



**Safe and versatile.  
Practical and easy  
to handle.  
Effective and powerful.  
To guarantee the maximum.**

#### **Air drills**

- Straight, pistol and angle models
- Drilling capacity: from 1 to 20 mm Ø

**Fiam**®  
PEOPLE AND SOLUTIONS

## Air drills

# Fiam air drills: drilling on any kind of material with handiness and efficacy

The main technological parameters in drilling operations are the cutting speed and the force with which the drill is moved forwards, both of which are in their turn connected with the type of material being drilled, the diameter of the hole and the idle speed of the drill.

Fiam air drills offer considerable advantages, combining high performance with an **excellent power to weight ratio** and design features that make them particularly **easy-to-handle in every production field**. The range includes various models with straight and pistol grip, or angle drills suitable to drill from 1 to 20 mm diameter; equipped with different kinds of chucks to fix the bits (self-locking chucks and keyed chucks), and models with collet chucks.

As regards the type of grip, Fiam air drills are characterized by advanced ergonomic solutions that **allow different grip position to suit every work situation** thanks to rounded shapes, without sharp edges.

### Straight grip drills

There are available the FZ series, extremely compact, the FS and FY series. The capacities of the chucks supplied with the tool vary from 0 to 10 mm and the speeds from 500 to 20.000 r.p.m.

An important benefit is that they can be started at low speed, using a lever, to facilitate initial insertion of the bit. Straight grip drills are ideal for **vertical drilling operations**.

### Pistol grip drills

The FSE, FDE and FY series are the most used for their practicality, handiness and lightness in relation to their performances. The capacities of the chucks supplied with the tool vary from 0 to 13 mm and the speeds from 450 to 20.000 r.p.m. Pistol grip drills are ideal for horizontal work; their ergonomic shape are ideal to guide the bit with precision and safety and to avoid harmful strain of the wrist.

The pistol grip is better for holes larger than 6-8 mm because it permits the best advancing force.

### Twin grip drills

Suitable for holes with a diameter of over 10-13 mm. FO air drills can also be used for boring and tightening.

### Angle drills

They are necessary when one needs to drill in **tight spaces where access is difficult, such as up against walls, close to metal sections and profiled beams**. Models are available with **30° (FZ series) and 90° angle heads**. The wide range is available with self docking chuck, with keyed chuck and without chuck; 90° angle drills (FS series) are also available in the version which permits the use of collet instead of the normal keyed chuck. With these models it is possible to have even more reduced head dimensions, especially when used with shorter drill bits. Speeds vary from 500 to 4.500 r.p.m.

### Drills-Screwdrivers

All Fiam air drills **can be used as screwdrivers**; it is sufficient to change the chuck to obtain a screwdriver (without clutch) practical, light and easy to handle.

### Special and multi spindle drills

Fiam designs and manufactures special drills to meet the specific needs of individual customers.

*Fiam Technical Consultancy Service is at your disposal for further details.*



FS48/90P



FSE17PA



FY8A

# Choosing the right air drill

To choose the right air drill, a range of different interdependent factors needs to be considered, among which we have the diameter of the hole and the cutting speed suitable for the material to be drilled.

The table helps one choose the right Fiam drill for the type of material being drilled, the corresponding cutting speed and the diameter of the helical bit.

Material					Fiam drills to use			
Compound steel stainless steel	Non-compound steel.	Cast iron, mild steel.	Aluminium, bronze, brass, hard plastics.	Wood and wood products composite mat. soft plastic				
Cutting speed (m/min)					Straight or pistol model	Idle speed (r.p.m.)	Angle model	Idle speed (r.p.m.)
5÷13	20÷27	27÷33	33÷66	50÷120				
Recommended hole diameter in mm								
-	-	< 2	< 4	< 6	FZ 45	4500	FZ31/30, 90	3100
-	-	-	< 1	< 6	FS 200...	20000		
-	< 1	< 1.5	1 ÷ 2	1.5 ÷ 5	FS 65...	6500		
-	1 ÷ 2	1 ÷ 2.5	1.5 ÷ 3.5	4 ÷ 8	FS 48...	5400	FS65/90...	4500
< 1	1.5 ÷ 3	2 ÷ 4	3 ÷ 6	6 ÷ 10	FS 33...	3800	FS48/90...	3400
1 ÷ 2	2.5 ÷ 5	3.5 ÷ 6	5 ÷ 8	-	FS 26...	2900	FS33/90...	2200
1.5 ÷ 3	4 ÷ 6	5 ÷ 8	7 ÷ 10	-	FS17...	1700		
2.5 ÷ 5	5 ÷ 8	6 ÷ 10	-	-	FS 10...	1000	FS17/90...	1100
4 ÷ 8	6 ÷ 10	-	-	-	FS 5...	500	FS10/90...	700
-	< 1.5	< 2	< 2.5	< 5.5	FDE 60...	6000		
< 1.5	1.5 ÷ 3	2 ÷ 4	3 ÷ 6	6 ÷ 10	FDE 49...	4900		
1 ÷ 2	2.5 ÷ 5	3.5 ÷ 6	5 ÷ 8	10	FDE 33...	3300		
1 ÷ 2.5	4 ÷ 5.5	5 ÷ 7	7 ÷ 10	-	FDE 26...	2600		
1 ÷ 2	2.5 ÷ 5	3.5 ÷ 6	5 ÷ 8	10	FY 6...	3200		
1 ÷ 3	1.5 ÷ 4	2 ÷ 6	7 ÷ 10	8 ÷ 13	FY 8...	2600		
2 ÷ 5	3 ÷ 7	4 ÷ 10	9 ÷ 12	11 ÷ 15	FY 10...	1800	FY8/90...	1600
4 ÷ 7	5 ÷ 11	7 ÷ 12	-	-	FY 13...	750	FY10/90...	1200
5 ÷ 9	8 ÷ 13	9 ÷ 14	-	-	FY 14...	450	FY13/90...	500
-	6 ÷ 9	8 ÷ 10	10 ÷ 13	13 ÷ 16	FO 12P	2000		
6 ÷ 8	8 ÷ 13	9 ÷ 15	12 ÷ 16	15 ÷ 18	FO 16P	950		
8 ÷ 11	12 ÷ 16	13 ÷ 18	15 ÷ 20	18 ÷ 25	FO 20P	600		
10 ÷ 15	14 ÷ 20	16 ÷ 23	-	-	FO 3P	170		

**NOTE:** The same forward force cannot be applied to straight grip drills as to pistol grip drills. It is therefore advisable to choose slower speed.

One should always bear in mind that the **idle speed of the drill can fall during drilling due** to an increase in the stall torque. If, for example, you need to drill compound steel with a 4 mm bit, the table suggests an FS10 or FS5; if more heavy duty use is envisaged and greater power is required one could use an FY10 or an FY13.

It is possible for a given material and drill model, to drill with larger diameter bits at a faster cutting speed and viceversa, adjusting the thrust force on the drill.

It is preferable to choose a higher-powered drill if the bit size corresponds to the maximum chuck capacity and you are working on sheet metal or drilling holes where the depth exceeds the diameter of the hole itself. It is advisable to drill a pilot hole for holes (in steel) with a diameter of over 6-8 mm.

A more effective result will be obtained by using **high quality bits that are always kept perfectly sharp.**

In special manual drilling situations and drilling-equipment mounted applications, Fiam **manufactures special drills**, in a very wide range of speeds, with direct air inlet for remote control use, and with smooth or flanged housings.

Given the wide variety of solutions possible, Fiam's qualified **Technical Consultancy Service** is at your disposal for any further information.



Be demanding

## Reliability

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

The internal gears guarantee **constant performance** and **long lifetime of the tool**

The air motors employed ensure **high power and maximum output** in every production field

Tools are manufactured with very high quality materials that guarantee **greater resistance to wear**

The possibility of using **unlubricated compressed air** (except FO drills) permits to **eliminate lubrication plant costs** and to use these tools in **high precision works** (for example electronics, precision mechanics)



FS10C



FZ31/90P

Don't be satisfied with the maximum

## Productivity

Great use effectiveness thanks to innovative design systems

Fiam drills guarantee a **great versatility of use**: they can be used on any kind of material and in every work situation making them the perfect answer

Models with 30° and 90° angle heads are ideal **in tight spaces where access is difficult**, such as up against walls, close to metal sections and profiled beams

All straight air drills **can be used as screwdrivers**; it is sufficient to change the chuck to obtain a screwdriver (without clutch) practical, light and easy to handle (see Accessories available upon request on page 18)

Fiam proposes a wide range of air drills with **self-locking chuck**, with **keyed-chuck, without chuck** and with **collet** to solve every application need

All air drills can be started at **low speed** to facilitate initial insertion of the bit and therefore to obtain faster drilling operations

FO series is particularly effective for **heavy-duty drilling and boring operations** in which the drill needs to be moved forward with considerable force

In special manual drilling situations and drilling-equipment mounted applications, Fiam **manufactures special drills**, in a very wide range of speeds, with direct air inlet for remote control use, and with smooth or flanged housings



FSE17PA



F020P

Perfection is  
in your hands

## Ergonomics

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

The grip design and use of special light alloys make these tools **lighter and more handy**

They guarantee maximum handiness, thanks to the **good power/weight ratio** and the extremely compact dimensions, reducing operator's fatigue

They are started using the related **lever** (straight and angle models) or **push button** (pistol models) in comfortable position for operator

Some models are provided with **low pressure push button** to facilitate the operation when starting and during the drilling operation

Fiam has developed air drills with **vibration levels below 2,5 m/s<sup>2</sup>**, reducing the reaction to the operator's hand. As regards the reduction of the vibration levels, it is advisable to choose, where it is possible, pistol air drills that transmit less vibrations than straight models.

It is **advisable to use shorter helical** drill bits to reduce the vibration risk to the hand-arm system

These tools are equipped with **effective silencing systems** to reduce noise levels guaranteeing operator's confort

In order to contrast any possible torque reaction on wrist, all the straight and pistol drills (except for the FZ series) are equipped with the **auxiliary grip** (in accordance with ISO 11148-3 standard). FO air drills are provided with **double grip**, because they are used in heavy duty operations.

Easy and fast possibility of **conveying air exhaust** using the suitable conveyor (see Accessories available upon request on page 21)

The grip is designed to be used **both by right and left hand operators** and for **small hands**

The grip of straight drills presents an **optimized diameter** and geometry combined with a special non-slip grip, enabling the operator to overcome the torque reaction and axial force exerted by drill in the most effective way

Straight models are manufactured with a special plastic material that guarantees the **right degree of softness to the grip (anti slip grip) and provides an effective hand insulation**



*Having full knowledge of the ergonomics and safety needs of the operator, Fiam optimizes the performances of its tools and offers support and qualified training for the correct use of the tools*

Naturally  
innovative

## Ecology

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

The advanced design technology of the air motors ensures a **reduction of compressed air** without compromising tool performances

The design of the inner kinematic motions optimizes the output of the available power, which is being transmitted with **minimum dispersions**

All the components are easy to dispose of because they are built **using recyclable materials**; therefore they don't represent a pollution risk or a danger for personal safety

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

Air drills (except for FO models) work at maximum efficiency without need of lubrication guaranteeing in such the **absence of oil exhaust** into the working environment



# Straight air drills FZ, FS, FY

Straight air drills

**IDLE SPEED:**

from 500 to 20.000 r.p.m.

**DRILLING CAPACITY:**

from 1 to 10 mm Ø

**TYPE OF DRILL:**

- with self-locking chuck
- with keyed chuck
- without chuck



**FZ45C**

C = with keyed chuck



**FS26**

without chuck



**FS10C**

C= with keyed chuck

**STARTING SYSTEM:**

lever

**APPLICATION FIELD:**

they are mainly used in vertical drilling operations  
**on any kind of material**

**FS48C**

**C** = with keyed chuck



**FY8A**

**A** = with self-locking chuck



**FY10C**

**C** = with keyed chuck



# Straight air drills FZ, FS, FY

Type of drill		Grip	Type of chuck supplied	Chuck capacity	Output shaft (a)	Idle speed	Starting system	Weight	Dimensions (mm)	Compressed air consumption	Noise level
Model	Code	Type	Type	mm	Tipo	rp.m.	Type	Kg	Ø x L	l/s	dBA
FZ45A	122309009		Self-locking chuck	0÷4	-	4500		0,480	32x185	6	76
FZ45C	122311145		Keyed chuck	0÷4	-	4500		0,430	32x178	6	76
FZ45	122309007		Without chuck	0÷4*	1	4500		0,350	32x153	6	76
FS200C	124611120		Keyed chuck	0÷6	-	20000		0,625	40x190	9	76
FS65A	124609043		Self-locking chuck	0÷8	-	6500		0,840	40x205	9	76
FS65C	124611104		Keyed chuck	0÷8	-	6500		0,700	40x190	9	76
FS65	124609014		Without chuck	0÷8*	2	6500		0,570	40x157	9	76
FS48A	124609044		Self-locking chuck	0÷8	-	5400		0,840	40x205	9	76
FS48C	124611106		Keyed chuck	0÷8	-	5400		0,700	40x190	9	76
FS48	124609015		Without chuck	0÷8*	2	5400		0,570	40x157	9	76
FS33A	124609045		Self-locking chuck	0÷8	-	3800		0,840	40x205	9	76
FS33C	124611108		Keyed chuck	0÷8	-	3800		0,700	40x190	9	76
FS33	124609003		Without chuck	0÷8*	2	3800		0,570	40x157	9	76
FS26A	124609037		Self-locking chuck	0÷8	-	2900		0,840	40x205	9	76
FS26C	124611110		Keyed chuck	0÷8	-	2900		0,700	40x190	9	76
FS26	124609002		Without chuck	0÷8*	2	2900		0,570	40x157	9	76
FS17A	124609010		Self-locking chuck	1÷10	-	1700		1,090	40x255	9	76
FS17C	124611112		Keyed chuck	1÷10	-	1700		0,960	40x235	9	76
FS17	124609054		Without chuck	1÷10*	2	1700		0,735	40x197	9	76
FS10A	124609046		Self-locking chuck	1÷10	-	1000		1,090	40x255	9	76
FS10C	124611114		Keyed chuck	1÷10	-	1000		0,960	40x235	9	76
FS10	124609001		Without chuck	1÷10*	2	1000		0,735	40x197	9	76
FS5A	124609047		Self-locking chuck	1÷10	-	500		1,090	40x255	9	76
FS5C	124611116		Keyed chuck	1÷10	-	500		0,960	40x235	9	76
FS5	124609055		Without chuck	1÷10*	2	500		0,735	40x197	9	76
FY8A	126311118		Self-locking chuck	1÷10	-	2600		1,330	46x270	11	77
FY8C	126309024		Keyed chuck	1÷10	-	2600		1,195	46x250	11	77
FY8	126309026		Without chuck	1÷10*	3	2600		0,970	46x213	11	77
FY10A	126311110		Self-locking chuck	1÷10	-	1800		1,330	46x270	11	77
FY10C	126309078		Keyed chuck	1÷10	-	1800		1,195	46x250	11	77
FY10	126309023		Without chuck	1÷10*	3	1800		0,970	46x213	11	77

## Legend

FZ, FS, FY...A = models with self-locking chuck • FZ, FS, FY...C = models with keyed chuck • FZ, FS, FY... = models without chuck.  
For the right choice, see page 3.

### (a) OUTPUT SHAFT

1 - Tapered J 0. • 2 - Threaded 3/8" x 24 UNF. • 3 - Threaded 1/2" x 20 UNF.

### \* Chuck capacity

The indicated capacity is the maximum recommended.

## Legend



Lever start

### • To choose the right air drill, it is necessary to check the drilling capacity in the chart on page 3.

- The figures shown are measured at a pressure of 6,3 bar (ISO 2787), the recommended operating pressure.
- Noise level has been measured in accordance with ISO 3744 and ISO 15744.
- The code number must be used when ordering.

The data given in the table are indicative and can be changed without prior notice. The values indicated for noise 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 Assistance Service**.

### Standard equipment (supplied with the tool)

- Drills with self-locking chuck: self-locking chuck.
- Drills with keyed chuck: keyed chuck and key.
- Hanging ring.
- Auxiliary grip (except FZ... models) - ISO 11148 -3 standard - (see page 22).
- Use and maintenance manual.
- Eco-friendly packaging

### Accessories available upon request

- Wide range of accessories for air drills and the compressed air system (see pages 18-22).

### Models available upon request

- Models with 0.5 to 5 mm collet chuck (FZ... series).
- Models with 0.5 to 7 mm collet chuck (FS... series).
- Models with 0.5 to 10 mm collet chuck (FY... series).
- In special manual drilling situations and drilling-equipment mounted applications, Fiam **manufactures special drills**, in a very wide range of speeds, with direct air inlet for remote control use, and with smooth or flanged housings. Given the wide variety of solutions possible, Fiam's qualified **Technical Assistance Service** is at your disposal for any further information.

## Other technical features

Models	Air inlet	Recommended hose bore	Supply hoses recommended *	
			Rubber	Spiral
FZ...	1/8" gas	Ø 5 mm	693511020	-
FS..., FY...	1/4" gas	Ø 8 mm	693511022	693011020

\* For features of hoses see p. 20

# Pistol air drills FSE, FDE, FY, FO



## Pistol air drills

### IDLE SPEED:

from 170 to 20.000 r.p.m.

### DRILLING CAPACITY:

from 1 to 13 mm Ø

### TYPE OF DRILL:

- with self-locking chuck
- with keyed chuck
- without chuck

## FDE26PA

A= with self-locking chuck



## FO20P

Bit holder female morse taper bore



**STARTING SYSTEM:**

button

**APPLICATION FIELD:**

they are suitable for a lot of drilling operations **on every type of material and in every industrial field.**

FO series is particularly effective for **heavy-duty drilling** and boring operations in which the drill needs to be moved forward with considerable force.



**FY8PA**

**A=** with self-locking chuck



**FSE17PA**

**A=** with self-locking chuck



**FSE10PC**

**C=** with keyed chuck



# Pistol ai drills FSE, FDE, FY, FO

Type of drill		Grip	Type of chuck supplied	Chuck capacity	Output shaft (a)	Idle speed	Sparring system	Weight	Dimensions (mm)	Compressed air consumption	Noise level
Model	Code	Type	Type	mm	Type	r.p.m.	Type	Kg	Ø x L x H	l/s	dBA
FSE200PC	124611530		Keyed chuck	0÷6	-	20000		0,730	38x180x155	9	77
FSE65PA	124611541		Self-locking chuck	0÷8	-	6500		0,940	38x196x155	9	77
FSE65PC	124611531		Keyed chuck	0÷8	-	6500		0,800	38x180x155	9	77
FSE65P	124610531		Without chuck	0÷8*	1	6500		0,670	38x150x155	9	77
FSE48PA	124611542		Self-locking chuck	0÷8	-	5400		0,940	38x196x155	9	77
FSE48PC	124611532		Keyed chuck	0÷8	-	5400		0,800	38x180x155	9	77
FSE48P	124610532		Without chuck	0÷8*	1	5400		0,670	38x150x155	9	77
FSE33PA	124611543		Self-locking chuck	0÷8	-	3800		0,940	38x196x155	9	77
FSE33PC	124611533		Keyed chuck	0÷8	-	3800		0,800	38x180x155	9	77
FSE33P	124610533		Without chuck	0÷8*	1	3800		0,670	38x150x155	9	77
FSE26PA	124611544		Self-locking chuck	0÷8	-	2900		0,940	38x196x155	9	77
FSE26PC	124611534		Keyed chuck	0÷8	-	2900		0,800	38x180x155	9	77
FSE26P	124610534		Without chuck	0÷8*	1	2900		0,670	38x150x155	9	77
FSE17PA	124611545		Self-locking chuck	1÷10	-	1700		1,180	38x233x155	9	77
FSE17PC	124611535		Keyed chuck	1÷10	-	1700		1,045	38x210x155	9	77
FSE17P	124610535		Without chuck	1÷10*	1	1700		0,820	38x175x155	9	77
FSE10PA	124611546		Self-locking chuck	1÷10	-	1000		1,180	38x233x155	9	77
FSE10PC	124611536		Keyed chuck	1÷10	-	1000		1,045	38x210x155	9	77
FSE10P	124610536		Without chuck	1÷10*	1	1000		0,820	38x175x155	9	77
FSE5PA	124611547		Self-locking chuck	1÷10	-	500		1,180	38x233x155	9	77
FSE5PC	124611537		Keyed chuck	1÷10	-	500		1,045	38x210x155	9	77
FSE5P	124610537		Without chuck	1÷10*	1	500		0,820	38x175x155	9	77
FDE60PA	124611550		Self-locking chuck	1÷10	-	6000		1,080	38x223x155	10	77
FDE60PC	124611560		Keyed chuck	1÷10	-	6000		0,945	38x200x155	10	77
FDE60P	124610550		Without chuck	1÷10*	1	6000		0,720	38x165x155	10	77
FDE49PA	124611551		Self-locking chuck	1÷10	-	4900		1,080	38x223x155	10	77
FDE49PC	124611561		Keyed chuck	1÷10	-	4900		0,945	38x200x155	10	77
FDE49P	124610551		Without chuck	1÷10*	1	4900		0,720	38x165x155	10	77
FDE33PA	124611552		Self-locking chuck	1÷10	-	3300		1,080	38x223x155	10	77
FDE33PC	124611562		Keyed chuck	1÷10	-	3300		0,945	38x200x155	10	77
FDE33P	124610552		Without chuck	1÷10*	1	3300		0,720	38x165x155	10	77
FDE26PA	124611553		Self-locking chuck	1÷10	-	2600		1,080	38x223x155	10	77
FDE26PC	124611563		Keyed chuck	1÷10	-	2600		0,945	38x200x155	10	77
FDE26P	124610553		Without chuck	1÷10*	1	2600		0,720	38x165x155	10	77
FY6PA	126311556		Self-locking chuck	1÷10	-	3200		1,540	46x222x170	11	77
FY6PC	126309103		Keyed chuck	1÷10	-	3200		1,400	46x200x170	11	77
FY6P	126309036		Without chuck	1÷10*	2	3200		1,180	46x165x170	11	77

Type of drill		Grip	Type of chuck supplied	Chuck capacity	Output shaft (a)	Idle speed	Starting system	Weight	Dimensions (mm)	Compressed air consumption	Noise level
Model	Code	Type	Type	mm	Type	r.p.m.	Type	Kg	Ø x L x H	l/s	dBA
FY8PA	126311558		Self-locking chuck	1÷10	–	2600		1,540	46x222x170	11	76
FY8PC	126309019		Keyed chuck	1÷10	–	2600		1,400	46x200x170	11	76
FY8P	126309020		Without chuck	1÷10*	2	2600		1,180	46x165x170	11	76
FY10PA	126311560		Self-locking chuck	1÷10	–	1800		1,540	46x222x170	11	76
FY10PC	126309015		Keyed chuck	1÷10	–	1800		1,400	46x200x170	11	76
FY10P	126309018		Without chuck	1÷10*	2	1800		1,180	46x165x170	11	76
FY13PA	126311563		Self-locking chuck	1÷13	–	750		2,000	46x263x170	11	76
FY13PC	126309007		Keyed chuck	1÷13	–	750		1,845	46x238x170	11	76
FY13P	126309021		Without chuck	1÷13*	2	750		1,485	46x195x170	11	76
FY14PA	126311564		Self-locking chuck	1÷13	–	450		2,000	46x263x170	11	76
FY14PC	126309030		Keyed chuck	1÷13	–	450		1,845	46x238x170	11	76
FY14P	126309035		Without chuck	1÷13*	2	450		1,485	46x195x170	11	76
FO12P	127011512		Without chuck	–	3	2000		3,050	65x200x360	14	91
FO16P	127011516		Without chuck	–	3	950		3,600	65x236x360	14	91
FO20P	127011520		Without chuck	–	3	600		3,600	65x236x360	14	91
FO3P	127011530		Without chuck	–	3	170		4,180	65x272x360	14	91

#### Legend

FSE, FDE, FY, ...PA = models with self-locking chuck • FSE, FDE, FY, ...PC = models with keyed chuck • FSE, FDE, FY, FO...P = models without chuck  
 • For the right choice, see page 3.

#### Legend

Push button

Push button

#### (a) OUTPUT SHAFT

1 - Threaded 3/8" x 24 UNF • 2 - Threaded 1/2" x 20 UNF • 3 - Tapered n. 2.

#### • To choose the right air drill, it is necessary to check the drilling capacity in the chart on page 3.

- The figures shown are measured at a pressure of 6,3 bar (ISO 2787), the recommended operating pressure.
- Noise level has been measured in accordance with ISO 3744 and ISO 15744.
- The code number must be used when ordering.

#### \* Chuck capacity

The indicated capacity is the maximum recommended.

The data given in the table are indicative and can be changed without prior notice. The values indicated for noise 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 Assistance Service**.

#### Standard equipment (supplied with the tool)

- Drills with self-locking chuck: self-locking chuck.
- Drills with keyed chuck: keyed chuck and key.
- Hanging ring.
- Auxiliary grip (except FZ... models) - ISO 11148 -3 standard - (see page 22).
- Use and maintenance manual.
- Eco-friendly packaging

#### Accessories available upon request

- Wide range of accessories for air drills and the compressed air system (see pages 18-22).

#### Models available upon request

- Models with 0.5 to 7 mm collet chuck (FSE...P series).
- Models with 0.5 to 10 mm collet chuck (FDE...P series).
- Models with 0.5 to 10 mm collet chuck (FY...P series).
- Models with 3÷13 mm capacity keyed chuck (only for FO...P series: use morse taper socket code 653360030 and keyed chuck code 650090160).
- Models predisposed for conveying air exhaust.
- In special manual drilling situations and drilling-equipment mounted applications, Fiam manufactures special drills, in a very wide range of speeds, with direct air inlet for remote control use, and with smooth or flanged housings. Given the wide variety of solutions possible, Fiam's qualified **Technical Assistance Service** is at your disposal for any further information.

#### Other technical features

Models	Air inlet	Recommended hose bore	Supply hoses recommended *	
			Rubber	Spiral
FSE...P, FDE...P, FY...P	1/4" gas	Ø 8 mm	693511022	693011020
FO...P	3/8" gas	Ø 13 mm	693511023	–

\* For features of hoses see p. 20

# Angle air drills FZ, FS, FY

## Angle air drills

### IDLE SPEED:

from 500 to 4.500 r.p.m.

### DRILLING CAPACITY:

from 1 to 10 mm Ø

### TYPE OF DRILL:

- with self-locking chuck
- with keyed chuck
- without chuck

Models with 30° (FZ series) and 90° angle heads 90° angle drills (FS series) are also available in the version which permits the use of collet instead of the normal keyed chuck

### FS17/90C

C = with keyed chuck



### FS48/90P

P = with collet chuck



### FS65/90P

P = with collet chuck



**STARTING SYSTEM:**

lever

**APPLICATION**

**FIELD:**

they are necessary when one needs to drill in **tight spaces where access is difficult, such as up against walls, close to metal sections and profiles beams**



**FZ31/30P**  
P = with collet chuck

**FY8/90C**

C= with keyed chuck



**FZ31/90P**

P = with collet chuck



**FS17/90P**

P = with collet chuck



# Angle air drills FZ, FS, FY

Type of drill		Grip	Type of chuck supplied	Chuck capacity	Output shaft (a)	Idle speed	Starting system	Weight	Dimensions (mm)	Compressed air consumption	Noise level
Model	Code	Type	Type	mm		r.p.m.	Type	Kg	Ø x L x H	l/s	dBA
FZ31/30P	122335132		Collet chuck	1÷5	–	3100		0,500	31x235x35	6	76
FZ31/90P	122395132		Collet chuck	1÷5	–	3100		0,500	31x228x47	6	76
FS65/90A	124609091		Self-locking chuck	0÷6	–	4500		1,250	40x255x100	9	76
FS65/90C	124691118		Keyed chuck	0÷6	–	4500		1,100	40x255x83	9	76
FS65/90P	124695104		Collet chuck	1÷7	–	4500		1,000	40x255x54	9	76
FS65/90	124609093		Without chuck	0÷6*	1	4500		0,970	40x255x54	9	76
FS48/90A	124609212		Self-locking chuck	0÷6	–	3400		1,250	40x255x100	9	76
FS48/90C	124691116		Keyed chuck	0÷6	–	3400		1,100	40x255x83	9	76
FS48/90P	124695106		Collet chuck	1÷7	–	3400		1,000	40x255x54	9	76
FS48/90	124609155		Without chuck	0÷6*	1	3400		0,970	40x255x54	9	76
FS33/90A	124609124		Self-locking chuck	0÷8	–	2200		1,250	40x255x100	9	76
FS33/90C	124691108		Keyed chuck	0÷8	–	2200		1,100	40x255x83	9	76
FS33/90P	124695108		Collet chuck	1÷7	–	2200		1,000	40x255x54	9	76
FS33/90	124609154		Without chuck	0÷8*	1	2200		0,970	40x255x54	9	76
FS17/90A	124609083		Self-locking chuck	1÷10	–	1100		1,420	40x285x112	9	76
FS17/90C	124691112		Keyed chuck	1÷10	–	1100		1,300	40x285x90	9	76
FS17/90P	124695112		Collet chuck	1÷7	–	1100		1,200	40x285x54	9	76
FS17/90	124609211		Without chuck	1÷10*	1	1100		1,070	40x285x54	9	76
FS10/90A	124609210		Self-locking chuck	1÷10	–	700		1,420	40x285x112	9	76
FS10/90C	124691114		Keyed chuck	1÷10	–	700		1,300	40x285x90	9	76
FS10/90P	124695114		Collet chuck	1÷7	–	700		1,200	40x285x54	9	76
FS10/90	124609075		Without chuck	1÷10*	1	700		1,070	40x285x54	9	76
FY8/90A	126309060		Self-locking chuck	1÷10	–	1600		1,820	46x320x125	10	80
FY8/90C	126391101		Keyed chuck	1÷10	–	1600		1,700	46x320x103	10	80
FY8/90	126309062		Without chuck	1÷10*	2	1600		1,480	46x320x65	10	80
FY10/90A	126309104		Self-locking chuck	1÷10	–	1200		1,820	46x320x125	10	80
FY10/90C	126391102		Keyed chuck	1÷10	–	1200		1,700	46x320x103	10	80
FY10/90	126309064		Without chuck	1÷10*	2	1200		1,480	46x320x65	10	80
FY13/90A	126309071		Self-locking chuck	1÷10	–	500		2,020	46x350x125	10	80
FY13/90C	126391103		Keyed chuck	1÷10	–	500		1,900	46x350x103	10	80
FY13/90	126309082		Without chuck	1÷10*	2	500		1,680	46x350x65	10	80

## Legend

FZ, FS, FY...A = models with self-locking chuck • FZ, FS, FY...C = models with keyed chuck • FZ, FS, FY...P = models with collet chuck • FZ, FS, FY... = models without chuck. • For the right choice, see page 3.

### (a) OUTPUT SHAFT

1 - Threaded 3/8" x 24 UNF • 2 - Threaded 1/2" x 20 UNF

### \* Chuck capacity

The indicated capacity is the maximum recommended.

## Legend



- **To choose the right air drill, it is necessary to check the drilling capacity in the chart on page 3.**
- The figures shown are measured at a pressure of 6,3 bar (ISO 2787), the recommended operating pressure.
- Noise level has been measured in accordance with ISO 3744 and ISO 15744.
- The code number must be used when ordering.

The data given in the table are indicative and can be changed without prior notice. The values indicated for noise 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 Assistance Service**.

### Standard equipment (supplied with the tool)

- Drills with self-locking chuck: self-locking chuck.
- Drills with keyed chuck: keyed chuck and key.
- Drills with collet chuck: locking key for socket (the collet has to be ordered apart, see page 19).
- Use and maintenance manual.
- Eco-friendly packaging

### Accessories available upon request

- Wide range of accessories for air drills and the compressed air system (see page 18-23).

### Models available upon request

- Models with customized output shaft (only for models FS.../90... and FY.../90...).
- In special manual drilling situations and drilling-equipment mounted applications, Fiam manufactures special drills, in a very wide range of speeds, with direct air inlet for remote control use, and with smooth or flanged housings. Given the wide variety of solutions possible, Fiam's qualified **Technical Assistance Service** is at your disposal for any further information.

## Other technical features

Models	Air inlet	Recommended hose bore	Rubber	Spiral
FZ.../30, FZ.../90	1/8" gas	Ø 5 mm	693511020	-
FS.../90..., FY.../90...	1/4" gas	Ø 8 mm	693511022	693011020

\* For features of hoses see p. 20

## DIMENSIONS (mm)

FZ31/30	FZ31/90	FS.../90A																								
		<table border="1"> <thead> <tr> <th>Mod.</th> <th>A mm</th> <th>Ø B mm</th> </tr> </thead> <tbody> <tr> <td>FS65...</td> <td></td> <td></td> </tr> <tr> <td>FS48...</td> <td>60</td> <td>34</td> </tr> <tr> <td>FS33...</td> <td></td> <td></td> </tr> <tr> <td>FS17...</td> <td>72</td> <td>35</td> </tr> <tr> <td>FS10...</td> <td></td> <td></td> </tr> </tbody> </table>	Mod.	A mm	Ø B mm	FS65...			FS48...	60	34	FS33...			FS17...	72	35	FS10...								
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FS65...																										
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FS17...	72	35																								
FS10...																										
FS.../90C	FS.../90	FS.../90P																								
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FY.../90A	FY.../90C	FY.../90																								
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FY13...																										

## Self-locking chucks

Practical chucks allow an excellent locking of the drill bit during all the drilling operations.



*N.B.: Self-locking chucks are not available for FSE200C, FSE200PC and FO...P air drill models.*

Chuck capacity mm	Drive type	Dimensions Ø x l mm (open)	Code	For drills
0÷4	JO	28x28	651011040	FZ45A
0÷6	3/8 x 24 UNF	34x60	651381006	FS65/90A, FS48/90A
1÷8	3/8 x 24 UNF	34x60	651381008	FS...A, FSE...PA, FS339/0A
1÷10	3/8 x 24 UNF	35x72	651381010	FS...A, FSE...PA, FDE...PA, FS.../90A
1÷10	1/2 x 20 UNF	35x72	651121010	FY...A, FY...PA, FY.../90A
1÷13	1/2 x 20 UNF	40x83	651121013	FY...PA

## Keyed chucks

Strong chucks supplied with chuck locking key to lock the drill bit.



*\* To be used with morse taper socket code 407012040.*

Capacità mandrino mm	Chuck capacity mm	Dimensions Ø x l mm (open)	Code	For drills	Key code (supplied with chuck)
0÷4	J 0	26 x 35	650011040	FZ45C	600041001
0÷6	3/8 x 24 UNF	30 x 43	650381006	FS65/90C; FS48/90C; FSE200PC; FS200C	600061005
0÷8	3/8 x 24 UNF	30 x 43	650381008	FS...C; FSE...PC; FS339/0C	600061005
1÷10	3/8 x 24 UNF	36 x 50	650381010	FS...C; FSE...PC; FDE...PC; FS.../90C	600081009
1÷10	1/2 x 20 UNF	36 x 50	650121010	FY...C; FY...PC; FY.../90C	600081009
1÷13	1/2 x 20 UNF	42 x 58	650121013	FY...PC	600081009
3÷16	J 6	51 x 67	650091160*	FO...P	600131020

## Collet chucks

The use of collets chuck permits to reduce the dimensions of encumbrance of the head and to obtain the better accuracy in drilling.



Collet chuck	Drive type	Code	For drills series
ER	3/8 x 24 UNF	660449011	FS...; FD...
ER	3/8 x 24 UNF	660449010	FS...; FD...

## Quick change chucks for tightening operations

The models of the drills shown in the table can be used as screwdrivers, replacing the drill bit chuck with a chuck suitable to be used with bits, sockets, bit holders (for FS..., FD..., FY...), stud bolt and insert holder, etc. (for FO...P).



Type of chuck	Drive type	Fem. hex. drive mm	Code	For drills series
(a)	3/8 x 24 UNF	6,35	653380002	FS...; FD...
(a)	1/2 x 20 UNF	6,35	653120002	FY...
(b)	3/8 x 24 UNF	6,35	653380001	FS...; FD...
(b)	1/2 x 20 UNF	6,35	653120001	FY...
(c)	□ 1/2"	12	659911001*	FO...P

*\* To be used with morse taper socket code 407012020. The chuck can be used to tighten stud bolts and inserts.*

## Morse taper socket nr 2 for use with fo drills

Taper socket J6 is normally used together with keyed chuck, whose capacities vary from 3 to 16 mm (see keyed chucks chart), when it is necessary to use cylindrical shank drill bits, while the square drive taper socket when the drills is used as a screwdriver.

Drive	Code
□ 1/2"	653130010
□ 3/4"	653340020
Taper J6	653360030



## Collets

The use of collets on drills with collet chuck enables to reduce drill head dimensions and to obtain a better drilling accuracy.

- For FZ31/30P, FZ31/90P series



Capacity Ø mm *	Code
1	660421010
1,5	660421015
2	660421020
2,5 o 3/32"	660421025
3	660421030
3,5 o 1/8"	660421035
4	660421040
4,5	660421045
5 o 3/16"	660421050

\* Collets tightening capacity is referred to diameter of the tap shank.

- For FS.../90P series



Capacity Ø mm *	Code
1	660431010
1,5	660431015
2	660431020
2,5 o 3/32"	660431025
3	660431030
3,5 o 1/8"	660431035
4	660431040
4,5	660431045
5 o 3/16"	660431050
5,5	660431055
6	660431060
6,5 o 1/4"	660431065
7	660431070

## Tap holders

### Tap holders

They permit to work rapidly with different size taps. Each tap size requires a specific tap holder.



Dimensions of the tap		
Shank Ø mm	drive mm	Code
2,8	2,1	655211028
3	2,4	655241030
3,5	2,7	655271035
4	3	655301040
4,5	3,4	655341045
5	3,8	655381050
6	4,9	655491060
6,3	5	655501062
6,5	4,9	655491065
7	5,5	655551070
7,3	5,5	655551073

Dimensions of the tap		
Shank Ø mm	drive mm	Code
8	6,2	655621080
8,5	7	655701085
9	7	655701090
9,4	7	655701094
10	8	655801101
11	9	655901110
12,1	9,1	655911121
14,1	11,1	655111141
16,2	12,3	655010160
18,2	14,8	655900182

## Spiral supply hoses - with couplings

Polyurethane spiral supply hoses with a maximum extended length of 8 m. Extremely flexible and resistant, they take up less space thanks to their reduced external diameters.



To choose the most suitable supply hose, refer to the recommended hose bore given on page 9, 13 and 17.

Polyurethane hose (green) Ø internal x Ø external mm	Length mm	Swivelling male coupling	Fixed female coupling	Code
6,5x10	1180÷8000	1/4" gas	1/4" gas	693011015
8x12	1140÷8000	1/4" gas	1/4" gas	693011020

Ø internal = recommended hose bore.

## Rubber supply hoses - with couplings

Rubber supply hoses with coupling made with inner duct in synthetic rubber and high resistance reinforced textile chase. They can be used with compressed air, water, cutting oil and antifreeze liquids. They are extremely flexible and versatile and above all safe and resistant in time. Upon request, hoses of other dimensions are available: please apply to the Fiam Technical Assistance Service.



To choose the most suitable supply hose see pages 9, 13 and 17.

Hose mm Ø internal x Ø external	Length mm	Swivelling male coupling	Fixed female coupling	Code
4,8 x 9,4	3000	1/8" gas M	1/4" gas F	693511020
6,3 x 12,7	3000	1/4" gas M	1/4" gas M	693511021
9,5 x 15,9	3000	1/4" gas M	1/4" gas M	693511022
9,5 x 15,9	3000	3/8" gas M	3/8" gas M	693511023

## Quick couplings - nipples

To choose the most suitable quick coupling, refer to the air inlet and the recommended hose bore on page 9, 13 and 17.



male

female

Recommended hose bore	Air inlet threading	Male quick coupling Code	Female quick coupling Code
Ø 5 mm	1/8" gas	695411018	695431018
Ø 6 mm	1/4" gas	695411014	695431014
Ø 8÷10 mm	1/4" gas	695411114	695431114
Ø 13 mm	3/8" gas	695411138	695431138

To choose the most suitable quick nipples, refer to the air inlet and the recommended hose bore on page 9, 13 and 17.



male

female

Recommended hose bore	Air inlet threading	Male quick coupling Code	Female quick coupling Code
Ø 5 mm	1/8" gas	695311018	695331018
Ø 6 mm	1/4" gas	695311014	695331014
Ø 8÷10 mm	1/4" gas	695311114	695331114
Ø 13 mm	3/8" gas	695311138	695331138

## Air flow governors

- With 6 positions scaled control
- With micrometer screw

Indicated for obtaining the required torque values by adjusting the air supply. Strongly recommended for use with screwdrivers without clutch.

The less air is supplied = the less torque is yielded.



Governor with scaled control

Capacity max	Coupling M/F	Code
6 l/s	1/4" gas	697451000



Governor with micrometer screw control

Capacity max	Coupling M/F	Code
20 l/s	1/4" gas	697431000

## Flexible couplings

These light and compact couplings improve the operators' working conditions; they prevent twisting of supply hoses and reduce vibrations.

Model	Coupling M/F	Code
RS 25 FM	1/4"	695091015
RS 30 FM	3/8"	695091020



## Exhaust air hose conveyors

Used to drive away the tool exhaust air from the operator and therefore making the workplace more ergonomical.

For air drills series:	Code	
FZ45, FZ31/30, FZ31/90	693751013	
FS..., FS...90...	693751006	
FSE...P..., FDE...P...	693751009	
FY..., FY...P..., FY...90...	693751003	

## FRL Group - Filter, pressure regulator, lubricator

The FRL group is **recommended for filtering, regulating and lubricating the compressed air supply** for air tools.

This system **eliminates solids and humidity** while supplying a precise air flow and suitable lubrication.

Where necessary, it is **indicated for obtaining the required torque values by adjusting the pressure of the air supply.**



Threaded attack	Flow rate	Complete assembly	Reduction compl. of gauge	Lubricator
	l/s	Code	Code	Code
1/4" gas	1,7 ÷ 16	697331020	697331025	697281020
3/8" gas	4,2 ÷ 20	697351020	697351025	697291020
1/2" gas	8 ÷ 43	697371020	697371025	697301020

## Auxiliary grip

The use of the auxiliary grip is recommended to permit a considerable reduction of the fatigue to the operator. For more information please contact **Fiam Technical Assistance Service**.

ø internal (mm)	For series	Code
38	FSE...P, FDE...P	681041205
40	FS200, FS65, FS48, FS33, FS26	681041210
40	FS17, FS10, FS5	681041230
43	FY13P, FY14P	681041011
46	FY8, FY10	681041002



## Lubricating oil for air tools

Used to lubricate the internal components of the motor group.

Code
699011008



1 lit. bottle

## Balancer

The use of the balancer allows the operator to work in safety and without effort, at the same time guaranteeing the maximum care of the tool.

Capacity min - max	Cable length mm	Code
0,4 ÷ 1	1600	690011160
1 ÷ 2	1600	690021160
2 ÷ 4	2000	690041200
4 ÷ 6	2000	690061200
6 ÷ 8	2000	690081200
8 ÷ 10	2500	690101250



## Balancer with built-in supply hose

Particularly indicated to support and to feed at the same time straight air tools. The balancer is provided with a hose that can be connected directly to the main air feed so that the tool is supplied directly.

Capacity min - max	Length mm	Male coupling	Code
1,2 ÷ 2,5	1350	1/4" gas	691021202



## BC/BCA Cartesian Arms

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 a position monitoring device for processing the angular and linear displacement of the tool on the work point.**

Thanks to these arms, all work operations take place without any oscillation and

their movements are **extremely fluid and flowing** and this translates into a significant increase in work precision, the consequent quality of the production process as well as ergonomics for the operator.

*For more information, contact the Fiam Technical Service.*



BC Cartesian Arm



BCA Cartesian Arm

## BT-MG Magnesium Telescopic Arms

This solution for ergonomic workplace eliminate torque reaction on operator's wrist.

They guarantee reliability and long life span thanks to accurate manufacturing process and innovative, high quality materials used.

- Thanks to the telescopic elements (3 for all models and 2 for BT-MG 10...) and different reachable lengths, they adapt themselves to working areas according to productive needs
- Double final junction allows maximum freedom of action, great handiness, **even when tightening with the tool bent**
- To be used with any type of tools

- Laboratory tests have demonstrated that Fiam BT **arms bear 30%** higher torque generated by the tool in respect to **competitors arms**

- They can be **easily installed** on existing workplaces on ceiling or wall using a simple plate with reduced dimensions.



Model	Code	Max torque		Max work range (mm)	Min work range (mm)	Ø max tool (mm)
		(Nm)	in lb			
BT-MG 10 800	692071420	10	88.50	660	480	26.5-50
BT-MG 10 1000	692071421	10	88.50	800	550	26.5-50
BT-MG 15 800	692071409	15	132.70	860	505	26.5-46
BT-MG 15 1000	692071401	15	132.70	1070	575	26.5-46
BT-MG 15 1500	692071404	15	132.70	1580	745	26.5-46
BT-MG 40 800	692071410	40	354	860	505	26.5-46
BT-MG 40 1000	692071402	40	354	1070	575	26.5-46
BT-MG 40 1500	692071405	40	354	1580	745	26.5-46
BT-MG 40 2000	692071407	40	354	2120	925	26.5-46
BT-MG 70 800	692071411	70	619.50	860	505	34-50
BT-MG 70 1000	692071403	70	619.50	1070	575	34-50
BT-MG 70 1500	692071406	70	619.50	1580	745	34-50
BT-MG 70 2000	692071408	70	619.50	2120	925	34-50

### Standard equipment (supplied with arm)

- 2 kits of screws with different lengths to install tools with different diameter from 26.5 up to 50 mm
- Tool holder accessory
- Use and maintenance manual
- Eco-friendly packaging

## BA50 balancing arm - up to 50 Nm

To avoid undesirable effects on the operator's wrist, arm or shoulder movements and for minimum fatigue during manual operations, Fiam has designed the BA50 balancing arm to complete the range of other models with different capacities. This balancing arm can be used with air and electric tools (screwdrivers, drills, tapping machines, nutrunner motors) for **weight from 0.7 to 2 kg**.

If it is necessary to fit a heavier tool, weighing up to a maximum of 4 kg., special reinforced springs are available upon request. This system guarantees **extreme working precision because the tool is kept perfectly perpendicular to the piece** being machined thanks to the specific adjustable adapter.

Furthermore it is simple to use and ensures excellent manoeuvrability.

The stand is supplied complete with a fixing plate.

Max. work range	1000 mm
Min. work range	630 mm
Max. torque	50 Nm
Max. load (with standard springs)	2 kg
Max. load (with reinforced springs)	4 kg
Max. rotation angle	360°
Ø max. tool	50 mm

Model	Code
BA50	692031008

### Standard equipment (supplied with balancing arm)

- Adjustable adapter
- Bench base plate
- Eco-friendly packaging

### Accessories available upon request

- To support tools of up to 4 kg max. it is necessary to order 2 reinforced springs (code 692059022)



For balancing arm that must support weights of more than 4 kg., please contact Fiam Technical Assistance Service.

## BA20 balancing arm - up to 20 Nm

This balancing arm can be used with air and electric screwdrivers, drills, tappers, riveting machines, etc. with **diameters varying from 25 to 50 mm** and with a **maximum of 20 Nm tightening torque**.

The BA20 balancing arm ensures **very high precision** work since the tool is kept perfectly perpendicular to the piece being assembled: therefore it

avoids any accidental **damages** to the materials for a **higher quality of the finished product**.

Work can also be carried out horizontally or on two axes at the same time, simply by choosing the specific adapter.

The arm with standard springs can **support up to 2 kg. weight**; to support a weight up to 2.5 kg., the standard springs must be replaced with the reinforced ones (upon request).

Max work range	850 mm
Min. work range	520 mm
Max. torque	20 Nm
Max. load (with standard springs)	2 kg
Max. load (with reinforced springs)	2,5 kg
Max. rotation angle	360°
Ø max. tool	from 25 to 50 mm

Model	Code
BA20 balancing arm	692031009

### Standard equipment

- To support tools of up to 2,5 Kg. max. it is necessary to order the reinforced springs cod. 692059010
- Bench base plate
- Eco-friendly packaging



## Adapters for BA20 available upon request (to be ordered separately)

- **Adapters to work on the vertical axis**



- **Adapter to work on the horizontal axis**



- **Adapter to work on two axis**



Adapter	Code	Ø internal adjustable mm
AD 25/40	692059008	25÷40
AD 40/50	692059009	40÷50

Adapter	Code	Ø mm
AD 36	692059014	36

Adapter	Code	Ø max mm
AD 36/2AX	692059015	36

For adapters with different diameter, please contact Fiam Technical Consultancy Service.

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