CHEVALIER®

Grinding / Turning / Milling

FSG-CNC Series

High Efficiency Precision CNC Profile Grinder

Heavy Duty CNC Creepfeed & Profile Grinder

FSG-H818CNC • FSG-B818CNC • FSG-C1224CNC

FSG-H/B818CNC • C1224CNC Series

High Efficiency Precision CNC Profile Grinder
Heavy Duty CNC Creepfeed & Profile Grinder

Advanced grinding cycles such as surface, plunge, pitch, side, profile, form, index, and creepfeed grinding significantly enhance the machine versatility.
These machines are designed to meet current and frture grinding requirements such as intricate profiles, mold components and are well suited for parts of aircraft, automobile, electronic, medical, machine tool, and defense industries.

FSG-H/B818CNC
High Efficiency Precision CNC Profile Grinder

- The FSG-H/B818CNC grinding machines are high precision, high efficiency multi purpose CNC Profile grinders. Column and wheelhead traverse on precision roller bearings and hardened and ground guideways that are pre-loaded and driven by a precision ballscrew, to provied excellent rigidity and precise positioning.
- Crossfeed and Elevating axes are positioned by precision ballscrews and an AC servo motor for providing superior accuracy and execellent longevity.
- FSG-H818CNC: The two step hydraulic table driven system can be set to low speed for creepfeed grinding or high speed for conventional grinding, to add the machine versatility. FSG-B818CNC: table is driven by a precision ballscrew and an AC servo motor, to provide precise positioning and achieve optimun speeds needed for creepfeed grinding.

FSG-C1224CNC
Heavy Duty CNC Creepfeed & Profile Grinder

- The FSG-C1224CNC grinding machine, with 30HP spindle motor, is a heavy duty, high precision, high efficiency, multi-purpose CNC creepfeed and profile grinder.
- Crossfeed and elevating axes are positioned by precision ballscrews and an AC servo motor for providing superior accuracy and execellent longevity. Coulmn travels on linear guideway system which provide precise positioning, high rigidity and smooth movement of the machine. Integrated machine structure with well designed ribs, the machine is suitable for heavy duty creepfeed grinding.
- SIEMENS 828D or FANUC 0iM controller provides full automation through programming for griding multi-shaped workpieces and complete the entire grinding processes. This includes rapid approacing, rough grinding , wheel dressing with auto compensation and fine grinding in one fully automatic cycle. With optional wheelhead mounted automatic rotary diamond dresser, the grinding wheel can be dressed always for better grinding result application, and the wheel dressing time can be reduced to minimum. So the machine grinding efficiency can be increased a lot.

Note: Machine shown with optional accessories.

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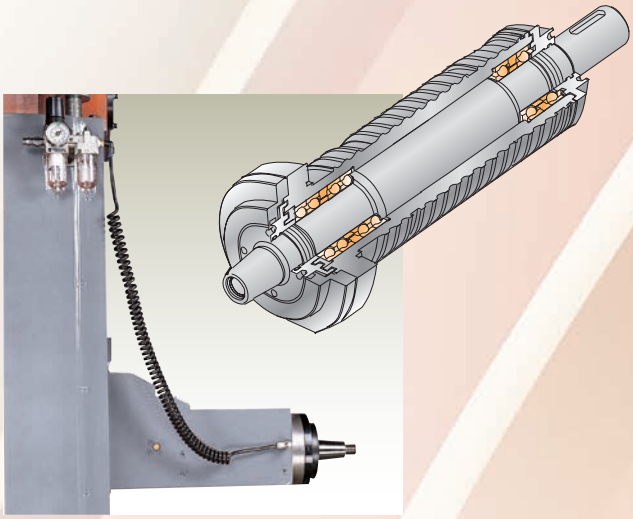
Machine Structure

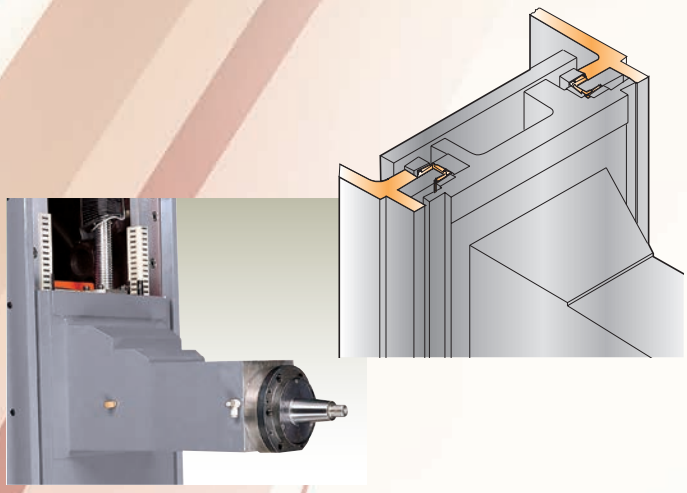
Spindle (Including Heat Emission Device)

Suppoted by six super precision angular contact beraings. Spindle can perform heavy duty grinding loads Spindle is air-cooled to minimize temperature increase and ensure spindle accuracy.



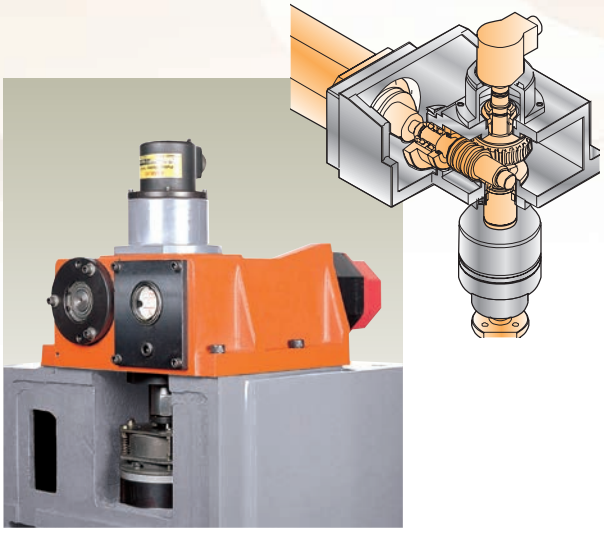
Elevating Guide Way

Wheelhead travels on hardened and ground guide ways, interfacing with adequately pre-loaded rollers. The wheelhead is driven by precise ballscrew for accurate positioning at 0.001mm (0.00005") minimum downfeed increment.



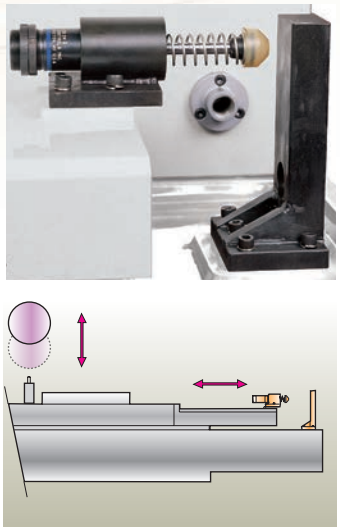
Elevating Encoder Device

Elevating encoder, mounted on the top of elevationg ballscrew, acting with clutch can directly encode the down feed amount, thus eliminating error, increasing accuracy, and extending longevity.



Automatic Dressing Function (H818CNC)

To reach the dressing position, a hydraulic buffer is used to ensure the positive stop of the table at exact position. Automatic wheel dressing with compensation is also included. (Diamond dresser is optional)



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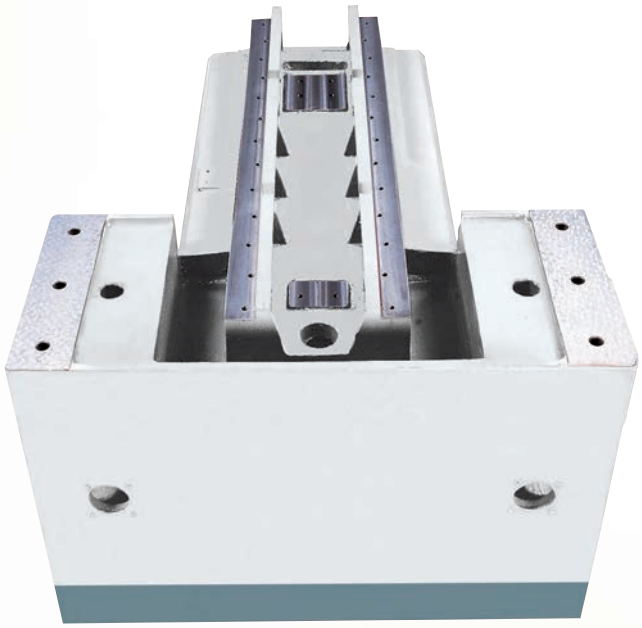
Machine Structure

Single Piece Base Casting

Specially designed single piece base casting offers superior rigidity and extends longevity.



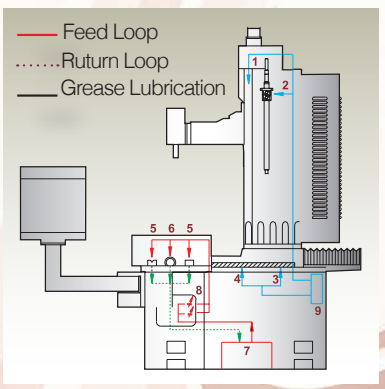
Coolant Drainage

The enlarged and properly sloped drainage through the upper machine base enables rapid coolant drainage needed to accommodate large volume of coolant flow during creepfeed grinding.

Lubrication System

Forced lubricant automatically flows to all guideways and mechanism that require lubrication. A pressure switch interlock prevents the spindle from running before lubrication pressures is established, and stops the machine if lubrication supply fails, enhancing the machines longevity and accuracy.

1. Column Slideways
2. Elevating Ballscrew
3. Base Guideways
4. Crossfeed ballscrew
5. Table Guideways
6. Ballscrew Rod
7. Lubricator
8. Flow Divider
9. Grease Gun



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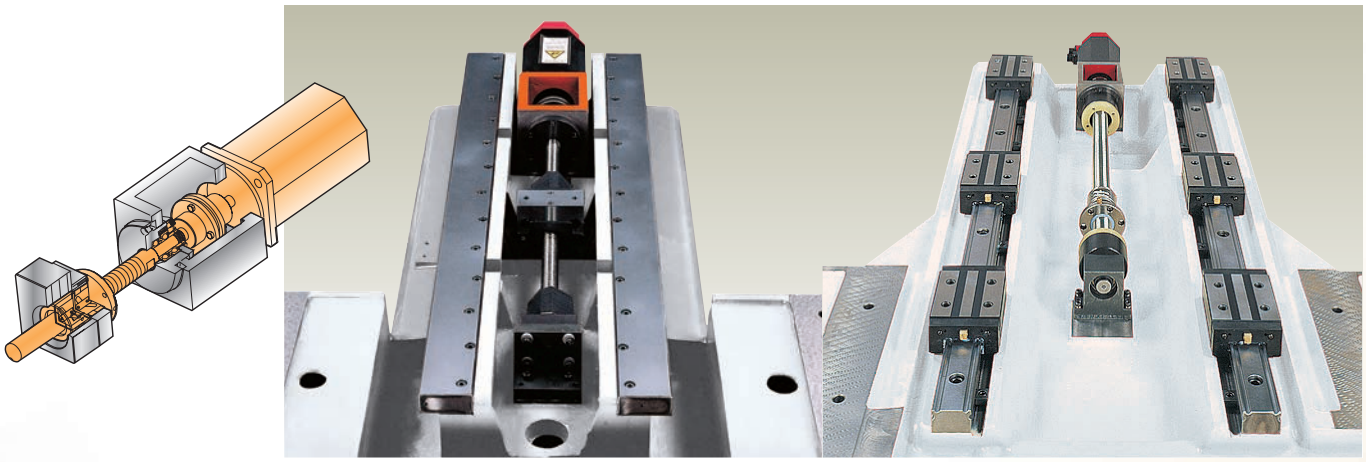
Machine Structure

Crossfeed Guideway System

FSG-H/B818CNC's column moves on hardened and ground guide ways, interfacing with adequately pre-loaded rollers. The guideway system of FSG-C1224CNC is composed of linear guideway system. And column driven by precision ballscrew and SIEMENS or FANUC AC Servo control system, providing precise in/out movement.

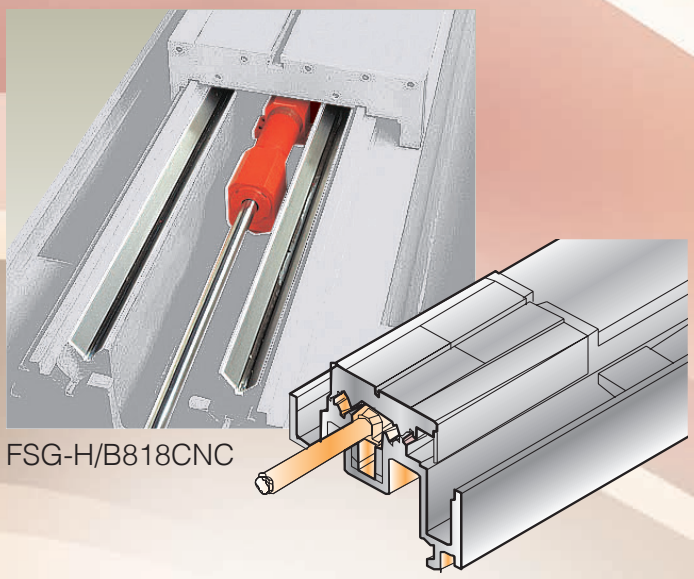


FSG-H/B818CNC

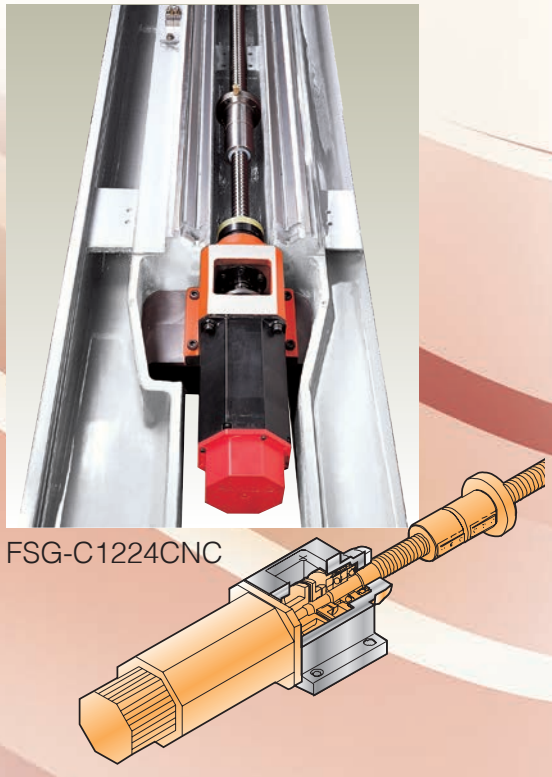
FSG-C1224CNC

Longitudinal Mechanism

Table travels on double-Vee guide ways coated with Turcite-B anti-friction material providing low friction and excellent longevity. FSG-H818CNC's table is driven by hydraulic system, capable of reaching speeds as low as 20 mm/min, to facilitate creepfeed grinding; FSG-B818CNC/C1224CNC is driven by precise ballscrew, this mechanism ensures positioning accuracy for creepfeed and heavy duty grindinig.



FSG-H/B818CNC



FSG-C1224CNC

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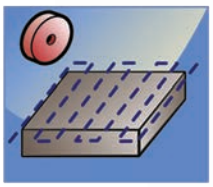
Control

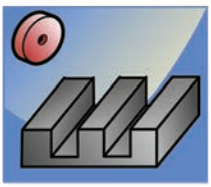
Display and Control Panel

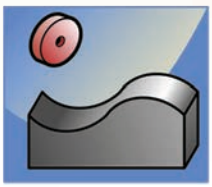
1. All executing function are well indicated. Main power, machine zero, end of program, magnetic chuck voltage, dressing, lubrication conditions are all shown by indicating LEDS.
2. The 8.4" TFT LCD color monitor position, program and working condition as well as self-displayed on the screen for the operator's convenience.
3. One piece soft-key keyboard not only dustproof and waterpppproof but also offers maintenance free features.
4. Easy to operate's switch coped with indicating lights, to assure positive operations.
5. For the operator's convenience, not only the magnetic force can be adjusted but also the demagnetizing time. (Optional)
6. With MPG, feedrate override switches and JOG buttons, manual operation becomes easy and convenient.

Auto Grinding Modes

SMART-III has four types of graphic conversational grinding modes. The new TaskLink mode enables the user to complete complex grinding tasks in one cycle.


Surface Grinding


Slice Grinding


Profile Grinding


TaskLink

Auto Dressing Modes

Conversational graphic automatic wheel dressing modes can be linked with any or all grinding modes.

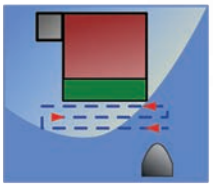


Table Type Single Tip Dresser

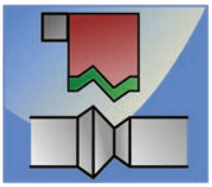
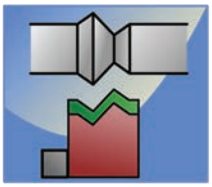
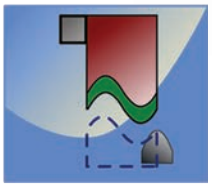


Table Type Diamond Roller


Over The Head Diamond Roller


Profile Dressing

Control

- SIEMENS 828D Control
- FANUC 0iM Control

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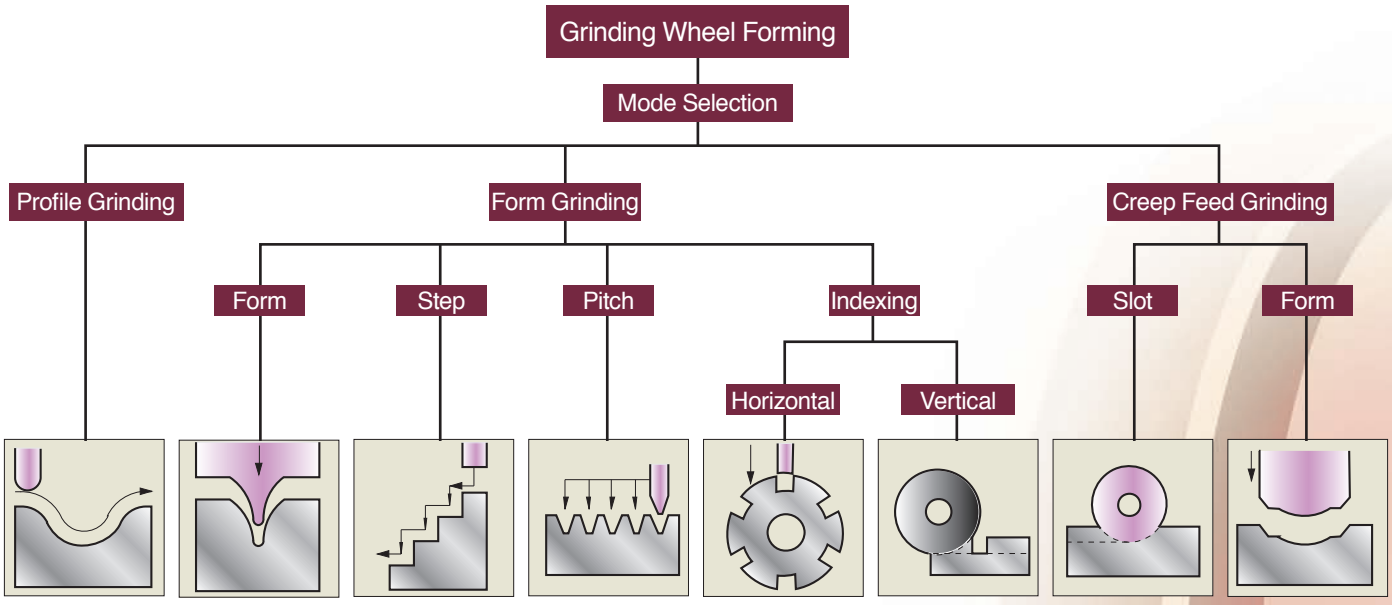
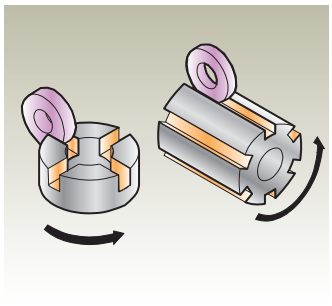
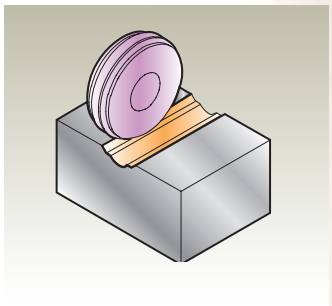
Grinding Mode



Indexing Grinding

By using horizontal or Vertical indexer or applicable holding fixture, machine can grind various indexing shapes and slot.



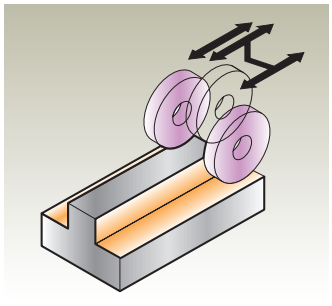


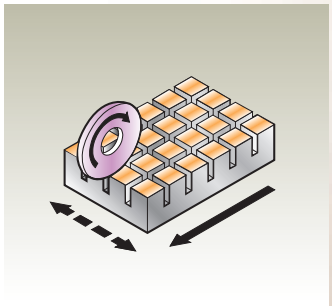
Heavy Duty Creepfeed Grinding

Creepfeed grinding can enhance efficiency for form and plunge grinding.

Step Grinding

Multi level surface can be ground in one grinding cycle.



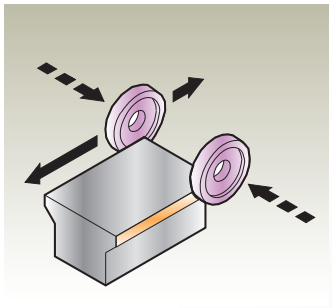


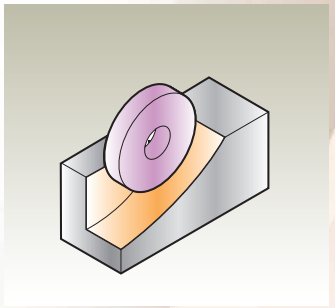
Slice Grinding

Thin slices can be creepfeed ground. Excellent results can be obtained when slicing ceramic materials.

Side Grinding

Both sides of workpiece can be ground in one cycle. Two sides of grinding wheel can be dressed and compensated automatically in one grinding cycle.





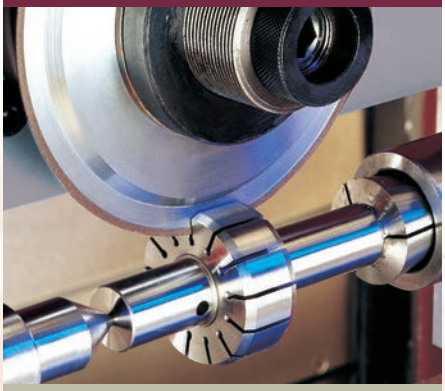
Punch Grinding

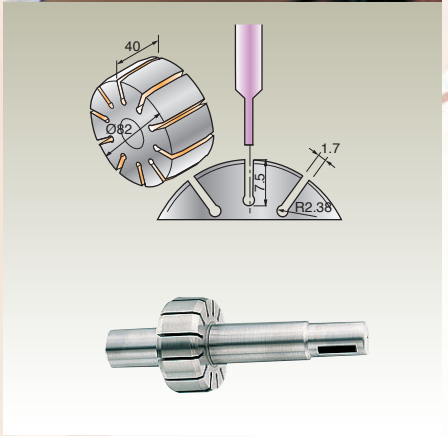
Various punch shapes can be creepfeed ground to enhance efficiency.

FSG-H/B818CNC Series

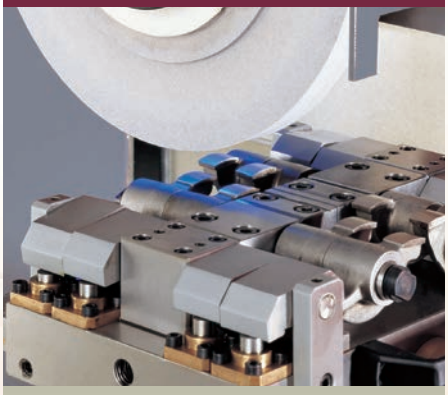
Applications

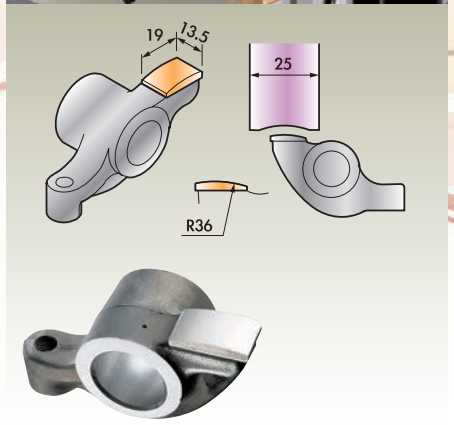
Pump Rotor
(Hardware Industry)



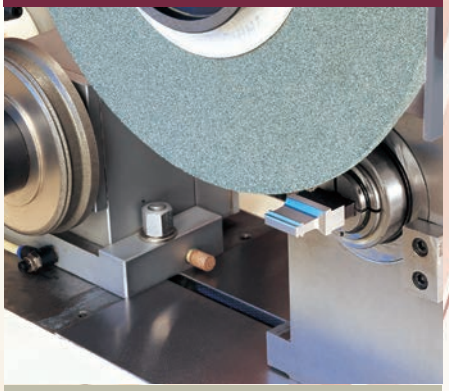


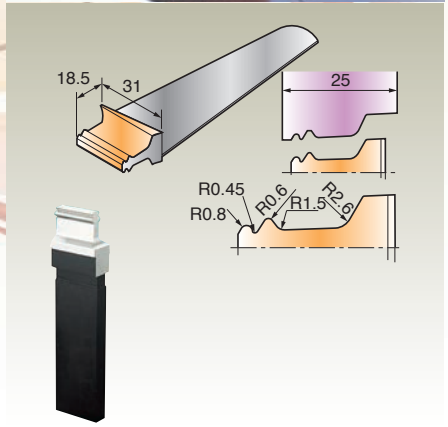
Rocker Arm
(Automobile Industry)



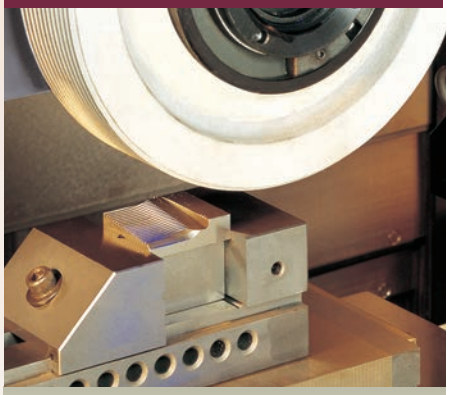


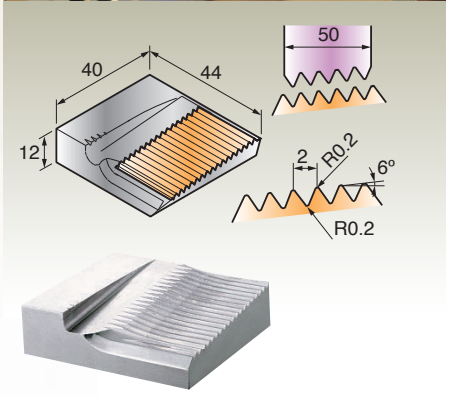
Turbine Blade
(Aerospace Industry)



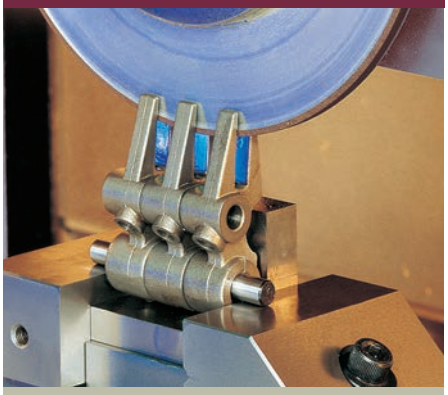


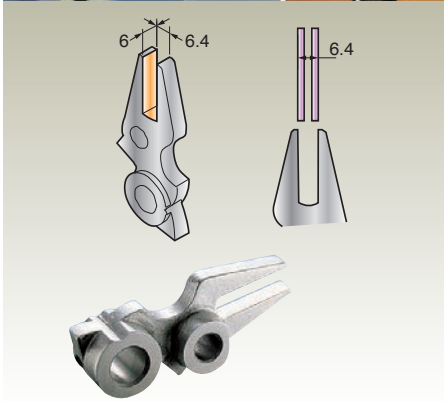
Thread Rolling Die
(Hardware Industry)



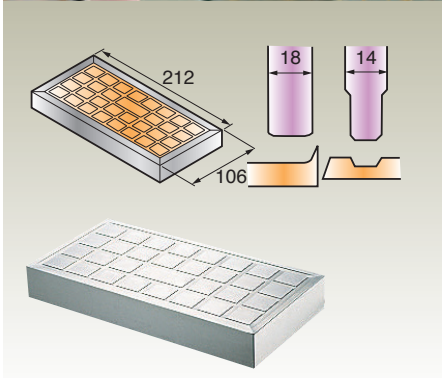


Textile Machine Linkage
(Textile Industry)





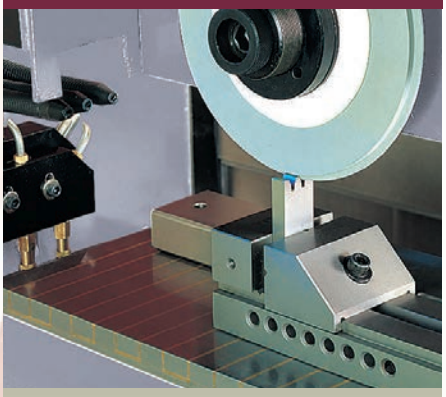
Tile's Mold
(Coustruction Industry)

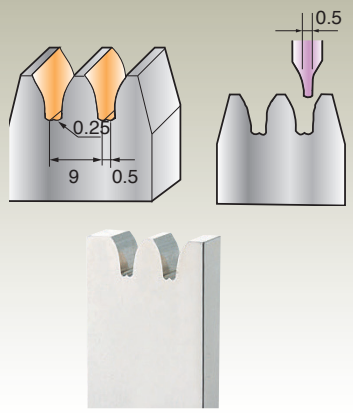


FSG-H/B818CNC • C1224CNC Series

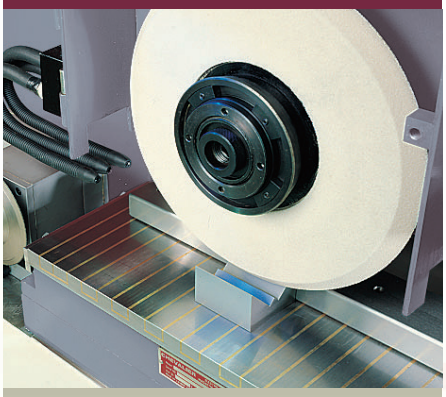
Applications

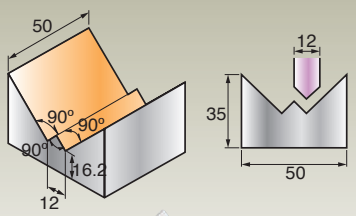
Terminal Press Mold
(Electical Industry)



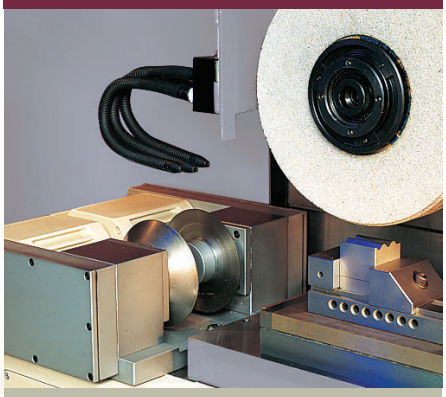


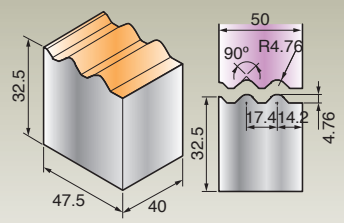
Terminal Press Mold
(Mold Industry)



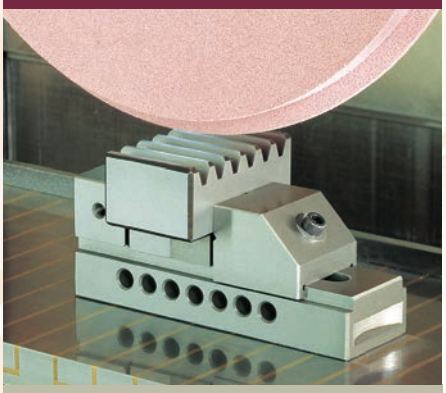


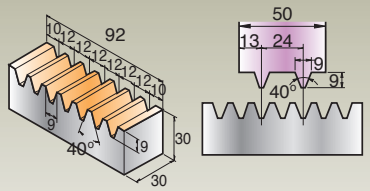
Press Mold
(Mold Industry)



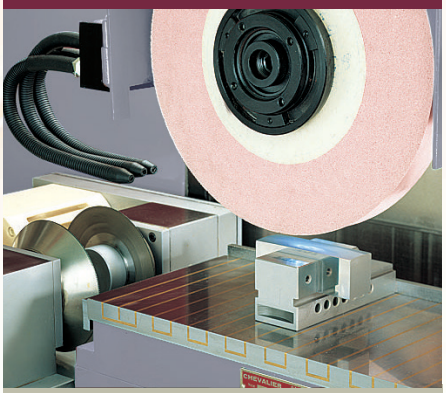


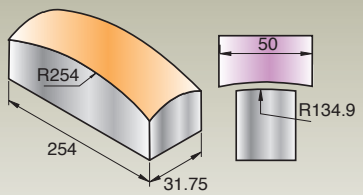
Rack
(Mechanical Industry)



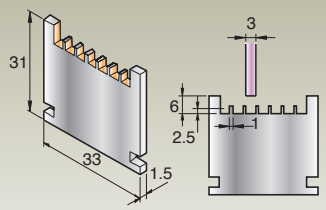


Tank Parts
(Defense Industry)





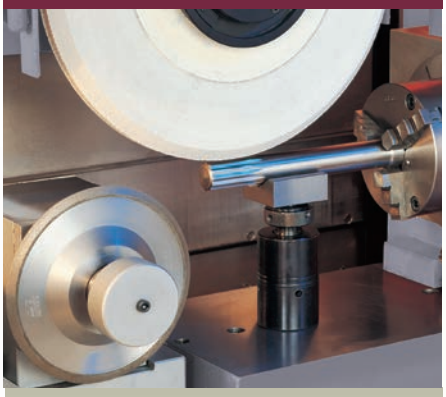
IC Punching Mould
(Electrical Industry)

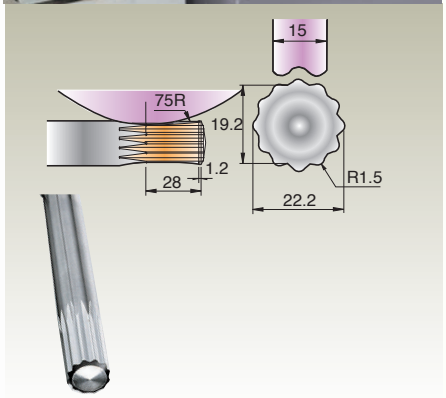


FSG-H/B818CNC • C1224CNC Series

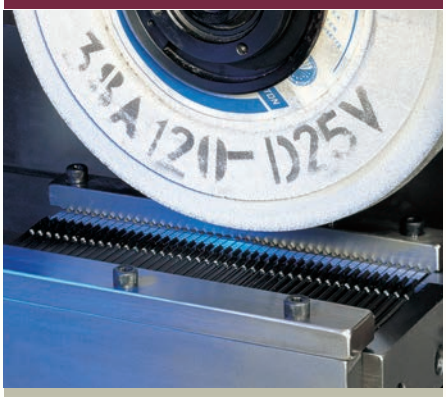
Applications

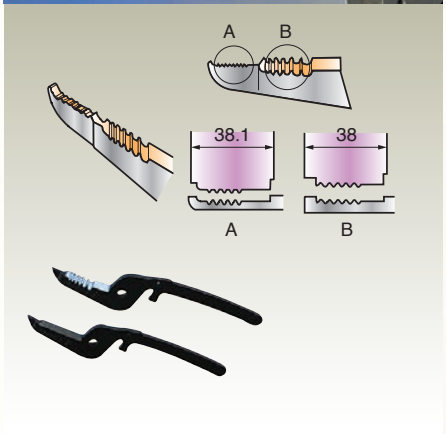
R-angel Punching Mold
(Hardware Industry)





Wire Stripper
(Hardware Industry)

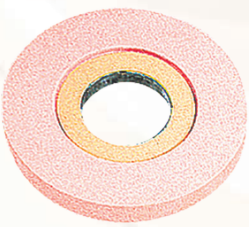




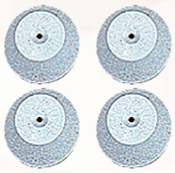
Standard Accessories

Tool box
- Touch-up paint
- Balancing arbor
- Wrench
- Diamond dresser with diamond
- Hex. wrench
- Hole plugs

Wheel flange



Grinding wheel



Levelling pads

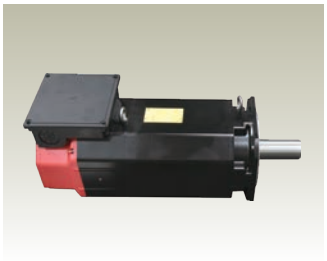
Levelling screws & nuts

Machine lamp

FSG-H/B818CNC • C1224CNC Series

Optional Accessories

Note: Items maked with" • " are recommended to be factory installed



• Spindle Motor

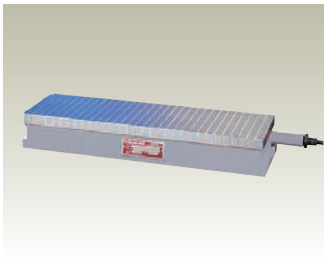
H/B818CNC
• 20HP

C1224CNC
• 50HP

Wheel Flange

H/B818CNC
Suitable for 305x76.2x31.75mm (12"x3"x1 1/4") grinding wheel
Clamping width: 22~ 32mm (7/8"~1 1/4")

C1224CNC
Suitable for 355.6x127x102mm (14"x5"x4")

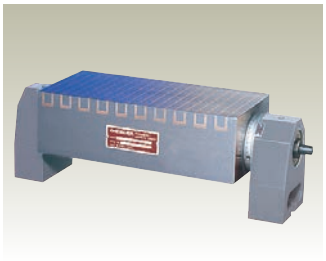


Electromagnetic Chuck

(To order chuck control is required.)

H/B818CNC / C1224CNC
• 200x450mm (Voltage: 110VDC)

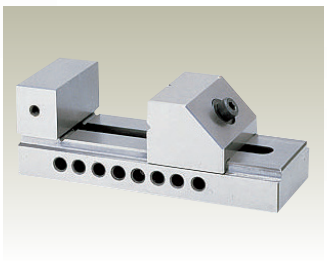
C1224CNC
• 300x600mm



Inclinable Electromagnetic Chuck (With Standard Pole Pitch)

(To order chuck control is required.)

B818CNC
• 200x300mm



Precision Vise

• 50x76mm (2"x3")
• 63x100mm (2 1/2"x4")
• 76x100mm (3"x4")
• 89x127mm (3 1/3"x5")
• 100x127mm (4"x5")

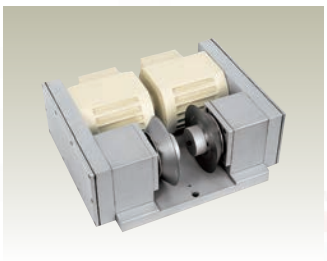


Table-Mounted Double diamond disc. dresser

(Diamond disc is not included)

H/B818CNC
Motor:1/4HP
Speed: 1750rpm (60HZ)
Roller Dia.: Max. 140mm (5 1/2")
Roller Dia.: Min. 90mm (3 1/2")
Clamping width: Max. 30mm (1 3/16")
Dia. of shaft: 35mm (1 3/8")

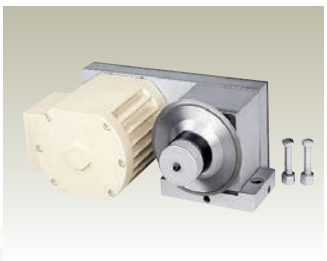
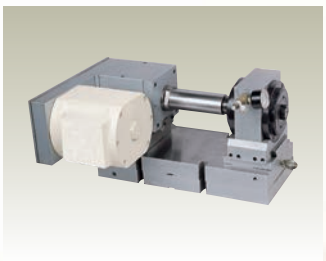


Table-Mounted single diamond disc. dresser

(Diamond disc is not included)

H/B818CNC
Motor: 1/4HP
Speed: 1750rpm(60HZ) / 1450rpm (50HZ)
Roller Dia.: Max. 140mm (5 1/2")
Roller Dia.: Min. 90mm (3 1/2")
Clamping width: Max. 50mm (2 1/8")
Dia. of shaft: 35mm (1 3/8")



C1224CNC
Motor: 1/4HP
Speed: 1750rpm (60HZ)/ 1450rpm (50HZ)
Roller Dia.: Max. 140mm (5 1/2")
Roller Dia.: Min. 90mm (3 1/2")
Clamping width: Max. 127mm (5")
Dia. of shaft: 45mm (1 4/5")

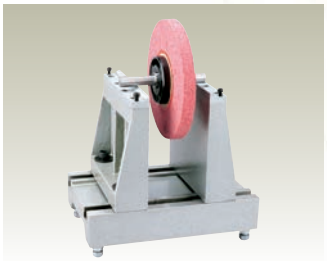
H/B818CNC / C1224CNC
Motor: 1kw AC SERVO
Speed: 2000rpm
Roller Dia.: Max. 140mm (5 1/2")
Roller Dia.: Min. 90mm (3 1/2")
Clamping width: Max. 200mm (8")
Dia. of shaft: 45mm (1 4/5") / 52mm (2")

Balancing Stand (Roller Type)

Suitable for 203-355mm(8"~14") wheel

Roller Balancing stand

C1224CNC
• Max. wheel Dia.: 508mm(20")



Balancing stand

C1224CNC
• Max. wheel Dia.: 406mm(16")

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Optional Accessories

Hydraulic Temperature regulator for spindle and disc dresser

Coolant capacity: 700 kcal/hr

Tower type of coolant system (for C1224CNC)

Volume :1250L
Extra high pressure pump: 4.5kg/cm²
Coolant Capacity: 66L/min

Chuck controller

Input Voltage: 140VAC
Output Voltage: 110VDC
(With variable holding power, auto demagnetization.)

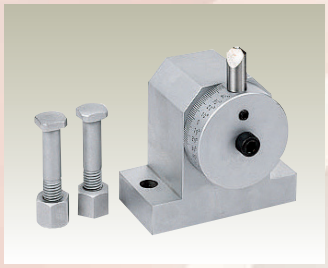
• Grinding Wheel Dynamic Balancing system

• CNC Controlled Horizontal indexer

(This indexer, driven by AC servo motor and cooperated with CNC controller.)

• Automatic door system for splash guard

(To order silent air compressor is required)



• Auto Retracting table mount dresser

• Oil Mist Collector

Coolant system with auto paper feeding device & Magnetic separator

(with 1 roll of paper)

H/B818CNC
- Volume: 250L
  Coolant Capacity: 1/4HPx2
  Pump: 80L/min
  Space: 1600x1100mm(63"x43")
  Height: 750mm(29 1/2")
- Medium pressure pump: 2.3kg/cm²
  Coolant Capacity: 66L/min
- Extra high pressure pump: 4.5kg/cm²
  Coolant Capacity:66L/min

C1224CNC
- Volume: 500L
  Extra high pressure pump: 4.5kg/cm²
  Coolant Capacity: 66L/min

Coolant system with auto paper feeding device

(with 1 roll of paper)

H/B818CNC
- Volume: 250L
  Coolant Capacity: 1/4HPx2
  Pump: 80L/min
  Space: 1600 x 1100mm(63"x43")
  Height: 750mm(29 1/2")
- Medium pressure pump: 2.3kg/cm²
  Coolant Capacity: 66L/min
- Extra high pressure pump: 4.5kg/cm²
  Coolant Capacity: 66L/min

C1224CNC
- Volume: 500L
  Extra high pressure pump: 4.5kg/cm²
  Coolant Capacity: 66L/min

• Wheelhead mounted automatic rotary diamond dresser with auto wheel dressing compensation

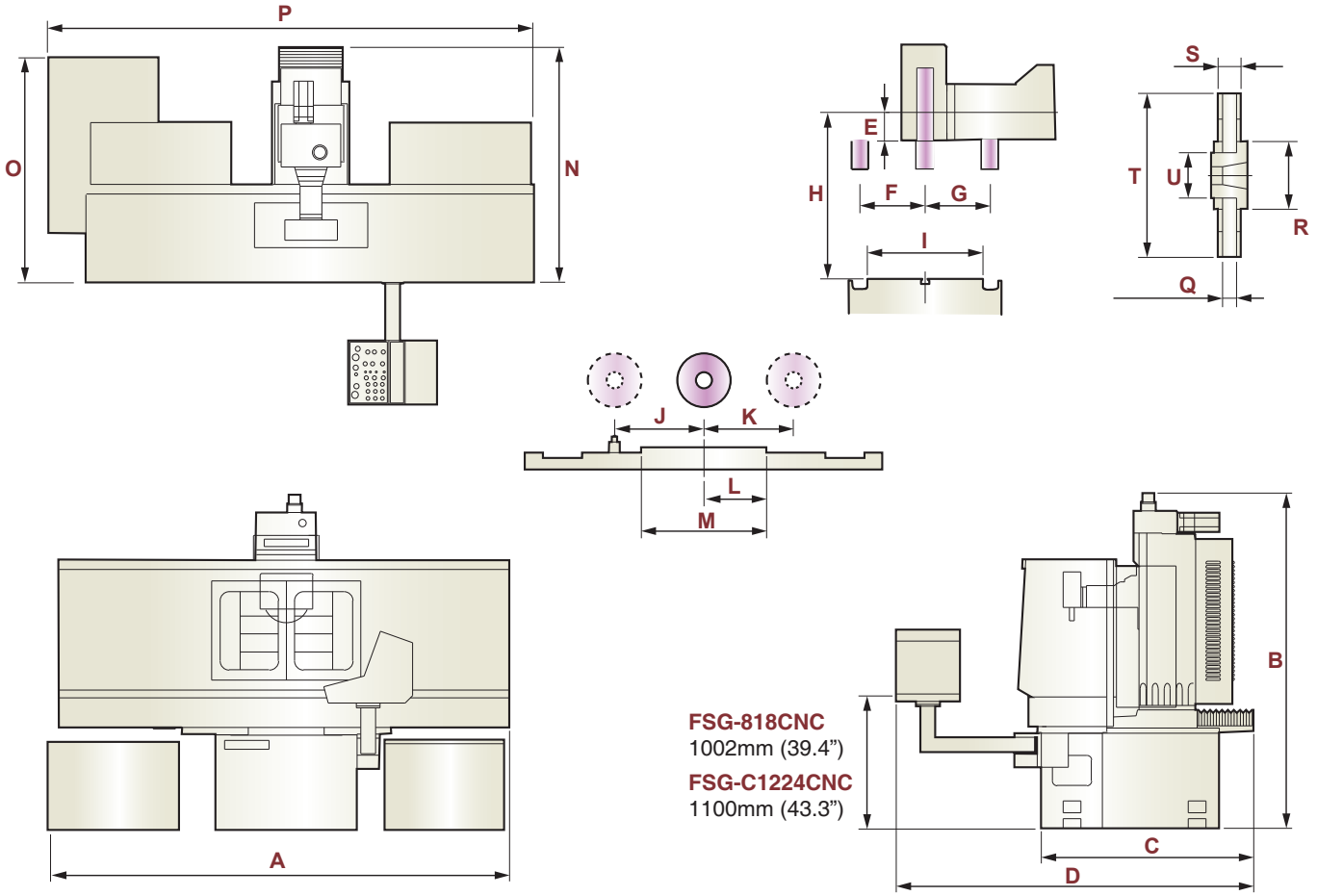
(Diamond roller is not included)

H/B818CNC
Moter: 1/4HP
Speed: 1750rpm(60HZ)/1450rpm (50HZ)
Roller Dia: Max. 100mm (3 7/8") Roller Dia: Min.90mm(3 1/8")
Clamping width: Max. 55mm (2 1/8")
Dia of shaft: 35mm (1 3/8")

C1224CNC(DIA-3)
Moter: 2HP
Speed: 1750rpm(60HZ), 1450rpm(50HZ)
Roller Dia: Max. 140mm
Spindle Speed : 930rpm(60Hz), 775rpm(50Hz)
Dia of shaft: 45mm

FSG-H/B818CNC • C1224CNC Series

Dimensional Drawings



unit: mm (")

Item	FSG-H818CNC	FSG-B818CNC	FSG-C1224CNC
A	3000 (118")		4000mm (157.5")
B	2290mm (90")		2660mm (104.7")
C	1700mm (67")		2020mm (79.5")
D	2800mm (110.2")		3065mm (120.7")
E	65mm (2.6")		86mm (3.4")
F	140mm (5.5")		203mm (8")
G	140mm (5.5")		203mm (8")
H	480mm (19")		610mm (24")
I	203mm (8")		305mm (12")
J	355mm (14")		406mm (16")
K	295mm (11.6")		406mm (16")
L	228.5mm (9")		305mm (12")
M	457mm (18")		610mm (24")
N	2100mm (82.7")		2255mm (88.8")
O	2300mm (90.6")		
P	3600mm (141.7")	3325mm (130.9")	3600mm (141.7")
Q	20~50mm (0.8"~2")		20~100mm (0.8~4")
S	50mm (2")		101.6mm (4")
T	305mm (12")		355.6mm (14")
U	76.2mm (3")		77mm (3.03")

FSG-H/B818CNC • C1224CNC Series

Specifications

Item		FSG-B818CNC	FSG-H818CNC	FSG-C1224CNC
Table	Table Size	203 x 457mm (8" x 18")		305 x 610mm (12" x 24")
	Max. Grinding Length	457mm (18")		610mm (24")
	Max. Grinding Width	203mm (8")		305mm (12")
	Max. Distance from Talbe urface to Spindle Centerline	480mm (19")		610mm (24")
	Max. table load	200 kgs (440 lbs)		420 kgs (920 lbs)
	T-slot (Size x Quantity)	12mm (0.5") x 1		14mm (0.6") x 1
Longitudinal Transverse Travel	Table Speed Infinitely Variable	10~15000 mm/min (0.032~49 fpm)	20~25000 mm/min (0.065~82 fpm)	10~15000 mm/min (0.032~49 fpm)
	Max. Travel	630mm (24.8")		810mm (32")
Cross Transverse Travel	Max. Travel	265mm (10.4")		400mm (16")
	Column Feed infinitely varible	3000 mm/min		0~3000 mm/min
	Least Increment Input	0.001mm (0.0001")		0.001mm (0.0001")
	Cross Feed, intermittent/stroke	(by NC Data)		(by NC Data)
Wheel Head Elevation	Least Increment Input	0.001mm (0.0001")		0.001mm (0.0001")
	Wheelhead Feed, Infinitely Variable	1000 mm/min (3 fpm)		0~1000 mm/min (0~3 fpm)
	Auto. infeed	(by NC Data)		(by NC Data)
Spindle	Speed	500~3500rpm		500~3500rpm
	Power Rating (AC SERVO)	SIEMENS: 9kw(11.7HP), Optional 17kw (22.1HP) FANUC: 11kw(15HP), Optional 15kw (20HP)		SIEMENS: 17kw(22.1HP), Optional 37kw(48.1HP) FANUC: 22kw(30HP), Optional 37.5kw (50HP)
Grinding Wheel	OD x Width x Bore	Ø305 x 31.75 x Ø76.2mm (Ø12" x 1.3" x Ø3")		Ø365 x 102 x Ø127mm (Ø14" x 4" x Ø5")
Rated Power, Approx.		SIEMENS: 15.3kW(19.9HP), Optional 23.3kW (30.3HP) FANUC: 15kW (20HP), Optional 18.7kW (25HP)		SIEMENS: 24.7kW (32.1HP), Optional 44.7kW (58.1HP) FANUC: 42kW (56HP), Optional 54kW (76HP)
Machine Size	Floor Space (L x W x H)	3000 x 3400 x 3250mm (118" x 134" x 92")		4000 x 2940 x 2660mm (158" x 116"x105")
	Weight, Approx.	3950kgs (8708 lbs)		9000kgs (19800 lbs)

*All content is for reference only and may be subject to change without notice or obligation.

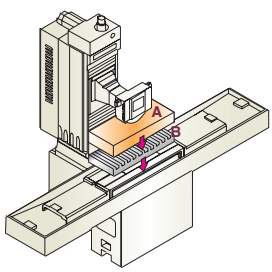
Permissible Load of Machine

unit: kg (lbs)

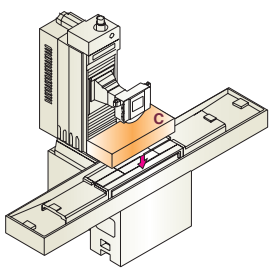
The total suggested maximum workloads of table are shown as follows:

A= Workpiece **B**=Magnetic Chuck **C**=A+B

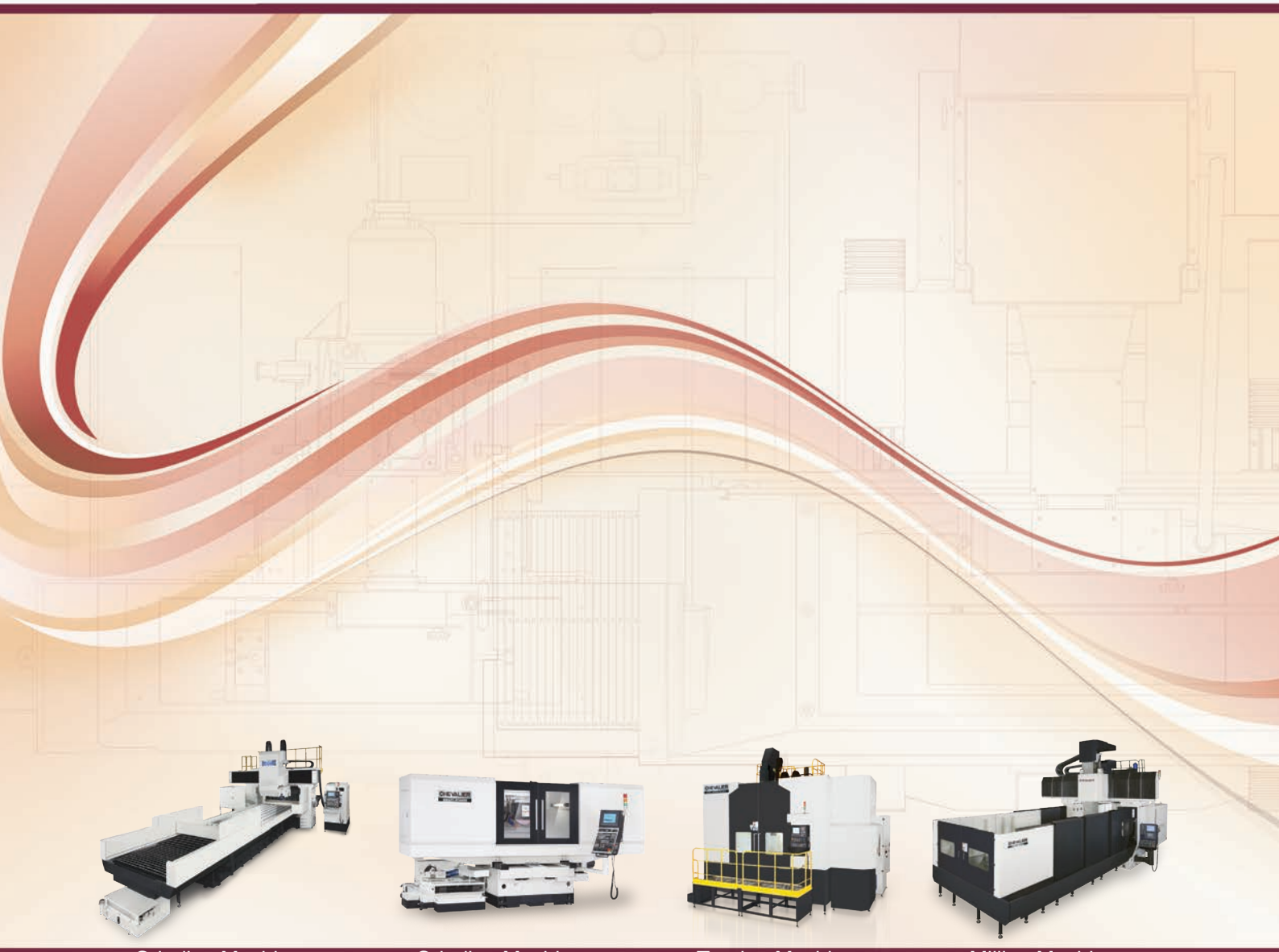
Item	H/B818CNC	C1224CNC
A	165 (363)	314 (690)
B	35 (77)	106 (233)
C	200 (440)	420 (924)



Grinding with Magnetic Chuck



Grinding without Magnetic Chuck



Grinding Machine | Grinding Machine | Turning Machine | Milling Machine

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