

# ACCURATE

MACHINE TOOL SERVICES

## Stock DL 22LA

Heavy Duty Box Way Horizontal Turning Center

**Machine Serial No. TB050226**

MAG Proposal No. DMC-000324



## ■ SPECIFICATIONS

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### CAPACITY:

Maximum Swing (on the Bed)	Ø 550mm (21.6")
Maximum Cutting Diameter	Ø 390mm (15.35")
Maximum Cutting Length	540mm (21.26")
Draw Tube I.D.	Ø 68mm (2.68")
Chuck Size	8"

### SPINDLE:

Spindle Nose	A2-6 (ASA)
Bore Diameter	Ø 76 mm (2.99")
Main Spindle Motor	15/11KW (20/15 HP)
Spindle Speed	4,000 rpm
Spindle Torque (15 min. rating)	123 ft-lbs (17.05kgf.m)
Spindle T.I.R	>3 $\mu$ m (spindle taper)

### SLIDE & CARRIAGE

"X" Axis Travel	210mm (8.27")
"Z" Axis Travel	580 mm (22.83")
Rapid Traverse "X"	24 m/min (944 IPM)
Rapid Traverse "Z"	24 m/min (944 IPM)
Guide Ways (X / Z)	BOX WAY
Bed Structure	45° Slant bed

### TURRET

Max Number of Tool Stations	12 Tools
Turret Indexing Speed (Full)	0.2 (1.0) seconds
Indexing Type	Non-stop, Bi-directional
Tool Size (Turning and Facing)	□ 25 mm (1") – Bolts clamp type
Tool Size (Boring Bar Max. Diameter)	Ø 40 mm (1.5")

### TAILSTOCK (Manual)

Tailstock Center (Taper)	MT #4
Quill Diameter	Ø 80 mm (3.15")
Quill Travel (by Hydraulic)	80 mm (3.15")
Tailstock Body Travel	530 mm (20.87")
Max. Thrust of Quill	690 kg (1,521 lbs.) at 35 kg/cm <sup>2</sup>

### MACHINE SIZE

Floor Space Requirements (L x W)	2,960 mm (117") x 1,650 mm (65")
Machine Height	1,900mm (75")
Machine Weight	4,350 kg (9,590 lbs.)
Power Consumption	22 kVA
Voltage	220V±10%, 60 Hz, 3 phase

### CNC

CNC Model	Fanuc Oi-TF
Display Unit	8.4" LCD monitor

## ■ MACHINE CONSTRUCTION & FEATURES

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### BED

- ✓ One-piece 45° rigid slant type bed casting structure.
- ✓ Heavily ribbed torque tube design to prevent thermal deformation and twisting.
- ✓ Easy access to all machine parts and easy chip removal design.
- ✓ Maximum rigidity and minimal deformation under heavy machining



### SPINDLE & HEADSTOCK

The machine headstock utilizes a precision ground spindle that is machined in a temperature-controlled environment and clean room assembled.

Precision angular contact ball bearings are assembled in optimal position and combination to ensure heavy loads and superior finishes.

Spindle Nose	ASA A2-6
Spindle Bore Dia.	Ø 76 mm (2.99")
Draw Tube I.D.	Ø 67mm (2.68")
Max. Bar-work Capacity	Ø 65mm (2.56")
Spindle Speed (6" Chuck)	Max 4,000 rpm
Spindle Drive Method	V-Belt
Spindle Bearing Lubrication:	Grease Packed

### TAIL STOCK

Manual Body, Programmable Quill	
Tailstock Quill Diameter	Ø 80 mm (3.15")
Stroke of Tailstock Quill (hydraulic)	80 mm (3.15")
Stroke of Tailstock Body	530 mm (20.8")
Tailstock Quill	MT #4
Max. Thrust force of Tail stock Quill	690 kg (1,521 lbs.)



### PROGRAMMABLE TAIL STOCK (Option)

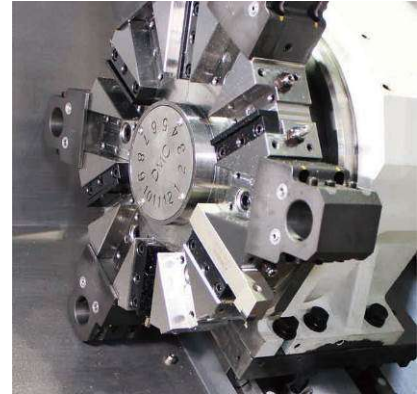
## RIGID TURRET DESIGN - 12 Station Servo Turret

The 12-station turret accepts any combination of I.D. or O.D. tool holders. Turret rotation is bi-directional and non-stop from station to station.

The high accuracy curvic coupling with random selection and shortest path indexing. This reduces idle time, contributing to increased productivity.

Prepared for through the tool coolant capability using U-drill holders (Option).

Turret Type	12 stations drum turret
Turret Drive Method	Servo Motor
Tool Size	
- Turning/facing holder (wedge clamp)	<input type="checkbox"/> 25 mm (1")
- Boring bar shank Dia.	Ø 40 mm (1.5")
Index Coupling	Ø 292mm (Ø 11.5") 3-piece Curvic Coupling
Turret Clamp Force by Hydraulic	4,913 kgf (10,831 lbs.)
Turret Index Time (1 step / full)	0.2 sec/ 1 sec



## AUTO TOOL PRE-SETTER (Option)

### **AUTO TOOL SETTER**

Auto tool setter serves as a monitoring system for tool wear compensation and tool-breakage detection

### **TOOL SETTING**

Tool setting data is registered to the CNC by simply bringing the tool tip into contact with the tool sensor.

### **TOOL PRESETTER PRODUCTIVITY**

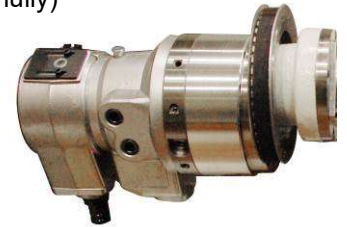
Reduces set-up time

Reduces change over time from part to part



## HYDRAULIC CHUCK & CYLINDER

Chuck Type	MH-208DM (Big Bore) (8" through hole, Samchully)
Matching Soft / Hard Jaw	SB08B1/HB08A1
Jaw Stroke / diameter	Ø 7.4 mm (0.29")
Max. Speed of Chuck	4,000 rpm
Spindle Nose	A2-6 (Mounting Adaptor)
Rotary Cylinder Type	SH-17068CC (Samchully)
Max. Hyd. Pressure	40.8 kg/cm <sup>2</sup> (580.17 psi)
Piston Thrust (Input / Output)	6,531 kgf (14,398 lbs.) / 6,060 kgf (13,360 lbs.)



## LUBRICATION

Pump unit	AMGP-1M2-01NS-T03-TY <A-RYUNG > HMGP-303S-01-T04-P-220 <HANSUNG>
Motor	Synchronous motor (AC220V, 25W, 50/60Hz)
Discharge	150CC/min
Discharge pressure	Maximum 15 kg/cm <sup>2</sup> (217.6 psi)
Tank capacity	3.0 Liters (0.79 gal)



## COOLANT AND CHIP PAN

Type	Removable / Independent
Coolant capacity	190 Liters (52.8 Gal)
(1) Pump motor	0.4 kW (0.54 hp)
Discharge & Pressure	40 l/min – 0.18 kg/cm <sup>2</sup> (10.6Gal-2.56psi) at 60 Hz



## ■ CONTROLLER SPECIFICATIONS

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- **TYPE OF CONTROL / Fanuc 0i-TF**
  - 32-bit multiprocessor continuous-path control
  
- **HARDWARE COMPONENTS**
  - 8.4" Color LCD Monitor
  - Flash memory card interface
  - RS 232C interface
  - USB Port
  - LAN Port
  
- **SCREEN DISPLAY**
  - Window oriented operator interface
  - Display of current block during program execution
  - Screen texts: English (other languages: Option)
  - Actual cutting / spindle speed display
  - Alarm display and Alarm history display
  - Clock (function) display
  
- **OPERATION**
  - Program protection on machine control panel
  - 512Kbyte part programming storage
  - Number of Registered Programs: 400
  - Built-in Run Hour / Parts Counter Display
  - Tool life management
  - Background editing
  - Linear and circular interpolation
  - Graphic Display
  - Variable lead thread cutting (G34)
  - 1 position Spindle Orientation
  - Programmable data input
  - Program restart
  - Custom macro
  
- **MODES**
  - AUTOMATIC
  - Control of AUTOMATIC mode by:
    - Feed hold and spindle stop
    - Skip block
    - Single block
    - Dry run feed rate
  - JOG (setup)
  - MDI (manual data input)

- **MACHINE CONFIGURATION FOR AXES**
  - Inch or metric programming
  - Switchover between metric and inch for input and offsets, display, programmed traverse path
  - Feed-rate and rapid traverse: minimum input feed-rate in inches/min = 0.0001 inches/min.
  - Revolution feed-rate: minimum input feedrate in inches/rev = 0.0001 inches/min.
  
- **MACHINE SPINDLE CONFIGURATIONS**
  - Constant cutting speed, cutting feed-rate clamp
  - Thread cutting, traverse, cross, tapered with thread constant
  - Thread pitch constant: smallest pitch in inches/rev = 0.0001 inches/rev
  
- **OVERRIDES, OFFSETS AND COMPENSATIONS**
  - Feed-rate override 0% to 150%
  - Rapid traverse override 0%, 25%, 50%, 100%
  - Spindle speed override 50% to 120%
  - 64 pairs of Tool Offsets
  - Tool nose radius compensation, Tool geometry/wear compensation
  - Chamfering / Corner R compensation
  - Backlash compensation
  
- **CNC PROGRAMMING**
  - Diameter/Radius command
  - Insertion of comments in the program
  - Chamfer radius programming, Chamfer on/off
  - Mirror image by each axis
  - Stored stroke check 1, 2<sup>nd</sup> reference position return
  - Work coordinate system (G50), Work coordinate system selection (G52 ~ G59)
  - Skip function, Optional block skip
  - Sub-program call (4 level)
  - Searching function: Program no., Sequence no., and external work no.
  - Simple canned cycle (G90, G92, G94)
  - Multiple repetitive canned cycle (G70 ~ G76)
  - Absolute and incremental programming
  - Feed per minute (G98) / Feed per revolution (G99)
  - Dwell time can be programmed in seconds or revolutions
  - Single block by each axis, dry run
  
- **SAFETY AND DIAGNOSTIC FUNCTIONS**
  - Safety routines permanently active for measuring circuits, over temperature, battery, voltage, memory, limit switches, fan monitoring
  - Self-diagnostics
  - Contour monitoring
  - Spindle monitoring
  
- **OPTIONAL FUNCTION**
  - Dynamic graphic display
  - Fast Ethernet (hardware)

## ■ FFG DMC DL22LA – Serial No. TB050226

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- Fanuc Oi-TF Controller with 10.4" LCD Monitor
- 4,000 Rpm Spindle
- 20HP (15kW) Spindle Motor
- Torque 123 lbf-ft (17.05 kgf.m)
- 8" Chuck
- 12 Station Servo Turret
- A2-6 Spindle Nose
- Box Ways
- Programmable Tail Stock
- Programmable Quill
- Chip Conveyor (side type)
- Bar Feeder Interface
- Manual Tool Pre-setter (Pull Down Type)
- Part Catcher (with box)
- (4) Extra M-Codes
- Coolant Gun
- Air Gun
- 3 Color Tower Signal Light
- Chip and Coolant Splash Guarding (Full Coverage)
- Hydraulic Pressure Interlock from Main Hydraulic Line
- Machine Leveling Plate
- One Set of Manuals
- Standard Tooling Package
  - O.D. Tool Clamper:                   □ 25x25 (1")                   6 ea.
  - Boring Bar Holder:                    Ø 40 mm (1.5")               5 ea.
  - Facing Holder:                        □ 25x25 (1")                   1 ea.
  - Boring Bar Sleeve:                    Ø 25 mm (1")                 1 ea.
  - Boring Bar Sleeve:                    Ø 20 mm (3/4")               1 ea.
  - Boring Bar Sleeve:                    Ø 16 mm (5/8")               1 ea.
  - Boring Bar Sleeve:                    Ø 12 mm (1/2")               1 ea.
  - Boring Bar Sleeve:                    Ø 10 mm (3/8")               1 ea.