

QUICK REFERENCE CATALOG



Specialists in Precision Gundrilling

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GUN DRILL MACHINES FOR MOLDS AND BLOCKS



courtesy Exacta Stampi

Many of the recent innovations applied to gun drilling machines for moldmakers were developed by IMSA, and the efforts of IMSA's design team are still concentrated on this application. A deep drilling machine that offers state-of-the-art performance will provide immediate benefits and will have a long shop floor life: It's this logic that drives IMSA to constantly improve its gun drilling machines for molds and blocks.

About us

Established in 1988 and located in Barzago (Lecco) in northern Italy, IMSA initially manufactured special machines for general mechanic industry. Since 1992 it specialized in the design and manufacture of deep hole drilling machines and became a leading manufacturer of this machine type.

IMSA is represented globally with more than 550 deep drilling machines currently running in Italy and in the rest of Europe, in Canada, USA, Mexico, Brasil,... IMSA machines are working in businesses in the mechanical production industry, machining job shops, aerospace, mold makers for many sectors of the industry such as automotive, food/packing, medical parts among others.

IMSA machines are made-to-order. The standard models are custom-tailored thanks to a series of options. We also offer complete high-tech solutions to meet the most common needs.

MACHINES FOR CENTERLINE DRILLING IN CYLINDRICAL PARTS



For centerline deep hole drilling of cylindrical parts, such as oil-hydraulic parts, gears and mechanical transmissions, parts for medical applications, since 2000 IMSA offers a wide range of drilling machines with counter-rotation systems. Individual solutions can also be designed and manufactured for special-application deep hole drilling.

MACHINES FOR CENTERLINE DRILLING IN CYLINDRICAL PARTS

IMSA machines for centerline deep hole drilling: a series of custom-tailored machines

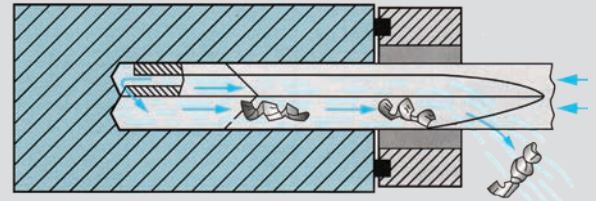
IMSA "MFT" Deep Hole Drilling Machines are dedicated to cylindrical parts such as transmission housings, cam shafts, gear shafts, injectors, lubricators, couplings, valves, drive valves ... in general, all solids of revolution with a deep drilling in their axis.

The automatic gun drilling machines of IMSA series "MFT" and "MFTB" are customized for drilling depth, diameters, number of spindles; our range starts from machines for small lots to high-productivity lines. We also propose different solutions for automated load, as a completion to the supply.

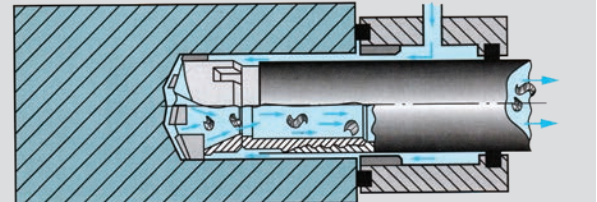
Two drilling methods

IMSA machines for centerline drilling of round workpieces use two different drilling methods according to different diameters:

- deep hole drilling by "gun drill tool" for our MFT Series
- deep hole drilling method "BTA/STS" for our MFTB series



The Gun Drilling Method



The BTA Drilling Method

Learn more at: <https://www.imsaitaly.com/en/articles/the-deep-drilling-process>

Single-Spindle

Gundrill tool



MFT 750 /6 CR

Drilling diameter range min-max	1.5 - 6 mm
Drilling depth max. (Ø 1.5 - 3 mm)	approx. 120 mm
Drilling depth max. (Ø 3 - 6 mm)	750 mm
Workpiece counter-rotation	150 rpm
Work holding movement	pneum./opt.CNC
Drilling spindle	5.8 kW - 15,000 rpm
Oil pressure max.	180 bar

Single-Spindle

Gundrill tool



MFT 750 /12 CR

Drilling diameter range min-max	3 - 12 mm
Drilling depth max. (160xØ)	750 mm
Workpiece counter-rotation	150 rpm
Work holding movement	pneum./opt.CNC
Drilling spindle	9 kW - 7,500 rpm
Oil pressure max.	120 bar

Single-Spindle

Gundrill tool



MFT 1000 EVO

Drilling diameter range min-max	4 - 25 mm
Option: Small diameter adjustment	3 - 20 mm
Option: Large diameter adjustment	6 - 32 mm
Drilling depth max. (160xØ)	1,000 mm
Workpiece counter-rotation	150 rpm
Work holding movement	a CNC
Drilling spindle	9 kW - 6,000 rpm
Oil pressure max.	80 bar

Single-Spindle

Gundrill tool



MFT 500 CR • MFT 1000 CR MFT 1500 CR

Drilling diameter range min-max	(opt. 4) 6 - 25 mm
Drilling depth max. (respectively)	500 / 1,000 / 1,500 mm
Workpiece counter-rotation	150 rpm
Work holding movement	pneum./opt.CNC
Drilling spindle	7.5 kW - 6,000 rpm
Oil pressure max.	(opt. 120) 80 bar

Double-Spindle

Gundrill tool



MFT 750 /2T CR MFT 1500 /2T CR

Drilling diameter range min-max	6 - 24 mm
Drilling depth max. (respectively)	750 / 1,500 mm
Workpiece counter-rotation	150 rpm
Work holding movement	a CNC
Drilling spindle	12 kW - 4,000 rpm
Drilling heads	2 on one carriage
Oil pressure max.	80 bar

Double-Spindle

Gundrill tool



MFT 1000 /2Ti CR MFT 1500 /2Ti CR

Drilling diameter range min-max	(opt. 4) 6 - 25 mm
Drilling depth max. (respectively)	1,000 / 1,500 mm
Workpiece counter-rotation	150 rpm
Work holding movement	pneum./opt.CNC
Drilling spindles 2x	7 kW - 6,000 rpm
Drilling heads	2, independent
Oil pressure max.	(opt. 120) 80 bar

MACHINES FOR CENTERLINE DRILLING IN CYLINDRICAL PARTS



Single-Spindle
Gundrill tool

MFT 1000 /32 CR MFT 1500 /32 CR

Drilling diameter range min-max	6 - 32 mm
Drilling depth max. (respectively)	1,000 / 1,500 mm
Workpiece counter-rotation	150 rpm
Work holding movement	a Cnc
Drilling spindle	9 kW - 6,000 rpm
Oil pressure max.	(opt. 120) 80 bar



Single-Spindle
Gundrill tool
BTA-STS

MFTB 1000 /51 CR GDK MFTB 1500 /51 CR GDK MFTB 2000 /51 CR GDK

Drilling diameter range min-max with gun drill	8 - 24 mm
Drilling diameter range min-max with BTA-STS tool	18 - 51 mm
Drilling dia. max. in counterboring	65 mm
Drilling depth max. (respectively)	1,000 / 1,500 / 2,000 mm
Workpiece counter-rotation	80 rpm
Work holding movement	hydraulic
Drilling spindle	22 kW - 3,500 rpm

IMSA GDK system

In the intermediate diameter range between the Gun Drilling and the BTA Drilling, we propose a Double-Setup flexible solution we called IMSA "GDK" System. This enables you to better take advantage of both tool types.



Single-Spindle
Gundrill tool

MFT 1000 /43 CR MFT 1500 /43 CR

Drilling diameter range min-max	8 - 43 mm
Drilling depth max. (respectively)	1,000 / 1,500 mm
Workpiece counter-rotation	80 rpm
Work holding movement	hydraulic
Drilling spindle	17 kW - 4,200 rpm
Oil pressure max.	100 bar



Single-Spindle
BTA-STS

MFTB 1000 /76 CR MFTB 2000 /76 CR MFTB 3000 /76 CR

Drilling diameter range min-max	20 - 76 mm
Drilling dia. max. in counterboring	85 mm
Drilling depth max. (respectively)	1,000 / 2,000 / 3,000 mm
Workpiece counter-rotation	80 rpm
Work holding movement	a CNC
Drilling spindle	38 kW - 1,500 rpm



Single-Spindle
BTA-STS

MFTB 3000 /110 EVO

Drilling diameter range min-max	30 - 110 mm
Drilling depth max.	3,300 mm
Workpiece counter-rotation	0...400 rpm
Work holding movement	by CNC
Drilling spindle	54 kW - 1,400 rpm



Single-Spindle
BTA-STS

MFTB 1000 /51 CR MFTB 1500 /51 CR MFTB 2000 /51 CR

Drilling diameter range min-max, solid	18 - 51 mm
Drilling dia. max. in counterboring	65 mm
Drilling depth (respectively)	1,000 / 1,500 / 2,000 mm
Workpiece counter-rotation	80 rpm
Work holding movement	hydraulic
Drilling spindle	17 kW - 2,000 rpm



Single-Spindle
BTA-STS

MFTB 1000 /110 MFTB 2000 /110

Drilling diameter range min-max	20 - 110 mm
Drilling dia. max. in counterboring (option)	135 mm
Drilling depth max. (respectively)	1,000 / 2,000 mm
Workpiece counter-rotation	no
Work holding movement	hydro-mechanical
Drilling spindle	51 kW - 1,500 rpm



Single-Spindle
BTA-STS

MFTB 2000 /200

Drilling diameter range min-max	50 - 200 mm
Drilling depth max.	2,000 mm
Workpiece counter-rotation	no
Work holding movement	hydro-mechanical
Drilling spindle	71 kW - 1,250 rpm

Deep Hole Drilling Machines for Axial Drilling of Cylindrical Parts

This machine series is fundamentally custom-built. Therefore, the models shown in our catalog should be considered examples and are subject to further optimization in new projects. We would like to update you on the latest developments:

- The MFT 750/6 CR and MFT 750/12 CR have been merged into the new **MFT 600/12 EVO** model.
- The MFT 500 CR, 1000 CR and 1500 CR have been optimized as **MFT 1000 EVO** and **MFT 1500 EVO**.
- On machines using BTA tooling, the **IMSA GDK System** is now available as an option both on machines drilling up to Ø 51 mm and on those drilling up to **Ø 76 mm**. Thanks to this option, these BTA models can also use gun drills, extending the drilling range to diameters starting from 6 mm on the "/51" models and from 8 mm on the "/76" models.

What's New



MFT 600 /12 EVO

Applications: medical components, temperature probes, aerospace pins, telescopic ejector sleeves for molds.

Drilling method: gun drilling with counter-rotating workpiece.

Drilling diameter range: 2 - 12 mm.

Single-cycle drilling depth:

– up to 40-50 × diameter for diameters up to 3 mm;

– up to 160 × diameter for diameters from 3 to 12 mm.;

Drilling spindle: 7.0 kW, 10,000 rpm.



MFT 600 /12 EVO
YouTube Video



MFT 1000 EVO Quick Delivery

Centerline gun drilling machine for cylindrical parts, serial year 2026, new machine

Drilling method: gun drilling with counter-rotating workpiece.

Drilling diameters: 4-25 mm.

Max. drilling depth: 1,000 mm (160 x Ø).

Drilling spindle: 9 kW, 6,000 rpm.



Download the PDF with
application examples and
machine specifications



MFTB 1000 /76 GDK

MFTB 2000 /76 GDK

MFTB 3000 /76 GDK

For the intermediate diameter range between gun drilling and BTA drilling, we offer a flexible dual-setup solution called the **IMSA GDK System**, designed to take full advantage of both tooling technologies.

Drilling diameters:

– Gun drills: 8 - 25 mm from solid.

– BTA drills: 20 - 76 mm from solid.

– Counterboring: up to 85 mm.

Maximum drilling depth: 1,000 / 2,000 / 3,000 mm (according to machine name).

Drilling spindle: 38 kW, 1,500 rpm.

Workpiece counter-rotation: 80 rpm



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GUN DRILL MACHINES FOR MOLDS AND BLOCKS



MF1000/2C

NEW

Gun drilling and milling machine for molds and mechanical parts up to 2 or 4 tons, with rotary/tilting table or rotary table

Machine version with Rotary table 800x900mm	load 4,000 kg
Swing clearance	1,650 mm
Horizontal X-axis (Gantry column)	1,100 mm
Machine v. with Rotary-Tilting table 800x800mm	load 2,000 kg
Table tilting angle	+25°...-20°
Swing clearance	1,300 mm
Horizontal X-axis (Gantry column)	1,000 mm
Vertical Y-axis	500 mm
Drilling Depth max, in single operation	1,000 mm
Optimal drilling diameter range	4-25 mm
Gun drilling spindle	11 kW (S1) - 6,000 rpm
ISO40 milling spindle	13 kW (S1) - 6,000 rpm

Headstock with separate gun drilling and milling spindle. The use of the auxiliary milling spindle doesn't require any machinist's intervention on the headstock. Switchover gundrilling/milling and back takes place in 8 seconds in fully automatic mode by M functions.

Automatic ISO40 tool changer in option.



MF1000/2F

Gun drilling and milling machine for middle-size molds, with rotary or rotary-tilting table

Horizontal X-axis (Gantry column)	1,400 mm
Vertical Y-axis	700 mm
Drilling Depth max, in single operation	1,000 mm
Swing clearance	1,600 mm
Rotary table 800 x 1,000 mm	load 4,000 kg
Rotary table 1,000 x 1,200 mm	load 6,500 kg
Rotary-Tilting table 1,000 x 1,000 mm	load 5,000 kg
Tilting angle	+22.5°...-22.5°
Optimal drilling diameter range	4 - 25 (32) mm
Gun drilling spindle	11 kW (S1) - 6,000 rpm
Milling spindle ISO40	13 kW (S1) - 6,000 rpm

Headstock with separate gun drilling and milling spindle. The use of the auxiliary milling spindle doesn't require any machinist's intervention on the headstock. Switchover gundrilling/milling and back takes place in 8 seconds in fully automatic mode by M functions.

Different capacity ISO40 tool storages available in option.



MF1250/2FL

Gun drilling and milling machine for middle-size molds, with rotary-tilting table

Horizontal X-axis (Gantry column)	1,700 mm
Vertical Y-axis	800 mm
Drilling Depth max, in single operation	1,250 mm
Swing clearance	1,900 mm
Rotary-Tilting table 1,000 x 1,000 mm	load 6,000 kg
Tilting angle	+22.5°...-22.5°
Optimal drilling diameter range	4 - 25 (32) mm
Gun drilling spindle	11 kW (S1) - 6,000 rpm
Milling spindle ISO40	13 kW (S1) - 6,000 rpm

Headstock with separate gun drilling and milling spindle. The use of the auxiliary milling spindle doesn't require any machinist's intervention on the headstock. Switchover gundrilling/milling and back takes place in 8 seconds in fully automatic mode by M functions.

Different capacity ISO40 tool storages available in option.



MF800C

3-4 Axes deep drilling machine for blocks and mechanical parts

Horizontal X-axis (Gantry column)	800 mm
Vertical Y-axis	500 mm
Drilling Depth max, in single operation	800 mm
Swing clearance	1,100 mm
Fixed table 800 x 800 mm	load 4,000 kg
Rotary table 600 x 600 mm	load 2,000 kg
Optimal drilling diameter range	4 - 18 mm
Gun drilling spindle	7 kW (S1) - 6,000 rpm

Light milling capability: Tapping "Kit" to be mounted on the spindle head, ER32 collet.



Gantry Column

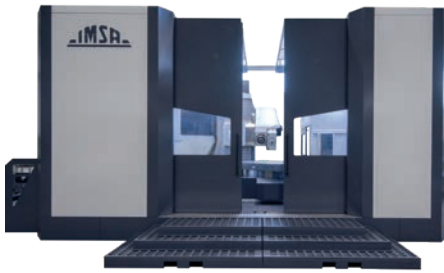
Many IMSA machines for molds and blocks have a Vertical Gantry Column structure: this means, the column is supported and guided at both bottom and top. This structure is 16 times more rigid than an equivalent column only supported at the bottom.

Learn more at: <https://www.imsaitaly.com/en/articles/gantry>

→ Watch IMSA machine videos
→ Download technical brochures

WWW.IMSAITALY.COM





MF1600 S2

NEW

"T"-design machine for milling and gun drilling of molds up to 30 tons, with tilting headstock

Horizontal X-axis (table translation)	3,000 mm
Vertical Y-axis	1,600 mm
Drilling Depth max, in single operation	1,600 mm
Swing clearance	3,600 mm
Rotary table 1,600 x 1,800 mm	load 30,000 kg
Headstock tilting angle A-axis	+25°...-20°
Optimal drilling diameter range	5 - 50 mm
Gun drilling spindle	15 kW (S1) - 4,200 rpm
Milling spindle ISO50	35 kW (S1) - 6,000 rpm
Two separate machining heads, located on the same headstock, carry out gun drilling and milling. Liquid-cooled ISO50 milling electrosindle 334 Nm (S1).	
Different capacity ISO50 tool storages available in option.	



MF1350 EVO

Gun drilling and milling center of our Evo Series, with tilting headstock, for molds up to 12 tons

Horizontal X-axis (Gantry column)	1,900 mm
Vertical Y-axis	1,250 mm
Drilling Depth max, in single operation	1,350 mm
Swing clearance	2,600 mm
Rotary table 1,200 x 1,500 mm	load 12,000 kg
Headstock tilting angle A-axis	+20°...-20°
Optimal drilling diameter range	5 - 40 mm
Gun drilling spindle	11 kW (S1) - 4,200 rpm
Machine version with ISO40 milling spindle	18 kW (S1) - 6,000 rpm
Torque	115 Nm
Machine vers. with ISO50 milling spindle	29 kW (S1) - 6,000 rpm
Torque	200 Nm
Headstock with separate gun drilling and milling spindles. The use of the auxiliary milling spindle doesn't require any machinist's intervention on the headstock. Switchover gundrilling/milling and back takes place in 8 seconds in fully automatic mode by M functions. Liquid-cooled spindles. The milling head has a 400 mm extra movement.	
Different capacity ISO40 / ISO50 tool storages available in option.	

Evo Series

Our technical team has conducted a complete refresh of the designs of our previous BB series born in 2000. The EVO series has been developed to combine improved milling performance with consolidated deep hole drilling capabilities.

The EVO gun drilling machines are equipped with a vertical gantry column structure, like the previous BB series; this new series, however, sees the use on all machines of inductive scale reading systems and optimized transmissions; these machines are therefore both more precise and faster.

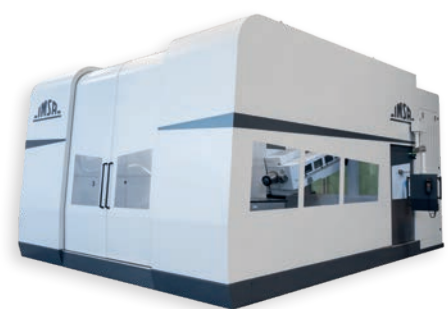
In addition, to guarantee constant performance, all spindle motors are liquid-cooled instead of air-cooled.



MF1300/4P EVO

"TOP AUTOMATION IN GUN DRILLING": EVO-Series Gun Drilling and Milling center, equipped with IMSA's 4-station Gun Drill Changer

Horizontal X-axis (Gantry column)	2,010 mm
Vertical Y-axis	1,500 mm
Drilling Depth max, in single operation	1,300 mm
Swing clearance	2,750 mm
Rotary traversing table 1,200 x 1,500 mm	load 12,000 kg
Translation towards the headstock U-axis	500 mm
Headstock tilting angle A-axis	+20°...-20°
Optimal drilling diameter range	5 - 40 mm
Gun drilling spindle	11 kW (S1) - 4,200 rpm
IMSA's 4-station Gun Drill Changer enables automatic replacement of the gun drilling unit without operator intervention.	
Milling spindle ISO50	29 kW (S1) - 6,000 rpm
Headstock with separate gun drilling and milling spindle. The use of the auxiliary milling spindle doesn't require any machinist's intervention on the headstock. Switchover gundrilling/milling and back takes place in 8 seconds in fully automatic mode by M functions. Liquid-cooled ISO50 milling electrosindle 200 Nm. The milling head has a 450 mm extra movement.	
Different capacity ISO50 tool storages available in option.	



MF1750 EVO

Gun drilling and milling center of our Evo Series, with tilting headstock, for molds up to 20...40 tons

Horizontal X-axis (Gantry column)	2,950 mm
Vertical Y-axis	1,500 mm
Drilling Depth max, in single operation	1,750 mm
Swing clearance	4,300 mm
Rotary traversing table 1,600x1,800 mm	load 30,000 kg
Rotary traversing table 2,000x2,000 mm	load 40,000 kg
Rotary traversing table 2,000x2,500 mm	load 40,000 kg
Rotary traversing table 2,200x2,200 mm	load 45,000 kg
Translation towards the headstock U-axis	1,000 mm
Headstock tilting angle A-axis	+20°...-20°
Optimal drilling diameter range	5 - 50 mm
Gun drilling spindle	15 kW (S1) - 4,200 rpm
Milling spindle ISO50	45 kW (S1) - 4,500 rpm
Headstock with separate gun drilling and milling spindle. The use of the auxiliary milling spindle doesn't require any machinist's intervention on the headstock. Switchover gundrilling/milling and back takes place in 8 seconds in fully automatic mode by M functions. Liquid-cooled ISO50 milling electrosindle 430 Nm. The milling head has a 500 mm extra movement.	
Different capacity ISO50 tool storages available in option.	

Deep Hole Drilling and Milling Machines for Molds and Blocks

Selected Models with Reduced Delivery Times

IMSA machines are traditionally built to order. However, to support companies that need to start new production projects quickly, IMSA has introduced the advance production of selected high-demand models, available with delivery times of up to 4 months from order.

Machines included in this program:



MF 1350 EVO

For machining blocks up to 16,000 kg, with a maximum swing clearance of 2,600 mm. Compound-angle machining with rotary table and tilting headstock.

X-axis travel: 1,900 mm.

Y-axis travel: 1,250 mm.

Fully automatic switching between milling and deep hole drilling.

Liquid-cooled spindles.

Optimal drilling diameters: 5-40 mm from solid.

Single-cycle drilling depth: 1,350 mm.

Liquid-cooled deep hole drilling spindle: 11 kW, 4,200 rpm.

Liquid-cooled ISO50 milling spindle: 29 kW.



MFT 1000 EVO



MF 1000 /2C



MF 1250/2FL



MF 1000 /3T EVO

For complex molds up to 2.5 tons.

5-face machining with tilting rotary table and IMSA vertical Gantry structure.

Pallet changer: automatic 2-position system for loading the next workpiece during the machining cycle.

Swing clearance up to 1,600 mm.

Table: 1,000 x 1,000 mm, tilt angle -90° / +15°.

Fully automatic switching between milling and deep hole drilling.

Deep hole drilling: diameters 4-32 mm from solid. Depths up to 1,000 mm.

IMSA Gun Drill Change System: automatic replacement of 3 complete deep hole drilling units.

Milling: 29 kW spindle, 6,000 rpm, 200 Nm.

Milling tool changer: automatic 80-position HSK63-A storage.



MF 2000 EVO

For molds and blocks up to 30 / 40 / 50 tons, depending on the selected table.

Compound-angle machining with rotary table and tilting headstock.

Travels: X 4,000 mm, Y 2,000 mm.

Fully automatic switching between milling and deep hole drilling.

Liquid-cooled spindles.

Deep hole drilling: 15 kW (S1) spindle, 4,200 rpm. Diameters 5-50 mm from solid. Depths up to 2,000 mm.

Milling: ISO50 spindle, 45 kW, 4,500 rpm. ISO50 tool changer available with various storage sizes.



MF 1650 /5P EVO

For molds and blocks up to 30 / 40 / 50 tons, depending on the selected table.

Compound-angle machining with rotary table and tilting headstock.

Travels: X 3,000 mm, Y 2,000 mm.

Fully automatic switching between milling and deep hole drilling.

Liquid-cooled spindles.

Deep hole drilling: 15 kW (S1) spindle, 4,200 rpm. Diameters 5-50 mm from solid, without pilot hole. Depths up to 1,650 mm.

IMSA Gun Drill Change System: automatic replacement of the gun drilling unit without any operator intervention.

Milling: separate ISO50 spindle, 45 kW, 4,500 rpm, 430 Nm.

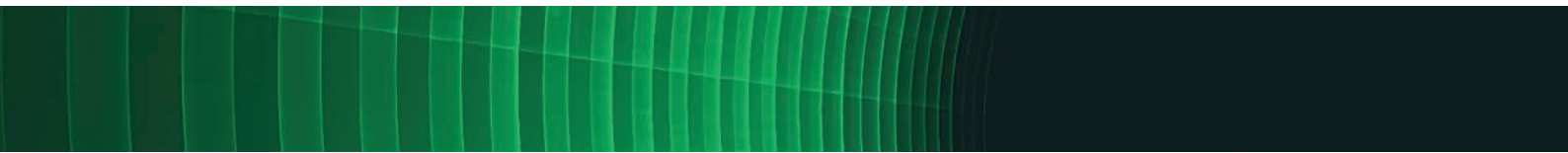
ISO50 tool changer available with various storage sizes.



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MF1650/5P EVO
on YouTube Shorts





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