

Core innovation

Body perfection

15C



**Straight, pistol and angle
15C air screwdrivers and nutrunners**

Torque range: from 0,4 to 5 Nm
Automatic shut-off

Fiam[®]
PEOPLE AND SOLUTIONS

Searching for excellence, developing ideas.

Are you looking for innovation, practicality and accuracy?
Only the range of 15C tools can satisfy your needs.

A modern range, ideal in every type of industrial assembly:
to overcome the performance's challenge with **different control levels of the whole assembly process**.

For this reason each 15C tool is also designed to monitor the assembly cycle (poka-yoke system, anti-error system) or the joint, ensuring extraordinary results. 15C screwdrivers: perfection has a new name and a new number.

PAGE 4

Level 1

Screwdrivers and nutrunners with TRACS2 torque control

Accurate, reliable, constant tightenings, cycle after cycle.
High torque repeatability on hard and soft joints.

PAGE 10

Level 2

Screwdrivers and nutrunners with TRACS2 torque control + SCREWS COUNTING

15C tools with pneumatic pick up signal, subsequently converted into electric signal: it reports if the clutch shuts-off during the time set in the program.

Therefore it allows to discriminate the screws that have been tightened incorrectly with consequent quality improvement of the assembled product.

Straight screwdriver



"Forward" pistol screwdriver



Pistol screwdriver



Control levels of the assembly process



Level 1

Torque control

- TRACS2 CLUTCH
- ACCURATE TIGHTENINGS
- HIGH REPEATABILITY



Level 2

Torque control, screws counting

- TRACS2 CLUTCH
- ACCURATE TIGHTENINGS
- HIGH REPEATABILITY
- COUNTING OF TIGHTENED SCREWS
- OK / KO CYCLE
- MONITORING OF THE TIGHTENING TIME

Angle nutrunner



Solution with TOM monitoring unit

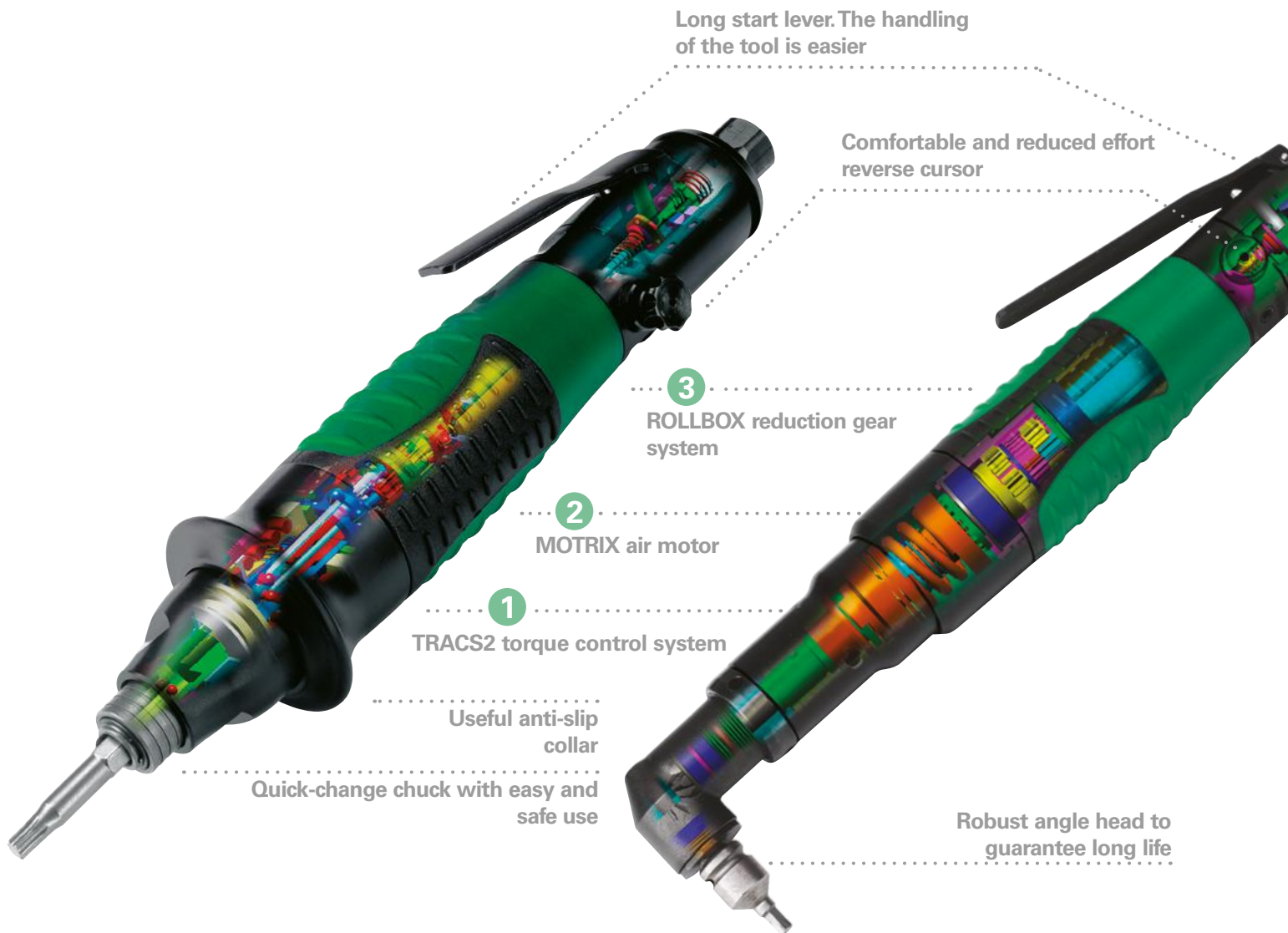


An eye for innovation, a glance to the future.

For over 65 years Fiam has been moving towards the **future** and **research**. So it has designed the modern 15C air screwdrivers/nutrunners, increasing quality and performances.

Straight, pistol and angle tools are characterized by **their extreme handiness and ergonomic grip**: ideal for working with high productivity and minimum effort.

Modern solutions ideal in **mechanical, electrical, electronics and furniture fields**.





Our name, your guarantee. For each model.

- 1 Patented **TRACS2** torque control system; it guarantees high torque repeatability and vibration levels below 2,5 m/s².
 - 2 Technologically advanced **MOTRIX** air motor, ensuring higher performances.
 - 3 **ROLLBOX** reduction gear system, ensuring high output.
 - Practical cycle end acoustic signal.
 - Reduced weight thanks to the use of light alloys.
 - Hanging ring for balancer use.
 - Safe, practical and precise clutch adjustment system.
 - Possibility of conveying air exhaust.
 - Recyclable materials.
- OIL FREE**, the possibility of using non lubricated air eliminates the emission of oil fog into the environment.



Be demanding

Don't be satisfied
with the maximum

Reliability

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

1 TRACS2 (Torque Repeatability and Accuracy Control System):

the torque control system ensures a very **high torque repeatability**, i.e. a very low Mean Shift value also in the presence of variability of the joint softness level.

This system maintains same torque values for hundreds of thousands of cycles. TRACS2 system guarantees a **high quality improvement** in the tightening process

2 MOTRIX: newly conceived air motor ensures **long lifetime, high specific power and maximum torque**

3 ROLLBOX: reduction gear system has been designed to guarantee **maximum output, long lifetime of the kinematic chain and reduced noise level**

30° and 90° angle heads: construction materials ensure **high resistance** and long life

Antislip varnishing for the **start lever** which makes it **longer lasting**

Productivity

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

1 TRACS2: the modern torque control system **reduces to a minimum level the need of quality control at the end of the assembly process**, with a remarkable **increase of the tightening cycle productivity**

2 MOTRIX: high rotating speed of the air motor with equal tightening torque, with evident **reduction of tightening cycle time**

Cycle end acoustic signal: it permits the operator to **pass on to the next tightening cycle more rapidly**

Grip design: it permits **extraordinary ease in handling** the tool with **less operator fatigue** and significant increase of the productivity

Quick change chuck for straight and pistol models: it favours **easier and safer** bit replacement; it is available upon request, also for use of double insert bits

Clutch adjustment system: safe, practical and accurate

Extremely compact heads for angle models: they are indispensable when space is limited or where access is difficult, such as up against walls, close to metal sections, profiles and inside of components



Perfection is
in your hands

Ergonomics

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

Minimal dimensions: these tools can be used in every position and when space is limited. Their **handling is guaranteed** because the grip is very near to the tool's head

Weight: extremely reduced weight and **compact dimensions** guarantee perfect handling

Ergonomic grips: designed according to modern biomechanics principles paying particular attention to the features of the female hand. The grips are manufactured with an ergonomic sheath made of bi-component material of different type, density and relief (for straight and angle models) and made of no slip material (for pistol models), making them easier to hold the tool, increasing the hand grip, **improving the handling, the thermal isolation and operator's comfort**

Comfortable low effort reverse button (for straight and angle models) / cursor (for pistol models): they reduce finger fatigue; they can be used by both right and left hand operators

TRACS2: the modern torque control system **reduces the reaction to the operator's hand**. Thanks to the immediate automatic air shut-off system with the careful study of the internal gears, the vibration levels are below 2,5 m/s²

"Forward" pistol grip: indicated when balancing systems cannot be used and where it does not need a particular push along the fastening axis



PISTOL GRIP

Pistol grip: indicated for situations in which screwdriving operations require thrust along the screwdriving axis

Possibility of conveying air exhaust away from the operator

Long start lever for angle models: the **handling of the tool** is easier reducing fatigue and the effort of the operator

Anti-slip collar for straight models: it avoids that the hand slips towards the tightening point, above all in case of big thrust on the screw, **increasing the safety and reducing the operator's fatigue**

Patented silencing system: these tools are extremely noiseless and are equipped with a controlled spread of the exhaust air

Hanging ring for balancer use eliminating any operator's effort



'FORWARD' PISTOL GRIP

Naturally
innovative

Ecology

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

1 TRACS2: the torque control system has a high running speed which, together with the push-to-start system, **reduces the working time of the tool and the compressed air consumption**

2 MOTRIX: the advanced technological design of the air motor permits **very high decrease of compressed air consumption**, without affecting tool performance

3 ROLLBOX: thanks to the new inner kinematic motions which optimize efficiency, the available power is being transmitted with **minimum dispersions**

15C screwdrivers/nutrunners work at maximum efficiency without need of



lubrication guaranteeing in such the **absence of oil exhaust** into the working environment

ECO-CONTRIBUTION WEEE ACQUITTED:

Fiam carries out its obligations of producer, with full respect for the environment, and **without any extra charge for the customer**



DIFFERENT ACCESSORIES TO IMPROVE ERGONOMIC WORKPLACES

Type of screwdriver/nutrunner		Grip	Tightening torque on soft joint		Idle speed	Starting system	Reversibility	Weight	Dimensions (mm)	Air consumption	Accessories	Noise level*	Vibrations	
Model	Code		Type	Nm										in lb
15C2A	112514372	↓	0,4 ÷ 2,0	3.54 ÷ 177	2000	↓	↻	0,58	1.28	38x230	4,0	⬡ F 1/4"	73	<2,5
15C3A	112514373	↓	0,4 ÷ 3,5	3.54 ÷ 30.975	1400	↓	↻	0,59	1.30	38x230	5,5	⬡ F 1/4"	73	<2,5
15C4A	112514374	↓	0,4 ÷ 4,5	3.54 ÷ 39.825	950	↓	↻	0,59	1.30	38x230	5,5	⬡ F 1/4"	73	<2,5
15C5A	112514375	↓	0,4 ÷ 5,0	3.54 ÷ 44.25	650	↓	↻	0,59	1.30	38x230	5,5	⬡ F 1/4"	73	<2,5
15C2AL	112514382	↓	0,4 ÷ 2,0	3.54 ÷ 177	2000	↑	↻	0,59	1.30	38x228	4,0	⬡ F 1/4"	73	<2,5
15C3AL	112514383	↓	0,4 ÷ 3,5	3.54 ÷ 30.975	1400	↑	↻	0,60	1.32	38x228	5,5	⬡ F 1/4"	73	<2,5
15C4AL	112514384	↓	0,4 ÷ 4,5	3.54 ÷ 39.825	950	↑	↻	0,60	1.32	38x228	5,5	⬡ F 1/4"	73	<2,5
15C5AL	112514385	↓	0,4 ÷ 5,0	3.54 ÷ 44.25	650	↑	↻	0,60	1.32	38x228	5,5	⬡ F 1/4"	73	<2,5


Model	Code	Type	Nm	in lb	rpm	Type	Type	kg	lb	Ø x l x h	l/s	Drive	dBA	m/s ²
15C2APA	112514522	↘	0,6 ÷ 2,2	5.31 ÷ 19.47	2200	↘	↻	0,70	1.540	31x178x156	6	⬡ F 1/4"	71	<2,5
15C3APA	112514523	↘	0,4 ÷ 3,5	3.54 ÷ 30.975	1400	↘	↻	0,72	1.584	31x178x156	6	⬡ F 1/4"	71	<2,5
15C4APA	112514524	↘	0,4 ÷ 4,5	3.54 ÷ 39.825	950	↘	↻	0,72	1.584	31x178x156	6	⬡ F 1/4"	71	<2,5
15C5APA	112514525	↘	0,4 ÷ 5,0	3.54 ÷ 44.25	650	↘	↻	0,72	1.584	31x178x156	6	⬡ F 1/4"	71	<2,5
15C2AP	112514532	↘	0,6 ÷ 2,2	5.31 ÷ 19.47	2200	↘	↻	0,70	1.540	37x209x157	6	⬡ F 1/4"	71	<2,5
15C3AP	112514533	↘	0,4 ÷ 3,5	3.54 ÷ 30.975	1400	↘	↻	0,72	1.584	37x209x157	6	⬡ F 1/4"	71	<2,5
15C4AP	112514534	↘	0,4 ÷ 4,5	3.54 ÷ 39.825	950	↘	↻	0,72	1.584	37x209x157	6	⬡ F 1/4"	71	<2,5
15C5AP	112514535	↘	0,4 ÷ 5,0	3.54 ÷ 44.25	650	↘	↻	0,72	1.584	37x209x157	6	⬡ F 1/4"	71	<2,5


Model	Code	Type	Nm	in lb	rpm	Type	Type	kg	lb	l/s	Drive	dBA	m/s ²
15C2A90	112593942	↘	0,8 ÷ 2	708 ÷ 177	2000	↘	↻	0,70	1.54	4,0	⬡ M 1/4"	73	<2,5
15C3A90	112593943	↘	0,8 ÷ 3	708 ÷ 26.55	1400	↘	↻	0,70	1.54	5,5	⬡ M 1/4"	73	<2,5
15C4A90	112593944	↘	0,8 ÷ 4	708 ÷ 35.4	950	↘	↻	0,70	1.54	5,5	⬡ M 1/4"	73	<2,5
15C5A90	112593945	↘	0,8 ÷ 5	708 ÷ 44.25	650	↘	↻	0,70	1.54	5,5	⬡ M 1/4"	73	<2,5
15C2A30	112533942	↘	0,8 ÷ 2	708 ÷ 177	2000	↘	↻	0,70	1.54	4,0	⬡ M 1/4"	73	<2,5
15C3A30	112533943	↘	0,8 ÷ 3	708 ÷ 26.55	1400	↘	↻	0,70	1.54	5,5	⬡ M 1/4"	73	<2,5
15C4A30	112533944	↘	0,8 ÷ 4	708 ÷ 35.4	950	↘	↻	0,70	1.54	5,5	⬡ M 1/4"	73	<2,5
15C5A30	112533945	↘	0,8 ÷ 5	708 ÷ 44,25	650	↘	↻	0,70	1.54	5,5	⬡ M 1/4"	73	<2,5

Legend

15 = Power of the motor in Watt/10 • C = Screwdriver/Nutrunner • 2 = Maximum tightening torque in Nm • A = Air shut-off system • L = Lever • P = Pistol grip
 • 30 = Head at 30° • 90 = Head at 90° • PA = 'Forward' pistol grip


Legend

 **Reversibility:** all models are suitable for tightening and untightening operations

 **Push start**

 **Lever start**

 **Push button**

 **Push button**

 **Lever start**

- The figures shown are measured at a pressure of 6,3 bar (ISO 2787) the recommended operating pressure.
- Tightening torque values have been measured in accordance with ISO 5393 standard.
- Noise level has been measured in accordance with ISO 3744 and ISO 15744 standards.
- * Additional factor: 3 dBA spread in method and production (ISO 15744).
- Vibrations level have been measured in accordance with ISO 28927-2.
- Accessory drive: male square drive (ISO 1174); female hexagonal drive 1/4", 6,35 mm (ISO 1173).
- The code number must be used when ordering.

The data given in the table are indicative and can be changed without prior notice. The 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, by the pressure and quantity of air supply, and by the type of accessory used. The values indicated for noise and vibration levels were obtained in the laboratory, performing tests that comply with the standards stated, but alone are not sufficient for calculating risks. Values measured in the single work places may be higher than those stated. The values of actual exposure and consequent risks are specific and depend on the operator's method of work, the type of work piece and the work place, as well as the operator's time of exposure and his physical conditions. Fiam cannot be held responsible for any consequences deriving from the use of the information in the table when evaluating risks in the work place over which Fiam has no control. For all further details, please apply to the **Fiam Technical Consultancy Service**.

Other technical features

TRACS2
clutch spring

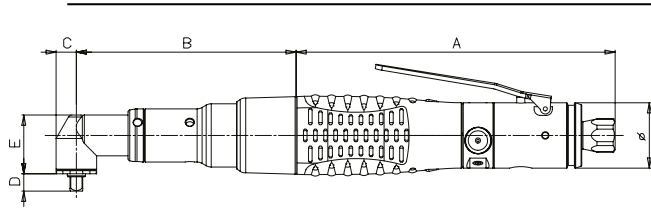
Assembled on the tool
grey colour - Ø wire 3,2 mm
Code 595103202

Supplied
black colour - Ø wire 2,2 mm
Code 595102204

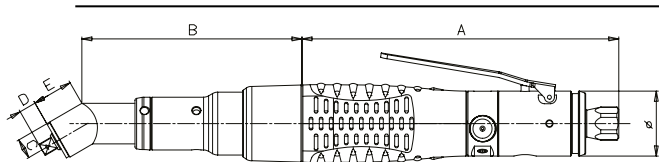
Model	Tightening torque on soft joint (Nm)	Tightening torque on soft joint (Nm)
15C...	0,8 ÷ at MAX torque	From min torque ÷ 1,2

Model	Air inlet	Recommended hose bore
15C...	1/4" gas	Ø 5 mm

Dimensions (mm) of angle models



Models	A	B	C	D	E	Ø
15C2A90	157	109	10	8,5	29	32
15C3A90	157	109	10	8,5	29	32
15C4A90	157	109	10	8,5	29	32
15C5A90	157	109	10	8,5	29	32



Models	A	B	C	D	E	Ø
15C2A30	157	109	10	8,5	20	32
15C3A30	157	109	10	8,5	20	32
15C4A30	157	109	10	8,5	20	32
15C5A30	157	109	10	8,5	20	32



15C air screwdrivers/nutrunners are designed for use with lubricated and unlubricated compressed air

Standard equipment (supplied with the tool)

- Clutch adjustment key
- Additional clutch spring (only for straight and pistol models)
- Hanging ring
- Use and maintenance manual
- Eco-friendly packaging

Accessories available upon request

- Bits, sockets, etc., balancers, exhaust silencers and other compressed air system accessories: (see Accessories catalogue)
- Collar bracket for straight models to be installed on arm stands and with auxiliary grip (cod. 692039006)

Models available upon request	Straight models	Pistol models	Angle models
Lever models for left hand operators	X		X
Models with anti-slip collar with different dimensions	X		
Models with only right hand rotation	X	X	X
Models with only left hand rotation	X	X	X
Models with lever + push start (or push button + push start)	X	X	
Models for double insert bits	X	X	X
Models with screws suction	X	X	
Models with low speeds	X	X	X
Models with a female hexagonal drive for inserts (BITS): when ordering, add BITS at the end of the code (e.g. 15C2A... → 15C2A...-BITS)			X
Models with quick change chuck	Standard	Standard	X
15C...LT models for low torques	X	X	X

15C screwdrivers/nutrunners with TRACS2 torque control + SCREWS COUNTING

0% error, 100% accuracy.

Did you lose any screws? The **'screws count'** function will help you: therefore in case of high production rate, you won't risk any omission. Moreover, the feed-back signal and the end one to pass to next piece **accelerate the production cycles and ensure control on the assembled products.** So dead times will decrease and quality will increase.

The solution includes:

- Lever or push button air shut-off **15C SCREWDRIVERS equipped with pneumatic pick-up signal (ported)**
- **COMPUTERIZED MONITORING UNIT TOM** (Tightening Operation Monitor): it allows the **monitoring of the tightening cycle through the double-signal pressure** coming from the screwdrivers, subsequently converted into electric signal.



A proved system against pressure changes.

The use of two pneumatic signals (tool start and clutch operated) guarantees the system functioning **regardless of the pressure changes, critical point in many production lines.**

A considerable advantage in respect to other poka-yoke systems, which are more difficult to programme and use a single signal: which are considerably affected by pressure fluctuations.

Tightening Operation Monitor

Model	Description	Code	Dimensions (mm)	Electric feed
TOM	Monitoring unit	685001062	width 208 x depth 128 x height 42	24V, 110/230V, 50/60 Hz

Standard equipment

- Feeder • Feed cable • Use and maintenance manual • Eco-friendly packaging

TOM Tightening Operation Monitor is also available in the configuration BOX TOM, that includes: **TOM unit and all its accessories already wired in a single box.**

This **“Plug and Play” solution is easy to introduce into assembly lines and extremely practical** since you just need to connect the air line and the power supply to start production immediately.

Model	Description	Code	Dimensions (mm)	Electric feed
BOX TOM	Monitoring unit	685001086	h 265 mm (without tower-light) x depth 165 x width 300	24V, 110/230V, 50/60 Hz

Standard equipment

BOX TOM includes:

- TOM monitoring unit • Tool locking/unlocking device • Cable to connect TOM with locking/unlocking device • Transducer • Tower light • Feeder • Feed cable • Use and maintenance manual • Eco-friendly packaging



MODEL “STOP BY TIME” AVAILABLE UPON REQUEST - Code 685001087

Used when it is necessary to **tighten** threaded elements controlling shut-off by **depth rather than torque** through the control of tightening time.

It allows the tightening of the threaded elements with a tolerance of 360° compared to target depth.

It is to order with the tool locking unit to activate the arrest “to time” of the screwdriver together to cables and Cables multi-dock (see pag. 11). When the time set by the operator is reached, the tools stops for a programmable time. There will be an OK signal (and not an error that requires a RESET as the standard version does). You can set up to 8 different times, one for each program available.

Model	Code
TOM “STOP BY TIME”	685001087
TOM BOX “STOP BY TIME”	685001089

Transducer for TOM

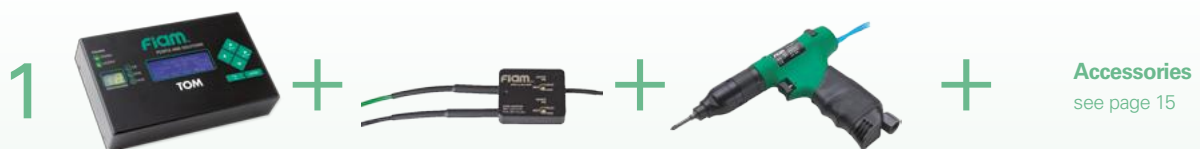
TOM needs to be purchased along with Fiam transducer, one for each tool (except when TOM is connected to EasyDriver CA).

Completely designed and manufactured by Fiam, it is a single box that receives two pneumatic signals (input) through two hoses of different colors: black for starting signal and green for torque signal; equipped with led indicator and unique electric connecting cable (output) to carry the electrical signal to the TOM unit. Reduced dimensions and weight, easier to calibrate.

Model	Code
Transducer for TOM	687041041



What is it necessary to choose?



Features

20 INPUTS	<ul style="list-style-type: none"> • 8 for programmes selection, 6 for remote functioning: switching off, program activation, tool stop, tool loosening, program reset <p>Availables with contacts 24V/GND (both pull-up and pull-down) for a great compatibility with the bench buttons (i.e: reset, block, unblocking etc.) and to be interface with the PLC of the client</p>
24 OUTPUTS	<ul style="list-style-type: none"> • For results, active program, screwdriver status and possible electro-valve activation, auxiliary output, signal waste piece, in cycle signal (to check the beginning and the end of tightening cycle, useful i.e. set/unset the pieces jigs)
AUTOMATIC CHECK OF TIGHTENING TIME	<ul style="list-style-type: none"> • Which can be adjusted by setting the cycle time thus discriminating the different KO results
SINGLE PROGRAM 99 tightenings	<ul style="list-style-type: none"> • Tightening with min/max time equal for all screws • Screws count • 3 different acoustic signals: tightening end, single program end, error
SEQUENCE PROGRAM 99 tightenings x 8	<ul style="list-style-type: none"> • More single programmes (up to 8) in sequence • 4 different acoustic signals: tightening end, single tightening end, sequence (OK/NOK) • It can be selected from PC • For each tightening sequence it is possible to program the maximum number of tightening attempts fro NOK screws
RS 232 SERIAL PORT	<ul style="list-style-type: none"> • To print the following results in sequence: Date / hour - Number active output - Result – Tightening Time – Screw number - Program number - Sequence
PASSWORD	<ul style="list-style-type: none"> • Two modalities: one does not allow the operator changing menu's parameters; the other, in addition to former's possibilities, in case of error and consequent unit stop, allows the line manager to reactivate the process by means of a password or key (optional)
TIME	<ul style="list-style-type: none"> • It can be activated without buffer-battery to be replaced
MEMORY	<ul style="list-style-type: none"> • Parameters for statistics (they can printed through RS232): OK piece - NOK Screws - Pressed resets (NOK pieces) - Number of screws counted by TOM (data not resettable) – It stores data related to last 6,000,000 screws
LEVER RELEASED CONTROL	<ul style="list-style-type: none"> • In production processes where the operators tighten so fast that release the lever before the clutch shuts-off
REMOTE FUNTIONING	<ul style="list-style-type: none"> • From external PLC (or sensor) it is possible to stop the tool with the dedicated locking/unlocking unit. For instance, when we work with jigs, the tool is activated only when parts are correctly positioned
MASKED TIME	<ul style="list-style-type: none"> • This feature disable any controls for a set time during which TOM does not detect possible incorrect operations by the worker (for instance "unintentional starts" with push-to-start screwdrivers)
RELEASE TIME	<ul style="list-style-type: none"> • This function allows to better identify the OK tightenings, even if the lever is released in a very short time after the clutch shut-off (for example, if the operator is particularly fast to tighten and release the lever)
RUNCYCLE	<ul style="list-style-type: none"> • For pallet lines where, for instance, jigs locking device needs to be activated and then release the jig when the piece is assembled. Replaces some activities that are normally controlled by a PLC

Models available upon request

- **Multi-dock connector:** connecting up to 8 tools (each tool has a dedicated program) that can operate individually depending on TOM programming.
Code 685001065
- **Tool locking/unlocking device:** it permits to TOM unit to enable/disable connected tool. For 26C models: code 685001069
- **Cables**
Code 685001071: to connect TOM with locking/unlocking device when a single screwdriver is used.
Code 685001072: to connect multi-dock connector with locking/unlocking device when several screwdrivers are used
- **Tower-light:** It allows immediate, visual display of the tightening outcome. Code 687041018
- **Connecting hoses** (air and signals) for use of the transducer for TOM. A very compact solution, completely spiral shape, which maintains a tidy work area for the operator. The hoses are 2.5 M long (measured with stretched hose and including 35 mm useful linear hose for connections)
Spiral multi-hose for TOM D12 code 693011027
Spiral multi-hose for TOM D10 code 693011026
- **Cover:** It prevents intentional or unintentional contacts and damages to TOM unit. It prevents modifications / tampering by unauthorized personnel.
Code 687041043
- For further information see cat. 99 - TOM Monitoring Unit.

Advantages of the TOM unit vs a PLC

	TOM	PLC
LAY OUT	Compact unit compared to the PLC	To provide the same features, the PLC must be integrated with other devices (additional modules which are bigger)
	Robust: the cover is made of sheet metal 1 mm thick	The PLCs are made of plastic and must be further protected by an additional electric panel
	It doesn't require switchboard and wiring for installation	The PLC provides an electric panel instead
	Possibility to position it directly on the production line to be used by the operator to read	The PLC needs a operator panel and/or external buttons
CHEAPNESS	Integrated and easy user interface	It is necessary an operator panel to connect and adequately program
	TOM is a complete system equipped with 16 IN and 24 OUT, RS232 for data and watch	To have all these functions, it is necessary to add expansions
	Complete firmware compatible with all screwdrivers , with all setting times and calibrations and many other functions	It is required a complete programming according to the different screwdrivers to connect
	Firmware already tested by Fiam and ready to use	A program developed by the customer, in addition to costs for software development and time (often some months), requires a time for verification and resolution of the programming errors
USE	Rapid start up: a few seconds to start	Long cycle of start; the PLC always require more time to start
	Rapid visualisation of the remaining screws thanks to additional display	For the PLC, it is required an additional monitor positioned close to the user
	Fast calculation: instantaneous response to events (both screwdriver and inputs / outputs). Very rapid reading: even in the case of 1 tightening with very high cadences, counts are not lost	Slower times of answer in case of tightenings with high work rate
	Easily interfaced to signal and transmit the data with all PLC	The PLC to communicate with other devices must have additional interfaces



TOM connected with the plant's system



Process under control and print of tightening results

Air screwdrivers with pneumatic pick-up signal

Type of screwdriver / nutrunner	Code	Grip	Tightening torque on soft joint		Idle speed	Starting system	Reversibility	Weight	Dimensions (mm)	Air consumption	Accessories	Noise level*	Vibrations	
			min.	max.										min.
Model	Code	Type	Nm	in lb	rpm	Type	Type	kg	lb	Øxhx	l/s	Drive	dBA	m/s ²
15C2A-CS	112507035	↓	0,4 ÷ 2,0	3.54 ÷ 177	2000	↓↑	↺	0,59	1.30	38x230	4	⊕ F 1/4"	73	<2,5
15C3A-CS	112507036	↓	0,4 ÷ 3,5	3.54 ÷ 30.975	1400	↓↑	↺	0,60	1.32	38x230	5,5	⊕ F 1/4"	73	<2,5
15C4A-CS	112507037	↓	0,4 ÷ 4,5	3.54 ÷ 39.825	950	↓↑	↺	0,60	1.32	38x230	5,5	⊕ F 1/4"	73	<2,5
15C5A-CS	112507038	↓	0,4 ÷ 5,0	3.54 ÷ 44.25	650	↓↑	↺	0,60	1.32	38x230	5,5	⊕ F 1/4"	73	<2,5
15C2AL - 2CS	112509891	↑	0,4 ÷ 2,0	3.54 ÷ 177	2000	↑↓	↻	0,59	1.30	38x228	4	⊕ F 1/4"	73	<2,5
15C3AL - 2CS	112509892	↑	0,4 ÷ 3,5	3.54 ÷ 30.975	1400	↑↓	↻	0,60	1.32	38x228	5,5	⊕ F 1/4"	73	<2,5
15C4AL - 2CS	112509893	↑	0,4 ÷ 4,5	3.54 ÷ 39.825	950	↑↓	↻	0,60	1.32	38x228	5,5	⊕ F 1/4"	73	<2,5
15C5AL - 2CS	112509894	↑	0,4 ÷ 5,0	3.54 ÷ 44.25	650	↑↓	↻	0,60	1.32	38x228	5,5	⊕ F 1/4"	73	<2,5
15C2AP - 2CS	112509895	↵	0,6 ÷ 2,2	5.31 ÷ 19.47	2200	↵	↻	0,70	1.54	37x209x157	6	⊕ F 1/4"	71	<2,5
15C3AP - 2CS	112509896	↵	0,4 ÷ 3,5	3.54 ÷ 30.975	1400	↵	↻	0,72	1.58	37x209x157	6	⊕ F 1/4"	71	<2,5
15C4AP - 2CS	112509829	↵	0,4 ÷ 4,5	3.54 ÷ 39.825	950	↵	↻	0,72	1.58	37x209x157	6	⊕ F 1/4"	71	<2,5
15C5AP - 2CS	112509830	↵	0,4 ÷ 5,0	3.54 ÷ 44.25	650	↵	↻	0,72	1.58	37x209x157	6	⊕ F 1/4"	71	<2,5
15C2APA - 2CS	112509899	↵	0,6 ÷ 2,2	5.31 ÷ 19.47	2200	↵	↻	0,70	1.54	31x178x156	6	⊕ F 1/4"	71	<2,5
15C3APA - 2CS	112509900	↵	0,4 ÷ 3,5	3.54 ÷ 30.975	1400	↵	↻	0,72	1.58	31x178x156	6	⊕ F 1/4"	71	<2,5
15C4APA - 2CS	112509876	↵	0,4 ÷ 4,5	3.54 ÷ 39.825	950	↵	↻	0,72	1.58	31x178x156	6	⊕ F 1/4"	71	<2,5
15C5APA - 2CS	112509883	↵	0,4 ÷ 5,0	3.54 ÷ 44.25	650	↵	↻	0,72	1.58	31x178x156	6	⊕ F 1/4"	71	<2,5
15C2A30 - 2CS	112509903	↵ ^{30°}	0,8 ÷ 2,0	708 ÷ 177	2000	↵	↻	0,70	1.54	see on page 9	4	⊕ M 1/4"	73	<2,5
15C3A30 - 2CS	112509904	↵ ^{30°}	0,8 ÷ 3,0	708 ÷ 26.55	1400	↵	↻	0,70	1.54	see on page 9	5,5	⊕ M 1/4"	73	<2,5
15C4A30 - 2CS	112509905	↵ ^{30°}	0,8 ÷ 4,0	708 ÷ 35.4	950	↵	↻	0,70	1.54	see on page 9	5,5	⊕ M 1/4"	73	<2,5
15C5A30 - 2CS	112509906	↵ ^{30°}	0,8 ÷ 5,0	708 ÷ 44.25	650	↵	↻	0,70	1.54	see on page 9	5,5	⊕ M 1/4"	73	<2,5
15C2A90 - 2CS	112509907	↵ ^{90°}	0,8 ÷ 2,0	708 ÷ 177	2000	↵	↻	0,70	1.54	see on page 9	4	⊕ M 1/4"	73	<2,5
15C3A90 - 2CS	112509908	↵ ^{90°}	0,8 ÷ 3,0	708 ÷ 26.55	1400	↵	↻	0,70	1.54	see on page 9	5,5	⊕ M 1/4"	73	<2,5
15C4A90 - 2CS	112509909	↵ ^{90°}	0,8 ÷ 4,0	708 ÷ 35.4	950	↵	↻	0,70	1.54	see on page 9	5,5	⊕ M 1/4"	73	<2,5
15C5A90 - 2CS	112509910	↵ ^{90°}	0,8 ÷ 5,0	708 ÷ 44.25	650	↵	↻	0,70	1.54	see on page 9	5,5	⊕ M 1/4"	73	<2,5

Legend

15 = Power of the motor in Watt/10 • C = Screwdriver/Nutrunner • 2 = Maximum tightening torque in Nm • A = Air shut-off system • L = Lever • P = Pistol grip • 30 = Head at 30° • 90 = Head at 90° • PA = 'Forward' pistol grip • 2CS = Double-signal pressure

Legend

 **Reversibility:** all models are suitable for tightening and untightening operations

 **Lever**

 **Push button**

- The figures shown are measured at a pressure of 6,3 bar (ISO 2787) the recommended operating pressure.
- Tightening torque values have been measured in accordance with ISO 5393 standard.
- Noise level has been measured in accordance with ISO 3744 and ISO 15744 standards.
- * Additional factor: 3 dBA spread in method and production (ISO 15744).
- Vibrations level have been measured in accordance with ISO 28927-2.
- Accessory drive: male square drive (ISO 1174); female hexagonal drive 1/4", 6,35 mm (ISO 1173).
- The code number must be used when ordering.

The data given in the table are indicative and can be changed without prior notice. The 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, by the pressure and quantity of air supply, and by the type of accessory used. The values indicated for noise and vibration levels were obtained in the laboratory, performing tests that comply with the standards stated, but alone are not sufficient for calculating risks. Values measured in the single work places may be higher than those stated. The values of actual exposure and consequent risks are specific and depend on the operator's method of work, the type of work piece and the work place, as well as the operator's time of exposure and his physical conditions. Fiam cannot be held responsible for any consequences deriving from the use of the information in the table when evaluating risks in the work place over which Fiam has no control. For all further details, please apply to the Fiam Technical Consultancy Service.

Standard equipment (supplied with the tool)

- Clutch adjustment key
- Additional clutch spring (only for straight and pistol models)
- Hanging ring
- Use and maintenance manual.
- Eco-friendly packaging.

Accessories available upon request

- Bits, sockets, etc., balancers, exhaust silencers and other compressed air system accessories (see Accessories catalogue)
- Collar bracket for straight models to be installed on arm stands and with auxiliary grips (cod. 692039006)

Accessories available upon request



BT-MG MAGNESIUM TELESCOPIC ARMS

Telescopic arms in magnesium alloy, designed and produced by Fiam, extremely resistant to mechanical stress thus guaranteeing reliability and long life span, thanks to accurate manufacturing process and applied innovative materials.

Designed with different telescoping extension elements (3 for all models and 2 for BT-MG 10...), they are conform for working areas according to various productive needs.

Double terminal coupling guarantees great handiness and maximum freedom of action also for inclined tightening operations. They can be easily installed on existing workplaces on ceiling or wall using a simple plate with reduced dimensions.

Model	Code	Max torque Nm in lb		Max work range (mm)	Min work range (mm)	Ø max tool (mm)
BT-MG 10 800	692071420	10	88,50	625	455	26.5-50
BT-MG 10 1000	692071421	10	88,50	825	655	26.5-50
BT-MG 15 800	692071409	15	132,70	860	505	26.5-50
BT-MG 15 1000	692071401	15	132,70	1070	575	26.5-50
BT-MG 15 1500	692071404	15	132,70	1580	745	26.5-50



BT-MG MAGNESIUM TELESCOPIC ARMS WITH POSITIONING DEVICE

The illustrated BT-MG arms as described above, can be equipped with a device for the detection of the correct position of the screwdriver on the tightening point.

The models, come in two versions:

- BT-MG TPM1 arms...: models with single angle movement detection
- BT-MG TPM-2 arms...: models with angle and linear movement detection.

The arms must be integrated with the TPM monitoring unit code **692078019** and with the TOM monitoring unit code **685001062**.

The system locates the positions of the screwdriver on the different tightening points and it memorizes the sequence (up to 35 positions/program for 8 programs).

For more information, please see the on-line catalogue.

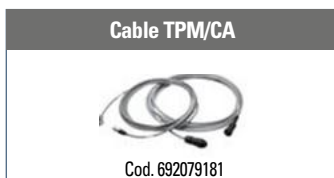
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MODELS WITH SINGLE ANGLE MOVEMENT DETECTION

Model	Code	Max torque Nm in lb		Max work range (mm)	Min work range (mm)
BT-MG 15 800 - TPM1	692071425	15	132,70	985	630
BT-MG 15 1000 - TPM1	692071426	15	132,70	1195	700
BT-MG 15 1500 - TPM1	692071427	15	132,70	1705	870

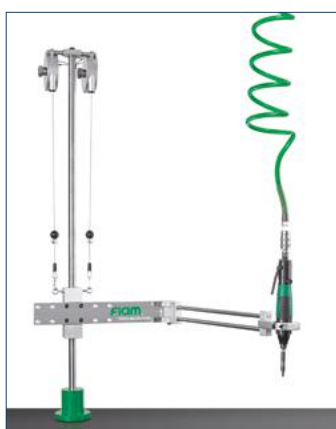
MODELS WITH ANGLE AND LINEAR MOVEMENT DETECTION

Model	Code	Max torque Nm in lb		Max work range (mm)	Min work range (mm)
BT-MG 15 800 - TPM2	692071422	15	132,70	985	630
BT-MG 15 1000 - TPM2	692071412	15	132,70	1195	700
BT-MG 15 1500 - TPM2	692071415	15	132,70	1705	870

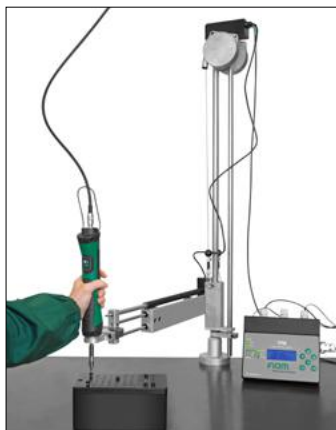
Accessories available upon request



BC Cartesian Arm



BCA Cartesian Arm



Cartesian Arm with a position monitoring device

CARTESIAN ARMS BC AND BCA

The new Fiam Cartesian arms represent fundamental solutions for ergonomics workplace. They are completely designed and manufactured by Fiam and can be used with any type of tool with a diameter up to 50 mm and weight up to 11 kg. A universal clamp is supplied but, upon request, numerous accessories are available for correctly fitting different Fiam tools to ensure maximum safety and functionality.

Available in 2 versions:

- Cartesian Arms
- Articulated Cartesian arms

All models are also available with positioning device for processing angular and linear movement detection on the work point (See previous page).

Description	Code	Max torque Nm	in lb	Max load kg	Max tool diameter mm
Cartesian Arm BC5	692031030	5	44,25	2	32+50

Description	Code	Max torque Nm	in lb	Max load kg	Max tool diameter mm
Articulated Cartesian Arm BCA5	692031034	5	44,25	2	32+50

CARTESIAN ARMS WITH A POSITION MONITORING DEVICE

All Fiam Cartesian arms can be fitted with a **position monitoring device** and, **combined with the TPM monitoring unit**, help make tightening systems very suitable for "Poka-Yoke" processes, while increasing the efficiency and speed of the production cycle.

The guided positioning system operates as follows:

- It works through "self-learning": it locates the screwdriver position at the various tightening points and stores them together with the sequence of actions and the number of screws (up to 35 positions/program and up to 8 programs).
- The TPM unit display offers a graphical system to guide operators progressively as they approach the tightening point.
- The screwdriver is enabled when it is at the first stored position (the TPM display shows POS.OK and the POS-OK LED on the telescopic arm lights).
- Each time a screw is tightened, the REMAIN display shows how many screws are left, indicating that it is ready to pass on to the next screw.
- The END signal comes on when the stored cycle is complete, and gives the OK to proceed with a new work cycle.
- During the memorization process, a precision tolerance can be programmed within the range: for example, for a length of 1 mm \pm 10% approximately; for the angle 0.1 degrees (maximum tolerances).

There are three models available for all air and electric Fiam tightening solutions:

- Arms BC... TMP-1: models with **single angle** movement detection
- Arms BC... e BCA... TPM-2: models with **angle and linear** movement detection.

For more information please see catalog 79 "Accessories for ergonomic workplace" or contact Fiam Technical Consultancy Service.

www.fiamgroup.com info@fiamgroup.com Meet us on:

