Excellent reliability, winning productivity.
Fiam: the guarantee of best result

**CB: hi-tech DC screwdrivers
with torque/angle control**

• Torque range: from 0,6 up to 115 Nm
• Speed: from 245 up to 2535 rpm

Fiam

PEOPLE AND SOLUTIONS

Solutions with torque and angle control
Innovation, reliability, performance. The best of Fiam for your production cycle.

They can be integrated perfectly with the network control systems of the production site. They allow to **control, monitor, analyze, diagnose and programme in real-time.**
They guarantee a **very high control of the productive process** and consequently of the quality of the assembled products. These are the new, **extraordinary Fiam solutions**
for industrial tightening: a concentration of innovation and reliability.
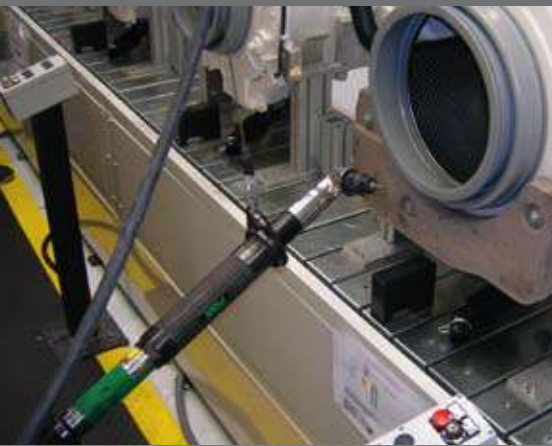
HANDINESS
AND RELIABILITY:
TOGETHER FOR A 3 TIMES
PERFECT SINERGY

Screwdriver, control unit, single cable: these are the **3 innovative core parts of the CB systems** designed and manufactured by Fiam for you.

3 elements that work in **perfect sinergy** and allow to obtain **extremely reliable and very high quality assembled products.**

Screwdriver, electric cable, control unit: a perfect and incomparable dialogue

What is your productive need?
This wide range of DC screwdrivers
– pistol, straight and angle – is your
solution to satisfy every need in terms
of torque and speed.

The hi-tech DC screwdrivers with
torque/angle control CB have **extremely
advanced features** and are connected to
a single feed and control unit, through a
single cable.

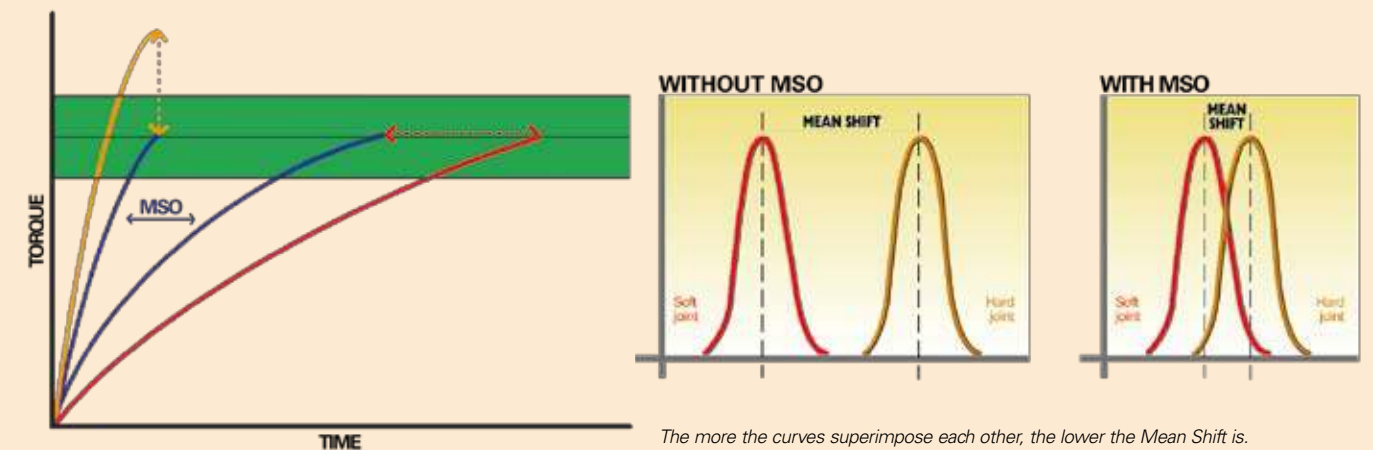So you will have **the guarantee of a perfect
productive process.**

Mean Shift Optimizer

The control units of the CB tightening systems have the MSO
software feature. This extremely advanced and accurate device **varies
automatically and electronically tool speed, adapting it to the joint
depending on its softness/hardness during tightening.**

The feature can be enabled or disabled depending on the type of application: it manages simultaneously
screwdriver speed as the joint varies; this situation occurs often in mass-production where the features
of the products to be assembled may differ.

- It **reduces assembly times increasing productivity**
- It **improves** screwdriver performance in terms of
  nominal torque maintaining **high accuracy** (reduced
  Mean Shift) **as the joint varies**
- it **protects the motor** and its internal gears **from
  wear caused by overheating** in the standard
  systems, obtaining **longer screwdriver lifetime**

- It **reduces reaction** on operator's hand when the
  screwdriver works
- The **times of deceleration can be programmed:** this is
  an important advantage for safety

ERGOTECH

The Mean Shift is an index by which we can judge the behaviour of the
screwdriver when the softness of the joint varies: one of the critical
factors to pay maximum attention to is the ability of a screwdriver to
obtain the lowest Mean Shift .

WITHOUT MSO MEAN SHIFT

WITH MSO MEAN SHIFT

The more the curves superimpose each other, the lower the Mean Shift is.
In other words, the screwdriver is practically insensitive to joint
changes and therefore it is a high quality screwdriver.

For MSO: each workpiece is a "SINGLE WORKPIECE".
This is the guarantee of a incomparable reliability

Through the MSO feature each
workpiece (also standard) is valued as
a single workpiece. In fact the **joints**,
particularly the soft joints, **are all
different,** and this device offers unique
advantage in the market:
the MSO **works in real-time
(in-process),** i.e. it **decelerates
always** depending on the joint for

each workpiece to be processed.
Unlike other systems with
"self-learning feature", which base
on the tightenings performed during
the tool's calibration phase on the
same joint before the working process
(pre-process).

Reliability

Long lifetime of the components guaranteed by careful design and quality of the productive process which results in less maintenance and repair costs

All CB screwdrivers have a **transducer and an encoder** which effect the **control of the torque and angle with DIRECT modality;** this ensures high resolution in the measurement of torque and angle values guaranteeing an **excellent tightening process control**

For an optimal control of the operator's activities,the buttons and therefore the corresponding tool's commands **can be programmed by the control unit** depending on the type of application (for example, they can be also disabled)

All CB tools have an **electronic built in chip that transmits data to the control unit,** such as: model, serial n°, n° of cycles performed, calibration value, etc. All this information, available **without the operator programming anything**, can be displayed directly on the TCS unit and **render maintenance work easier.**

Every single system **can be programmed** to **perform different assemblies at different torque and therefore it can be suitable for different applications**, thus providing a considerable advatange in terms of investment costs

Productivity

Considerable increase of the efficiency of the tightening cycle thanks to innovative systems

New TCS **units integrate both the control features** of the assembly process and the **screwdriver's feed features** (power, current...)

Available in many versions, the TCS units are **entirely interchangeable with all screwdrivers**; they differentiate for the complexity of their features

The systems (screwdrivers, unit and cables) are designed with great attention to modularity and therefore the interchangeable components guarantee **easier maintenance operations with reduced costs**

The computerized electric solutions reduce production times and costs as they require **less torque verifications** in respect to traditional assembly systems

In relation to their weight and dimensions, CB screwdrivers have a **higher speed** among the solutions on the market

The pistol models and push-to-start models are equipped with **LEDs to light up the fastening point:** this device is particularly useful to assemble where space is reduced and dark (the activation time of LEDs is programmable by the control unit)

In addition to the start button, **the reverse button, reversing rotation, can also be used as a work program selector**

All CB screwdrivers **feature light and sound devices to inform the operator of the fastening outcome** based on preset values (result, start, error…): an advantage for the operator and his productivity

Ergonomics

Optimization of the tool performances in regard to ergonomics and operator safety

Extremely **compact, light** and balanced, these screwdrivers are supplied with particular **grips for a perfect ergonomics**

Pistol models are very well balanced and with extremely reduced dimensions; they are also available in versions with **top feeding cable**

MSO system *(Mean Shift Optimizer)* guarantees greater operator's comfort thanks to the **absence of the tool's overheating**

These systems meet the most important ergonomic requirements such as **low noise level, maximum safety and double-insulation system,** ensuring safe working environments for the operators

Ecology

Innovative systems designed paying even more attention with respect to environment and of its safeguard

The electrical solutions safeguard the workplace since there is absolutely **no oil spraied in the air**, which is sometimes present when using air tools

All the **components are easy to dispose of** because they are built using recyclable materials; Fiam carries out its WEEE obligations as manufacturer, with full respect for the environment, and without any extra charge for the customer

All Fiam products are supplied with **eco-friendly packaging**

MULTI-FUNCTION BUTTON: CORE AND BRAIN OF EACH CB SCREWDRIVER

All CB screwdrivers have the multi-function button that allows the interaction of the operator with the assembly process.
The **many options to be activated with the button can be chosen and programmed directly from the control unit** (for example the direction change of the screwdriver to untighten, the selection of the different screwdriver's control parameters, the control of the alarm in case of mistake, etc.).

- **minimum pressure** for activation
- **red, green and yellow LEDs** indicate the state of screwdriver

- **two blue lights** indicate the rotation of the screwdriver (untightening/ tightening)
- **activation and choice** of the first two programmes configured
- the particular screwdriver's button seat **prevents accidental activation**

TCS feed and control unit: every need is satisfied

TCS (Tightening Control System) units are innovative instruments that include the **feed features** to the screwdrivers (power, current parameters etc.), the programming and the **accurate control of each stage of the assembly process.**

Available in more versions, they are entirely **interchangeable with all screwdrivers models and differ for the different features to be chosen depending on production need.**

Programming has never been easier

A perfect reading for an immediate understanding
The display, well-lit and with visible characters, has a clear and functional layout.

An intuitive navigation to carry out the operation you want
In the menu, the navigation is particularly intuitive and simple. Few keys are needed to configure the parameters, process tightening data or view the entire system diagnostics and create many assembly strategies.

A safe system for errors verification
The effective results can be compared with quality objectives: for example the system counts the tightenings completed and identifies damaged threads or the repeated tightenings. The system can also be programmed to start the successive stages of the productive process only when all tightenings are OK.

All you need to be always updated
Updates are easy to make.

TCS 1 model: the simplicity of control

- It permits to set **8 programmes**; each programme can manage: speed, torque / angle, slow seek and self tapping, acceleration (ramp), direction (clockwise / anticlockwise), torque threshold, unit of measurement
- It has a single tightening strategy: **torque control and angle monitoring**
- It provides **sequence control** (Poka-Yoke system): OK for each screw tightened;once the cycle is complete, the screwdriver stops and stands by for external reset
- Particularly the self-tapping option results advantageous where the **final tightening torque is lower than the initial threading torque** (widespread situation for example for assembling with self-threading screws on sheet metal) as it prevents damages to the workpiece to be assembled
- In the sequence control, it is possible to enable or disable the untightening option with any result (OK/NOK) - Error proofing
- It makes reading of torque and angle values easier, as it visualizes corresponding **graphs** on the display.
- Its programming method is easy and intuitive; it can be **programmed directly from unit's keyboard (on line) or Personal Computer (off line)** thanks to a **software to be installed on PC**
- **It avails of a RS 232 serial output**
- **It permits to print tightening data** (result, torque, angle) via serial output (data are transferred to PC)
- It has 8I +8O **(I/Os) to connect the PLC and exchange information**
- It has a **'Diagnostics menu' to check state of screwdriver** (temperature, torque applied, power present, speed) and **state of I/Os**
- **The controller reads the electronic chip built into the tool** and displays its characteristics
- Is is equipped with a **support** that allows the installation on pre-existing systems and eases the practical positioning of the cables

TCS 3 model
the reply with all solutions

- Through its **99 programmes,** it permits to obtain up to **12 tightening sequences** for each programme: speed, torque/angle, acceleration (ramp), slow seek and self tapping, direction (clockwise/anticlockwise), torque treshold, unit of measurement…
- It permits to set **7 tightening strategies** (torque control and angle monitoring, torque control and angle control, torque monitoring and angle control, min/max torque, yield point, gradient and untightening)
- It permits the **sequence control** (Poka-Yoke system): OK for each screw tightened;once the cycle is complete, the screwdriver stops and stands by for external reset
- Particularly the self-tapping option results advantageous where the **final tightening torque is lower than the initial thread torque** (widespread situation for example for assembling with self-threading screws on sheet metal) as it prevents damages to the workpiece to be assembled
- It makes reading of torque and angle values easier, as it **vizualises** corresponding graphs on the display
- Its programming methods is easy and intuitive; it can be made directly from keyboard and/or PC thanks to the **software already installed on the unit**
- It memorizes up to **10 steps of any result (OK/NOK)**
- It is possible to connect whatever **PC** thanks to the software installed on the unit and it isn't necessary to install any programme on the PC
- **It permits to print tightening data** (result, torque, angle, date, hour) via serial output (data can be transferred to PC)
- Thanks to the **built-in Ethernet inteface**, it is possible to **programme and acquire data from remote workstations**
- It is supplied with **internal memory** with space for up 10.000 stored entries

- It can **read barcodes** and **set different tightening programmes** (with reading device provided as option)
- **It avails of 2 RS 232 serial outputs to be programmed** (for programming and for data transfer)
- **It avails of a USB port** to load and download programmes and data
- It has an extremely advanced statistical capability on different parameters
- It has a "Diagnostics menu" to **check state of screwdtriver** (temperature, torque applied, power present, speed) and **state of I/Os**
- **It reads the electronic chip built into the tool** and displays its characteristics
- It is equipped with a **support** that allows the installation on pre-existing systems and eases the practical positioning of the cables

TCS 3 CONTROL UNIT:
FOR A COMMUNICATING WORLD

ETHERNET IS STANDARD!
Each TCS 3 unit has the Ethernet output as standard; this allows direct connection to the network. Also Device Net and Profibus connections are available as options.

I/O 24 VDC (only for TCS3-V…version)
Particularly fast, they allow error verification, selection of the parameters or equivalent devices and the 'remote' control of the tools

USB OUTPUT
To save the settings, transfer the configuration parameters from one controller to another or effect back up

TWO RS 232 SERIAL OUTPUTS
One for connecting the computer and the other for adding a barcode scanner, a serial printer, connections to serial network or to remotely configure the tool and control unit (two outputs to be programmed).

Model	Ethernet	Device Net	Profibus	I/O from 24 VDC	Serial
TCS3	●				●
TCS3 - V	●			●	●
TCS3 - VD	●	●		●	●
TCS3 - D	●	●			●
TCS3 - VP	●		●	●	●
TCS3 - P	●		●		●

TCS 3 V
In addition to all the features of the TCS 3, this version also has:
- 8 +8 I/Os for connection to PLC and for acquiring certain information (OK-NOT OK for each individual tightening cycle to be programmed)

TCS 3 VD
In addition to all the features of the TCS 3, this version also has:
- 8+8 I/Os for connection to PLC and for acquiring certain information (OK-NOT OK for each individual tightening cycle to be programmed)
- **DEVICE NET** interface for connection to PLC

TCS 3 D
In addition to all the features of the TCS 3, this version also has:
- **DEVICE NET** interface for connection to PLC

TCS 3 VP
In addition to all the features of the TCS 3, this version also has:
- 8+8 I/Os for connection to PLC and for acquiring certain information (OK-NOT OK for each individual tightening cycle to be programmed)
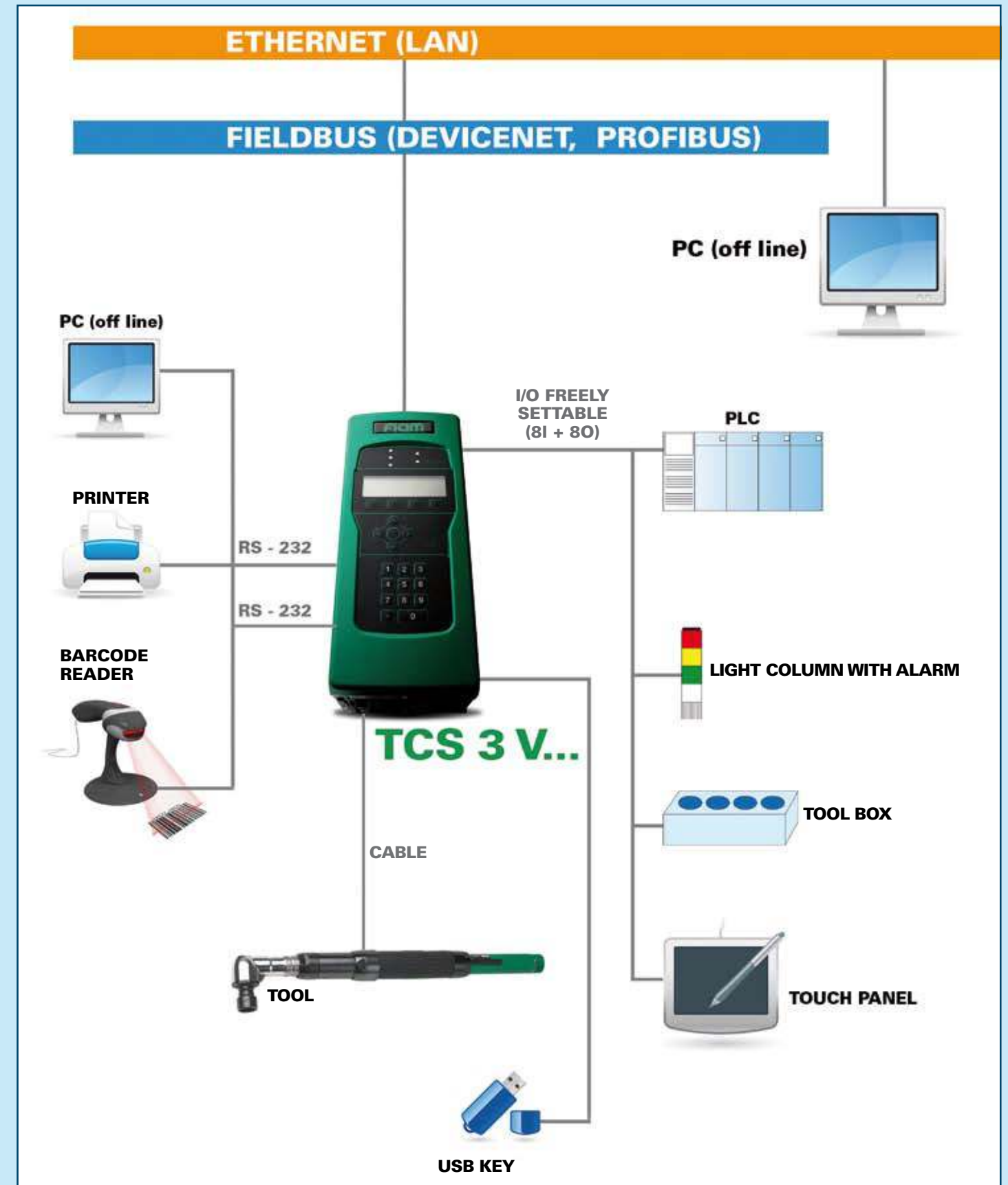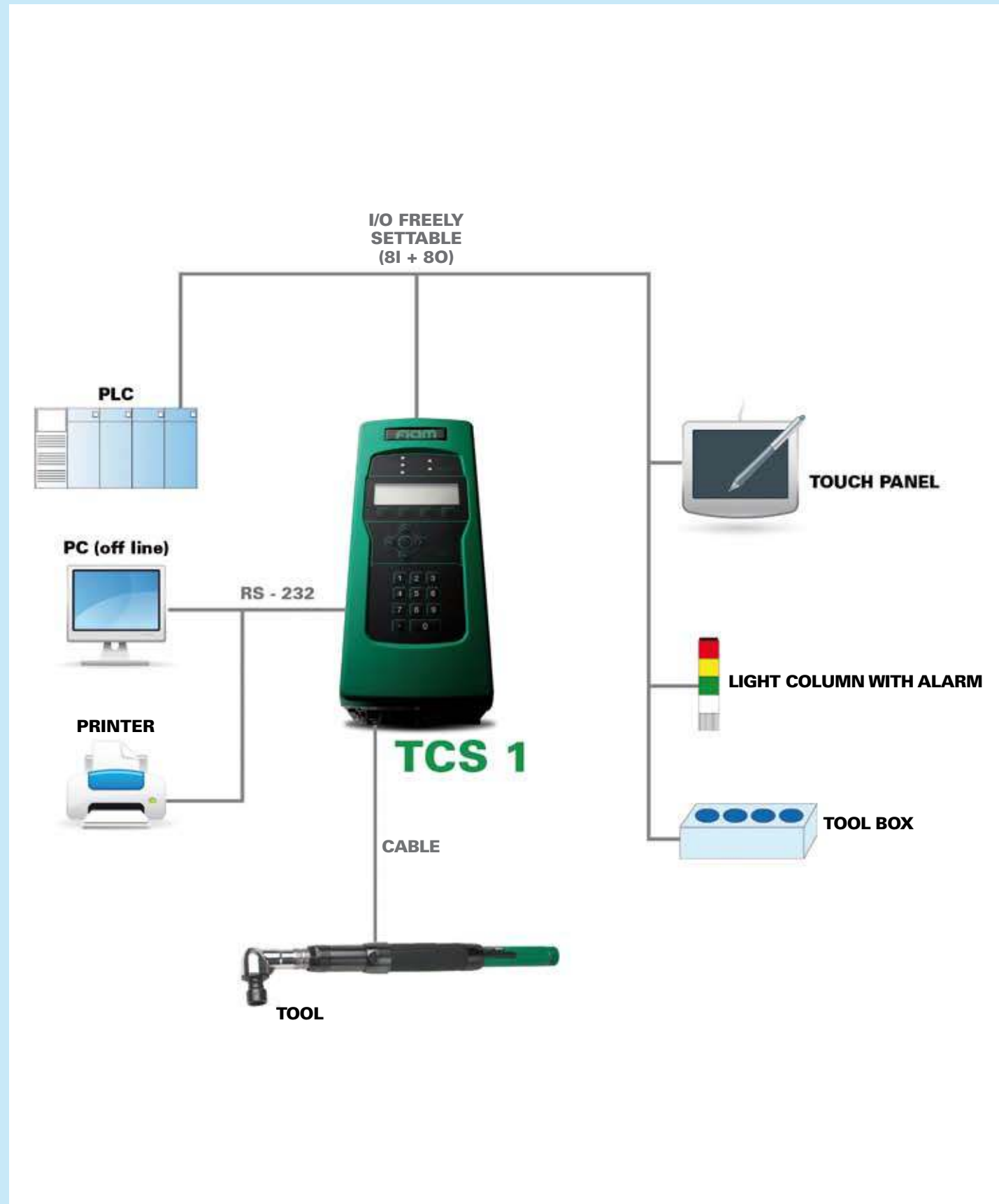- PROFIBUS interface for connection to PLC

TCS 3 P
In addition to all the features of the TCS 3, this version also has:
- PROFIBUS interface for connection to PLC

N.B. TCS3 control unit cannot be upgraded into TCS V/VD/D/VP/P. 'Remote' control and programming can be performed thanks to the fact that all TCS3 units are capable of interfacing through Ethernet
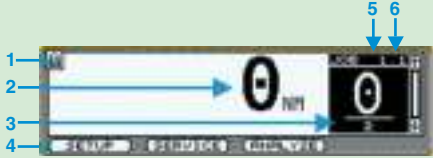
I/O FREELY SETTABLE (8I + 8O)

PLC

PC (off line)

RS - 232

PRINTER

TOUCH PANEL

LIGHT COLUMN WITH ALARM

TOOL BOX

TCS 1

CABLE

TOOL

ETHERNET (LAN)

FIELDBUS (DEVICENET, PROFIBUS)

PC (off line)

PC (off line)

PRINTER

RS - 232

RS - 232

BARCODE READER

I/O FREELY SETTABLE (8I + 8O)

PLC

LIGHT COLUMN WITH ALARM

TCS 3 V...

TOOL BOX

CABLE

TOOL

TOUCH PANEL

USB KEY

PROGRAMMING ON BOARD (ON LINE)

Main menu

The work strategy is easily selectable
1. Identification icon of the controller state (it lights and flashes)
2. Display of the tool torque
3. Working cycle visualization
4. Programming features
5-6. Tightening stages or jobs

Set Up

Different tightening strategies, the modality of count type "Poka yoke" and many other units of measurement can be set


The tightening direction of the tool can be set
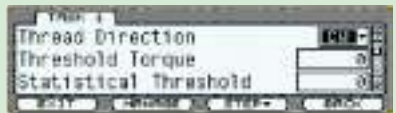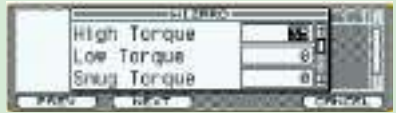
There are two programming modes:
• easier (Wizard)
• more accurate
In the Wizard programming, the minimum / maximum torque required can be set and automatically the unit will calculate the nominal torque.
Instead torque threshold, nominal torque and other parameters are inserted in the more accurate programming modality .
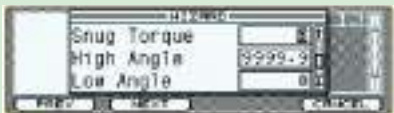
It is possible to set the start of the angle measurement (threshold). The speed to be set starts from maximum speed expressed by the tool
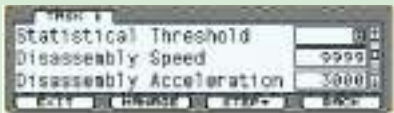
It is possible to set the untightening speed and the corresponding acceleration.
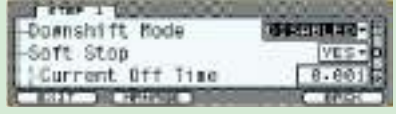
Set the acceleration modality during tightening station:
• MSO: the operator sets the MSO values and the unit analyzes the joint in terms of torque in a micrometric way and manages automatically the best acceleration;
• **Manual:** The operator sets the deceleration values and the final speed
• **Disabling:** possibility to disable the MSO feature (for example to check / discriminate the presence or absence of components used on very soft joints, such as washers / seals).

Service

Possibility to check the total status of the cycles performed and the level of control units' updating.

Analyze

View the diagnostics of the unit to check the voltage/power/temperature tool / speed in rpm/ acceleration/working torque.
The trace menu displays the tightening chart; the I/O menu displays inputs/outputs used.

PROGRAMMING FROM PERSONAL COMPUTER (OFF LINE)

OFF-LINE software, already installed as standard on TCS3 (and supplied on CD for TCS1), has a graphical interface that enables the programming of the unit directly on the personal computer.
The step by step setting is logical and intuitive as on board: moreover there is high capacity for analysis and reporting.

Main menu of the programming off-line software.
Allows to:
• Programme the TCS unit
• Analyze the tightening data and make the diagnostics of the screwdriver/controller system
• View and print the tightening programmes and the general settings
• Update the TCS and screwdriver software when necessary

Menu corresponding to the on-line Wizard programming on TCS.
• It allows a quick and easy programming of the tightening cycle.

Menu for detailed programming of the tightening cycle: it is possible to build a new programme and export it on the TCS and also change an existing programme on TCS after import into the PC.
Import and export data via RS 232 serial output

Menu for programming MSO feature that ensures constant performances (in terms of accuracy of given torque) as the joint varies.
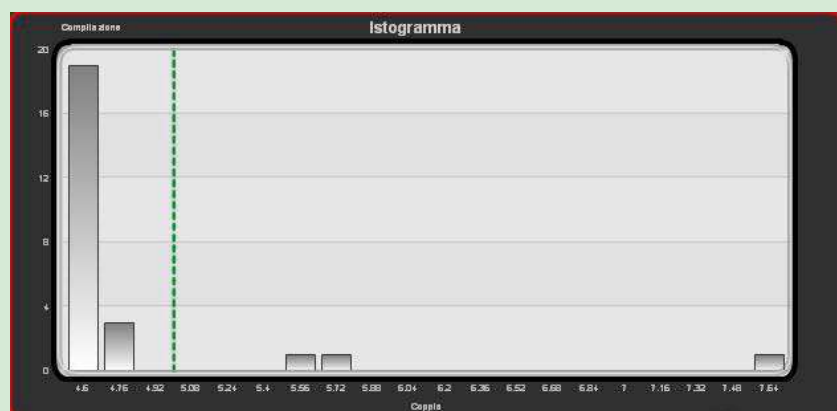
Display of the tightening results stored in TCS (date, hour, torque, angle).
The wrong results are crossed automatically by the programme.

Display of statistical data in memory

The data in memory can also be viewed using the histogram

Connecting cables:
the third operational core

Be demanding

Don't be satisfied with the maximum

Perfection is in your hands

Reliability

Productivity

Ergonomics

The advanced technological design of the **connecting cables** reduces maintenance costs and machine downtimes. In fact they are:
- **commissioned and tested** for over 2 million working cycles
- **manufactured with special materials to reduce any interference** caused by other machines
- **extremely flexible, they resist** to dynamic and particularly strong movements to offer a longer lifetime than other cables available on the market
- **designed with innovative technologies** to manage torque and leds that guarantee extreme safety in data transfer
- equipped with **shaped insert that is plugged directly into the tool** and guarantees high **connection reliability**
- equipped with **robust pins** that transmit signals and resist to an extremely high number of connect/disconnect cycles, **maintaining initial reliability unchanged in time**

The cable round shape permits easy bending in every direction: a great advantage in respect to the flat cables, which are harder and more exposed to stress

The connecting cables reduce the machine downtimes caused by damages because they are supplied with a **ratchet system** to prevent any accidental untightening

The connecting cable are fast to apply and install

Light connecting cables: they can be **rapidly connected/disconnected**

There is **a single connecting cable between the tool and the unit:** a great advantage in presence of obstructed work areas

90° connectors and wide range of lenghts (3,7 and 10 metres) guarantee the encumbrance reduction and the optimization of work areas. This renders work stations more comfortable

Connecting with TCS control unit

Connecting with tool

Connecting with tool

Pistol models

Type of screwdriver		Grip	Torque range				Idle speed	Starting system	Reversibility	Weight		Dimensions (mm)	Accessories
			min.	max.	min.	max.							
Model	Code	Type	Nm	Nm	in lb	in lb	rpm	Type	Type	kg	lb	Ø x l	Drive
2CB2APA	112618500		0,6 ÷ 2		5,31 ÷ 17,7		2050			0,7	1,54	36 X 197 x 178	F 1/4″
2CB3APA	112618501		1 ÷ 3		8,85 ÷ 26,55		1620			0,8	1,76	36 x 211 x 178	F 1/4″
2CB5APA	112618502		1,5 ÷ 5		13,275 ÷ 44,25		880			0,8	1,76	36 x 211 x 178	F 1/4″
12CB4APA	112618503		1,3 ÷ 4		11,505 ÷ 35,4		2535			0,8	1,76	36 x 222 x 178	F 1/4″
12CB10APA	112618504		3 ÷ 10		26,55 ÷ 88,5		1280			0,9	1,98	36 x 236 x 178	F 1/4″
12CB13APA	112618505		4 ÷ 13		35,4 ÷ 115,05		880			0,9	1,98	36 x 237x 178	F 1/4″
12CB17APA	112618506		5 ÷ 17		44,25 ÷ 150,45		610			0,9	1,98	36 x 237 x 178	F 1/4″
23CB8APA	112618507		2,5 ÷ 8		22,125 ÷ 70,8		2245			1,3	2,86	52 x 259 x 196	3/8″
23CB17APA	112618508		5 ÷ 17		44,25 ÷ 150,45		990			1,3	2,86	52 x 274 x 196	3/8″
23CB21APA	112618509		6 ÷ 21		53,1 ÷ 185,85		785			1,4	3,08	52 x 274 x 196	3/8″
23CB31APA	112618510		9 ÷ 31		79,65 ÷ 274,35		540			1,4	3,08	52 x 274 x 196	3/8″
33CB32APA	112618511		10 ÷ 32		88,5 ÷ 283,2		1125			1,6	3,52	52 x 299 x 196	3/8″
33CB40APA	112618512		12 ÷ 40		106,2 ÷ 354		890			1,6	3,52	52 x 299 x 196	3/8″

Legend

2 = Power of the screwdriver • **CB** = DC screwdriver • **2** = Max torque in Nm • **A** = Torque/angle control • **PA** = 'Forward' pistol grip

Legend

↻ **Reversibility:** all models are suitable for tightening and untightening operation

⇥ **Push to start**

• Noise level has been measured in accordance with ISO 3744 and ISO 15744 standards (inf. to 72 dBA)
• Accessory drive: male square drive (ISO 1174-1); female hexagonal drive 1/4″, 6,35 mm (ISO 1173)
• The code number must be used when ordering.

In compliance with EEC Directive 2004/108 on ESD compatibility

Data shown in the table are indicative and can be changed without prior notice.
Torque values are purely indicative and may be influenced by the softness of the type of joint, by the type and length of the screw, and by the type of accessory used. For any further details, please address to Fiam Technical Service.

Standard equipment (supplied with tool)	Accessories available upon request	Models available upon request
• Screwdrivers can be used also with reaction bar (supplied only with some tools) to reduce further the reaction on the operator's hand • Aluminium reaction bar for 12CB 10, 13, 17 models (L= mm 305) and 23 CB 8, 17, 21, 31 models (L= mm 431) • Steel reaction bar for 33CB 32, 40 models (L=mm 305). • Use and maintenance manual • Eco-friendly packaging	• Bits, sockets, etc. (see Fiam Accessories cat. Nr. 78) • Test/checking service of assembly system directly at the customer's production lines • Balancers, cartesian arms and balancing arms for ergonomic tightening operations: they eliminate any fatigue in operator's hands and arms. See 'Accessories for ergonomic workplaces' catalogue (nr. 79)	• Models with top feeding cable (TOP) equipped with specific feed cable • Models with different drive • Models with different torque range: please address to Fiam Technical Service

Straight models

Type of screwdriver		Grip	Torque range				Idle speed	Starting system	Reversibility	Weight		Dimensions (mm)	Accessories
			min.	max.	min.	max.							
Model	Code	Type	Nm	Nm	in lb	in lb	rpm	Type	Type	kg	lb	Ø x l	Drive
12CB4AL	112618900		0,6 ÷ 4		5,31 ÷ 35,4		2535			0,7	1,54	36 x 282 *	F 1/4″
12CB6AL	112618901		2 ÷ 6		17,7 ÷ 53,1		1620			0,7	1,54	36 x 296 *	F 1/4″
12CB10AL	112618902		3 ÷ 10		26,55 ÷ 88,5		1280			0,7	1,54	36 x 296 *	F 1/4″
12CB13AL	112618903		4 ÷ 13		35,4 ÷ 115,05		880			0,7	1,54	36 x 271	3/8″
12CB17AL	112618904		5 ÷ 17		44,25 ÷ 150,45		610			0,7	1,54	36 x 271	3/8″
23CB8AL	112618905		2,5 ÷ 8		22,125 ÷ 70,8		2245			1,4	3,08	47 x 402	3/8″
23CB16AL	112618906		5 ÷ 16		44,25 ÷ 141,6		1000			1,4	3,08	47 x 417	3/8″
23CB21AL	112618907		6 ÷ 21		53,1 ÷ 185,85		785			1,6	3,52	47 x 417	3/8″
23CB31AL	112618908		9 ÷ 31		79,65 ÷ 274,35		540			1,6	3,52	47 x 417	3/8″
33CB32AL	112618909		10 ÷ 32		88,5 ÷ 283,2		1125			1,7	3,74	47 x 442	3/8″
33CB40AL	112618910		12 ÷ 40		106,2 ÷ 354		890			1,7	3,74	47 x 442	3/8″
12CB4A	112618911		0,6 ÷ 4		5,31 ÷ 35,4		2535			0,7	1,54	43 X 315 *	F 1/4″
12CB6A	112618912		2 ÷ 6		17,7 ÷ 53,1		1620			0,7	1,54	43 x 315 *	F 1/4″
12CB10A	112618913		3 ÷ 10		26,55 ÷ 88,5		1280			0,7	1,54	43 x 315 *	F 1/4″
12CB13A	112618914		4 ÷ 13		35,4 ÷ 115,05		880			0,7	1,54	43 x 315 *	F 1/4″
12CB17A	112618915		5 ÷ 17		44,25 ÷ 150,45		610			0,7	1,54	43 x 315 *	F 1/4″

Legend

12 = Power of the screwdriver • **CB** = DC screwdriver • **4** = Max torque in Nm • **A** = Torque/angle control • **L** = Lever

Legend

↻ **Reversibility:** all models are suitable for tightening and untightening operation

▮ **Lever start**

⇅ **Push to start**

• Noise level has been measured in accordance with ISO 3744 and ISO 15744 standards (inf. to 72 dBA)
• Accessory drive: male square drive (ISO 1174-1); female hexagonal drive 1/4″, 6,35 mm (ISO 1173)
• The code number must be used when ordering.

In compliance with EEC Directive 2004/108 on ESD compatibility

Data shown in the table are indicative and can be changed without prior notice.
Torque values are purely indicative and may be influenced by the softness of the type of joint, by the type and length of the screw, and by the type of accessory used. For any further details, please address to Fiam Technical Service.

* Length includes the quick change chuck

Standard equipment (supplied with tool)	Accessories available upon request	Models available upon request
• Screwdrivers can be used also with reaction bar (supplied only with some tools) to reduce further the reaction on the operator's hand • Aluminium reaction bar for 12CB models (L= mm 305) • Aluminium reaction bar for 23CB models (L=mm 431) • Steel reaction bar for 33CB models (L=mm 305) • Use and maintenance manual • Eco-friendly packaging	• Bits, sockets, etc. (see Fiam Accessories cat. Nr. 78) • Test/checking service of assembly system directly at the customer's production lines • Balancers, cartesian arms and balancing arms for ergonomic tightening operations: they eliminate any fatigue in operator's hands and arms. See 'Accessories for ergonomic workplaces' catalogue (nr. 79)	• Models with different drive • Models with different torque range: please address to Fiam Technical Service

Angle models

| Type of screwdriver | | Grip | Torque range | | | | Idle speed | Starting system | Reversibility | Weight | | Dimensions | Accessories |
Model	Code	Type	min. Nm	max. Nm	min. in lb	max. in lb	rpm	Type	Type	kg	lb	Ø x l	Drive
12CB4A90	112698900	▬	0,6 ÷ 4		5,31 ÷ 35,4		2325	➥	↻	0,7	1,54	See on page 21	☐ 1/4"
12CB6A90	112698901	▬	2 ÷ 6		17,7 ÷ 53,1		1490	➥	↻	0,8	1,76	See on page 21	☐ 1/4"
12CB10A90	112698902	▬	3 ÷ 10		26,55 ÷ 88,5		1080	➥	↻	0,8	1,76	See on page 21	☐ 3/8"
12CB14A90	112698903	▬	4 ÷ 14		35,4 ÷ 123,9		850	➥	↻	0,8	1,76	See on page 21	☐ 3/8"
12CB18A90	112698904	▬	5,5 ÷ 18		48,675 ÷ 159,3		590	➥	↻	0,8	1,76	See on page 21	☐ 3/8"
12CB23A90	112698905	▬	7 ÷ 23		61,95 ÷ 203,55		600	➥	↻	0,9	1,98	See on page 21	☐ 3/8"
23CB11A90	112698906	▬	3,5 ÷ 11		30,975 ÷ 97,35		1500	➥	↻	1,5	3,3	See on page 21	☐ 1/4"
23CB21A90	112698907	▬	6 ÷ 21		53,1 ÷ 185,85		725	➥	↻	1,6	3,52	See on page 21	☐ 3/8"
23CB31A90	112698908	▬	9 ÷ 31		79,65 ÷ 274,35		500	➥	↻	1,6	3,52	See on page 21	☐ 3/8"
33CB33A90	112698909	▬	10 ÷ 33		88,5 ÷ 292,05		1040	➥	↻	1,8	3,96	See on page 21	☐ 3/8"
33CB46A90	112698910	▬	14 ÷ 46		123,9 ÷ 407,1		750	➥	↻	2,	4,4	See on page 21	☐ 3/8"
33CB48A90	112698911	▬	15 ÷ 48		132,75 ÷ 424,8		730	➥	↻	2,2	4,84	See on page 21	☐ 3/8"
33CB60A90	112698912	▬	18 ÷ 60		159,3 ÷ 531		570	➥	↻	2,2	4,84	See on page 21	☐ 1/2"
34CB70A90	112698913	▬	21 ÷ 70		185,85 ÷ 619,5		435	➥	↻	2,9	6,38	See on page 21	☐ 1/2"
34CB101A90	112698914	▬	30 ÷ 101		265,5 ÷ 893,85		335	➥	↻	3	6,6	See on page 21	☐ 1/2"
34CB115A90	112698915	▬	35 ÷ 115		309,75 ÷ 1017,75		300	➥	↻	3	6,6	See on page 21	☐ 1/2"

Legend

12 = Power of the screwdriver • CB = DC screwdriver • 18 = Max torque in Nm • A = Torque/angle control • 90 = 90° angle head

Legend

↻ **Reversibility:** all models are suitable for tightening and untightening operation

➥ **Lever start**

• Noise level has been measured in accordance with ISO 3744 and ISO 15744 standards (inf. to 72 dBA)
• Accessory drive: male square drive (ISO 1174-1); female hexagonal drive 1/4", 6,35 mm (ISO 1173)
• The code number must be used when ordering.

In compliance with EEC Directive 2004/108 on ESD compatibility

Data shown in the table are indicative and can be changed without prior notice.
Torque values are purely indicative and may be influenced by the softness of the type of joint, by the type and length of the screw, and by the type of accessory used. For any further details, please address to Fiam Technical Service.

| **Standard equipment (supplied with tool)**	**Accessories available upon request**	**Models available upon request**
• Screwdrivers can be used also with reaction bar (supplied only with some tools) to reduce further the reaction on the operator's hand • Steel reaction bar for 34CB (L= mm 305) • Use and maintenance manual • Eco-friendly packaging	• Bits, sockets, etc. (see Fiam Accessories cat. Nr. 78) • Test/checking service of assembly system directly at the customer's production lines • Balancers, cartesian arms and balancing arms for ergonomic tightening operations: they eliminate any fatigue in operator's hands and arms. See 'Accessories for ergonomic workplaces' catalogue (nr. 79)	• Models with different drive • Models with hex. socket screws • Models with different torque range: please address to Fiam Technical Service

Models 12CB

Model	A	B	C	L
12CB4A90	11	30	21	271
12CB6A90	11	30	21	285
12CB10A90	11	33	22	288
12CB14A90	11	33	22	288
12CB18A90	11	33	22	288
12CB23A90	11	37	24	297
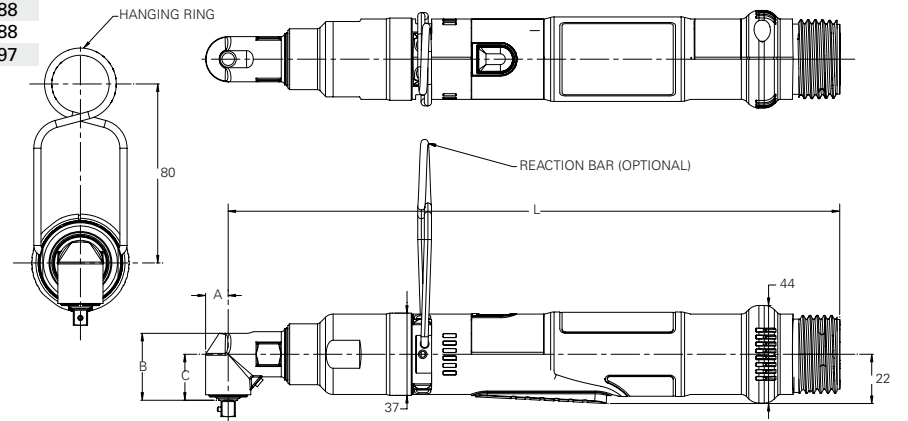
Models 23CB and 33CB

Model	A	B	C	L
23CB11A90	13	12	32	436
23CB21A90	14	13	37	449
23CB31A90	14	13	37	449
33CB33A90	14	13	37	475
33CB46A90	18	13	40	490
33CB48A90	20	16	49	493
33CB60A90	20	16	48	493
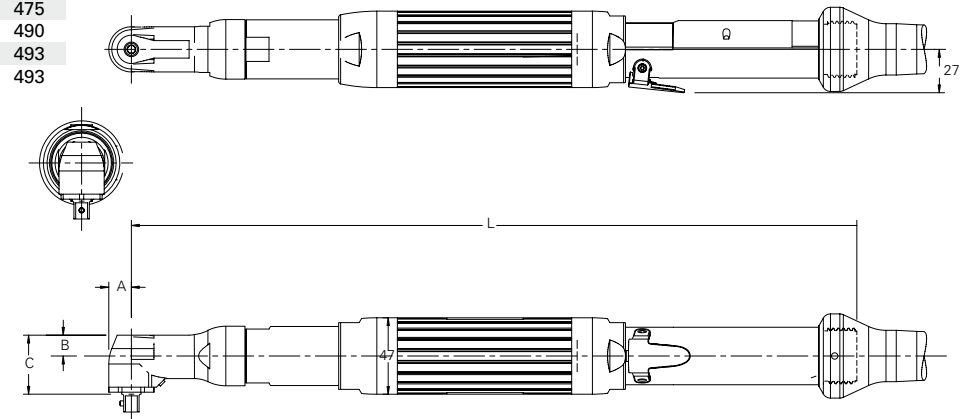
Models 34CB

Model	A	B	C	L
34CB70A90	49	-	49	523
34CB101A90	50	16	49	530
34CB115A90	50	16	49	530
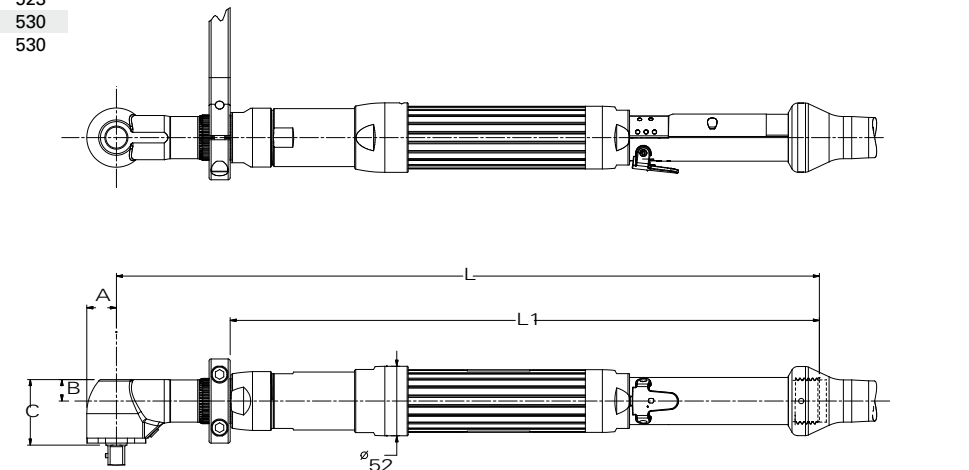
Angle models with flat head Closed Head (In line)

Model	Code	Type of screwdriver	Grip	Torque range min. Nm	max. Nm	min. in lb	max. in lb	Idle speed rpm	Starting system Type	Reversibility Type	Weight kg	lb	Dimensions (mm) Ø x l	Accessories Drive
12CB30A3 -13T	upon request	➡		9 ÷ 30		79,65 ÷ 265,5		660	➡	↻	1,2	2,64	42x461	MAX 13 (1/2")

A3 HEAD

Angle models with flat head Closed Head

Model	Code	Type of screwdriver	Grip	Torque range min. Nm	max. Nm	min. in lb	max. in lb	Idle speed rpm	Starting system Type	Reversibility Type	Weight kg	lb	Dimensions (mm) Ø x l	Accessories Drive
12CB13A1 -13T	upon request	➡		4 ÷ 13		35,4 ÷ 115,05		585	➡	↻	1	2,2	43 x 347	MAX 13 (1/2")
23CB16A1 -13T	upon request	➡		5 ÷ 16		44,25 ÷ 141,6		660	➡	↻	1,7	3,74	47 x 510	MAX 13 (1/2")
12CB14A2 -13T	upon request	➡		4 ÷ 14		35,4 ÷ 123,9		585	➡	↻	1,1	2,42	37 x 367	MAX 13 (1/2")
23CB16A2 -13T	upon request	➡		5 ÷ 16		44,25 ÷ 141,6		660	➡	↻	1,8	3,96	47 x 523	MAX 13 (1/2")
23CB15A4 -13T	upon request	➡		4,5 ÷ 15		39,825÷132,75		745	➡	↻	2,3	5,06	47 x 532	MAX 13 (1/2")
33CB27A4 -13T	upon request	➡		8 ÷ 27		70,8 ÷ 238,95		845	➡	↻	2,4	5,28	47 x 557	MAX 13 (1/2")
23CB22A5 -13T	upon request	➡		6,5 ÷ 22		57,525 ÷ 194,7		505	➡	↻	1,7	3,74	47 x 535	MAX 13 (1/2")
33CB38A5 -13T	upon request	➡		12 ÷ 38		106,2 ÷ 336,3		570	➡	↻	1,8	3,96	47 x 557	MAX 13 (1/2")
23CB18A6 -13T	upon request	➡		5,5 ÷ 18		48,675 ÷ 159,3		590	➡	↻	2,3	5,06	47 x 533	MAX 13 (1/2")
33CB30A6 -13T	upon request	➡		9 ÷ 30		79,65 ÷ 265,5		755	➡	↻	2,4	5,28	47 x 558	MAX 13 (1/2")
23CB16A7 -19T	upon request	➡		5 ÷ 16		44,25 ÷ 141,6		660	➡	↻	2,7	5,94	47 x 559	MAX 19 (3/4")
33CB31A7 -19T	upon request	➡		9 ÷ 31		79,65 ÷ 274,35		750	➡	↻	2,9	6,38	47x 580	MAX 19 (3/4")
33CB35A8 -19T	upon request	➡		10,5 ÷ 35		92,925÷309,75		675	➡	↻	2,7	5,94	47 x 549	MAX 19 (3/4")
34CB49A9-19T	upon request	➡		15 ÷ 49		132,75÷433,65		490	➡	↻	3,5	7,7	47 x 625	MAX 19 (3/4")

A1 HEAD

A2 HEAD

A4 HEAD

A5 HEAD

A6 HEAD

A7 HEAD

A8 HEAD

A9 HEAD
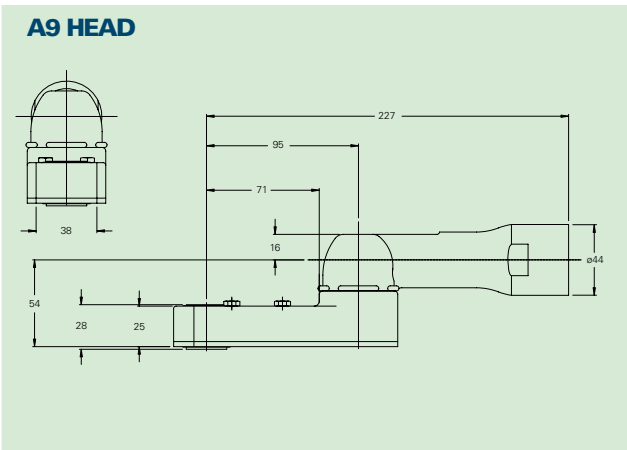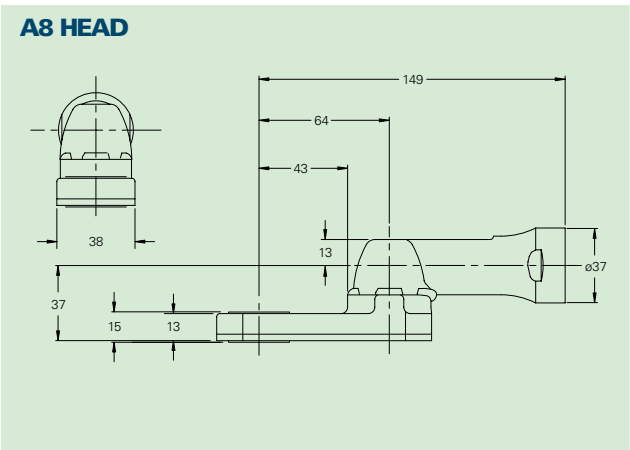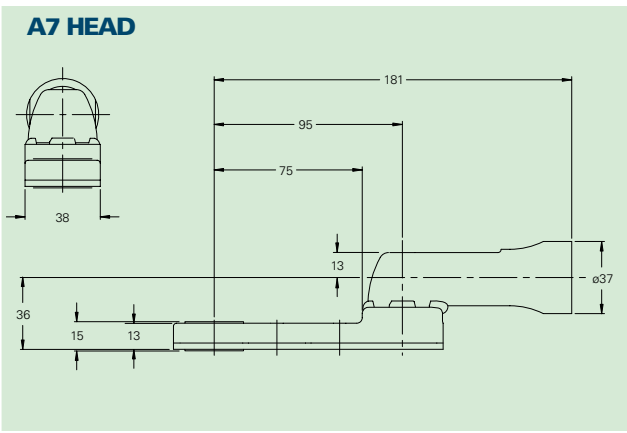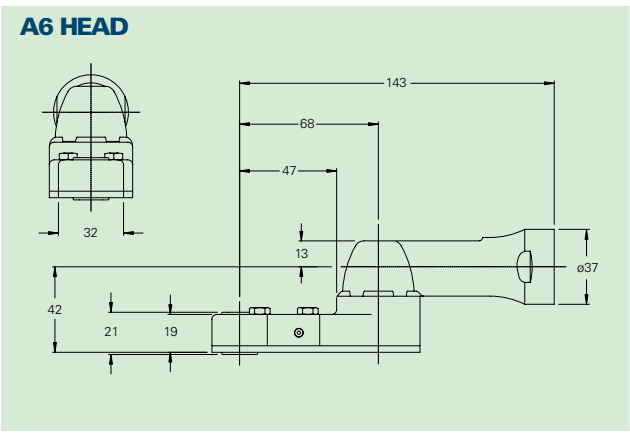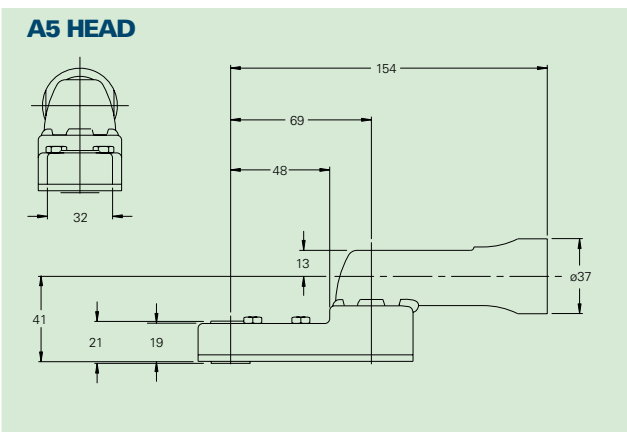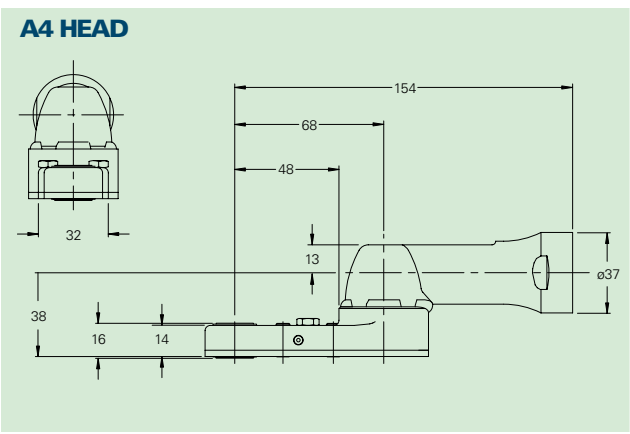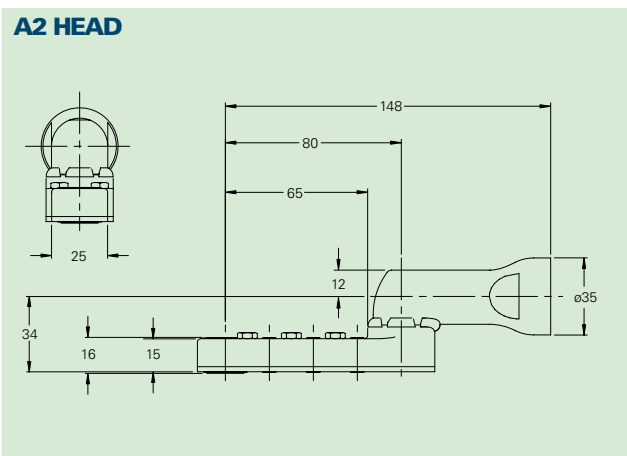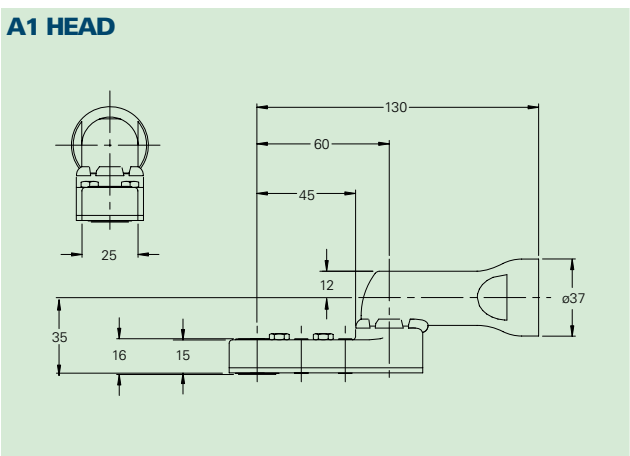
Angle models with flat head Open Head (In line)

Model	Code	Grip Type	Torque range min. Nm	max. Nm	min. in lb	max. in lb	Idle speed rpm	Starting system Type	Reversibility Type	Weight kg	lb	Dimensions (mm) Ø x l	Accessories Drive
12CB25A11-13 B	upon request		7,5 ÷ 25	66,375÷221,25		245			1,6	3,52	36 x 431	MAX 13 (1/2")	
23CB13A11-13 B	upon request		4 ÷ 13	35,4 ÷ 115,05		840			2,3	5,06	47 x 499	MAX 13 (1/2")	
33CB22A11-13 B	upon request		6,5 ÷ 22	57,525 ÷ 194,7		955			2,5	5,5	42 x 525	MAX 13 (1/2")	
23CB22A13-24 B	upon request		6,5 ÷ 22	57,525 ÷ 194,7		480			2	4,4	47 x 513	MAX 24 (15/16")	
33CB44A13-24 B	upon request		13 ÷ 44	115,05 ÷ 389,4		545			2,1	4,62	53 x 548	MAX 24 (15/16")	

A11 HEAD

A13 HEAD

Angle models with flat head Open Head

Model	Code	Grip Type	Torque range min. Nm	max. Nm	min. in lb	max. in lb	Idle speed rpm	Starting system Type	Reversibility Type	Weight kg	lb	Dimensions Ø x l	Accessories Drive
23CB14A10-13 B	upon request		4 ÷ 14	35,4 ÷ 123,9		815			2,2	4,84	47 x 519	13 (1/2)	
33CB25A10-13 B	upon request		7,5 ÷ 25	66,375÷221,25		1050			2,4	5,28	47 x 545	13 (1/2)	
23CB14A12-18 B	upon request		4 ÷ 14	35,4 ÷ 123,9		750			2,5	5,5	47 x 532	18 (11/16)	
33CB30A12-18 B	upon request		9 ÷ 30	79,65 ÷ 265,5		765			2,6	5,72	47 x 557	18 (11/16)	
34CB41A14-18 B	upon request		12 ÷ 41	106,2 ÷ 362,85		495			3,6	7,92	52 x 589	18 (11/16)	
34CB46A15-27 B	upon request		14 ÷ 46	123,9 ÷ 407,1		515			3,9	8,58	52 x 618	27 (11/16)	
34CB62A15-27 B	upon request		19 ÷ 62	168,15 ÷ 548,7		340			3,9	8,58	52 x 618	27 (11/16)	

A10 HEAD

A12 HEAD

A14 HEAD

A15 HEAD
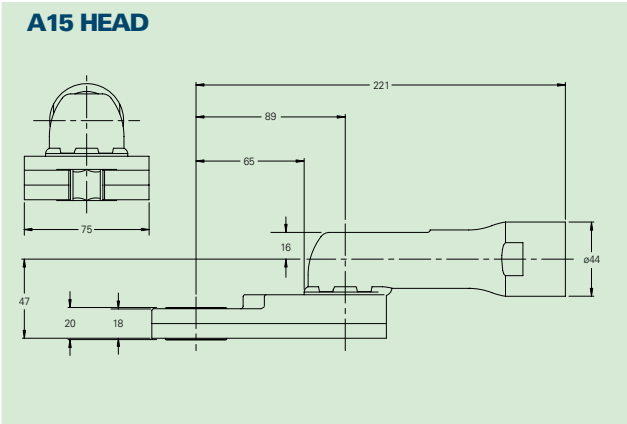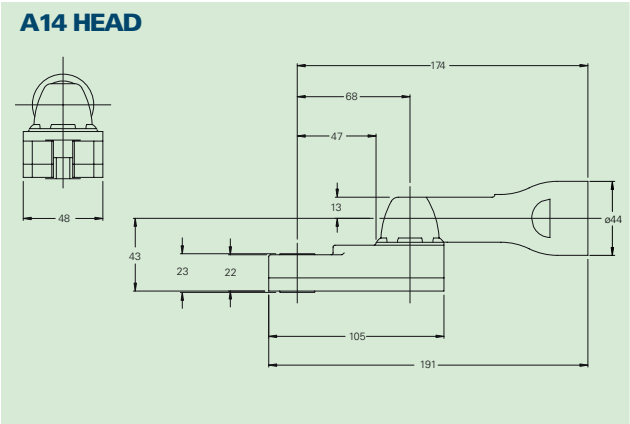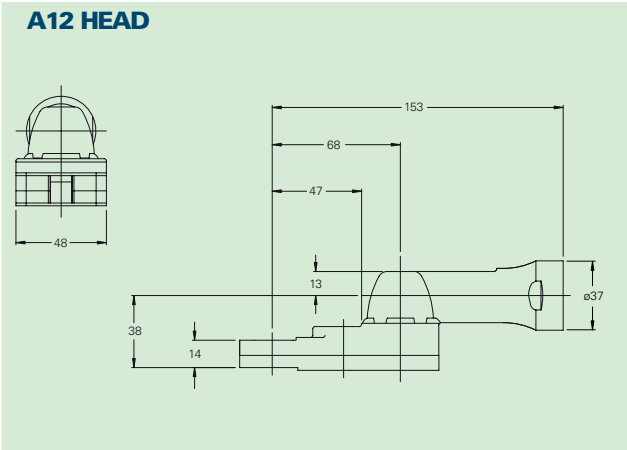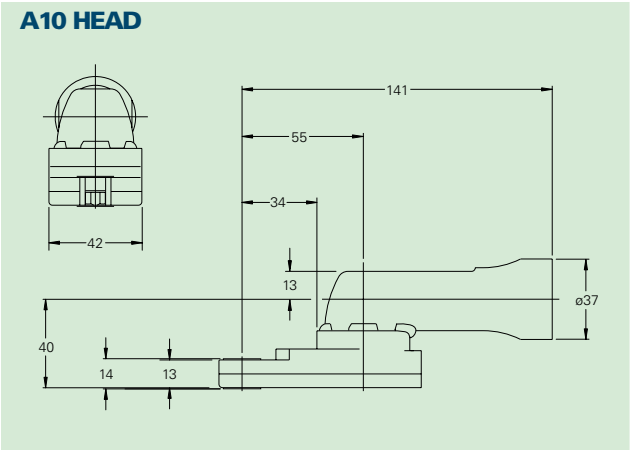
Legend

12 = Power of the screwdriver • CB = DC screwdriver • 25 = Max torque in Nm • A = Torque/angle control • A11 = Type of head (the number corresponds to model on catalogue)• 13 = max. hexagonal drive used • B = Type of end gear (Blind or Through)

Legend

⟳ **Reversibility:** all models are suitable for tightening and untightening operation

➡ **Lever start**

• Noise level has been measured in accordance with ISO 3744 and ISO 15744 standards (inf. to 72 dBA)
• The code number must be used when ordering.

In compliance with EEC Directive 2004/108 on ESD compatibility

Data shown in the table are indicative and can be changed without prior notice.
Torque values are purely indicative and may be influenced by the softness of the type of joint, by the type and length of the screw, and by the type of accessory used. For any further details, please address to Fiam Technical Service.

| Standard equipment (supplied with tool)	Accessories available upon request	Models available upon request
• Screwdrivers can be used also with reaction bar (supplied only with some tools) to reduce further the reaction on the operator's hand • Steel reaction bar for 34CB models (L= mm 305) • Use and maintenance manual • Eco-friendly packaging	• Test/checking service of assembly system directly at the customer's production lines • Balancers, cartesian arms and balancing arms for ergonomic tightening operations: they eliminate any fatigue in operator's hands and arms. See 'Accessories for ergonomic workplaces' catalogue (nr. 79)	• Models with different drive • Models with longer lever • Models with different torque range: please address to Fiam Technical Service

TCS feed and control unit

Model	Code	Type of screwdriver employed	Feed 220 – 240 V ac	Dimensions mm	Weight kg	lb
TCS 1	686000560	all	50 - 60 Hz	208	7	15,4
TCS 3	686000550	all	50 - 60 Hz	262	7,7	16,94
TCS 3 -V	686000555	all	50 - 60 Hz	262	7,7	16,94
TCS 3 -VD	upon request	all	50 - 60 Hz	262	7,7	16,94
TCS 3 - D	upon request	all	50 - 60 Hz	262	7,7	16,94
TCS 3 -VP	upon request	all	50 - 60 Hz	262	7,7	16,94
TCS 3 - P	upon request	all	50 - 60 Hz	262	7,7	16,94

Legend

TCS = Tightening Control System (feed and control uni) • 1 = Model • V = Features I/O for connection to PLC • VD = Features I/O for connection to PLC + DEVICE – NET interface • D = Features DEVICE NET interface • VP = Features I/O for connectiong to PLC + PROFIBUS interface • P = Features PROFIBUS interface

Standard equipment (supplied with tool)

- For TCS 3: built-in software to OFF LINE programme (from PC)
- For TCS 1: software to be installed on PC, to programme OFF LINE (from PC)
- External memory (USB key) for TCS3
- Quick guide for immediate use
- Eco-friendly packaging
- Use and maintenance manual
- Male I/O connector for wiring
- Support (see A on drawing): it allows the installation on pre-existing systems and eases the practical positioning of the cables
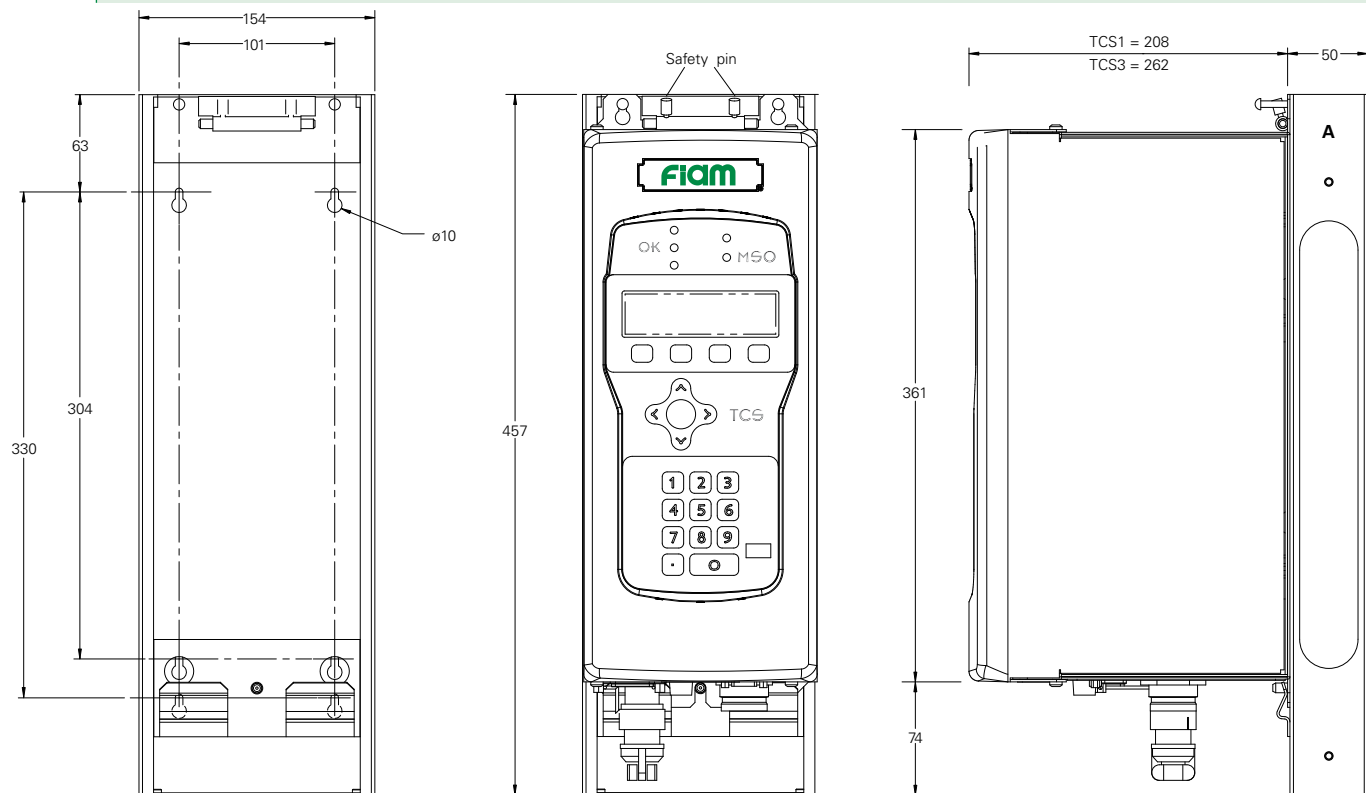
Connecting cables

Model	Code	Length mt.
CONNECTING CABLE FOR 12CB (except pistol models)	676300305	3
CONNECTING CABLE FOR 12CB (except pistol models)	676300310	7
CONNECTING CABLE FOR 12CB (except pistol models)	676300315	10
CONNECTING CABLE FOR 2, 23, 33, 34CB and 12 PISTOL MODELS	676300320	3
CONNECTING CABLE FOR 2, 23, 33, 34CB and 12 PISTOL MODELS	676300325	7
CONNECTING CABLE FOR 2, 23, 33, 34CB and 12 PISTOL MODELS	676300330	10

Models available upon request

- Revolving cables for applications where the access is particularly difficult
- 90° connectors
- Specific cable for pistol models with top feeding cable (TOP)

The strong point supplied by your business partner: pre-sales and after-sales service

Fiam expert technical staff is at customer disposal to supply the **best solution for every tightening requirement.** Please contact directly Fiam or the local distributor to ask for the capabilities of the CB system able to meet your specific productive needs.
For further information see the website www.fiamairtools.com or write to customerservice fiamairtools.com

Fiam

PEOPLE AND SOLUTIONS

Fiam Utensili Pneumatici Spa
Viale Crispi 123 - 36100 Vicenza - Italy
Tel. +39.0444.385000 - Fax +39.0444.385002
customerservice@fiamairtools.com
www.fiamairtools.com

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