

"HITACHI SEIKI" MODEL "9GA-NRAA"N/C Special Grinding MachineSPECIFICATION

Year: 1995

Machine specifications

Table working width	900mm
Table working length (Max.work length)	1,500mm
Table width (Total width)	1,200mm
Table length (Total length)	2,500mm
Table max. travel	2,000mm
Working height (Distance between table surface to the bottom of the grinding wheel)	100 - 500mm
Distance between columns	1,400mm
Table rapid traverse (X-axis)	1 - 12,000mm/min.
Head rapid traverse (Y and Z-axes)	1 - 5,000mm/min.
* Horizontal head left & right : Y-axis	
* " " up & down : Z-axis	

Horizontal Head

Wheel dimension (max. width/dia.)	150mm/φ260 - 320mm (spherical surface)
Wheel speed (Output diminuation over 3,000rpm)	1,500 - 4,000rpm.
Wheel head vertical travel	400mm

Motor

For Horizontal head drive (speed variable type)	3.7kw, 1 unit
" Horizontal head hydrostatic	15kw-4p, 1 unit
" Hydrostatic cooling device	0.75kw-2p, 1 unit & 0.4kw-4p, 1 unit
" Grinding fluids	0.4kw-2p, 1 unit
" Grinding fluids cooling (special accessory)	.75kw-4p, 1 unit

Servo motor

For table rapid traverse (X)	#20, 1 unit
" head left & right rapid traverse (Y)	#20, 1 unit
" head vertical rapid traverse (Z)	#20, 1 unit

N/C Control

FANUC 15MA	1 unit
Minimum resolution	0.001mm

Max. Load on table 2,000kg

Standard accessories

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|---|-------|
| 1) Light on table | 1 set |
| 2) Grinding fluids tank | 1 set |
| 3) Spanners and wrenches to be used for machine operation | 1 set |
| 4) Taper guage for grinding wheel (MALZ) | 1 pc. |

Optional accessories

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|--|---------|
| 1) Spare parts (Spindle, metal and bearing) | 1 set |
| 2) Foot step for coolant disposal | 1 set |
| 3) Levelling blocks | 1 set |
| 4) Grinding fluids temperature control device | 1 set |
| 5) Centrifugal separate type coolant seperator | 1 set |
| Motor : 2.2 kw, 4p ----- | 1 unit |
| " : 0.4 kw, 4p ----- | 2 units |
| 6) Overload detective function | 1 set |

Paint color : To be designated by the user.

Conditions

- 1) HITACHI SEIKI WILL SUPPLY ONLY "HARD" to the user.
- 2) The machining software for CRT mould are to be prepared by the user, such as a) Grinding wheel, b) Fixture, c) Tape d) Grinding fluids, e) Inspection tools, f) Other necessary items to be required for CRT moulds machining.

3) Power Source: According to the supplement attached here
Acceptance test

Acceptance test will carry out at HITACHI SEIKI factory after the machine has completed.

Accuracy of machine : According to the HITACHI SEIKI's Grinding machine inspection standard. The details are to be submitted later on.

Commissioning

Intallation and commissioning of machine are performed at user's factory. After reassembled machine, HITACHI SEIKI engineers will check the contents of the acceptance test carried out at HITACHI SEIKI on the machine which is final.

The instruction manual, foundation drawing, electrical wiring drawings and inspection sheets (4-copies) will be submitted after received order.

Control Unit Specifications (FANUC 15MA)

Standard features

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1. Controlled axes : 3 axes(X,Y and Z)
simultaneously 3 axes.
 2. Interpolation : positioning, linear interpolation,
multi coordinate circular interpolation
 3. Designation system : Absolute/incremental
 4. Least input increment : 0.001mm
 5. Tape code : EIA/ISO automatic recognition
 6. G - 2 digits
 7. M - 3 digits
 8. T - 4 digits
 9. Spindle speed designation : S code, RPM direct designation
 10. Feed rate designation : F code feed direct designation
 11. Feed rate override : 0 - 200 %
 12. Override cancel
 13. Rapid traverse override : 1 %, 25 %, 50 %, 100 %
 14. Manual jog feed : Rapid traverse, jog, handle feed
 15. Manual pulse generator : x 1, x10, x100 3 steps change over
 16. Tool length compensation
 17. Tool offset amount memory : Type A
 18. Tool position offset ; 32 pcs.
 19. C R T Display ; 9" monicolor
 20. Part program storage and edit
 21. Part program storage : 320 m
 22. Background editing function
 23. Reference point return : G 27, G 28, G 29
 24. Mirror image : CRT setting
 25. Optional block skip : 1 pc.
 26. Stored stroke check 1
 27. Tape reader without reel
 28. Memory type pitch error compensation
 29. Work coordinate system change
 30. Work coordinate system presetting
 31. Local coordinate system setting : G 52
 32. Work coordinate system selection : G 54 - G 59
 33. Machine coordinate system selection : G 53
 34. I / O Interface : RS 232C (only interface)
 35. Registrable programs : 100 pcs.

- 36) Part program check up
- 37) Circular radius R designation
- 38) Dwell
- 39) Memory lock key
- 40) Buffer register
- 41) Single block
- 42) Cycle start / Feed hold
- 43) N / C Self diagnosis function
- 44) Z axis designation cancel
- 45) Exact stop : G 09, G 61
- 46) Decimal point programming
- 47) Dry run
- 48) Backlash compensation
- 49) Program number search
- 50) Sequence number search
- 51) Label skip
- 52) Machine lock : auxiliary function lock
- 53) Manual absolute : (O N) Fixed
- 54) Optional stop
- 55) Follow up
- 56) Programmable data input
- 57) Clock function
- 58) Extended type editing : Program copy function

Control options

- 1) Tape reader with reel ; 150 m
- 2) Part program storage : 320 m
- 3) Custom macro : Common variable 200
- 4) Remote buffer
- 5) Bell type acceleration and deceleration after cutting feed rate interpolation

1-3 Main Dimensional Diagram

