CITIZEN

Cincom

D25

Sliding Headstock Type CNC Automatic Lathe

LFV technology

Next Generation

New Concept

New Design

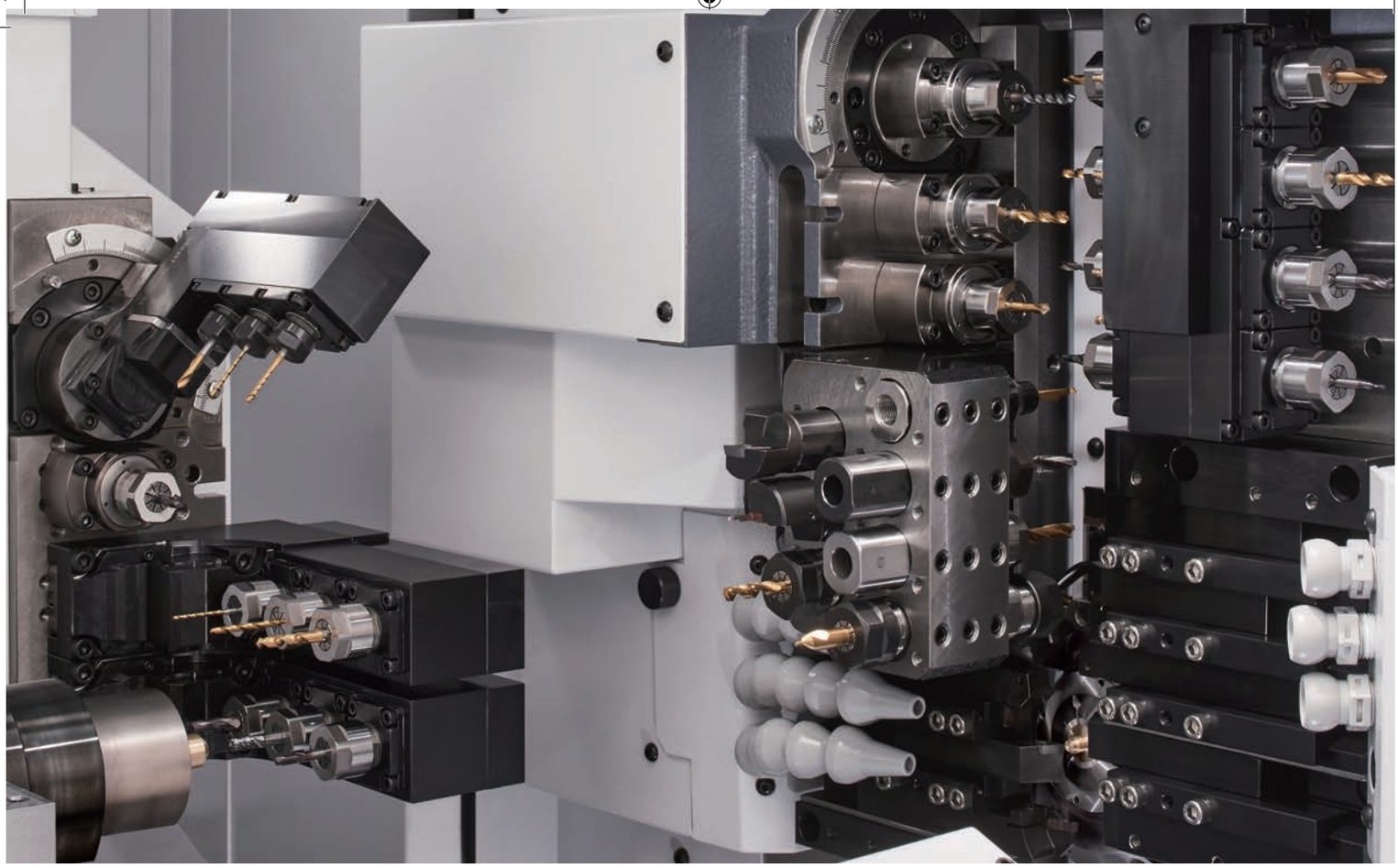
New Operability

New Styling

All-new Cincom D25

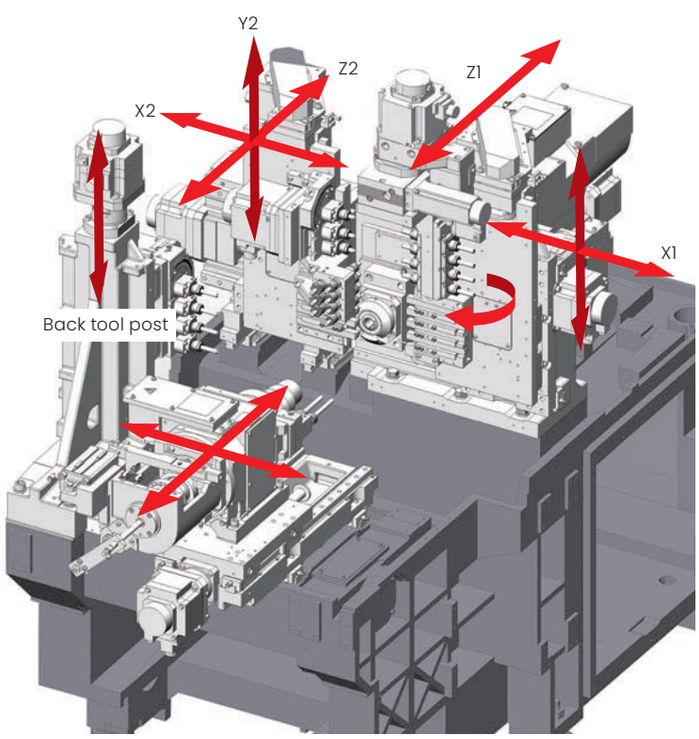
Citizen’s Challenge The future starts here.


CITIZEN
Cincom
D25



Full Tool Configuration to Support High Productivity

In addition to the "double gang tool" tool post, a B axis control for front machining is featured.
The double gang tool configuration allows the tool post not engaged in machining to be prepared for the next machining, helping to shorten non-cutting time at tool selection, and cycle times.



A total of up to 59 front/back tools can be mounted, with up to 28 tools for back machining, enabling a full range of machining with a diversity of tools and realising high productivity by optimum division of processes for front/back machining

Complex machining can also be handled flexibly, including contouring on curved faces through simultaneous 5-axis control using the B axis. This presents new machining possibilities.

The machine is configured with two spindles and four tool posts, and tool post 2 features the Z2 axis. Combined with tool post 1, simultaneous machining including balanced cutting and drilling with outer diameter cutting is possible.

With type VIII, rotary tools on gang tool post 1 have a B axis, allowing complex machining with an even more comprehensive axis configuration. In addition, both models can be installed with the opposite tool post to realise high productivity with four tool posts.

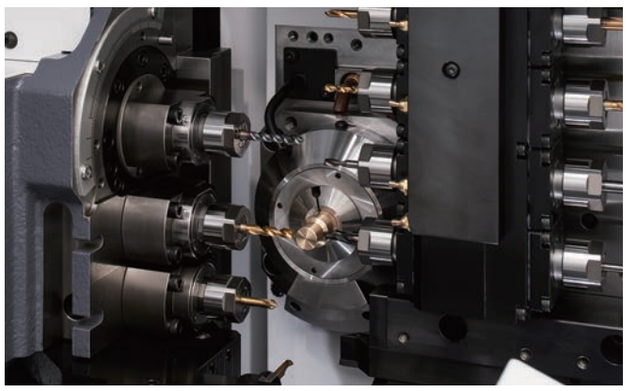
Axis configuration and model types

	VII	VIII
Rotary tool on the gang tool post (Tool post 1)	T	T
Rotary tool on the gang tool post (Tool post 2)	T	T
B axis (rotary tools on the gang tool post)	F	T
Back rotary tool	T	T
Opposite tool post	Opt.	Opt.

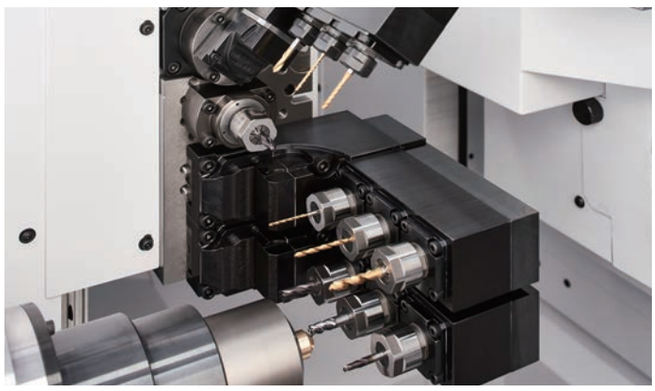
High Productivity through Simultaneous Machining with Three Tools

"Simultaneous machining with three tools" including additional machining with a back tool on the independent back tool post, in addition to simultaneous machining with two tools on the front

The two drills of the opposite tool post can machine holes up to 100 mm deep. O.D. cutting can be performed simultaneously even with deep hole machining, further expanding the machining range. face with the double tool post, allows simultaneously machining with turning, drilling, milling and so on, shortening cutting time and achieving high productivity.

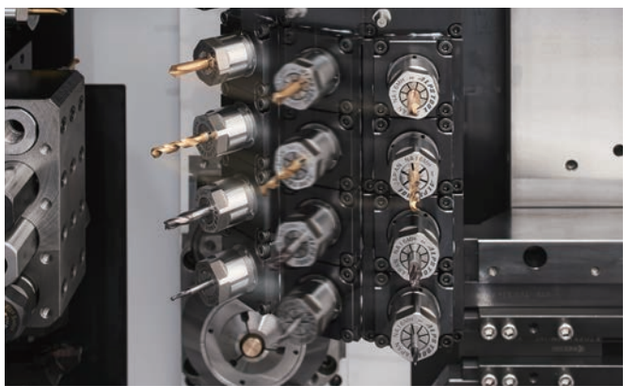


Simultaneous machining with two tools on the front face



Back machining with the independent back tool post

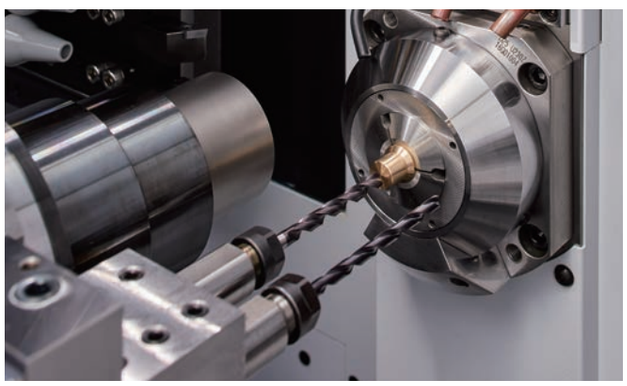
B Axis, Supporting Various Inclined Hole Machining (with Type VII)



A B axis that can be used for either front or back machining is featured. It supports a variety of "inclined hole machining" including machining of inclined holes at multiple angles, and helical interpolation machining. Simultaneous five-axis control with three orthogonal axes and two rotational axes enables machining of complex shapes. The contouring machining function allows machining under the optimum cutting conditions, being able, for example, to maintain the tool angle perpendicular to the machining point even on curved faces.

Drilling a parabolic shape by machining with 5-axis simultaneous control
The range of turning has been further expanded.

Opposite Tool Post



The two drills of the opposite tool post can machine holes up to 100 mm deep. O.D. cutting can be performed simultaneously even with deep hole machining, further expanding the machining range.

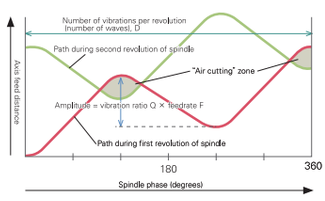
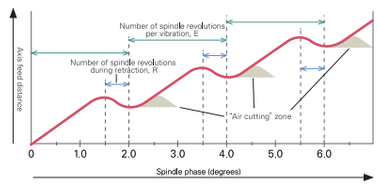
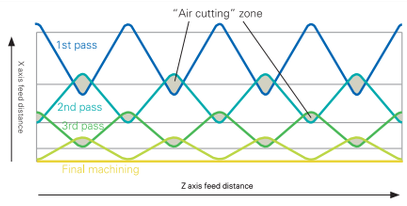
LFV Technology (optional)

LFV technology

LFV* is a technology for performing machining while vibrating the X and Z servo axes in the cutting direction in synchrony with the rotation of the spindle. It lessens the various problems caused by chips entangling with the product or tool, and is effective for small-diameter deep hole machining and the machining of difficult-to-cut materials.

*LFV is a registered trademark of Citizen Watch Co, Ltd.

Vibration mode

	LFV mode 1	LFV mode 2	LFV mode 3
Operation	Multiple vibrations per spindle revolution	Multiple spindle revolutions per vibration	Vibration threading
Specification	The axes execute multiple vibrations during one spindle revolution, reliably breaking chips up into small pieces.	Machining is carried out while rotating the spindle multiple revolutions per vibration.	A vibrating behavior is applied in the direction of the cutting (notching) during threading with the timing of this vibration changing with each pass in relation to the rotary phase of the spindle to provide "air-cutting" during the machining and break up chips.
Application	Ideal for outer/inner diameter machining and groove machining	Ideal for micro-drilling, where peripheral speed is required	Optimal for threading of internal and external diameters
Waveform			

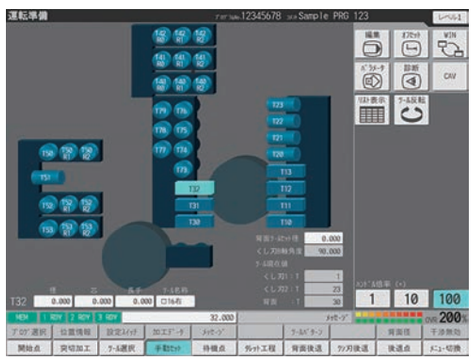
Note 1: LFV machining can be performed with the X1, Z1, X3, Z3 axis.
Note 2: LFV machining can be performed simultaneously on a maximum of 1 pair of axes.
Note 3: For LFV machining with rotary tools, the "LFV function" and "rotary tool feed per revolution" options are required.

Evolved Operation Panel

The machine features a large 15-inch LCD touch panel screen. The graphical HMI (human machine interface) improves visibility and allows intuitive operation. For even better ease of use, a full keyboard is integrated in sheet keys. You can select either of two key arrangements: conventional or computer keyboard. NC programs can be input/output using a USB flash drive or SD card.

Operation panel
The combination of a full keyboard and 15-inch screen assures ease of use.

USB slot and SD card slot
External output operation using an SD card is supported.



Preparation screen.
Screen design evolved for good visibility while maintaining the renowned operability of the Cincom brand.

Automatic operation screen
Motor load information is displayed graphically, allowing intuitive status checks.

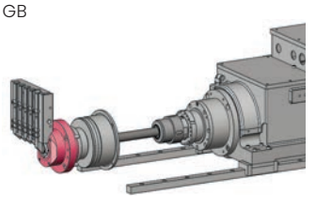
Comprehensive Standard Features

Front/back spindles and rotary tools are equipped with motors of ample capacity. Their comprehensive machining capabilities help improve productivity.

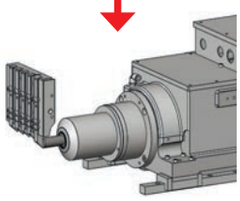
Spindle selection specifications are standard too, allowing you to switch between the guide bushing type*1 suited to machining long workpieces and the guide bushing-less type suited to leaving short remnant bars. By making use of their features in accordance with the cutting conditions, the total running costs can be reduced.

The cutting room door assures an expansive, open operating space for good usability, facilitating the operator's work, such as mount tools.

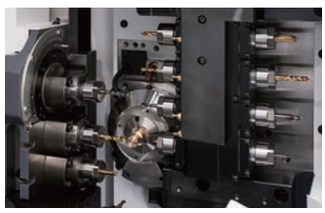
GB

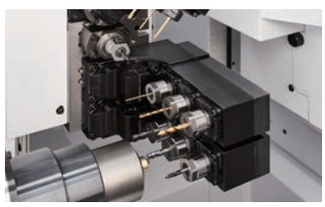


GBL

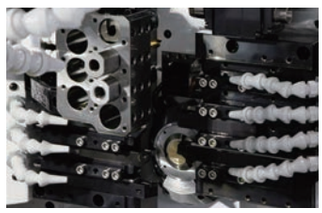


Switching between guide bushing / guide bushing-less type
The type can be selected as appropriate, for machining long thin workpieces, when using cold drawn material, or in order to leave short remnant bars.

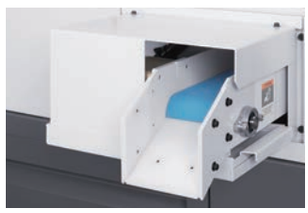




Higher level of motor output
The motors of front / back spindles and rotary tools have the machining capability of larger-diameter models, are more versatile due to an expanded speed range, and also help to shorten cycle times.



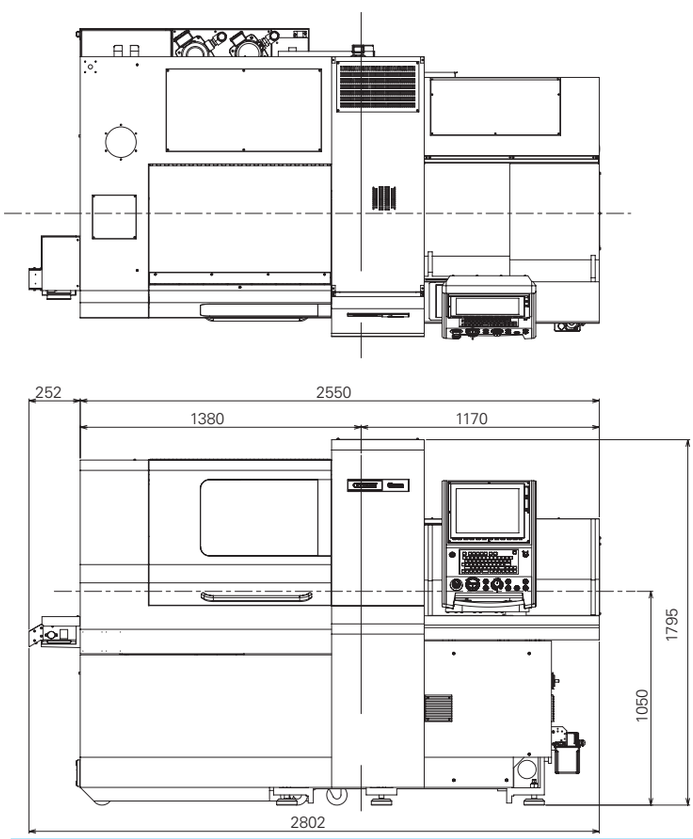
Coolant nozzles and coolant pumps
As a measure against entangling chips, an adequate number of chip coolant nozzles are provided. Furthermore, two pumps are installed to resolve the issue of chip entanglement.

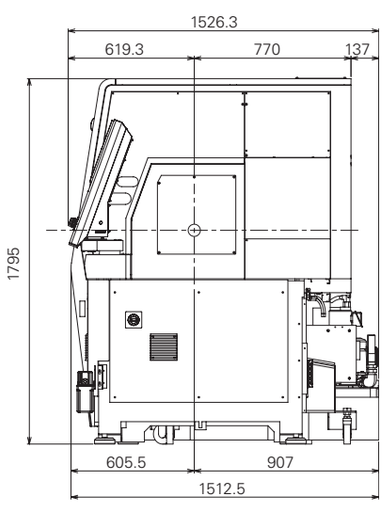


Workpiece conveyor
Unloads workpieces received from the workpiece separator outside the machine.

Wide opening
The flip-up door provides good access inside the machine and ample working space.

Machine Layout Drawing





Machine Specification

Item	D25	
	Type VII (D25-1M7)	Type VIII (D25-1M8)
Max. machining diameter (D)	12 mm dia. / 16mm dia. (OPT)	
Max. machining length (L)		
Guide bushing	250 mm	
Guide bushing-less	2.5 D	
Max. front drilling diameter	12 mm dia.	
Max. front tapping diameter (Cutting tap)	M10	
Spindle speed	Max. 10,000 min-1	
Max. drilling diameter by rotary tool on gang tool post	10 mm dia.	
Max. tapping diameter by rotary tool on gang tool post	M8	
Gang tool spindle speed	Max. 9,000 min-1	
Max. chuck diameter of the back spindle	25 mm dia.	
Max. workpiece protrusion length from the back spindle	50 mm	
Max. drilling diameter in back machining	12 mm dia.	
Max. tapping diameter in back machining	M10	
Back spindle speed	Max. 10,000 min-1	
Tool capacity Standard (Maximum)	35 (59)	35 (43)
Cutting tool	7 - 13	7 - 9
Front drilling tools	4 - 23	4 - 13
Front cross drilling tools	7 - 12	7
Back drilling tools	6 - 35	6 - 25
Back cross drilling tools	4 - 6	4 - 6
Tool size		
Turning tool	16 mm sq./ 19 mm sq./	
Sleeve	25.4 mm sq./	
Chuck / bushing		
Spindle collet chuck	TF30	
Back spindle collet chuck	TF30	
Guide bushing FG521-M	T227	
Rapid feed rate		
All axes (other than Z2)	32 m/ min	
Z2 axis	24 m/ min	
Motor		
For spindle drive	3.7/ 5.5 kW	
For driving rotary tools on the gang tool post	2.2 kW	
For back spindle drive	2.2/ 3.7 kW	
For driving rotary tools on the back tool post	1.0 kW	
Rated power consumption	13 kVA	
Total load current	33 A	
Main breaker capacity	60 A	
Pneumatic device		
Required pressure	0.5 MPa(5kgf/cm^2)	
Flow rate	Up to 60 NL/min (Power on) Up to 180 NL/min (With air blow)	
Tank capacity	0.8 L	
Coolant tank capacity	200 L	
Machine size		
Machine height	1,795 mm	
Required floor area	2,440×1,380 mm	
Required floor area	1,050 mm	
Required floor area	3,450 kg	

Standard Accessories	
Spindle chucking device	Cut-off tool breakage detector
Back spindle chucking device	Workpiece conveyor
Rotary tool spindle drive device of the gang tool post	Work light
Coolant tank (with level detector)	Rotary guide bushing drive device
Central lubrication device (with level) detector)	Spindle cooling device
Machine relocation detector	Door lock
Rotary guide bushing device	Signal lamp
Knockout device for through hole workpiece	3-colour signal tower
Coolant flow rate detector	Opposite tool post

Special Accessories	
Chip conveyor	Medium-pressure coolant device
D25 dedicated tools	

Standard NC Functions	
D25 dedicated NC unit	15-inch touch panel screen
User disk space: 10 MB	Program storage capacity 160 m (64kB)
Tool offset pairs: 99 pairs	Preparation function
On-machine program check function	Run hour display
USB slot	Door lock function
Interference check function	Machine operation information display
Collision detection function	Spindle speed fluctuation detection function
Spindle constant surface speed control function	Tool nose radius compensation
B axis control function (type VIII)	Thermal displacement correction function
Back spindle chasing function	Back spindle 1° indexing function
Drilling canned cycle	Back spindle C-axis function
Spindle C-axis function	RS-232C connector

Optional NC functions	
Circular thread cutting	Variable lead thread cutting
Differential speed rotary tool function	User macro
Milling interpolation function	High-speed synchronised tapping function
Coordinate rotation command function	Helical interpolation function
User disk space: 100 MB	Program storage capacity 4800 m (1920 kB)
Run using program in external memory	Tool life management I
Tool life management II	Network I/O function
Sub-micron command	Optional block skip (9 sets)
3D chamfering function	

Citizen Machinery UK Ltd

1 Park Avenue, Bushey WD23 2DA, UK
Hurst Business Park, Narrowboat Way, Brierley Hill DY5 1UF, UK
Tel. +44 (0) 1923 691500 | sales@citizenmachinery.co.uk

www.citizenmachinery.co.uk

ASIA
Headquarter Japan | Citizen Machinery Co., Ltd., 4107-6 Miyota, Miyota-machi, Kitasaku-gun, Nagano-ken, 389-0206, Japan, Tel. +81-267 325 901
EUROPE
Headquarter Europe | Germany | Mettinger Straße 11, 73728 Esslingen, Tel. +49-711 3906 100 | France | Citizen Machinery France S.A.S., ZAE des Lacs 3, 1385 Avenue du Mole, 74130 AYSE, France, Tel. + 33-450 985 269 | Italy | Citizen Macchine Italia s.r.l., Via Campo Romano 11/13 – 24050 Spirano (BG), Italy, Tel. +39-035 877 738 | Spain | Egasca, S.A., Polígono Industrial Erisono 2, 20600 Eibar, Gipuzkoa, Spain, Tel. +34-943 200 300 | UK | Citizen Machinery UK Ltd., 1 Park Avenue, Bushey, WD23 2DA, UK, Tel. +44-1923 691 500