

CHEVALIER®

FCG-610

UNIVERSAL TOOL & CUTTER GRINDER



FCG-6

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FEATURES

- Compact & rigid design for precise and safe operation.
- Steel balls in longitudinal travel for smooth movement.
- Large easy to read dials.
- Air bearing fixture (B90-C2AH)
- Air quill made of heat treated alloys, chrome plated, ground and lapped.
- Precision built and fitted with high grade castings and aluminum alloy throughout.
- Forward / Reverse switch.
- Rapid mounting of grinding attachments.
- Worm and worm gear for wheelhead angle adjustment.
- Precision acme screw for 160mm(6 5/16")vertical adjustment of wheelhead
- Worm and worm gear for 360 degree column adjustment.
- Adjustable limit switches on longitudinal travel.
- Backlash adjustment for leadscrew nut on crossfeed.
- Universal grinding accomplished with various wheels-flaring cup, saucer wheel or diamond wheel.

NOTE: End mill and 5C collet are not standard accessories.

UNIVERSAL TOOL & C



Note: Machine shown

APPLICATION EXAMPLES



Sharpening side milling cutter held on **B90-C2SH** fixture with a **B90-AA01-B90-AA15** arbor, **B90-C2R1** plain tooth rest is indexed against index disc.



Sharpening gear hob held on **B90-AB01** arbor, **B90-C2R2** plain tooth rest is indexed against index disc.



Sharpening drill tap held on **B90-2104** working head.



Sharpening side milling cutter held on **B90-AB01-AB04** arbor, **B90-C2R2** plain tooth rest is indexed against index disc.



A straight shank end mill being sharpened, held on **B90-C2AH** fixture with 5C collet.



Sharpening circular saw blade held on **B90-C1SG** attachment.



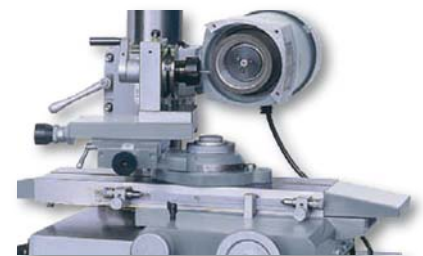
Sharpening a ball radius end mill held on **B90-C1RG** attachment.



Sharpening turning tool set-up on **B90-C2LH** fixture



Sharpening face milling cutter being held in the **B90-C2SF** fixture with a **B90-AA25** arbor, cutter is indexed with **B90-C2R1** univ. tooth rest, and wheel is Diamond cup wheel.



Engraving, radius and end mill grinder held on **B90-C3RG** fixture

CUTTER GRINDER

MACHINE CONSTRUCTION



FCG-610

shown with optional accessories



FCG-610 is driven by steel rollers



B90-2104
6-JAW WORKING HEAD for sharpening drill (dia. 3-32mm" (1/4"-1 1/4")) & tap (2/3/4/6 flute)



B90-C3RG
ER collet dividing punch grinder attachment



B90-C2AH
End mill grinder. Air bearing fixture 5C, 5C collet taper



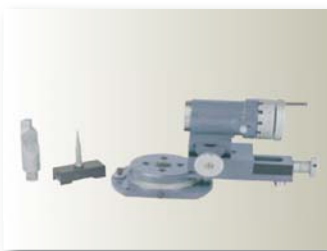
B90-C2T12
TAILSTOCK (Left & Right)



B90-C2SH
SENSITIVE WORK HEAD B&S TAPER NO.11 with **B90-AK24** index disc



B90-C2LH
WORK HOLDING FIXTURE



B90-C1RG
RADIUS ATTACHMENT



B90-C2R1
UNIVERSAL TOOTH REST with **B90-C2R1-1a** or **b** Micro tooth rest and **B90-C2R1-2a** or **b** Micro tooth rest (a=metric, b=inch)



B90-C2SF
SENSITIVE WORK HEAD NT#50 TAPER with **B90-AK24** index disc



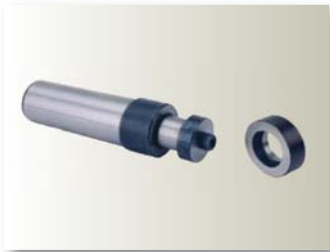
B90-C1SG
CIRCULAR SAW BLADE GRINDING ATTACHMENT (Max. to 508mm(20") dia)



B90-AF01B
(to be used with **B90-C2SH**) 4" Adjustable 3-jaw Chuck mounted on B&S NO.11 taper arbor which will fit all fixtures with B&S NO.11 spindle.

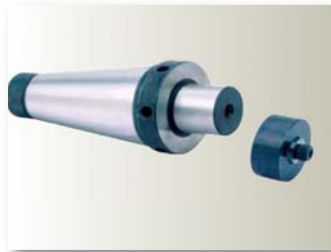


B90-C2R2
PLAIN TOOTH REST



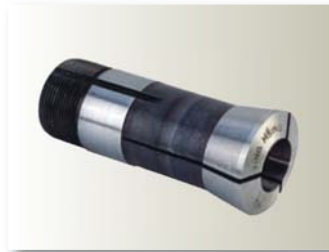
ARBORS (to be used with **B90-C2SH**) Shell End Mill and Cutter Arbor B&S NO.11 Taper O.D. specially designed to sharpen O.D. And Face of Shell Type Milling Cutters.

Part NO.	Dia. (inch)
B90-AA01	1/2 Arbor
B90-AA02	5/8 Arbor
B90-AA03	3/4 Arbor
B90-AA04	7/8 Arbor
B90-AA05	1 Arbor
B90-AA06	1 1/4 Arbor
B90-AA07	1 1/2 Arbor
Part NO.	Dia. (inch)
B90-AA10	13 Arbor
B90-AA11	16 Arbor
B90-AA12	22 Arbor
B90-AA13	27 Arbor
B90-AA14	32 Arbor
B90-AA15	40 Arbor



ARBOR (to be used with C2SF) Sharpening Face Milling Cutters Arbors NT#50 Taper O.D.(see picture above)

Part NO.	Dia. (inch)
B90-AA20	1 1/2
B90-AA21	2
Part NO.	Dia. (mm)
B90-AA25	40
B90-AA26	60



5C COLLET

5C Collets to fit AC01 Collet Sleeve and **B90-C2AH** Air Bearing Fixture.

B90-5CI: 3/16", 8/8", 1/2", 5/8", 3/4", 7/8", 1"(7pcs.)

B90-5CM: 6, 8, 10, 12, 16, 20, 25mm(7pcs.)



COLLET FIXTURE

B90-AC01A for changing **B90-C2SH** from B&S NO.11 Taper to accept 5C collet.



CUTTER AND HOB GRINDING

ARBOR(to be used with tailstock) arbors available:

B90-AB01 1/2" Arbor*

B90-AB02 1" Arbor*

B90-AB03 13mm Arbor*

B90-AB04 27mm Arbor*

*with Taper Collet for Index Disc

B90-AB05 3/4" Sleeve must be put in B90-AB01

B90-AB06 7/8" Sleeve must be put in B90-AB01

B90-AB07 1 1/4" Sleeve must be put in

B90-AB02

B90-AB08 1 1/2" Sleeve must be put in B90-AB02

B90-AB09 2" Sleeve must be put in B90-AB02

B90-AB10 16mm Sleeve must be put in B90-AB03

B90-AB011 22mm Sleeve must be put in B90-AB03

B90-AB012 32mm Sleeve must be put in B90-AB04

B90-AB013 40mm Sleeve must be put in B90-AB04



STRAIGHT SLEEVES

5C Collet Taper O.D. set-up on B90-AC01 Collet Sleeve and B90-C2AH Air Bearing Fixture Spindle.

B90-AC25 1 1/4" I.D.

B90-A45 1 1/2" I.D.

B90-A51 50mm I.D.

B90-AC28 40mm I.D.

B90-AC26 32mm I.D.

B90-A46 2" I.D.



TAPER ARBOR

5C Collet Taper O.D. set-up on **B90-AC01** Collet Sleeve and **B90-C2AH** Air Bearing Fixture Spindle.

B90-AC27 J6 Taper O.D.



INDEX DISCS

B90-AK24-60 Index Discs to fit **B90-C2SH & B90-C2SF** Sensitive Work Head including **B90-AK24** to **AK60** for 24, 30, 32, 34, 36, 40, 42, 44, 46, 48, and 60 divisions. Special Index Discs with any number divisions will be furnished on request.



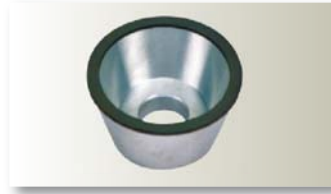
TAPER SLEEVES

5C Collet Taper O.D. set-up on **B90-AC01** Collet Sleeve and **B90-C2AH** Air Bearing Fixture Spindle.

B90-AC07 NO.3 MT Taper I.D.

B90-AC08 NO.2 MT Taper I.D.

B90-AC09 NO.1 MT Taper I.D.



DIAMOND CUP WHEEL

B90-AW101: 150x10x2x31.75mm (6"x26/64"x5/64"x1 1/4")

B90-AW102: 100x5x3x31.75mm (4"x13/64"x7/64"x1 1/4")

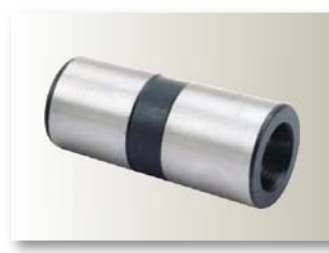


GRINDING WHEEL

B90-AW10:Saucer wheel 150x13x31.75mm (6"x1/2"x1 1/4")

B90-AW15:Cupwheel 125x50x31.75mm (5"x4"x1 1/4")

5112-70640605:Straight wheel 150x13x31.75mm (6"x1/2"x1 1/4")



TAPER SLEEVES

(to be used with **B90-C2SH**) B&S NO.11 Taper O.D. These sleeves can be used on all types of Cutters with Taper Shanks.

B90-AC20 4MT I.D.

B90-AC21 3MT I.D.

B90-AC22 2MT I.D.

B90-AC23 1MT I.D.

1. Cup wheel 2 pcs
2. Saucer wheel guard
3. Adjusting tools
4. 5C collet 1 set(7pcs)
B90-5CI: 3/16", 8/8", 1/2", 5/8", 3/4", 7/8"
1"(7pcs.)
B90-5CM: 6, 8, 10, 12, 16, 20, 25mm(7pcs.)
5. **B90-C2D1** DIAMOND DRESSER



DIAMOND DRESSER



5C collet set

OTHER OPT. ACCESSORIES

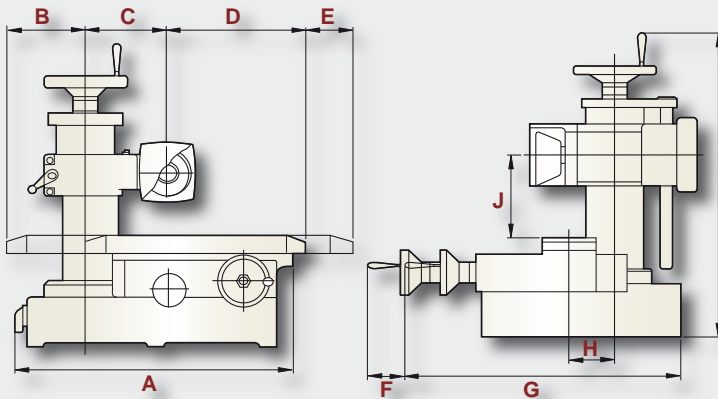
1. **B90-TA02**
TAPER ATTACHMENT



2. **5100-50850520**
SFRAIGHT WHEEL FOR
B90-2104
125x50x31.75mm(5"x2"x1 1/4")



3. **2100-C3412000**
MACHNE FLOOR STAND

DIMENSIONAL DRAWINGS

ITEM	DIMENSION	ITEM	DIMENSION
A	550mm(21 1/2'')	G	540mm(21 1/4'')
B	220mm(8 1/2'')	H	max: 283mm(11 1/8'') min: 133mm(5 1/4'')
C	190mm(7 1/2'')	I	645mm(25 13/32'')
D	461mm(18'')	J	max: 280mm(11'') min: 85mm(3 11/32'')
E	40mm(1 1/2'')		
F	150mm(6'')		

SPECIFICATION

Description	FCG-610
Distance between tailstocks	250mm (10'')
Swing over table	205mm (8'')
Longitudinal travel of table	250mm (10'')
Cross travel of saddle	160mm (6 5/16'')
Working table area	133mm x 470mm (5 1/4'' x 18 1/2'')
Dimension of T-Slot	11.1125mm x 20mm x 8mm (7/16''x 25/32'' x 5/16'')V
Vertical adjustment of wheel head	190mm (7 1/2'')
Swivel adjustment of column	360°
Vertical tilting range of wheel head	360°
Diameter of wheel(I.D. 1 1/4'')	Saucer Wheel 152mm (6'') Flaring Cup 127mm (5'')
Speed of wheel Speed of wheel	50Hz, 2850RPM 60Hz, 3450RPM
Motor	1/3HP, 1ph/110-220V 1/3HP, 3ph/220V
Net weight	125kg (275 lbs)
Packing Dimension (L x W x H) (Without Stand)	762mm x 686mm x 762mm (30'' x 27'' x 30'')
Noise level	below 80(dB)A

※ 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.

GRINDING ATTACHMENT SELECTIONS

GRINDING	APPLICATION RANGE	ACCESSORIES
1. B90-C2AH	END MILLS (Not suitable for tapered end mills)	5C Collet (Metric: 6~5mm, Inch:3/16''-1'') . B90-AC07/AC08/AC09: Taper Sleeve . B90-AC25/AC26/AC28: 5C Straight Sleeve . B90-AW15: Cup Wheel
2. B90-C1RG	PRIMARY AND SECONDARY RELIEF ANGLES OF END MILLS	5C Collet (Metric: 6~5mm, Inch:3/16''-1'') . B90-AC07/AC08/AC09: Taper Sleeve . B90-AC25/AC26/AC28: 5C Straight Sleeve . B90-AW15: Cup Wheel . Center Gauge, Horizontal Gauge
3. B90-C2LH	TURNING TOOLS	B90-AW101/AW102: Diamond Wheel . B90-AW15: Cup Wheel
4. B90-C2SH	RELIEF ANGLE OF SIDE MILLING CUTTERS	B90-AA10-AA15: Arbors(Metric: 13-40mm) . B90-AA01-AA07: Arbors(Inch: 1/2''~1 1/2'') . B90-AK24-AK60: Index Disc . B90-AC20-AC30: Taper Sleeve . B90-AC01A: Collet Fixture B90-AC07/AC08/AC09: 5C Collet (Metric: 6-25mm, Inch: 3/16''-1'') Taper Sleeve . B90-AC25/AC26/AC28: 5C Straight Sleeve . B90-AW101/AW102: Diamond Wheel
5. B90-C2SF	RELIEF ANGLE OF SURFACE MILLING CUTTERS	B90-AA25: Arbor(Metric: 40mm) . B90-AA26: Arbor(Metric: 60mm) . B90-AA20: Arbor(Inch: 1 1/2'') . B90-AA21: Arbor(Inch: 2'') . B90-AK24-AK60: Index Disc . B90-AW101/AW102: Diamond Grinding Wheel
6. B90-C2T12	RELIEF ANGLE OF SIDE MILLING CUTTERS AND GEAR (Inner diameter 13~40mm(1/2''~2''))	B90-AB01-AB13 . Cutter & Hob Grinding Arbor . B90-AK24-AK60: Index Disc . B90-C2R2: Plain Tooth Rest . B90-AW10: Disc Wheel (For Gear Rolling Tool) . CS270000: Lengthened Wheel Flange . B90-AW15: Cup Wheel(For Side Cutter)
7. B90-C1SG	RELIEF ANGLE OF SAW BLADES Maximum outer diameter 500mm(20'')	B90-C2R1: Universal Tooth Rest . B90-AW10: Disc Wheel . CS270000: Lengthened Wheel Flange
8. B90-2104	DRILLS (Diameter 6~32mm(1/4''~1 1/4'')) and TAPS (2/3/4/6 Flutes)	B90-2104 includes 1pc MT3 Sleeve, 6pcs Centers, 1pc 6-Jaw Head, 1pc Straight Wheel 5100-50850520(125 x 50 x 31.75mm(5'' x 4'' x 1 1/4'')) & 1pc Cam (optional) 2100-0338500 for right hand thread.

Cat.: 2116-000/A00 / R000048428 / 20050708 / 1000 DTP Design: VIVI / FALCON MACHINE TOOLS CO., LTD.



Manual Grinders
CNC Profile Grinders
Linear Motor CNC Profile Grinder
VMC (Various Sizes)
VMC w. turntable
CNC VTL w. Double Turret
CNC VTL
Slant Bed CNC Lathes
Teach-in Lathes

Grinder

VMC

Vertical Lathe

Lathe

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