

L A T H E

LV800RAW



HYUNDAI WIA LATHE
MODEL LV800RAW

To :

Configuration of Equipment and Spindle

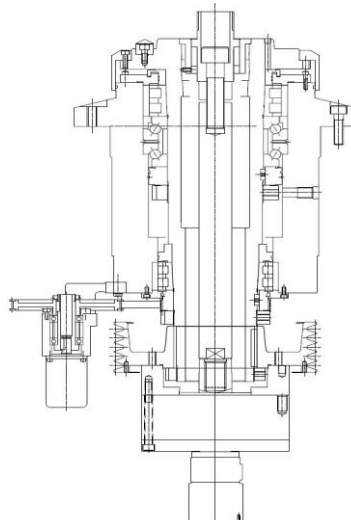
Bed and Column of Column-Integrated Box Configuration

- Considering Twisting and Rigidity, and Excellent Vibration Absorption



Stable cutting by constant surface speed control using AC motor

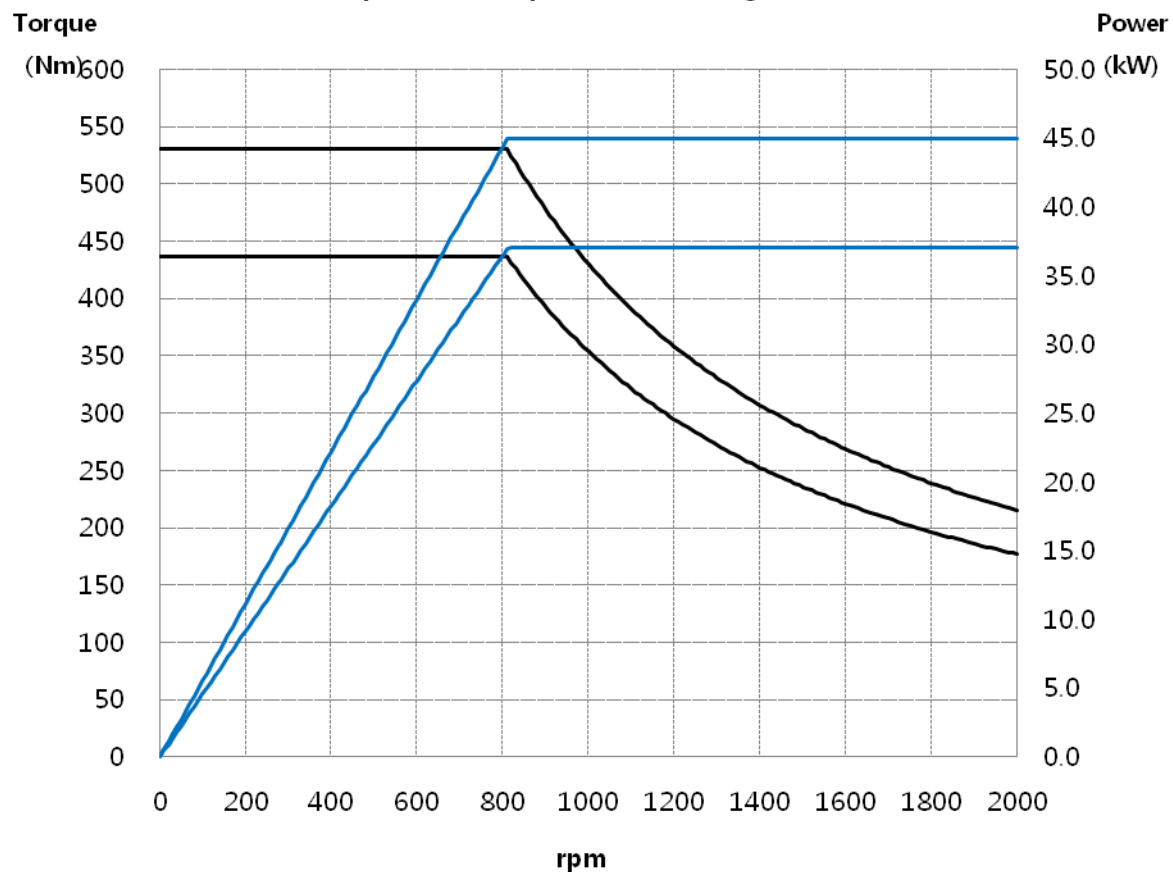
Multi-column cylindrical roller bearing and angular ball bearing mounted



Major Specification of Spindle

- **Main Spindle**
 - Standard chuck size: Chuckless
 - Standard chuck weight: Chuckless
 - Max Workpiece Weight (inc. chuck) 500 kg (1,102 lb)
 - Spindle Type: A2-11
 - Max. rotation rate: 2,000 r/min
 - Max. torque: 530 N-m (391 ft-lbs)
 - Motor Power Output (30 min/cont.) 45/37 kW (60/49 Hp)
 - Through Hole Dia.: $\varnothing 100$ mm ($\varnothing 3.94$ ")
 - Bearing lubrication: Grease lubrication

LV800RAW Spindle Torque-Power Diagram ($\alpha 40/6,000i$)



Feed System

- **Box Guide**
Equipped with Box Guide
- **Ball screw**
Double-anchor type ball screw support
Large diameter ball screw
- **Direct coupled to servo motor**
Ball screw directly coupled to the servo motor using coupling



Servo System

Rapid acceleration/deceleration with Fanuc servo system

		X-axis	Z-axis
Max. feed distance		440 mm (17.32")	800 mm (31.50")
Rapid Feedrate		20 m/min (787 ipm)	20 m/min (787 ipm)
Ball Screw	Dia.	Ø50 mm (ø1.97")	Ø50 mm (ø1.97")
	Lead	12 mm (0.47")	12 mm (0.47")
Servo Motor	Output	4 kW (5.4 Hp)	14 kW (18.7 Hp)
	Torque	22 Nm (16.2 ft-lbs)	53 Nm (39.1 ft-lbs)
	Thrust	28,312 N (6,369 lbs)	101,293 N (22,787 lbs)
Guideway	Type	Box Guide	Box Guide
	Distance	430 mm (16.93")	650 mm (25.59")

※ The thrust is a theoretical value.

Turret

High precision coupling and rotation in shortest selected indexing route

Servo-motor driven turret equipped with 3-piece curvic coupling

- High clamping power of 11.2 ton guarantees high accuracy in intermittent and heavy cutting

Holer exclusive for aluminum wheel mountable

- ***Turret***

- Turret Type: Drum type (12 facets)
- Drive mode: Servo Motor
- Indexing speed: 0.6 sec/step
- Tool Specification
 - Outer Dia.: 25 x 25 mm (1 x 1")

Q-Setter

Fast tool correction by contacting tool tip edge to the sensor

- Manual sensor mounting/demounting operation, contact sensor by jog feed

Hydraulic Hollow Chuck & Cylinder

Standard actuator in the industry employed (Chuckless Type)

- **Main Spindle**
 - Standard chuck size Chuckless
 - Standard chuck weight Chuckless
 - Max. workpiece weight 500 kg (1,102 lb)
 - Max. rotation rate 2,000 r/min
 - Spindle Type A2-11
 - Through Hole Dia. $\varnothing 100$ mm ($\varnothing 3.94$ ")

Hydraulic System

- Max. Discharge Pressure 6.9 MPa (996 psi)
- Discharge Rate 20 ℓ /min (5.3 gal/min)
- Tank Capacity 24 ℓ (6.0 gal)
- Lubricating Oil VG32/CB32

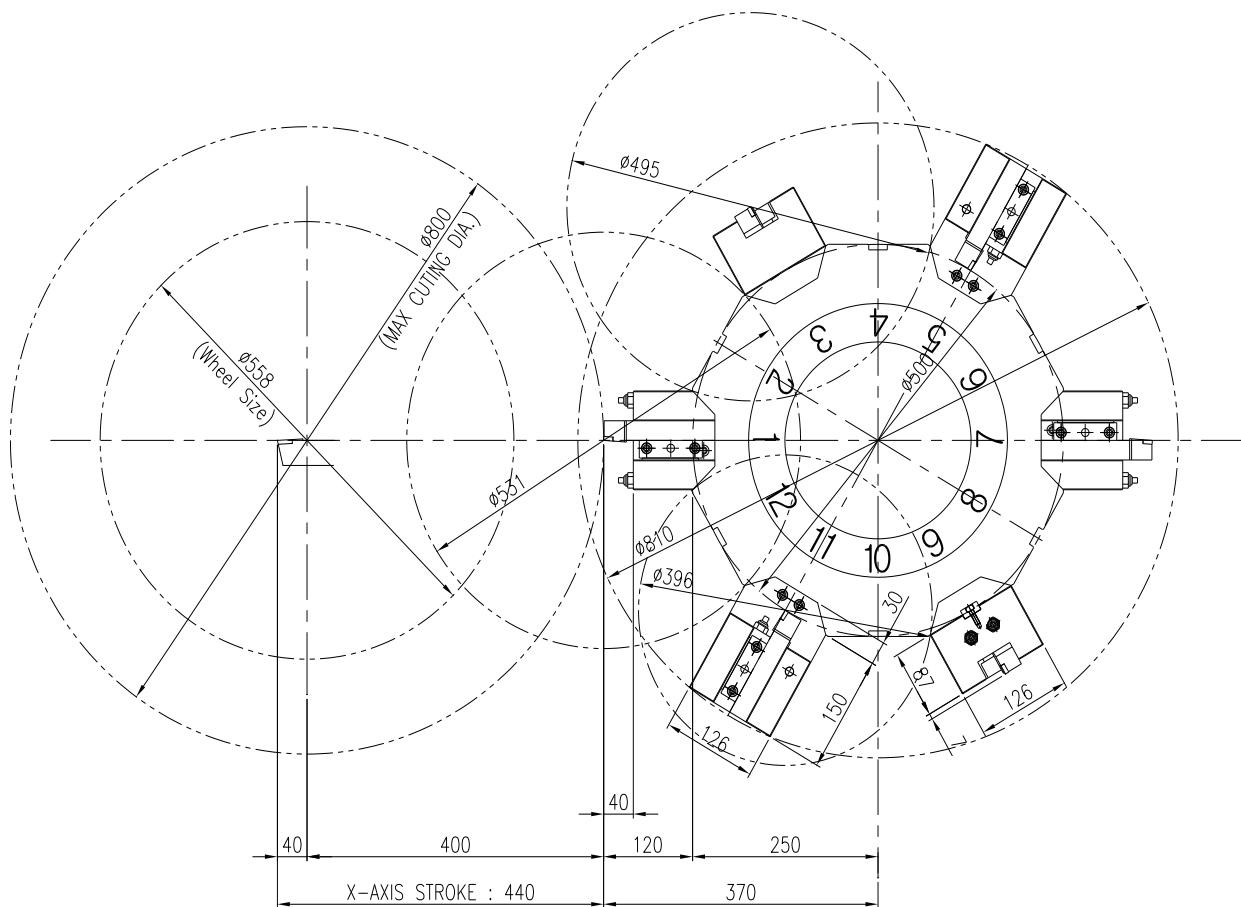
Lubrication

- Motor Type Single phase induction Motor
- Tank Capacity 2 ℓ (0.53 gal)
- Lubricating Oil G68

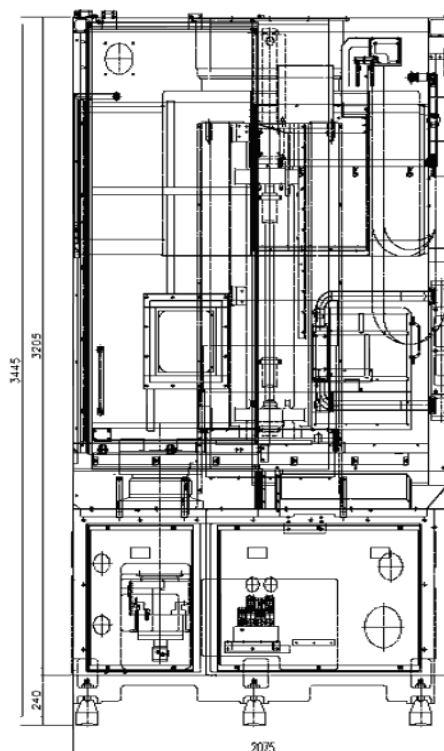
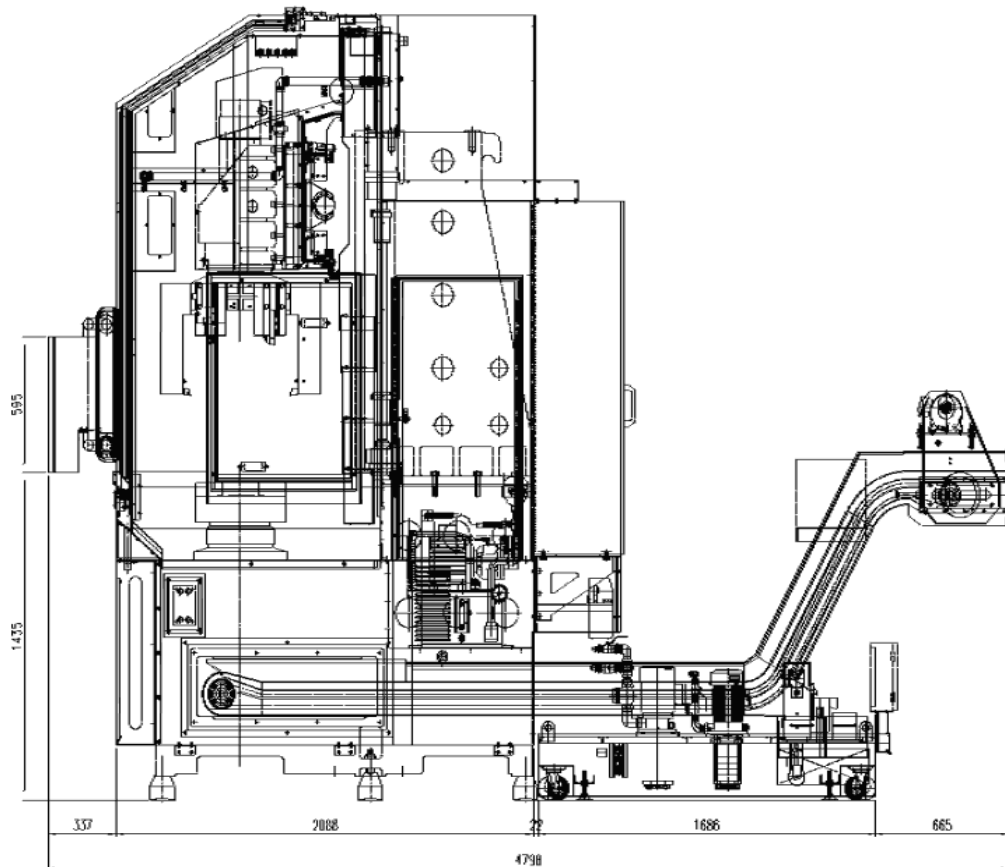
Cutting Oil

- Tank Capacity 700 ℓ (185 gal)
- Pump Motor Output 0.9 kW (1.2 Hp)
- Pump Discharge Rate 250 ℓ /min (66.0 gal/min)

Tool Interference



Equipment Layout



LV800RAW Detailed Specifications

- **Capacity**

- Max. swing: $\varnothing 890$ mm ($\varnothing 35''$)
- Swing over cross $\varnothing 710$ mm ($\varnothing 28''$)
- Max. Turning Diameter $\varnothing 800$ mm ($\varnothing 31.5''$)
- Standard chuck size Chuckless
- Standard chuck weight Chuckless
- (Inc. standard chuck)
- Max. workpiece weight 500 kg (1,102lb)

- **Main Spindle**

- Spindle Type A2-11
- Through Hole Dia. $\varnothing 100$ mm ($\varnothing 3.94''$)
- Motor Power Output (30 min/cont.) 45/37 kW (60/49 Hp)
- Max. rotation rate 2,000 r/min
- Max. torque 530 Nm (391 ft-lbs)

- **Turret**

- Turret Type Drum Type (12D)
- No. of Mountable Tools 12 Stations
- Turret indexing speed 0.6 sec/step
- Indexing Method Non-stop, Bi-directional
- Drive Servo-motor driven
- Tool Size (OD) 25mm x 25mm (1" x 1")

LV800RAW Detailed Specifications

- **Axis**

- | | |
|-------------------------|-----------------------|
| • X-axis Travel | 440 mm (17.32") |
| • Z-axis Travel | 800 mm (31.50") |
| • X-axis Rapid Feedrate | 20 m/min (787 ipm) |
| • Z-axis Rapid Feedrate | 20 m/min (787 ipm) |
| • Guideway (X / Z) | Box Guide / Box Guide |
| • Bed Configuration | Flat Bed |

- **CNC Controller (Standard)**

- | | |
|-------------------------------------|------------------------------|
| • Model | FANUC 32i Series |
| • Display | 10.4" full-color LCD display |
| • Memory | 256 Kbyte (640 m) |
| • Interactive automatic programming | Manual Guide i |

- **Lubricant and Cutting Fluid**

- | | |
|---------------------------|-----------------|
| • Lubricant Tank Capacity | 2 ℓ (0.53 gal) |
| • Coolant Tank Capacity | 700ℓ (111 gal) |
| • Coolant Pump Power | 0.9 kW (1.2 Hp) |

- **Machine Dimensions**

- | | |
|---------------------|-----------------------------------|
| • Footprint (W x L) | 2,075 x 4,101 mm (81.7" x 161.5") |
| • Height | 3,440 mm (135.4") |
| • Weight | 11,000 kg (24,250 lbs) |
| • Power Supply | 47 KVA |
| • Voltage | 200/220 V, 50/60 Hz |

Standard/Option Specifications

➤ **Spindle & Chuck**

• Spindle solid cylinder	Standard
• Spindle solid chuck	Option
• Chuck Clamp Foot Switch	Standard
• Chuck 2-Stage Pressurizer	Standard
• Chuck 2-Stage Foot Switch	Option
• Chuck Open/Close Checker	Option

➤ **Tool Post**

• Tool Holder	Standard
• 12-facet tool post	Standard
• Drill Socket	Option
• U-Drill holder (U-Drill cap)	Option
• U-Drill Holder Sleeve	Option

➤ **Coolant & Airblow**

• Standard Coolant (Nozzle)	Standard
• Bed Flushing Coolant	Standard
• Set Coolant	Standard
• Gun Coolant	Option
• Above-chuck Airblow	Option
• Airgun	Option
• High Pressure Coolant (6 bar)	Standard
• High Pressure Coolant pump (20 bar)	Option

➤ **Chip Handling**

• Coolant Tank (700 l)	Standard
• Chip Conveyor (Hinge/Scraper) rear (Discharge to the side)	Option
• Chip Conveyor (Hinge/Scraper) rear (Discharge to the rear)	Option
• Chip Box (Standard 180 L)	Option
• Chip Box (Swing 200 L)	Option
• Chip Box (Large 330 L)	Option

➤ **Safety Device**

• Front Door Interlock	Standard
• Total Splash Guard	Standard
• Safety Door Edge (CE)	Option
• Chuck Hydraulic Pressure Maintenance Interlock	Option
• Chuck Open/Close Checker	Option

➤ **Measurement**

• Linear Scale (X-axis)	Option
• Linear Scale (Z-axis)	Option

➤ **Environment**

• Air Conditioner	Option
• Dehumidifier	Option
• Oil Mist Collector	Option
• Oil skimmer	Standard

➤ **Jig & Automation**

• Auto door	Option
• Sub-control panel	Option
• External M-code 4 Sets	Option
• I/O Extension (inc. IN/OUT) (16 contacts)	Option
• I/O Extension (inc. IN/OUT) (32 contacts)	Option

Standard/Option Specifications

➤ **Hydraulic Pressure Supply System**

- Standard Hydraulic Cylinder (solid) Standard
- Standard Hydraulic Unit (70 bar/24ℓ) Standard

➤ **Computerized numerical control, CNC**

- FANUC 32i Series Standard
- HYUNDAI WIA FANUC i Series Option

➤ **Control & Software**

- Interactive automatic programming Standard
(Manual Guide i, FANUC)
- Interactive automatic programming Option
(SHOP TURN, Siemens)
- Interactive automatic programming Option
(HW-DPRO)
- HW-TM Option
(Tool Monitoring System, Built-In Type)
- HW-eDNC (DNC Software) Option

➤ **Electric Devices**

- 1 Color Call Light Standard
- 3 Color Call Light Option
- 3 Color Call Light & Buzzer Option
- Work Light Standard
- Power Panel Light Option
- Spindle Load Meter (LED type) Option
- Spindle RPM Meter (LED type) Option
- Work Counter (Digital) Option
- Total Counter (Digital) Option
- Tool Counter (Digital) Option
- Multi-tool Counter (6 pcs.) Option
- Multi-tool Counter (9 pcs.) Option
- Electric Leakage Breaker Option
- Transformer (FANUC, 60 kVA) Option
- Auto Power Cutoff Option

➤ **Others**

- Adjusting Tools & Tool Box Standard

FANUC System 32i Series

Item	Specification
Axis Control/Display	
No. of Controlled Axes	Max 4 axes
	X- and Z-axis
	X-, Z-, and C-axes (Mill model only)
	X, Z, B, C axes (MS model only)
	X, Z, Y, C axes (Y model only)
No. of simultaneously controlled axes	2-axes/ Linear, Circular Interpolation (max 4-axes)
No. of Spindle Axes	2 axes
Least Input Increment	X-, Z-, B-(Y)-axes: 0.001mm / 0.0001 inch
	C-axis: 0.001 deg.
Least Increment	X-, Z-, B-(Y)-axes: 0.001mm / 0.0001 inch
	C-axis: 0.001 deg.
High Speed HRV Control	
PMC Axis Control	
Inch/Metric Conversion	G20 / G21
Machine Lock	All axes
Stroke Check 1	Over-travel
Stroke Check 2, 3	
Chuck/Tailstock Barrier	
Mirror Image	
Follow-up	
Backlash Compensation	±0~9999 pulses (rapid feed & cutting feed)
Position Switch	
Abnormal Load Detection	BST (Back Spin Torque Limit)
Display	10.4" full-color LCD display
Operation	
Program Rebooting	
Program Check Function	Dry run, program check
Single Block	
Feed Function	
Manual Jog Feed	Rapid feed, jog, handle
Manual Handle Feed Magnification	x1, x10, x100
Cutting Feedrate Override	0 ~ 200% (10% units)
Jog Feedrate Override	0 ~ 2,000mm/min [79 ipm]

Rapid Feedrate Override	F1, F5, F25/F50, F100%
Override Cancel	
Feed per minute, Feed per revolution	
Program Input/Interpolation Function	
Nano Interpolation	Positioning/Linear/Circular (G00/G01/G02/G03)
Dwell	G04, 0 ~ 9999.9999sec
Thread Cutting Retrack	
Variable Lead Threading	
Multi-Threading	
Continuous Threading	
Synchronous Threading	
Reference Point Return	G28, Manual
Reference Point Return Check	G27
Second Reference Point Return	G30
Program Stop/Exit	M00, M01/M02, M30
Optional Block Skip	1
Max. Program Input Unit	+/- 9999.9999"
Program No.	O4 figures
Absolute/Increment Programming	
Plane Selection	G17, G18, G19
Workpiece Coordinate System	G52 to G59
Manual Absolute	"ON" fixed
Direct Drawing Dimension Programming	Including Chamfering/Corner R
G Code System	A
Programmable Data Input	G10
Sub-program Call	10 Folders
Custom Macro	
Add Custom Macro Variable	#100 to #199, #500 to #999
Multiple Repetitive Cycle	
Multiple Repetitive Cycle II	
Lathe Fixed Cycle	
Manual Guide i	Interactive automatic programming
Auxiliary Function/Spindle Function	
Auxiliary Function	M4 places
Level-up M Core	High-speed/Multi/Bypass M-Code
Spindle Speed Command	S4 places, binary output
Constant Surface Speed Control	G96, G97
Spindle Speed Override	50% ~ 150% (10% steps)
Spindle Orientation	

Rigid Tapping	
Tool Function/Tool Compensation	
Tool Function	T2 + 2
Tool Offset	
No. of Tool Offset	64 sets
Tool Nose Radius Compensation	G40, G41, G42
Geometric/Wear Offset	
Measurement Tool Offset Value B Direct Input	
Tool Life Management	
Data Input/Output & Editing	
Input/Output Interface	RS232C. Memory Card
Embedded Ethernet	100 Mbps
Part Program Storage	256KB (640m)
No. of Registered Programs	1000
Memory Lock	
Background Editing	
Extended Part Program Editing	Copy, move, modify NC software program
Setting, Display, Diagnosis Functions	
Self-Diagnosis	
Alarm History Display	Alarm & Message
Operating Time/No. of Parts Display	
Actual Spindle Speed & T-Code Display	
Actual Cutting Feedrate Display	
Operating Monitor Screen	Load Meter, etc.
Graphic Display	
Spindle/Servo Setting Screen	
Multi-language Display	5 languages selectable
Screen Saver	
Functionalities by Machine Specifications	
Cs Contour Control (C-axis)	Mill, MS and Y models only
Polar Coordinate Interpolation	Mill, MS and Y models only
Cylindrical Interpolation	Mill, MS and Y models only
Fixed Cycle for Drilling	Mill, MS and Y models only
Spindle Positioning Extension	Mill, MS and Y models only
Live Tool Control by Servo Motor	L150, 200, 250Y models only
Option	
Optional Block Skip (addition)	9
High-speed Ethernet	100 Mbps
Data Server	1 GB

Polygon Turning	L150, 200, 250Y models only
Polygon Machining (2 spindles)	L150, 200, 250Y models excluded
Part Program Storage	512KB (1280m) / 1MB (2560m) / 2MB (5120m)
Helical Interpolation	
Dynamic Graphic Display	
Tool Load Monitoring Function (Built-in type)	HW-TM

HYUNDAI WIA FANUC i Series

Item	Specification
Axis Control/Display	
No. of Controlled Axes	Max 4 axes
	X- and Z-axis
	X-, Z-, and C-axes (Mill model only)
	X, Z, B, C axes (MS model only)
No. of simultaneously controlled axes	2-axes/ Linear, Circular Interpolation (max 4-axes)
No. of Spindle Axes	2 axes
Least Input Increment	X-, Z-, B-axes: 0.001mm / 0.0001 inch
	C-axis: 0.001 deg.
Least Increment	X-, Z-, B-axes: 0.001mm / 0.0001 inch
	C-axis: 0.001 deg.
High Speed HRV Control	
PMC Axis Control	
Inch/Metric Conversion	G20 / G21
Machine Lock	All axes
Stroke Check 1	Over-travel
Stroke Check 2, 3	
Check Stroke Limit before Travel	
Chuck/Tailstock Barrier	
Mirror Image	
Follow-up	
Backlash Compensation	±0~9999 pulses (rapid feed & cutting feed)
Position Switch	
Abnormal Load Detection	BST (Back Spin Torque Limit)
Display	8.4" full-color LCD display
Operation	

Program Rebooting	
Program Check Function	Dry run, program check
Single Block	
Feed Function	
Manual Jog Feed	Rapid feed, jog, handle
Manual Handle Feed Magnification	x1, x10, x100
Cutting Feedrate Override	0 ~ 200% (10% units)
Jog Feedrate Override	0 ~ 2,000mm/min [79 ipm]
Rapid Feedrate Override	F1, F5, F25/F50, F100%
Override Cancel	
Feed per minute, Feed per revolution	
Program Input/Interpolation Function	
Nano Interpolation	Positioning/Linear/Circular (G00/G01/G02/G03)
Dwell	G04, 0 ~ 9999.9999sec
Thread Cutting Retrack	
Variable Lead Threading	
Multi-Threading	
Continuous Threading	
Synchronous Threading	
Reference Point Return	G28, Manual
Reference Point Return Check	G27
2 nd reference point return, 3 rd /4 th Reference point Return	G30
Program Stop/Exit	M00, M01/M02, M30
Optional Block Skip	1
Max. Program Input Unit	+/- 9999.9999"
Program No.	O4 figures
Absolute/Increment Programming	
Plane Selection	G17, G18, G19
Workpiece Coordinate System	G52 to G59
Workpiece Coordinate System Preset	G50.3
Manual Absolute	"ON" fixed
Direct Drawing Dimension Programming	Including Chamfering/Corner R
G Code System	A/B/C
Programmable Data Input	G10
Sub-program Call	10 Folders
Custom Macro	
Add Custom Macro Variable	#100 to #199, #500 to #999
Multiple Repetitive Cycle	
Multiple Repetitive Cycle II	

Lathe Fixed Cycle	
Polygon Turning	For E160MA/MC, E200MA/MC models only
Polygon Machining (2 spindles)	Except E160MA/MC, E200MA/MC models
Auxiliary Function/Spindle Function	
Auxiliary Function	M4 places
Level-up M Core	High-speed/Multi/Bypass M-Code
Spindle Speed Command	S4 places, binary output
Constant Surface Speed Control	G96, G97
Spindle Speed Override	50% ~ 150% (10% steps)
Spindle Orientation	
Rigid Tapping	
Tool Function/Tool Compensation	
Tool Function	T2 + 2
Tool Offset	
No. of Tool Offset	64 sets
Tool Nose Radius Compensation	G40, G41, G42
Geometric/Wear Offset	
Measurement Tool Offset Value B Direct Input	
Tool Life Management	
Data Input/Output & Editing	
Input/Output Interface	RS232C, Memory Card
Embedded Ethernet	100 Mbps
Part Program Storage	512 KB (1280 m) (E/L series only+)
	320 KB (800m) (KIT series only+)
No. of Registered Programs	400
Memory Lock	
Background Editing	
Extended Part Program Editing	Copy, move, modify NC software program
Setting, Display, Diagnosis Functions	
Self-Diagnosis	
Alarm History Display	Alarm & Message
Operating Time/No. of Parts Display	
Actual Spindle Speed & T-Code Display	
Actual Cutting Feedrate Display	
Operating Monitor Screen	Load Meter, etc.
Graphic Display	
Spindle/Servo Setting Screen	
Multi-language Display	5 languages selectable
Screen Saver	

Functionalities by Machine Specifications	
Cs Contour Control (C-axis)	Mill and MS models only
Polar Coordinate Interpolation	Mill and MS models only
Cylindrical Interpolation	Mill and MS models only
Fixed Cycle for Drilling	Mill and MS models only
Spindle Positioning Extension	Mill and MS models only
Spindle Synchronous Control	MS model only
Torque Control	MS model only
Live Tool Control by Servo Motor	For E160MA/MC, E200MA/MC models only
Option	
Optional Block Skip (addition)	9
High-speed Ethernet	100 Mbps
Data Server	1 GB
Helical Interpolation	
Dynamic Graphic Display	
Manual Guide i	Interactive automatic programming
Tool Load Monitoring Function (Built-in type)	HW-TM

SIEMENS 828D

Item	Specification
Control Function	
Max No. of Controlled Feed Axes	3-axes (excluding MS/SY)
	4-axes (MS/SY only)
Max No. of Controlled Axes	6-axes (excluding MS/SY)
	8-axes (MS/SY only)
Least Control Unit	0.0001mm / 0.00001inch
Feed Function	
Cutting Feedrate Override	0 - 120%
Rapid Feedrate Override	F1, 5, 25/50, 100%
Acceleration with jerk limitation	
Programmable acceleration	
Follow-up Mode	
Measuring system 1 and 2, selectable	
Separate path feed for corners and chamfers	
Travel to fixed stop	
Main Spindle Function	
Spindle Override	50% - 120%

Spindle Orientation	Standard
Spindle Speed Limit	Standard
Rigid Tapping	Standard
Interpolation	
Linear Interpolation Axes	Max. 4 axes
Circle via center point and end point	Standard
Circle via interpolation point	Standard
Helical Interpolation	Standard
Universal interpolator NURBS (non-uniform rational B splines)	Standard
Continuous-path mode with programmable rounding clearance	Standard
Tool Function	
Tool Diameter Compensation	Standard
Zero Offset (G54, G55, G56, G57 ,G58, G59)	Standard 100
Programmable Zero Offset	Standard
Tool Management	
Screen Display	
CRT/MDI	10.4" full-color LCD display
Screensaver	Standard
Manual Operation	
Manual Handle/Jog Feed	Standard
Reposition	Standard
Reference Point Return	First, Second Reference Point Return
Main Spindle Control	Start, stop, forward/reverse revolution, Jog, Ort.
Automatic Operation	
Single Block	Standard
Feed Hold	Standard
Optional Block Skip	Standard
Machine Lock	Standard
Dry Run	Standard
Cutting Simulation	Standard (2D)
Diagnosis	
Alarm Display	Standard
Spindle Load Meter/RPM Meter (Monitor Display)	Standard
PLC Status/LAD Display	Standard
Programming	
Part Program Size	3 MB (excluding MS/SY)
	5 MB (MS/SY only)
Program Title	23 digits
Sub-program Call	Standard (7 levels)
Absolute/Increment Programming	G90 - G91

Scaling, Revolution	Standard
Inch/Metric Conversion	Standard
Interactive Cycle Program	Standard (22 types)
Block Search	Standard
Variable Program (Macro)	Standard
Read / Write System Variable	Standard
Background Editing	Standard
Auxiliary Function	M - Code
Label Skip	Standard
Program Stop/Exit	M00, M01, M02, M30
Look Ahead, Jerk Limitation Feed-forward Control	Standard
ISO Conversion (G291) (execute Fanuc Program)	Standard
Maximum number of tools/cuttings	128/256 (excluding MS/SY) 256/512 (MS/SY only)
Number of levels for skip blocks 1	Standard
Protective Function	
Emergency Stop	Standard
Over-travel	Soft Limit & Hard O.T
Contour Monitoring	Standard
Program Protection	Standard
Support for Automation	
Actual Speed Display (Monitor)	Standard
Tool Life Management	Standard (Time, Parts)
Work Counter	Standard (Internal)
Language	
2 languages switchable	Standard Chinese Traditional, Czech, Danish, Dutch, Finnish, Hungarian, Japanese, Korean, Polish, Russian, Swedish, Portuguese, Turkish
Data Transmission	
RS 232C I/F	Standard
USB Memory Stick & CF Card	Standard
Option	
Shop Turn	
HW-TM	
3D Simulation	