

CNC HORIZONTAL LATHE MACHINE WITH C-AXIS

A) BASIC MACHINE

CNC Horizontal Lathe Machine with C-axis (01 set), with all standard accessories, optional accessories and specifications as mentioned below.

B) TECHNICAL SPECIFICATIONS OF THE MACHINE

1-CAPACITY	
Swing over bed	Ø 400-430 mm
Swing over cross slide	Ø 200-240 mm
Distance between centers	550-600 mm
Max. turning diameter	Ø 200-230 mm
Max. turning length	500 -550mm
Max. bar work diameter	Ø 45~50 mm
2-TRAVEL	
X-axis travel	110 -125mm
Z-axis travel	510-560 mm
3-MAIN SPINDLE	
Speed range	0-6000 rpm
Main drive power	12~ 15 kW
Spindle bore diameter	Ø 45-55 mm
4-C-AXIS	
Control	CNC Controlled
Resolution	0.001°
Rapid speed	1000 / 100 rpm
Spindle indexing with disc brake	0.01°
5-TURRET	
Number of tool stations	12
Number of driven tools	12
Tool holding System	VDI30/VDI40
Shank size for square tools	20x20/25x25 (mm)
Max. Shank diameter for boring bars	Ø 32/40 (mm)
Max. speed of driven tools	4000-5500 rpm
Max. power of driven tools	4-7 kW
6-FEED DRIVES	
Rapid traverse X/Z	20-25 m/min.
Max. feed thrust in X-axis	5000-6000 N
Max. feed thrust in Z-axis	7000-8000 N
Positioning Accuracy in X/Z axes	5-7 µm
Repeatability	3-5 µm
7-HYDRAULIC POWERED AUTOMATIC TAILSTOCK	
Tailstock stroke	100-120 mm
Tailstock thrust	Adjustable
Tailstock bore taper	MT4/MT5

8-LUBRICATION SYSTEM	
Guide ways and ball screws	Automatic Central oil lubrication system
Main spindle (free of maintenance)	Grease lubrication
9-CHIP CONVEYOR AND CHIP TROLLEY	
Chip Conveyor	Chain type
Chip conveyor control	Manual + Machine
Chip trolley capacity	200~ 400 Liters
10-PARTS-CATCHER	
Operation	Pneumatically
Max. finished part length	100-150 mm
Max. finished part diameter	Ø 45-55 mm
11-POWER SUPPLY	
Mains	3-phase, 400 V ± 10%, 50 Hz.
Operable temperature range	+10 to +35 °C

C) CNC CONTROL DETAILS

SIEMENS/SINUMERIK latest CNC control with 3-D simulation, incl. ShopTurn and Shop Mill (for C-axis programming) with dialog programming and G-code programming also. CNC Control Language must be English. With all standard features and cycles as well as with the following optional features/accessories:

- Ethernet Interface SIEMENS, hardware and software included.
- USB Port.
- ShopTurn extension package consisting of :
 - Rest material removing cycle
 - Monitoring function for simulation

D) BAR LOADER (01Set)

1-CAPACITY	
Max. Bar Length	100 – 800 mm
Max. Bar Diameter	04-45 mm
2-CONTROL	
All Functions	CNC Controlled
Bar feeding	Manual + Automatic
Plastic Insert Bushing Size	45 mm

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E) MACHINE INTEGRATED SYSTEMS

- a) Coolant system
- b) Hydraulic system
- c) Work light
- d) Machine status light

F) ACCESSORIES REQUIRED WITH MACHINE

- a) Automatic Tool Pre -setter with measuring cycle.
- b) Coolant Pistol.
- c) Oil mist separator.
- d) Air conditioning system for electrical cabinet.
- e) Foot pedal switches for main spindle and tail stock. (Qty. = 01 Set each)
- f) High pressure coolant pump 220V, 50 Hz, with min. pumping pressure = 7-10 bar.
- g) Test Mandrel VDI30/VDI40 axial, to check alignment of tool, turret and reference point of the machine. (Qty. = 01 Set)
- h) Test Mandrel for main Spindle. (Qty. = 01 Set)
- i) Electronic Hand Wheel.
- j) 3-Jaw hydraulic chuck compatible with spindle nose, through hole (Ø45-55) (Qty. = 01 Set)
- k) Set of soft jaws (Qty. = 20 Sets)
- l) Set of Reversible Hard Jaws (Qty. = 02 Sets)
- m) Power collet chuck (Ø 4-45) (Qty. = 01 Set)
- n) Set of collets with clamping range Ø 4-45 mm, 1.0mm steps (Qty. = 01 Set)
- o) Manual collets changer (Qty. = 01 Sets)
- p) Live center MT4/MT5 (Qty. = 01 Sets)
- q) Machine installation Kit (Qty. = 01 Set)
- r) Spares Parts:
 - 5 Years Mechanical spare parts.
 - 5 Years Electrical & Electronics spare parts.
 - Detail of all spares with Price of each spare.

G) PRE-SHIPMENT INSPECTION & TRAINING

The machine will be subjected to detail inspection at the manufacturer's premises by the Engineers of the buyers, before dispatch. The machine will be rejected if not found in accordance with the contract clauses without any liability on the buyer's side.

The manufacturers will provide necessary hands-on comprehensive training to Engineers of the buyers at manufacturer's premises for installation/commissioning, operation & setting, programming, mechanical and electrical/electronic maintenance.

G) TOOLING PACKAGE

Note: Price per unit must be quoted.

Sr. #	Description	Qty. (Nos.)
01.	Radial tool holder M4 O.D. turning tool holder VDI30/VDI40 for shanks 20x20/25x25, Spindle operation	06
02.	Radial tool holder M3 O.D. turning tool holder VDI30/VDI40 for shanks 20x20/25x25, Overhead (e.g. threading operation)	06
03.	Axial tool holder M4 VDI30/VDI40 for face grooving and face turning, shanks 20x20/25x25, M4 spindle direction	04
04.	Axial tool holder M3 VDI30/VDI40, face grooving and face turning, shank 20x20/25x25, M3 spindle direction	04
05.	Collet Holder for milling operations VDI30/VDI40, clamping range: Ø 2 – 16 mm and internal coolant supply	02
06.	Milling Collets set, clamping range Ø 2 – 16 mm Compatible with VDI30/VDI40 Collect Holder	01 set
07.	Indexable drill holder Ø 16 VDI30/VDI30/VDI40, Shank Ø 16 mm and internal coolant supply	02
08.	Indexable drill holder Ø 20 VDI30/VDI30/VDI40, Shank Ø 20 mm and internal coolant supply	02
09.	Indexable drill holder Ø 25 VDI30/VDI30/VDI40, Shank Ø 25 mm and internal coolant supply	02
10.	Indexable drill holder Ø 32 VDI30/VDI30/VDI40, Shank Ø 32 mm and internal coolant supply	02
11.	Indexable drill holder Ø 40 VDI30/VDI30/VDI40, Shank Ø 40 mm and internal coolant supply	02
12.	Boring bar holder Ø 8 VDI30/VDI40 and external coolant supply	02
13.	Boring bar holder Ø 10 VDI30/VDI40 and external coolant nozzle	02
14.	Boring bar holder Ø 12 VDI30/VDI40 and external coolant nozzle	02
15.	Boring bar holder Ø 16 VDI30/VDI40 and external coolant nozzle	02
16.	Boring bar holder Ø 20 VDI30/VDI40 and external coolant nozzle	02
17.	Boring bar holder Ø 25 VDI30/VDI40 and external coolant nozzle	02
18.	Boring bar holder Ø 32 VDI30/VDI40 and external coolant nozzle	02
19.	Boring bar holder Ø 40 VDI30/VDI40 and external coolant nozzle	02

Sr. #	Description	Qty. (Nos.)
20.	Offset boring bar holder Ø 25 VDI30/VDI40 with internal and external coolant line	02
21.	Tapping holder VDI30/VDI40 , Tap size: M4-M20 with length compensation	02
22.	Floating Reamer Holder: VDI30/VDI40 with adjustable axially parallel compensation	02
23.	Bar Stop Ø 20 VDI30/VDI40	02
Driven Tool Holders		
22.	Milling Holder (90°), Compatible with quoted collets, clamping range Ø 2 – 16 mm, VDI30/VDI40	02
23.	Milling Holder Straight Compatible with quoted collets, clamping range Ø 2 -16 mm, VDI30/VDI40	02

H) PACKING

1.	Climate packing	01
2.	Wooden box	01

I) DOCUMENTATION IN HARD FORM

The manufacturers have to provide the followings documents in **hard copy form (02 Sets Each)**, in original, in English language:

- i. Machine operational manuals.
- ii. Control programming manuals.
- iii. Siemens Programming manuals.
- iv. Electrical/Electronics repair & maintenance manuals.
- v. Electrical/ Electronics Detailed parts Catalogue.
- vi. Mechanical Repair & Maintenance Manuals.
- vii. Mechanical Detailed parts catalogue.
- viii. Machine initialization data and parameter list.
- ix. PLC program lists in LADDER/STL.
- x. Alarm messages and fault diagnostics scheme. Procedure for re-initialization of the machine.
- xi. Original Literature/leaflets/test reports of all parts purchased from other manufacturers.
- xii. Machine test reports and parameter list.