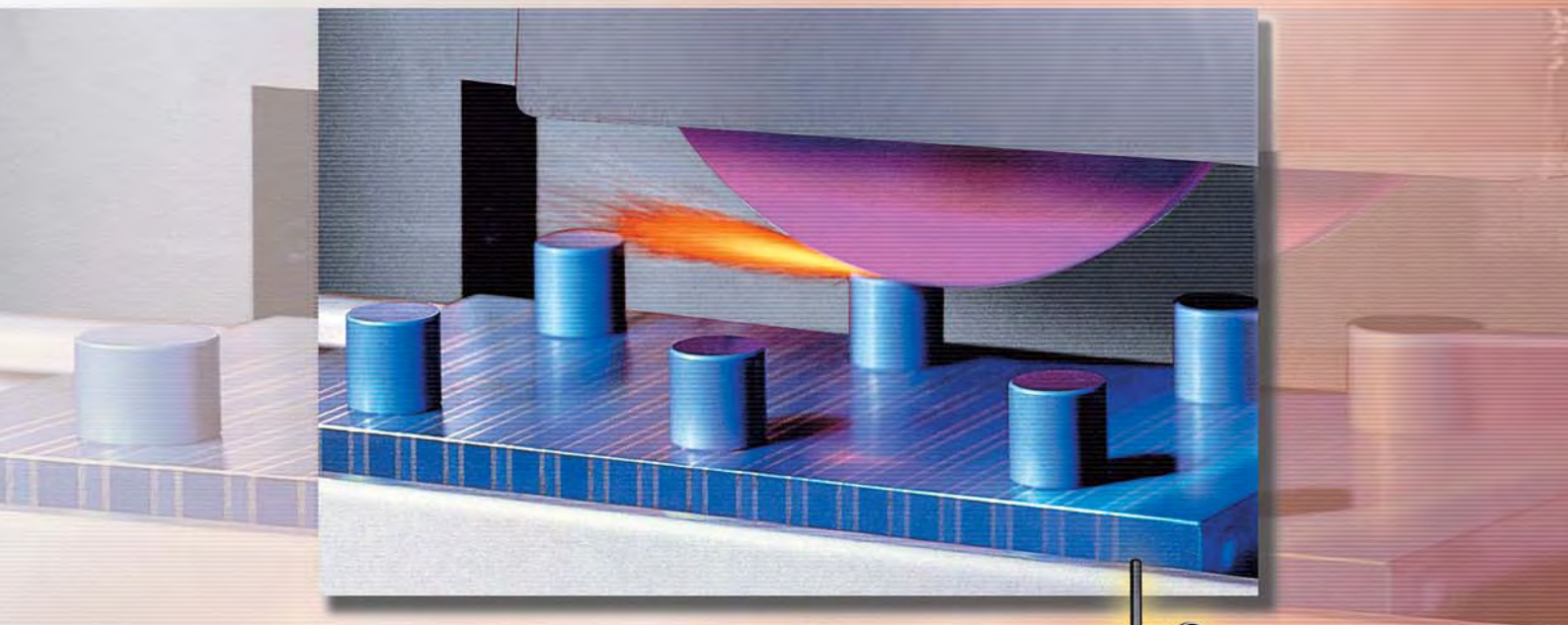
CHEVALIER®

FSG-618M/2A618

HIGH PRECISION SURFACE & FROM GRINDING



ISO 9001 BSMI REGISTERED CERT. NO. SM1Y027

IT'S VERY WELL MADE IN TAIWAN

1 **FEATURES**

HIGH PRECISION SURFACE & FR

FSG-618M · 2A618

HIGH PRECISION SURFACE & FORM GRINDER

This high precision surface and form grinder has been speciallydeveloped and improved in recent years.

The tool cabinet in machine base is specially designed foroperator's convenience (618M).

The interlock between electrical cabinet door and power supplyis established to ensure safe operation.

The maximum distance from table surface to spindle centerlineis 18" (450mm) which provides more clearance for grinding.

The spring loaded type table travel stops will dampen theovertravel caused by abnormal operations (618M).

The optimum span of double V crossfeed guideways is designedbased on bending moment, kinematics and supporting force.

All essential castings are mode of high grade of Meehanite castiron that is stress relieved through annealing to eliminateinternal stress.

With the greatest stiffness and stability of the castings, thismachine is suitable for both precision surface grinding and formgrinding.

This grinder is offered with one-full-year limited warranty formechanical and electrical parts

FSG-618M

Note:Machine shown with optional accessories

FSG-2A618

Note:Machine shown with optional accessories

OM GRINDING MACHINE

Parallelism of Table Surface to Table Cross Transverse

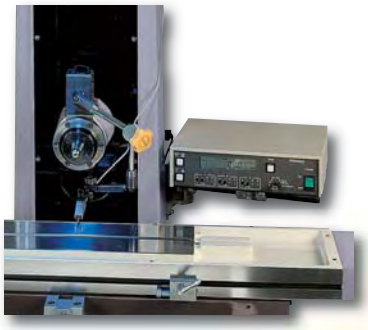
Attach the base of a test indicator to the wheel head. Touch the stylus of the indicator to the table surface. Traverse the table in and out, The indicator variation shall be within 0.00008"(0.002mm).

Runout of Wheel Spindle Conical Surface

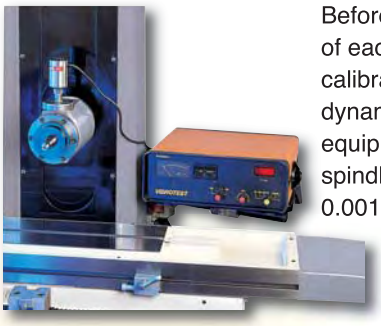
Apply a test indicator to the rear, middle and front points of conical surface of the wheel spindle, and rotate the wheel spindle, the variation shall be under 0.00006"(0.0015mm).

Parallelism of Table Surface to Table Longitudinal Movement

Attache the base of test indicator the the wheel head. Touch the stylus of the indicator to the table surface.
Move the table left to right and reverse. The indicator variation shall be within 0.0001"(0.0025mm).



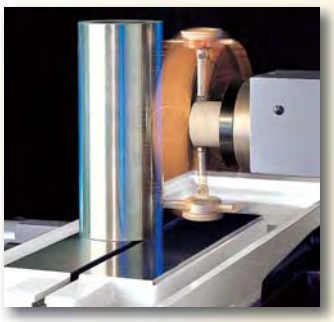
Spindle Dynamic Balancing Test



Before delivery, the spindle of each machine has to be calibrated by a portable precision dynamic vibration measuring equipment. The final amplitude of spindle vibration shall be under 0.0012"/s(0.03mm/s)

Parallelism and Squareness of Wheel Spindle Centerline to Table Surface

Attach the base of a test indicator to the wheel head. Touch the stylus of the indicator to the table surface. Traverse the table in and out. The indicator variation shall be within 0.00016"(0.004mm).

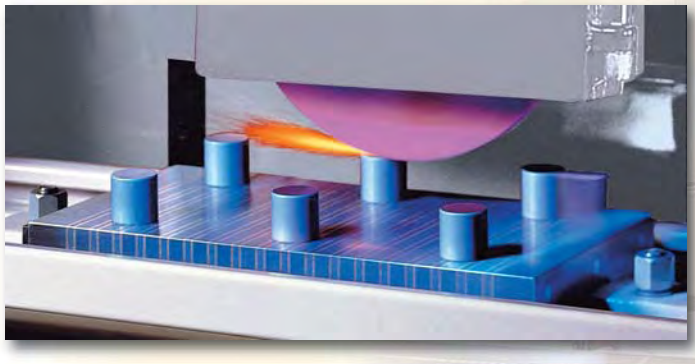


Steel Ball Sifting

Steel balls used in longitudinal movement are all heat treated and sieved by automatic machine which assures the diameter tolerance of steel balls in the same machine is under 0.00008"(0.002mm)

Flatness of Ground Workpiece

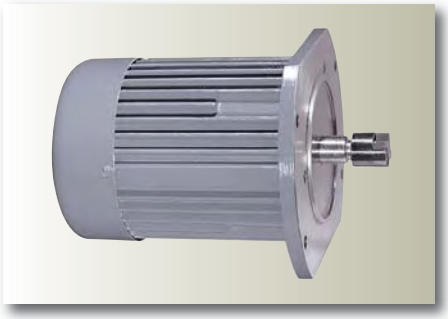
Due to excellent rigidity and stability of machine structure, the flatness tolerance of ground workpieces shall be 0.00012"(0.003mm) or better.



3 MACHINE CONSTRUCTION

2HP Low Vibration Spindle Motor

By using a 2HP class V3 low vibration spindle motor, both fine grinding and rough grinding can be performed to obtain the best grinding result.



High Precision Cartridge Type

Spindle is supported by 4 pieces of class 7(P4) super precision angular contact ball bearings which have been accurately measured, selected and pre-loaded, and then assembled in a temperature controlled room to ensure better grinding accuracy and surface finish. The labyrinth seal type structure is designed to offer better water-resistance, thus enhancelongevity of spindle bearings.

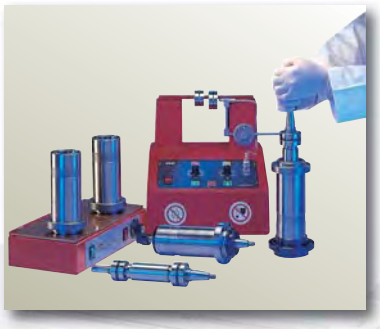
ASSEMBLY

High Precision Spindle Assembly Room

All spindles are assembled by skillful and experienced technicians following exact assembly procedures in a clean room.

Flatness of Ground Workpiece

Spindle bearings and spindle cartridge sleeve are preheated at the proper stage of installation to assure no undue forces are applied to spindle bearings.



Spindle Bearing Grease Sealing

All spindle bearings are sealed with high grade grease to minimize thermal expansion for longer service life of bearings.

Spindle Bearing Spacer Measurement

In order to assure the best assembly accuracy, the flatness tolerance of both inner and outer spacers must be within 0.00004"(0.001mm).

Spindle Temperature Rising Test

To assure spindle temperature rise does not exceed 10^{O}C, spindle is tested under a no load condition for 8 hours minimum. During the test, the spindle is running throughout its permissible speeds and is being continuously monitored by a thermograph.

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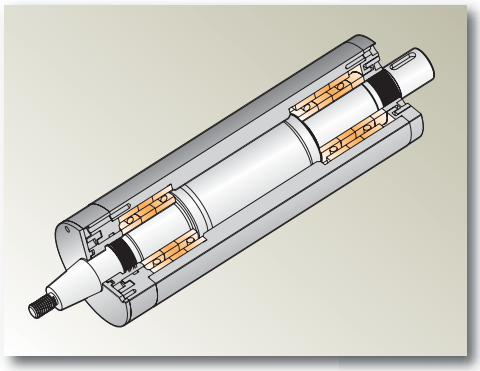
OMATIC PRECISION SURFACE GRINDING MACH

Spindle

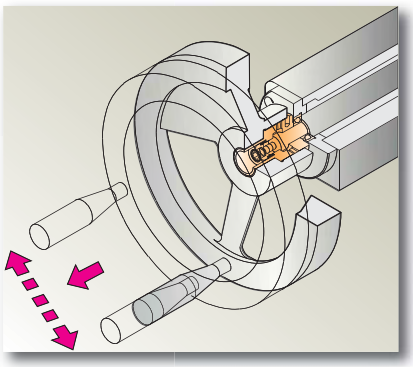


FSG-618M

Note:Machine shown with optional accessories

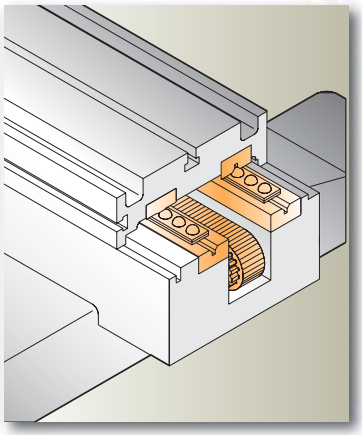
Indexable Table Handwheel

The table handwheel can be indexed to a comfortable position to enhance the ease of table traverse. (618M only)



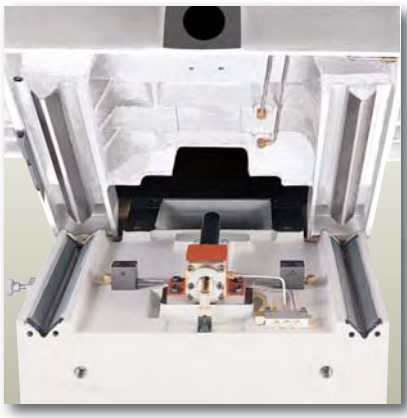
Continuous Loop Type Table Transmission Mechanism

Table is driven by a continuous loop wire reinforced cog timing belt. This system ensures slip-free and smooth transmission of table, thus the life of a continuous cog timing belt is at least three times longer than that of wire type or reciprocating timing belt type.
The table traverses on hardened & ground guideways with steel ball bearings providing smooth, accurate and efficient table movement. (618M)



Durable Slideways

Machine base slideways are lamina with Turcite-B and precisely hand scraped. The low friction slideways incorporated with automatic forced lubrication system ensures high accuracy and longer way life.



FSG-2A618

Note:Machine shown with optional accessories

Automatic Forced Recirculated Type Lubrication System

The lubrication system provides lube oil to saddle & column ways, and to cross & elevating leadscrews. This system minimizes the chance of wear due to negligent operation and ensures the machine accuracy and prolongs the life of machine.

1. Column slideways
2. Elevating leadscrew
3. Crossfeed leadscrew
4. Machine base double V slideways
5. Solenoid pump
6. Lubricator
7. Flow divider
8. Table guideways with ball bearings lubricated by grease.

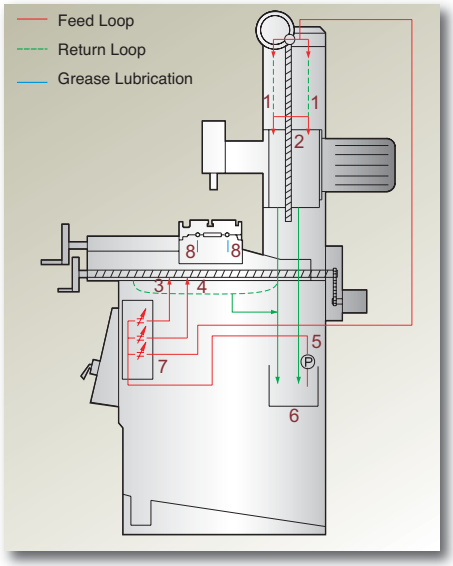
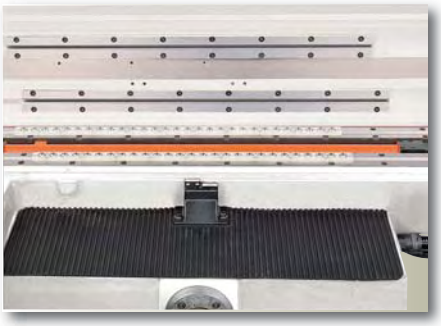
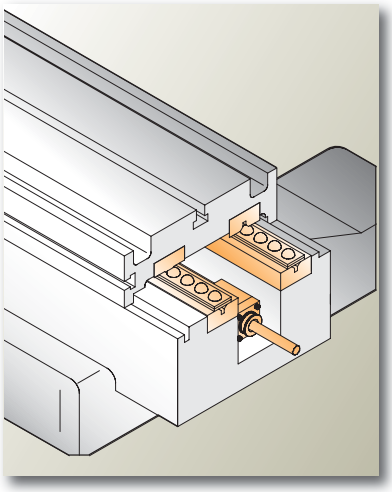


Table Guide Ways

Table transverse on hardened & ground guidways with steel ball bearings, which have been accurately sieved, for smooth, accurate and efficient table movement. (2A618)





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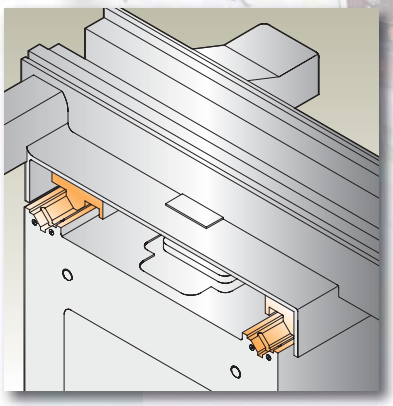
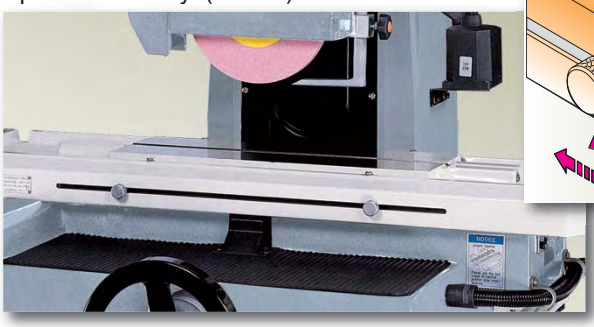
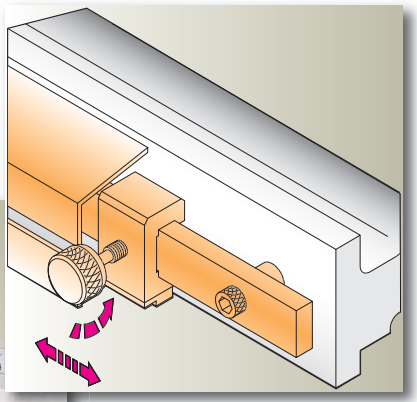


Table Reversing Mechanism

By using proximity switches, operator can easily set suitable table stroke for each workpiece to save grinding time and obtain higher grinding efficiency. The proximity switches have been properly covered for operator's safety. (2A618)

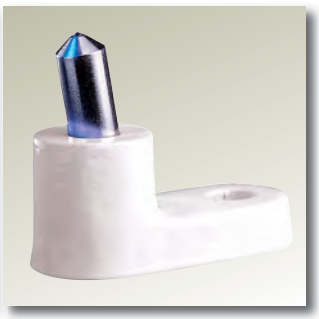




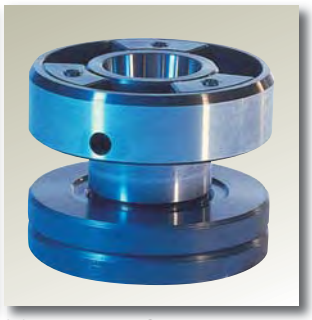
ACCESSORIES

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

MACHINE LAMP
B01-0101 (12V, 20W)

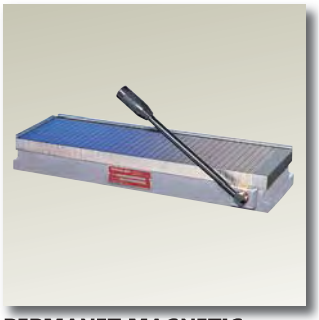


DIAMOND DRESSER
B03-0101



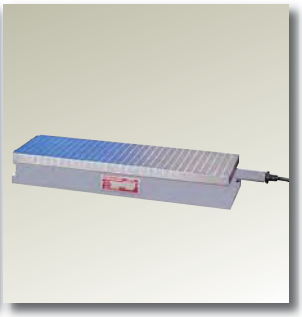
WHEEL FLANGE
B05-0101
Suitable for 8"x11/4"x1/2"(Ø203XØ31.75X12.7mm) grinding wheel

PUNCH FORMER
B07-0101
Diameter of the punch: 3/32"~1"(4~25mm)
Length of the punch: over7/8"(22mm)



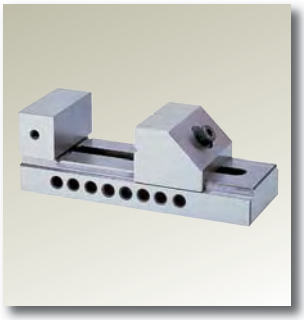
PERMANET MAGNETIC CHUCK
B09-0102
5 7/8"x17 3/4"(150x450mm)

INCLINABLE MAGNETIC CHUCK
B09-0105
5 7/8"x11 7/8"(150x300mm)



ELECTROMAGNETIC MAGNETIC CHUCK
B09-0106
5 7/8"x1734"(150x450mm)
*Required to order with chuck controller (B23-0901)

INCLINABLE ELECTROMAGNETIC CHUCK
B09-0601
5 7/8"x17 3/4"(150x450mm)
*Required to order with chuck controller (B23-0901)



PRECISION VISE
B11-0101
2"x3"(50x76mm)
B11-0102
1/2"x4"(63x100mm)
B11-0103
3"x4"(76x100mm)
B11-0104
3 1/2"x5"(89x127mm)
B11-01015
4"x5"(100x127mm)

PARALLEL DRESSING ATTACHMENT(MANUAL)
B13-0301
Suitable for: 8"(203mm) grinding wheel

BALANCE STAND
B15-0102
5 7/8"x17 3/4"(150x450mm)
*Required to order with chuck controller (B23-0901)

BALANCING STAND (ROLLER TYPE)
B15-0601
Suitable for : 8"~14"(203~355mm) grinding wheel

COMBINATION COOLANT & DUST EXHAUST UNIT
B17-0101
Volume: 34L, Pump: 1/8HP
Coolant Capacity: 20L/min
Space: 15 3/4"x31 1/16" (398x798mm)
Height: 26 3/4"(680mm)

DUST COLLECTOR
B17-0102
Suction Motor : 1/2HP,2P
Space : 18 1/2"x19 11/16" (470x500mm)
Height : 23"(585mm)

COMBINATION COOLANT & DUST EXHAUST UNIT WITH MAGNETIC SEPARATOR
B17-0105
Volume:50L,
Pump:1/8HP
Coolant Capacity:20L/min
Separator Capacity:20L/min
Space:25 3/4"x20 1/2"(655x520mm)
Height:28 3/4"(730mm)

COMBINATION COOLANT & DUT EXHAUST UNIT
(With magnetic separator)
B17-0106
Volume: 34L,
Pump: 1/8HP
Coolant Capacity: 20L/min
Separator Capacity: 20L/min
Space: 24 3/4"x31 1/16"
(628x790mm)
Height: 26 3/4"(680mm)

COOLANT SYSTEM WITH MANUAL PAPER FEEDING DEVICE(With 1 roll of paper)
B17-0107
Volume : 85L
Pump : 1/8HP
Coolant Capacity : 20L/min
Space : 21 21/32"x39 3/8"
(550x1000mm)
Height : 30 1/2"(775mm)

COOLANT SYSTEM WITH DOUBLE FILTER
B17-0901
Volume : 95L
Pump : 1/8HP
Coolant Capacity : 20L/min
Space : 26"x19"(660x480mm)
Height : 24"(610mm)

COOLANT SYSTEM
(With 1 roll of paper)
B17-0110
Volume: 42L
Pump: 1/8HP
Coolant Capacity: 20L/min
Space: 57"x24 3/8"
(1448x633mm)

SPLASH GUARD
(With Nozzle For CoolantSystem)
B19-0102

CHUCK CONTROLLER
(With variable holding power and auto demangetizer)
• B23-0901
input: 110VAC
Output: 0~90VDC

UNIVERSAL WHEEL GUARD FOR SIDE FORMING
B41-0106
Suitable for: 8"(203mm) grinding wheel

STD. ACCESSORIES

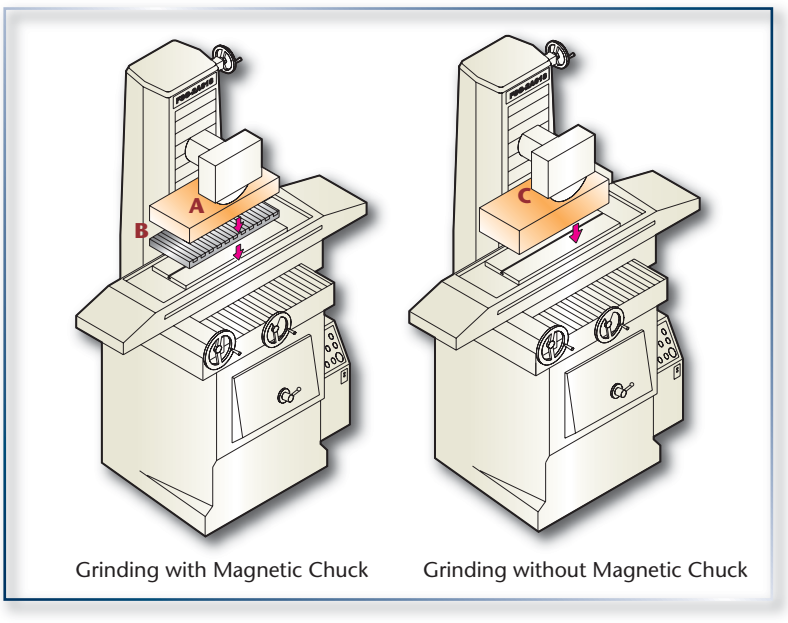
1. Tool box
2. Dust protcetion plate
3. Pin spanner wrench
4. Levelling pad
5. Touch-up paint
6. Hex. wrenches
7. Levelling set screws
8. Balancing arbor
9. Fuse
10. Coupling
11. Lifting rods
12. Magentic chuck setting screw
13. Pipe connector
14. Wheel flange

GENERAL SPECIFICATION

Description		FSG-618M	FSG-2A618
Table Size		5 3/4"x18"(146x460mm)	
Max. grinding length	Longitudinal	18"(457mm)	
Max. grinding width	Crosswise	6"(152mm)	
Max.distance from table surface to spindle centerline		18"(457mm)	
Standard magnetic chuck size		5 7/8"x17 3/4"(150x450mm)	
Longitudinal movement of table	Longitudinal travel, hydraulic	19 3/4"(500mm)	
	Maximum travel, manual	19"(482mm)	20"(510mm)
	Longitudinal travel, hydraulic		16~82fpm(5~25m/min)
Cross movement of table	Rapid travel, approx.	NA	38ipm(960mm/min)
	Automatic transverseincrement	NA	0.02~0.24"(0.4~6mm)
	Maximum automatic travel	NA	6 3/4"(171mm)
	Maximum manual travel	7"(180mm)	
	Handwheel per revolution	0.1"(3mm)	
	Handwheel per graduation	0.005"(0.01mm)	0.005"(0.01mm)
Wheelhead vertical infeed	Per revolution	0.05"(1mm)	
	Per graduation	0.0001"(0.005mm)	
Grinding Spindle drive	Speed	60Hz/3450rpm, 50Hz/2850rpm	
	Power rating	2HP(1.5kw)	
Standard grinding wheel	Diameter	Ø8"(203mm)	
	Width	1/2"(12.7mm)	
	Bore	Ø1 1/4"(31.75mm)	
Hydraulic system	Power rating	NA	1HP(0.75kw)
Crossfeed drive	Power rating	NA	0.05HP(40W)
Floor Space	Total space required	75"x55"x84" (1900x1400x2130mm)	75"x63"x84" (1900x1600x2130mm)
Weights	Net weight approx.	1500 lbs(680kgs)	1760 lbs(800kgs)
	Gross weight approx.		
Rated power, approx.		2.2HP(1.65kw)	3.3HP(2.5kw)
Packing dimensions(LxWxH)		44"x40"x85" (1120x1016x2160mm)	61"x44"x84" (1550x1120x2135mm)

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

PERMISSIBLE LOAD OF MACHINE



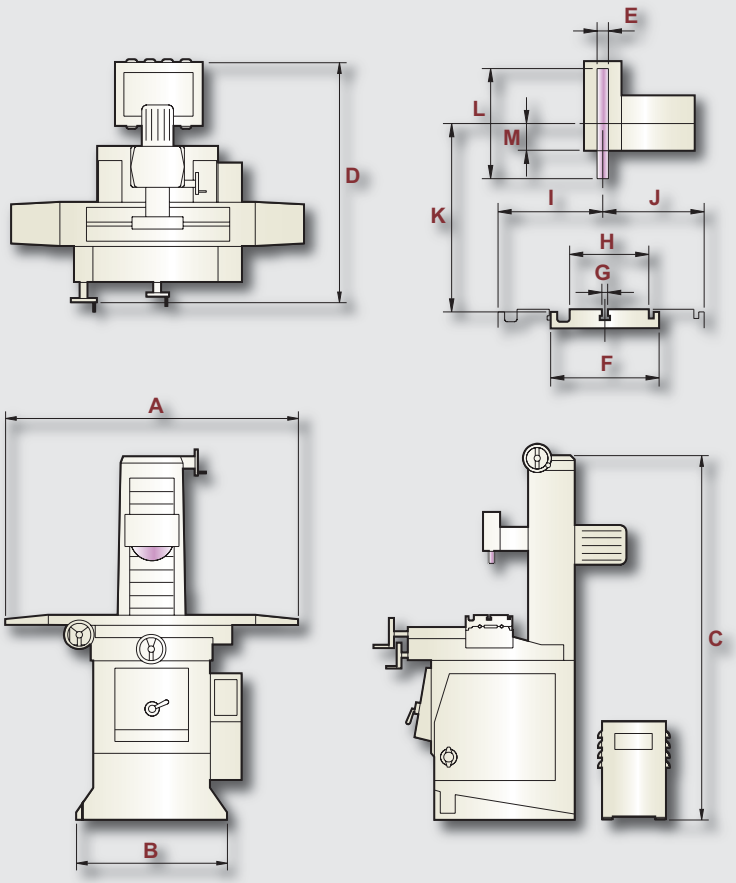
Grinding with Magnetic Chuck Grinding without Magnetic Chuck

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

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

MODEL	FSG-618	FSG-2A618
A lbs(kg)	360(180)	
B lbs(kg)	66(30)	
C lbs(kg)	462(210)	

DIMENSIONAL DRAWINGS



Model	FSG-618M	FSG-2A618
A	72″(1830mm)	
B	27 3/4″(690mm)	
C	84″(2130mm)	
D	55″(1400mm)	63″(1600mm)
E	1/2″(12.7mm)	
F	7 7/8″(200mm)	
G	7/16″(11mm)	
H	6″(150mm)	
I	7 3/4″(197mm)	
J	7″(183mm)	
K	18″(457mm)	
L	8″(203mm)	
M	2″(50mm)	

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CAT: 0116-00005C00 / 20050426 / 1000 P1

FALCON MACHINE TOOLS CO., LTD.
No. 34, Hsing Kong Road, Shang Kang, Chang Hua
TAIWAN 509
TEL: 886-4-7991126 FAX: 886-4-7980011
http://www.chevalier.com.tw
E-mail: overseas@chevalier.com.tw
TA-YA Factory TEL:886-4-25673266

U.S.A. OFFICE
CHEVALIER MACHINERY INC.
9925 Tabor Place Santa Fe Springs, CA 90670 U.S.A
TEL:(562)903-1929
FAX:(562)903-3959