



## FEMCO "VL-12" CNC VERTICAL LATHE

The machine consists of a Spindle Motor Driven Turn Table with manually actuated 4-jaw chuck for chucking a workpiece and a cutting tool manipulation device consists of a servo motor driven ram for vertical motion (Z) and a carriage for the ram, which traverse horizontally (X) on the cross rail. The cross rail, which is program elevated or descended to a desired level, is fixed to the double columns.

**The Turn Table Drive** consists of a 50 HP A.C. spindle motor and a gearbox, which provides 2 speed ranges (2.8 rpm - 280 rpm). The turntable sits on a Timken tapered roller bearing inside the bed.

**The Tool Holder** has an ISO # 50 taper shank and is similar to Bullard type tool holders. The ram has a #50 ISO taper receptacle with two hydraulically rotated cams to pull the shank tight.

**An Optional Tool Holder** changing device allows program commanded tool holder changing process. A carousel type magazine attached to the end of the cross rail keeps 8 tool holders thus allowing for rapid tool changes.

**The Rigid Surface Hardened and Ground Ram** moves up and down via servomotor actuated ball nut against a fixed screw. The 8 5/8" x 8 5/8" square sectioned ram slides inside Turcite lined narrow guide of the ram carriage. This design allows easy boring of relatively small diameter but deep holes.

**The Horizontal Traverse** of ram carriage is actuated by rotating ball screw with servomotor attached to the edge of the cross rail.

**The Crossrail** is made of boxed sectioned meehanite with sufficient rigidity against the weight of the ram and ram carriage and the thrust from machining. The cross rail is program elevated and descended to the desired height then clamped tight against the double columns. Leveling of the cross rail is achieved by having two precision ground 100 mm pitched hook up racks attached to the double columns. The relative height level of these two racks can be manually adjusted when necessary.

**The Double Columns** which support the cross rail are fixed to the bed (of the turntable) at the bottom ends and are linked to each other at the top ends. The cross rail is made of stress relieved Meehanite castings.

**Both the Ram and the Ram Carriage** positions are measured with Glass digital scale feed back. Therefore it is possible to measure the dimensions of a workpiece in addition to having closed loop positioning of the cutting tool. The Sheet metal splashguard and coolant supply are standard equipment.

**All Servo Motors and the Spindle Motor, Tool Changing and Crossrail Elevation** etc. are all controlled with FANUC OIT-C controller having all push buttons and display provided on a pendant. The pulse generator can be detached from the pendant so that an operator can take only the pulse generator with him when he has to reach close to or inside a workpiece when manual inching of cutting tool position is necessary.

There are two kinds of **Lubrication** supporting this machine. One is the continuous lubrication system for the gearbox of the rotating table and also for its bearing. The other is the automatic interval lubrication system for all the slide ways.

**Tool Magazine: (Carousel Type):** There is one carousel type 8 station tool magazine mounted on the right side of crossrail. Through NC control, various tool holders can easily get in/out the carousel. Furthermore, every tool holder is designed to be hydraulically cam-locked and centering aligned with the ram therefore, high repeatability and machining accuracy are assured to be attained.

**MACHINE SPECIFICATIONS:**

<b>Table Diameter</b>		49.2"
<b>Max. Swing</b>		62.9"
Max. Turning Height		43.3"
Max. Work piece Weight		10,000 lbs.
Max. Cutting Force		10,845 ft. lbs.
Table Speed		2.8-280 RPM (Stepless)
<b>Ram Dimensions</b>		8 5/8" x 8 5/8"
Turning Tool Size		1-1/4"
Horizontal Travel (X Axis)		51"
Vertical Travel (Z Axis)	42"	
X-Axis Rapid Traverse		394"/min.
Z-Axis Rapid Traverse		394"/min.
<b>Cross rail</b> Elevation Speed		15.7" IPM
Vertical Travel		Rail 39.4"
<b>Motor:</b>		
Main Table Drive		50/60 cont./30 min
Crossrail Elevation		5 HP
Hydraulic		5 HP
Lubrication of Turntable		0.37 HP
Lubrication of Slideway		0.1 HP
X-Axis Servo Motor		4.5 HP
Z-Axis Servo Motor		4.5 HP
Electric Power		120 AMP, 60 Hz, 3 phases
<b>Weight of machine</b> (approximate)		39,690 lbs
Dimension (L x W x H)		146" x 208" x 206"
(Maintaining space not included)		

**STANDARD CONTROL FEATURES FANUC OiT:**

Simultaneously Controllable Axes: 2	Minimum Programmable Increment:0.0001
Program Storage Length (640m)	Registered Programs: 63
Backlash Compensation	Constant Surface Speed Control
Self Diagnostic Functions	

**PROGRAMMING FEATURES:**

Background Editing	Tool Nose Radius Compensation (G70-42)
Combined Absolute/Incremental Commands	Inch / Metric Programming
Multiple Repetitive Cycles (G70-76)	Canned Cycles (G90, G92-G76)
Reference Point Return (G27-G30)	Sub Programming

**OPERATION FEATURES:**

High Resolution 8.4" Monochrome CRT	Geometry and Wear Offsets
16 pairs of Tool Offsets	Run Hour Display
Thread Cutting Retract	Automatic Tool Offset Calculation
Direct Input of Offset Value Measured	Input / Output Interface (RS232C)
Machine Lock Key Switch	Incremental Offset
Rapid Traverse Override	Feed Rate Override
Spindle Speed Override	Manual Pulse Generator
Tape Code: EIA, ISO Automatic Recognition	Optional Block Skip
Canned Cycles for Turning	Mirror Image
Manual Continuous Feed	Dry Run
Single Block	Clock Function

**STANDARD ACCESSORIES:**

Coolant Supply and Recirculation System.  
Automatic Slideway Lubrication System  
4-Jaw Manual Chuck (Mutually Independent).  
Glass Linear Scales (for X Axis and Z Axis) for Position Feed Back to Servo System.  
6 Tool Holder  
Bed Leveling and Fastening Parts.  
Splash Guard.  
Lamp  
Crossrail Slideway Telescope Cover.  
FANUC OiT with Detachable Manual Pulse Generator.  
Necessary Operation and Maintenance Documentation  
1 Set of Hand Tools for Maintenance

**Base Price:**

**WVL-12 with FANUC OiT Control** **\$399,000.00**

**MACHINE OPTIONS:**

Additional Tool Holders (preferable to be purchased with the machine so that the curvic coupling piece on each tool holder matches well with the piece on the ram).	\$ 5,000.00
ATC Carrousel 8 Tool Positions	\$ 24,500.00
Chip Conveyor	\$ 4,000.00
Transformer Per Your Requirement	\$ 3,000.00

**TERMS AND CONDITIONS:**

**Terms: 20% Down, 70% Due on Delivery, Balance due on Installation**

**Installation;** By Chaparral Machinery with any necessary support from FEMCO

**Service Support;** is a High Priority at FEMCO & Dealers are backed by FEMCO Service/Parts

**One Year Parts New Machine Warranty;** 12 months Mechanical & Fanuc components carry a (2) Year Parts Warranty.

**Delivery: 2-6 Months After Receipt of Order; FOB Port of Entry until otherwise quoted**

**Quote Valid for Thirty (30) days;** Specifications may change without notice.

**Best Regards,**

**Chaparral Machinery**

Ph (972) 313-1987

Fax (972) 313-1984