CNC MILLING MACHINE TROUBLE SHOOTING

1. Trouble Shooting

No	Trouble		Solution
1	Tool magazine((Umbrella type)	Noise for tool changing	1. Check the air pressure 2. Check the milling chuck pull stud model 3. Check the cylindrical travel 4. Check the oil input.
		Can't change the tool	1. Check the air pressure 2. Check the tool magazine manually, if can't move, check the circuit breaker 3. Check if tool magazine motor phase is right or not 4. Check if the limit switch of tool loosening is in right position 5. Check if the sensor switch is right or not 6. Check if the tools is hit or the reference point is changing, adjust 3-axis parameter according to P 2038(MITSUBISHI) or P1241(FANUC).
		Tool number in chaos	1. Check if the motor phase 2. Reset the tool magazine, and re-perform the procedure.
		Tool magazine keep rotation	1. Adjust the tool counter
		Tool magazine not drawing back.	1.Set Feed Rate knob as 0 under HANDWHEEL model, press RESET to get the tool magazine back.
2	Trouble Shoot (Arm type)	Noise for tool changing	1. Check the air pressure 2. Check the milling chuck pull stud model 3. Check the cylindrical travel 4. Adjust the second reference position, spindle positioning angle, spindle tool positioning, spindle tool switch positioning etc.
		Can't change the tool	1.Check the air pressure 2.Check the tool magazine manually, if can't move, check the circuit breaker 3.Check if tool magazine motor phase is right or not 4. Check if the brake is too tight or too loosen 5.Check the tool sleeve's tolerance 6.Arm not back to zero, adjust the arm screw to ZERO point, when the power on is ok.
		Tool magazine not	1.Set Feed Rate knob as 0 under HANDWHEEL model, press

		drawing back.	RESET to get the tool magazine back.
3	Axis Trouble	Over limited	1. Press "O.T.REL" key, use the handwheel rotate the axis to reverse direction. 2. Check if the limit switch is broken.
		Can't back to zero	1. Check the limit switch is right set in the software or not 1、 Adjust or replace the ZERO block or SWITCH
		Noise for Axis	1.Clean the axis cover, 2.Change the bearing 3.If it is from Z axis, check it is loosen for the hammer and guide way is loosen or not. Check if the hammer chain and guide wheel is wearing or not.
4	Spindle Trouble	Spindle Noise	1. Lubricate the spindle belt 2. Adjust the belt tension 3. Replace the spindle belt or spindle.
5	Coolant pump trouable	Can't drain	1. Check if the coolant liquid is enough or not. 2. Input water to exclude the air inside the coolan tank 3. Check the power sequence. 4. Check the thermal relay 5. Replace the coolant
6	Lubrication pump Trouble		1. Check if the lubrication oil is enough or not. 2. Check the oil filter 3. Check if the oil is SHELL TONA68 or equal one 4. Adjust or replace the valve. 5. Replace the pump.

2. PLC Alarm

AlarM Code	Explnation	Solution
1000. EMG STOP OR OVERTRAVE	Emergency stop	Check if X8.4 is written or not.
1001. AXIS NOT HOME	Axis not home	Use handwheel move axis back home.
1002. MC OL	Machine Alarm	System alarming, check manual for FANUC/MITSUBISHI
1003. LUBE LEVLE LOW	Lubrication oil alarm	Input the oil or replace the pump
1004. AIR PRESSURE LOW	Low air pressure	Check air pressure
1005. SP COOLER ALARM	Spindle oil Coolant	Input spindle coolant oil or replace the oil.
1006. HYDRAULIC PUMP PRESSURE LOW	Oil pressure Low-Chose function	Input oil
1007. WORN GEAR	Choose the high/Low speed incorrectly	Adjust the sensor switch.
1008. AXIS OT	Axis limit over	Press "O.T.REL"and make the axis rever
1009. BATTERY ALARM	Battery alarm	Replace battery
1010. MAG NOT BACK	ToolMagazine back home signal cannot be found---Choose function	Check the sensor switch
1011. ATC MOTOR OL	Tool magazine motor is over loaded	Check the thermal relay inside the electric cabinet
1012. COOLANT MOTOR OL	Coolant motor over loaded	Check the thermal relay inside the electric cabinet
1013. CHIP CONVEYOR OL	Check chip conveyor motor over loaded	Check the thermal relay inside the electric cabinet
1016. T CODE ERROR	T code error	Check T code
1017. SPINDLE NOT ORIENTATION	Spindle is not positioned	Move Z axis downward manually until the alarm disappear
1018. ARM NOT IN ORIGIN	The arm is NOT in middle position	Move the arm manually
1018. ARM NOT IN ORIGIN	No signal for the arm	Check if the sensors are broken or not
1019. Z AXIS NOT IN ATC POSITION	Z axis can't reach ATC	Check if the 2nd home point of Z axis signal F96.2 is right or not

Code	Description	Solution
1020. TOOL NOT INPOSITION	Tool magazine is not positioned and could notget the sensor signal	1. Make the tool magazine forward/backward rotation by hand to see if the alarm can be elimated, if 1027 alarm appears, operate the magnetic valve by hand, and rotate the tool magazine by hand too, then eliminate the alarm.
		2. Check if the sensor switch is broken or not
1021. TOOL NO. NOT FOUND	Cannot find the tool number	Please re-tidy the tool number
1022. TOOL POT NOT DOWN	Tool collets cannot go down	Check the circuit
1023. ARM 90 ERROR	Arm 90degree error	Replace the sensor
1025. TOOL NOT UNCLAMP	Tool unclamp	Check the limit switch of tool loosen
1026. ARM 270 ERROR	Arm-270degree Error	Check the sensor switch
1027. TOOL POT NOT UP	Tool collets cannot go upward	Check sensor switch and circuit
1028. ARM JOG MODE	Arm JOG mode error	Re-start the controller
1029. TOOL NOT CLAMP	Tool is not clamp well	Check the limit switch
1030. ARM HOME POS ERROR	Arm home point error	Check the sensor switch
1031. ATC LS ERROR	ATC limit error	1. Check the spindle tool loosen/clamp can test the signal at the same time, adjust the limit position.
1032. T CODE = SP	TCODE = Spindle tool	Reset the tool magazine when Tcode is not equal to spindle tool
2000. DOOR NOT CLOSE	Door is not close	Shut the door
2001. 4 AXIS CLAMP	The 4th axis is not clamped	Clamp the 4th well

Machine model	Net Weight KG	Main Power	Circuit Breaker	Power line diameter
VMC540	3500	10KVA	40A	10mm²
VMC650	4500	15KVA	40A	10mm²
VMC850	5300	15KVA	40A	10mm²
VMC960	4000	15KVA	40A	10mm²
VMC1060	8000	20KVA	60A	16mm²
VMC1150	7000	20KVA	60A	16mm²
VMC1270	10000	20KVA	60A	16mm²
VMC1370	12000	35KVA	100A	25mm²
VMC1580	15000	35KVA	100A	25mm²
VMC1690	18000	35KVA	100A	25mm²
VMC1890	18000	35KVA	100A	25mm²

3. Machine rated power

4. Maintenance

4.1 Machine's Electric Function

1）Circuit Breakers are used as machine's overload and circuit short protect.

2) Soft limit and mechanic limit has been set on the machine.

4.2 Everyday Maintenance

As we required in Permeable, only electrician is allowed to do repair and maintain job for this machine.

And the machine should meet with requirements below:

1) Check electronic oil pump to see that if lubrication oil is needed.
2) Check Oily water separator to see if the oil is enough or not.(If the oil falls below the indication, more oil is needed) 7TI
3) Check that if spindle huff is normal or not.
4) Clean the spindle with soft cloth, and lubricate it with 68# oil.
5) Clean every parts of ATC clearly.
6) Clean every blade tool.
7) Clean all the blocks and limit switch on the machine.
8) Drain hydrosphere in the oily water separator.
9) Keep the working area clean.
10) Clean every dust-anti window every day.
11) Check circuit breaker, contactor, relay, servo drive module etc. check if electric wire is loosened or not.
12) Grounded system must be closely and constantly.
13) Make sure that fan and spindle heat exchanger works well, or else it will cause damage to electric components.

4.3 Every week Maintenance

1) Clean the filter net of oil water separator and heat exchanger.
2) Clean the tool cover of Auto Tool Changer.
3) Check and clean limit switch
4) Check if all warning labels are clear or not.

4.4 Check Every Three Months

1) Clean or refresh the lubrication oil and oil-suck filter net.
2) Check parameters of every axis.

4.5 Check Every Six Months

1) Clean or refresh the lubrication oil and oil-suck filter net.
2) Check parameters and origin of every axis.

3) Check that if every scrape is wearable or not.

4) Check if every servo motor and spindle runs in normal, if so contact manufacturer immediately.

5) Check lubrication and

6) Check and adjust the leveling of the machine.

4.6 Check Every year

1) Check the verticality of every axis, and adjust it.

2) Check if lubrication oil pipe is good or not.

Warning:

1. Only professional operators are allowed to repair the Auto Tool Changer.

2. Others should be far away from working area.