

M3.s Injectors / Red Meat



■ High level of hygiene – easy to clean

■ Accurate injection – uniform quality



■ Clear brine – no blocked needles

■ Unique needle bridge system

■ Product under full control



■ Flexibility and versatility

■ Reliable and user friendly

fomaco

FOOD MACHINERY COMPANY

Created with passion – designed for success

The M3.s injecting technology

The equipment for injection and curing of pork and beef products is commonly used in the production of **bacon** and **ham, pastrami, corned beef, roast beef, steaks** and **moisture enhanced fresh meat** to name a few. Flexibility, reliability and accuracy are key words for Fomaco, enabling the customer to handle all meat cuts, both bone-in and boneless and at the same time meet the demand for low and high injection levels.



The unique needle bridge ensures an even and consistent injection level.

The unique needle bridge

Unlike the manifold system, our M3.s needle bridge valves are activated individually, injecting only when the needles are in the product, reducing the quantity of return brine or marinade considerably. The high performance centrifugal pump gives a constant brine pressure, regardless of the number of needles in the product, ensuring uniform distribution of brine, regardless of product size.



The sectionally divided pneumatic stripper feet prevent the product from moving when the needles are retracted.

Product under full control

The sectionally-divided, pneumatic stripper feet following the contours of the product will also contribute to accurate injection as these will prevent the product from moving when the needles are retracted. This provides a uniform needle pattern, and prevents the product from being injected twice – or from not being injected at all.



The self-cleaning protein filter FM 80 and high performance centrifugal pump.

Clear brine – no blocked needles

The self-cleaning FM 80 protein filter has a unique ability to remove all impurities contained in the brine. This will prevent the fine holes in the needles from being blocked – even after many hours of continuous production – which in turn ensures an even distribution of the brine/marinade and improved product quality.

High level of hygiene

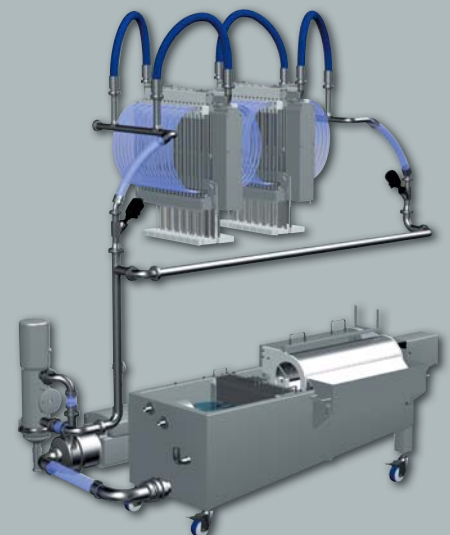
High emphasis is placed on food safety and hygiene. This has inspired Fomaco to develop a machine which is hygienic in production, easy and quick to clean.

Our brine flow system, needle heads and valves are designed to accurately match the liquid flow rate throughout the system, preventing brine residues from settling at the valve entrance, etc.

Our brine tank is available with cooling (optional), enabling accurate brine temperature control. Combined with temperature monitoring from the touch screen display, brines and marinades will have a germ count as low as possible.

Cleaning of the machine can be performed thoroughly and quickly because:

- Everything is manufactured in stainless steel and food approved plastic materials.
- The machine is self-draining by virtue of the pump position.
- All M3.s machines are equipped with an automatic, computerized washing program.
- When cleaning, the needles can be dismantled and fitted without using any tools.
- Since all electrical components are well protected special care is not needed when cleaning the machine.



The pump and the entire brine system can easily be taken apart and cleaned. All joints are mounted with hygienic fittings and are easily accessible outside the inner cabinet of the machine, and thus totally isolated from the electrical installations.

Configuration options for red meat injectors

The various sizes of injectors in the M3.s series are built on identical construction principles. The main differences between the models lie in the width of the transport systems (420 mm, 550 mm, 750 mm and 950 mm). The injectors are available with 1, 2 or 3 needle bridges, depending on the level of injection and tenderizing process required. Further - the machines are available with 48, 64, 88 or 112 needle heads, mounted with either single, double or quadro needles.



Single head injectors:

- One pump system and one needle head.



Double head injectors:

- One or two pump systems depending on application.
- Either two complete needle heads or one needle head and one knife tenderizer head.



Triple head injectors:

- Two pump systems.
- Either three complete needle heads or two complete needle heads and one knife tenderizer head.

Reliable and user friendly

The M3.s machines consist of thoroughly tested quality components, designed to work in a highly demanding and aggressive production environment. Using a M3.s injector will get you a sturdy, durable, high performance production machine which can be trusted, and will require a minimum of maintenance.

If a change of needle pattern is required, this can be done directly from the touch screen.

The colour touch screen is mounted on a swing arm for easy operation from all angles. Training of operators is quick as the user interface can be set to several languages and has been logically and intuitively developed. Many routines are fully automatic, such as:

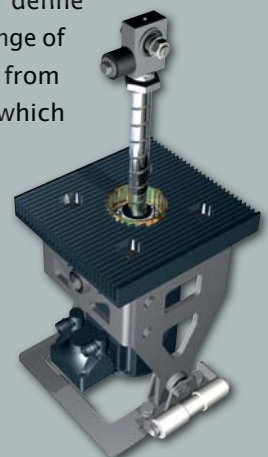


- Automatic machine settings through an unlimited number of pre-programmed production profiles.
- Automatic lubrication.
- Automatic monitoring of brine temperature.
- Automatic control of min. pump pressure.
- Automatic troubleshooting.
- Automatic cleaning program.
- Self-cleaning FM 80 protein filter.

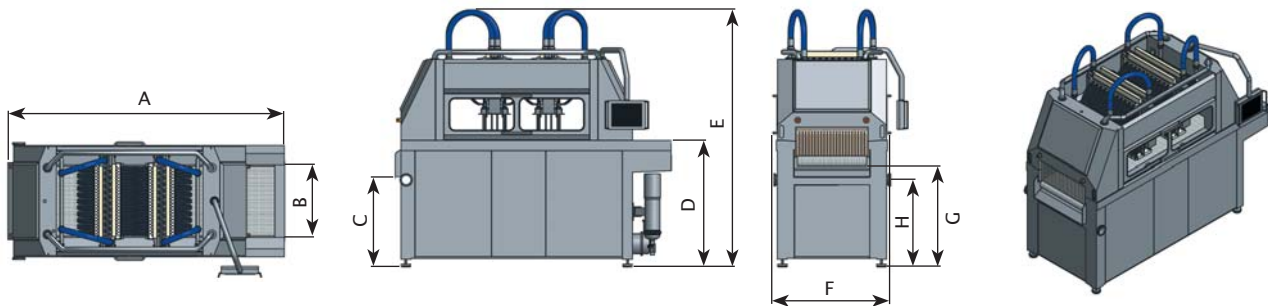
Variable stroke height

Spindle motors enable the M3.s machines to adapt to all product heights (within reason) making the machines even more flexible to fit your current and future production needs.

With this latest development it is even possible to define the movement range of the needle head from top to bottom, which means that the machine only injects between two predefined points.



Specifications	FGM 48 S/D	FGM 64 S/D	FGM 88 S/D/T	FGM 112 S/D/T
Drive unit for needle bridge	1/2 Motor AMK SKT-28-20-T00 / 4 kW 1/2 Gear Umbra ball screw	1/2 Motor AMK SKT-28-20-T00 / 4 kW 1/2 Gear Umbra ball screw	1/2/3 Motor AMK SKT-28-20-T00 / 4 kW 1/2/3 Gear Umbra ball screw	1/2/3 Motor AMK SKT-28-20-T00 / 4 kW 1/2/3 Gear Umbra ball screw
Drive unit for transport system	1,7 kW / 1,7 kW	1,7 kW / 1,7 kW	1,7 kW / 1,7 kW / 1,7 kW	1,7 kW / 1,7 kW / 1,7 kW
Pump motor	5,5 kW / 7,5 kW	7,5 kW / 7,5 kW	7,5 kW / 7,5 kW / 2 x 7,5 kW	7,5 kW / 7,5 kW / 2 x 7,5 kW
Pump	Centrifugal pump	Centrifugal pump	Centrifugal pump	Centrifugal pump
Pump capacity	0,5 bar up to 200 l/min 6 bar up to 650 l/min	0,5 bar up to 200 l/min 6 bar up to 650 l/min	0,5 bar up to 200 l/min 6 bar up to 650 l/min	0,5 bar up to 200 l/min 6 bar up to 650 l/min
Pre-filtration system	FM 80 self-cleaning filter	FM 80 self-cleaning filter	FM 80 self-cleaning filter	FM 80 self-cleaning filter
Air consumption (max)	550 / 1050 l/min	700 / 1300 l/min	900 / 1700 / 2500 l/min	1100 / 2100 / 3100 l/min
Number of needles	48 single, double or quadro / 2 x 48 single, double or quadro	64 single, double or quadro / 2 x 64 single, double or quadro	88 single, double or quadro / 2 x 88 single, double or quadro / 3 x 88 single, double or quadro	112 single, double or quadro / 2 x 112 single, double or quadro / 3 x 112 single, double or quadro
Needle bridge stroke/min	1-90	1-90	1-90	1-90
Knife bridge stroke/min	1-60	1-60	1-60	1-60
Transport system	Intralox conveyor	Intralox conveyor	Intralox conveyor	Intralox conveyor
Transport system width	420 mm	550 mm	750 mm	950 mm
Product movement	60, 45 or 30 mm per stroke of needle head	60, 45 or 30 mm per stroke of needle head	60, 45 or 30 mm per stroke of needle head	60, 45 or 30 mm per stroke of needle head
Max stroke height	240 mm	240 mm	240 mm	240 mm
Max product height	200 mm	200 mm	200 mm	200 mm
Capacity	Up to 7 tons/hr. depending on product and injection level	Up to 10 tons/hr. depending on product and injection level	Up to 12 tons/hr. depending on product and injection level	Up to 15 tons/hr. depending on product and injection level
Weight	980 kg / 1370 kg	1070 kg / 1470 kg	1240 kg / 1675 kg / 2350 kg	1650 kg / 2100 kg / 2850 kg



	FGM 48, 64, 88, 112 S	FGM 48, 64, 88, 112 D	FGM 88, 112 T
A	2300	2860	3420
B	420 / 550 / 750 / 950	420 / 550 / 750 / 950	750 / 950
C	930	930	930
D	1310	1310	1310
E	2670	2670	2770
F	880 / 1010 / 1210 / 1410	990 / 1120 / 1320 / 1520	1320 / 1520
G	1150	1150	1150
H	905	905	905

	PFS 7/225 R	PFS 7/330 R
A	1910	1910
B	2185	2185
C	795	1045
D	970	970
E	550	800

