

1. GENERAL SAFETY TIPS

- 1. Do not operate your machine until you have read and understood this safety manual thoroughly.**
- 2. Do not operate your machine until you have read and understood the operation and maintenance manual.**
- 3. Protect your eyes. Wear safety glasses at all times during the operation of your machine.**
- 4. Do not get caught in machine's moving parts. Remove all watches, ring, necklaces and neckties. Remove loose fitting clothes. Roll up sleeves above elbows.**
- 5. Protect your head by wearing safety helmet. Avoid working near overhead hazards.**
- 6. Protect your feet by wearing safety shoes with reinforced steel toes at all times.**
- 7. Gloves can be easily caught in machine's moving parts. Remove them before operating the machine.**
- 8. Loose items can become flying object. Remove all loose items (tools, clamps, rags, etc) from around machine before operation.**
- 9. Never operate a machine after using non-prescription drugs, taking strong medication or consuming alcoholic drinks.**
- 10. Protect your hands. Stop the machine spindle completely before changing tools.**
- 11. Protect your hands. Stop the machine spindle completely before loading or unloading a workpiece.**

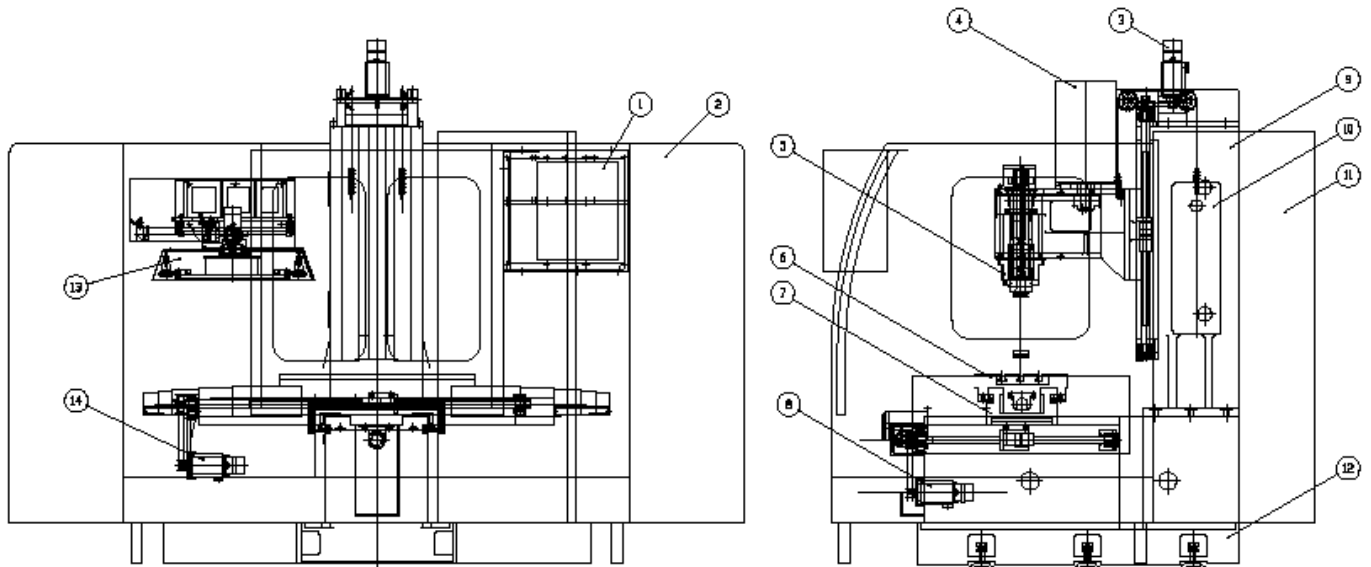
- 12. Protect your hands. Stop the machine spindle completely before clearing away chips or lubricating. Never use your hands to clear chips and use a brush or chip scraper instead of.**
- 13. Protect your hand. Stop the machine spindle completely before adjusting workpiece, fixture or coolant nozzle.**
- 14. Protect your hands. Stop the machine spindle completely before taking measurements.**
- 15. Protect your hands. Stop the machine spindle completely before adjusting or changing belts, pulleys or gears.**
- 16. Keep hands and arms clear of start switch when changing tools.**
- 17. Protect your mouth. Wear a mouth mask at all times during the operation of your machine.**
- 18. Prevent workpiece and cutter damage. Never start the machine when the cutter is in contact with workpiece.**
- 19. Keep work areas all lighted. Ask for additional light if necessary.**
- 20. Keep your work area clean and dry. Remove chips oil and other obstacle.**
- 21. Never leave you machine unattended. Never lean on your machine. Stand away when machine is running.**
- 22. Do not get trapped. Avoid pinch points caused by motion of table and ram.**
- 23. Prevent loose flying objects. Securely clamp and locate workpiece. Use stop blocks when necessary. Keep clamps clear or cutter path.**
- 24. Prevent tool breakage. Use correct feeds and speeds for the job. Reduce feeds and speeds if you notice unusual noise or vibration.**

- 25. Damaged and dull tools break easily. Keep tools sharp. Inspect tools and tool holders. Keep tool overhang to a minimum. Do not use the prohibited materials (diamond, jewelry, ore, etc.).**
- 26. Prevent fires. Keep flammable liquids and materials away from working area and hop chips.**
- 27. Prevent explosion. Do not use this machine in a potentially explosive atmosphere.**
- 28. Be sure your installation conforms to applicable electrical codes. Inspect all electrical connections before installing, operating or servicing machine. Be sure power supply voltage matches machine voltage.**
- 29. Disconnect all power to the machine before installing or servicing machine. Disconnect all power before opening electrical or control box. To service should be only performed by a qualified engineer.**
- 30. If you want to work on a bigger workpiece, please use additional proper guard for protection. (We just provide standard guard for protection)**

2. MACHINE SPECIFICATIONS

2-1 MACHINE FEATURES

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|-----------------------|----------------------|
| 1. Control cabinet | 8. Y-axis motor |
| 2. Full splash guards | 9. Column |
| 3.Z-axis motor | 10. Counterweight |
| 4. Spindle motor | 11. Electric cabinet |
| 5. Spindle | 12. Base |
| 6. Working table | 13. Tools magazine |
| 7. Saddle | 14. X-axis motor |



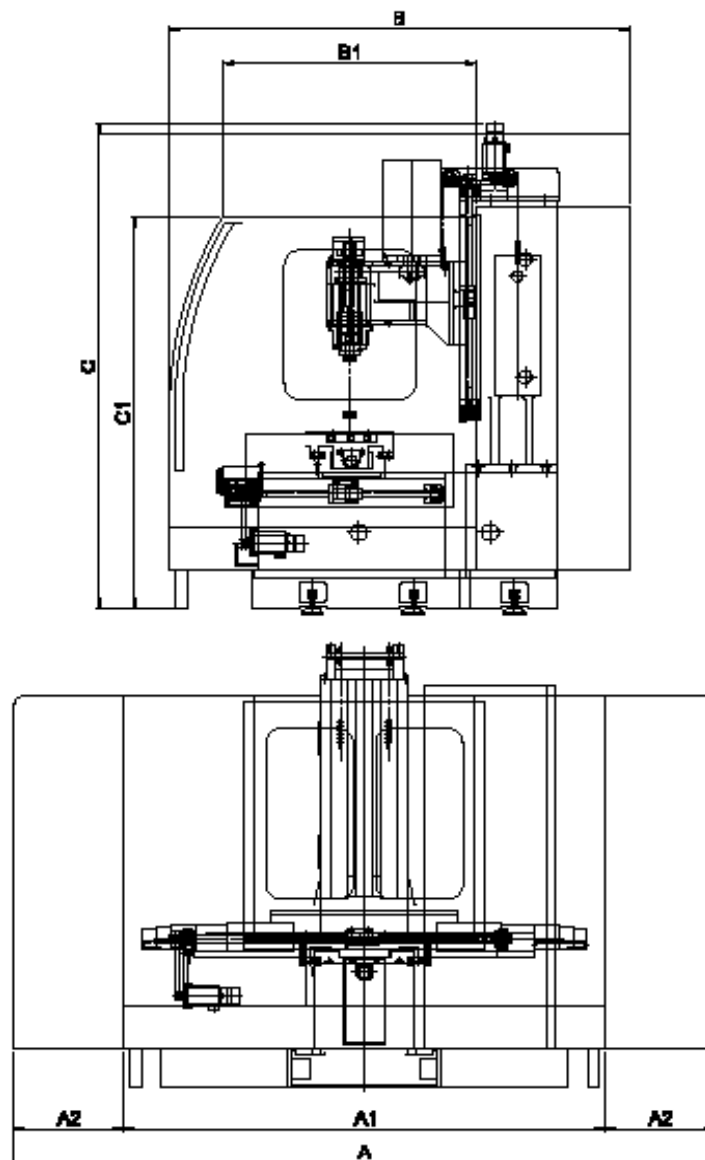
2-2 MACHINE SPECIFICATIONS

MODEL	GSM-2000
Table Size	32"x86"
Working Surface	813x2,185mm
Table Surface Configuration	18x5x100mm
Table Loading Capacity	1,800 Kgs
X-axis travel	2,000mm
Y-axis travel	850mm
Z-axis travel	710mm
Spindle Taper	BT40/CAT40
Spindle speed	8,000rpm
Feed rate	0-5,000mm/min.
Spindle motor	15Kw/30min.
Tool magazine capacity	20;24
Net Weight	6,800Kgs
Gross Weight	7,200Kgs
Packing Dimension	315X226X254cm

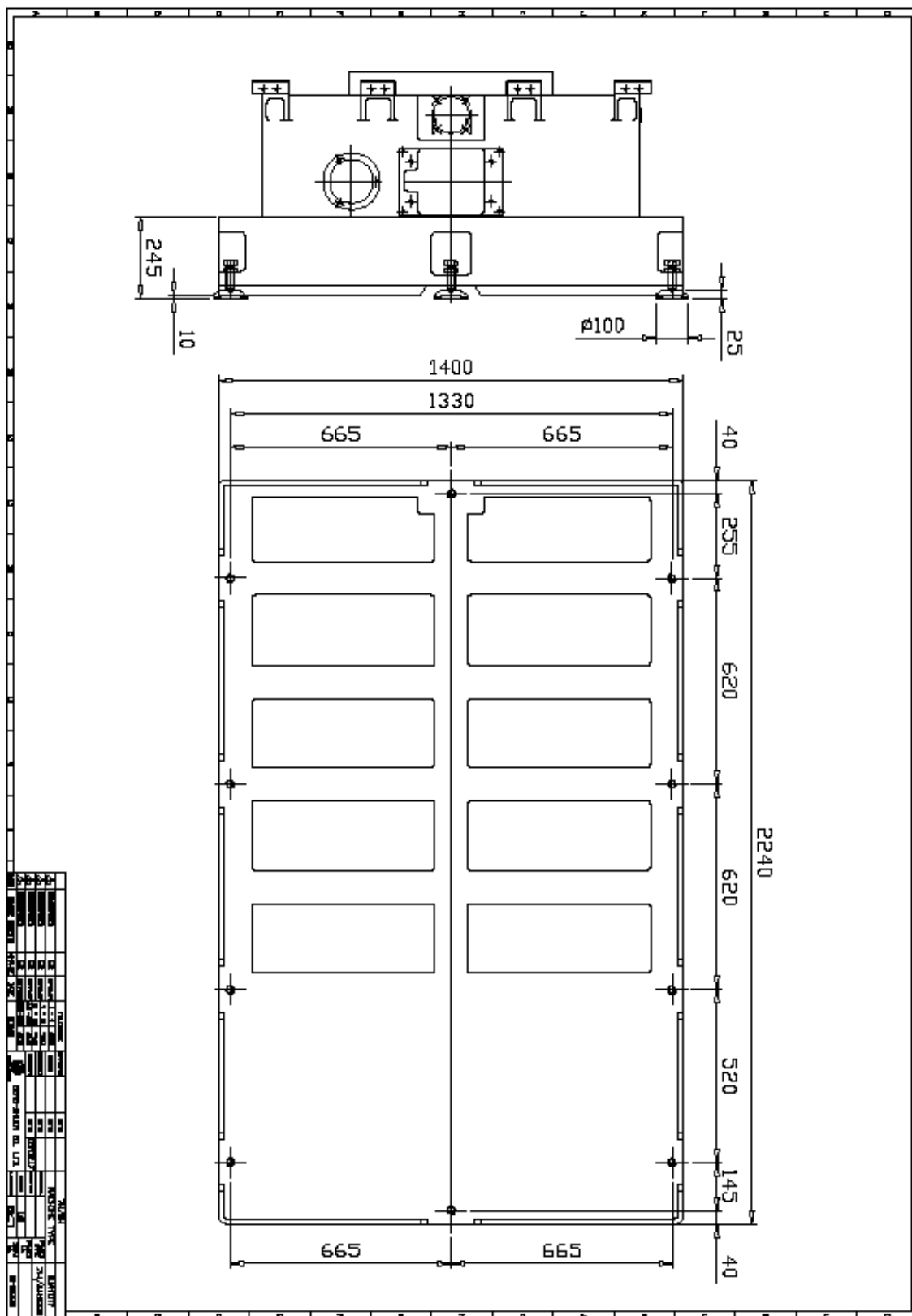
2-3 MACHINE DIMENSIONAL DRAWINGS

Unit: m/m.

SIZE MODEL	A	A1	A2	B	B1	C	C1
GSM-800F	2,810	2,210	300	2,010	1,100	2,250	1,750
GSM-1000F	3,170	2,210	485	2,110	1,370	2,500	1,750
GSM-1300F	4,150	2,210	960	2,400	1,470	2,500	1,900
GSM-1500F	4,430	2,210	1,100	2,400	1,470	2,540	1,900
GSM-1500LF	4,430	2,210	1,100	2,680	1,670	2,540	1,950
GSM-1700F	5,300	2,210	1,540	2,800	1,780	2,800	1,950
GSM-2000F	5,600	2,210	1,695	2,800	1,780	2,800	1,950
GSM-2500F	7,050	4,510	1,270	2,800	2,410	2,800	1,950
GSM-3000F	7,550	6,480	535	2,923	2,514	2,728	1,950



2-4 MACHINE FLOOR SPACE



3. MACHINE INSTALLATION

3-1 GENERAL WARNINGS

The electricity system should meet the machine specifications. Attempting to run the milling machine center from any other source can cause severe damage and void the warranty.

Do not press "POWER ON" button on the control panel until the machine is properly installed completely.

Never service the machining center with the power connected.

Never leave the control boxes open when the power is on. A deadly high voltage may be present all areas of the control box.

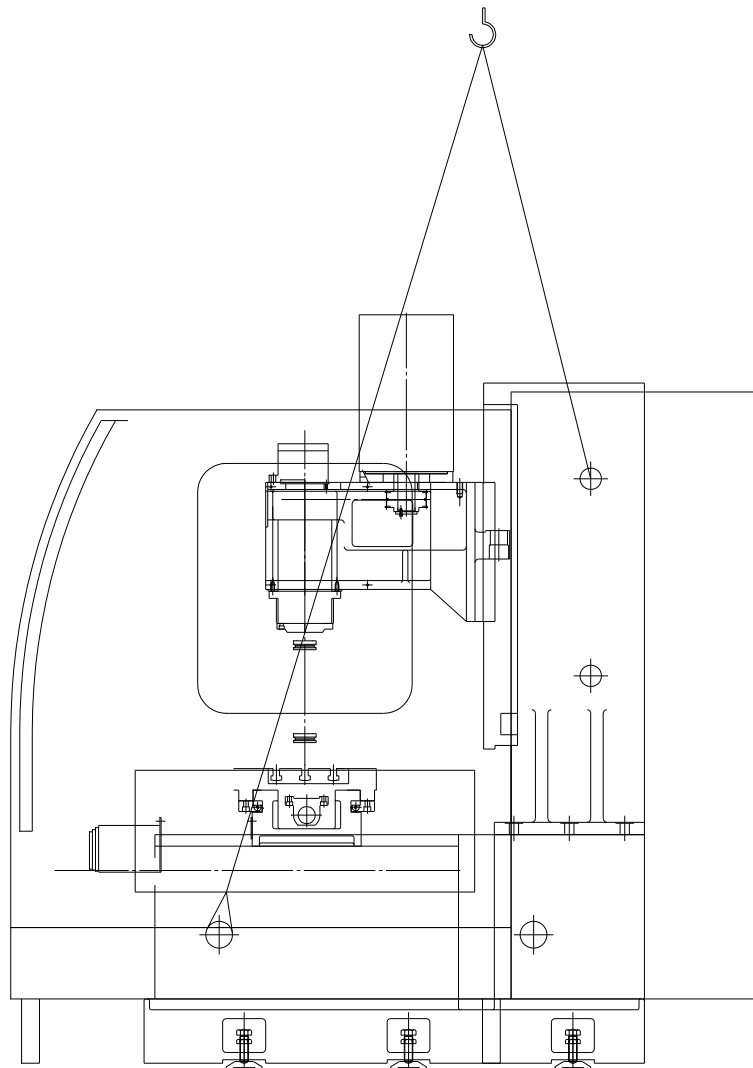
Never reach through the holes in the vertical column. The large counterweight inside can cause severe injury as it moves up and down.

3-2 UNPACKING AND INSTALLING

3-2-1 UNPACKING

Disassemble packing crate and remove skids as carefully as possible to avoid damaging the machine. If the machine is damaged during transportation, contact your local dealer and the transportation company who delivered your machine immediately.

3-2-2 PROPER METHOD FOR LIFTING MACHINE



Use crane for lifting machine:

1. To screw each two bolts in column hole A and base casting hold B.
2. To place steel wire under the bolts for lifting as show in above-mention figure.
3. Lift the machine above the ground about 50mm (2"), and then move it to the determined place.

NOTE:

1. *Move table to the middle of the saddle and near the saddle to the column as close as possible while machine is being moved.*
2. *Watch out for the machine balance during moving.*

3-2-3 CHECKING FOR SHORTAGE

Be sure to check your machine against the packing list, which is shipped with every machine. In case of shortage, note items not received and contact with your local dealer.

3-2-4 CLEANING AND LUBRICATING MACHINE

1) All protective coating must be removed before using machine. Do not attempt to the table, saddle or head if the coating still exists. Be cautious while selecting a suitable cleaning agent. Paraffin applied with a clean brush will soften the protection coating. The protective coating can then be removed with clean rags.

NOTE:

Do not use gasoline or any other flammable solution to clean the machine.

2) Clean and lubricate all the exposed ways of table, saddle and knee. Drive the table, saddle and kneed to the end of travel, clean and lubricate ways thoroughly. Be sure to use a suitable lubricant such as Sunoco Waylube #111180 or Mobil Vactra Oil #2.

NOTE:

This job has to be done after the machine is already under normal power supply.

3-2-5 SELETING SUITABLE LOCATION

It is our recommendation that the machine be securely anchored to the floor to prevent machine movement, and also to improve machining accuracy. For floor plan refer to picture below:

3-2-6 CONNECTING POWER SUPPLY

1. Electricity system:
 - a) 220V
 - b) 3 Phase 50/60HZ
 - c) Over 50 amp
2. The external power cable requires wires diameter 16 –25mm and a 75A non-fuse switch (NFB Breaker).
3. After the wires are completely installed, check if the voltage is $220\pm 10\%$.
4. Confirm if the motor phase is correct.
5. Compress air source: Pressure 6 – 8 kgf/cm², Supply: 200 L/min.

3-2-7 INSTALL Z-AXIS SERVO MOTOR AND REMOVE SUPPORTER

1. Check if the counterweight chain on the top of the column is in the appropriate position.
2. Reinstall Z-axis servomotor, and make sure the locking screws on coupling have been tightened.
3. Turn on the power when the control panel is ready. Use MPG to move the head (Z-AXIS) up about 5mm, and then remove the supporter.
4. Move the head down till the counterweight chain is tight.
5. Make sure the supporter is loose, and then remove the supporter from the left side of the electrical cabinet.
6. After reinstall X, Y, Z axis servomotor, execute the “Home Search” again.
7. The machine with Automatic tool-changing function, the Z-axis must be set up tool-change position (Z) again, put the new value on the CNC-user parameter (P.18).