

ZERO CENTRE

A HIGH
PERFORMANCE
3 AXIS C.N.C.
VERTICAL
MACHINING
CENTRE, FITTED
WITH FANUC OM
CONTROL



DENFORD

COMPUTERISED MACHINES AND SYSTEMS

ZERO CENTRE

GENERAL SPECIFICATIONS

1. CNC Control – Fanuc OM MODEL A or B.
2. Control size 410 X 270 X 210 with 9" V.D.U.
3. Controlled/Simultaneous axes: 3 axes – full 3 axes Linear Interpolation.
4. Circular Interpolation on any 2 axes.
5. Helical Interpolation.
6. Rapid Traverse 10m/min.
7. Feedrate override 0-150% (10% increments).
8. Rapid traverse override (100% 50% 25% 0%).
9. Cutting feed 1-5m/min.
10. Plane switching XY XZ YZ.
11. Tangential speed control.
12. Spindle speed programming with current display.
13. Jog override.
14. Electronic handwheel control.
15. Spindle speed override.
16. Reference point return (G27, G28, G29).
17. Automatic co-ordinate system setting (G92).
18. Absolute/incremental programming within the same block.
19. Inch/mm programming.
20. Subprogram: 2 holds nested.
21. Tool length compensation.
22. Full cutter compensation.
23. Program stop.
24. Dry run facility.
25. Axis lock.
26. Single block/Auto execution.
27. Mirror imaging.
28. Back lash compensation (max 255 pulses).
29. Program Format: Conversational Programming and I.S.O. using G & M codes.
30. Full Program input and edit facility.
31. 63 registerable Programs with battery backup.
32. Memory 10m tape length (4000 char).
33. Program protection.
34. Self diagnostics functions.
35. Canned cycles for drilling, boring and tapping
36. Tool Path Graphics.
37. Built in Program time display plus parts counter.
38. Automatic acceleration/deceleration.
39. Skip function G31.
40. All axes interlocked with software and hardware limits.
41. RS232C serial interface with DNC capabilities.
42. Operator messages – low lube - zero machine etc.
43. System resolution 0.001mm (0.00004")
44. Electric spindle orientation control.

CONTROL OPTIONS:

45. Custom Macro and order made Macro.
46. Multi language display.
47. Bubble cassette and adaptor.
48. Extra memory 120m (48k) tape length. (48,000 char.).
49. Circular and rectangular pocket clearance facility.

MECHANICAL

Working Table Surface

800 mm X 400 mm (31½" X 15¾")
Longitudinal Travel (X) 520 mm (20½")

Cross Travel (Y)	520 mm (20½")
Head Travel (Z)	520 mm (20½")
Spindle to Table	80-460 mm (3½"-18½")
Spindle to Column	385 mm (15½")
Spindle Taper	150 40
Tee Slots	18 mm width 100 mm centres
Spindles Speeds	100-6000 r.p.m. – 2 ranges
Automatic Tool Changer	Up to 16 tools
Tool to Tool	4 seconds
Chip to Chip	9 seconds
Max Tool Diameter	80 mm (3.2")
Max Tool Length	250 mm (10")
X Axis Ballscrew	32 mm dia X 10 mm pitch
Y Axis Ballscrew	32 mm dia X 10 mm pitch
Z Axis Ballscrew	32 mm dia X 10 mm pitch
Max Machine Length	1620 mm (64")
Max Machine Width	1900 mm (75")
Height	2000 mm (79")
Weight	2500 kgs (5500 lbs.)
Air Supply	6kg/cm² (85 psi)
Coolant Pump Motor	½ H.P.
Mechanical Resolution	0.01 mm (0.0004")

ELECTRICAL

Mains Supply
50/60 Hz - 3 phase - 380/415 Volts.
Spindle Motor:
Fanuc AC Servo 3 H.P./5 H.P. (15 mins)
Axes Motors:
Fanuc A.C. Servo. Output power 0.55 kw. Max torque 26 Nm.

STANDARD EQUIPMENT

Totally Enclosed Splash Guard, Flood Coolant, Lo-Vo Light, Maintenance and Instruction Manual, Spare Parts List, Tool Kit, 16 Station Automatic Tool Changer, Automatic Lubrication to all Slides and Ballscrews, 2 Days' Operator Training.

EXTRA EQUIPMENT

Fanuc Cassette, Fanuc PPR, Spray Mist Coolant, Printer, CAD/CAM Systems, Off-Line Computer Programming for IBM or 100% Compatibles, Robot Handling Systems, 9" Rotary Table.

SAFETY

Power on Indicator, Axes Limit Switches, Electronic Spindle Monitoring, Diagnostic Fault Finder, Safety Guards.

CAD/CAM SOFTWARE

For IBM P.C. and 100% compatibles.
- Auto CAD, Auto CAM.
For BBC computers.
- EASICAD, EASICAM - Compas Starter/Cam.
For Nimbus Computers.
- Compas Designer, Auto CAM.
- Auto CAD, Auto CAM.

COMES
COMPLETE
WITH A
16 STATION
AUTOMATIC
TOOL CHANGER



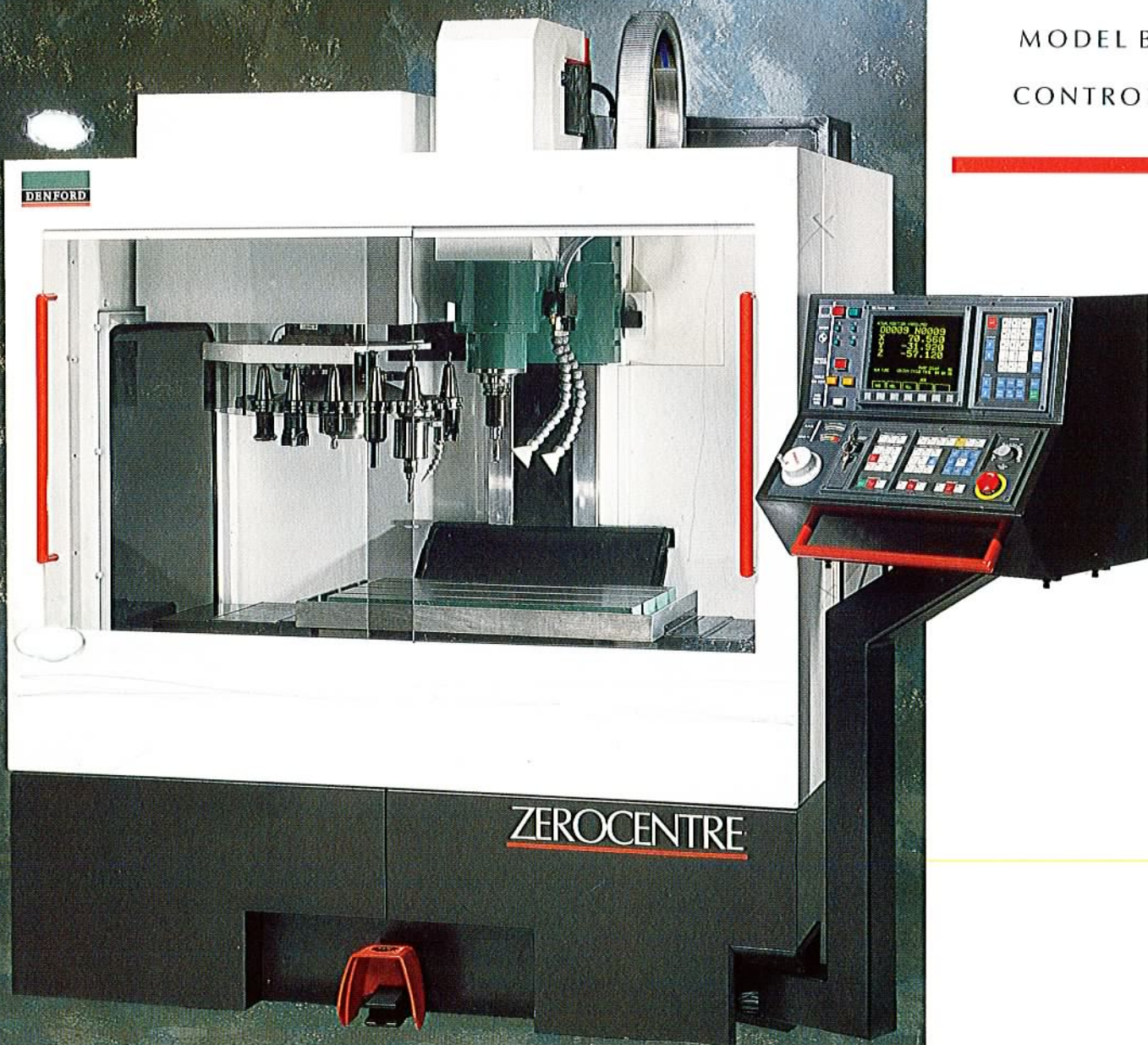
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A HIGH
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3 AXIS C.N.C.
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MODEL B
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GENERAL SPECIFICATIONS

C.N.C. CONTROL – FANUC OM MODEL B (Standard features)

1. Control size 470 X 540 X 480 with 9" V.D.U.
2. Machine operators panel.
3. Simultaneous 3 axes contouring control.
4. Multi-quadrant circular Interpolation.
5. Rapid Traverse 10m/min.
6. Feedrate override 0-150% (10% increments).
7. Rapid traverse override (100% 50% 25% 0%).
8. Cutting feed 1-5m/min.
9. Plane switching XY XZ YZ.
10. Tangential speed control.
11. Spindle speed programming with current display.
12. Jog override.
13. Manual Pulse Generator – for manual tool positioning.
14. Spindle speed override.
15. Reference point return (G27, G28, G29).
16. Automatic co-ordinate system setting (G92).
17. Absolute/incremental programming within the same block.
18. Menu programming.
19. Inch/mm programming/conversion.
20. Subprogram: 2 holds nested.
21. Tool length compensation (G43, G44, G49).
22. Full cutter compensation.
23. Program stop. (Exact stop G04, G09, G61).
24. Dry run facility.
25. Axis lock.
26. Single block/Auto execution.
27. Cycle start/feed hold.
28. Mirror imaging.
29. Back lash compensation (max 255 pulses).
30. S.T.M. Code Input/Output.
31. Program Format: I.S.O. using G & M codes.
32. Full Program input and edit facility.
33. 63 registerable Programs with battery backup.
34. Program/Sequence Number Search/Display.
35. Memory 10m tape length (4000 char.)
36. Program protection – battery back up.
37. Self diagnostics functions.
38. Canned cycles for drilling, boring and tapping.
39. Built in Program time display plus parts counter.
40. Automatic acceleration/deceleration.
41. Skip function G31.
42. All axes interlocked with software and hardware limits.
43. RS232C serial interface with DNC capabilities.
44. Operator messages – low lube, coolant, etc.
45. System resolution 0.001mm (0.0004").

CONTROL OPTIONS:

46. Custom Macro A and B, order made Macro.
47. Multi language display.
48. Bubble cassette and adaptor.
49. Extra memory up to 320m.
50. Circular and rectangular pocket clearance facility.
51. Programme Scaling.
52. Tool life management.
53. Background editing.
54. Helical Cutting.
55. Toolpath Graphics.
56. Conversational Programming.
57. Simultaneous 4 axes Contouring Control.

MECHANICAL

Working Table Surface

800 mm X 400 mm (31½" X 15¾")
Longitudinal Travel (X) 520 mm (20½")
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Spindle to Table 80-460 mm (3¼"-18½")
Spindle to Column 385 mm (15½")
Spindle Taper I.S.O. 40
Spindle Diameter 78 mm (3")
Tee Slots 18 mm width 100 mm centres
Spindles Speeds 100-6000 r.p.m. – 2 ranges
Automatic Tool Changer Up to 16 tools
Tool to Tool 4 seconds
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Max Tool Diameter 80 mm (3.2")
Max Tool Length 250 mm (10")
X Axis Ballscrew 32 mm dia X 10 mm pitch
Y Axis Ballscrew 32 mm dia X 10 mm pitch
Z Axis Ballscrew 32 mm dia X 10 mm pitch
Max Machine Width 1600 mm (63")
Max Machine Depth 2040 mm (80½")
Height 2000 mm (79")
Weight 2350 kgs (5170 lbs.)
Air Supply 6kg/cm² (85 psi)
Coolant Pump Motor ½ H.P.
Hardened and ground ways
System Resolution .001 mm (.00004")
Mechanical Resolution .01 mm (0.0004")

ELECTRICAL

Mains Supply

50/60 Hz - 3 phase - 380/415 Volts. 14 AMP

Spindle Motor:

Fanuc AC 3 H.P./5 H.P. (15 mins)

Axes Motors:

Fanuc A.C. Digital Servo (Brushless): Output power 0.55 kw. Max torque 26 Nm.

STANDARD EQUIPMENT

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SAFETY

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CAD/CAM SOFTWARE

For IBM P.C. 100% compatibles and RM Nimbus P.C. - Auto CAD, Auto CAM.

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