Reliability and accuracy: real innovation knows no obstacles

Air angle nutrunners

- with 90° angle head
- with 30° angle head
- with flat head drive

- Torque range: from 0,8 to 145 Nm
- Automatic shut-off

FIAM®

PEOPLE AND SOLUTIONS

Tightening in presence of limited space and where access is difficult. Also with high torques.

Particularly suitable for motorvehicle industry and household appliances, angle nutrunners are indispensable when space is limited and where access is difficult, such as up against walls, close to metal sections and profiled beams, etc.

50C....A90

Main features are:

- **robust angle heads to guarantee long lifetime**
- **high torque accuracy**
- **great attention to ergonomics**

Particularly the **50C models** permit to tighten torques up to 145 Nm and to solve with very high precision heavy tightening operations, as for example the assembly of convector heaters, hydraulic pumps with great dimensions or in the MVI industry.

AD9RA1

A6RSA1

AG40RA

15C...90

15C...30

With the AF nutrunners all points that need tightening are within easy reach

These air nutrunners with a flat head drive are the most effective tool for solving all assembly situations where it's difficult to reach the point to tighten and where objects would get in the way of ordinary angle nutrunners. More specifically, **the AF air angle nutrunners** are extremely useful where there are pressurised circuits, that is to say **components with pipes containing fluids fitted with nuts that need tightening** (as could be gas ramps in hobs, refrigerator compressor pipes, car braking system pipes, boiler pipes, coffee machine pipes and so on).

The **special heads** that adapt to numerous assembly situations render this system optimum: with their radial opening it is, in fact, possible to put the pipe inside the hex. drive making it so much easier to reach the nut. Moreover, the latest generation of design specifications guarantee **extreme reliability and maximum life** for these brand tools.

40A...AF..

Robust angle heads to guarantee reliability and long lifetime.

Radial opening ideal to reach the nut.

Be demanding

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

The **torque control system** with instant automatic air shut-off **improves the quality of the tightening process,** and consequently that of the **finished product**

High performance motor: **optimising performance even when supply pressures are low**

Robust control top, obtained by mechanic working, guarantees high resistance to hits and long lifetime

High tightening precision: CM/CMK values are extremely high; therefore they can be used where **great tightening accuracy is required** also with high torques, particularly in the motorvehicle fields

The **angle heads** are **extremely compact** to tighten where access is difficult. They are designed and built with **innovative materials** to ensure high wear resistance (and therefore they need less maintenance) and **high tightening precision**

The grease supplied for **lubricating** of the AF heads, a Fiam special and exclusive, guarantees **continuous performance of the nutrunner in terms of torque and life** under all conditions of use

Don't be satisfied with the maximum

Productivity

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

The torque control system **reduces the need to perform quality controls at the end of assembly**

The high performance of the air motor and the kinematic chain supplì **optimum tightening speeds, reducing the time/cycle**

The cycle end acoustic signal emitted by the tightening torque control system advises the operator of the end of tightening: so he can **pass on to the next tightening cycle more rapidly**

An excellent ratio **between speed and expressed torque** guarantees an accurate precision

It's even more practical, quicker and safer to adjust the clutch thanks to the new **rotating cursor**

For 40A...AF..., models, the **start lever operates both the tightening and the realignment of the end gear** thanks to its double work stroke: by **activating** the lever from the rest position **to the first step**, the end gear is realigned, instead by **activating completely** the lever the nutrunner starts functioning and the end gear starts to rotate

For 40A...AF..., models with the through gear **untightening** can be done turning the tool by 180°

Thanks to Fiam's great flexibility in proposing **customised solutions,** any production situation can be tightened, even the most complex

Cm= **indicator of the machine (nutrunner) repeatability during operation**

CmK= **indicator of the machine (nutrunner) accuracy during operation**

When the indicator refers to a nutrunner, the repeatability represents the nutrunner capability to generate the same torque value in every cycle, while the accuracy represents the nutrunner capability to respect the pre-set torque value.

Perfection is
in your hands

Ergonomics

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

All nutrunners, except for A...R models, have a **rotating cursor** for the adjustment of the clutch, practical, easy and safe

The **long ergonomic start lever** permits a more comfortable and easy grip to guarantee the operator's comfort

The torque control system reduces the reaction to the operator's hand. Thanks to the careful study of the internal gears, **the vibration levels are below 2,5 m/s²**

The **antislip varnishing,** which is a feature of the start lever, makes it more comfortable and longer lasting

Effective built-in silencing system: these nutrunners are extremely noiseless and are equipped with a controlled spread of the exhaust air

These nutrunners are particularly **versatile and handy** thanks to the ideal **weight to power ratio**

The Fiam nutrunners are **among the most compact tools on the market** thanks to the very good **dimensions ratio** (length/diameter/head dimension)

To make the tightening job even easier and **eliminate stress on the operator's arm,** special accessories are recommemded: they permit higher use agility and flexibility and wide rotations of the tool around its axis (see Accessories available upon request)

The reduced thickness of the head makes tightening easier also in small spaces

The head with blind gear makes it easier to bring the nut near the joint

Naturally
innovative

Ecology

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

All the components are **easy to dispose of** because they are built **using recyclable materials;** therefore they do not represent any danger for environmental pollution

The technological design of the air motor, besides **reducing the consumption of compressed air** permits to improve the performances also at low air feed pressure

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

The **head construction materials** ensure a long life resulting in a reduction in maintenance costs and in component replacement

Rotating cursor for the adjustment of the clutch

Ergonomic start lever

Type of nutrunner		Grip	Tightening torque on soft joint				Idle speed	Starting system	Reversibility	Weight		Air consumption	Accessories	Noise level*	Vibrations
			min.	max.	min.	max.									
Model	**Code**	**Type**	**Nm**		**in lb**		**rpm**	**Type**	**Type**	**kg**	**lb**	**l/s**	**Drive**	**dBA**	**m/s²**
15C2A30	112533942	30°	0,8 ÷ 2		7.08 ÷ 17.7		2000			0,70	1.54	4,0	M 1/4''	73	< 2,5
15C3A30	112533943	30°	0,8 ÷ 3		7.08 ÷ 26.55		1400			0,70	1.54	5,5	M 1/4''	73	< 2,5
15C4A30	112533944	30°	0,8 ÷ 4		7.08 ÷ 35.4		950			0,70	1.54	5,5	M 1/4''	73	< 2,5
15C5A30	112533945	30°	0,8 ÷ 5		7.08 ÷ 44.25		650			0,70	1.54	5,5	M 1/4''	73	< 2,5
15C2A90	112593942	30°	0,8 ÷ 2		7.08 ÷ 17.7		2000			0,70	1.54	4,0	M 1/4''	73	< 2,5
15C3A90	112593943	30°	0,8 ÷ 3		7.08 ÷ 26.55		1400			0,70	1.54	5,5	M 1/4''	73	< 2,5
15C4A90	112593944	30°	0,8 ÷ 4		7.08 ÷ 35.4		950			0,70	1.54	5,5	M 1/4''	73	< 2,5
15C5A90	112593945	30°	0,8 ÷ 5		7.08 ÷ 44.25		650			0,70	1.54	5,5	M 1/4''	73	< 2,5
AD6RA1	114893986	90°	2,5 ÷ 6		22.125 ÷ 53.1		1150			1,200	2.64	10	M 3/8"	77	< 2,5
AD9RA1	114893989	90°	2,5 ÷ 9		22.125 ÷ 79.65		900			1,200	2.64	10	M 3/8"	77	< 2,5
AD14RA1	114893994	90°	3 ÷ 14		26.55 ÷ 123.9		600			1,400	3.08	10	M 3/8"	77	< 2,5
AD26RA1	114893996	90°	11,5 ÷ 26		101.775 ÷ 230.1		350			1,450	3.19	10	M 3/8"	77	< 2,5
AG40RA	114893975	90°	18 ÷ 40		159.3 ÷ 354		400			2,050	4.51	13	M 3/8"	80	< 2,5
AG60RA	114893980	90°	29 ÷ 60		256.65 ÷ 531		300			2,300	5.06	13	M 1/2"	80	< 2,5
50C95A90	112694400	90°	43 ÷ 95		380.55 ÷ 840.75		200			2,700	5.94	15	M 1/2"	81	< 2,5
50C145A90	112694401	90°	68 ÷ 145		601.8 ÷ 1283.25		120			3,400	7.48	15	M 1/2"	81	< 2,5
A6RSA1	114893924	FLAT	3,5 ÷ 11,5		30.975 ÷ 101.775		600			1,700	3.74	9	F 1/4"	82	< 2,5
A10RYA	116300012	FLAT	12 ÷ 33		106.2 ÷ 292.05		250			2,750	6.05	9	F 14 mm	82	< 2,5
40A17AF12B	114899930	FLAT	7 ÷ 17		61.95 ÷ 150.45		300			1,90	4.18	9	12	75	< 2,5
40A17AF13B	114899931	FLAT	7 ÷ 17		61.95 ÷ 150.45		300			1,90	4.18	9	13	75	< 2,5
40A17AF15B	114899932	FLAT	7 ÷ 17		61.95 ÷ 150.45		300			1,90	4.18	9	15	75	< 2,5
40A9AF12B	upon request	FLAT	2 ÷ 9		17.7 ÷ 79.65		500			1,90	4.18	9	12	75	< 2,5
40A9AF13B	upon request	FLAT	2 ÷ 9		17.7 ÷ 79.65		500			1,90	4.18	9	12	75	< 2,5
40A9AF15B	upon request	FLAT	2 ÷ 9		17.7 ÷ 79.65		500			1,90	4.18	9	12	75	< 2,5
40A20AF12B	upon request	FLAT	7 ÷ 20		61.95 ÷ 177		240			1,90	4.18	10	12	75	< 2,5
40A20AF13B	upon request	FLAT	7 ÷ 20		61.95 ÷ 177		240			1,90	4.18	10	12	75	< 2,5
40A20AF15B	upon request	FLAT	7 ÷ 20		61.95 ÷ 177		240			1,90	4.18	10	12	75	< 2,5

Legend

Reversibility: all models are suitable for tightening and untightening operations
The **A10RYA model** is reversed by using either the bottom hexagonal drive (right-hand rotation) or top hexagonal drive left-hand rotation).
The **50C models** can be reversed by sliding the ring nut placed below the start lever.
40A…AF.. models: reversing to direction of rotation is used to realign the end gear at the end of the tightening operation

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 8662-1 and ISO 8662-7 standards.
- 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.

40A...AF.. models

To guarantee maximum nutrunner performances over time the head has to be greased, equivalent to three injections with the grease gun supplied, every 3.000 cycles

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.**

Real innovation knows no obstacles

Other technical features

Models	Air inlet	Recommended hose bore
15C...	1/4'' gas	Ø 5 mm
AD...RA1, A6RSA1, A10RYA, 40A...AF..	1/4'' gas	Ø 8 mm
50C...	1/4'' NPT	Ø 8 mm
AG40RA, AG60RA	1/4'' gas	Ø 10 mm

Standard equipment (supplied with the tool)

- Clutch adjustment key
- Grease gun (only for 40A…AF… models)
- Specific grease (50 gr. tube) (only for 40A…AF… models)
- Hanging ring (except for 50C)
- Use and maintenance manual
- Eco-friendly packaging

How to choose 40A...AF.. models

40 = Nutrunner power (400 watt) • A = Angle nutrunner • 17 = Maximum torque expressed • A = Air shut-off • F = Flat (flat head drive) • 12 = Hexagonal drive used • B = Type of end gear (**B**lind or **T**hrough)

Blind gear: this gear has a "ridge" on which the nut to tighten sits, making tightening easier

Through gear: this gear has a hex. drive that covers the nut completely; with this gear untightening can also be done turning the tool by 180°

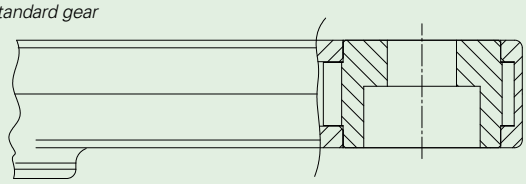
Models available upon request

- **Models with only right or left hand**
- **Models with quick change chuck**
- **Models with low speeds** for critical tightenings (e.g. with stainless steel)
- **Models for low torques:** ideal for tightenings with small screws/nuts
- **Models with screws sunction** for non magnetisable stainless steel screws
- **Models A6RSA1 and A10RYA with hexagonal head different to the standard** (for A6RSA1 max hex. 7 mm, for A10RYA max hex. 15 mm): to order add the size of the hexagonal required after the code (A6RSA1→ A6RSA1/7; A10RYA → A10RYA/13). The non-standard hexagonal heads are normally used without accessories
- **Models for torques higher than 145 Nm**
- **Models with female hexagonal drive for inserts (BITS)** (except AD6RA1, AD9RA1, AG40RA and AG60RA); when ordering, add BITS at the end of the code (e.g. 15C2A... →15C2A...-BITS)
- **Models with poka yoke system for screws counting:** to avoid any screw omission, to accelerate the production cycles and ensure control on the assembled product. See pages 10-11 of this catalogue.
- **Models with joint monitoring system (except for 50C models):** to defect and store the torque values and monitor the tightening cycle. See pages 12-13 of this catalogue.

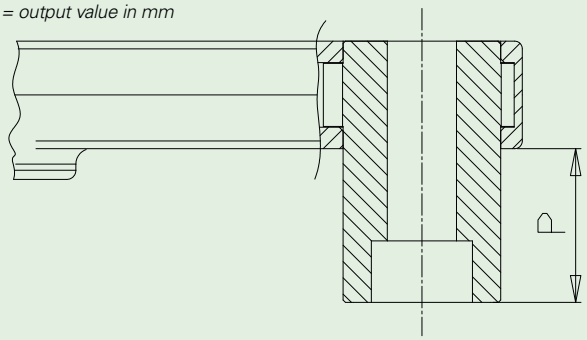
AF models:

- Models with **T**rough end gear (T version instead of B) (i.e. 40A17AF12B → 40A17AF12**T**)
- Models with a different size end hex. drive (i.e. for 14 mm end gear 40A17AF12B → 40A17AF**14**B)
- Models with differently shaped end gear (polygonal, square, double hexagon, oval, etc.)
- Models with torque ranges lower than those given in the chart
- Models with extended end hex. drive
- Models for assembly works with small nuts and therefore for tightenings with low torques and high speeds: ideal for assembly of thermocouples (e.g. plastic hoses of flatiron with heater)

Standard gear



Extended gear
P = output value in mm



- Stall torque models, without clutch

For all models please contact **Fiam Technical Consultancy Service**

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 **AIR ANGLE NUTRUNNERS equipped with pneumatic pick-up signal (ported)**
- **COMPUTERIZED MONITORING UNIT TOM-PM** (Torque Operation Monitor - Pressure Monitoring): it allows the **monitoring of the tightening cycle through the double-signal pressure** coming from the nutrunner, 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: the pressure difference when torque is obtained.

Computerized unit

Model	Description	Code	Dimensions (mm) Width x depth x h	Electric feed
TOM-PM	Monitoring unit	685001057	230x200x130	110/220V, 50/60 Hz

Legend

TOM-PM = Tightening Operation Monitor - Pressure Monitoring

Standard equipment (supplied with unit)

- Kit of pressure switches (cod. 685001058) with pneumatic hoses and electric cable length to 3,0 mt.
- Power cord
- IN connector for unit operation
- Use and maintenance manual
- Eco-friendly packaging

Accessories available upon request

- 3 colors tower-light providing the same display light signals of the unit's led-lights (supplied with 3,0 mt long cable): cod. 686000606

Models available upon request

- Customized models available. For example:
  - models provided with tightening/untightening/cycle end features
  - suitable for use with autofed tightening unit CA EASYDRIVER (see cat. 89)
  - models provided with tightening sequence monitoring for more nutrunners used by only one operator.

For further information please contact **FiamTechnical Consultancy Service**

Features of the monitoring unit TOM-PM (Torque Operation Monitor - Pressure Monitoring)

- It is possible to set **1 sequence of tightening** through internal PLC
- Tightening sequence can contain **up to 999 screws**
- It is possible to **program the maximum number of tightening attempts** for KO screws
- **Automatic check of tightening time** which can be adjusted by setting the cycle time thus discriminating the different KO results
- **PLC programming keypad:** user friendly
- **Visual indicators of the tightening status** positioned on the front panel of the unit
- **Acoustic signal:** short tightening OK, long tightening KO
- **Reset cycle or releasing pallet/jig** with key selector or PLC
- **Electric signal for "end cycle OK"** to release pallet/jig (or manual with key selector)
- **Last tightening annullated through button:** decrease on counter in case of untightening (when for example the piece has not been positioned)
- **I/O Connectors** with contact to 24 Volt d.c. (max 0,5A for connection to PLC and/or to light signal systems)
- The unit can be connected only to one air tool equipped with **shutoff clucth, lever or push button (not push start) and doublesignal pressure** (START and TORQUE)
- Weight: 2,0 Kg

Operation	Led-lights on the TOM-PM front panel
Tightening OK	**TIGHTENING OK:** green led-light
Tightening sequence set	**CYCLE END:** yellow led-light **TIGHTENING OK:** green led-light
Fastening a screw already tightened	**TIGHTENING KO:** red led-light
Number of tightened screws	Counter on display
Number of tightenings KO	Counter on display
Screw stripping	**TIGHTENING KO:** red led-light, increase on counter KO and signal on display "T>T_MAX"
Releasing of the lever before the tightening is completed	Neither signal nor increase on the screw counter
Screw getting stuck; partial thread; presence of different joint among foreseen joint types (clutch operated before minimum time set)	**TIGHTENING KO:** red led-light, increase on counter KO and signal on display "T<T_MIN"
Presence of different joint among foreseen joint types (clutch operated after maximum time set)	**TIGHTENING KO:** red led-light, increase on counter KO and signal on display "T>T_MAX"

Joint monitoring: everything under control.

Are you looking for total reliability? You have just found it. When tightenings are difficult, **15C tools and the computerised torque monitoring TOCS-TC** guarantee an extraordinary quality and eliminate the possibility of error during the tightening cycle. Nothing will pass unnoticed: the cycle is monitored, the torque values are under control and the production waste is reduced to the minimum level.

The solution includes:

- **AIR ANGLE NUTRUNNERS:** the built-in strain gauge torque transducer converts the torque applied to the single joints into an electrical signal which is then processed by the TOCS-TC computerised unit

- **COMPUTERISED CONTROL UNIT TOCS-TC** (Tightening Operation Control System - Torque Control): it defects and stores the tightening torque value, displays the cycle results (OK and KO) and monitors the tightening cycle through torque/time values, that can be easily stored.

- **Available in two versions** with alphanumerical display (TOCS-TC...A) and graphic display (TOCS-TC...G); the latter allows the torque-time curve to be visualised.

Computerized unit

Model	Description	Code	Dimensions (mm) Width x depth x h	Electric feed
TOCS-TC 1CH A	Control unit	686000131	210x330x125	110/220V, 50/60 Hz
TOCS-TC 2CH A	Control unit	686000132	210x330x125	110/220V, 50/60 Hz
TOCS-TC 1CH G	Control unit	686000133	210x330x125	110/220V, 50/60 Hz
TOCS-TC 2CH G	Control unit	686000134	210x330x125	110/220V, 50/60 Hz

Legend

TOCS -TC= Tightening Operations Control System - Torque Control • 1 CH = 1 channel for connection to one tool • 2CH = 2 channels for connection to two different or similar tools, working synchronically or asynchronically • A = alphanumerical display • G = graphic display

Standard equipment (supplied with unit)	Accessories available upon request	Models available upon request
• 2m electric power cable • Use and maintenance manual • Eco-friendly packaging	• OK/KO signal light column with built-in buzzer (code 686000182) • Transport handle	• Version with network board for communicating with specific software (computerised unit programming + data acquisition)

TOCS-TC unit (Tightening Operation-Control-System-Torque Control): technical features

The complete and simple programming menus offer:

- Up to 20 programme settings (MIN torque, MAX torque, MIN time, MAX time) and password protection;
- Tightening sequences settings with a maximum of 99 screws and a maximum number of repetitions in the event of a reject.

The I/O's of the unit offer:

- OK/KO signalling for each cycle and general OK/KO (end-of-sequence);
- 3 user configurable on-line printing modes;
- The type of possible rejects required can be detected trough the correct programming of tightening cycle;
- The internal memory stores torque/time/result data concerning the last 1,000 tightening cycles (circular buffer);
- The system can be networked (proprietary protocol) with supervision (programming + data acquisition) and optional software.

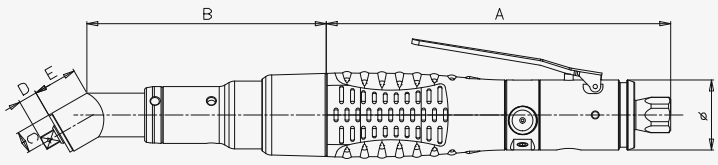
Technical features

- **Built-in membrane programming** keyboard
- **Electrically powered (a.c.);** if power is interrupted, the data **memory** is maintained by a battery
- **Illuminated liquid crystal display** with 4 lines of 20 characters (version ...A) or graphic (version ...G)
- **RS232 output and LPT output** for connection to printer.
- **Visual indicators for signalling tightening status**, located on the panel:
  RED = Tightening KO (incorrect)
  GREEN = Tightening OK (correct) + pallet release signal;
- **I/O connectors** with contacts powered at 24 Vdc (max. 0.5A) for connection to PLC and/or signal lights to indicate OK and KO tightening

Overall dimensions (in mm)

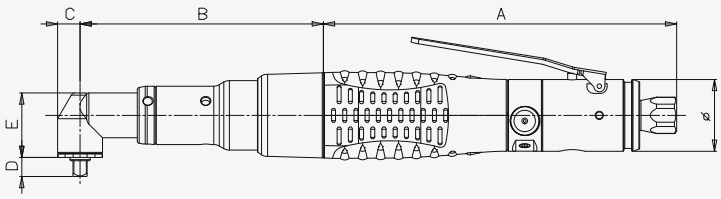
15C...A30 MODELS

Models	A	B	C	D	E	Ø
15C...A30	157	109	10	8,5	20	32



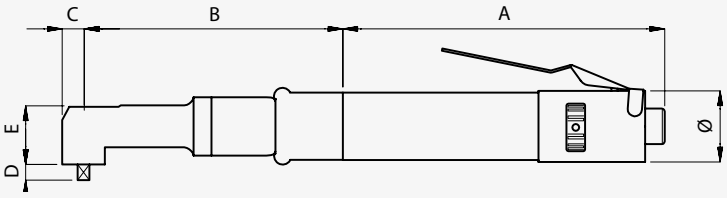
15C...A90 MODELS

Models	A	B	C	D	E	Ø
15C...A90	157	109	10	8,5	29	32

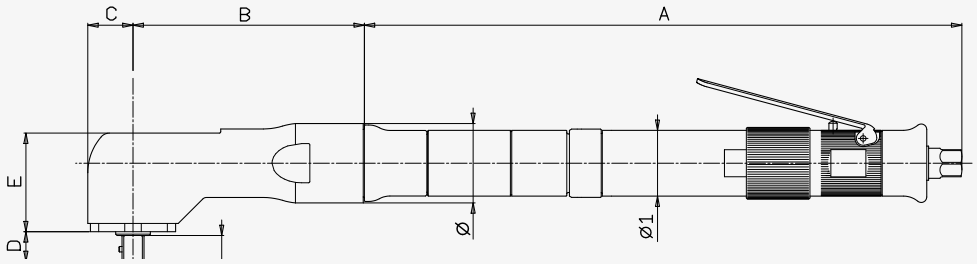


AD.../AG... MODELS

Models	A	B	C	D	E	Ø
AD6RA1	195	97	12,5	12	30	40
AD9RA1	195	97	12,5	12	30	40
AD14RA1	195	125	14	12	34,5	40
AD26RA1	180	137	14	12	34,5	40
AG40RA	240	163	16	12	40	40
AG60RA	240	178	20	16,5	45,5	40



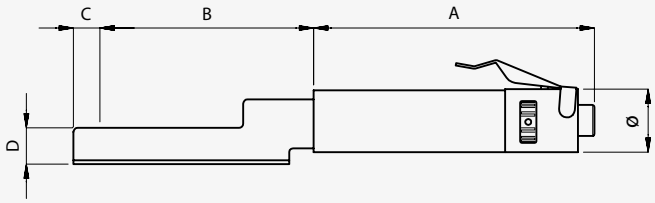
50C... MODELS

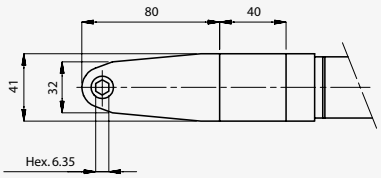


Models	A	B	C	D	D1	E	Ø	Ø1
50C95A90	347	130	22	17,5	15,5	50	44	38
50C145A90	376	132	26	17,5	15,5	60	46	38

Overall dimensions (in mm)

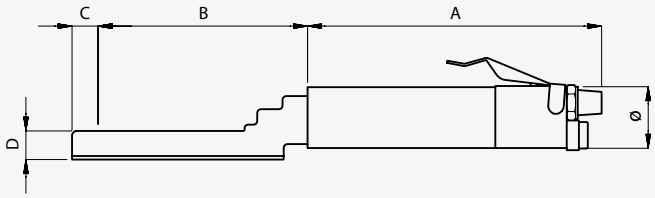
A6RSA1 MODELS

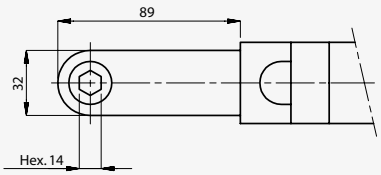




Models	A	B	C	D	Ø
A6RSA1	295	108	12	18	40

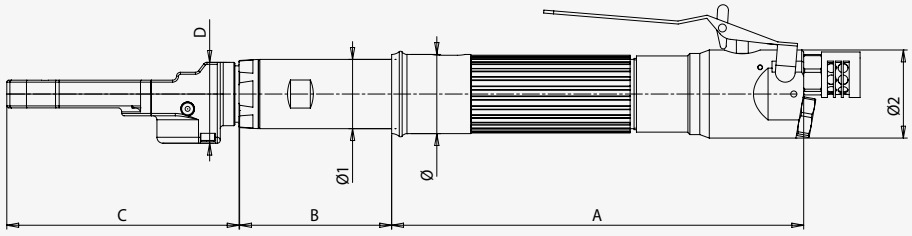
A10RYA MODELS



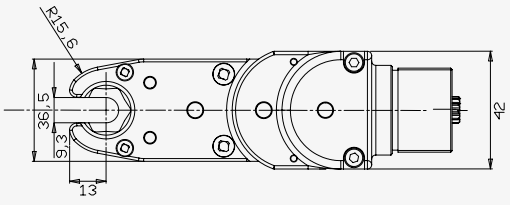


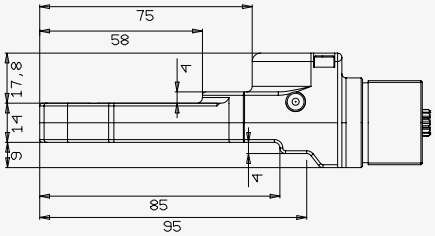
Models	A	B	C	D	Ø
A10RYA	370	134	16	18	46

40A... AF... MODELS



Standard head:
*maximum pipe diameter the head can hold is 9 mm (for different diameters please contact the **Fiam Technical Consultancy Service**)*





Models	A	B	C	D	Ø	Ø1	Ø2
40A9AF..B	195	77	117	41	40	35	44,5
40A17-20AF..B	213	77	117	41	40	35	44,5

Accessories available on request

- **Bits, sockets,** manual and magnetic adaptors for inserts, exhaust air conveyors, balancers and other accessories. See the "Fiam Accessories" catalogues n. 77 and 78.

- **Reaction bar for 50C models** reduce the reaction to the operator's hand.

	Code	For models
Reaction bar	681041024	50C145A90
Reaction bar	681041025	50C95A90

- **Swivelling bail ring for models AD, AG, 50C:** practical accessory designed to keep the tool always in a horizontal position, perfectly balanced and swivelling allowing a considerable reduction in fatigue during tightening operations.

	Code	For models
Swivelling bail	681011060	AD...
Swivelling bail	681011055	AG...
Swivelling bail	681011100	50C...

Assembly sequence

- **Specific grease for 40A…AF models:** a Fiam special and exclusive, it guarantees continuous performance of the nutrunners in terms of torque and life under all conditions of use

	Code	For models
Specific grease (500 gr)	6899051018	40AF

- **BC 25/4 cartesian arm complete with omnidirectional** coupling for more ergonomic tightening operations with 40A...AF angle nutrunners. This agile and flexible device allows **besides extension** over its entire height, **the rotational extent of the arm on the abscissa allows up to 180° permitting a wide operating area**.
The special omnidirectional coupling allows **the tool to be rotated freely** around its axis while **also allowing its horizontal axis** to move by +/- 15°.

BC 25/4 cartesian arms are equipped with balancer, adapter and with a **comfortable handgrip to hold the tool.** Finally, they offer the **possibility of using different compressed air inlets** depending on how the work stations are arranged.

	Code	For models
BC 25/4	692031018	40A...AF...

ERGOTECH

ERGONOMIC NOTE

These mechanical devices eliminate the reaction on wrist-hand-shoulder system of the operator, eliminate the force required to support the tool, eliminate the vibrations, allow the maintenance of a good wrist position, permit to change the hold using both hands.

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PEOPLE AND SOLUTIONS

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