If the turret crashes, the coupling [1] for the turret motor can "slip" (move out of position) in relation to the motor shaft. If this occurs, the male and female couplings [2] behind the turret [3] do not align and cannot engage ("clamp") during a tool change. This causes Alarm 114 TURRET LOCK FAULT when you push [ZERO RETURN], [A]. To correct this problem, this procedure tells you how to complete these tasks:

2. Change the position of this coupling in relation to the z-channel on the motor encoder.

Do this procedure for these machines:

1. ST-10/10Y
2. SL-10/20/30
3. TL-15/25
4. HL-1/2/3/4/5/6
Caution: When you do maintenance or repair on CNC machines and their components, you must always follow basic safety precautions. This decreases the risk of injury and mechanical damage.

Do these steps before you do work in the machine or in the control cabinet:

- Set the main circuit breaker to the [OFF] position.
- Use an approved lock with an approved safety tag. Always follow lock-out procedures in accordance to local government rules.
- After turning off the machine, wait at least 5 minutes before working in the control cabinet, to allow power to dissipate. Wait for the voltage indicator LED on the vector drive to go off completely.
- Always turn off the main air supply when you work on any part of the pneumatic system.
- Make sure to rest the spindle head on a block of wood when work is done on a vertical axis. This will prevent any unintended movement that could result in the axis falling.
- Never alter any safety circuits on the machine.

You should not do machine repair or service procedures unless you are qualified and knowledgeable about the processes. Serious damage to the machine components can result in costly repairs. The service technicians at your Haas Factory Outlet (HFO) have the training and experience, and are certified to do these tasks safely and correctly. The repair and service work performed by your HFO is protected with a limited warranty.

Danger: Some service procedures can be dangerous or life-threatening. DO NOT attempt a procedure that you do not fully understand. If you have any doubts about doing a procedure contact your Haas Factory Outlet (HFO) and schedule a service visit.

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**Lathe - Turret Motor Coupling - Alignment**

**STEP 1**

Operate this code in MDI mode:

```
% 
T1;
%
```

Push [EMERGENCY STOP].

Remove the covers to get access to the turret motor coupling.

Caution: Before you remove the covers in the steps that follow, put labels and marks on the covers that show the correct installation sequence.

For SL and HL machines, remove the covers as follows:

- Remove the rear cover [1].
- Remove the (3) screws [2], as shown.
**STEP 2**

- Remove the top wiper [1] and the wiper on the left side [2].
- Remove the screws for the cover [6] as follows: Remove the (5) screws across the top [3]. Then remove the (3) screws on each side [4]. Remove the screw [5] at the lower left side.

  🔄 **Note:** This screw [5] is difficult to see.

- Remove the cover [6] from the rear of the machine.

**STEP 3**

For the ST-10, remove the covers in the sequence shown. Remove the covers [1, 2, 3] at the rear of the machine. Then remove the covers and wipers [4, 5, 6] near the right side of the turret.

  🔄 **Note:** A wiper [4] is on the top, and a wiper is on each side [4].

**STEP 4**

Make sure a minimum 1” (25 mm) space is between the turret and all objects in the direction of the Z Axis.

Operate this code in MDI mode:

```
% 
M43;
% 
```

This disengages the turret.

Push [EMERGENCY STOP].

Use the screwdriver or your thumb to turn the coupling to get access to the coupling screw [1].
<table>
<thead>
<tr>
<th>STEP 5</th>
<th>Loosen coupling screw for the collar on the side near to the motor.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>STEP 6</td>
<td>Use a screwdriver or your thumb to turn the coupling to turn the turret in the next step.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>STEP 7</td>
<td>Turn the coupling until the turret is at the tool pocket 1 position.</td>
</tr>
<tr>
<td></td>
<td>Note: A &quot;1&quot; mark is engraved on the turret at the tool pocket 1 position.</td>
</tr>
<tr>
<td></td>
<td>Align the coolant nozzle with the coolant port, as shown.</td>
</tr>
<tr>
<td></td>
<td>Push [RESET].</td>
</tr>
</tbody>
</table>
STEP 8

Change Setting 7 to OFF. Change parameter 43:4 (Z CHANNEL ONLY) to 1.

This causes the zero channel of the motor encoder to set the zero position when you push [ZERO RETURN] and then [A] in the next instruction.

Release [EMERGENCY STOP].

Push [RESET]. Push [ZERO RETURN]. Push [A], and push [SINGLE]. This aligns the electronic zero channel with the mechanical home switch position and clamps the turret.

Caution: Do not push [EMERGENCY STOP] before the next step. If you push [EMERGENCY STOP], the motor shaft can turn and you will lose the zero channel position. If the motor shaft turns, you must do the full the procedure again.

STEP 9

Manually turn the coupling to the left and to the right to feel the distance of the free movement. Turn the coupling to the approximate middle of the free movement.

Note: If you cannot turn the coupler with your hand, use a flat-head screwdriver to turn the coupler.

STEP 10

Hold the coupling in the middle while you torque the coupling screw to 15 ft-lb (20 Nm).
STEP 11

Change parameter **43:4** (Z CH ONLY) back to 0.

Change Setting **7** back to **ON**.

STEP 12

Make sure the alignment of the turret motor coupling is correct. Do these steps:

1. Push [POWER OFF].
2. Push [POWER ON].
3. In MDI mode, push [TURRET FWD] to move the turret to the next tool pocket.
4. Manually turn the coupling to make sure you can feel free movement to the left and to the right.
5. Release [EMERGENCY STOP].
6. Push [RESET].
7. Do this for each tool pocket position.

Put all the covers back onto the machine.