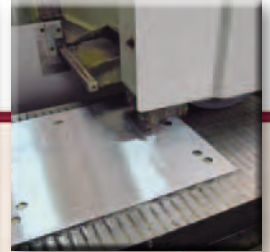
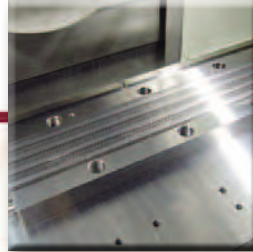


CHEVALIER®

Grinding / Turning / Milling



FSG-ADIII • ADS Series
Column Type High Precision 3-Axes
Automatic Surface Grinder
FSG-2040ADIII • 2060ADIII
FSG-2440ADS • 2460ADS • 2480ADS

FSG-2040ADIII • 2060ADIII**FSG-2440ADS • 2460ADS • 2480ADS****COLUMN TYPE HIGH PRECISION 3-AXIS AUTOMATIC SURFACE GRINDER****■ Programmable Controlled Grinding Machine**

The machine with micro-processor is programmed to perform rough grinding, fine grinding sparkout passes, automatic overwheel dressing and compensation for wheel dress amount. After grinding, table can be set to park either left end or right end. Spindle can be set to stop running or continue running and the wheelhead can also be set to lift up to the start or the reference point after grinding cycle has finished. The machine is suitable for mass production.

■ Precision Spindle And Rigid Elevating Guideways

The rigid wheelhead houses a large diameter cartridge type spindle supported by six super precision Class 7 (P4) permanently lubricated angular contact ball bearings (four pieces for the 20 series). The balanced spindle motors are air cooled to ensure optimum surface finishes and maintain superior accuracy.

■ Optional Automatic Wheel Dressing With Compensation

The machine efficiency is maximized by the automatic dressing with automatic dressing compensation during rough and/or fine grinding and at the end of rough grinding. This allows the machine to run unattended and reduces machining costs.

■ Completely Supported Guideways

Extended base guideways for crossfeed and longitudinal travel enhance the machines rigidity and stability in addition to upgrading the machines accuracy and longevity. The permissible loads can be completely supported and table overhang is eliminated.

■ Rigid Construction

All essential casting is made of high grade dense cast iron which has been stress relieved and ribbed with honeycomb ribs to enhance rigidity and increase stability, which increases cutting capability.

■ Crossfeed Stroke Setting

The crossfeed travel is set with push buttons on the control panel. This new break through in design is more efficient and user-friendly.

■ Wheelhead Driven By AC Servo Motor

The wheelhead that is coated with Turcite-B travels on the hardened and ground column ways. The wheelhead is precisely positioned by a hardened and ground leadscrew (20 series) or precision ballscrew (24 series). An AC servo motor provides high torque, high speed and accurate positioning with a minimum increment of 0.001mm (0.0001"). A manual pulse generator (MPG) is standard for easy operation.

■ Crossfeed Speed Control

A frequency converter on the FSG-20 ADIII series controls crossfeed continuous moving speed. The crossfeed of the FSG-24 ADS series is combined with a servo motor and is controlled by a ratio switch to obtain a better grinding surface finish and better dressing result.

**FSG-2060ADIII**

Note: Machine shown with optional accessories

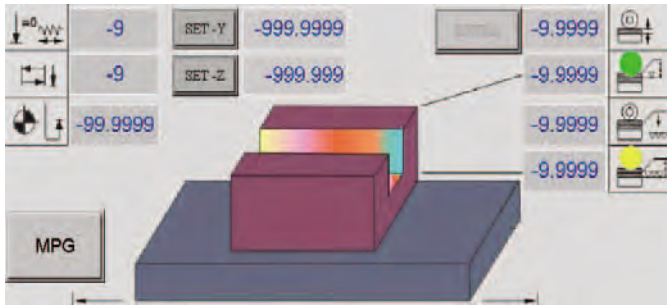
24ADS Series

CONTROLLER FEATURES

3

XIS AUTOMATIC SURFACE GRINDER

GRINDING MODE DISPLAY ON THE CONTROLLER



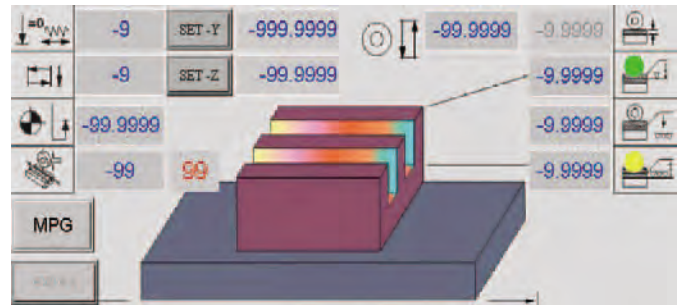
Plunge Grinding Mode



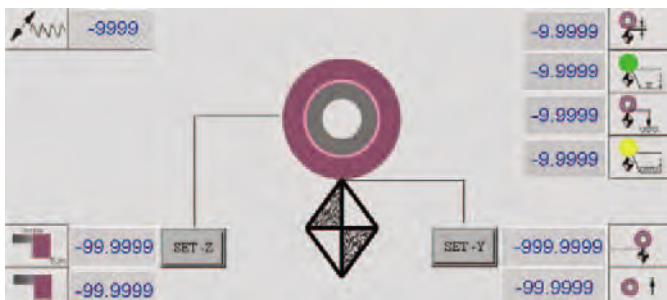
Surface Grinding Mode



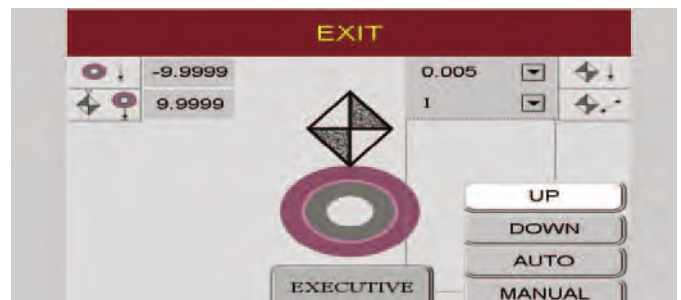
Crisscross Grinding Mode



Multi-Groove Grinding Mode (24ADS only)



Dressing from Table



Automatic overhead dresser with compensation (Option)

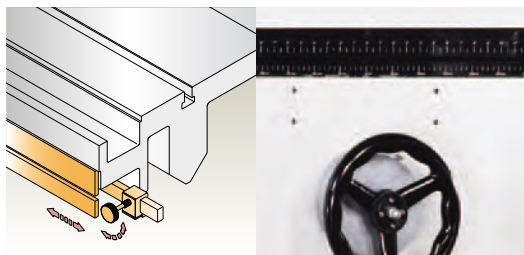
20 Series

Spindle

The spindle is supported by five pieces of Class 7 (P4) (six pieces for 24 series) super precision angular contact ball bearings, which have been accurately measured, selected and preloaded and assembled in a temperature controlled clean room. The spindle is permanently lubricated and requires no maintenance. The large diameter spindle is precisely balanced to ensure accuracy.

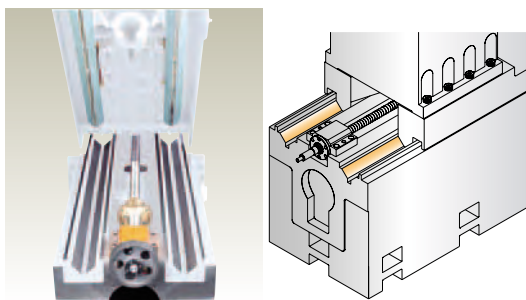
Longitudinal Stroke Adjustment Device

Table reversal is controlled by proximity switches which never make contact. It is simple for operator to adjust table reversal to minimum required stroke, thereby grinding less air and reducing grinding time. Stroke adjustment protection plate is designed to allow table stroke to be adjusted safely.



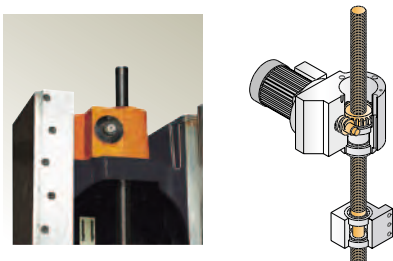
Crossfeed Guideways

Double "V" guideways are ground and laminated with Turcite-B then precisely hand scraped. Continuous lubrication is provided to ensure smooth and precise crossfeed increments.



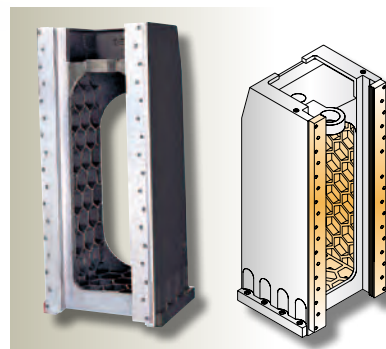
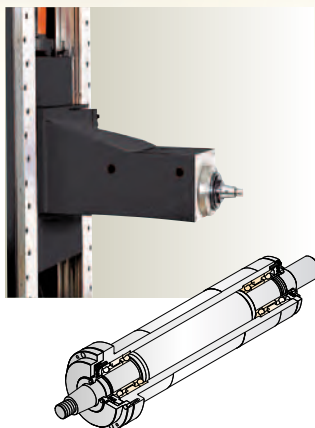
Elevating Transmission Mechanism

The wheelhead travelling on a preloaded hardened and ground guideway system is driven by a hardened and ground leadscrew and an AC servo motor providing high torque, speed and accurate positioning with minimum increment of 0.001mm (0.0001"). A manual pulse generator (MPG) is standard for easy operation.



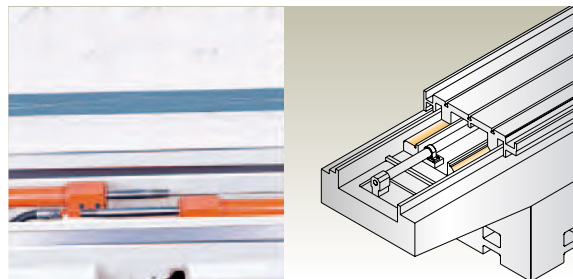
Column

The column is made of high grade dense cast iron which has been stress relieved and ribbed with honeycomb type ribs to enhance rigidity and increase stability thereby increasing the grinding performance.



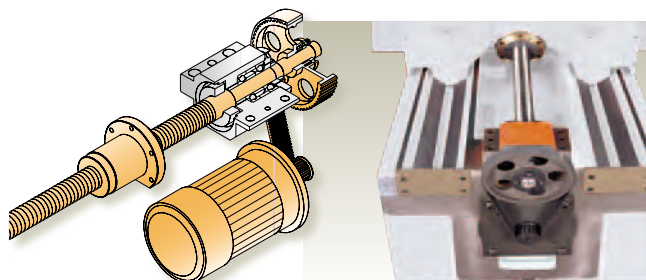
Longitudinal Slide Way

One "V" and one flat table guideways are laminated with Turcite-B and precisely hand scraped to ensure high accuracy. Continuous lubrication is provided to assure smooth stick-slip free movement of the table and accurate positioning.



Crossfeed Transmission Mechanism

Enlarged precision leadscrew with backlash adjustment device is driven by an AC motor. The encoder type stroke setting key allows crossfeed reversal points to be set from operator's control panel, thereby working efficiency is increased.



24ADS Series

MACHINE CONSTRUCTION

5

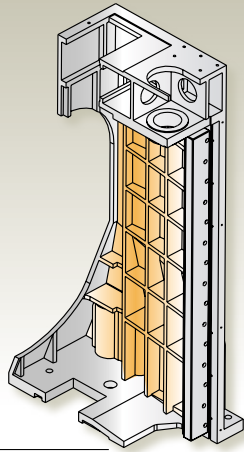
XIS AUTOMATIC SURFACE GRINDER

24 Series



Stable structure

The column is made of high grade dense cast iron which has been stress relieved. With ribbed and computer-analyzed structure, the stability and rigidity is greatly increased. Spindle travels on hardened and ground square ways, and is driven by precision ballscrew and an AC servo motor for heavy grinding and smooth and accurate movement.



Crossfeed Slideway

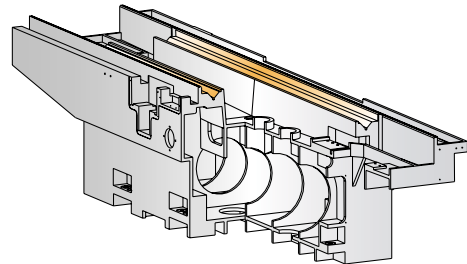
Hardened and ground guideways are laminated with Turcite-B, then precisely hand scrapped. Continuous lubrication is provided to assure smooth stick-slip free movement of the table and accurate positioning.



Longitudinal Slideways

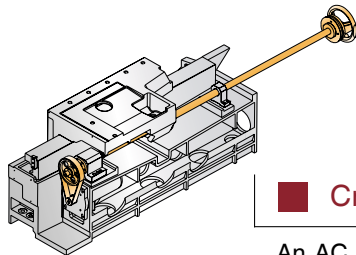
With double "V" guideways, which are laminated with turcite-B anti-friction material, for smooth and stable longitudinal movement.

The table is full supported on the well designed front base of machine; thus, the accuracy is greatly increased.



Crossfeed Transmission Mechanism

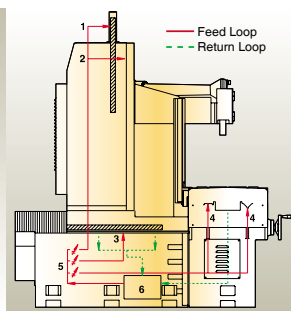
An AC servo motor and the ballscrew drives the column in a linear motion. The encoder type stroke setting key allows the crossfeed reversal points to be set from operator's control panel, which increases working efficiency.



Automatic Lubrication System(20 & 24 series)

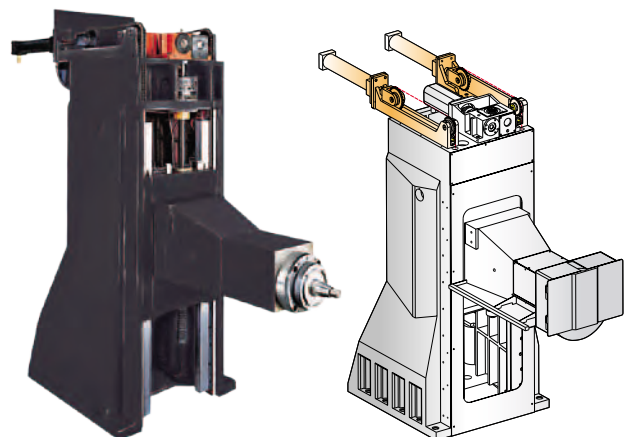
Equipped with a central continuous lubrication system. A warning light will illuminate if oil pressure drops below preset pressure.

1. Elevating leadscrew
2. Column guideways
3. Cross guideways
4. Table guideways
5. Flow divider
6. Lubricator



Spindle Counter Weights Balance System

Hydraulic counter weights balance system is installed to eliminate backlash and wear of elevating screws.



Elevating Transmission Mechanism

Note: Items marked with • are recommended to be factory installed

**MACHINE LAMP**

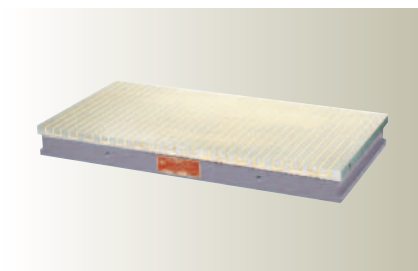
B01-0903X
(12V, 50W)

**DIAMOND DRESSER**

B03-0401X
(1.0 Carat)

**WHEEL FLANGE**

B05-0401X
Suitable for 355x127x50mm
(14"x5"x2")
grinding wheel Clamping width:
22~38mm(7/8"~11/2")

**ELECTROMAGNETIC CHUCK**

B09-1001X (2040)
500x1,000mm(19 5/8"x 39 3/8")
B09-1002X (2060)
500x1,500mm(19 5/8" x 59")
(Voltage: 110VDC)

* To order **B23-0705X** chuck control is required.

**PARALLEL DRESSING ATTACHMENT (HYDRAULIC TYPE)**

• **B13-1001X**
Max.OD: 355mm(14")
Mini OD: 235mm(9.3")
Max. Length: 60mm(2.4")

**OVERWHEEL PARALLEL DRESSER WITH AUTOMATIC DRESS COMPENSATION**

• **B13-1002X**
Max. OD: 355mm(14")
Mini OD: 235mm(9.3")
Max. Length: 60mm(2.4")

**BALANCING STAND WITH LEVELLING BUBBLE**

B15-0301X
Max. Dia: 355mm(14")
Max. Width: 50mm(2")

BALANCING STAND(ROLLER TYPE)

B15-0702X
Max. Dia: 508mm(20")

**BALANCING STAND (ROLLER TYPE)**

B15-0601X
Max. Dia: 355mm(14")

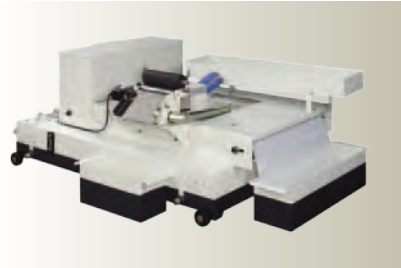
**COOLANT SYSTEM WITH AUTO PAPER FEEDING DEVICE (With 1 Roll of Paper)**

B17-1002X
Volume: 120L
Paper feeding motor: 25W
Pump: 1/8HP
Coolant Capacity: 20L/min
Space: 1,450x620mm(57" x 24 3/8")
Height: 760mm(30")

24ADS Series

OPTIONAL ACCESSORIES(20 Series) 7

XIS AUTOMATIC SURFACE GRINDER



COOLANT SYSTEM WITH AUTO PAPER FEEDING DEVICE & MAGNETIC SEPARATOR (With 1 Roll of Paper)

B17-1003X

Volume: 120L

Paper feeding motor: 25W

Pump: 1/8HP

Coolant Capacity: 20L/min

Space: 1,450x620mm(57" x24 3/8")

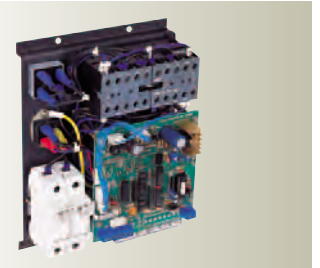
Height: 760mm (30")



WATER BAFFLE

• B19-1001X (2040)

• B19-1002X (2060)



CHUCK CONTROLLER

• B23-0704X

Input Voltage: 135VAC

Output Voltage: 110VDC 10A

* With variable holding power, auto demagnetization

* Must be ordered with electro-magnetic chuck



SPINDLE MOTOR

• B31-1001X

(10HP, 4P) (2040)

• B31-1003X

7.5HP, 6P for 508mm(20") wheel



CROSSFEED BALLSCREW

• B37-1001X (metric)

• B37-1002X (inch)



FREQUENCY CONVERTER

• B48-10011

(7.5HP) (Voltage: 200V-230V) (2040)

• B48-10021

(7.5HP+Transformer) (Voltage: 480V-575V, 240V, 346V) (2040)

• B48-10031

(10HP) (Voltage:200V-230V) (2060)

• B48-10041

(10HP+Transformer) (Voltage: 480V-575V, 240V, 346V) (2060)

• B48-10051

(7.5HP) (Voltage: 380V-415V, 440V, 460V) (2040)

• B48-10061

(10HP) (Voltage: 380V, 415V, 440V, 460V) (2060)



HYDRAULIC TEMPERATURE REGULATOR

• B42-1001X(HBO-1000PSB)

Cooling capacity: 4,500 kcal/hr/60Hz

• B42-1002X(HBO-600PSB)

Cooling capacity: 2,100 kcal/hr/60Hz

Note: Items marked with • are recommended to be factory installed

**MACHINE LAMP**

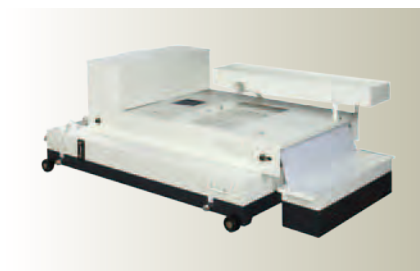
B01-0702X
(24V, 50W)

**DIAMOND DRESSER**

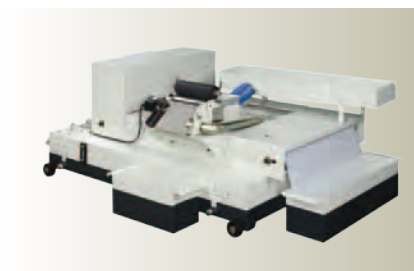
B03-0701X
(1.0 Carat)

**WHEEL FLANGE**

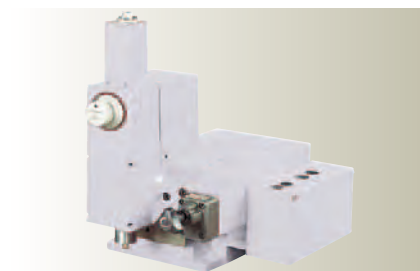
B05-0701X
Bore size: 127mm(Ø5")
Clamping width:
43~50mm(1.7"~2")

**COOLANT SYSTEM WITH AUTO PAPER FEEDING DEVICE**

B17-0701X
Volume: 250L
Pump: 1/2HP
Coolant Capacity: 120L/min
Space: 1,600x1,100mm(63"x43")
Height: 750mm(29 1/2")

**COOLANT SYSTEM WITH AUTO PAPER FEEDING DEVICE & MAGNETIC SEPARATOR**

B17-0702X
Volume: 250L
Pump: 1/2HP
Coolant Capacity: 120L/min
Space: 1,600x1,100mm(63"x43")
Height: 750mm(29 1/2")

**AUTO OVER-THE-WHEEL DRESSER with AUTO DRESSING COMPENSATION**

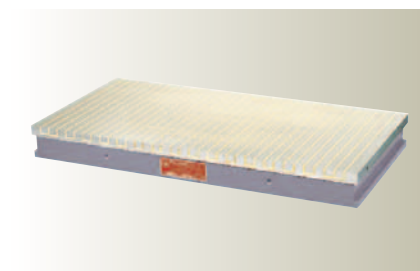
• **B13-0708X**
Suitable for 406mm (16") grinding wheel Max.
OD: 406mm(16")
Mini OD: 236mm(9.3")
Max. Length: 76mm(3")

**SPINDLE MOTOR**

• **B31-0701X**
25HP/4p, 1,700rpm/60cy,
1,400rpm/50cy
• **B31-0705X**
15HP/6p, 1,200rpm/60cy,
1,000rpm/50cy for Ø508mm
(Ø20") wheel

**FREQUENCY CONVERTER**

• **B48-07081**
(25HP) (Voltage: 380V-460V)
• **B48-07061**
(25HP) (Voltage: 200V-230V)
• **B48-07011**
(15HP) (Voltage: 200V-230V)
• **B48-07021**
(15HP) (Voltage: 240V, 346V, 480V)
• **B48-07031**
(15HP) (Voltage: 380V-460V)

**ELECTROMAGNETIC CHUCK**

B09-0701X
600x1,000mm x 1pc
(24"x39 3/8" x 1pc)
B09-0702X
600x1,500mm x 1pc
(24"x59" x 1pc)
(Voltage: 110VDC)
B09-0704X
600x1,000mm x 2pcs
(24"x39 3/8" x 2pcs)
*To order **B23-0704X** chuck control is required.

24ADS Series

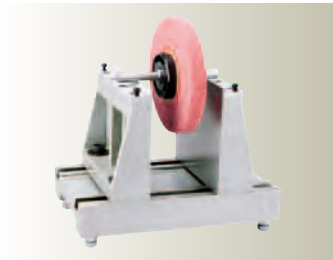
OPTIONAL ACCESSORIES(24 Series) 9

XIS AUTOMATIC SURFACE GRINDER



GRINDING WHEEL DYNAMIC BALANCER

• B44-0703X(SBS)



GUILDWAY TYPE BALANCING STAND

B15-0703X



ROLLER BALANCING STAND

B15-0702X

Max. Dia: 508mm(20")



HYDRAULIC TEMPERATURE REGULATOR

• B42-0801X

Volume: 50L



CHUCK CONTROLLER

• B23-0704X

Input Voltage: 135VAC Output Voltage: 110VDC 10A, with variable holding power, auto demagnetization

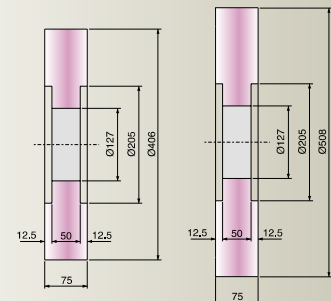
* Must be ordered with electro-magnetic chuck



GRINDING WHEEL

5122-10411630

Ø406 x 75 x Ø127mm
(Ø16" x 3" x Ø5")
Double recessed



5122-10412030

Ø508 x 75 x Ø127mm
(Ø20" x 3" x Ø5")
Double recessed

STANDARD ACCESSORIES

Note: The items marked "•" with are stored in the tool box.



1. Tool box
2. Wheel flange
3. Grinding wheel
- 4. Locking nut
- 5. Wheel flange extractor
- 6. Balancing arbor
7. Hook spanners
8. Wrench
- 9. Fuse
- 10. Touch-up paint
11. Levelling pads
12. Levelling screws & nuts
13. Splash guard
14. Hydraulic temperature regulator (for 24 series)
15. Water baffle (for 24 series)

PERMISSIBLE LOAD OF MACHINE

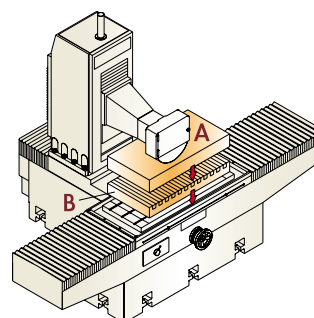
The total suggested maximum loads of working table are shown as follows

A = Workpiece

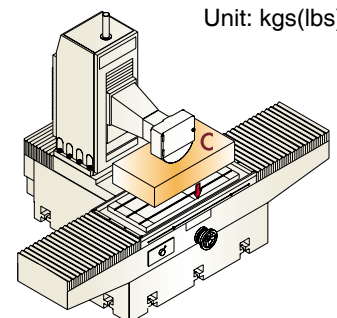
B = Magnetic chuck

C = A + B

MODEL	2040ADIII	2060ADIII	2440ADS	2460ADS	2480ADS
A	900 (1,980)	1,100 (2,420)	1,120 (2,464)	1,320 (2,904)	1,240 (2,728)
B	270 (594)	440 (968)	380 (836)	480 (1,056)	760 (1,672)
C	1,170 (2,574)	1,540 (3,388)	1,500 (3,300)	1,800 (3,960)	2,000 (4,400)

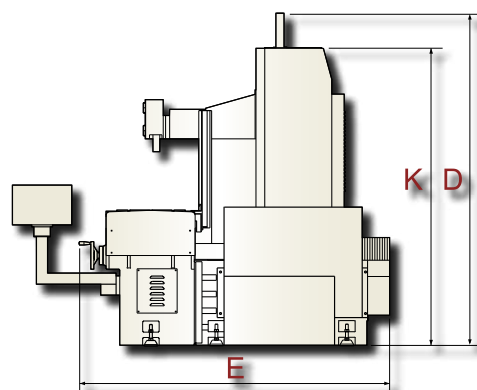
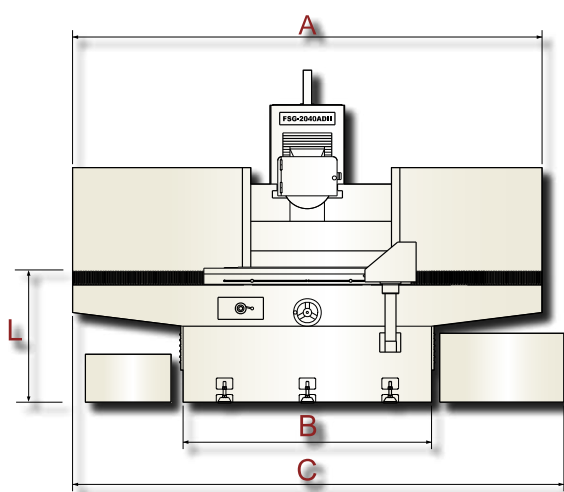
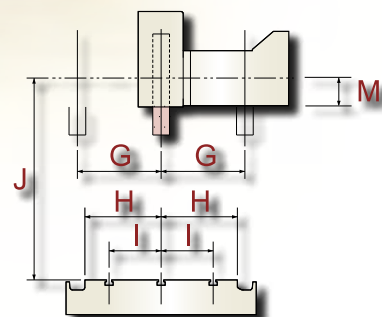
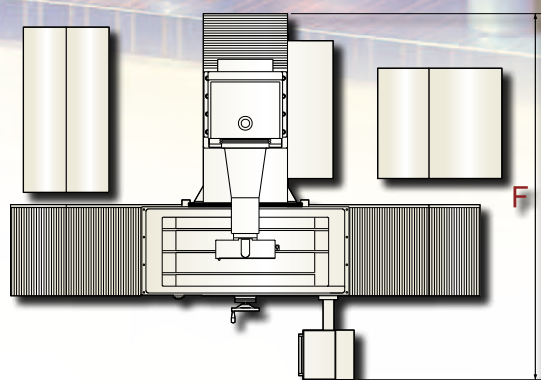


Grinding with
Electromagnetic Chuck



Grinding without
Electromagnetic Chuck

Unit: kgs(lbs)



Unit: mm(")

Description	2040ADIII	2060ADIII	2440ADS	2460ADS	2480ADS
A	3,400mm (133 7/8")	4,600mm(181 1/8")	3,500mm(137 3/4")	4,500mm(177 1/4")	6,000mm(236 1/4")
B	1,800mm(70 7/8")	2,800mm(110 1/4")	2,100mm(82 3/4")	3,100mm(122")	4,100mm(161 3/8")
C	3,810mm(150")	4,953mm(195")	3,870mm(152 3/8")	4,870mm(191 3/4")	6,120mm(241")
D	2,719mm(107")		2,780mm(109 3/8")		
E	2,175mm(85 5/8")		2,855mm(112 3/8")		
F	2,810mm(110 5/8")		3,660mm(144 1/8")		
G	280mm(11")		295mm(11 3/5")		
H	280mm(11")		305mm(12")		
I	160mm(6 5/16")		210mm(8 1/4")		
J	730mm(28 3/4")		Max. 850mm(33 1/2"), Min. 170mm(6 3/4")		
K	2,310mm(91")		N/A		
L	990mm(39")		880mm(34 11/16")		
M	95mm(3 3/4")		110mm(4 5/16")		

Notice: The manufacturer reserves the right to modify the design, specifications, mechanisms....etc. of the machine without notice.
All content is for reference only and may be subject to change without notice or obligation.

DISCRIPTION	FSG-2040ADIII	FSG-2060ADIII	FSG-2440ADS	FSG-2460ADS	FSG-2480ADS
Capacity					
Max. Grinding Length-Longitudinal	1,000mm (40")	1,500mm (59")	1,000mm (40")	1,500mm (59")	2,000mm (78.7")
Max. Grinding Width-Crosswise	500mm (20")		600mm (23.6")		
Distance Between Table To Spindle Cennterline	730mm (28.7")		850mm (33.4")		
Table					
Table Working Size	500mm x 1,000mm (20" x 40")	500mm x 1,500mm (20" x 59")	600mm x 1,000mm (24" x 40")	600mm x 1,500mm (24" x 59")	600mm x 2,000mm (24" x 80")
T-Slots (Width x Dis. x No.)	14mm x160mm x 3 (0.55" x 6.3" x 3)		14mm x 210mm x 3 (0.55" x 8.3" x 3)		
The Distance From Table To Ground	990mm(39")		880mm(34.6")		
Table Speed	5~25m/min.(16~82fpm)		5~25m/min.(16~82fpm)		
Max. Table Stroke	1,100mm(43 1/4")	1,600mm(63")	1,100mm (43.3")	1,600mm (63")	2,100mm (82.6")
Transverse Movement (Z)					
Rapid Travel	1.5m/min. (60Hz / 4.9fpm), 1.25m/min. (50Hz / 4.08fpm)	1.5m/min. (60Hz / 4.9fpm), 1 25m/min. (50Hz / 4.08fpm)	0~5m/min. (0~16fpm)		
Automatic Transverse Movement	3~32mm(1 1/8"-1 1/4")		3~32mm (1 1/8"-1 1/4")		
Hand Wheel Per Revolution	5mm(0.2")		-		
Hand Wheel Per Graduation	0.02mm(0.0008")		0.02mm (0.0008")		
Transverse Movement Stroke	560mm(22")		675mm (26.6")		
Elevating Movement Of Wheel Head					
Rapid Travel	400mm/min. (15.7")		400mm/min. (15.7")		
Head Wheel Per Graduation	0.001mm(0.0001")		0.001mm (0.0001")		
Spindle					
Spindle speed	60Hz / 1,750rpm, 50Hz / 1,450rpm		60Hz / 1,750rpm, 50Hz / 1,450rpm		
Wheel Size (OD x W x BORE)	Ø355mm x Ø50mm x Ø127mm (Ø14 x Ø2" x Ø5")		406mm x 75mm x 127mm (Ø16" x Ø3" x Ø5")		
Motors					
Spindle Motor	5.6Kw(7.5HP,4P)	7.5Kw(10HP,4P)	11Kw (15HP)		
Power Requirement					
Power Required	13.5Kw(18HP)	17Kw(23HP,4P)	20.6Kw (28HP)	22Kw (30HP)	23.6Kw (32HP)
Tank Capacities					
Hydraulic Tank	200L(52 gals.)		250L(66 gals.)		
Lubricant Tank	-		20L(5 gals.)		
Machine Dimensions					
Machine Height (H)	2,719mm (107")		2,770mm (109")		
Required Floor Space (W x L)	3,810mm x 2,997mm (150" x 118")	4,953mm x 2,997mm (195" x 118")	3,660mm x 3,870mm (144" x 152")	3,660mm x 4,870mm (144" x 191")	3,660mm x 6,120mm (144" x 240")
Machine Weight	6200Kg(13,640lbs.)	7900Kg(17,380lbs.)	8,400Kg (18,480lbs.)	9,800Kg (21,560lbs.)	10,600Kg (23,320lbs.)

Notice: The manufacturer reserves the right to modify the design, specifications, mechanisms....etc. of the machine without notice.
All the specifications shown above are just for reference.



Grinding Machines



Grinding Machines



Turning Machines



Milling Machines

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