

Tightening automation.
Only excellent solutions.

Automatic feeders for screws and nuts

- QUICHER
- AM

Fiam[®]
PEOPLE AND SOLUTIONS

Be demanding

Don't be satisfied
with the maximum

Perfection is
in your hands

Naturally
innovative

EFFICIENT SOLUTIONS FOR RAPID AND SAFE ASSEMBLY APPLICATIONS

When bench or line assembly requires the use of very small screws or nuts, **time is essential to increase production.**

Fiam presents some innovative systems for fastening with semiautomatic feed which **notably reduce the cycle-time** and thus **improve productivity.**

The systems we illustrate here offer an easy and continuous supply of screws and/or nuts and lighten the burden on the operator who no

longer needs to pick up the screw or nut and place it on the screwdriver bit or on the piece.

Fiam semi-automatic feeders are easy to use and very reliable; the range varies according to the screw or nut to be used.

Moreover the internal gears guarantee **great reliability, long life and lasting performances** which result in less maintenance and repair costs.

Alike all Fiam solutions, semi-automatic feeders **respect ergonomic criterias and maximum operator's safety**; they are designed with great attention to **environment safeguard**, because they are built using recyclable materials; therefore they are easy to dispose of and they won't be an environmental pollution and/or personal safety hazard.

QUICHER and AM automatic feeders

Feeders for screws QUICHER: to ease operator screw picking and positioning in presence of small screws

For magnetisable screws from 2 - 5 mm shank diameter
and PHILLIPS (or POZIDRIVE) head



Feeders for nuts AM: efficacy 'pick and place' system to reduce cycle times and improve productivity

For 5,5 - 13 mm hexagonal nuts



QUICHER automatic feeder for magnetised screws

For PHILLIPS (or POZIDRIVE) magnetised screws

This semi-automatic feeder offers several important advantages::

- **Productivity is increased by 35%** because screws do not have to be taken by hand and positioned on the screwdriver bits; it enables to use the same unit with different screws and with a simple replacement of the rails;
- Use is very practical because **one hand is free** during assembly: the screw is taken by the screwdriver from the selection channel leaving the other hand free to hold the assembly piece;
- **Greater comfort** for the operator who only sometimes has to fill the screw bowl with **high capacity of screw stocking in the feeder**;
- **Extreme versatility**: rails, easy and quick to replace, can feed up to 2 screws per second; they are interchangeable with the aim to use screws having different shank diameter (shank diameter from 2 to 5 mm and max shank length 18 mm).
- Equipped in the standard execution with a **TIMER for adjustment of timing of screw feeding stop**: this device allows to optimise screw feeling depending on its shape and dimensions;
- **Service kit** includes an accessory for magnetizing the screw when this is being slid inside it and de-magnetize it when this is taken out from such accessory.



Rails

We advise using straight air and electric screwdrivers with lever start (consult the Fiam Screwdrivers Catalogue).

To choose the most suitable feeder contact **Fiam Technical Consultancy Service**.

A simple device for screw-feeder inclination is part of the standard supply, with the aim to ease screws sliding on the rail up to the pick-up point



A strong and effective brush for cleaning for screws being in excess on the rail



QUICHER MODELS

Model	Code	For screws with shank Ø mm
NJ23-R20	199923020	2
NJ23-R23	199923023	2,3
NJ23-R26	199923026	2,6
NJ23-R30	199923030	3
NJ45-R35	199923035	3,5
NJ45-R40	199923040	4
NJ45-R50	199923050	5

The supply includes feeder, 1 rail and standard equipment

- Feed voltage: 220 V, 50 Hz
- Operating voltage: 12 Volt c.c.
- Weight: 3,2 kg (enclosing rail)
- Dimensions: L 130 x H 136 x P 215 mm

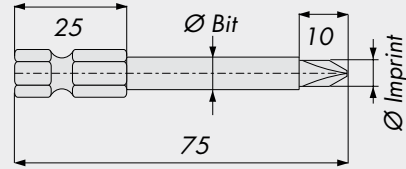
PHILLIPS BITS

Phillips screws	Bit Ø mm	Imprint Ø mm	Bit code
PH1	3	3	605052031
PH1	3 4,5	3 2,6	605052031 605050041
PH1	4,5	2,6	605050041
PH1	4,5	2,6	605050041
PH2	6	4	605050036
PH2	6	4	605050036
PH2	6	5	605050043

POZIDRIVE BITS

Pozidrive screws	Bit Ø mm	Imprint Ø mm	Bit code
PZ1	3	3	605062031
PZ1	3	3	605062031
PZ1	3	3	605062031
PZ1	3	3	605062031
PZ2	6	4	605060006
PZ2	6	4	605060006
PZ2	6	5	605060009

Bit dimensions in mm

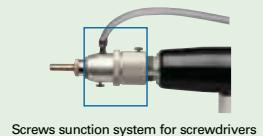


Standard equipment (provided with the feeder)

- 12 Volt DC electrical power supply (code 490331015)
- 1 hexagonal adjustment spanner
- 1 magnetiser for bits (code 611109116)
- Use and maintenance manual
- Eco-friendly packaging

Models available upon request

- **Models with screw suction system**
In presence of non magnetisable screws, Quicher can be equipped with a special screw selection system which selects and presents the screw for further pick up with air or electric screwdrivers with screw suction system.
- **Models with hopper**
When higher screw feeding capacity is being required, models with built-in hopper with capacity of 0,4 lt are available.



Screws suction system for screwdrivers



For further information please contact Fiam Technical Consultancy Service.

Accessories available upon request





- 6.35 mm **bits** with hexagonal drive (ISO 1174) and Phillips/Pozidrive tip
- **Special bits** with lengths different from those in the drawing.
- **Rails** models R.... to use the same unit with different screws. To choose see chart.



Rails

Screw shank Ø mm	Rail model	Rail code
2	R 20	649021001
2,3	R 23	649021002
2,6	R 26	649021003
3	R 30	649021004
3,5	R 35	649021005
4	R 40	649021006
5	R 50	649021007

Types of screws to use with shank diameter and minimum length (maximum length 18 mm)

Shank ø mm	ø 2,0	ø 2,3	ø 2,6	ø 3,0	ø 4,0	ø 5,0
Type of screw	Minimum length (* of shank - **total) in mm					
* Without washer 	1,8	2,5	2,8	3,0	6,0	7,0
* With washer 	3,0	4,0	4,0	4,0	6,0	8,0
* With double washer 	5,0	5,0	6,0	6,0	8,0	10,0
** With flat or oval countersunk head 	2,5	2,8	3,5	4,0	7,0	8,0

AM semi-automatic feeder for hexagonal nuts

For hexagonal nuts of 5.5 - 13 mm

AM is the right solution for an easy and continuous supply of 5,5 - 13 mm hexagonal nuts.

This effective automatic feeder consists of:

- a **vibrating loader unit** equipped with a transparent cover for a good view of the bowl capacity
- **nut suction station**
- an **electronic unit** for controlling and adjusting the nut feed speed.

Nut pick-up:

A sensor inside the nut suction station is activated by the special socket on the screwdriver, drives a pneumatic cylinder that pushes the nut upwards to insert it in the retaining spring of the socket itself. Picked up nut can then be tightened onto the component.

The nuts must have more or less ± 0.1 mm on stated dimensions to be gripped by the special socket (to be ordered separately).

To choose the most suitable special socket, see Accessories available upon request.

To use straight **air or electric screwdrivers with lever start or air and electric nutrunner motors** adequately fixed on cartesian arms or fastening slides.

To choose the most suitable feeder and tool please contact

Fiam Technical Consultancy Service.

1



2



3



AM models		NUTS	
Model	Code	Height mm	Hexagon mm
AM55B	199971001	2,4	5,5
AM60B	199971002	3	6
AM70B	199971003	3,2	7
AM80B	199971004	4	8
AMB100B	199971005	5	10
AMB110B	199971006	5,5	11
AMB130B	199971007	6,5	13

- Recommended working pressure: 6,3 bar
- Mains supply: 220 V, 50 Hz
- The code number must be used when ordering
- Special socket for screwdriver to be ordered separately (see Accessories available upon request)

Standard equipment (provided with the feeder)

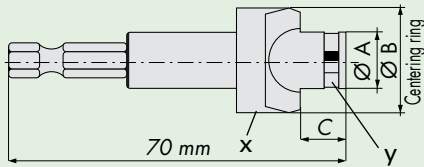
- Electronic unit for adjusting operating speed
- Use and maintenance manual
- Eco-friendly packaging

Models available upon request

- Models for nuts with flanged washers

Accessories available upon request

- **Special sockets for screwdrivers** for hexagonal head nuts shown in the table. We recommend ordering at least 3 sockets
- Customised sockets



C dimension: minimum measure to avoid that the centering ring (Ø B) touches the components to be assembled during the tightening phase.

To choose the most suitable socket for the screwdriver, we recommend verifying the dimensions above indicated in respect to the piece to be tightened with the nut.

SPECIAL SOCKETS FOR SCREWDRIVERS

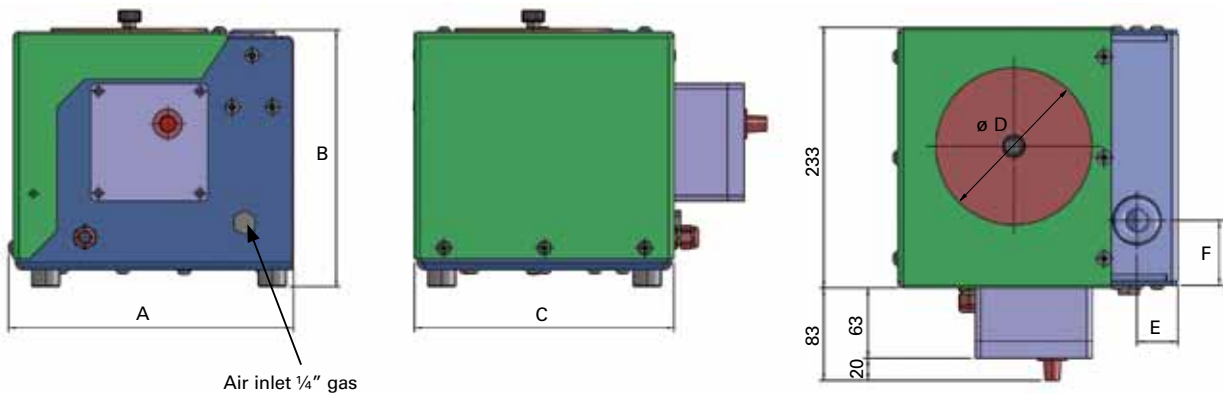
Special socket mm	Code	Socket with hexagonal drive 1/4"		
		"C" dimension	Ø A mm	Ø B mm
5,5	605181055	9,5	8,8	20
6	605181060	9,5	9,8	20
7	605181070	9,5	11,5	21,5
8	605181080	9,5	13	23
10	605181100	8,5	14,8	25
11	605181110	8,5	18	29
13	605181130	8,5	19,8	29

SPARE PARTS

Centering ring code (x)	Retaining spring code (y)
611189060	528505500
611189060	528506000
611189070	528507000
611189080	528508000
611189100	528510000
611189110	528511000
611189130	528513000

Dimensions of automatic feeders

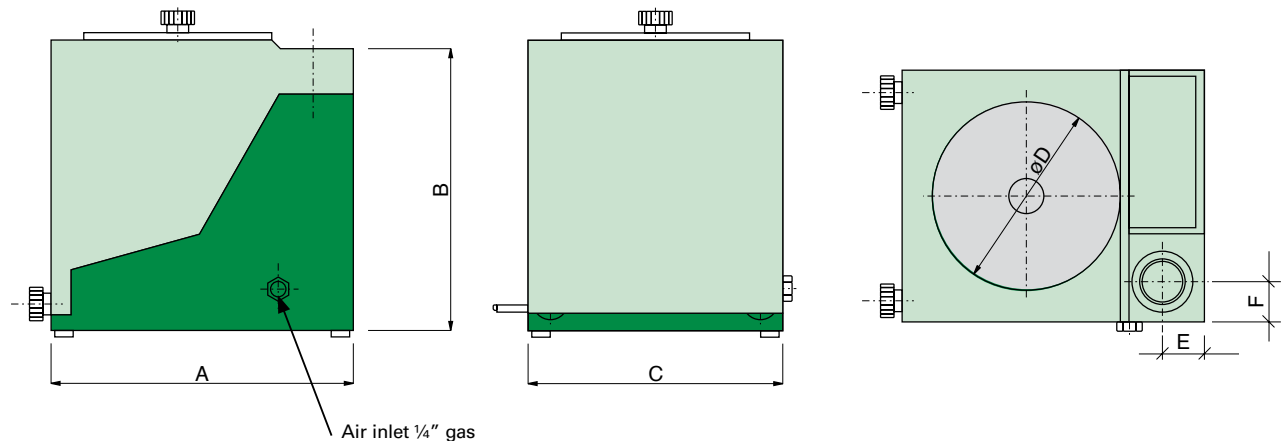
• AM models



Models	Dimensions mm						Weight
	A	B	C	D	E	F	Kg
AM...	255	229	233	140	37	58	23

Dimensions of automatic feeders

• AMB models



Models	DIMENSIONS mm						Weight
	A	B	C	D	E	F	Kg
AMB	310	280	290	220	30	40	23,5

Many customized solutions

To increase productivity in the manual assembly operations, besides from automatic feeders Quicher and AM, FIAM offers **screw feeding systems** which are normally used in automation. The solution shown hereafter is an example of continuous screw feeding and pick-up with a pistol grip air screwdriver.

The layout is extremely versatile because more than one pick and place devices can be connected to the same screw feeding unit; moreover its overall dimensions make it adaptable to the logistic needs of the work-place.

It can be used with pistol grip screwdrivers and, upon request, with straight screwdrivers equipped with magnetic bit.

The system can be installed in existing production lines.

The solution comprises:

- 1-way screw feeding unit
- Screw pick & place device with constant screw feeding enabling the screw to be continuously available
- Avvitatore pneumatico Fiam



The photo shows the automatic screw picking with a Fiam air tool



The photo shows the screw feeding unit with screw pick and place device

For further information see "Components for Automation" catalogue and contact Fiam Technical Consultancy Service.