



VMC - 30/40-Taper - Inline - TRP Clamp/Unclamp Sensor - Adjustment

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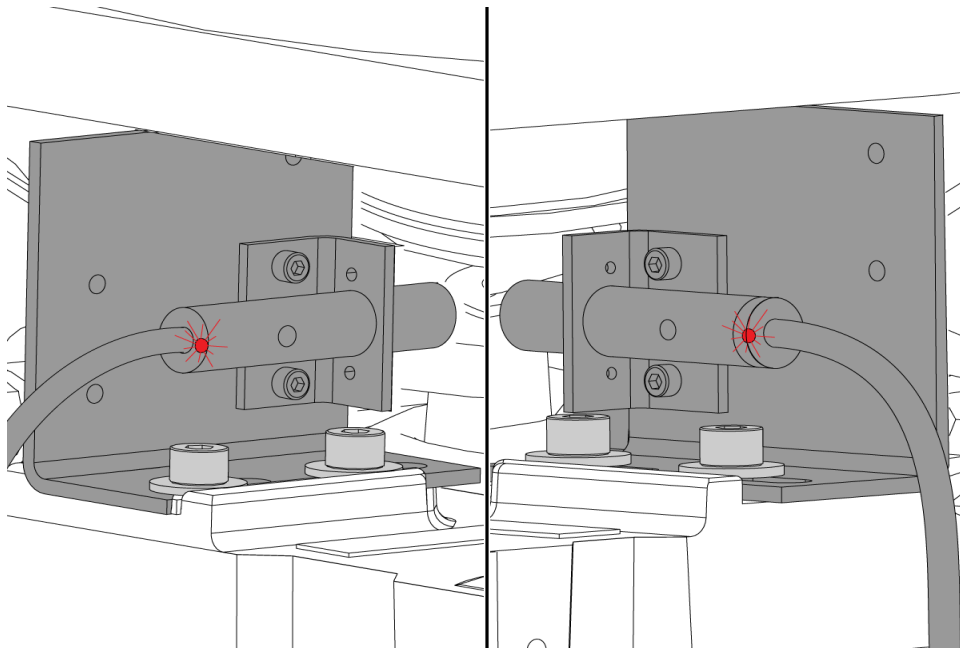
Translation
Available



VMC - 30/40-Taper - Inline - TRP Clamp/Unclamp Sensor - Adjustment - Introduction

This procedure tells you how to do these adjustments:

1. drawbar height
2. proximity sensor ("switch") position for the drawbar open ("unclamped") position
3. proximity sensor ("switch") position for the drawbar closed ("clamped") position



Machine Compatibility

Do this procedure on a vertical mill with these components:

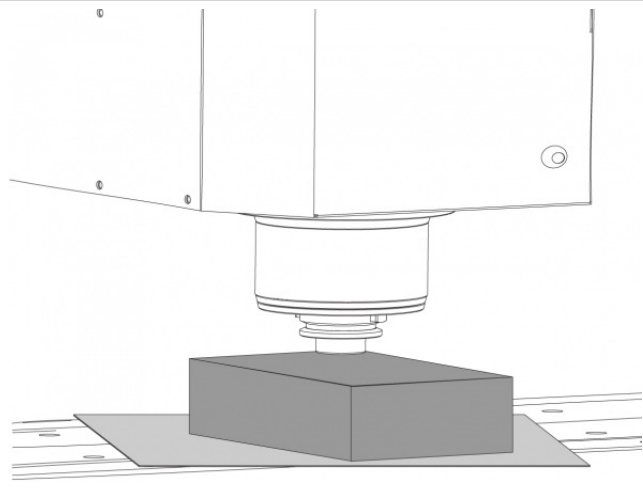
- inline drive
- 30- or 40-taper spindle
- adjustable tool release piston (TRP) clamp and unclamp proximity sensors

Tools Required

PRESSURE GAUGE SERVICE KIT
(P/N 93-2621)

VMC - 20/30/40-Taper - Drawbar Height - Check

STEP 1



Jog the X Axis and the Y Axis until the spindle is in the middle of the table.

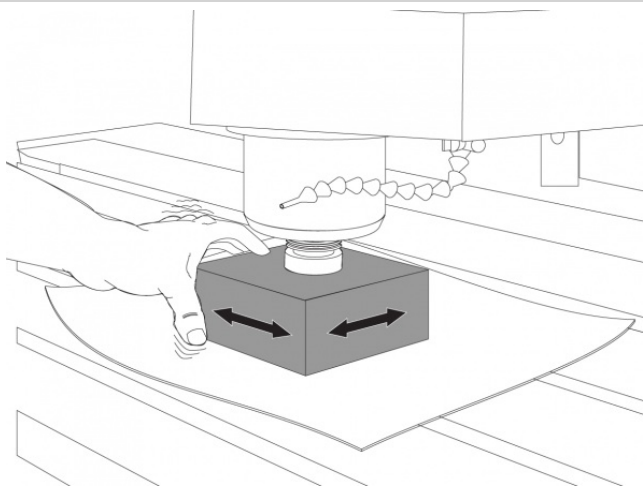
Put a toolholder with no tool into the spindle. Put a piece of paper on the table to protect the table. Put the aluminum block on the piece of paper.



Jog the Z Axis in the negative (-) direction.

Do this until the toolholder is approximately 0.30" (8 mm) from the top of the block.

STEP 2



Push [.001/1].



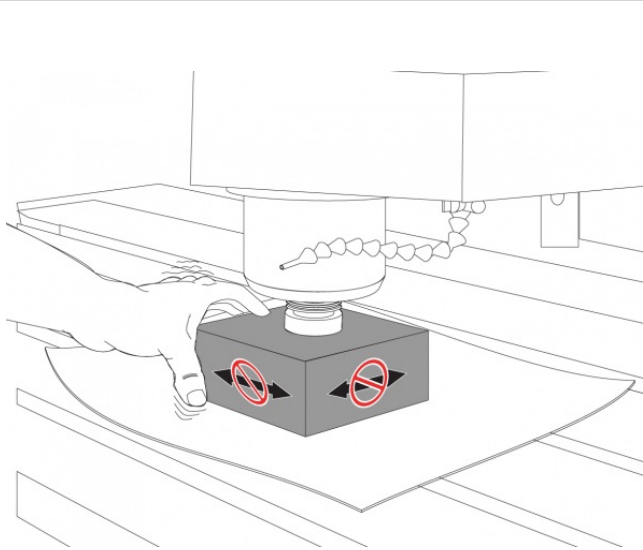
Jog the Z Axis in the negative (-) direction one increment at a time. Jog until the toolholder lightly touches the block.

The block can move in the X and Y axes, but not in the Z Axis.



Caution: Do not push the tool-release button. This causes a Z-Axis overload.

STEP 3



Push **[.001/1]**.



Jog the Z Axis in the negative (-) direction 0.002" (0.05 mm).

The block is tight.



Push **[POSIT]** to show the Position display. Push **[MDI]** and then **[HAND JOG]** to change the position display to zero.



Jog the Z Axis in the positive (+) direction 0.100" (2.54 mm) above the block.

Push and hold the tool-release button. With moderate force, try to move the aluminum block. If the drawbar height is correct, the block does not move at 0.100.

If the block moves, go to Step 4. If the block does not move, go to Step 5.

STEP 4

Do this step if the block moved in Step 3.



Push **[MDI]** and then **[HAND JOG]**. Push **[.01/10]**.



Jog the Z Axis in the negative (-) direction 0.01" (0.254 mm), one increment.



Push and hold the tool-release button.

Try to move the aluminum block. If the block moves, jog the Z Axis one increment at a time until the block cannot move. Record the number of increments you must move the spindle. The number of increments is the number of shims to add.

STEP 5

Do this step if the block did not move in Step 3.



Push **[.01/10]**.



Jog the Z Axis in the positive (+) direction 0.01" (0.254 mm), one increment.



Push and hold the tool-release button.

Try to move the aluminum block. If the block does not move, jog the Z Axis one increment at a time until the block moves. Record the number of increments you must move the spindle. The number of increments is the number of shims to remove.

VMC - 30/40-Taper - Inline - TRP - Add or Remove Shims

STEP 1

Jog these axes:

- Z Axis to the bottom end of travel
- X Axis to the center of travel
- Y Axis to the front of the machine

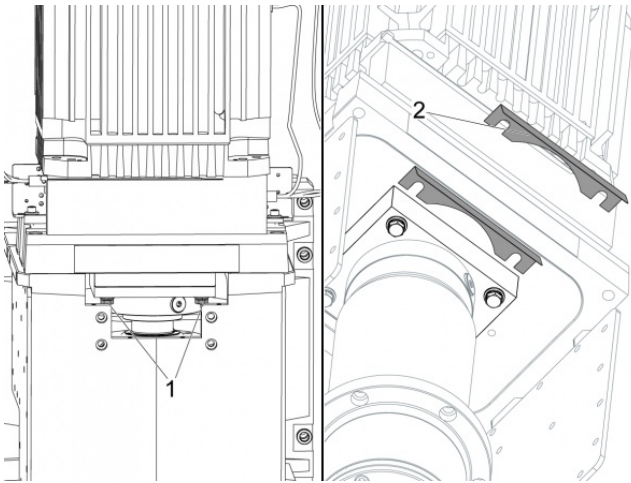


Push **[EMERGENCY STOP]**.

You must stand on the mill table to get access to components. Clean the table fully. Put a piece of protective material that does not move on the table.

Remove the front spindle head cover.

STEP 2



ADD OR REMOVE SHIMS

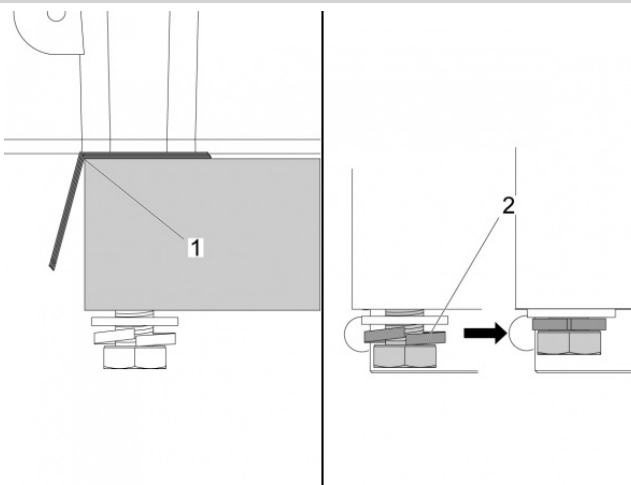
Loosen the (4) screws [1] for the striker plate. Use the openings in the spindle head casting.

Add or remove the correct number of shims [2].



Note: The correct number of shims is the number of increments you moved the spindle until the block did not move, in the steps before.

STEP 3



Make sure the inner corner [1] in the shims is fully against the striker plate.

Tighten the striker plate screws [2].

Do this section again: [VMC - 20/30/40-Taper- TRP - Proximity Sensor - Adjustment](#).

When the drawbar height is correct, tighten the screws again.

VMC - 20/30/40-Taper - TRP - TSC - Pre-charge - Adjustment

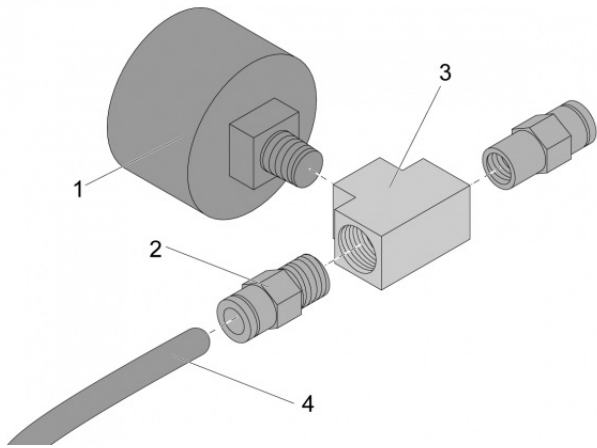
This procedure tells you how to do these tasks:

- Assemble the pressure gauge service kit.
- Use the pressure kit to adjust the TRP pre-charge.



Note: Do not do this procedure if the machine does not have through-spindle coolant. The location of the pre-charge solenoid may vary.

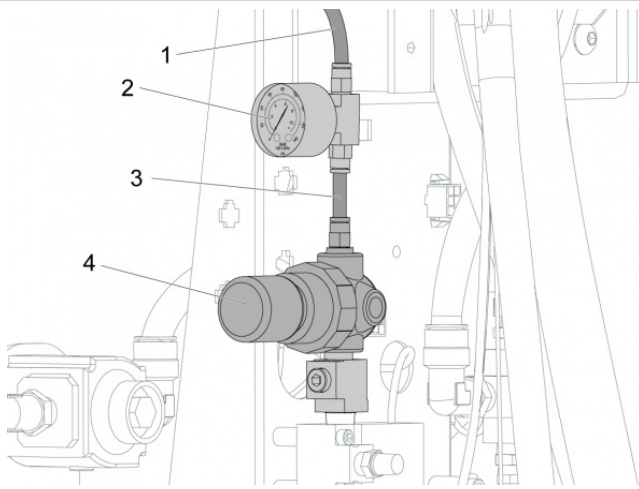
STEP 1



Do these steps to make a pressure-gauge assembly:

- Attach the gauge [1] to the tee-fitting [3].
- Attach the (2) quick-release fittings [2] to the tee-fitting.
- Put the 1/4" tubing [4] into one of the quick-release fittings [2].

STEP 2

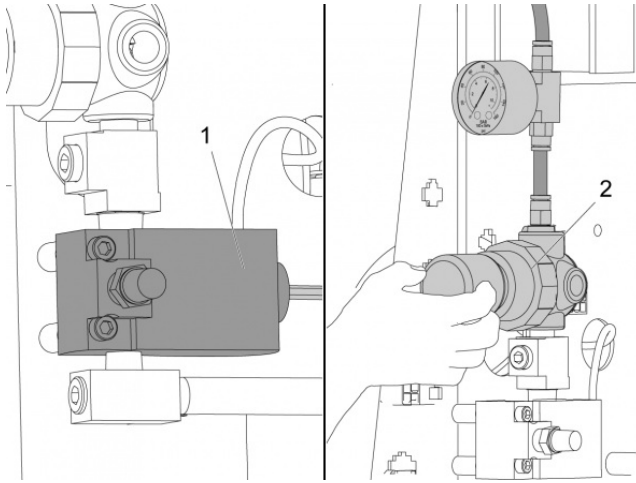


Disconnect the tube [1] from the output-side of the pre-charge pressure regulator [4].

Put the tube into the top of the pressure-gauge assembly [2].

Connect the 1/4" tube [3] from the pressure-gauge assembly to the regulator.

STEP 3



On some machines, you cannot adjust the regulator. Use the pressure-gauge assembly to make sure the regulator operates correctly. Do these steps to make sure the regulator [2] operates correctly:

Adjustable regulator:

Push and hold the button on the pre-charge solenoid valve [1]. Do this for 20 seconds.

Pull the regulator adjustment knob to unlock it. Set the air pressure to 30 psi (2.1 bar). Release the solenoid button. Push and hold the button on the solenoid valve [1], again. Do this for 20 seconds.

Make sure the gauge shows 30 psi (2.1 bar). Release the solenoid button. Push the regulator adjustment knob to lock it.

Non-adjustable regulator:

Push and hold the button on the pre-charge solenoid valve [1]. Do this for 20 seconds.

Make sure the gauge shows 30 psi (2.1 bar). If the gauge does not show 30 psi (2.1 bar), the regulator is defective. Replace the regulator.

Both: Remove the pressure-gauge assembly from the regulator.


VMC - 30/40-Taper - Inline - TRP Clamp/Unclamp Sensor - Adjustment

STEP 1



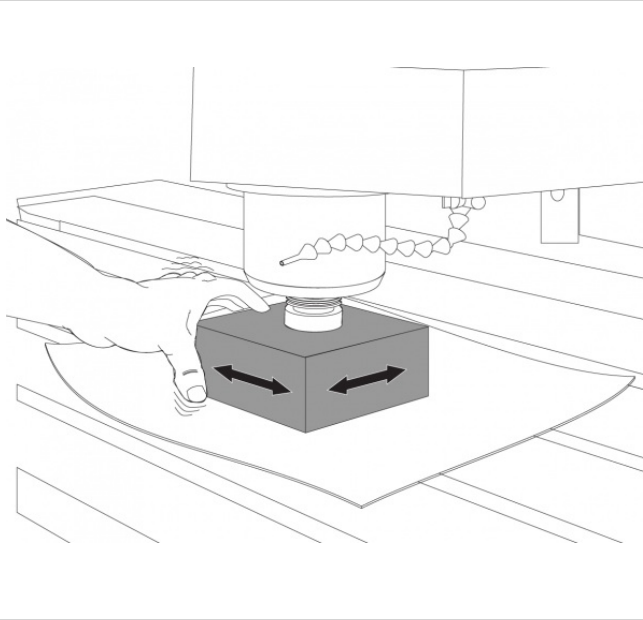
Clear the **[EMERGENCY STOP]**. Push **[RESET]** to stop each alarm.

If the machine does not have a Consolidated Air/Lubrication Module (CALM), do these steps:

1.  Push **[PARAM/DGNOS]**.
2. Set Parameter **76 LOW AIR PRESSURE** to **99999**.
3. Turn the main air regulator to decrease the air pressure to 75 psi (5.2 bar).

Move the center of the table under the spindle axis. Put a toolholder with no cutting tool into the spindle.

STEP 2



Put a piece of paper on the table to prevent damage to the table. Put the aluminum block [2] on the piece of paper.



Push [.001/1].



Slowly jog the Z Axis in the negative (-) direction until the toolholder lightly touches the block.

The block can move in the X and Y axes, but not in the Z Axis.



Push [POSITION]. Push [ORIGIN].



Caution: Do not push the tool-release button. This causes a Z-Axis overload.



Jog the Z Axis in the positive (+) direction 0.060" (1.52 mm) above the block.

STEP 3



Push [PARAM/DGNOS] until the **Diagnostics** tab shows.

Push the tool-release button while you monitor the status of **Draw Bar Open**.

If **Draw Bar Open** changes to **1**, no adjustment is necessary. Replace the spindle head covers.

GAUGES				CONFIGURATION				I/O				I/O 2				INPUTS 2				LUBE			
INPUTS 1								OUTPUTS 1															
Tool Changer In	0	SPARE	0	Power Servos	1	Move Spigot CW	0																
Tool Changer Out	1	SPARE	0	SPARE	0	Move Spigot CCW	0																
Tool One In Pos.	1	SPARE	0	SPARE	0	Pal Ready Light	0																
Low TSC Pressure	1	Circuit Breaker	1	SPARE	0	TSC Purge	0																
Tool In Position	1	Low GB Oil Pres.	0	Brake 4th Axis	0	Unclamp Pre-Chrg	0																
Spindle Hi Gear	0	APC Door	0	Coolant Pump On	0	HTC Shuttle Out	0																
Spindle Low Gear	1	APC Pin Clr #1	1	Auto Power Off	0	Brake 5th Axis	0																
Emergency Stop	0	APC Pin Clr #2	0	Spind. Motor Fan	0	Door Lock	0																
Grd/Sfty Switch	0	Tool Unclmp Rnt*	1	Move T. C. In	0	Sp Lube Pump On	0																
M-Code Finish *	1	Ax Grease Press.	0	Move T. C. Out	0	Vacuum Enable	0																
Buss Pwr Fault	0	APC Pal #2 Home	1	Rotate T. C. CW	0	SWTC Pocket down	0																
Low Air Pressure	0	APC Pal #1 Home	0	Rotate T. C. CCW	0	TSC Coolant	0																
Low Lube Press.	0	Ground Fault	0	Spindle Hi Gear	0	HiIntensityLight	0																
Regen. Over Heat	1	G31 Block Skipt	0	Spindle Low Gear	1	Worklight	0																
Draw Bar Open	0	Spigot Position	1	Unclamp Tool	0	Enable Conveyor	0																
Draw Bar Closed	1	Conveyor Overcrnt	1	SPARE	0	Reverse Conveyor	0																

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STEP 4

If **Draw Bar Open** does not change to **1** when you push the tool-release button, adjust the sensor as follows:

1. Loosen the (2) **Draw Bar Open** sensor screws. Keep the screws sufficiently tight to control the adjustment.
2. Lightly tap the **Draw Bar Open** sensor in the direction of the TRP. Do this until **Draw Bar Open** changes to **1** when you push the tool-release button.
3. Push the tool-release button (2) more times. **Draw Bar Open** changes from **0** to **1** with each tool release.
4. Jog the Z Axis in the negative (-) direction to 0.050" (1.27 mm) above the block.

Push the tool-release button while you monitor the status of **Draw Bar Open**. If **Draw Bar Open** stays at **0**, no adjustment is necessary. If **Draw Bar Open** changes to **1**, do these steps:

1. Lightly tap the **Draw Bar Open** sensor away from the TRP until **Draw Bar Open** stays **0** when you push the tool-release button.
2. Push **[TOOL RELEASE]** (2) more times to make sure **Draw Bar Open** stays **0**.
3. Torque the (2) **Draw Bar Open** screws. Refer to [Haas Fastener Torque Specifications](#). Use the value for iron.
4. Jog to 0.06" (1.52 mm) away from the block.

Push **[TOOL RELEASE]** while you monitor the status of **Draw Bar Open**. If **Draw Bar Open** changes to **1**, no adjustment is necessary. If **Draw Bar Open** stays at **0**, do these steps:

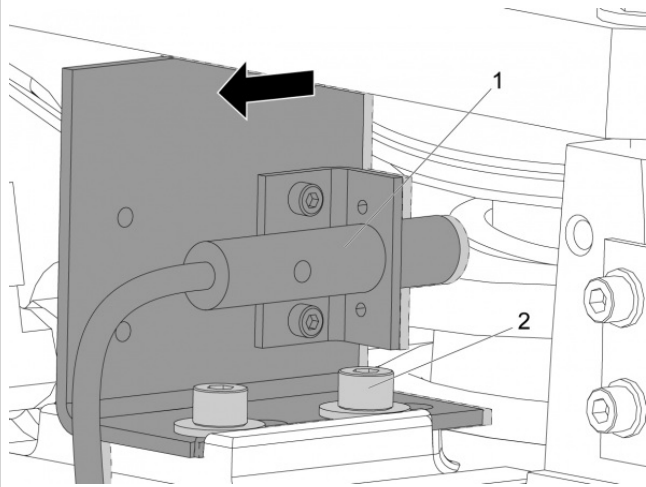
1. Loosen the (2) **Draw Bar Open** sensor screws. Keep the screws sufficiently tight to control the adjustment.
2. Lightly tap the **Draw Bar Open** sensor in the direction of the TRP. Do this until **Draw Bar Open** changes to **1** when you push the tool-release button.
3. Push **[TOOL RELEASE]** (2) more times to make sure **Draw Bar Open** changes from **0** to **1**.
4. Torque the (2) **Draw Bar Open** screws. Refer to [Haas Fastener Torque Specifications](#). Use the value for iron.



Note: When you push the tool-release button, the adjustment of the sensor is correct if:

- At 0.06" (1.52 mm) above the block, (**Draw Bar Open=1**) . The sensor is on.
- At 0.05" (1.27 mm) above the block, (**Draw Bar Open=0**) . The sensor is off.

STEP 5



Adjust the **Draw Bar Closed** sensor as follows:

Remove the toolholder from the spindle. Operate this code in **MDI** mode:

```
%  
M56 P1114;  
%
```

If **Draw Bar Closed** does not change to **0**, do these steps:

1. Loosen the (2) sensor screws [2]. Keep the screws sufficiently tight to control the adjustment.
2. Lightly tap the clamp sensor [1] away from the TRP until **Draw Bar Closed** = **0**.
3. Push **[RESET]**. If the adjustment is correct, **Draw Bar Closed** changes to **1**.

Torque the (2) clamp sensor screws. Refer to [Haas Fastener Torque Specifications](#). Use the value for iron.



Set Parameter **76**, LOW AIR DELAY, to **1500**.

Do some tool changes to make sure that the TRP is correctly adjusted.