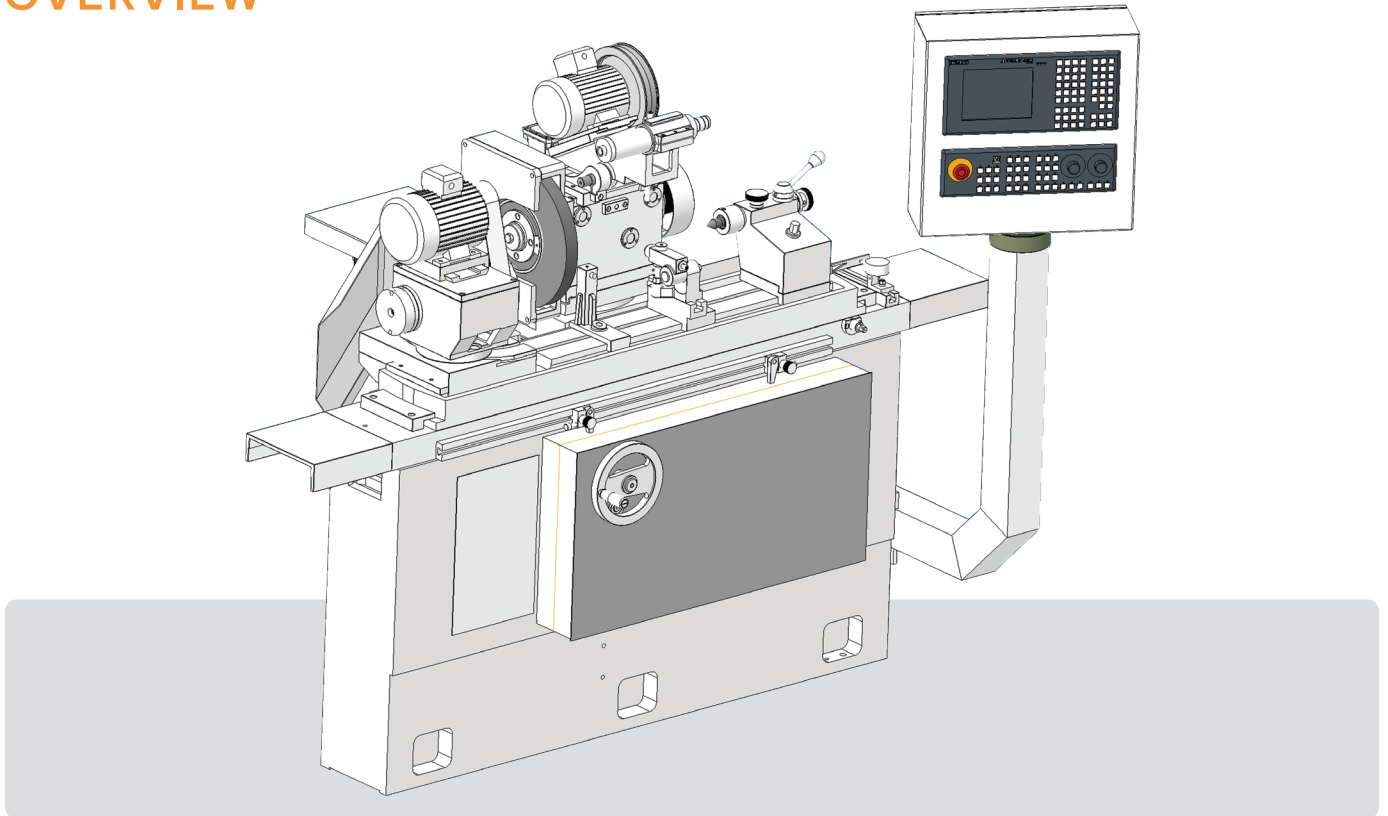


**KIYA**

**HCG SERIES**  
**Hydraulic**  
**Cylindrical Grinders**



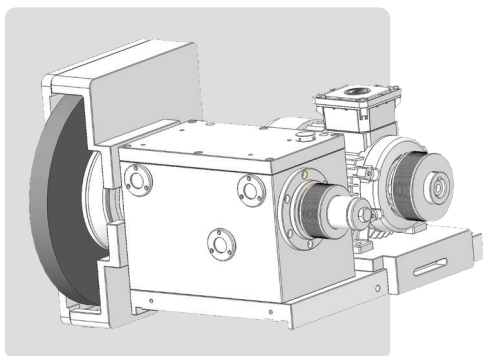
## OVERVIEW



## 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-Flat table guide ways on both axis with continuous lubrication. Longitudinal hand travel of the table is by rack and pinion arrangement & automatic travel by hydraulic mechanism

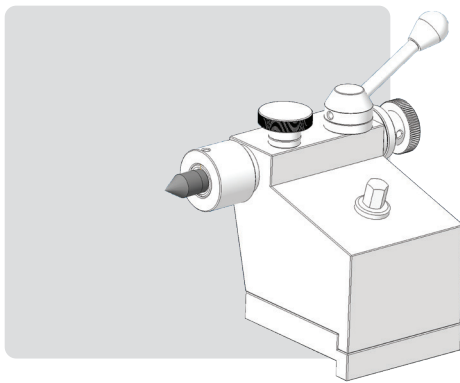
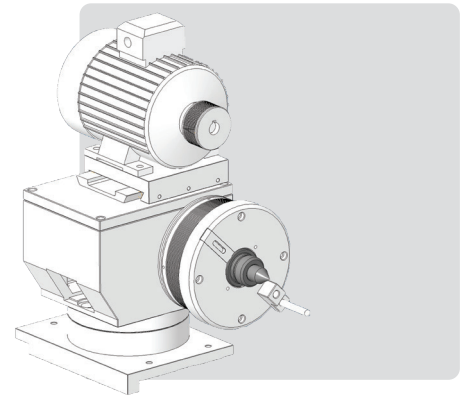


## WHEEL HEAD

The hydrodynamic 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 stationary 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.

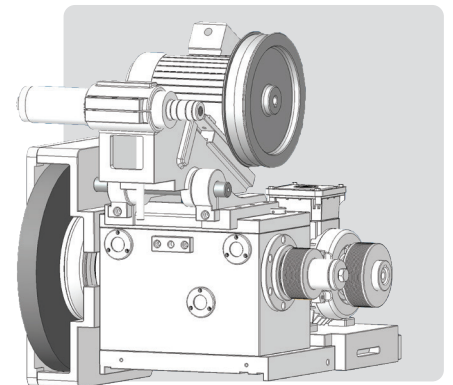


## TAIL STOCK

The tail stock is spring loaded and can accept MT - 3 / 4 taper for HCG - 450 / 600 and MT - 4 / 5 taper for HCG - 800 / 1000 / 1200 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. Various filtration systems are available as optional.

## 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.

## **EXTERNAL SINGLE AXIS (OPTIONAL)**

Machine is also build for simple production line with logically developed programs with Siemens 808D controller. X-axis slide movement with ball screw via servo for precision positioning and better accuracy for simple shaft operation. Whereas two plunge or single travers grinding cycles, with auto dressing cycle are available.

## **STANDARD FEATURES WITH SINGLE AXIS**

- Single Axis CNC External Grinder with Siemens 808D as standard.
- 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.
- Inch/Metric switchable.
- Auto Programmable Centralise Lubrication Unit.
- AC Servo axis for Drive.
- Machine with Half enclosure.

## **OPTIONAL ACCESSORY**

- Mitsubishi / Delta PLC (With Single axis)
- Internal Grinding Attachment with Ø60 x 250L
- Internal Grinding Attachment with Ø80 x 250L
- Single Dia. IPG (With Single Axis)
- Universal Type Wheel Head.
- True Chuck Flange.
- Two Point Steady Rest up to Ø25 mm.
- Three Point Steady Rest up to Ø100 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)
- Manual Angular Dresser.
- Manual Radius Dresser.
- Three Point Dresser.
- Tailstock Mounted Dresser.
- Foot Switch Operated Hydraulic Tailstock
- Optional Center Height up to 200 mm
- Optional MT-3 Taper for Work head and Tail stock for model HCG 450 / 600.
- Optional MT-5 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

		<b>MODEL</b>				
DESCRIPTION	UNIT	HCG-E 450	HCG-E 600	HCG-E 800	HCG-E 1000	HCG-E 1200
<b>CAPACITY</b>						
SWING OVER TABLE	mm	300				
ADMIT BETWEEN CENTRES	mm	450	600	800	1000	1200
WORK HEAD CENTER HEIGHT	mm	150 (200)				
GRINDING DIAMETER MAX O.D.	mm	275				
GRINDING DIAMETER MIN O.D.	mm	5		15		
MAX. WEIGHT OF JOB BETWEEN CENTER	Kg	70		120		
<b>WHEEL HEAD</b>						
GRINDING WHEEL SIZE (OD X ID X WIDTH)	mm	350 X 127 X 40		400 X 127 X 40		
SPINDLE SPEED MAX. (33 MPS)	rpm	1600				
SPINDLE SIZE	mm	41.22				
SPINDLE MOTOR POWER	kw/hp	2.25/3				
<b>WHEEL TABLE X-AXIS HYDRAULIC</b>						
X-AXIS STROKE	mm	200				
RAPID APPROACH TRAVEL	mm	35				
MIN. INCREMENT ON DIAMETER	mm	0.002				
GUIDE WAYS TYPE	mm	V AND FLAT TURCITE				
<b>WHEEL TABLE X-AXIS WITH SERVO (OPTIONAL)</b>						
X-AXIS STROKE	mm	200				
RAPID FEED RATE	mtr/min	5				
MINIMUM RESOLUTION	mm	0.001				
SERVO MOTOR TORQUE	Nm	8				
BALL SCREW	mm	Ø 25 X 5		Ø 32 X 5		
GUIDE WAYS TYPE	mm	V AND FLAT TURCITE				

**SPECIFICATION**

**MODEL**

DESCRIPTION	UNIT	HCG-E 450	HCG-E 600	HCG-E 800	HCG-E 1000	HCG-E 1200
<b>TABLE</b>						
TABLE SPEED (MIN/MAX)	mm/ min	300 / 4000				
TABLE STROKE	mm	480	630	830	1030	1230
MAX. SWIVEL OF TABLE	deg(°)	+7° / -2°				
GUIDE WAYS TYPE	mm	V AND FLAT TURCITE				
<b>WORK HEAD</b>						
TAPER BORE	mm	MT-4 (3)		MT-4 (5)		
SPINDLE SPEED	rpm	30 - 500				
SPINDLE MOTOR POWER	kw/hp	0.75 / 1				
SWIVEL OF WORK HEAD	deg(°)	±45°				
<b>TAILSTOCK</b>						
CENTER TAPER#	mm	MT-4 (3)		MT-4 (5)		
QUILL TRAVEL	mm	20				
QUILL DIA.	mm	45		60		
<b>HYDRAULIC UNIT</b>						
TANK CAPACITY	litre	50		100		
MOTOR POWER	kw/hp	0.75 / 1				
PUMP CAPACITY	lpm	4				
<b>INTERNAL GRINDING ATTACHMENT (OPTIONAL)</b>						
GRINDING DIAMETER MAX I.D. / DEPTH	mm	100 / 80				
GRINDING DIAMETER MIN I.D. / DEPTH	mm	12 / 20				
SPINDLE DIMENSION	mm	Ø 60 X 250				
SPINDLE SPEED	rpm	18000				
OPTIONAL SPINDLE DIMENSION	mm	Ø 80 X 250				
OPTIONAL SPINDLE DIMENSION	mm	Ø 50 X 250				
MOTOR POWER	kw/hp	0.37 / 0.5				

**SPECIFICATION**

**MODEL**

DESCRIPTION	UNIT	HCG-E 450	HCG-E 600	HCG-E 800	HCG-E 1000	HCG-E 1200
<b>GENERAL</b>						
OPERATION VOLTAGE	volts	3Ø 415V AC				
TOTAL POWER REQUIRED	kw/hp	3.5 / 4.75				
FLOOR SPACE	mm	2100 X 1250	2500 X 1250	3600 X 1500	3900 X 1500	4200 X 1500
MACHINE WEIGHT (APPROX.)	kg	1600	1800	3100	3300	3500

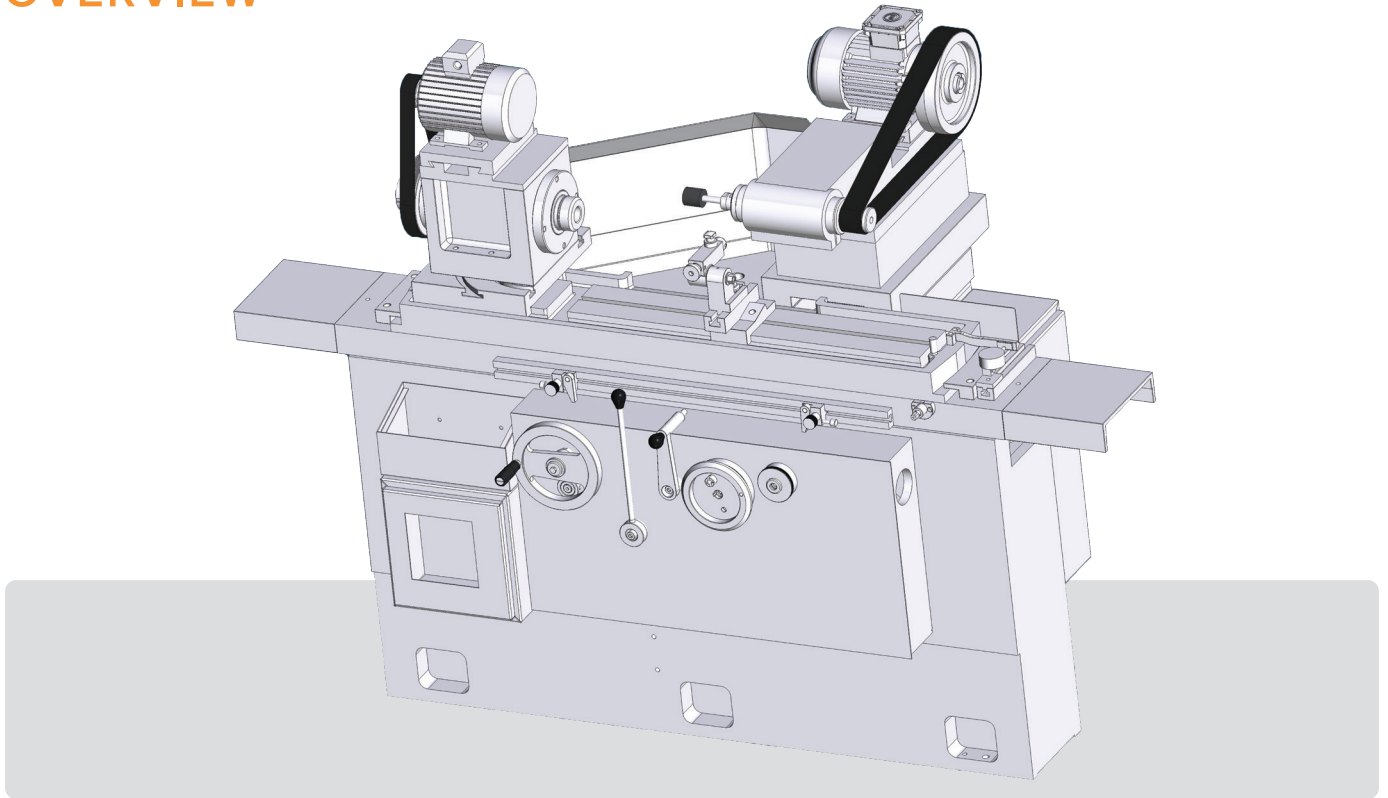
**NOTE:**

Minimum and Maximum grinding diameter as specified above may vary based on specific requirement.  
 Work head spindle is with Live and Dead center operating provision.  
 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 Accessory used.  
 ( ) Optional Accessories. \*May Vary.

*Admit between center, 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*

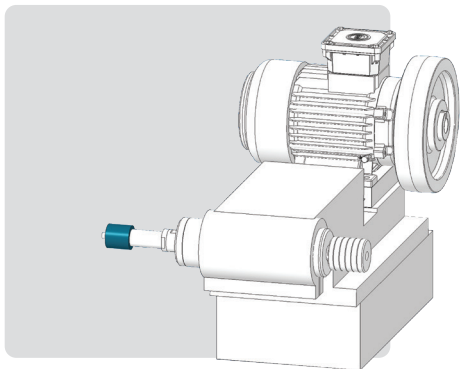
## OVERVIEW



## 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-Flat table guide ways with continuous lubrication. Longitudinal hand travel of the table is by rack and pinion arrangement & automatic travel by hydraulic mechanism.



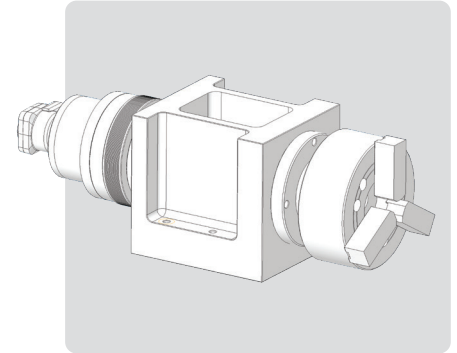
## WHEEL HEAD

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 spindle 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 plate is provided as standard.



## COOLANT

Generous coolant supply is provided with electrical pump fitted on separate tank is of 95 litres capacity approx. Different filtration systems are available as optional.

## ELECTRICALS

The machine is supplied with all electrical suitable for 3 $\phi$ , 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.

## OPTIONAL ACCESSORY

- $\varnothing$  60 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  $\varnothing$  100 mm.
- Magnetic Separator.
- Paper band with Magnetic Coolant Separator.
- Hydraulic chucking system.
- $\varnothing$  150 / 200 mm Magnetic Chucking System on Request for Bush Type Component

**SPECIFICATION**

DESCRIPTION	UNIT	MODEL	
		HCG-I 450	HCG-I 600
<b>CAPACITY</b>			
SWING OVER TABLE	mm	350	
WORK HEAD CENTER HEIGHT	mm	175	
GRINDING DIAMETER MAX I.D. / DEPTH	mm	100 / 80	
GRINDING DIAMETER RANGE I.D. / DEPTH	mm	12 / 20	
MAX. WEIGHT OF JOB WITH CHUCK	mm	50	
<b>WORK HEAD</b>			
TAPER BORE	mm	MT - 4	
SPINDLE SPEED	rpm	30 - 500	
SPINDLE MOTOR POWER	kw/hp	0.75 / 1	
SWIVEL OF WORK HEAD	deg(°)	±15°	
<b>WHEEL TABLE X-AXIS MANUAL</b>			
X-AXIS STROKE	mm	200	
MIN. INCREMENT ON DIAMETER	mm	450	600
GUIDE WAYS TYPE	mm	V AND FLAT TURCITE	
<b>TABLE</b>			
TABLE SPEED (MIN / MAX)	mm/min	300 / 4000	
TABLE STROKE	mm	450	
MAX. SWIVEL OF TABLE	deg(°)	7°	
GUIDE WAYS TYPE	mm	V AND FLAT TURCITE	
<b>INTERNAL GRINDING HEAD</b>			
MOTOR POWER	kw/hp	3.5 / 5	
SPINDLE DIA.	mm	Ø 80 (60)	
SPINDLE SPEED	rpm	14500	

**SPECIFICATION**

**MODEL**

DESCRIPTION	UNIT	HCG-I 450	HCG-I 600
<b>HYDRAULIC UNIT</b>			
TANK CAPACITY	litre	50	
MOTOR POWER	kw/hp	0.75 / 1	
PUMP CAPACITY	lpm	4	
<b>GENERAL</b>			
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.  
 ( ) Optional Accessories. \*May Vary.

*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*



**KIYA**

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