

GENERAL SPECIFICATION

| Description                                            |                                     | FSG-B2440CNC                                                  |                                          | FSG-H2440CNC                             | FSG-H/B2460CNC                         | FSG-H2480CNC          |
|--------------------------------------------------------|-------------------------------------|---------------------------------------------------------------|------------------------------------------|------------------------------------------|----------------------------------------|-----------------------|
| <b>Table Size</b>                                      |                                     | 24"x40"(600mmx1000mm)                                         |                                          |                                          | 24"x60"(600mmx1500mm)                  | 24"x80"(600mmx2000mm) |
| Max. Grinding Length                                   | Longitudinal                        | 40"(1000mm)                                                   |                                          |                                          | 60"(1500mm)                            | 80"(2000mm)           |
| Max. Grinding Width                                    | Crosswise                           | 24"(600mm)                                                    |                                          |                                          |                                        |                       |
| Max. Travel                                            | X Axis                              | 43 3/8"(1100mm)                                               |                                          |                                          | 63"(1600mm)                            | 82 5/8"(2100mm)       |
|                                                        | Z Axis                              | 26 3/4"(680mm)                                                |                                          |                                          |                                        |                       |
| Max. Distance from Table Surface to Spindle Centerline |                                     | 33 1/2"(850mm)                                                |                                          |                                          |                                        |                       |
| Dimension of T x Quantity                              |                                     | 0.55"x3(14mmx3)                                               |                                          |                                          |                                        |                       |
| Table Speed                                            | Infinitely Variable                 | 0.032~49fpm<br>(10~15000mm/min)                               | 10~82fpm<br>(3~25m/min)                  | 10~82fpm<br>(3~25m/min)                  | 16~82fpm<br>(5~25m/min)                |                       |
| <b>Cross Transverse Travel</b>                         | Rapid Travel, approx Per Graduation | 0~16fpm(0~5m/min)<br>0.0001"(0.001mm)                         |                                          |                                          |                                        |                       |
| <b>Wheelhead Vertical Infeed</b>                       | Rapid Travel, approx Per Graduation | 0~19.7ipm(0~500mm/min)<br>0.0001"(0.001mm)                    |                                          |                                          |                                        |                       |
| <b>Grinding Spindle Drive</b>                          | Speed                               | B Type:1400rpm/50Hz,1700rpm/60Hz                              |                                          |                                          | H Type: 500~3500rpm(AC Servo Motor)    |                       |
|                                                        | Power Rating                        | B Type:15Hp/4p(11kw)(Opt. AC Servo Motor)                     |                                          |                                          | H Type: 20Hp/15kw(AC Servo Motor)      |                       |
| <b>Standard Grinding Wheel</b>                         | Diameter                            | ø16"(ø406mm), option ø20"(ø508mm)                             |                                          |                                          |                                        |                       |
|                                                        | Width                               | 3"(75mm)                                                      |                                          |                                          |                                        |                       |
|                                                        | Bore                                | ø5"(ø127mm)                                                   |                                          |                                          |                                        |                       |
| <b>Accuracy</b>                                        | Positioning Repeatability           | ±0.00031"(±0.008MM) VDI-3441<br>±0.00031"(± 0.008MM) VDI-3441 |                                          |                                          |                                        |                       |
| <b>Hydraulic Drive</b>                                 | Hydraulic Pump Motor                | N/A                                                           | 5Hp/6P(3.65kw)                           |                                          |                                        | 7.5Hp/6P(5.5kw)       |
|                                                        | Tank Capacity                       |                                                               | 250L                                     |                                          |                                        |                       |
| <b>Automatic Lubrication System Pump</b>               | Motor Tank Capacity                 | 1/4Hp/4p<br>20L                                               |                                          |                                          |                                        |                       |
| <b>Floor Space(LXWXH)</b>                              | Total Space Required                | 145 1/4"x157 1/2"x128"<br>(3700x4000x3250mm)                  | 158"x157 1/2"x128"<br>(4010x4000x3250mm) | 197"x157 1/2"x128"<br>(4927x4000x3250mm) | 244"x157 1/2"x128"<br>(6200x4000x3250) |                       |
| <b>Weights</b>                                         | Net Weight, Approx.                 | 18480lbs(8400kg)                                              | 14850lbs(6750kg)                         | 17820lbs(8100kg)                         | 23320lbs(10600kg)                      |                       |
|                                                        | Gross Weight Approx.                | 24530lbs(11150kg)                                             | 20900lbs(9500kg)                         | 24860lbs(11300kg)                        | 29150lbs(13250kg)                      |                       |
| <b>Rated Power, Approx.</b>                            |                                     | 28Hp(20.6KW)                                                  | 30Hp(22.38KW)                            |                                          |                                        | 37Hp(27.6KW)          |
| <b>Packing Dimensions( L x W x H)</b>                  |                                     | 161"x117"x126"<br>(4090x2970x3200mm)                          | 161"x117"x126"<br>(4090x2970x3200mm)     | 194.5"x120"x126"<br>(4940x3050x3200mm)   | 249"x119"x126"<br>(6320x3020x3200mm)   |                       |

※ 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.

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CHEVALIER®

FSG-H/B2440CNC

FSG-H/B2460CNC/H2480CNC

HIGH PRECISION CNC GRINDER MACHINE



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# FSG-H / B24CNC Series

## HIGH PRECISION CNC GRINDER MACHINE

**FSG-B2440CNC · B2460CNC (3 AXIS CNC CONTROLLED)**

**FSG-H2440CNC · H2460CNC · H2480CNC (2 AXIS CNC CONTROLLED)**

### HIGH PRECISION CNC GRINDER MACHINE

These precision CNC surface grinders come with Chevalier's customized canned programs that are so easy to use, all the operator needs is to fill in the blanks as prompted. No programming experience is necessary as we made it the most user-friendly profile grinder in the market. Based on existing software provided, the machine can execute part programming along with automatic wheel dressing. **CHEVALIER** is ISO 9001 certified manufacturer dressing with compensation, leaving the operator more free time to do other jobs.

- Large diameter, cartridge type spindle with air-cooled, precisely balanced, totally enclosed spindle motor.
- Automatic wheel dressing with compensation for unattended machining.
- Extended base guideways to prevent overhangs during heavy loads.
- Spindle counterweight balance system to eliminates backlash.
- Stable feed, superior accuracy with combination of linear roller guideways, precision ballscrews and FANUC AC digital servo motors on Y · Z and X (B model only).
- Double "V" longitudinal slideways.
- Hardened and ground square sliding column ways.
- Rigid cast iron construction.



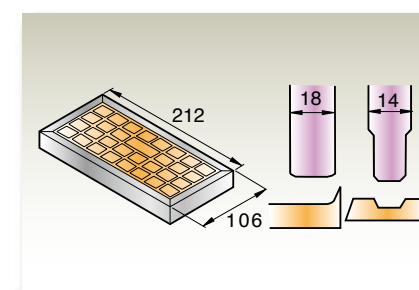
**FSG-B2460CNC**

Note: Machine shown with optional accessories



1. Easy to read functions. Main power, machine zero, end of program, chuck voltage, dressing, lubrication conditions are all in LEDs.
2. For added convenience, the 9" monitor displays positions, programs, working condition and ladder diagram of the PLC.
3. One-piece, soft key keyboard is dustproof and waterproof.
1. Easy to operate switches with light indicators.
2. Optional magnetic force and demagnetizing time adjustment.
3. Test functions can verify NC program for accuracy.
4. Easy and convenient manual operation with standard M.P.G., feedrate override and JOG buttons.

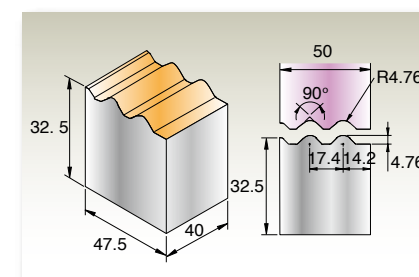
## GRINDING EXAMPLE



**TILE'S MOLD**  
(Construction Industry)  
**MODEL: B2440 CNC**  
Required Optional B13-0810  
Accessory  
Material SKD11  
Kind of Wheel CB150-WBA-100  
Form Accuracy  $\pm 0.0005"$   
( $\pm 0.012\text{mm}$ )  
Cycle time 58min  
Grinding Mode Form Grinding



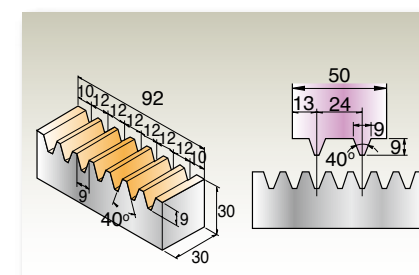
58min



**PRESS MOLD**  
(Mold Industry)  
**MODEL: B2440 CNC**  
Required Optional B13-0811  
Accessory  
Material S15C  
Kind of Wheel 32A46-I14V  
Form Accuracy  $\pm 0.0008"$   
( $\pm 0.02\text{mm}$ )  
Cycle time 50sec  
Grinding Mode Plunge Grinding



50min



**RACK**  
(Mechanical Industry)  
**MODEL: H2440CNC**  
Required Optional B13-0801  
Accessory  
Material SKH9  
Kind of Wheel RA46-H14V  
Form Accuracy  $\pm 0.0002"$   
( $\pm 0.06\text{mm}$ )  
Cycle time 4min  
Grinding Mode Pitch Grinding



4min



# FSG-H/B 24 CNC Series

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## MACHINE CONSTRUCTION

### HIGH PRECISION CNC GRINDER MACHINE

#### Column

The column is made of high grade, dense cast iron which has been stress relieved. The computer aided design features a rubbed, honeycombed structure which resists flexing and vibration during heavy duty machining. The spindle travels on hardened and ground square ways.

#### High Precision Heavy Duty Spindle Design

These machines use a large diameter, cartridge type spindle with air-cooled, precisely balanced and totally enclosed spindle motor. Providing maximum support to the spindle are 6 pieces of Class 7(P4) permanently lubricated, angular contact ball bearings. This spindle design ensures extremely smooth surface finish and consistent accuracy.

#### Longitudinal Slideways

The longitudinal slideways feature double "V" configuration instead of the usual "V" and flat design. The double "V" design improves the structural rigidity and stability of the front base. With Turcite-B anti-friction material lamination of the slideways, smooth and stable travel is consistently maintained during all kinds of machining conditions.

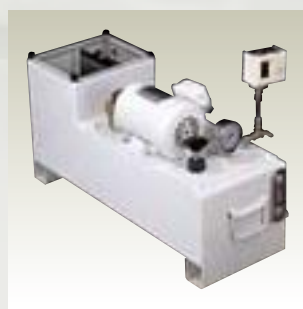
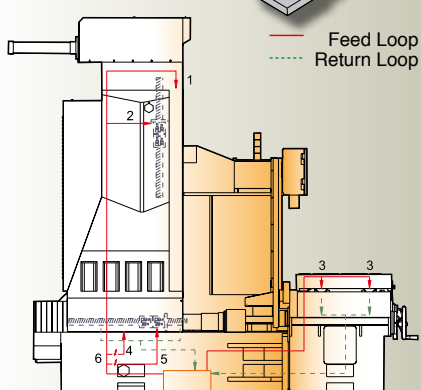
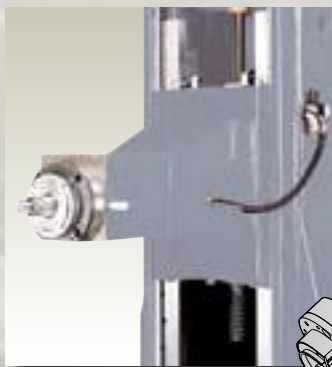
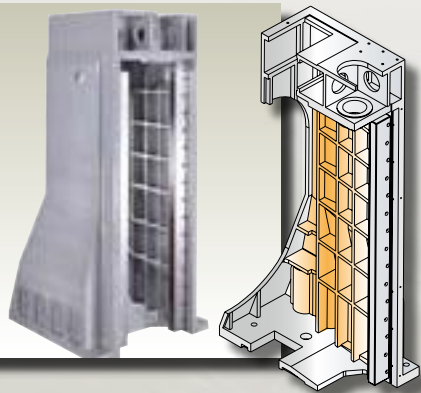
#### Stable Feed, Superior Accuracy

The crossfeed slideway system features a perfect mating of linear slideways, precision ballscrews and FANUC AC digital servo motor that provide high torque, speed and accurate positioning with a minimum increment of 0.0001".

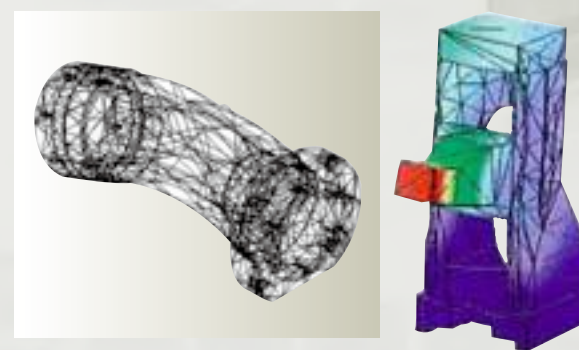
#### Automatic Lubrication System

An automatic lubrication system is standard on all machines. The system uses a pressure sensor to monitor lubrication pressure. The machine shuts down automatically when the pressure drops below a preset level.

1. Elevating Leadscrew
2. Column Slideways
3. Table Guideways
4. Crossfeed Ballscrew
5. Flow Divider
6. Lubricator



FSG-H2440CNC  
Note: Machine shown with optional accessories



#### Computer-Aided Engineering

The geometric model of the machine was created using the Pro/ENGINEER 3D CAD software. The static and dynamic structural analyses were carried out with the help of the Pro/MECHANICA software to ensure high rigidity.

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## MACHINE CONSTRUCTION

#### Smooth and Accurate Wheelhead Movement

The wheelhead is positioned with a C3 grade ballscrew and driven by FANUC AC digital servo Motor. The wheelhead guideways are laminated with Turcite-B anti friction materials and then precisely hand scraped.

#### Spindle Counterweight Balance System

Pneumatic counterweights balance are installed in the spindle to eliminate backlash and prevent the premature wear of the elevating screws.

#### Steady and Precise Table Drive (B Model Only)

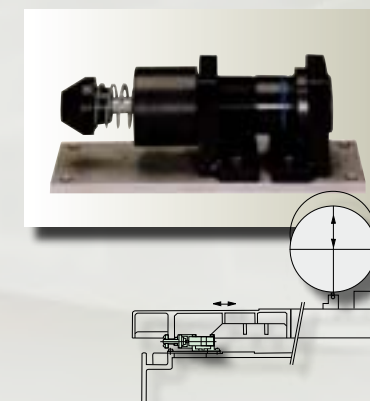
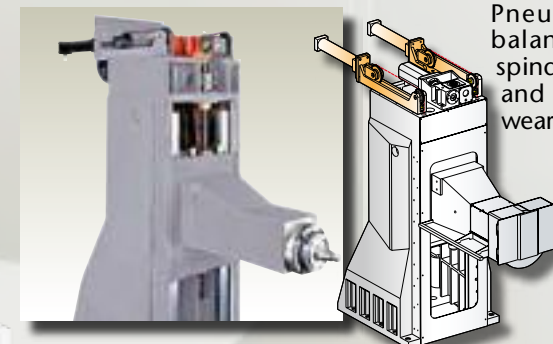
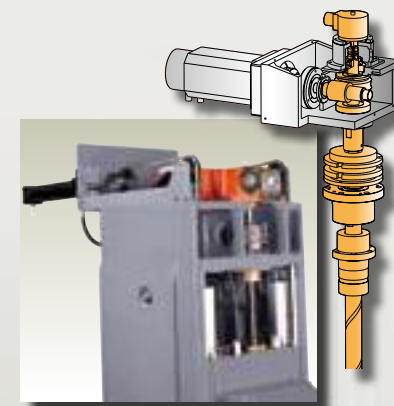
The table is driven by a precision ballscrew and FANUC AC servo motor providing precise positioning and optimum speed required for creepfeed grinding.

#### Hydraulic System Temperature Regulator (H Model Only)

A with hydraulic temperature regulator is provided on H models to minimize thermal expansion and maintain consistent accuracy and repeatability during heavy duty machining conditions.

#### Automatic Wheel Dressing with Compensation

Automatic wheel dressing with compensation feature dresses the wheel automatically during rough and/or fine grinding and at the end of rough grinding. This enables the machine to run unattended for hours making them ideal for high-volume production runs. Result: reduced machining costs and increased line productivity.



# FSG-H / B24CNC Series

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## OPT. ACCESSORIES

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



### GRINDING WHEEL DYNAMIC BALANCER

• B44-0703  
Aligned rpm range: 400~20000rpm  
Aligned Phase angle accuracy: 0.1 degree  
Vibration measuring unit:  $\mu$ m  
Min. align value: 0.01 $\mu$ m(1800rpm)



### COOLANT SYSTEM WITH AUTO PAPER FILTER & MAGNETIC SEPARATOR

B17-0702  
Volume: 250L  
Pump: 1/2HP  
Coolant Capacity: 80L/min.  
Space: 3"x43"(1600x1100mm)  
Height: 29 1/2"(750mm)



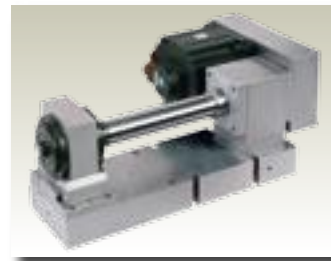
### COOLANT SYSTEM WITH AUTO PAPER FILTER

B17-0701  
Volume: 250L  
Pump: 1/2HP  
Coolant Capacity: 80L/min.  
Space: 63"x43"(1600x1100mm)  
Height: 29 1/2"(750mm)



### THREE POINT DOUBLE RECESSED

B03-0703  
Hardness: higher than KNOOP 12000  
Radius value: 0.125 mm  
Sharp angle: 40 degree  
Grain size: 1.5 Carat



### DUAL SUPPORT ROLLING TYPE WHEEL DRESSER

• B13-1202  
Shaft:  $\varnothing$ 45  
Clamping width: 4.5"(115mm)  
Motor: 1/4HP-4P 60HZ-1750rpm  
50HZ-1450rpm  
Max. OD: 6 1/2"(165mm)  
Mini. OD: 4"(100mm)  
• B13-1203  
Shaft:  $\varnothing$ 52/ $\varnothing$ 45  
Clamping width: 8"(203mm)  
Motor(AC Servo): 1kw-2000rpm  
Max. OD: 6 1/2"(165mm)  
Mini. OD: 4"(100mm)



### TABLE MOUNT DISC DRESSER WITH COOLANT PIPE

B13-0810 (without discx1pc)  
Motor: 1/4Hp1750rpm/60Hz, 1450rpm/50Hz  
Disc Spec.:  $\varnothing$ 90~140x55x $\varnothing$ 35mm  
( $\varnothing$ 3 1/2"-5 1/2"x2 5/32"x $\varnothing$ 1 3/8")  
Clamping width: 2.17"(55mm)



### UNIVERSAL TABLE MOUNT DISC DRESSER WITH COOLANT PIPE

B13-0703 (without discx2pcs)  
motor: 1/4Hp1750rpm/60Hz, 1450rpm/50Hz  
Disc Spec.:  $\varnothing$ 90~140x55x $\varnothing$ 35mm  
( $\varnothing$ 3 1/2"-5 1/2"x2 5/32"x $\varnothing$ 1 3/8")  
Clamping width: 1.18"(30mm)



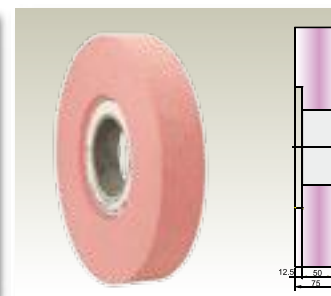
### ROLLER BALANCING STAND

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



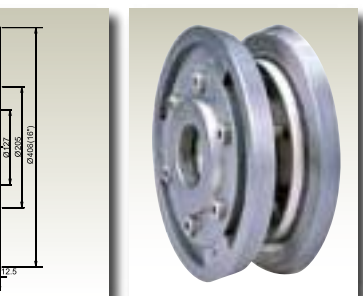
### BALANCING STAND

B15-0703  
Max. Wheel Dia.: 16"(406mm)



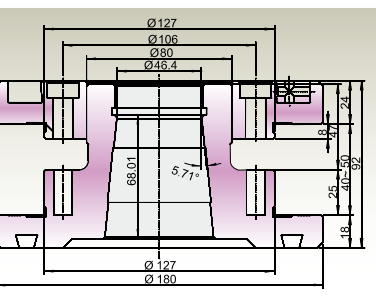
### GRINDING WHEEL

5122-10411630  
 $\varnothing$ 16"x3"x $\varnothing$ 5"( $\varnothing$ 406x75x $\varnothing$ 127mm)  
DOUBLE RECESSED  
5122-10412030  
 $\varnothing$ 20"x3"x $\varnothing$ 5"( $\varnothing$ 508x75x $\varnothing$ 127mm)



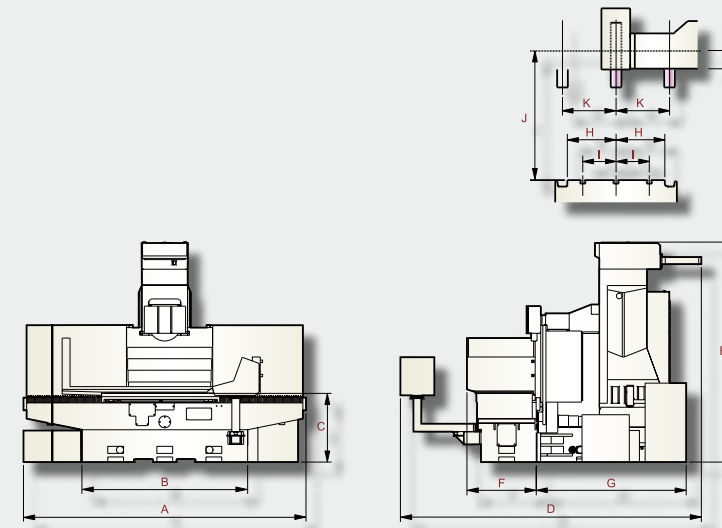
### WHEEL FLANGE

B05-0701  
Bore size:  $\varnothing$ 5"( $\varnothing$ 127mm)  
Clamping Width: 1.3"~2"(32~50mm)



## DIMENSIONAL DRAWINGS

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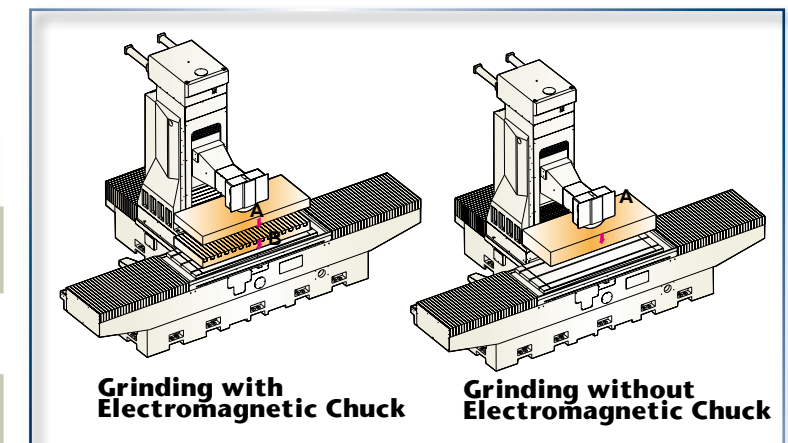
| Model | H/B2440CNC                                   | H/B2460CNC       | H2480CNC          |
|-------|----------------------------------------------|------------------|-------------------|
| A     | 140 15/16"(3580mm)                           | 194"(4926mm)     | 239 3/8" (6080mm) |
| B     | 82 11/16"(2100mm)                            | 122 1/2"(3100mm) | 161 7/16"(4100mm) |
| C     | 34 11/16" (880mm)                            |                  |                   |
| D     | 150 3/16"(3814mm)                            | 151 1/4"(3842mm) | 151 1/4"(3842mm)  |
| E     | 109 3/4" (2787mm)                            |                  |                   |
| F     | 34 13/16" (886mm)                            |                  |                   |
| G     | 74 7/16" (1890mm)                            |                  |                   |
| H     | 12" (305mm)                                  |                  |                   |
| I     | 8 1/4"(210mm)                                |                  |                   |
| J     | Max. 33 7/16" (850mm), Min. 6 11/16" (170mm) |                  |                   |
| K     | 13 15/16" (355mm)                            |                  |                   |
| L     | 4 3/8" (110mm)                               |                  |                   |

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## PERMISSIBLE LOAD OF MACHINE

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

| A=Workpiece | B=Permanent Magnetic Chuck |                |                | C=A+B          |
|-------------|----------------------------|----------------|----------------|----------------|
| MODEL       | B2440CNC                   | H2440CNC       | H/B2460CNC     | H2480CNC       |
| A lbs(kg)   | 2460<br>(1120)             | 2464<br>(1120) | 2904<br>(1320) | 2782<br>(1240) |
| B lbs(kg)   | 836<br>(380)               | 836<br>(380)   | 1089<br>(495)  | 1672<br>(760)  |
| C lbs(kg)   | 3300<br>(1500)             | 3300<br>(1500) | 3993<br>(1815) | 4400<br>(2000) |



## STANDARD ACCESSORIES

Note: 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. Hydraulic temperature regulator  
Oil cooling chiller system