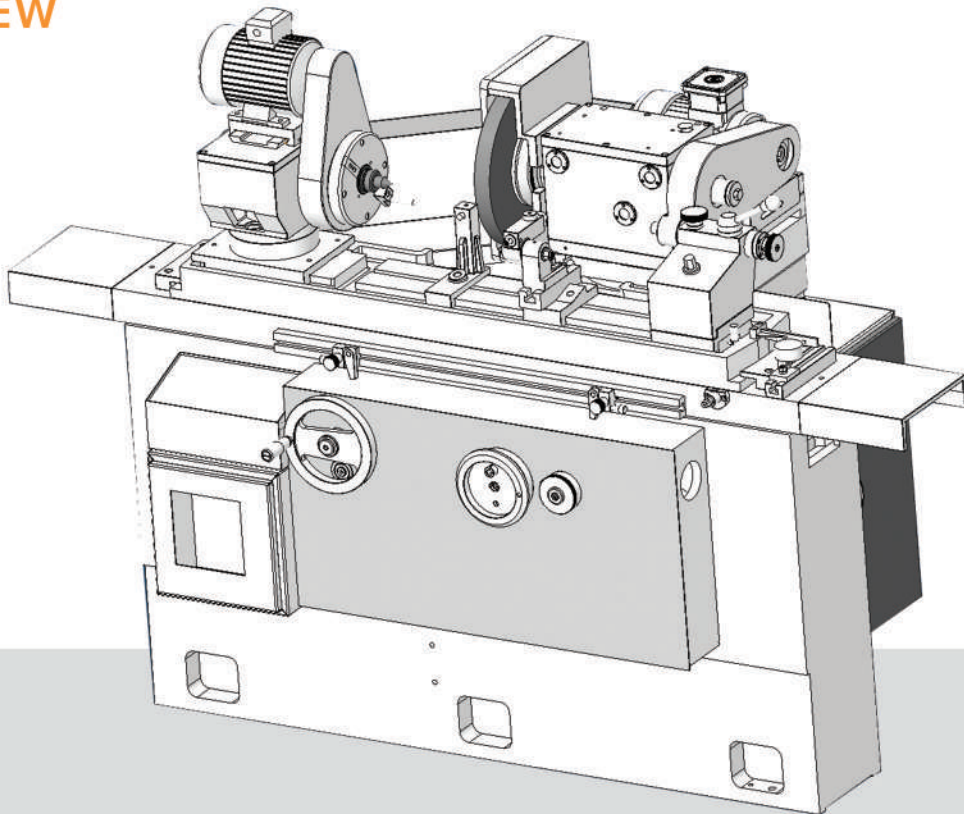


HCG SERIES
Hydraulic
Cylindrical Grinders



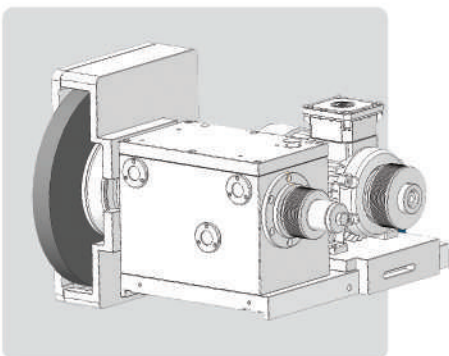
OVERVIEW



MACHINE BED

The Machine bed is made of one piece close special graded grain cast iron box structure design with optimum ribbing provides high static and vibration free dynamic rigidity to the machine. Artificial Stress relieving process carried for more dimensional stability.

The Precision hand scraped V-belt table guide ways with continuous lubrication. Longitudinal hand travel of the table is by rack and pinion arrangement and automatic travel by hydraulic mechanism.

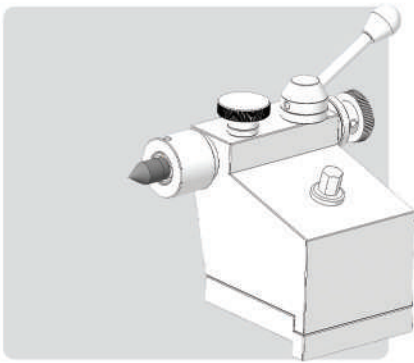
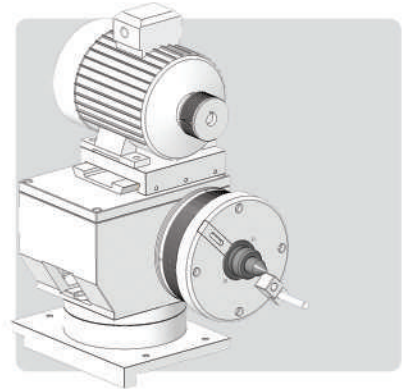


WHEEL HEAD

The Hydro Dynamic wheel head spindle is made of case hardened Nickel Chrome alloy steel ground and micro finished & runs in adjustable White metal bush bearing to achieve vibration free rotation with high accuracy and long life. Drive to the wheel head is transmitted by poly V-belts.

WORK HEAD

Work head spindle is made of case hardened alloy steel and runs with precision Taper Roller and Ball Bearing for Live and Stationery center. The drive to the work head is by induction motor via VFD to control job rpm for Grinding. The work head can be swivelled for taper grinding by chuck clamping/holding.

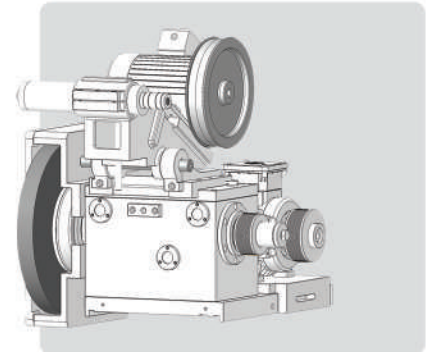


TAIL STOCK

The tail stock is spring loaded and can accept MT-3/4/5 taper and work as dead center as per models mentioned in specification.

INTERNAL GRINDING ATTACHMENT (OPTIONAL)

Machine is provided with Cartridge type Wheel spindle with two match pair sets of Angular Bearing for smooth performance while material cutting. This unit is with independent drive motor which is hinged on the wheel head and can be quickly lowered into grinding position. The drive to the Spindle is transmitted by flat belts.



COOLANT

Generous coolant supply is provided with electrical pump fitted on separate tank is of 95 litres capacity approx.

ELECTRICALS

The machine is supplied with all electrical suitable for 3Ø, 415 V Ac, 50 Hz cycle. The motors are approved & reputed brand make with IE2 standard. The electrical panel is mounted on one side of the machine, push button station is located at easy reach of the operator.

SINGLE AXIS (OPTIONAL)

Machine is also build for simple production line with logically developed programs with Siemens 808D controller. X slide movement with Ball Screw via Servo for precision positioning and better accuracy for simple Shaft and Internal Grinding operation. Whereas two plunge or Single Travers grinding cycles, with Auto Dressing cycle are available.

STANDARD FEATURES WITH SINGLE AXIS

- Single Axis CNC Internal Grinder with Siemens 808D as standard. Mitsubishi / Delta PLC option also available.
- Dedicated Programs with Two Plunge or Single Travers Grinding cycle.
- Dedicated Dressing Cycles.
- G code / M code compatibility with other NC builders.
- Skip Dressing Cycles.
- Pitch error & Back Lash compensation.
- RS 232 C serial Interface port.
- Inch/Metric switchable.
- Auto Programmable Centralise Lubrication Unit.
- AC Servo axis for Drive.
- Machine with Half enclosure

OPTIONAL ACCESSORY

- Internal Grinding Attachment with $\text{Ø}60 \times 250\text{L}$
- Internal Grinding Attachment with $\text{Ø}80 \times 250\text{L}$
- Universal Type Wheel Head.
- True Chuck Flange.
- Two Point Steady Rest up to $\text{Ø}25 \text{ mm}$.
- Three Point Steady Rest up to $\text{Ø}100 \text{ mm}$ for internal grinding.
- Wheel Spindle with Angular Contact Bearing.
- Additional Wheel Flange.
- Wheel Balancing Stand.
- Wheel Balancing Arbour.
- Wheel Head with VFD (Manual Speed Change Over)
- Optional Center Height up to 200 mm
- Optional MT-3 Taper for Work head and Tail stock for model HCG 450 / 600.
- Optional MT-4 Taper for Work head and Tail stock for model HCG 800 / 1000 / 1200
- Three jaw / Four Jaw Chuck (True chuck and Dog Chuck)
- Magnetic Separator for Coolant.
- Paper band with Magnetic Coolant Separator.

SPECIFICATION

DESCRIPTION	UNIT	MODEL				
		HCG-E 450	HCG-E 600	HCG-E 800	HCG-E 1000	HCG-E 1200
CAPACITY						
SWING OVER TABLE	mm	250		300		
ADMIT BETWEEN CENTRES	mm	450	600	800	1000	1200
WORK HEAD CENTER HEIGHT*	mm	125 (200 OPTIONAL)		150 (200 OPTIONAL)		
GRINDING DIAMETER MAX (O.D.)	mm	250		300		
GRINDING DIAMETER MIN (O.D.)	mm	5		25		
GRINDING DIAMETER MAX (I.D.)	mm	100				
GRINDING DIAMETER RANGE (I.D.)	mm	12				
MAX. WEIGHT OF JOB BETWEEN CENTER	Kg	70		120		
WHEEL HEAD						
GRINDING WHEEL SIZE (OD X ID X WIDTH)	mm	350 X 127 X 40		400 X 127 X 40		
WHEEL DISCARD DIAMETER	mm	200				
SPINDLE SPEED MAX. (33 MPS)	rpm	1800		1600		
SPINDLE SIZE	mm	41.22				
SPINDLE MOTOR POWER	kw/hp	2.25/3				
WHEEL TABLE X-AXIS HYDRAULIC						
X-AXIS STROKE	mm	200		300		
RAPID APPROACH TRAVEL	mm	35				
MIN. INCREMENT ON DIAMETER	mm	0.002				
GUIDE WAYS TYPE	mm	V AND FLAT TURCITE				
WHEEL TABLE X-AXIS WITH SERVO (OPTIONAL)						
X-AXIS STROKE	mm	200		300		
RAPID FEED RATE	mtr/min	15				

SPECIFICATION

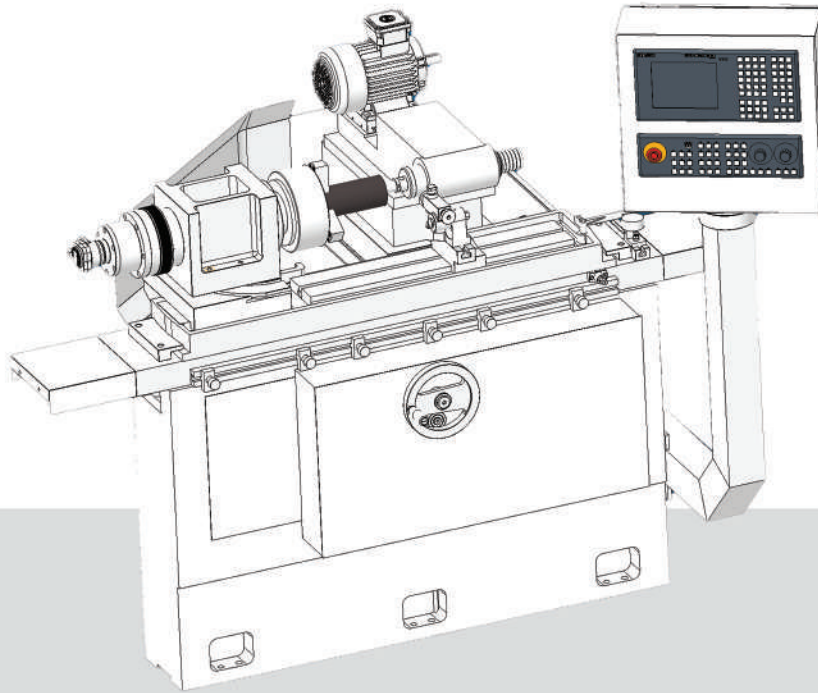
		MODEL				
DESCRIPTION	UNIT	HCG-E 450	HCG-E 600	HCG-E 800	HCG-E 1000	HCG-E 1200
MINIMUM RESOLUTION	mm	0.001				
SERVO MOTOR TORQUE	Nm	8				
BALL SCREW	mm	Ø25 X 5				
GUIDE WAYS TYPE	mm	V AND FLAT TURCITE				
TABLE						
TABLE SPEED (MIN/MAX)	mm/ min	300/4000				
TABLE STROKE	mm	480	630	830	1030	1230
MAX. SWIVEL OF TABLE	deg(°)	7°				
GUIDE WAYS TYPE	mm	V AND FLAT TURCITE				
WORK HEAD						
TAPER BORE**	mm	MT-4		MT-5		
SPINDLE SPEED	rpm	30-500				
SPINDLE MOTOR POWER	kw/hp	0.75/1				
SWIVEL OF WORK HEAD	deg(°)	±45°				
TAILSTOCK						
CENTER TAPER#	mm	MT-4		MT-5		
QUILL TRAVEL	mm	20				
QUILL DIA.	mm	45		60		
HYDRAULIC UNIT						
TANK CAPACITY	litre	50		100		
MOTOR POWER	kw/hp	0.37/0.5				
PUMP CAPACITY	lpm	4		6		
INTERNAL GRINDING ATTACHMENT (OPTIONAL)						
SPINDLE DIMENSION	mm	Ø60 X 250		Ø80 X 250		
SPINDLE SPEED	rpm	18000		14500		
SPINDLE ATTACHMENT BORE	mm	Ø60		Ø80		
OPTIONAL SPINDLE DIMENSION	mm	Ø80 X 250		Ø60 X 250		

SPECIFICATION

DESCRIPTION	UNIT	MODEL				
		HCG-E 450	HCG-E 600	HCG-E 800	HCG-E 1000	HCG-E 1200
OPTIONAL SPINDLE DIMENSION	mm	Ø50 X 250				
MOTOR POWER	kw/hp	0.75/1				
MAX. BORE GRINDING LENGTH	mm	100				
GENERAL						
OPERATION VOLTAGE	volts	3Ø 415V AC				
TOTAL POWER REQUIRED	kw/hp	3.5/4.75				
FLOOR SPACE	mm	2100 X 1200	3200 X 1400	3100 X 1200	3700 X 1200	3900 X 1200
MACHINE WEIGHT(APPROX.)	kg	1600	1800	3100	3300	3500

Note:
Minimum and Maximum grinding diameter as specified above may vary based on specific requirement. Work head spindle is with Live center as per operating. Features and Specification may vary as specific job requirement. Colour as shown in picture may not match with actual machine colour. Machine Guard May Change as per Job Specification and Accessary used. As per Grinding length, Wheel utilisation will change depending upon swivel angle. Please discuss suitability to your requirement before ordering to us. As a part of Continuous Improvement Process, design and specification subjected to change without prior notice and information.

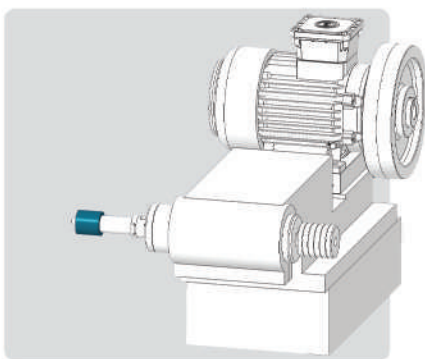
OVERVIEW



MACHINE BED

The Machine bed is made of one piece close special graded grain cast iron box structure design with optimum ribbing provides high static and vibration free dynamic rigidity to the machine. Artificial Stress relieving process carried for more dimensional stability.

The Precision hand scraped V-belt table guide ways with continuous lubrication. Longitudinal hand travel of the table is by rack and pinion arrangement and automatic travel by hydraulic mechanism.

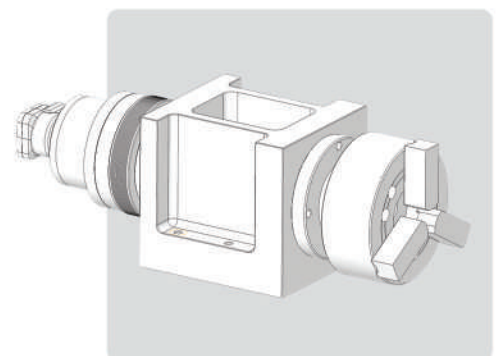


WHEEL HEAD

Machine is provided with Cartridge type Wheel spindle ($\varnothing 80 \times 250$ mm) with two match pair sets of Angular Bearing for smooth performance while material cutting. Spindle is driven by induction motor and transmitted by Poly V belt. Cross slide able to feed by hand wheel rapid and Micro feed adjustment provided with machine.

WORK HEAD

Heavy Work head spindle provided with live center only for dedicated Internal Grinding application. Work head is made of case hardened alloy steel and runs with precision Angular Bearing. The drive to the work head is by induction motor via VFD to control job rpm for Grinding. The work head can be swivelled for taper grinding by chuck clamping/holding. 6" True chuck is provided as standard.



COOLANT

Generous coolant supply is provided with electrical pump fitted on separate tank is of 95 litres capacity approx.

ELECTRICALS

The machine is supplied with all electrical suitable for 3Ø, 415 V Ac, 50 Hz cycle. The motors are approved & reputed brand make with IE2 standard. The electrical panel is mounted on one side of the machine, push button station is located at easy reach of the operator.

SINGLE AXIS (OPTIONAL)

Machine is also build for simple production line with logically developed programs with Siemens 808D controller. X slide movement with Ball Screw via Servo for precision positioning and better accuracy for simple Shaft and Internal Grinding operation. Whereas two plunge or Single Travers grinding cycles, with Auto Dressing cycle are available.

STANDARD FEATURES WITH SINGLE AXIS

- Single Axis CNC Internal Grinder with Siemens 808D as standard. Mitsubishi / Delta PLC option also available.
- Dedicated Programs with Plunge, Travers Grinding and Dressing Cycles.
- G code / M code compatibility with other NC builders.
- Skip Dressing Cycles.
- Pitch error & Back Lash compensation.
- RS 232 C serial Interface port.
- Inch/Metric switchable.
- Auto Programmable Centralise Lubrication Unit.
- AC Servo axis for Drive.
- Machine with Half enclosure.

OPTIONAL ACCESSORY

- Ø 60 mm belt driven Internal Grinding spindle in lieu of standard.
- Ø 100 mm belt driven Internal Grinding spindle in lieu of standard.
- Work center height up 200 mm
- Three jaw /Four Jaw Chuck (True chuck and Dog chuck)
- Three Point steady Rest up to Ø 100 mm.
- Magnetic Separator
- Paper band with Magnetic Coolant Separator.
- Hydraulic diaphragm chucking system (without diaphragm chuck).
- Ø150 mm Magnetic Chucking System on Request for Bush Type Component
- In-Process Gauge.

SPECIFICATION

DESCRIPTION	UNIT	MODEL	
		HCG-I 450	HCG-I 600
CAPACITY			
SWING OVER TABLE (OUTER DIAMETER)	mm		150
WORK HEAD CENTER HEIGHT*	mm		175
GRINDING DIAMETER MAX (I.D.)	mm		100
GRINDING DIAMETER RANGE (I.D.)	mm		12
MAX. WEIGHT OF JOB WITH CHUCK	mm		40
WORK HEAD			
TAPER BORE	mm		MT-4
SPINDLE SPEED	rpm		30-500
SPINDLE MOTOR POWER	kw/hp		0.75/1
SWIVEL OF WORK HEAD	deg(°)		±15°
WHEEL TABLE X-AXIS MANUAL			
X-AXIS STROKE	mm		200
MIN. INCREMENT ON DIAMETER	mm		0.002
GUIDE WAYS TYPE	mm		V & FLAT TURCITE
WHEEL TABLE X-AXIS WITH SERVO (OPTIONAL)			
X-AXIS STROKE	mm		200
RAPID FEED RATE	mtr/min		15
MINIMUM RESOLUTION	mm		0.001
SERVO MOTOR TORQUE	Nm		8
BALL SCREW	mm		Ø25 X 5
GUIDE WAYS TYPE	mm		V & FLAT TURCITE
TABLE			
TABLE SPEED (MIN/MAX)	mm/min		300/4000
TABLE STROKE	mm		450
MAX. SWIVEL OF TABLE	deg(°)		7°
GUIDE WAYS TYPE	mm		V & FLAT TURCITE

SPECIFICATION

DESCRIPTION	UNIT	MODEL	
		HCG-I 450	HCG-I 600
INTERNAL GRINDING HEAD			
MAX. BORE GRINDING LENGTH	mm	100	
MOTOR POWER	kw/hp	3.5/5	
SPINDLE DIA.	mm	Ø 80	
SPINDLE SPEED	rpm	14500	
OPTIONAL SPINDLE DIMENSION	mm	Ø60 X 250	
SPINDLE SPEED	rpm	18000	
OPTIONAL SPINDLE DIMENSION	mm	Ø100 X 250	
SPINDLE SPEED	rpm	10500	
HYDRAULIC UNIT			
TANK CAPACITY	litre	50	
MOTOR POWER	kw/hp	0.37/0.5	
PUMP CAPACITY	lpm	4	
GENERAL			
OPERATION VOLTAGE	volts	3Ø 415V AC	
TOTAL POWER REQUIRED	kw/hp	6.5/8.7	
FLOOR SPACE	mm	2100 X 1200	3200 X 1400
MACHINE WEIGHT(APPROX.)	kg	1600	1800

Note:
Minimum and Maximum grinding diameter as specified above may vary based on specific requirement. Work head spindle is with Live center as per operating. Features and Specification may vary as specific job requirement. Colour as shown in picture may not match with actual machine colour. Machine Guard May Change as per Job Specification and Accessary used. As per Grinding length, Wheel utilisation will change depending upon swivel angle. Please discuss suitability to your requirement before ordering to us. As a part of Continuous Improvement Process, design and specification subjected to change without prior notice and information

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