

**OKK**

# KCV 800 KCV 1000

— VERTICAL MACHINING CENTER —



From Aircraft parts to Large LCD components, its flexible design meets the users needs.

## KCV1000



signal-lamp, Touch sensor is optional

Launching the KCV1000 with expanded X & Y axes, born from the proven KCV800.

Conquering a wide range of applications from general to long work-pieces.

Exceptional productivity with large strokes in a space saving package.

In a continuous pursuit of high accuracy and high speed processing, KCV is the embodiment of overall efficient operations.

A highly rigid machine body design produces powerful cutting performance.

The traverse column provides excellent accessibility, operability and extensibility.

An advanced controller facilitates the finest quality throughout high speed and rapid response machining.

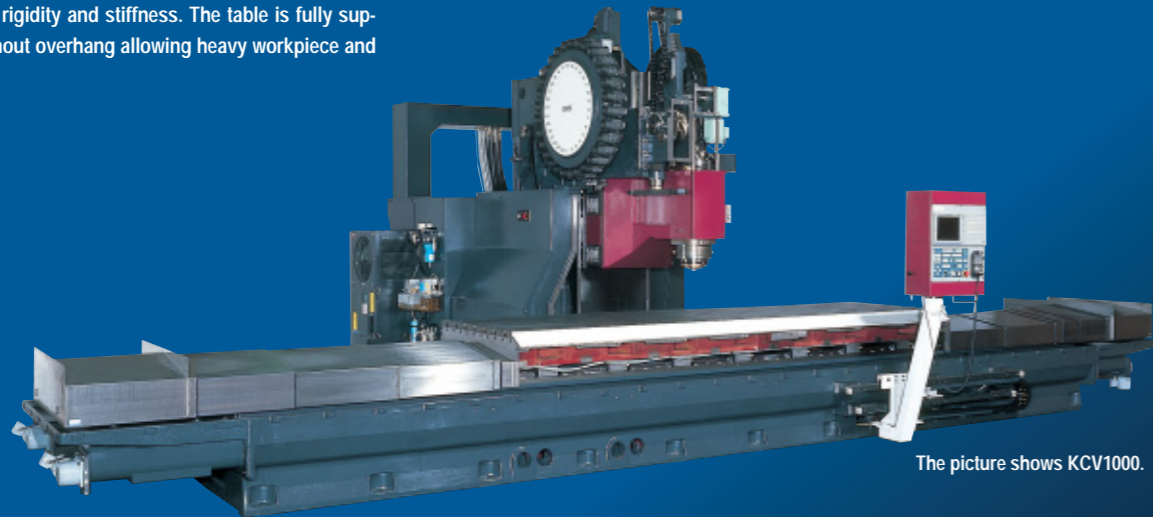
## KCV800



Space saving design combined with high productivity leaving the competition behind.

### Highly rigid machine structure produces highly accurate processing.

Solid thick walled structure of the bed and column provides high rigidity and stiffness. The table is fully supported without overhang allowing heavy workpiece and long life.



The picture shows KCV1000.

### Comprehensive chip processing measures

With standard chip conveyors front and back of the table, further the KCV1000 has coil conveyors right and left of the column and X and Y axis shutter flushing.



The picture shows KCV1000.



### Operator friendly traversing column

Traversing column ensures easy access to fixtures enabling quick setup and work piece loading.



### Thorough measures to control thermal displacement

Bearing heat is suppressed by usage of a spindle housing cooling mechanism; further the KCV1000 implements core chilled ball screws in the feed axis and utilizes a spindle coolant wall jacket design. These measures improve processing accuracy and stability.



The picture shows KCV800.

### Highly rigid high-speed feed systems

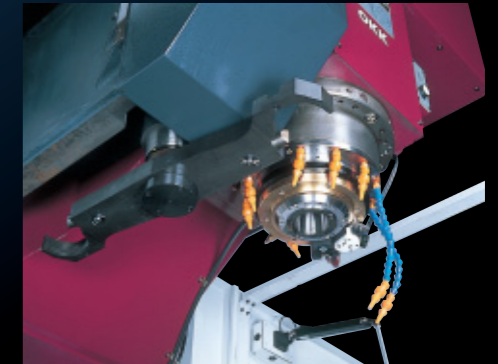
Accurate and highly rigid linear ball guides are used on the axis guide faces of KCV800 and linear roller guides on the same of KCV1000. For the feed screw supports of KCV1000, a double anchoring method that ensures high feeding rigidity is adopted to realize high-speed response and powerful cutting performances.



The picture shows KCV800.

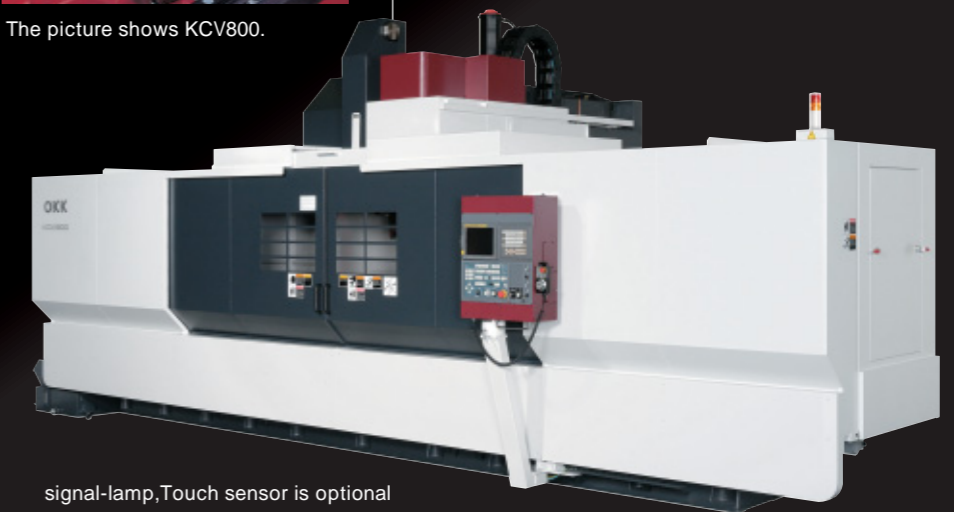
### High-speed ATC mechanism

The ATC unit of high-speed cam interlock method supports highly efficient processing: Tool exchange time of 2.5 seconds with #50 tools (tool-to-tool)



### Maintenance-free structure

Designed to be the ultimate in safety and ease of operation. The hydraulics have been eliminated, decreasing power consumption, noise, and maintenance.



signal-lamp, Touch sensor is optional

The machines in the photographs of this brochure may include optional accessories.

## Standard Specifications

Item		KCV800	KCV1000
Travel on X axis( Table:right/left )	mm	3050( 120.07" )	3500( 137.79" )
Travel on Y axis( Column:back/forth )	mm	820+45( 32.28"+1.77" )	1020+45( 40.15"+1.77" )
Travel on Z axis( Spindle head:up/down )	mm	720( 28.34" )	720( 28.34" )
Distance from table top surface to spindle nose	mm	200 ~ 920( 7.87" to 36.22" )	200 ~ 920( 7.87" to 36.22" )
Distance from Column front to spindle center	mm	875( 34.44" )	1085( 42.71" )
Table work surface area( X-axis direction × Y-axis direction )	mm	3300×820( 129.92"×32.28" )	3800×1020( 149.60"×40.15" )
Max.workpiece weight loadable on table	kg	3000( 6600lbs )	4000( 8800lbs )
Table work surface configuration ( Number and nominal dimension of T slots and spacing )	mm	Five 22-mm( 0.86" )T slots with 140-mm( 5.51" )pitch	Seven 22-mm( 0.86" )T slots with 140-mm( 5.51" )pitch
Height from floor level to table work surface	mm	980( 38.58" )	1000( 39.37" )
Spindle speed	min <sup>-1</sup>	35 ~ 13000	35 ~ 12000
Number of spindle speed shift steps		Stepless( Motorized Spindle )	Stepless( Motorized Spindle )
Spindle nose( Nominal number )		7/24 taper No.50	7/24 taper No.50
Spindle bearing bore diameter	mm	90( dia. 3.54" )	100( dia. 3.93" )
Rapid traverse rate	m/min	XYZ:16( 629 ipm )	XYZ:20( 787 ipm )
Cutting feed rate	mm/min	1 ~ 10000( 0.04 to 393 ipm )	1 ~ 10000( 0.04ipm to 393 ipm )
Jog feed rate	mm/min	2000( 78 ipm )	2000( 78 ipm )
<b>Automatic tool changer</b>			
Type of tool shank ( Nominal number )		JIS B 6339 BT50	JIS B 6339 BT50
Type of pull stud ( Nominal number )		OKK 90°	OKK 90°
Tool storage capacity		30 tools( Optimal 40 tools )	30 tools( Optimal 40 tools )
Maximum tool diameter( with adjacent tools )	mm	100( dia. 3.93" )	100( dia. 3.93" )
Maximum tool diameter( without adjacent tools )	mm	200( dia. 7.87" )	200( dia. 7.87" )
Maximum tool length( from the gauge line )	mm	350( 13.78" )	350( 13.78" )
Maximum tool weight	kg	20( 44 lbs )	20( 44lbs )
Tool selection method		Memory random method	Memory random method
Tool changing time( tool-to-tool )	s	2.5	2.5
Tool changing time( cut-to-cut )	s	7.5	8.5
<b>Motor</b>			
Spindle motor( 30-min. rating/continuous rating )	kW	MITSUBISHI AC30/22( 40HP/30HP )FANUC AC30/25( 40HP/33HP )	MITSUBISHI AC30/22( 40HP/30HP )FANUC AC30/25( 40HP/33HP )
Feed motors	kW	MITSUBISHI XYZ:7×4.5×7( 9.4HP×6HP×9.4HP ) FANUC XYZ:6×7×6( 8.1HP×9.4HP×8.1HP )	MITSUBISHI XYZ:7( 9.4HP ) FANUC XYZ:6×7×9( 8.1HP×9.4HP×12HP )
Lubrication pump motor for slideway	kW	0.017( 0.023HP )	0.017( 0.023HP )
Coolant pump motor	kW	0.4( 0.5HP )	1.1( 1.5HP )
Motor for ATC	kW	0.75( 1.0HP )	0.75( 1.0HP )
Motor for tool magazine	kW	0.4( 0.5HP )	0.4( 0.5HP )
Motor for tool pot	kW	0.09( 0.11HP )	0.09( 0.11HP )
<b>Required power source</b>			
Power supply	kVA	MITSUBISHI 67/FANUC 58	MITSUBISHI 79/FANUC 65
Supply voltage	V	AC200±10% AC220±10%	AC200±10% AC220±10%
Supply frequency	Hz	50/60±1 60±1*	50/60±1 60±1*
Compressed air supply pressure	MPa	0.4( 57.1psi )~0.6( 85.7psi )	0.4( 57.1psi )~0.6( 85.7psi )
Air supply flow rate( atmospheric pressure )	L/min <sup>-1</sup> ( ANR )	400( 105.7gal )	400( 105.7gal )
Coolant tank capacity	L	250( 66 gal )	700( 185gal )
Spindle cooling oil tank capacity	L	65( 17.2 gal )	51( 13.4gal )
Slideway lubrication oil tank capacity	L	6( 1.6 gal )	6( 1.6gal )
Machine height( from floor level )	mm	3523( 138.70" )	3459( 136.18" )
Required floor space under operation	mm	8036×4708( 316.37"×185.35" )	9420×5238( 370.86"×206.22" )
Required floor space including maintenance area	mm	8600×5210( 338.58"×205.11" )	11000×6000( 433.07"×236.22" )
Machine weight	kg	21000( 46200 lbs )	28000( 61600.lbs )
Controller		MITSUBISHI 635V FANUC 160is	MITSUBISHI 635V FANUC 310is

\* In case of supply voltage 220V only 60Hz available

## Standard accessories

Item	Q'ty
Lighting system	1set
Coolant unit with Lift up type chip conveyor( KCV1000 ) [ Coolant unit with Separate type coolant tank( KCV800 ) ]	1set
Safety Doorlock	1set
Splash guard	1set
X/Y/Z axes slideway protection cover	1set
Spindle head and ball screws cooling oil temperature controller( KCV1000 ) [ Spindle head cooling oil temperature controller( KCV800 ) ]	1set
Automatic lubricating unit	1set
Built-in coil-type chip conveyors /4set ( KCV1000 ) [ Built-in coil-type chip conveyors /2set ( KCV800 ) ]	1set
Leveling block	1set
Foundation parts	1set
Parts for machine transportation	1set
Automatic power off	1set
Electrical spare parts( fuses )	1set
Instruction manual	2set
Electrical instruction manual ( operating manual, maintenance instruction manual, parts list, and hardware diagrams )	1set

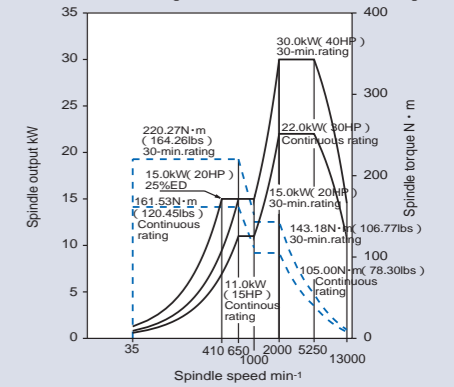
## Special accessories

Item	Contents
Spindle for double contact tool holder	
Pull stud applicable for MAS	MAS-I / MAS-II
Tool storage capacity	40 tools
Linear scale feedback	XY axes / XYZ axes
Lift-up type chip conveyor	Scraper type / Scraper type with floor magnet / Drum type for aluminum chips
Block & piping for oil hole holder	1.1kW Big, NIKKEN
Stopper for high speed holder	Big, NIKKEN
Coolant through spindle	2MPa, 7MPa, Air
Oil mist/Air blower	
Air blower	
Workpiece flushing gun	
Bond for foundation work	KCV800:1 set / KCV1000:2 set
Coolant cooler	MAC-150CSC
Signal lamp	2-lump type, 3-limp type
Automatic operation of splash guard	Front door open / close
Splash guard/ top cover	
Shutter for tool magazine	
NC rotary table	Rotary table type*1
Sub-table	T-slot / Special specification
Touch sensor system T1( Automatic )	Work piece measurement and tool length measurement and tool break detection
Tool break detection with limit switches	

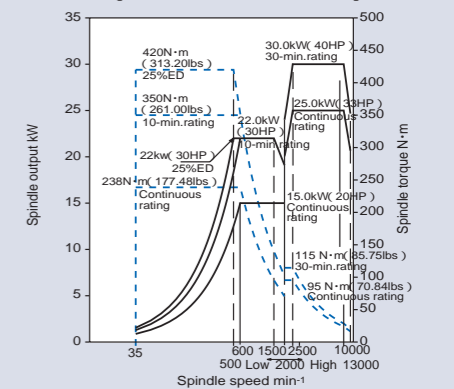
\*1 Inform us of the desired manufacturer or model

## KCV800

### MITSUBISHI( Standard13000min<sup>-1</sup> )

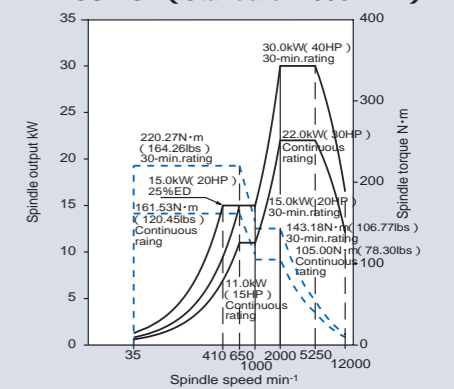


### FANUC( Standard13000min<sup>-1</sup> )

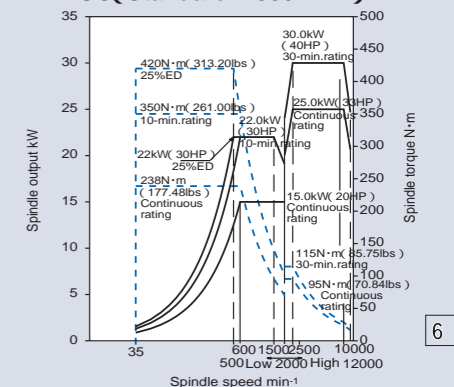


## KCV1000

### MITSUBISHI( Standard12000min<sup>-1</sup> )

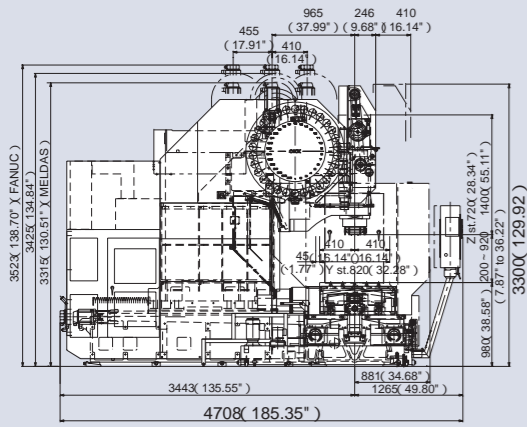


### FANUC( Standard12000min<sup>-1</sup> )

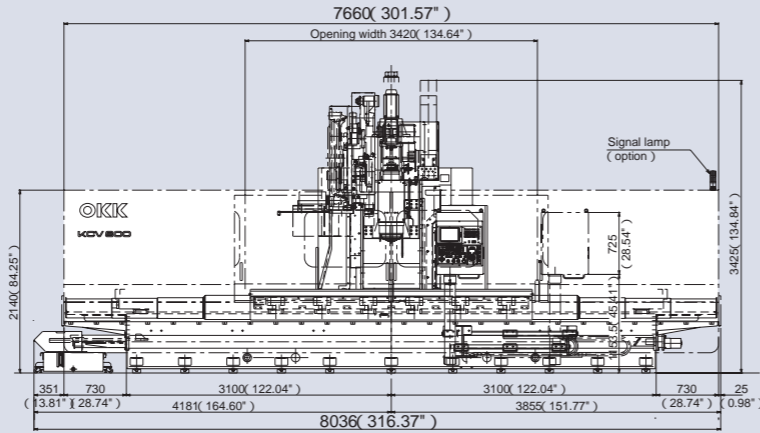


## Main Dimensions

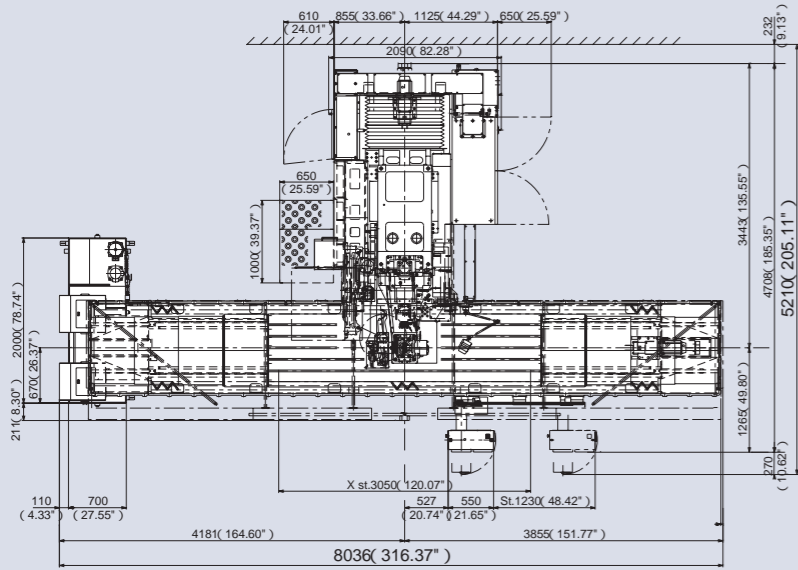
Side view



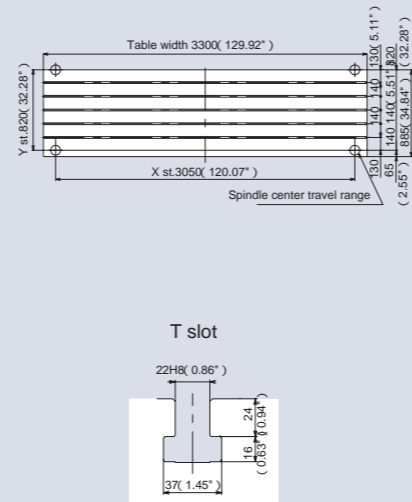
Front view



Floor space

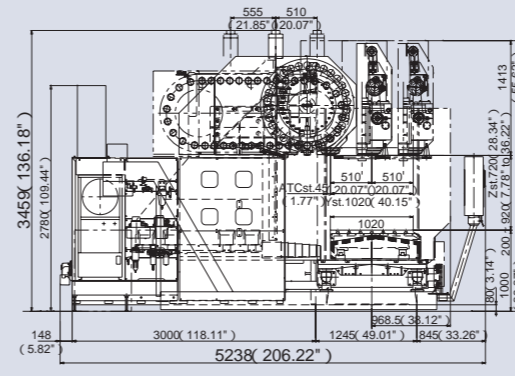


Table

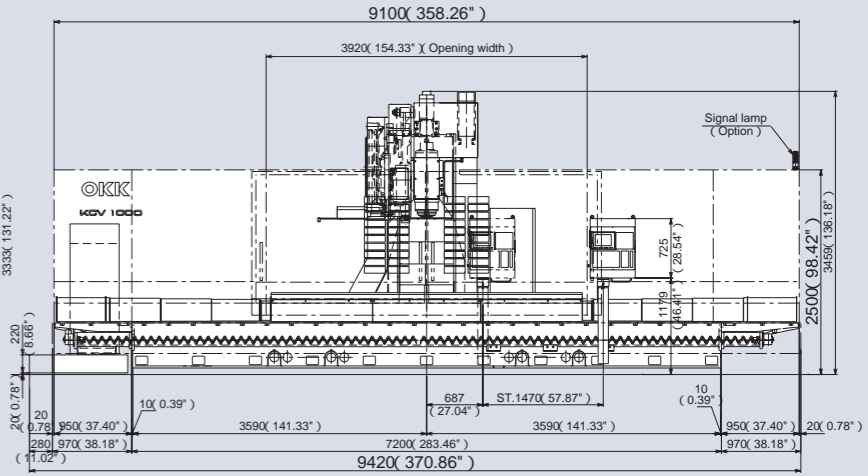


## Main Dimensions

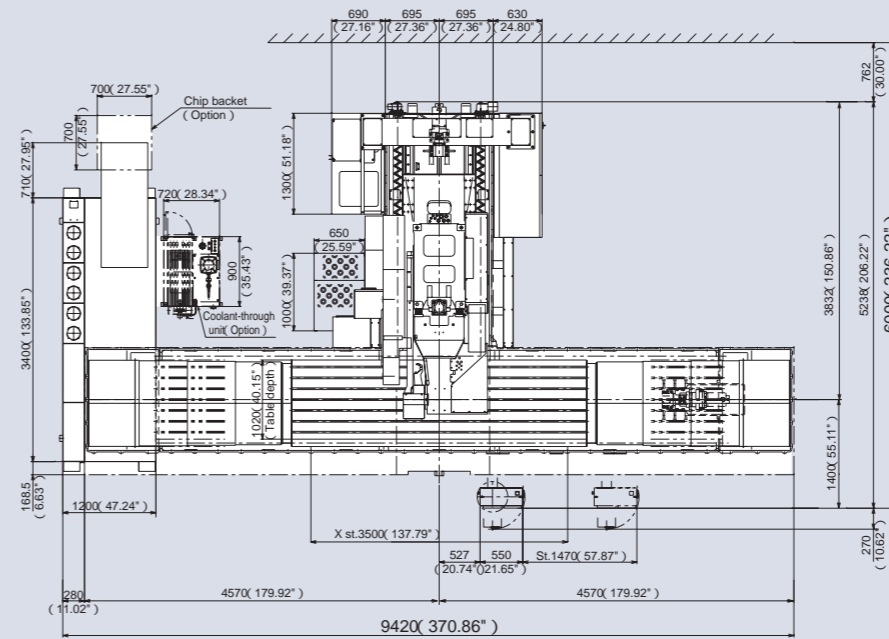
Side view



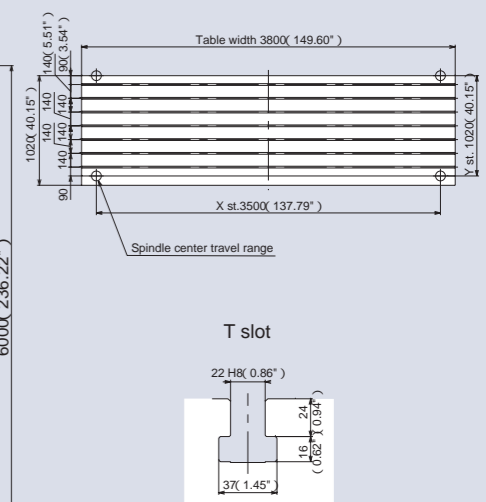
Front view



Floor space



Table



### Standard

No.of controlled axes : 4 axes( X, Y, Z, B )  
 No.of simultaneously controlled axes : 3 axes  
 Least input increment : 0.001mm / 0.0001"  
 Max. programmable dimension : ± 99999.999mm  
 Absolute/Incremental programming : G90 / G91  
 Decimal point input /  
 Inch / Metric conversion : G20 / G21  
 NC tape : ISO / EIA data input format  
 Program format : Meldas standard format( M2 format : need to require )  
 Least control increment : 1nm  
 Positioning : G00  
 Linear interpolation : G01  
 Circular interpolation:G02 / G03( CW / CCW ) Radius designation on arc. )  
 Cutting Feed rate : F5.3 digits, direct command  
 F1-digit feed  
 Dwell : G04  
 Manual handle feed : manual pulse generator 1set( 0.001, 0.01, 0.1mm )  
 Rapid traverse override: 0 / 1 / 25 / 50 / 100%  
 Cutting Feed rate override : 0 ~ 200%( per10% )  
 Feed rate override cancel : M49 / M48  
 Rigid tapping: G84, G74  
 Part program storage capacity : 160m  
 No. of registered programs : 200  
 Part program editing  
 Background editing  
 Buffer modification  
 10.4 inch color LCD / MDI with touch panel  
 Integrated time display  
 Clock function  
 User definable key  
 MDI( Manual Data Input )operation  
 Menu List  
 Parameter / operation guidance  
 Alarm guidance  
 Program input / output interface : RS232C-1CH  
 Ethernet interface  
 Hard disk driving  
 IC card driving  
 S function : 4, 5-digit direct command  
 Spindle speed override: 50 ~ 150%( per 5% )  
 T function : 4-digit direct command  
 ATC tool registration  
 M function : 3-digit programming  
 Multiple M-codes in 1 block : 3  
 2nd auxiliary function: A, C  
 Tool length offset G43, G44  
 Tool offset : G45 ~ G48  
 Cutter compensation : G38 ~ G42  
 Tool offsets : 200 sets  
 Tool offset memory : tool geometry and wear offset  
 Manual reference position return  
 Automatic reference position return: G28 / G29  
 2nd to 4th reference position return: G30 P2 ~ P4  
 Reference position return check : G27  
 Automatic coordinate system setting  
 Coordinate system setting : G92  
 Selection of machine coordinate system setting : G53  
 Selection of workpiece coordinate system setting : G54 ~ G59

Local coordinate system setting : G52  
 Program stop : M00  
 Optional stop : M01  
 Optional block skip : /  
 Dry run  
 Machine lock  
 Z-axis feed cancel  
 Miscellaneous function lock  
 Program number search  
 Sequence number search  
 Program restart function  
 Cycle start  
 Auto restart  
 Single block  
 Feed hold  
 Manual absolute on / off  
 3D Solid program check  
 Graphic check  
 Machinig time computation  
 Automatic operation handle interruption  
 Manual numerical command  
 Sub program control  
 Canned cycle : G73, G74, G76, G80 ~ G89  
 Linear angle designation  
 Circular cutting  
 Mirror image function : Parameter  
 Mirror image function : G code  
 Variable command : 200 sets  
 Automatic corner override  
 Exact stop check / mode  
 Programmable data input : G10 / G11  
 Backlash compensation  
 Memory pitch error compensation  
 Manual tool length measurement  
 Emergency stop  
 Data protection key  
 NC alarm display  
 Machine alarm message  
 Stored stroke limit /  
 Load monitor  
 Self-diagnostics  
 Absolute position detection

### Option

Additional one axis control : name of axis ( A, C, U )  
 Additional two axis control : name of axis ( A, C, U )\*  
 Tape format : M2 / M0 format **PK**  
 Unidirectional positioning : G60 **PK**  
 Helical interpolation  
 Cylindrical interpolation  
 Hypothetical axis interpolation  
 Spiral interpolation  
 Handle feed 3 axes( Remote control pulse handle not available )  
 Part program storage capacity 320m( 400 )  
 Part program storage capacity 600m( 400 )

Part program storage capacity 1280m( 1000 ) **PK**  
 Part program storage capacity 2560m( 1000 )  
 Part program storage capacity 5120m( 1000 )  
 3.5 internal floppy disk drive 1 drive  
 ( 1.44MB / 720KB )Floppy disk mode is not available  
 Computer link B : RS232C  
 3-dimensional cutter compensation  
 Tool offsets : 400 sets  
 Tool offsets : 999 sets  
 Addition of workpiece coordinate system( 48sets ):  
 G54.1 P1 ~ P48 **PK**  
 Addition of workpiece coordinate system( 96sets ):  
 G54.1 P1 ~ P96  
 Optional block skip : Total 9  
 Tool retract and return  
 Sequence number comparison and stop  
 Corner chamfering/corner R **PK**  
 User macro and use macro interruption **PK**  
 Variable memory expansion: 300 sets( total )  
 Variable memory expansion: 600 sets( total ) **PK**  
 Pattern rotation  
 Programmable coordinate system rotation :  
 G68, G69 / G68.1, G69.1 **PK**  
 Parameter coordinate system rotation **PK**  
 Special canned cycles : G34 ~ G36, G37.1/G34 ~ G37  
 Scaling : G50, G51  
 Chopping function  
 Playback  
 Skip function : G31 **PK**  
 Automatic tool length measurement : G37 / G37.1  
 Tool life management II with tool set( 100 total )  
 Additional tool life management sets : 200 total **PK**  
 Additional tool life management sets : 400 total  
 Additional tool life management sets : 600 total  
 Additional tool life management sets : 800 total  
 Additional tool life management sets : 1000 total

## Original OKK Software

### Neomatic 730

HQ control ----- STD  
 Hyper HQ control mode  
 16.8m / min, SSS control ----- OP  
 Hyper HQ control mode  
 135m / min, SSS control ----- OP  
 Die & mold machining NC kit ----- OP  
 NC Option package  
 ( items with " **PK** "are included )----- OP  
 Program editor ----- OP  
 Touch sensor system :  
 TX( manual operation mode )----- OP  
 Soft scale m ----- STD  
 Pallet program registration screen  
 ( with External search )----- STD  
 Process maker ----- OP  
 Work manager ----- OP

Items with \* require Neomatic 750 controller.

### Standard

No. of controlled axes : 3 ( X, Y, Z )  
 No. of simultaneously controlled axes : 3 axes  
 Least input increment : 0.001mm / 0.0001"  
 Max. programmable dimension ±99999.999mm  
 Absolute / Incremental programming G90 / G91  
 Decimal point input / Pocket calculator type decimal point input  
 Inch Metric conversion : G20 / G21  
 NC tape : ISO / EIA data input format  
 Program format : FANUC standard format  
 Positioning : G00  
 Linear interpolation : G01  
 Circular interpolation : G02 / G03 ( CW / CCW )  
 ( Radius designation on arc. )  
 Cutting Feed rate : F5.3 digits , direct command  
 Dwell : G04  
 Manual handle feed : manual pulse generator 1set ( 0.001, 0.01, 0.1mm )  
 Rapid traverse override : 0 / 1 / 25 / 50 / 100%  
 Cutting Feed rate override : 0 ~ 200% ( per10% )  
 Feed rate override cancel : M49 / M48  
 Rigid tapping : G84, G74 ( mode designation : M29 )  
 Part program storage capacity 80m  
 No. of registered programs : 125  
 Part program editing  
 Background editing  
 10.4 inch color LCD / MDI  
 Clock function  
 MDI ( manual data input ) operation  
 Program input / output interface : RS232C-1CH  
 IC card interface  
 S function : 5-digit direct command  
 Spindle speed override : 50 ~ 150% ( per 5% )  
 T function : 4-digit direct command  
 ATC tool registration  
 M function : 3-digit programming  
 Multiple M-codes in 1 block : 2  
 Tool length offset G43, G44 / G49  
 Cutter compensation C : G41, G42 / G40  
 Tool offsets 99 sets  
 Tool offset memory C  
 Manual reference position return  
 Automatic reference position return : G28 / G29  
 2nd reference position return : G30  
 Reference position return check : G27  
 Automatic coordinate system setting  
 Coordinate system setting : G92  
 Selection of machine coordinate system setting : G53  
 Selection of workpiece coordinate system setting :  
 G54 ~ G59  
 Local coordinate system setting : G52  
 Program stop : M00  
 Optional stop : M01  
 Optional block skip : /  
 Dry run  
 Machine lock  
 Z-axis feed cancel  
 Miscellaneous function lock

Program number search  
 Sequence number search  
 Program restart function  
 Cycle start  
 Auto restart  
 Single block  
 Feed hold  
 Manual absolute on / off  
 Sub program control  
 Canned cycle : G73, G74, G76, G80 ~ G89  
 Mirror image function parameter  
 Automatic corner override  
 Exact stop check / mode  
 Programmable data input : G10  
 Conversational programming with graphic function  
 Graphic display  
 Backlash compensation  
 Memory pitch error compensation  
 Skip function  
 Tool length measurement  
 Emergency stop  
 Data protection key  
 NC alarm display / alarm history display  
 External alarm message  
 Stored stroke limit 1  
 Load monitor  
 Self-diagnostics  
 Absolute position detection

### Option

Additional one axis control : name of axis ( A, B, C, U, V, W )  
 Additional two axis control : name of axis ( A, B, C, U, V, W )  
 Additional three axis control : name of axis ( A, B, C, U, V, W )  
 Simultaneously controlled axis : Max.6 axes  
 FS15 tape format  
 Unidirectional positioning : G60  
 Helical interpolation  
 Cylindrical interpolation  
 Hypothetical axis interpolation  
 Conical / spiral interpolation  
 Smooth interpolation ( RISC is required )  
 NURBS interpolation ( RISC is required )  
 Involute interpolation  
 F1-digit feed  
 Handle feed 3 axes ( Remote control pulse handle not available )  
 Part program storage capacity 160m  
 Part program storage capacity 320m  
 Part program storage capacity 640m  
 Part program storage capacity 1280m  
 Part program storage capacity 2560m  
 Part program storage capacity 5120m  
 Registered programs 200  
 Registered programs 400  
 Registered programs 1000 ( More program capacity 320m is required )

Extended part program editing  
 Handy file  
 Remote buffer  
 High speed remote buffer B ( Remote buffer is required )  
 Data server : Memory card  
 2nd auxiliary function  
 Tool offset  
 3-dimensional cutter compensation  
 Tool offsets : 200 sets  
 Tool offsets : 400 sets  
 Tool offsets : 499 sets  
 Tool offsets : 999 sets  
 Addition of workpiece coordinate system ( 48sets ) :  
 G54.1 P1 ~ P48  
 Addition of workpiece coordinate system ( 300sets ) :  
 G54.1 P1 ~ P300  
 Machining time stamp function  
 Optional block skip : Total 9  
 Tool retract and return  
 Sequence number comparison and stop  
 Manual handle interruption  
 Programmable mirror image  
 Directory display of floppy cassette  
 Optional chamfering / corner R  
 Custom macro  
 Interruption type custom macro  
 Addition of custom macro common variables : 600  
 Figure copy  
 Programmable coordinate system rotation : G68, G69  
 Scaling : G50, G51  
 Chopping function  
 Playback  
 Dynamic graphic display  
 Automatic tool length measurement : G37  
 Tool life management : 128 pairs  
 Addition of pairs for tool life management : 512 in total  
 Run hour and parts count display

## Original OKK Software

### OKK-F160is-MB

Help guidance function ----- STD  
 HQ control ----- STD  
 Hyper HQ control A mode ----- OP  
 Hyper HQ control B mode ( with RISC ) ----- OP  
 Die & mold machining NC kit ----- OP  
 NC Option package ----- OP  
 Special canned cycles (including circular cutting) - OP  
 Soft scale m ----- STD

### Standard

No.of controlled axes : 4 axes( X, Y, Z, B )  
 No.of simultaneously controlled axes : 3 axes  
 Least input increment : 0.001mm / 0.0001"  
 Max. programmable dimension : ± 99999.999mm  
 Absolute/Incremental programming : G90 / G91  
 Decimal point input /  
 Inch / Metric conversion : G20 / G21  
 NC tape : ISO / EIA data input format  
 Program format : Meldas standard format( M2 format : need to require )  
 Least control increment : 1nm  
 Positioning : G00  
 Linear interpolation : G01  
 Circular interpolation:G02 / G03( CW / CCW )( Radius designation on arc. )  
 Cutting Feed rate : F5.3 digits, direct command  
 F1-digit feed  
 Dwell : G04  
 Manual handle feed : manual pulse generator 1set( 0.001, 0.01, 0.1mm )  
 Rapid traverse override: 0 / 1 / 25 / 50 / 100%  
 Cutting Feed rate override : 0 ~ 200%( per10% )  
 Feed rate override cancel : M49 / M48  
 Rigid tapping: G84, G74  
 Part program storage capacity : 160m  
 No. of registered programs : 200  
 Part program editing  
 Background editing  
 Buffer modification  
 10.4 inch color LCD / MDI with touch panel  
 Integrated time display  
 Clock function  
 User definable key  
 MDI( Manual Data Input )operation  
 Menu List  
 Parameter / operation guidance  
 Alarm guidance  
 Program input / output interface : RS232C-1CH  
 Ethernet interface  
 Hard disk driving  
 IC card driving  
 S function : 4, 5-digit direct command  
 Spindle speed override: 50 ~ 150%( per 5% )  
 T function : 4-digit direct command  
 ATC tool registration  
 M function : 3-digit programming  
 Multiple M-codes in 1 block : 3  
 2nd auxiliary function: A, C  
 Tool length offset G43, G44  
 Tool offset : G45 ~ G48  
 Cutter compensation : G38 ~ G42  
 Tool offsets : 200 sets  
 Tool offset memory : tool geometry and wear offset  
 Manual reference position return  
 Automatic reference position return: G28 / G29  
 2nd to 4th reference position return: G30 P2 ~ P4  
 Reference position return check : G27  
 Automatic coordinate system setting  
 Coordinate system setting : G92  
 Selection of machine coordinate system setting : G53  
 Selection of workpiece coordinate system setting : G54 ~ G59

Local coordinate system setting : G52  
 Program stop : M00  
 Optional stop : M01  
 Optional block skip : /  
 Dry run  
 Machine lock  
 Z-axis feed cancel  
 Miscellaneous function lock  
 Program number search  
 Sequence number search  
 Program restart function  
 Cycle start  
 Auto restart  
 Single block  
 Feed hold  
 Manual absolute on / off  
 3D Solid program check  
 Graphic check  
 Machinig time computation  
 Automatic operation handle interruption  
 Manual numerical command  
 Sub program control  
 Canned cycle : G73, G74, G76, G80 ~ G89  
 Linear angle designation  
 Circular cutting  
 Mirror image function : Parameter  
 Mirror image function : G code  
 Variable command : 200 sets  
 Automatic corner override  
 Exact stop check / mode  
 Programmable data input : G10 / G11  
 Backlash compensation  
 Memory pitch error compensation  
 Manual tool length measurement  
 Emergency stop  
 Data protection key  
 NC alarm display  
 Machine alarm message  
 Stored stroke limit /  
 Load monitor  
 Self-diagnostics  
 Absolute position detection

### Option

Additional one axis control : name of axis  
 ( A, C, U )  
 Additional two axis control : name of axis  
 ( A, C, U )\*  
 Tape format : M2 / M0 format  
 Unidirectional positioning : G60 **PK**  
 Helical interpolation **PK**  
 Cylindrical interpolation  
 Hypothetical axis interpolation  
 Spiral interpolation  
 Handle feed 3 axes( Remote control  
 pulse handle not available )  
 Part program storage capacity 320m( 400 )  
 Part program storage capacity 600m( 400 )

Part program storage capacity 1280m( 1000 ) **PK**  
 Part program storage capacity 2560m( 1000 )  
 Part program storage capacity 5120m( 1000 )  
 3.5 internal floppy disk drive 1 drive  
 ( 1.44MB / 720KB )Floppy disk mode is not available  
 Computer link B : RS232C  
 3-dimensional cutter compensation  
 Tool offsets : 400 sets  
 Tool offsets : 999 sets  
 Addition of workpiece coordinate system( 48sets ):  
 G54.1 P1 ~ P48 **PK**  
 Addition of workpiece coordinate system( 96sets ):  
 G54.1 P1 ~ P96  
 Optional block skip : Total 9  
 Tool retract and return  
 Sequence number comparison and stop  
 Corner chamfering/corner R **PK**  
 User macro and use macro interruption **PK**  
 Variable memory expansion: 300 sets( total )  
 Variable memory expansion: 600 sets( total ) **PK**  
 Pattern rotation  
 Programmable coordinate system rotation :  
 G68, G69 / G68.1, G69.1 **PK**  
 Parameter coordinate system rotation **PK**  
 Special canned cycles : G34 ~ G36, G37.1/G34 ~ G37  
 Scaling : G50, G51  
 Chopping function  
 Playback  
 Skip function : G31 **PK**  
 Automatic tool length measurement : G37 / G37.1  
 Tool life management II with tool set( 100 total )  
 Additional tool life management sets : 200 total **PK**  
 Additional tool life management sets : 400 total  
 Additional tool life management sets : 600 total  
 Additional tool life management sets : 800 total  
 Additional tool life management sets : 1000 total

## Original OKK Software

### Neomatic 730

HQ control ----- STD  
 Hyper HQ control mode  
 16.8m / min, SSS control ----- OP  
 Hyper HQ control mode  
 135m / min, SSS control ----- OP  
 Die & mold machining NC kit ----- OP  
 NC Option package  
 ( items with " **PK** "are included )----- OP  
 Program editor ----- OP  
 Touch sensor system :  
 T0( manual operation mode ) ----- OP  
 Soft scale m ----- STD  
 Pallet program registration screen  
 ( with External search ) ----- STD  
 Process maker ----- OP  
 Work manager ----- OP

Items with \* require Neomatic 750 controller.

**Standard Specification**

No. of controlled axes : 3 ( X, Y, Z )  
 No. of simultaneously controlled axes : 3 axes  
 Least input increment : 0.001mm / 0.0001"  
 Max. programmable dimension  $\pm 999999.999$ mm  
 Absolute/Incremental programming G90 / G91  
 Decimal point input / Pocket calculator type decimal point input  
 Inch Metric conversion : G20 / G21  
 NC tape : ISO / EIA data input format  
 Program format : FANUC standard format  
 Nano Interpolation  
 Positioning : G00  
 Linear interpolation : G01  
 Circular interpolation: G02 / G03 ( CW / CCW )  
 ( Radius designation on arc. )  
 Cutting Feed rate : F6.3 digits , direct command  
 Dwell : G04  
 Manual handle feed : manual pulse generator 1set  
 ( 0.001, 0.01, 0.1mm )  
 Rapid traverse override: 0 / 1 / 25 / 50 / 100%  
 Cutting Feed rate override: 0~200% ( per10% )  
 Feed rate override cancel : M49 / M48  
 Rigid tapping: G84, G74 ( mode designation : M29 )  
 Part program storage capacity 160m  
 No. of registered programs : 120  
 Part program editing  
 Background editing  
 Extended part program editing  
 10.4 inch color LCD / MDI  
 Clock function  
 MDI ( manual data input ) operation  
 Program input / output interface : RS232C-1CH  
 Memory card interface  
 S function : 5-digit direct command  
 Spindle speed override: 50 ~ 150% ( per 5% )  
 T function : 4-digit direct command  
 ATC tool registration  
 M function : 3-digit programming  
 Multiple M-codes in 1 block : 2  
 Tool length offset G43, G44 / G49  
 Cutter compensation C : G41, G42 / G40  
 Tool offsets 99 sets  
 Tool offset memory C  
 Manual reference position return  
 Automatic reference position return: G28 / G29  
 2nd reference position return : G30  
 Reference position return check : G27  
 Automatic coordinate system setting  
 Coordinate system setting : G92  
 Selection of machine coordinate system setting : G53  
 Selection of workpiece coordinate system setting :  
 G54 ~ G59  
 Local coordinate system setting : G52  
 Program stop : M00  
 Optional stop : M01  
 Optional block skip : /  
 Dry run  
 Machine lock  
 Z-axis feed cancel

Miscellaneous function lock  
 Program number search  
 Sequence number search  
 Program restart function  
 Cycle start  
 Auto restart  
 Single block  
 Feed hold  
 Manual absolute on / off  
 Sub program control  
 Canned cycle : G73, G74, G76, G80 ~ G89  
 Mirror image function parameter  
 Automatic corner override  
 Exact stop check / mode  
 Programmable data input : G10  
 Graphic display  
 Backlash compensation for each  
 rapid traverse and cutting feed  
 Memory pitch error compensation  
 Skip function  
 Tool length measurement  
 Emergency stop  
 Data protection key  
 NC alarm display / alarm history display  
 Machine alarm message  
 Stored stroke limit 1  
 Load monitor  
 Self-diagnostics  
 Absolute position detection

**Optional Specification**

Additional one axis control : name of  
 axis ( A, B, C, U, V, W )  
 Additional two axis control : name of  
 axis ( A, B, C, U, V, W )  
 Least input increment IS-C :  
 0.0001mm / 0.00001"  
 FS15 tape format  
 Unidirectional positioning : G60  
 Helical interpolation  
 Cylindrical interpolation  
 Hypothetical axis interpolation  
 Conical / spiral interpolation  
 Smooth interpolation ( Hyper HQ  
 mode B is required )  
 NURBS interpolation ( Hyper HQ  
 mode B is required )  
 Involute interpolation  
 F1-digit feed  
 Handle feed 3 axes ( Remote control  
 pulse handle not available )  
 Part program storage capacity 320m ( 250 )  
 Part program storage capacity 640m ( 500 )  
 Part program storage capacity 1280m ( 1000 )  
 Part program storage capacity 2560m ( 1000 )  
 Part program storage capacity 5120m ( 1000 )  
 Part program storage capacity 10240m ( 1000 )  
 Part program storage capacity 20480m ( 1000 )

Handy file  
 Data server : ATA card ( 1GB )  
 Spindle contour control  
 2nd auxiliary function  
 Tool offset  
 3-dimensional cutter compensation  
 Tool offsets : 200 sets  
 Tool offsets : 400 sets  
 Tool offsets : 499 sets  
 Tool offsets : 999 sets  
 Tool offsets : 2000 sets  
 Addition of workpiece coordinate system ( 48sets ) :  
 G54.1 P1 ~ P48  
 Addition of workpiece coordinate system ( 300sets ) :  
 G54.1 P1 ~ P300  
 Machining time stamp function  
 Optional block skip : Total 9  
 Tool retract and return  
 Sequence number comparison and stop  
 Manual handle interruption  
 Programmable mirror image  
 Optional chamfering / corner R  
 Custom macro  
 Interruption type custom macro  
 Addition of custom macro common variables : 600  
 Special Canned Cycle  
 Figure copy  
 Programmable coordinate system rotation : G68, G69  
 Scaling : G50, G51  
 Chopping function  
 Playback  
 Automatic tool length measurement : G37  
 Tool life management : 256 pairs  
 Addition of pairs for tool life management : 1024 in total  
 High-speed skip signal  
 Run hour and parts count display

**Original OKK Software****OKK F310is-A**

HQ control -----STD  
 Hyper HQ control A mode ----- OP  
 Hyper HQ control B mode ----- OP  
 Die & mold machining NC kit ----- OP  
 NC Option package ----- OP  
 Soft scale m -----STD



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S-Plant



W-Plant

Technical center is for test cutting, demonstration and training.  
S-plant is for machining and assembly of spindles and tables.  
W-plant is for final assembly of large sized machining centers.  
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