

8.4 THERMAL OVERLOAD RELAY OF SERVO UNIT

The servo control unit has the function of detecting the following alarm states.

	Alarm No.
. Fuse (main circuit) blown	331(X) 332(Y) 333(Z) 334(4)
. Overload	351(X) 352(Y) 353(Z) 354(4)
. TG error	391(X) 392(Y) 393(Z) 394(4)

8.4.1 FUSE BLOWING (Alarm No. 331, 332)

When the main circuit of the servo control unit is shorted or when the servo control unit itself becomes faulty, the fuse in the unit will be blown, and the following alarm Nos. will be displayed on the CRT.

- 331: FUSE(X) ... for X-axis
- 332: FUSE(Y) ... for Y-axis
- 333: FUSE(Z) ... for Z-axis
- 334: FUSE(4) ... for 4Th axis

When a fuse is blown, and the alarm No. 331 or 332 is displayed, do not attempt to take measures, but the user should immediately notify our service department.

8.4.2 OVERLOAD (ALARM NO. 351, 352)

The servo control unit is provided with electronic thermal relays respectively and independently for the X and Z axes, and they trip under the following conditions.

- Programs involving excessively heavy cuts are executed.
- Programs involving excessively frequent speed changes are executed.
- Frictions in the machine system become abnormally large.

When the electronic thermal relay trips, the servo power supply is turned off, and the following alarm Nos. are displayed on the CRT.

- 351: OL(X) ... X-axis overload
- 352: OL(Y) ... Y-axis overload
- 353: OL(Z) ... Z-axis overload
- 354: OL(4) ... 4Th axis overload

When this is the case, take the following measures.

- (1) Push the POWER OFF button to turn off the power supply, and then, stop the supply of power to NC.
- (2) Find the cause of the overloading. For example, the cause may be eliminated through modifications of the part program, or by the elimination of abnormally large load on the machine.
- (3) Supply power to the NC, and push the POWER ON button to turn on the power supply and make the system ready for operation. However, since the servo motor requires approximately 30 minutes to cool down after being overloaded to the extent of tripping the electronic thermal relay, wait at least 30 minutes before starting to operate NC.
- (4) If the electronic thermal relay trips, notify our service department.

8.4.3 TG ERROR (ALARM NO. 391, 392)

The servo control unit can detect the following alarm states.

- Wire breaking in the tachometer generator (TG) or overspeeding
- Main circuit overcurrent
- Main circuit overvoltage

When any of these faults occurs, the following alarm Nos. will be displayed on the CRT.

- 391: TG ERROR (X)
- 392: TG ERROR (Z)
- 393: TG ERROR (Z)
- 394: TG ERROR (4)

When this is the case, take the following measures.

- (1) Push the POWER OFF button to turn off the power supply, and then, stop the supply of power to NC.
- (2) Find the cause of the alarms, and eliminate it. In this case, if the fault conditions are reported to our service department, we will be able to give advice on troubleshooting.
- (3) Resupply power to NC, and then, push the POWER ON button to make the unit ready for operation.
- (4) If TG ERROR is displayed again, notify our service department.