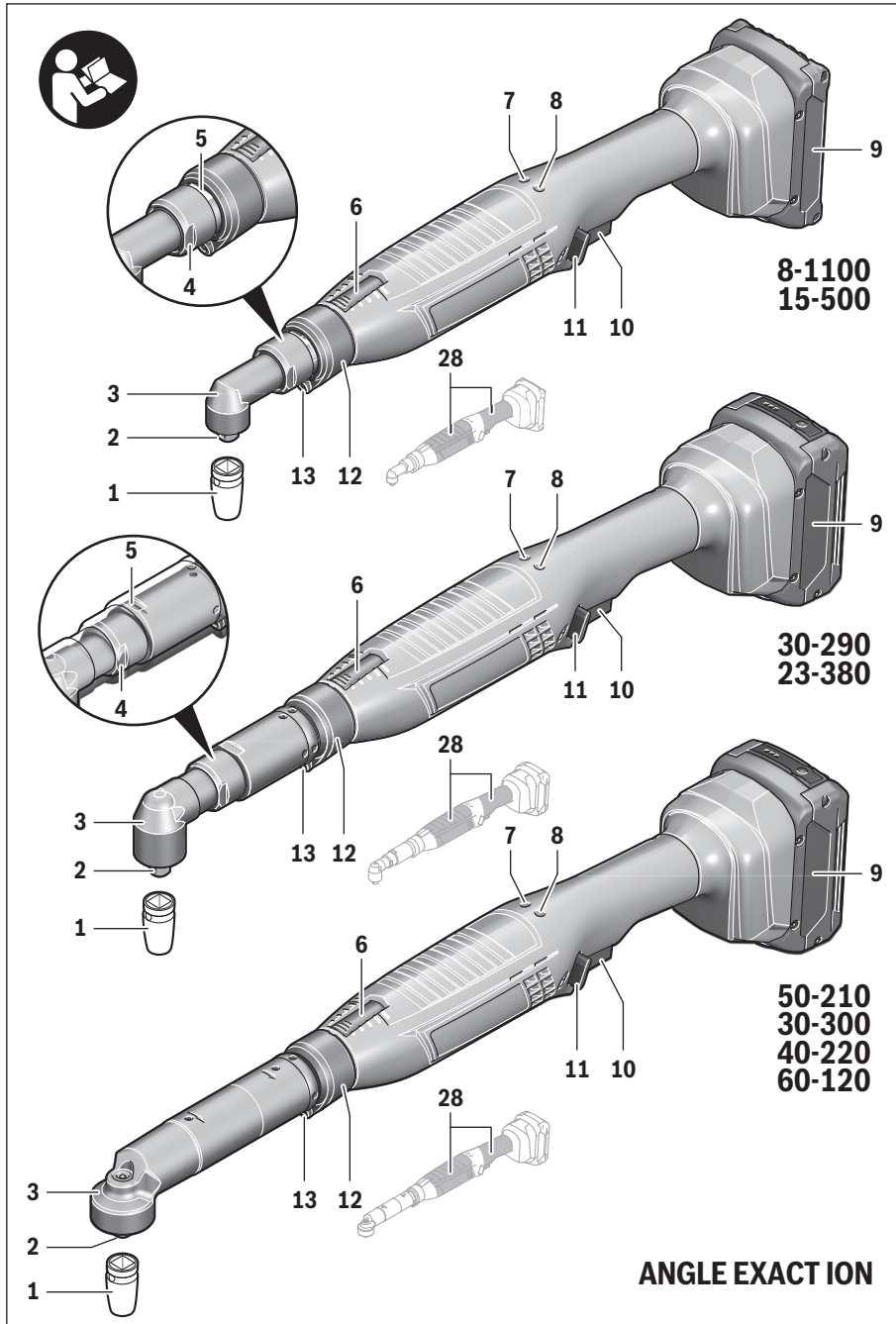


de Originalbetriebsanleitung
en Original instructions
fr Notice originale
es Manual original
pt Manual original
it Istruzioni originali
nl Oorspronkelijke
 gebruiksaanwijzing
da Original brugsanvisning
sv Bruksanvisning i original
no Original driftsinstruks
fi Alkuperäiset ohjeet
el Πρωτότυπο οδηγίων χρήσης
tr Orijinal işletme talimatı
pl Instrukcja oryginalna
cs Původní návod k používání
sk Pôvodný návod na použitie

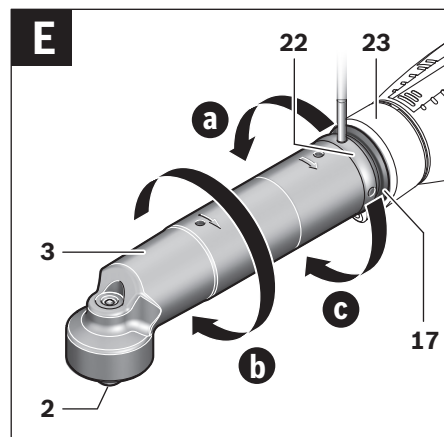
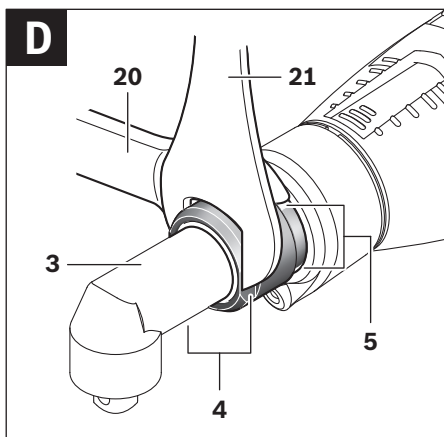
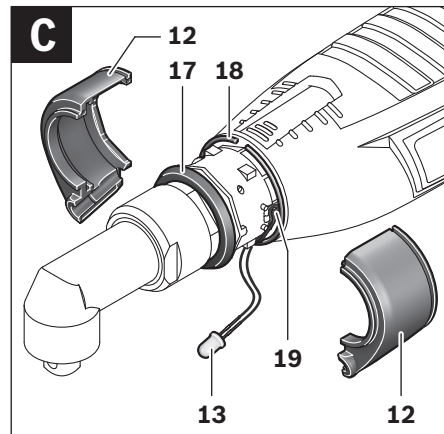
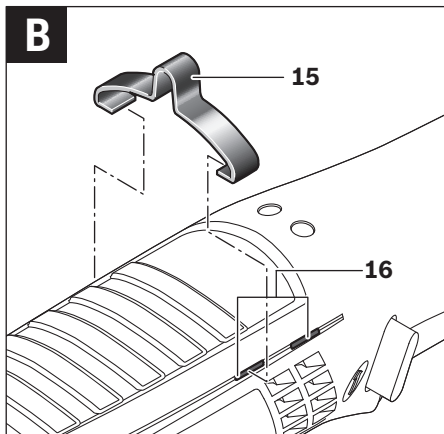
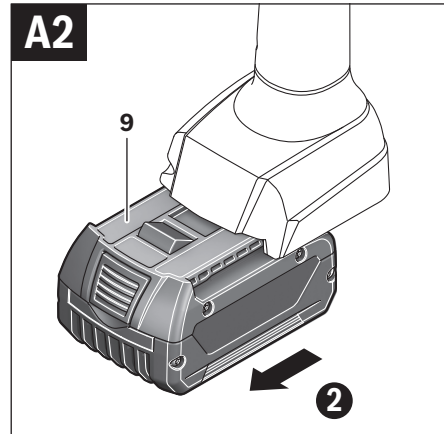
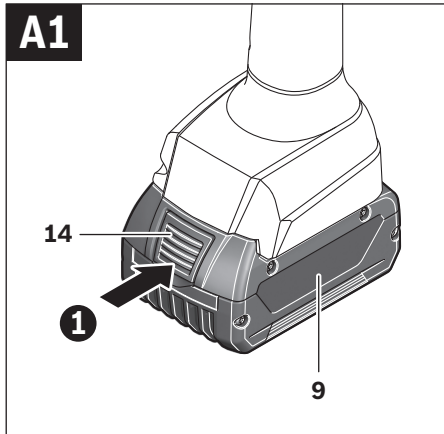
hu Eredeti használati utasítás
ru Оригинальное руководство
 по эксплуатации
uk Оригінальна інструкція з
 експлуатації
kk Пайдалану нұсқаулығының
 түпнұсқасы
ro Instrucțiuni originale
bg Оригинална инструкция
mk Оригинално упатство за работа
sr Originalno uputstvo za rad
sl Izvirna navodila
hr Originalne upute za rad
et Algupärane kasutusjuhend
lv Instrukcijas oriģinālvalodā
lt Originali instrukcija
ja オリジナル取扱説明書

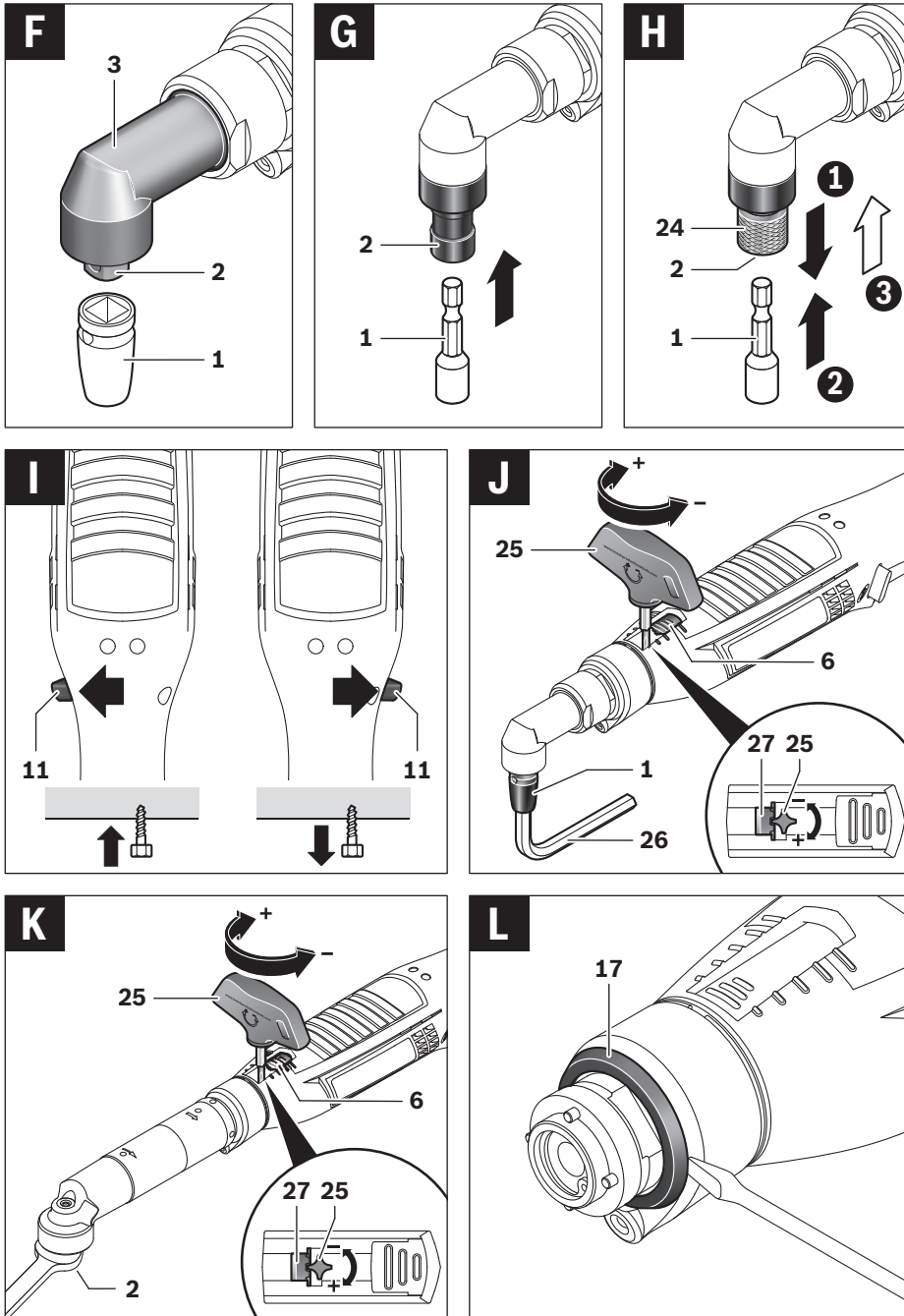
cn 正本使用说明书
tw 原始使用說明書
ko 사용 설명서 원본
th หนังสือคู่มือการใช้งานฉบับต้นแบบ
id Petunjuk-Petunjuk untuk
 Penggunaan Orisinal
vi Bản gốc hướng dẫn sử dụng
ar تعليمات التشغيل الأصلية
fa دفترچه راهنمای اصلی





4 |





14 | English

Nur für EU-Länder:

Gemäß der europäischen Richtlinie 2012/19/EU müssen nicht mehr gebrauchsfähige Elektrowerkzeuge und gemäß der europäischen Richtlinie 2006/66/EG müssen defekte oder verbrauchte Akkus/Batterien getrennt gesammelt und einer umweltgerechten Wiederverwendung zugeführt werden.

Nicht mehr gebrauchsfähige Akkus/Batterien können direkt abgegeben werden bei:

Deutschland

Recyclingzentrum Elektrowerkzeuge
Osteroder Landstraße 3
37589 Kalefeld

Schweiz

Batrec AG
3752 Wimmis BE

Akkus/Batterien:**Li-Ion:**

Bitte beachten Sie die Hinweise im Abschnitt „Transport“, Seite 13.

Änderungen vorbehalten.

English

Safety Notes

General Power Tool Safety Warnings

⚠ WARNING Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term “power tool” in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

Work area safety

- ▶ **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
- ▶ **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
- ▶ **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

Electrical safety

- ▶ **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with**

earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.

- ▶ **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.**

There is an increased risk of electric shock if your body is earthed or grounded.

- ▶ **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- ▶ **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges and moving parts.** Damaged or entangled cords increase the risk of electric shock.
- ▶ **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
- ▶ **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.** Use of an RCD reduces the risk of electric shock.

Personal safety

- ▶ **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.
- ▶ **Use personal protective equipment. Always wear eye protection.** Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- ▶ **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
- ▶ **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- ▶ **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
- ▶ **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
- ▶ **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.

Power tool use and care

- ▶ **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.

- ▶ **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- ▶ **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
- ▶ **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- ▶ **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
- ▶ **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- ▶ **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

Battery tool use and care

- ▶ **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
- ▶ **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
- ▶ **When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another.** Shorting the battery terminals together may cause burns or a fire.
- ▶ **Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.

Service

- ▶ **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

Safety Warnings for Industrial Cordless Angle Wrenches

- ▶ **Hold power tool by insulated gripping surfaces, when performing an operation where the fastener may contact hidden wiring.** Fasteners contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.
- ▶ **Use appropriate detectors to determine if utility lines are hidden in the work area or call the local utility company for assistance.** Contact with electric lines can lead to fire and electric shock. Damaging a gas line can lead to explosion. Penetrating a water line causes property damage.
- ▶ **Switch off the power tool immediately when the tool insert jams. Be prepared for high reaction torque that can cause kickback.** The tool insert jams when:
 - the power tool is subject to overload or
 - it becomes wedged in the workpiece.
- ▶ **Hold the machine with a firm grip.** High reaction torque can briefly occur while driving in and loosening screws.
- ▶ **Secure the workpiece.** A workpiece clamped with clamping devices or in a vice is held more secure than by hand.
- ▶ **Always wait until the machine has come to a complete stop before placing it down.** The tool insert can jam and lead to loss of control over the power tool.

⚠ WARNING The dust developing during sanding, sawing, grinding, drilling and similar operations can act carcinogenic, teratogenic or mutagenic. Some of the substances contained in these dusts are:

- Lead in lead-based paints and varnishes;
- Crystalline silica in bricks, cement and other masonry work;
- Arsenic and chromate in chemically treated wood.

The risk of disease depends on how often you are exposed to these substances. To reduce the risk, you should work only in well ventilated rooms with appropriate protective equipment (e. g. with specially designed respirators that filter out even the smallest dust particles).

- ▶ **Before any work on the machine (e. g., maintenance, tool change, etc.) as well as during transport and storage, set the rotational direction switch to the centre position.** Unintentional actuation of the On/Off switch can lead to injuries.
- ▶ **Avoid unintentional switching on. Ensure the On/Off switch is in the off position before inserting battery pack.** Carrying the power tool with your finger on the On/Off switch or inserting the battery pack into power tools that have the switch on invites accidents.
- ▶ **Use only flawless tool bits that are not worn.** Defective tool bits can break, for example, and cause injury or damage.
- ▶ **When working with an application tool, pay attention that the application tool is firmly seated on the tool holder.** When the application tool is not firmly connected with the tool holder, it can come loose again and not be controlled.
- ▶ **Be careful when long screws are screwed in. Depending on the type of screw and the tool bit used, there is a danger of slipping.** Long screws are often difficult to control and the danger exists that the tool bit may slip off the fastener head and cause injury.
- ▶ **Pay attention to the direction of rotation that is set before switching on the power tool.** For example, when a screw is to be loosened and the direction of rotation is set

16 | English

so that the screw is tightened, this can lead to a strong torque reaction of the power tool.

- ▶ **Do not use this tool as a drill.** Tools equipped with shut-off clutches are not designed for drilling applications. The clutch can shut off automatically and without warning.

- ▶ **Do not open the battery.** Danger of short-circuiting.



Protect the battery against heat, e. g., against continuous intense sunlight, fire, water, and moisture. Danger of explosion.

- ▶ **In case of damage and improper use of the battery, vapours may be emitted. Ventilate the area and seek medical help in case of complaints.** The vapours can irritate the respiratory system.

- ▶ **Use the battery only in conjunction with your Bosch power tool.** This measure alone protects the battery against dangerous overload.

- ▶ **Use only original Bosch batteries with the voltage listed on the nameplate of your power tool.** When using other batteries, e. g. imitations, reconditioned batteries or other brands, there is danger of injury as well as property damage through exploding batteries.

- ▶ **The battery can be damaged by pointed objects such as nails or screwdrivers or by force applied externally.** An internal short circuit can occur and the battery can burn, smoke, explode or overheat.

8 Battery charge-control indicator

9 Battery pack*

10 On/Off switch

11 Rotational direction switch

12 LED holder

13 Worklight

14 Battery unlocking button*

15 Utility clip*

16 Fastening slots for utility clip

17 Marking ring

18 Snap ring

19 Cavity in the housing shell

20 Open-end spanner, size 27 mm*

21 Open-end spanner, size 22 mm*

22 Lock nut

23 Motor housing

24 Quick-change chuck*

25 Adjustment tool

26 Allen key*

27 Adjustment disc

28 Handle (insulated gripping surface)

*Accessories shown or described are not part of the standard delivery scope of the product. A complete overview of accessories can be found in our accessories program.

Product Description and Specifications



Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

While reading the operating instructions, unfold the graphics page for the machine and leave it open.

Intended Use

The power tool is intended for screwing in and loosening bolts/screws, nuts and other threaded fasteners in the specified dimension and performance range.

This power tool is not intended for use as a drill.

The light of this power tool is intended to illuminate the power tool's direct area of working operation and is not suitable for household room illumination.

Product Features

The numbering of the product features refers to the illustration of the machine on the graphics page.

- 1 Tool bit*
- 2 Tool holder*
- 3 Angled drive head*
- 4 Spanner flats on the angled head flange*
- 5 Spanner flats on the sleeve nut
- 6 Torque selector switch
- 7 LED indicator, tightening control

Noise/Vibration Information

Measured sound values determined according to EN 60745.

Typically the A-weighted sound pressure level of the product is 70 dB(A). Uncertainty K = 3 dB.

The noise level when working can exceed 80 dB(A).

Wear hearing protection!

Vibration total values a_h (triax vector sum) and uncertainty K determined according to EN 60745:

Screwdriving without impact: $a_h < 2.5 \text{ m/s}^2$, $K = 1.5 \text{ m/s}^2$.

The vibration level given in this information sheet has been measured in accordance with a standardised test given in EN 60745 and may be used to compare one tool with another. It may be used for a preliminary assessment of exposure. The declared vibration emission level represents the main applications of the tool. However if the tool is used for different applications, with different accessories or insertion tools or is poorly maintained, the vibration emission may differ. This may significantly increase the exposure level over the total working period.

An estimation of the level of exposure to vibration should also take into account the times when the tool is switched off or when it is running but not actually doing the job. This may significantly reduce the exposure level over the total working period.

Identify additional safety measures to protect the operator from the effects of vibration such as: maintain the tool and the accessories, keep the hands warm, organisation of work patterns.

Technical Data

Industrial Cordless Angle Wrench ANGLE EXACT ION		8-1100	15-500	23-380	30-290		
Article number 3 602 D94 600	... 601	... 602	... 607		
Rated voltage	V=	18	18	18	18		
Torque for hard/soft screwdriving application according to ISO 5393	Nm	2 – 8	2 – 15	10 – 23	10 – 30		
No-load speed n_0	min ⁻¹	550 – 1100	260 – 520	190 – 380	145 – 290		
Weight according to EPTA-Procedure 01/2003	kg	1.7	1.7	2.2	2.2		
Degree of protection		IP 20	IP 20	IP 20	IP 20		
Battery (Not included in the standard delivery scope)		Li-Ion	Li-Ion	Li-Ion	Li-Ion		
Battery pack L (0 602 494 002)		●	●	–	–		
Battery pack XL (0 602 494 004)		–	–	●	●		
Angled drive head (Standard delivery scope)		–	–	–	–		
Industrial Cordless Angle Wrench ANGLE EXACT ION		30-300	40-220	50-210	60-120		
Article number 3 602 D94 603	... 604	... 605	... 606		
Rated voltage	V=	18	18	18	18		
Torque for hard/soft screwdriving application according to ISO 5393	Nm	10 – 30	15 – 40	15 – 50	15 – 60		
No-load speed n_0	min ⁻¹	150 – 300	140 – 220	90 – 180	60 – 120		
Weight according to EPTA-Procedure 01/2003	kg	2.4	2.4	2.4	2.4		
Degree of protection		IP 20	IP 20	IP 20	IP 20		
Battery (Not included in the standard delivery scope)		Li-Ion	Li-Ion	Li-Ion	Li-Ion		
Battery pack L (0 602 494 002)		–	–	–	–		
Battery pack XL (0 602 494 004)		●	●	●	●		
Angled drive head (Standard delivery scope)		■ 3/8"	■ 3/8"	■ 3/8"	■ 3/8"		
Angled drive head							
				Straight drive head			
		■ 1/4"	■ 3/8"	■ 3/8"	○ 1/4"	QC○ 1/4"	QC○ 1/4"
Article number 0 607 453 617	... 453 620	... 451 618	... 453 618	... 453 630	... 453 631
Maximum torque, hard screwdriving application according to ISO 5393	Nm	20	25	30	20	20	6
Tightening torque at the flange	Nm	20	20	25	20	20	10
Accessories for ANGLE EXACT ION		15-500	15-500	30-300	15-500	15-500	15-500
Weight according to EPTA-Procedure 01/2003	kg	0.2	0.2	0.3	0.2	0.2	0.2

Declaration of Conformity 

We declare under our sole responsibility that the product described under "Technical Data" is in conformity with the following standards or standardisation documents: EN 60745 according to the provisions of the directives 2009/125/EC (Regulation 1194/2012), 2011/65/EU, 2004/108/EC, 2006/42/EC.

Technical file (2006/42/EC) at:
Robert Bosch GmbH, PT/ETM9,
D-70745 Leinfelden-Echterdingen

Henk Becker
Executive Vice President
Engineering

Helmut Heinzelmann
Head of Product Certification
PT/ETM9

Henk Becker *i.V. Helmut Heinzelmann*

Robert Bosch GmbH, Power Tools Division
D-70745 Leinfelden-Echterdingen
Leinfelden, 26.11.2013

18 | English

Assembly

- **Before any work on the power tool, remove the battery.**

Battery Charging

- **Use only the battery chargers recommended by Bosch for this power tool.** Only these battery chargers are matched to the lithium ion battery used in your machine.

Note: The battery is supplied partially charged. To ensure full capacity of the battery, completely charge the battery in the battery charger before using your power tool for the first time.

The lithium-ion battery can be charged at any time without reducing its service life. Interrupting the charging procedure does not damage the battery.

The lithium ion battery is protected against deep discharging by the "Electronic Cell Protection (ECP)". When the battery is empty, the machine is switched off by means of a protective circuit: The inserted tool no longer rotates.

- **Do not continue to press the On/Off switch after the machine has been automatically switched off.** The battery can be damaged.

The battery is equipped with a NTC temperature control which allows charging only within a temperature range of between 0 °C and 45 °C. A long battery service life is achieved in this manner.

Observe the notes for disposal.

Removing the battery (see figures A1 – A2)

The battery **9** is equipped with two locking levels that should prevent the battery from falling out when pushing the battery unlocking button **14** unintentionally. As long as the battery is inserted in the power tool, it is held in position by means of a spring.

- To remove the battery **9**, press the unlocking button **14** and pull out the battery toward the front. **Do not exert any force.**

Battery Charge-control Indication (yellow LED)

Battery Charge-control Indication 8	Meaning
Flashing light + audio signal	Battery Charging: Only 6 – 8 more screwdriving operations possible.
Continuous light	Capacity no longer sufficient for a new screwdriving operation or the machine was subject to overload: The machine can no longer be switched on. – Remove the battery and replace with a fully charged one.
Flashing light	The machine is overheated and out of operation: – Before restarting the operation of the machine, wait until the flashing automatically stops after a short period.

Operating and Storage Environment

The device is suitable exclusively for operation at enclosed work sites.

For proper operation, the allowable ambient temperature should be between 0 °C und +45 °C at an allowable relative humidity between 20 and 95 %, free of moisture condensation.

Suspension Device (see figure B)

With the utility clip **15**, the machine can be attached to a suspension device.

- Fasten the utility clip **15** to the machine by engaging it into the fastening slots **16**.
Depending on the machine's centre of gravity, either the front or rear slots can be used.

- **Regularly check the condition of the utility clip and the hook of the suspension device.**

Adjusting the Worklight (see figure C)

- Press off the marking ring **17** with a thin screwdriver blade, a knife, or similar.
- Using snap-ring pliers, slide the snap ring **18** toward the rear onto the housing shell.

The two shell halves of the LED holder **12**, which enclose the worklight **13**, can now be adjusted to any desired position.

- Pay attention not to damage the worklight cable and, without kinking or bending it, slide it into the cavity **19** intended for it in the housing shell.
- Enclose the worklight **13** again with the two housing shells of LED holder **12**.
- Press the snap ring **18** and the marking ring **17** back to their initial positions.

Mounting the Angled Screw Head (see figure D)

Applies for the following types: ANGLE EXACT ION
8-1100 | 15-500 | 23-380 | 30-290

On these industrial cordless angle wrenches, a fitting angled screw head (see "Angled drive head", page 17) has to be mounted first.

- Hold the power tool with the open-end spanner **21** by the spanner flats **4** of the angled head flange.

► **Never clamp the tool by the housing shells!**

- Mount the angled screw head **3** onto the flange in the requested position and tighten the sleeve nut with the open-end spanner **20** via the spanner flats **5**.
Hold the angled head flange with the open-end spanner **21** to prevent turning.

Adjusting the Angled Drive Head

The angled drive head **3** can be adjusted to a total of eight positions.

- Hold the power tool with the open-end spanner **21** by the spanner flats **4** of the angled head flange.

► **Never clamp the tool by the housing shells!**

- Loosen the sleeve nut with the open-end spanner **20** by the spanner flats **5**. Adjust the angled drive head **3** in 45°

steps to the desired position and retighten the sleeve nut again with the open-end spanner **20** by the spanner flats **5**. Hold the angled head flange with the open-end spanner **21** to prevent turning.

Adjusting and Removing the Angled Drive Head (see figure E)

Applies for the following types: ANGLE EXACT ION
30-300 | 40-220 | 50-210 | 60-120

The angled drive head **3** with tool bit holder **2** can be continuously adjusted around 360°.

- Loosen the lock nut **22** by inserting an appropriate tool into an opening of the lock nut and turning the lock nut in the direction of the arrow **a** (left thread).
- Fix the angled drive head **3** in this position by turning the lock nut **22** in the direction of the arrow **c** against the angled drive head. Tighten the lock nut **22** with a tightening torque of max. 50 Nm again.
- Turn the angled drive head **3** in arrow direction **b** until the desired work angle is reached, but not more than once by 360°.

The angled drive head **3** can also be removed completely, e. g. when it is required to replace the marking ring **17** by one with another colour or to adjust the worklight. Adjust the worklight to the desired position first (see "Adjusting the Worklight", page 18) before adjusting the angled drive head.

- Loosen the lock nut **22** by inserting an appropriate tool into an opening of the lock nut and turning the lock nut in the direction of the arrow **a** (left thread).

Unscrew the angled drive head **3** in arrow direction **b** until it can be removed.

Unscrew the lock nut **22** from the motor housing **23** in arrow direction **a**.

Now, the marking ring can be exchanged or the worklight can be adjusted.

- Turn the lock nut **22** in arrow direction **c** onto the motor housing **23** and screw on the angled screw head again turning in arrow direction **b**.
- Lock the angle nutrunner head by screwing the lock nut **22** in arrow direction **c**.
- Retighten lock nut **22** again with a tightening torque of approx. 50 Nm.

Configuring the Power Tool

With the *BOSCHEXACT Configurator* software, different power tool settings (e. g., speed, driving stages, repeat protection) can be configured. For this, the power tool must be connected to a PC via the USB data port.

Note: Observe all safety warnings and instructions in the software instruction manual.

Changing Application Tools on the Screw Head with External Square Drive (see figure F)

Inserting

- Press in the pin on the drive square of the tool holder **2**, e. g. using a small screwdriver, and slide the tool bit **1** over the drive square. Pay attention that the pin engages in the recess of the tool bit.

Removing

- Press in the pin in the recess of the tool bit **1** and pull the tool bit out of the tool holder **2**.

Changing Application Tools on the Screw Head with Internal Hexagon (see figure G)

Inserting

- Insert the tool bit **1** into the internal hex socket of the tool holder **2** until it can be felt to engage.

Removing

- Pull the tool bit **1** off of the tool holder **2** with the aid of pliers, if necessary.

Changing Application Tools on the Head with Quick-change Chuck (see figure H)

Inserting

Use only insertion tools with fitting end pieces (1/4" hexagonal).

- Pull the sleeve of quick-change chuck **24** to the front and hold.
- Insert tool bit **1** into tool holder **2** and release the quick-change chuck.

Removing

- Pull the sleeve of quick-change chuck **24** to the front and hold.
- Remove tool bit **1** from tool holder **2** and release the quick-change chuck.

Operation

- ▶ **Before any work on the power tool, remove the battery.**

Starting Operation

When starting the power tool, you should first select the direction of rotation with the rotational direction switch **11** since the power tool starts only when the rotational direction switch **11** is not in the middle position (switch-on lock).

Reversing the rotational direction (see figure I)

- **Right rotation:** For driving in screws, push the rotational direction switch **11** left to the stop.
- **Left Rotation:** For loosening or unscrewing screws, push the rotational direction switch **11** right to the stop.

Switching On the Worklight

The work area illumination **13** makes possible the lighting of the screwing position for unfavorable light conditions. The work area illumination **13** is switched on by lightly pressing the on/off switch **10**. When the on/off switch is firmly pressed, the power tool is switched on and the work area illumination continues to light.

- ▶ **Do not look directly into the work area illumination – your sight can be temporarily degraded!**

20 | English

Switching On and Off

The screwdriver has a **shut-off clutch** that depends on the torque and can be set in the given range. It responds when the torque that is set is reached.

- To **start** the machine press the on/off switch **10** to the stop.
- The machine **switches off automatically** as soon as the preset torque is reached.
- ▶ **When the on/off switch 10 is released prematurely, the preset torque is not reached.**

To save energy, only switch the power tool on when using it.

Working Advice

- ▶ **Apply the power tool to the screw/nut only when it is switched off.** Rotating tool inserts can slip off.

Setting the Torque (see figures J – K)

The tightening torque is dependent on the spring pretension of the shut-off clutch. The shut-off clutch responds in right as well as left rotation when the torque setting is reached.

For setting the individual tightening torques, use only the adjustment tool **25** provided.

- Push the torque selector switch **6** on the power tool completely back.

Applies for the following types: ANGLE EXACT ION
8-1100 | 15-500 | 23-380 | 30-290

- Insert an Allen key **26** into tool bit **1** and turn it slowly.
- When a small indentation (adjusting dial **27**) is visible in the clutch, insert the adjustment tool **25** into the indentation and turn it.

Applies for the following types: ANGLE EXACT ION
30-300 | 40-220 | 50-210 | 60-120

- Slowly turn the tool holder **2** using an open-end spanner.
- When a small indentation (adjusting dial **27**) is visible in the clutch, insert the adjustment tool **25** into the indentation and turn it.

Turning in the clockwise direction results in a higher torque, in the counterclockwise direction, a lower torque.

- Remove the adjustment tool **25**. Shut the torque selector switch **6** again to protect the clutch against contamination.

Note: The required adjustment is dependent on the type of threaded connection and can be best determined by practical trials. Check the trial screwings with a torque wrench.

- ▶ **Set the torque only in the specified performance range, otherwise the shut-off clutch will no longer respond.**

Marking the Torque Setting (see figure L)

Always use the power tool with a marking ring to insure that the housing body is sealed from dust and dirt.

Applies for the following types: ANGLE EXACT ION
30-300 | 40-220 | 50-210 | 60-120

For these industrial cordless angle wrenches, the angled screw head must be removed first, see "Adjusting and Removing the Angled Drive Head", page 19.

The torque can be marked now as described below.

Applies for the following types: ANGLE EXACT ION
8-1100 | 15-500

To identify individually adjusted tightening torques, the marking ring **17** can be replaced with a marking ring of another color.

- Press off the marking ring **17** with a thin screwdriver blade, a knife, or similar.

Screwing Fastener Indicator (green/red LED)

When the preset torque is reached, the shut off coupling responds. The LED indicator **7** lights green.

If the preset torque is not reached, the LED indicator **7** lights red and an acoustical signal sounds. The screwing fastener must be performed again.

Repeat Protection

When the shut-off coupling responds for a screwing fastener, the motor shuts off. Switching on again is possible only after a 0.7 second delay. In this manner, an unintentional re-tightening of an already seated screw is avoided.

Maintenance and Service**Maintenance and Cleaning**

- ▶ **Before any work on the machine itself (e. g. maintenance, tool change, etc.) as well as during transport and storage, remove the battery from the power tool.** There is danger of injury when unintentionally actuating the On/Off switch.
- ▶ **For safe and proper working, always keep the machine and ventilation slots clean.**

Power Tool Lubrication

Lubricants:
Special gearbox grease (225 ml)
Article number 3 605 430 009
Molycote grease
SAE 10/SAE 20 engine oil

- Clean the gearbox after the first 150 running hours using a mild solvent. Follow the solvent manufacturers directions for use and disposal. Lubricate the gearbox using Bosch gearbox lube. Repeat the lubrication procedure every 300 hours after the initial gearbox service.
- Oil the moving parts of the shut-off clutch after 100 000 screwing operations with a few drops of SAE 10/SAE 20 motor oil. Lubricate the sliding and rolling parts with Molycote grease. At this time, inspect the clutch for wear in order to ensure that the repeatability and accuracy have not been affected. Afterwards, the torque of the clutch must be readjusted.

- ▶ **Have maintenance and repair work performed only by qualified specialists.** In this manner, it can be ensured that the safety of the power tool is maintained.

An authorized Bosch after-sales service agent will carry out this work quickly and reliably.

- ▶ **Observe all applicable environmental regulations when disposing of old grease and solvents.**

After-sales Service and Application Service

Our after-sales service responds to your questions concerning maintenance and repair of your product as well as spare parts. Exploded views and information on spare parts can also be found under:

www.bosch-pt.com

Bosch's application service team will gladly answer questions concerning our products and their accessories.

In all correspondence and spare parts order, please always include the 10-digit article number given on the type plate of the machine.

Robert Bosch GmbH is responsible for the delivery of this product in accordance with the sales contract within the framework of the legal/country-specific regulations. For claims with respect to the product, please contact the following location:

Fax: +49 (711) 7 58 24 36
www.boschproductiontools.com

Transport

The contained lithium-ion batteries are subject to the Dangerous Goods Legislation requirements. The user can transport the batteries by road without further requirements.

When being transported by third parties (e.g.: air transport or forwarding agency), special requirements on packaging and labelling must be observed. For preparation of the item being shipped, consulting an expert for hazardous material is required.

Dispatch batteries only when the housing is undamaged. Tape or mask off open contacts and pack up the battery in such a manner that it cannot move around in the packaging. Please also observe possibly more detailed national regulations.

Disposal



The machine, rechargeable batteries, accessories and packaging should be sorted for environmental-friendly recycling.

Do not dispose of power tools and batteries/rechargeable batteries into household waste!

Only for EC countries:



According to the European Guideline 2012/19/EU, power tools that are no longer usable, and according to the European Guideline 2006/66/EC, defective or used battery packs/batteries, must be collected separately and disposed of in an environmentally correct manner.

Batteries no longer suitable for use can be directly returned at:

Great Britain

Robert Bosch Ltd. (B.S.C.)
P.O. Box 98
Broadwater Park
North Orbital Road

Denham
Uxbridge
UB 9 5HJ

At www.bosch-pt.co.uk you can order spare parts or arrange the collection of a product in need of servicing or repair.

Tel. Service: (0844) 7360109

E-Mail: boschservicecentre@bosch.com

Battery packs/batteries:



Li-ion:

Please observe the instructions in section "Transport", page 21.

Subject to change without notice.

Français

Avertissements de sécurité

Avertissements de sécurité généraux pour l'outil

AVERTISSEMENT

Lire tous les avertissements de sécurité et toutes les instructions.

Ne pas suivre les avertissements et instructions peut donner lieu à un choc électrique, un incendie et/ou une blessure sérieuse.

Conservé tous les avertissements et toutes les instructions pour pouvoir s'y reporter ultérieurement.

Le terme « outil » dans les avertissements fait référence à votre outil électrique alimenté par le secteur (avec cordon d'alimentation) ou votre outil fonctionnant sur batterie (sans cordon d'alimentation).

Sécurité de la zone de travail

- ▶ **Conservé la zone de travail propre et bien éclairée.** Les zones en désordre ou sombres sont propices aux accidents.
- ▶ **Ne pas faire fonctionner les outils électriques en atmosphère explosive, par exemple en présence de liquides inflammables, de gaz ou de poussières.** Les outils électriques produisent des étincelles qui peuvent enflammer les poussières ou les fumées.
- ▶ **Maintenir les enfants et les personnes présentes à l'écart pendant l'utilisation de l'outil.** Les distractions peuvent vous faire perdre le contrôle de l'outil.

Sécurité électrique

- ▶ **Il faut que les fiches de l'outil électrique soient adaptées au socle. Ne jamais modifier la fiche de quelque façon que ce soit. Ne pas utiliser d'adaptateurs avec des outils à branchement de terre.** Des fiches non modifiées et des socles adaptés réduiront le risque de choc électrique.
- ▶ **Éviter tout contact du corps avec des surfaces reliées à la terre telles que les tuyaux, les radiateurs, les cuisinières,**