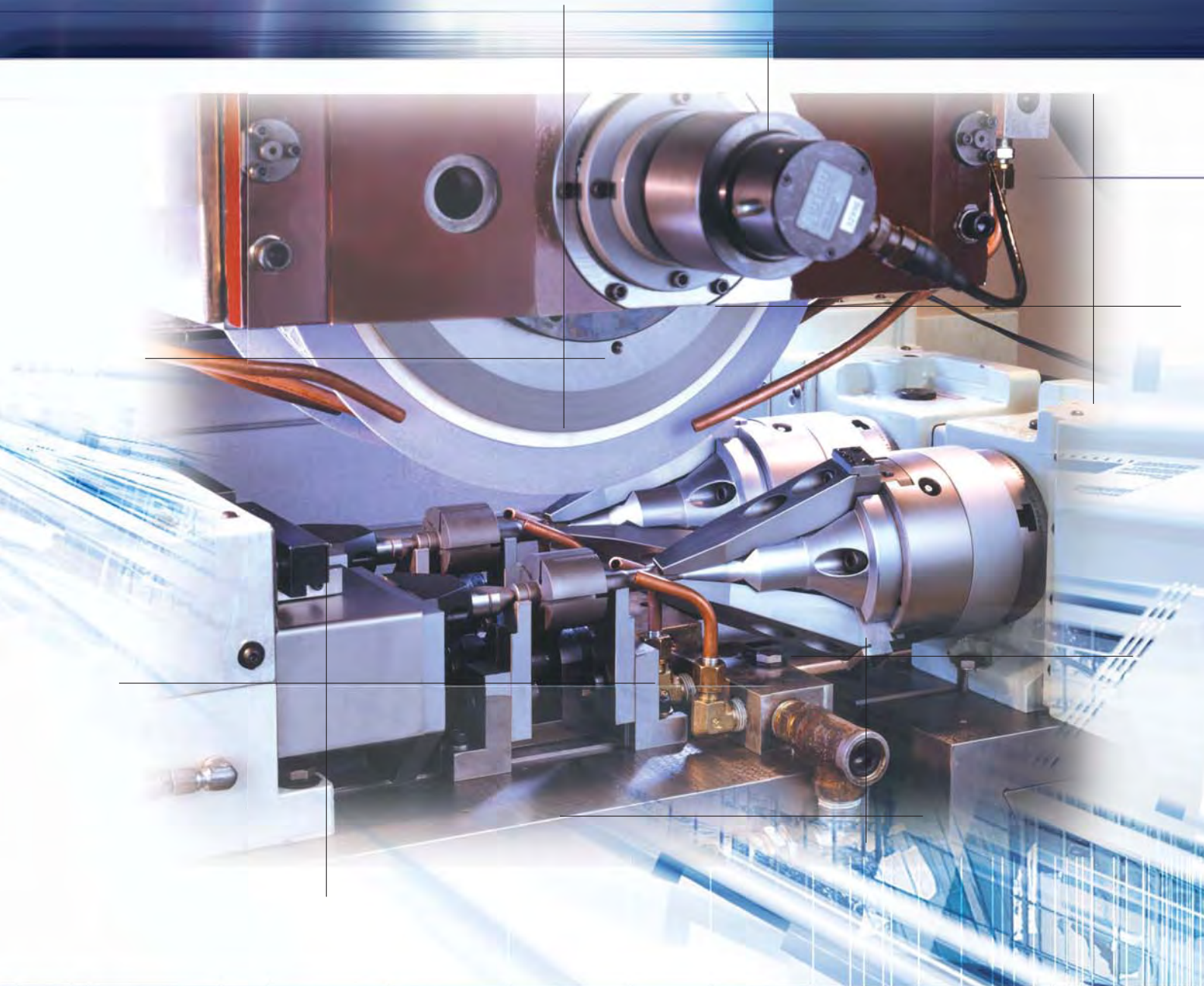


CHEVALIER®

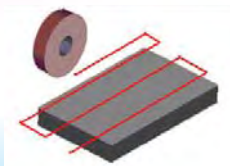
MULTI-FUNCTION CNC SURFACE GRINDER

SMART II-SERIES

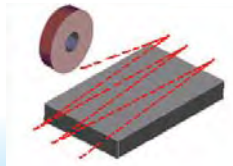
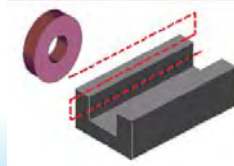


Easy to use for all kinds of FORM /PROFILE grinding

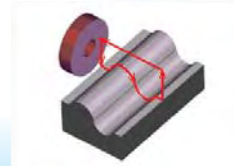
Conversational automatic wheel dressing



SURFACE GRINDING

CRISS-CROSS
GRINDING

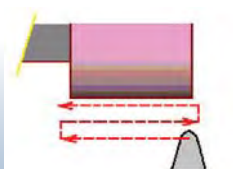
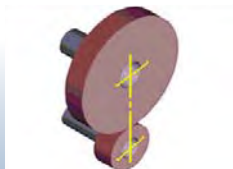
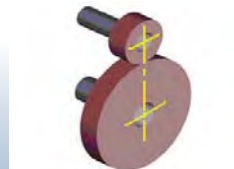
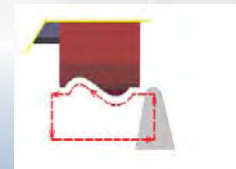
PLUNGE GRINDING



PROFILE GRINDING

4 GRINDING MODES

4 types of graphic conversational auto. wheel dressing mode can be executed together with 4 grinding modes and automatic wheel compensation.

TABLE TYPE
SINGLE TIP DRESSERTABLE TYPE
DIAMOND ROLLEROVER THE HEAD
DIAMOND ROLLER

PROFILE DRESSING

4 TYPES OF WHEEL DRESSING MODES

Test run your program using the simulation mode!



The faster you turn the electronic handwheel, the faster the program executes. if you have doubts, stop cranking and the machine stops.
NO OTHER GRINDER DOES THAT!

- No single blocks.
- No dry runs.
- Avoid crashes while test-running new programs
- Greatly reduced setup time



On-screen simulation path

Control Features

SMART-II Series

2

Auto. wheel compensation can be executed even in PROFILE dressing mode.



Pre-set the dressing function or dress the wheel anytime during the grinding cycle.



Graphic input dressing grinding path

After cycle end, system allows the operator to execute additional finish cuts without repeating the whole cycle.

SMART Control Functions

- Microsoft Win CE Platform
- 10.4" TFT Color Screen
- Simple Graphic Conversational controller with preview function
- Various built-in factory-programmed canned cycles
- Surface/Plunge/Criss-Cross/Profile grinding modes
- Powerful graphic program input function, available for grinding and dressing
- Easy to operate and can combine grinding cycle, wheel dressing and auto compensation without using a CNC program
- Wheel dressing can be executed during grinding cycle
- Simulate grinding path and dressing cycles by turning MPG handwheel
- Grind multi-slots with different pitch and depth
- Conversational & G-code programs can be saved in hard drive or floppy disk.
- FANUC CNC program compatible
- Patented longitudinal stroke adjustment from screen

MULTI-FUNCTION CNC SURFACE GRINDER

3

Designed to meet your surface,



FORM GRINDING



PROFILE GRINDING



FORM GRINDING



CERAMIC SURFACE GRINDING



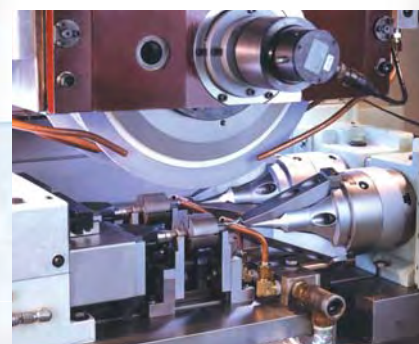
OD GRINDING



STEP GRINDING



FORM GRINDING



PUMP ROTOR SLICING



SLICING

GRAPHITE ELECTRODE PARTS



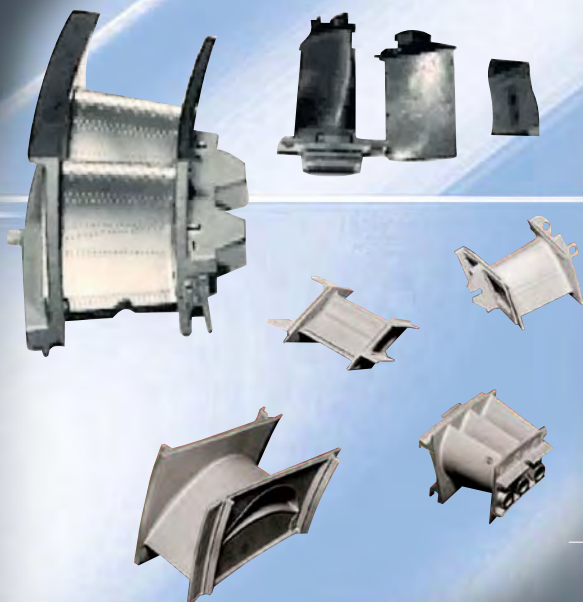
AUTO PARTS



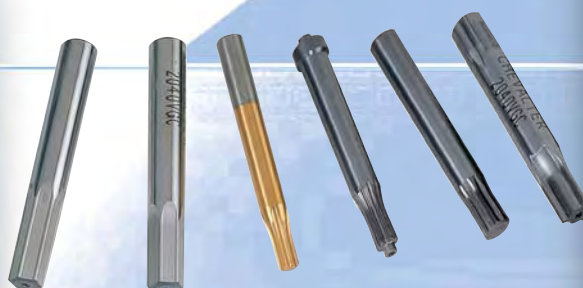
form and profile grinding needs.

4

AEROSPACE-TURBINE BLADE



PUNCHER



ALL KINDS OF FORM /PROFILE GRINDING PARTS

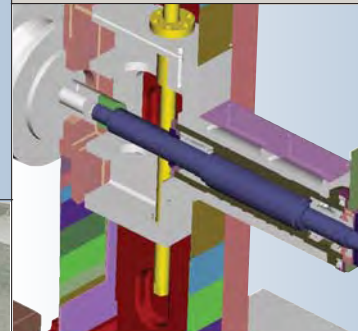


SMART CNC SURFACE / FORM

SMART-Series

Spindle

- The spindle is supported by 4 pieces of class 7(P4) super precision angular contact ball bearings and directly coupled with low vibration class v3 spindle motor. Air purged spindle available upon request.



Base and saddle

- Specially designed one-piece T-shaped base casting offers superior rigidity.
- Hand-scraped, Turcite-B Coated crossfeed guideways between base and saddle have double " V " design; provides support for full table travel and prevents table overhangs.

SMART-H818 II

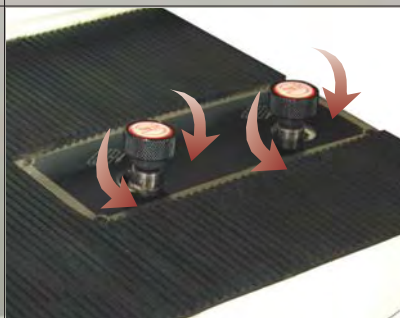
Note: Machine shown with optional accessories

/B818 Series

l Features

/B818II

/ PROFILE GRINDING MACHINE



Hydraulic creep-feed function

- Table longitudinal movement speed can be adjusted easily by turning these two knobs. (H type Standard)



Quick lock/unlock mechanism

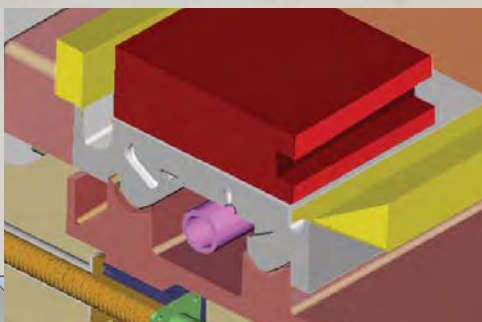
- Hydraulic cylinder can be disengaged very quickly for quick fixture alignment. (H type Standard)



Counterweight balance device

Elevating Mechanism

- Headstock elevation accuracy is adjusted by gibs and designed with counterweight balance device to ensure the micro downfeed accuracy.



Double " V " ways for table and saddle

- Hand-scraped, Turcite-B coated Longitudinal ways between table and saddle are of double " V " design, ideal for delicate side grinding operations.



- SMART-H TYPE GRINDER.(2 axis CNC CONTROL), with hydraulic table longitudinal movement.
- SMART-B TYPE GRINDER.(3 axis CNC CONTROL),with ballscrew for table longitudinal movement.



SMART-H/B 1

SMART-

Mechanics

Spindle

- The spindle is supported by 4 Class P4 super precision angular contact ball bearings that are permanently lubricated. The new spindle design includes circulation grooves on spindle with options for air and oil cooling.



SMART-H1224 II

Note: Machine shown with optional accessories

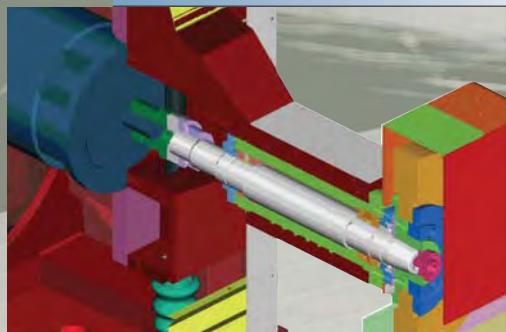
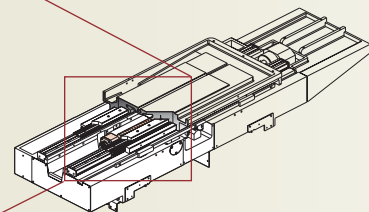
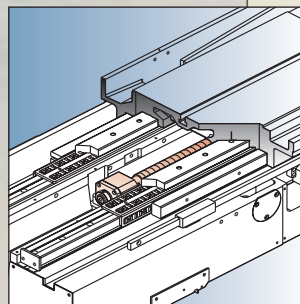


Table Guide

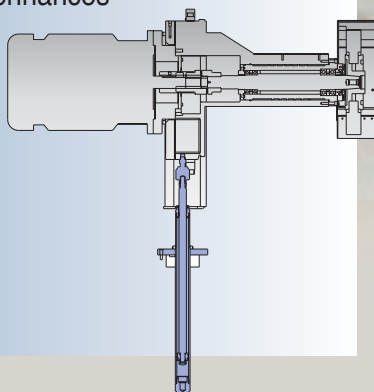
Hardened and ground table guide roller bearings provide precise



Smart B Type grinders (3 axis CNC control) use ballscrews and programmable controls for table travel from 0.032fpm(10mm/min) to 49fpm(15000mm/min)

Counterbalance System

- A counterbalance in the spindle vertical drive prolongs ballscrew life and enhances downfeed accuracy.



Heavy Duty Needle Roller Bearings

- Ultra low friction - better accuracy
- Low maintenance cost

2/16 Series

H/B12/16 II

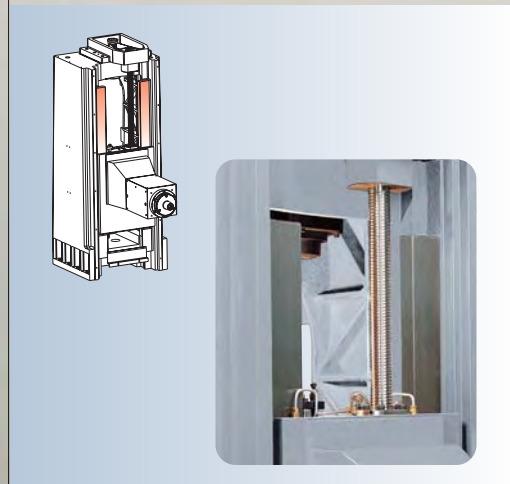
8

Key Features



SMART-B1640 II

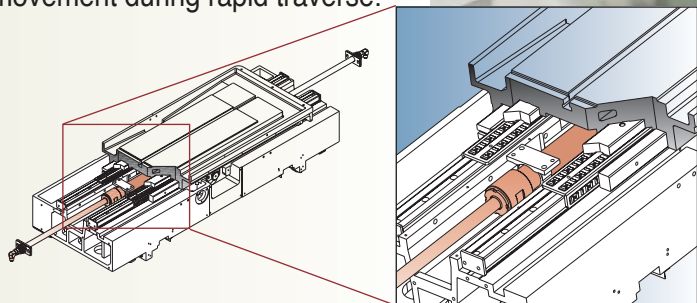
Note: Machine shown with optional accessories



Hardened and ground wheelhead and column ways

Guideway System

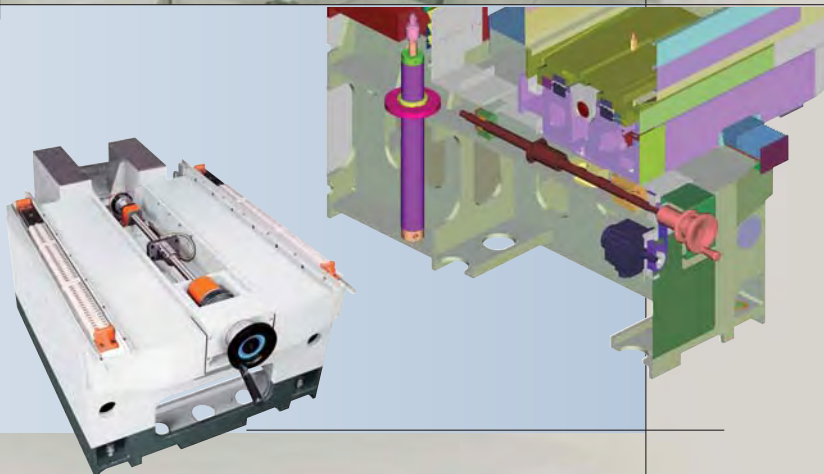
Guideway system with precision needle roller linear movement during rapid traverse.



Smart H Type grinders (2 axis CNC control) use hydraulic drive with control table speed movement from 16fpm(5m/min) to 82fpm(25m/min)

Base and Saddle Guideway system

- The base and saddle guideway systems use needle roller bearings running on heavy duty slide rails. The one-piece base casting has been stress relieved and finite element analyzed.



Optional Accessories

9

SMART-H/B818/12/16 II

- 1 .
*Three point
diamond dresser*



For dressing wheel 3
faces .

- 2 .
*Coolant system
with paper filter*



Providing efficient cooling and
better ground surface results.
Volume:120L
Paper feeding motor:25W
Pump:1/8HP
Coolant Capacity:20L/min

- 3 .
Chuck controller



Input:140VAC
Output:110VDC

- 4 .
*Electro-magnetic
chuck*



Various size for selection
(must order chuck controller)

- 5 .
CNC rotary table



AC servo driven and
CNC controlled device
Resolution:0.001°/STEP
Max.rpm:33.3rpm
Positioning error:0 °0'20"

- 6 .
Single disc dresser



Can be mounted on table for
quicker dressing.
Spindle RPM:2000rpm
Shaft Dia:1"(25.4mm)
Clamping Width:0.78"(20mm)

- 7 .
Wheel Flange



818 clamping width:1/4" - 3/4"
1224/1640 clamping width:3/4" -
1 1/2"

- 8 .
*Spindle frequency
inverter*



- (7.5HP 200V)
(Voltage:220V,230V,240V)
- (5HP+Transformer 10.5KVA)
(Voltage: 200V, 208V, 346V-575V)
- (7.5HP+Transformer 12.5KVA)
(Voltage: 200V, 208V, 346V,575V)
- (10HP 200V)
(Voltage:220V,230V,240V)
- (10HP+Transformer)
(Voltage: 200V, 208V,230V,240V, 346V-575V)

9.Machine lamp

10.Double sides water baffle

11.Linear scales (with axis card)

12.Spindle Oil chiller

13.Table mount angular dresser

14.7000rpm spindle with variable speed control

15.Wheel balancing stand

16.Fully enclosed splash guard

17.Hyd Creep-feed device (for 12/16 hyd. model)

18.Auto wheel balancing system

Standard Accessories

SMART-H/B818/12/16 II

- 1.Balancing arbor
- 2.Wheel mounting
/dismounting tools
- 3.Hole plugs
- 4.Tool box
- 5.Leveling pads
- 6.Leveling screws

- 7.Touch-up paint
- 8.Wheel flange
- 9.Table splash guard
- 10.Hex head wrench
- 11.Fuses
- 12.Grinding wheel

General Specifications

SMART-H/B818/12/16 II

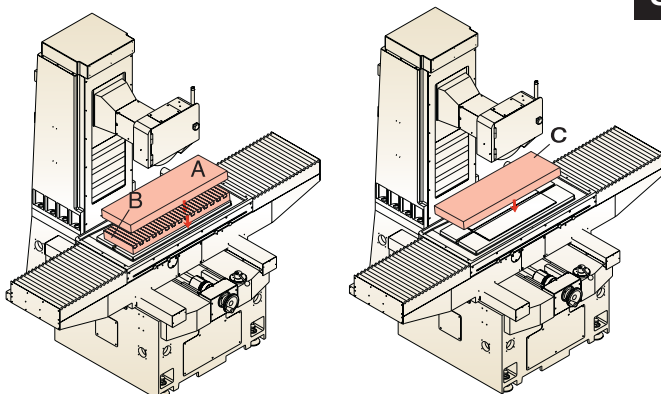
10

Description	H818II	B818II	H1224II	B1224II	H1632II	B1632II	H1640II	B1640II
Table								
Size (mm)	8" × 18"(200 × 460)		113/4" × 23 5/8"(300 × 600)		15 3/4" × 31 1/2"(400 × 800)		15 3/4" × 39 3/8"(400 × 1000)	
Max. Grinding Length(mm)	18"(460)		24"(610)		32"(810)		40"(1015)	
Max. Grinding width(mm)	8"(200)		12"(305)		16"(405)		16"(405)	
Max. Distance From Table Surface To Spindle Center(mm)	18"(457)	16"(406)	24 3/4"(630)		24 3/4"(630)		24 3/4"(630)	
Standard Magnetic Chuck Size(mm)	7 7/8" × 17 3/4" (200 × 450)		11 3/4" × 23 5/8" (300 × 600)		15 3/4" × 31 1/2" (400 × 800)		15 3/4" × 39 3/8" (400 × 1000)	
Longitudinal Movement of Table								
Travel-Hydraulic(mm)	19.6"(500) 20"(510)		25 5/8"(650)		33 7/16"(850)		41 5/16"(1050)	
Max.Travel Manual(mm)	20"(510)		27 1/2"(700)		35 3/8"(900)		43 1/4"(1100)	
Table Speed fpm	0.065-82 0-55.75		16-82 0.032-49		16-82 0.032-49		16-82 0.032-49	
infinitely Variable (m/min)	hi(0.02-25) (0-17)		(5-25) (0.01-15)		(5-25) (0.01-15)		(5-25) (0.01-15)	
Cross Transverse Travel								
Least Increment Input (mm)	0.0001"(0.001)		0.0001"(0.001)		0.0001"(0.001)		0.0001"(0.001)	
Max. Travel(mm)	8 3/4"(220)		14 5/8"(370) 14 5/8"(370)		18"(460) 18"(460)		18"(460) 18"(460)	
Rapid Travel	0-10fpm(0-3m/min)		0-10fpm(0-3m/min)		0-10fpm(0-3m/min)		0-10fpm(0-3m/min)	
Wheel head Elevation								
Least Increment Input(mm)	0.0001"(0.001)		0.0001"(0.001)		0.0001"(0.001)		0.0001"(0.001)	
Rapid Travel	0-10fpm(0-3m/min)		0-10fpm(0-3m/min)		0-10fpm(0-3m/min)		0-10fpm(0-3m/min)	
Spindle Grinding Drive								
Speed HZ/rpm	60/3450 \ 50/2850		50/1450 \ 60/1750 (7 1/2)5.6		50/1450 \ 60/1750 (7 1/2)5.6		50/1450 \ 60/1750 (7 1/2)5.6	
Power Rating(HP)/KW	(2)/1.5		OPT (15)/11.25,(10)/7.5		OPT (15)/11.25,(10)/7.5		OPT (15)/11.25,(10)/7.5	
Hyd.Power								
Power Rating	1HP/0.75KW	NONE	1HP/0.75KW	NONE	2HP/1.5KW	NONE	2HP/1.5KW	NONE
Longitudinal Servo Motor								
PowerRating	NONE	2.66HP/2KW	NONE	4.7HP/3.5KW	NONE	4.7HP/3.5KW	NONE	4.7HP/3.5KW
Cross Servo motor								
PowerRating	AC Servo 1.3HP/1KW		AC Servo 1.3HP/1KW		AC Servo 1.3HP/1KW		AC Servo 1.3HP/1KW	
Elevation Servo motor								
PowerRating	AC Servo 1.3HP/1KW		AC Servo 1.3HP/1KW		AC Servo 1.3HP/1KW		AC Servo 1.3HP/1KW	
Total PowerRating	9.4HP(7KW)/10.7HP(8KW)		12 1/2HP(9.4KW)/15HP(11.5KW)		12 1/2HP(9.4KW)/15HP(11.5KW)		12 1/2HP(9.4KW)/15HP(11.5KW)	
Max.Table Loading	462lbs/210kg		924lbs/420kg		1320lbs/600kg		1474lbs/210kg	
Standard grinding wheel (Dia.XWidthXBore(mm))	Ø8" × 1/2" × Ø1 1/4" Ø203 × 12.7 × Ø31.75		Ø14" × 2" × Ø5" Ø355 × 50 × Ø127		Ø14" × 2" × Ø5" Ø355 × 50 × Ø127		Ø14" × 2" × Ø5" Ø355 × 50 × Ø127	
Net Weight	2665 lbs (1210Kgs) 88" × 88" × 88"		4849lbs(2200kgs) 98" × 70" × 94"		6394lbs(2900kgs) 105" × 76" × 94"		7710lbs(3500kgs) 105" × 76" × 94"	
Packing Dimensions(mm)	(2235 × 2235 × 2235)		(2490 × 1778 × 2390)		(2667 × 1930 × 2390)		(2667 × 1930 × 2390)	
Floor Space(mm)	80.9" × 82.36" × 82.7" (2055 × 2092 × 2100)		109" × 105" × 87" (2776 × 2672 × 2210)		132" × 114" × 87" (3350 × 2896 × 2210)		132" × 114" × 87" (3350 × 2896 × 2210)	

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.

SMART-H/B818/12/16II Max. Loading Capacity



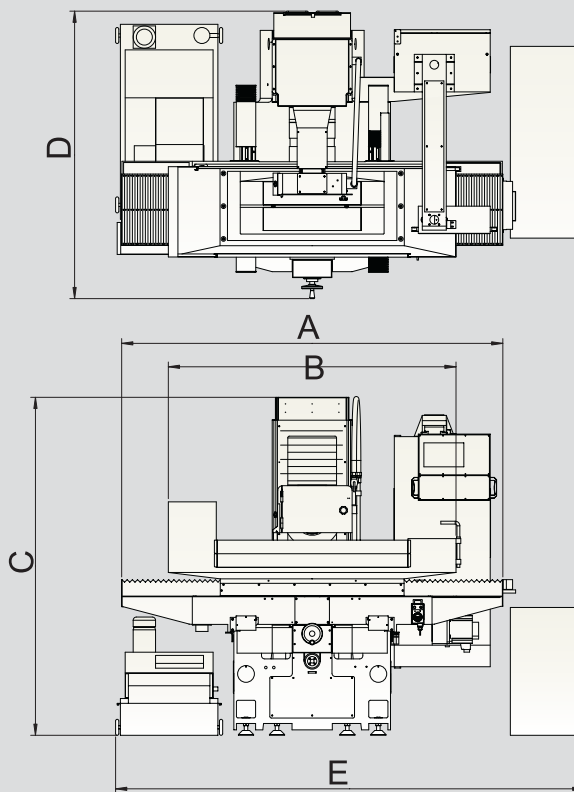
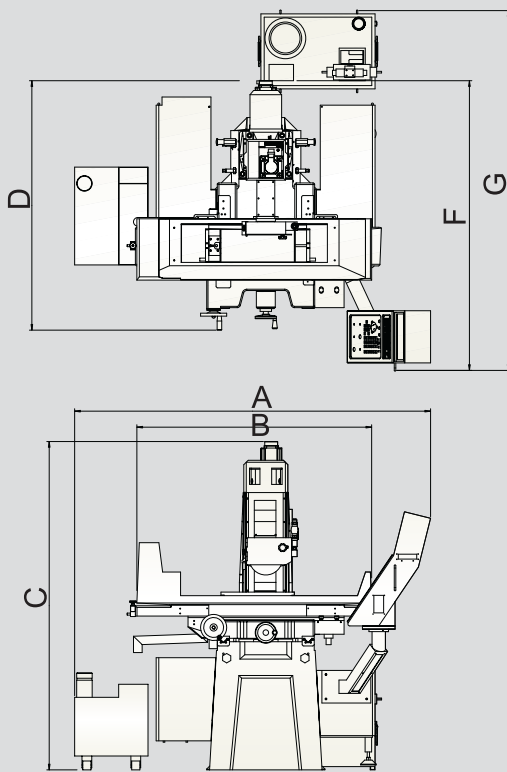
A = PARTS B = CHUCK C = A + B

TYPE	SMART-818	SMART-1224	SMART-1632	SMART-
A lbs	385	690	946	930
(kg)	(175)	(314)	(403)	(423)
B lbs	77	233	433	543
(kg)	(35)	(106)	(197)	(247)
C lbs	462	923	1319	1473
(kg)	(210)	(420)	(600)	(670)

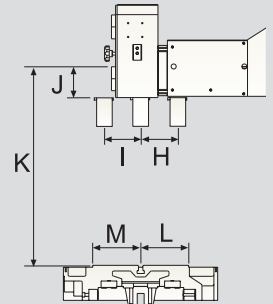
DIMENSIONAL DRAWINGS

SMART-H/B818II

SMART-H/B12/16 II

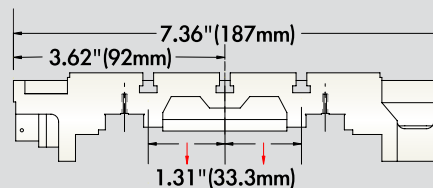


Max. Wheel Crossfeed Position



T-SLOTS

3 T-SLOTS for 16 Series



MODEL: SMART-H/B818II	SMART-H/B1224II	SMART-H/B1632.1640II	MODEL: SMART-H/B818II	SMART-H/B1224II	SMART-H/B132.1640II
A 86"(2183mm)	93 1/2"(2376mm)	137 1/2"(3493mm)	H 4 15/16"(110mm)	7"(180mm)	9 1/2"(240mm)
B 56 5/7"(1440mm)	45 1/4"(1150mm)	57 1/4"(1455mm)	I 4 15/16"(110mm)	7"(180mm)	9 1/2"(240mm)
C 79 1/3"(2014mm)	82"(2085mm)	82"(2085mm)	J 2 23/64"(60mm)	3 6/25"(82mm)	3 6/25"(82mm)
D 60 1/5"(1530mm)	75 1/4"(1912mm)	83 1/3"(2116mm)	K 18"(457mm)	24 3/8"(620mm)	24 7/16"(620mm)
E N/A	109 1/4"(2776mm)	153 1/4"(3893mm)	L 3 15/16"(100mm)	6"(152.5mm)	8"(152.5mm)
F 70"(1777mm)	105 1/8"(2672mm)	113 1/4"(2876mm)	M 3 15/16"(100mm)	6"(152.5mm)	8"(152.5mm)
G 86 5/6"(2207mm)	N/A	N/A			



Ta-Ya Factory (TAIWAN)



Chuang Hsing Factory (TAIWAN)



U.S.A. Office and warehouse

CHEVALIER MACHINERY INC.

9925 TABOR PLACE
SANTA FE SPRINGS, CA 90670
TEL: (562)903-1929
<http://www.chevalierusa.com>
E-mail: info@chevalierusa.com

FAX: (562)903-3959