



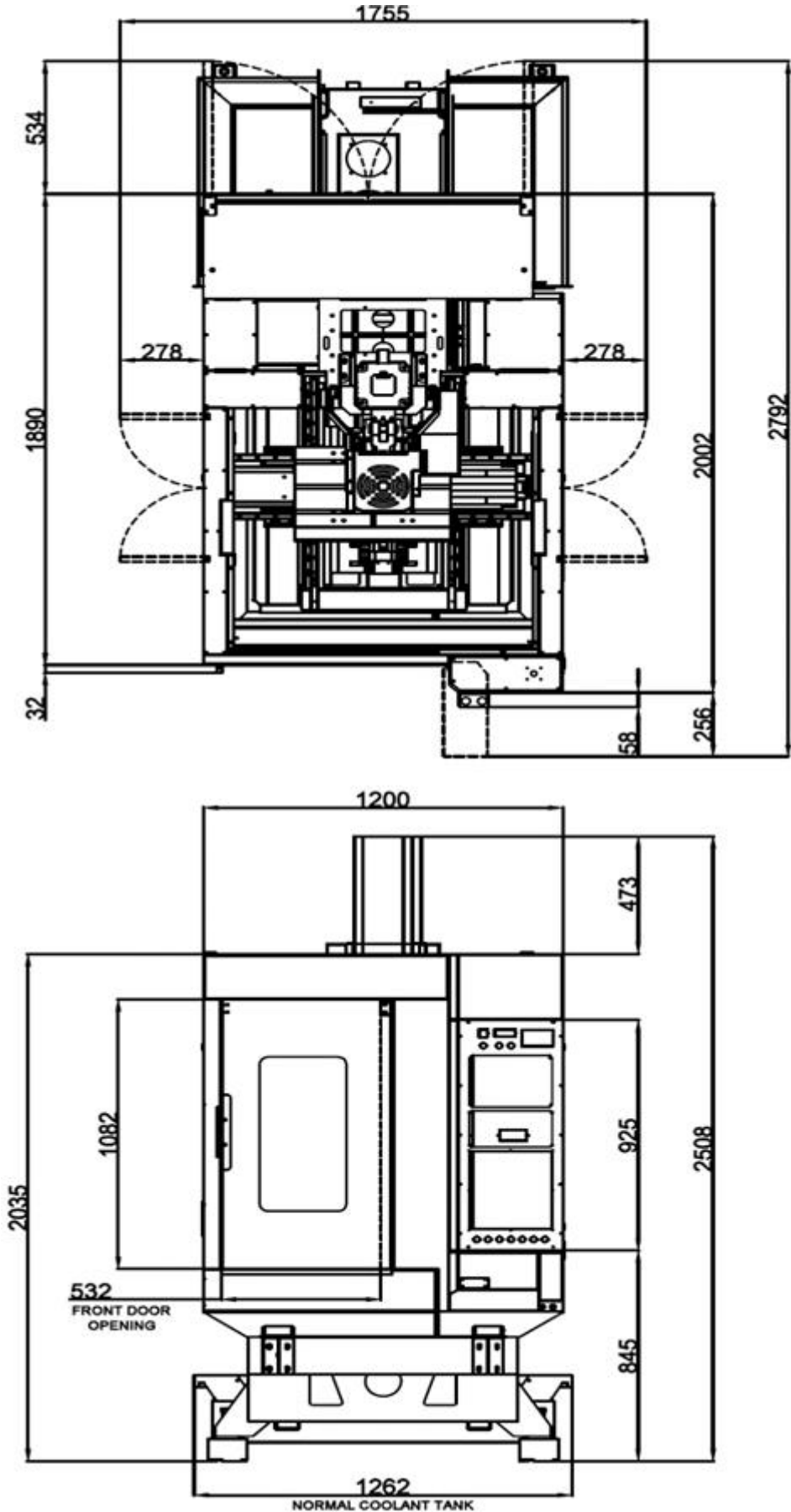
SV0

Installation Packet

Important !

- The input voltage to the machine should be 3-phase, 220V, 60 Hz.
 - A power transformer will be required if the machine voltage is other than 220 V AC.
 - A voltage stabiliser is necessary if the machine is used in situations where the fluctuations in the input voltage are more than 5% of the specified voltage.
 - Cooling of the control cabinet by means of an AC or HEAT EXCHANGER unit (as per surrounding temperature) is recommended for ensuring better performance of the system.
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- **NOTE: ALL MACHINES ARE DELIVERED WITH FLUIDS IN THEM. PLEASE CHECK TO VERIFY AT INSTALLATION.**
 - **EXCEPTION: MACHINES THAT ARE DELIVERED WITHOUT THE CHILLER UNIT INSTALLED WILL REQUIRE CHILLER FLUID.**

SV-0 Floor Space Diagram



Foundation (Refer to Sheet)

When the ground is level and sufficiently strong, special foundation work is not necessary for installing the machine. Special foundation is necessary in the following cases:

- (a) The ground is weak and may cause sinking or inclination of the ground.
- (b) Higher accuracy and performance is required.
- (c) High-accuracy machining is to be retained for a long time.
- (d) It is recommended to check every year or every 6-8 months after installation that the concrete foundation is stable.
- (e) After installation of the machine, the flatness and straightness of the work table must be checked and corrected using spirit level. Permissible values are 0.020 mm.
- (f) Move work table and saddle to middle stroke position. Keep the spirit level at the centre of the work table and adjust the screws if required. Correct the Squareness between spindle and work table.

Once levelled properly, the machine can maintain the accuracy and assure normal working.

Air source

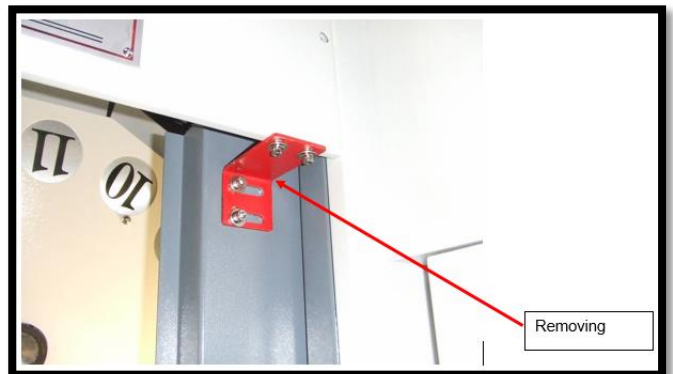
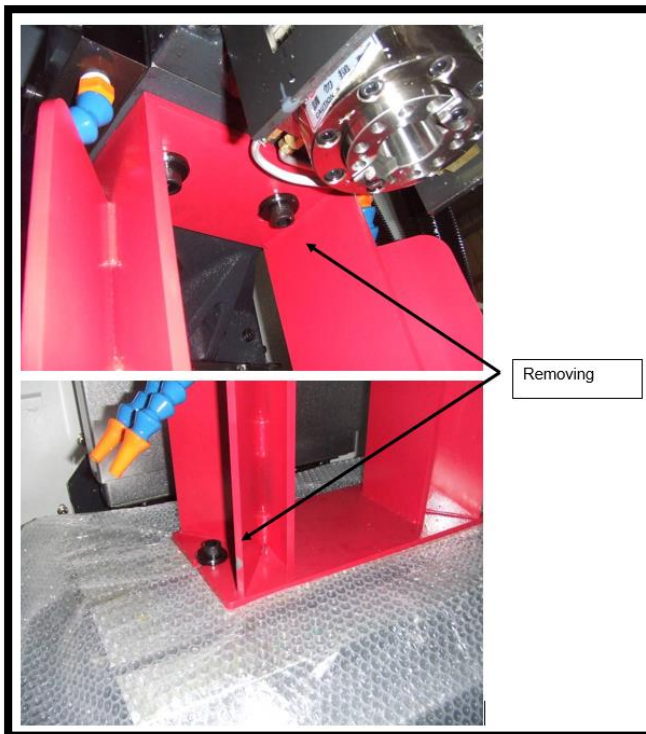
Air Quality	ISO 8573-1 Class 4 Clean, Dry, NO OIL, NO WATER
Minimum pressure From Air Dryer	6 bar (87 psi)
Max Air Consumption	5.5 CFM / 150 LPM



CAUTION

- Remove the axis lock plates from the slides before turning the power On.
- Upon delivery, the axis lock plates are used for transportation. Ensure that they are removed before operating the machine. These lock plates can be retained and reused whenever the machine is moved again.

Removal of axis lock plates

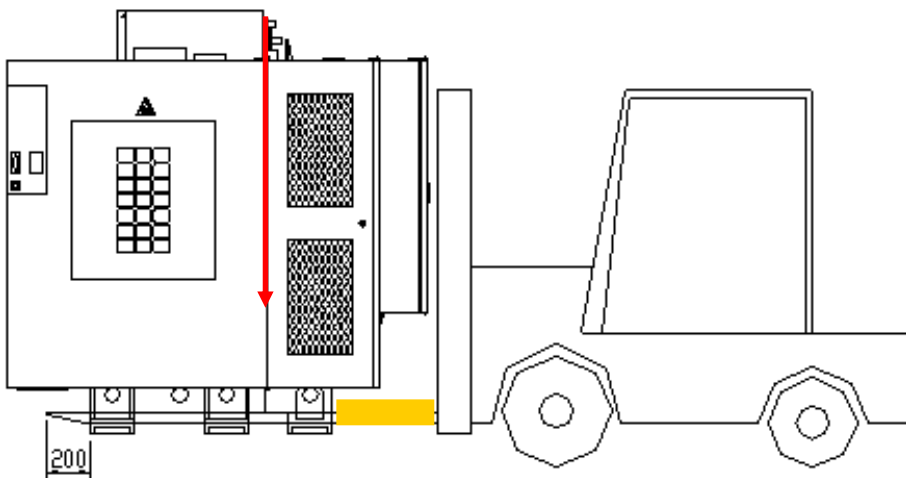


Lifting diagram

While lifting the machine, refer details as given below:-

Model	Unit	SV-0
Net Weight	Kg	2000

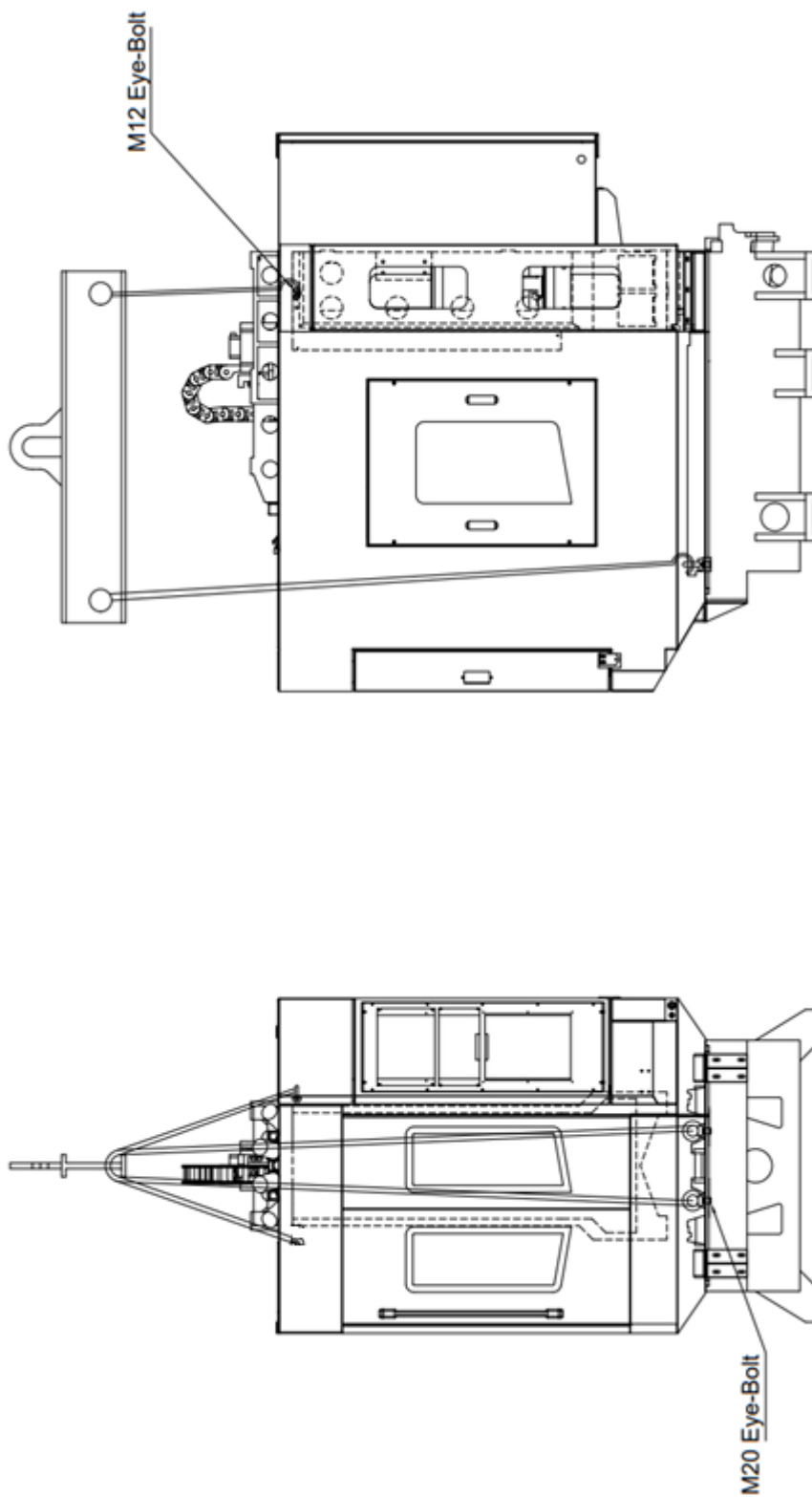
Machine centre of gravity show as red arrow below.



We recommend customer to use the forklift at least 5ton to move the machine. The better way is that forklift use its forks go through the bottom of saddle from back of the machine and forks must come out the saddle edge at least 200mm in the front. (We can put the woodblock <yellow> as above to prevent the machine cover hit the mast during the moving)

New saddle design can accept the forklift move the machine in any direction of front, back or side by follow the rule that forks must come out the saddle edge longer than 200m and the machine must keep stable during the moving.

Lifting diagram



Electrical wiring and power connection Use

the following primary power source and cables:

(a) Supply voltage:

220 V, 60Hz, 3-phase. Refer 2.9 for detailed information.

If a different power supply voltage is in service in a country where the machine is being installed, then a suitable transformer must be provided.

(b) Cable (from the primary power source to the electric cabinet of the machine):

Cable size: Refer 2.9 for detailed information.

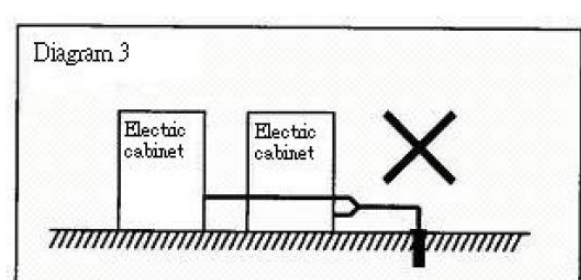
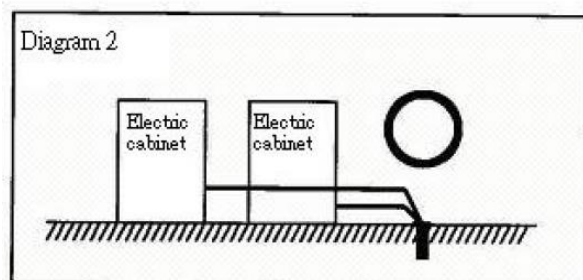
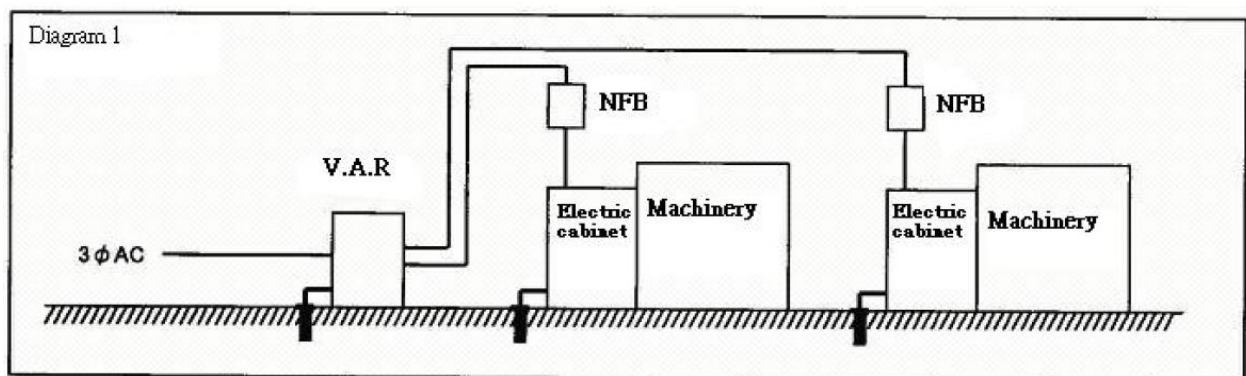
The voltage between neutral and earth must be less than 3V.

(c) Grounding:

- Grounding must be done only by officially qualified electricians.
- Use only one grounding conductor for one cable. As a rule, always connect ground cables as shown in the figure below, as otherwise, serious accidents might be caused.
- Never share grounding with any equipment that may generate noise.
- Always ground separately.
- Type C / D Chemical Earth



WARNING



Installation instructions for the machine



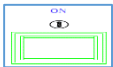
WARNING

- Only qualified personnel are authorised to carry out power connections.
- In order to prevent anyone from turning Power on by mistake during power connection, place a tag or placard reading “Never turn Power On” at a prominent place.

1. Connect the mains cable to R, Y, B and PE.

Input Voltage	220V, 3 Phase AC
Maximum voltage fluctuation	± 5%
Maximum line to line fluctuation	5%
Frequency	60Hz
Type of Earthing	Type C / D Chemical Earthing
Voltage Stabilizer	Required. Refer the below table for capacity
Isolation Switch for Stabilizer	100 A as per capacity

Machine Model	Power Capacity	Cable Size	Rating of Isolation Switch
SV-0	20 KVA	16 mm ²	100 A

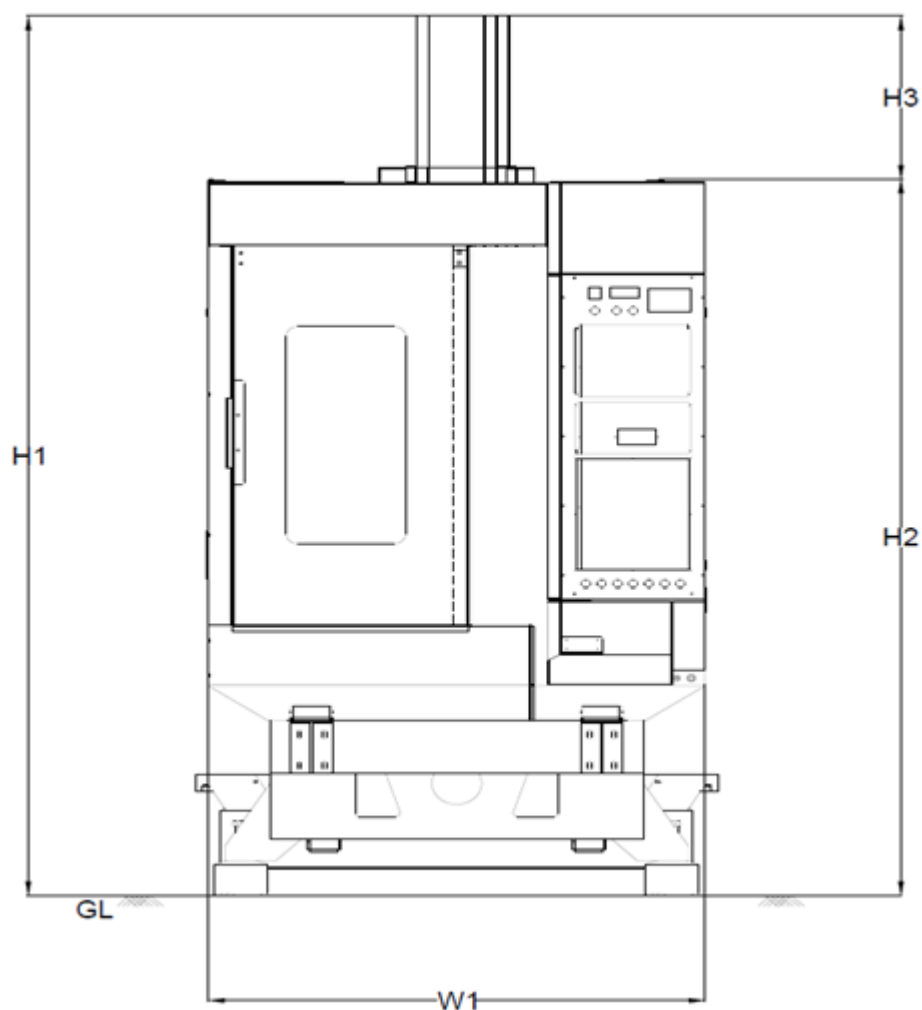
2. Connect ground terminal to PE.
3. Coolant Motor, Flush Coolant Motor, Coolant through tool motor arrange as per drawing of coolant tank & make electrical connection for the same.
4. Perform checking as follows:
 - Check for proper earth connections and 3-phase input supply connection.
 - Check for the 3-phase input supply.
 - Put on the Main Switch.
 - Press NC ON push button.  The display appears.
 - Release all Emergency Stops (on the machine operator panel and chip conveyor panel if available).
 - Now the machine is ready for operation.

Installation, Operation & Maintenance Manual

This machine **should not** be used for any other purposes, including in a potentially explosive atmosphere, without consultation with Smart Machine Tool.

Machine specifications

Machine Specifications – SV Series		
Specifications	Unit	SV-0
Traverse		
X-Axis Travel	mm	460
Y-Axis Travel	mm	320
Z-Axis Travel	mm	300
Spindle nose to table surface	mm	180-480
Spindle Centre to Z-Axis Telescopic Cover	mm	
Table		
Table Dimension	mm x mm	520X320
Table Loading Capacity	Kg	250
No/Width/CD of T-Slots	No./mm/mm	3/14/100
Spindle		
Spindle Speed	rpm	12,000
Spindle Power (Fanuc)	kW	3.7kW Cont.
Taper	-	BT 30
Axis Drive		
Rapid Traverse X/Y/Z Axes	m/min.	60/60/60
Cutting Feed rates	m/min.	10
Auto Tool Changer (ATC)		
ATC Type	-	Drum type
No. of Tools	No's	21
Max. Tool Length	mm	160
Max. Tool Weight	Kg	3
Tool Diameter (with adjacent tool)	mm	50
Tool Changing Time (Tool to Tool)	Sec.	T-T:1.7/C-C:2.2
Accuracy		
Positioning Accuracy	mm	0.01
Repeatability	mm	± 0.003
Installation Data		
Floor Space(including basic coolant system)	W x D	1262x2508
Net Weight (with ATC)	Kg	2000
Power Capacity (Fanuc)	kVA	20
Air Supply (Pressure)	-	6 bar
Power Supply	-	3-Ø,220V,60Hz

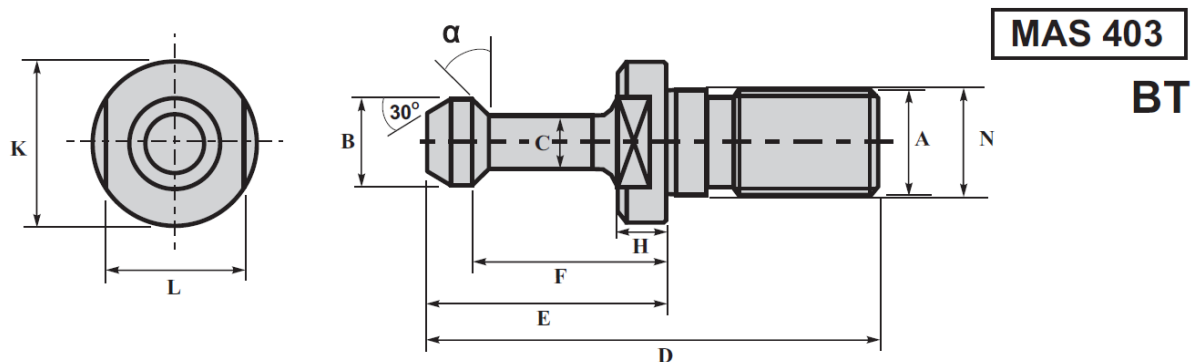


Machine Dimension - SV Series

	SV0
W1	1262
H1	2508
H2	2035
H3	473
DEPTH	2535
All Dimensions in mm	
Note : Dimension don't include accessories & space for maintenance	

Pull Stud Information

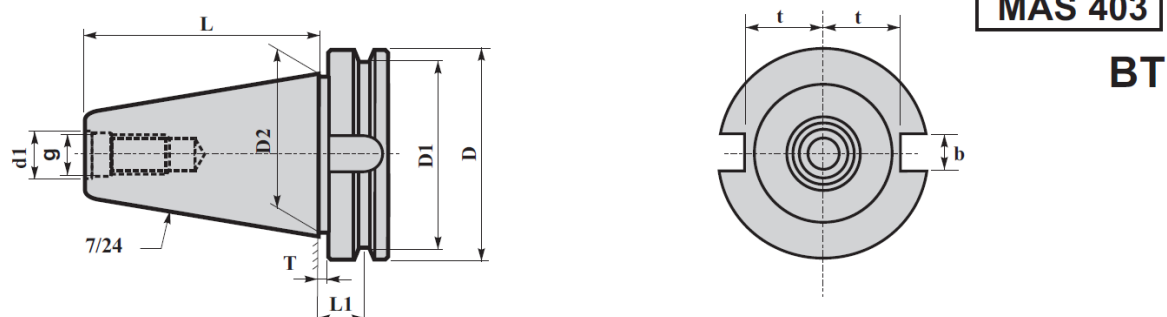
BT 30 Pull Stud and Tool holder



★ = Available in stock

TABLE(1)

ORDERING NO.	α	A	B	C	D	E	F	H	K	L	N
PS-BT30 / α ★	30°/45°	M12	11	7	43	23	18	5	16.5	13	12.5



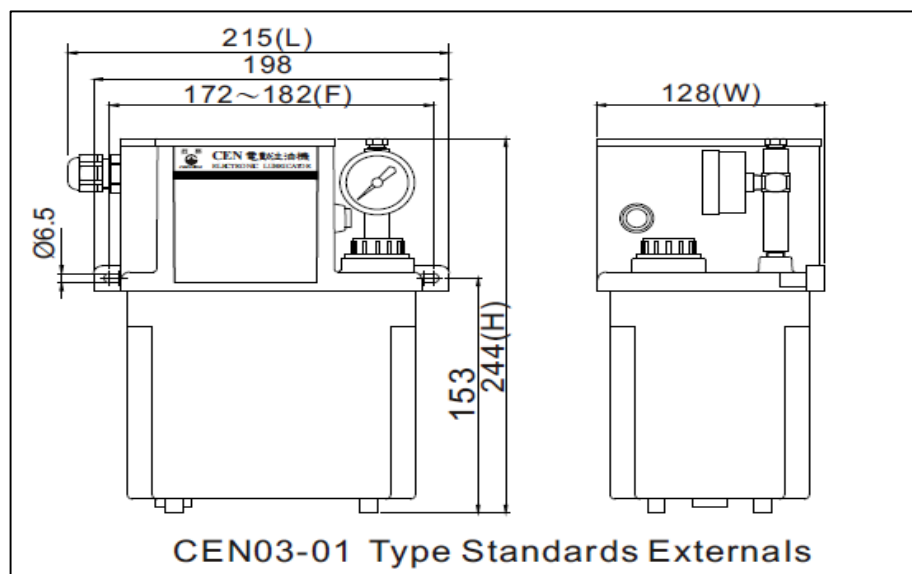
TAPER	D	D1	D2	L	d1	g	t	b	T	L1
30	46	38	31.75	48.4	12.5	M12	16.3	16.1	2	13.6

Points to be lubricated and brands of oil

Sl. No.	Parts to be lubricated	ISO Grade	IOC	HP	CASTROL	IOC
01	X/Y/ Z - axis Guideways & Ball screws	VG68	SERVO WAY 68	WAY LUB 68	Meghna BD 68	Motomol 68
02	Spindle Oil chiller	Grade-3/6				
03	ATC gearbox	VG150	SERVO MESH SP150	Parthen EP 150	Alpha SP 150	Amocam oil 150
04	4th Axis	VG150	SERVO MESH SP151	Parthen EP 151	Alpha SP 151	Amocam oil 151
05	FRL	VG32	SERVO SYSTEM 32 SER	ENKLO 32	Hyspin AWS 32	Hydrol S 32

Lubrication System

- Centralized is used for lubrication on for LM guide and ball screw of all 3 axes.
- Interval for lubrication: Controlled by PLC (Settable by user).



Spindle oil chiller:

Specification:

Sr. No.	Parameter	All SV Models
1	Name	Spindle Oil Chiller
2	Make	Advance Cooling Systems Pvt. Ltd.
3	Model	DO 4PTSA
7	Refrigerant	R134a / 0.35 kg
8	Tank capacity	13 litre, 76 Kg

Temp. Setting Range:

- Fixed Temperature control: 10° C ~40° C
- Differential temperature control: -5° C ~ +5° C