



Haas Automation, Inc.

Chucker Lathe

Next Generation Control
Operator's Manual Supplement
96-0226
Revision E
February 2020
English
Original Instructions

Haas Automation Inc.
2800 Sturgis Road
Oxnard, CA 93030-8933
U.S.A. | HaasCNC.com

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Covering Haas Automation, Inc. CNC Equipment

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This warranty shall be governed by the laws of the State of California without application of rules on conflicts of laws. Any and all disputes arising from this warranty shall be resolved in a court of competent jurisdiction located in Ventura County, Los Angeles County, or Orange County, California. Any term or provision of this Certificate that is invalid or unenforceable in any situation in any jurisdiction shall not affect the validity or enforceability of the remaining terms and provisions hereof, or the validity or enforceability of the offending term or provision in any other situation or in any other jurisdiction.

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If you have concerns or questions regarding this Operator's Manual, please contact us on our website, www.HaasCNC.com. Use the "Contact Us" link and send your comments to the Customer Advocate.

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Customer Satisfaction Policy

Dear Haas Customer,

Your complete satisfaction and goodwill are of the utmost importance to both Haas Automation, Inc. and the Haas distributor (HFO) where you purchased your equipment. Normally, your HFO will rapidly resolve any concerns you have about your sales transaction or the operation of your equipment.

However, if your concerns are not resolved to your complete satisfaction, and you have discussed your concerns with a member of the HFO's management, the General Manager, or the HFO's owner directly, please do the following:

Contact Haas Automation's Customer Service Advocate at 805-988-6980. So that we may resolve your concerns as quickly as possible, please have the following information available when you call:

- Your company name, address, and phone number
- The machine model and serial number
- The HFO name, and the name of your latest contact at the HFO
- The nature of your concern

If you wish to write Haas Automation, please use this address:

Haas Automation, Inc. U.S.A.
2800 Sturgis Road
Oxnard CA 93030
Att: Customer Satisfaction Manager
email: customerservice@HaasCNC.com

Once you contact the Haas Automation Customer Service Center, we will make every effort to work directly with you and your HFO to quickly resolve your concerns. At Haas Automation, we know that a good Customer-Distributor-Manufacturer relationship will help ensure continued success for all concerned.

International:

Haas Automation, Europe
Mercuriusstraat 28, B-1930
Zaventem, Belgium
email: customerservice@HaasCNC.com

Haas Automation, Asia
No. 96 Yi Wei Road 67,
Waigaoqiao FTZ
Shanghai 200131 P.R.C.
email: customerservice@HaasCNC.com



Declaration of Conformity

Product: CNC Lathes (Turning Centers)*

*Including all options factory- or field-installed by a certified Haas Factory Outlet (HFO)

Manufactured By: Haas Automation, Inc.
2800 Sturgis Road, Oxnard CA 93030
805-278-1800

We declare, in sole responsibility, that the above-listed products, to which this declaration refers, comply with the regulations as outlined in the CE directive for Machining Centers:

- Machinery Directive 2006 / 42 / EC
- Electromagnetic Compatibility Directive 2014 / 30 / EU
- Additional Standards:
 - EN 60204-1:2006 / A1:2009
 - EN 614-1:2006+A1:2009
 - EN 894-1:1997+A1:2008
 - EN ISO 13849-1:2015

RoHS2: COMPLIANT (2011/65/EU) by Exemption per producer documentation.

Exempt by:

- a) Large scale stationary industrial tool.
- b) Lead as an alloying element in steel, aluminum, and copper.
- c) Cadmium and its compounds in electrical contacts.

Person authorized to compile technical file:

Jens Thing

Address:

Haas Automation Europe
Mercuriusstraat 28
B-1930 Zaventem
Belgium

USA: Haas Automation certifies this machine to be in compliance with the OSHA and ANSI design and manufacturing standards listed below. Operation of this machine will be compliant with the below-listed standards only as long as the owner and operator continue to follow the operation, maintenance, and training requirements of these standards.

- *OSHA 1910.212 - General Requirements for All Machines*
- *ANSI B11.5-1984 (R1994) Lathes*
- *ANSI B11.19-2010 Performance Criteria for Safeguarding*
- *ANSI B11.22-2002 Safety Requirements for Turning Centers and Automatic Numerically Controlled Turning Machines*
- *ANSI B11.TR3-2000 Risk Assessment and Risk Reduction - A Guideline to Estimate, Evaluate, and Reduce Risks Associated with Machine Tools*

CANADA: As the original equipment manufacturer, we declare that the listed products comply with regulations as outlined in the Pre-Start Health and Safety Reviews Section 7 of Regulation 851 of the Occupational Health and Safety Act Regulations for Industrial Establishments for machine guarding provisions and standards.

Further, this document satisfies the notice-in-writing provision for exemption from Pre-Start inspection for the listed machinery as outlined in the Ontario Health and Safety Guidelines, PSR Guidelines dated November 2016. The PSR Guidelines allow that notice in writing from the original equipment manufacturer declaring conformity to applicable standards is acceptable for the exemption from Pre-Start Health and Safety Review.



All Haas CNC machine tools carry the ETL Listed mark, certifying that they conform to the NFPA 79 Electrical Standard for Industrial Machinery and the Canadian equivalent, CAN/CSA C22.2 No. 73. The ETL Listed and cETL Listed marks are awarded to products that have successfully undergone testing by Intertek Testing Services (ITS), an alternative to Underwriters' Laboratories.



Haas Automation has been assessed for conformance with the provisions set forth by ISO 9001: 2015. Scope of Registration: Design and Manufacture of CNC Machines Tools and Accessories, Sheet Metal Fabrication. The conditions for maintaining this certificate of registration are set forth in ISA's Registration Policies 5.1. This registration is granted subject to the organization maintaining compliance to the noted standard. The validity of this certificate is dependent upon ongoing surveillance audits.

Original Instructions

User's Operator Manual and other Online Resources

This manual is the operation and programming manual that applies to all Haas Lathes.

An English language version of this manual is supplied to all customers and is marked "**Original Instructions**".

For many other areas of the world, there is a translation of this manual marked "**Translation of Original Instructions**".

This manual contains an unsigned version of the EU required "**Declaration Of Conformity**". European customers are provided a signed English version of the Declaration of Conformity with Model Name and Serial Number.

Besides this manual, there is a tremendous amount of additional information online at: www.haascnc.com under the Service section.

Both this manual and the translations of this manual are available online for machines up to approximately 15 years old.

The CNC control of your machine also contains all of this manual in many languages and can be found by passing the **[HELP]** button.

Many machine models come with manual supplement that is also available online.

All machine options also have additional information online.

Maintenance and service information is available online.

The online "**Installation Guide**" contains information and check list for Air & Electrical requirements, Optional Mist Extractor, Shipping Dimensions, weight, Lifting Instructions, foundation and placement, etc.

Guidance on proper coolant and Coolant Maintenance is located in the Operators Manual and Online.

Air and Pneumatic diagrams are located on the inside of the lubrication panel door and CNC control door.

Lubrication, grease, oil and hydraulic fluid types are listed on a decal on the machine's lubrication panel.





How to Use This Manual

To get the maximum benefit of your new Haas machine, read this manual thoroughly and refer to it often. The content of this manual is also available on your machine control under the HELP function.

IMPORTANT: Before you operate the machine, read and understand the Operator's Manual Safety chapter.

Declaration of Warnings

Throughout this manual, important statements are set off from the main text with an icon and an associated signal word: "Danger," "Warning," "Caution," or "Note." The icon and signal word indicate the severity of the condition or situation. Be sure to read these statements and take special care to follow the instructions.

Description	Example
<p>Danger means that there is a condition or situation that will cause death or severe injury if you do not follow the instructions given.</p>	 <p>DANGER: No step. Risk of electrocution, bodily injury, or machine damage. Do not climb or stand on this area.</p>
<p>Warning means that there is a condition or situation that will cause moderate injury if you do not follow the instructions given.</p>	 <p>WARNING: Never put your hands between the tool changer and the spindle head.</p>
<p>Caution means that minor injury or machine damage could occur if you do not follow the instructions given. You may also have to start a procedure over if you do not follow the instructions in a caution statement.</p>	 <p>CAUTION: Power down the machine before you do maintenance tasks.</p>
<p>Note means that the text gives additional information, clarification, or helpful hints.</p>	 <p>NOTE: Follow these guidelines if the machine is equipped with the optional extended Z-clearance table.</p>

Text Conventions Used in this Manual

Description	Text Example
A Code Block text gives program examples.	G00 G90 G54 X0. Y0. ;
A Control Button Reference gives the name of a control key or button that you are to press.	Press [CYCLE START] .
A File Path describes a sequence of file system directories.	<i>Service > Documents and Software >...</i>
A Mode Reference describes a machine mode.	MDI
A Screen Element describes an object on the machine's display that you interact with.	Select the SYSTEM tab.
A System Output describes text that the machine control displays in response to your actions.	PROGRAM END
A User Input describes text that you should enter into the machine control.	G04 P1. ;
A Variable n indicates a range of non-negative integers from 0 to 9.	Dnn represents D00 through D99.

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Chapter 1: Introduction

1.1 Overview

This operator's manual supplement describes the unique features and functions of the Chucker Lathe.

Refer to your Lathe Operator's Manual for control operation, programming, and other general Lathe information.

Specific details about the Chucker Lathe itself, including information that is beyond the scope of this document, can be found at www.HaasCNC.com.

1.2 Chucker Lathe Features

The following figures show some of the standard and optional features of your Haas lathe.

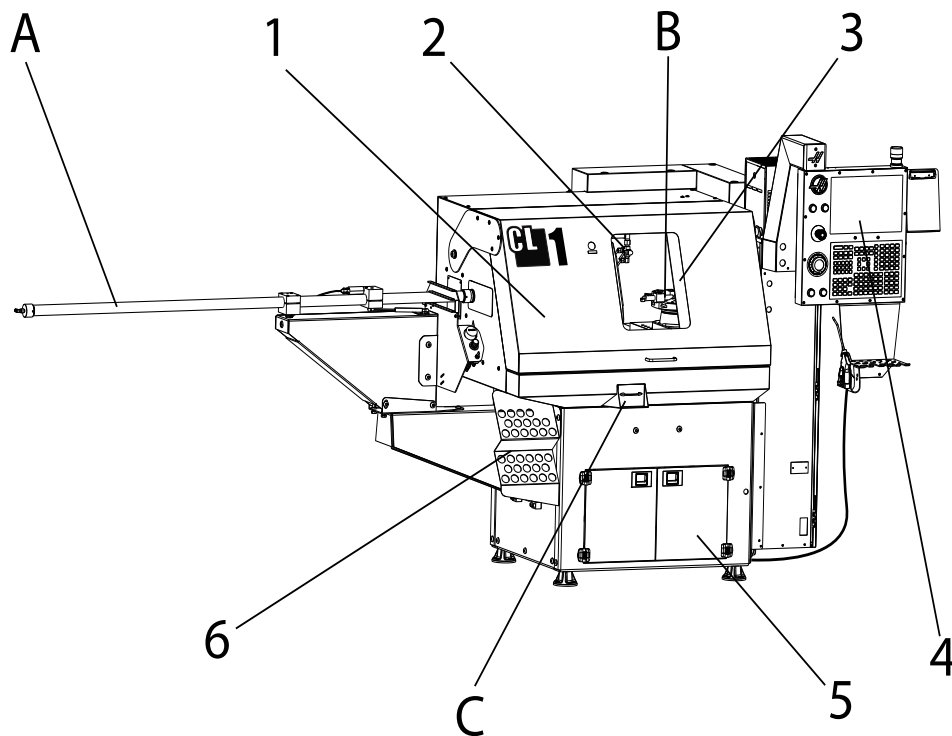


NOTE:

These figures are representative only; your machine's appearance may vary depending on the model and installed options.

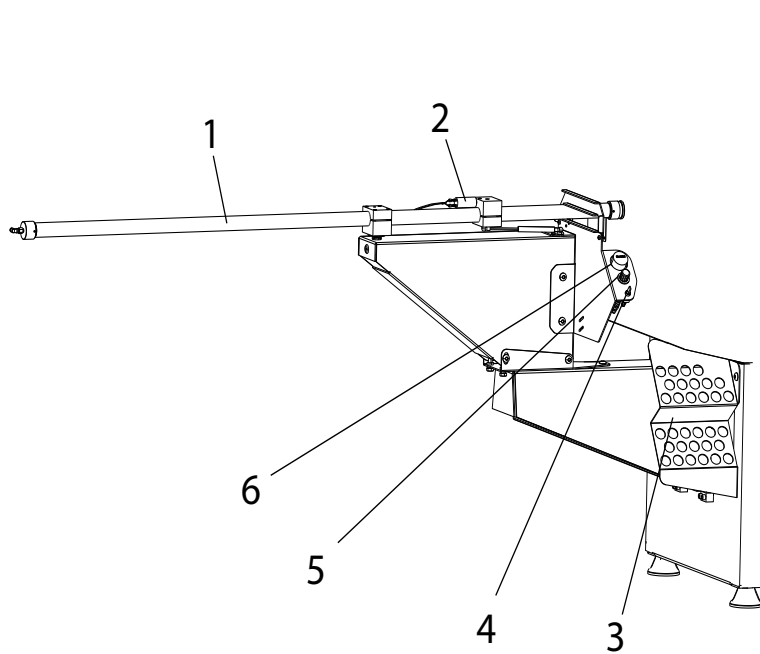
Chucker Lathe Features

T1.1: Chucker Lathe Features (CL-1 shown front view)



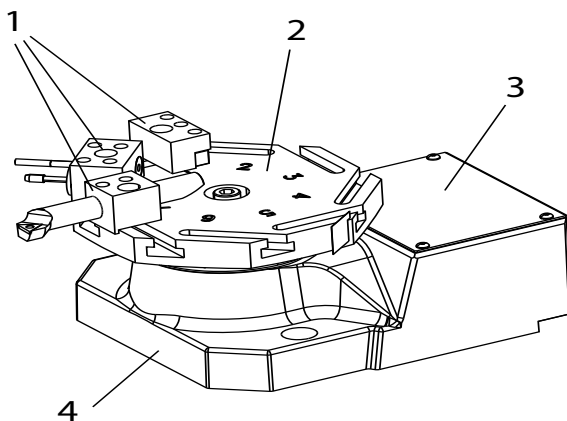
- | | |
|---|-----------------------------|
| 1. Operator Door | A. Bar Pusher (optional) |
| 2. Coolant Nozzles | B. ATT8 Tool Changer |
| 3. Auto Door (optional) / Manual Door (std) | C. Parts Catcher (optional) |
| 4. Control Pendant | |
| 5. Coolant Tank/Pump (optional) | |
| 6. Collet Holder | |

T1.2: Detail A - Bar Pusher



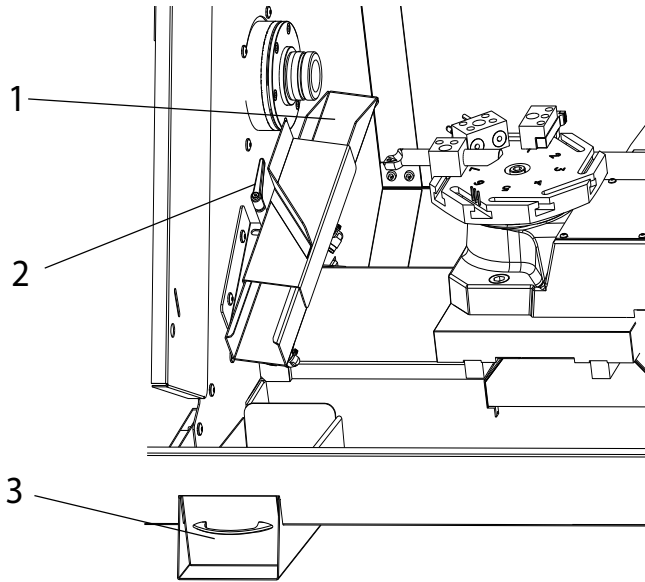
1. Bar Pusher Tube
2. End of Bar Pressure Switch
3. Collet Holder
4. Manual Feed Switch
5. Regulator
6. Air Pressure Gauge

T1.3: Detail B - ATT8 Tool Changer



1. Tool Holders
2. 8 Station Turret
3. Turret Motor Cover
4. ATT8 Mounting Base

T1.4: Detail C - Parts Catcher



- 1. Part Chute
- 2. Side-to-Side Adjustment Handle
- 3. Parts Tray

Chapter 2: Operation

2.1 Introduction

You will find the majority of the information on how to operate your Chucker Lathe in the Lathe Operator's Manual. Operational differences are described in the following sections:

- Machine Power-On
- ATT8 Turret Operation
- Bar Pusher Operation
- Parts Catcher Operation

2.2 Moving the Chucker Lathe

**WARNING:**

The Chucker Lathe has a high center of gravity. Move the machine slowly and carefully to prevent it from falling over.

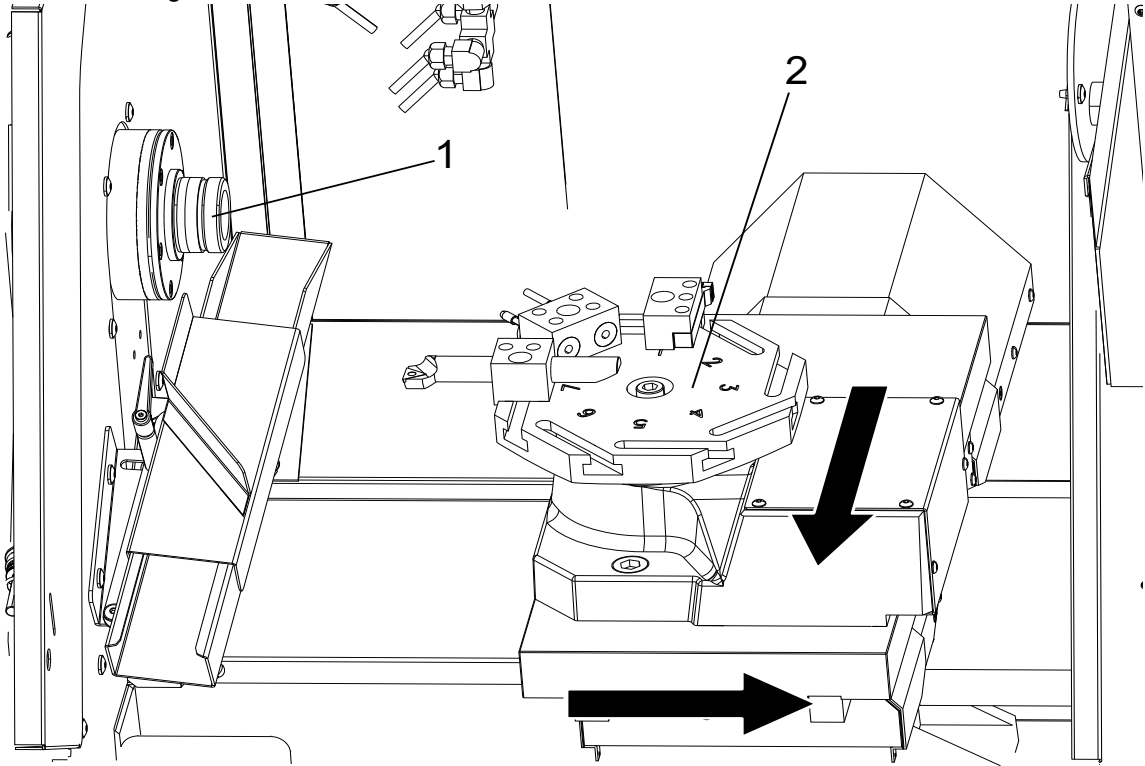
1. You will need a pallet jack that has at least 1500 lb capacity and forks that will fit in the space between the Chucker Lathe's leveling pads (22.5", 571 mm).
2. Lift the Chucker Lathe from the control cabinet side.
3. Carefully move the Chucker Lathe to its operating location, then lower it onto the leveling pads.
4. Make sure there is equal tension on each leveling screws.

2.3 Machine Power-On

Follow this procedure to turn on a Chucker Lathe for the first time.

Before you do this procedure, make sure that possible crash areas, such as the spindle, and tool changer are clear and that all shipping brackets have been removed.

F2.1: Power-Up X/Z Axis Home Movement and Possible Crash Areas: [1] spindle, [2] tool changer



1. Press and hold **[POWER ON]** until you see the Haas logo on the screen. After a self-test and boot sequence, the display shows the startup screen. The startup screen gives basic instructions to start the machine. Press **[CANCEL]** to dismiss the screen. You can also press **[F1]** to disable it.
2. Turn **[EMERGENCY STOP]** clockwise to reset it.
3. Press **[RESET]** to clear the startup alarms. If you cannot clear an alarm, the machine may need service. Contact your Haas Factory Outlet (HFO) for assistance.
4. Close the doors.



WARNING:

*Before you do the next step, remember that automatic motion begins immediately when you press **[POWER UP/RESTART]**. Make sure the motion path is clear. Stay away from the spindle, tool changer.*

5. Press **[POWER UP/RESTART]**.



The axes move slowly until the machine finds the home switch for each axis. This establishes the machine home position.

The control is now in **OPERATION:MEM** mode.

2.4 Workholding

Installing a Collet

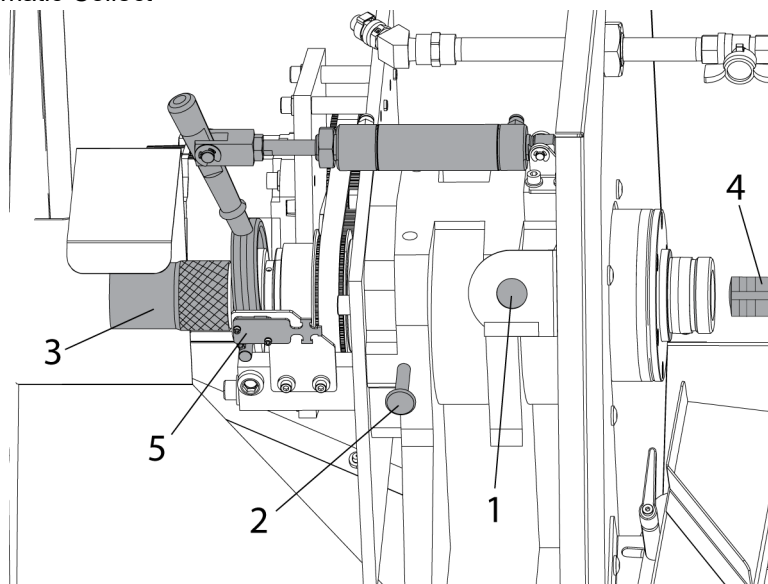


NOTE:

The numbers in brackets in the following set of instructions refer to the numbered parts listed in the following illustration.

F2.2:

Pneumatic Collect



1. Open the large operator door.
2. Press the CHUCK button [1] to unclamp the collet. The message “UNCLAMPED” appears on the control screen.

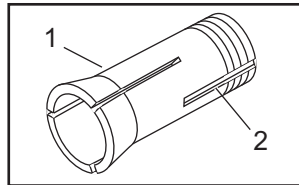
3. Push on the spindle lock pin [2] and turn the spindle by hand until the pin engages and the spindle can not turn.
4. Turn the knurled knob [3] at the end of the drawbar assembly clockwise until you can insert the collet [4] into the spindle nose. The spindle contains a collet anti-rotation pin to align the collet for installation. Turn the collet in the spindle head until you feel the anti-rotation pin engage with the pin slot on the collet.



NOTE:

Make sure the collet is correctly aligned with the anti-rotation pin. An incorrectly aligned collet can damage the spindle and the collet.

F2.3: Collet Anti-rotation Pin: [1] Collet, [2] Collet anti-rotation pin slot.



5. Turn the knurled knob clockwise to draw the collet into the spindle. You will feel the draw bar tighten on the collet threads.

Inserting a Workpiece

1. Put a part into the open collet.
2. Turn the knurled knob clockwise until the part is tight in the collet, then loosen the knob about one half-turn.
3. Press the CHUCK button. Make sure that the part is clamped in the collet.



WARNING:

If the part is in place, but the collet and the part are not tight, do not operate the spindle.

4. Next, find the correct clamping force for your stock:
 - a) Press the CHUCK button to unclamp the collet ('UNCLAMPED' will be displayed on the screen).
 - b) Turn the knurled knob slightly; clockwise to tighten, counterclockwise to loosen.
 - c) Press the CHUCK button to clamp the collet. The part is properly clamped when the draw bar arm hesitates during clamping, then continues to the end of the piston stroke. The mechanism makes a distinct sound when it clamps.

**WARNING:**

If the arm does not go to full stroke, the collet has not properly clamped the part. The machine will not start the spindle until the micro switch [5] is tripped when the collet is clamped.

**WARNING:**

If the arm does not hesitate while the part is clamped, the part will not be clamped tightly and it may spin when the tool makes contact. The part may also come out, causing damage or injury.

5. Do a couple of test clamps to make sure the collet is set at the correct tension.

**NOTE:**

A standard 5C collet has a maximum adjustment range of only around 0.010". Part diameter variation or bar stock variations may therefore cause improper clamping. Good machining practices include regular inspection of bar stock diameter and/or adjustment of the collet.

6. Make sure to disengage the spindle lock pin before you try to operate the spindle.

Removing a Collet

1. Open the large operator door and press the CHUCK button to unclamp the collet.
2. Push on the pin and turn the spindle by hand until the pin engages and the spindle can not turn.
3. Turn the knurled knob counterclockwise to begin loosening the collet. If there is bar stock in the collet, remove it from the collet as soon as it is loose enough.
4. Keep turning the knurled knob until the collet is loose, then remove the collet from the spindle.

Collet Use Tips

Some collets hold certain materials better than others, so make sure to choose the proper collet for the application (i.e., serrated vs. smooth).

Standard collets pull back while they clamp material. If the part outer diameter (OD) varies, pullback (Z-distance) will vary.

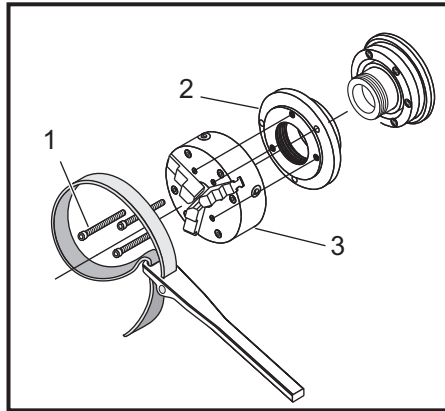
Because of their design, dead length (exact length) collets position parts more consistently.

**NOTE:**

Do not try to adjust the length of the draw bar arm air cylinder. Contact Haas Service for adjustment. If roller bearings spin while the spindle turns, contact Haas Service.

Installing a Chuck

1. Engage the spindle lock pin while you do this procedure.
2. Attach the chuck to its back plate with the Socket Head Cap Screws (SHCS) supplied in the kit. Torque the SHCS to 25 ft-lbs.
3. Installing a Chuck: [1] Socket-head cap screw (SCHS), [2] Face plate, [3] Chuck.



4. Gently turn the assembly onto the spindle nose until it seats against the spindle shoulder. Tighten the chuck with a strap wrench to approximately 70 ft-lbs.

Chuck Alignment Follow this procedure to eliminate runout in the chuck.

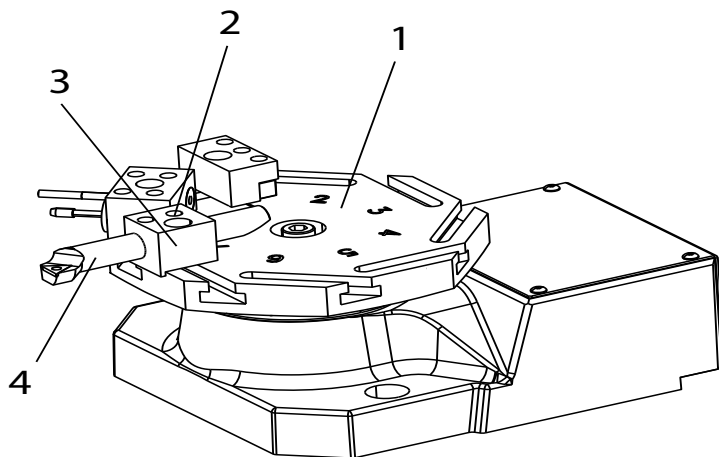
1. Place a precision test bar in the chuck.
2. Set a dial indicator against the test bar and rotate the chuck.
3. Use the chuck adjustment screws to align the chuck until the dial indicator reads zero.

Chuck Removal

1. Engage the spindle lock pin.
2. Use a strap wrench to unscrew the chuck. To avoid damaging the chuck, do not pry against the chuck jaws.

2.5 ATT8 Turret Operation

F2.4: ATT8 Turret Detail: [1] Turret, [2] tool-retention screws, [3] tool holder, [4] tool,



NOTE:

The ATT8 has a 1/2 inch turning tool height from the top of the turret.

To set up the ATT8 turret:



1. **CAUTION:** If you use the air gun to remove chips and coolant from the turret, do not blow air into the ring cover at the base of the turret. Compressed air can force chips and coolant into the mechanism. This damages the unit.
2. Loosen the tool-retention screws [2]. Put the tool [4] into the tool holder [3] and tighten the tool-retention screws [2].

2.5.1 ATT8 Operational Test

Use this program to test the tool changer:

1. Enter the following code:

␣

```
T1 ;  
T2 ;  
T3 ;  
T4 ;  
T5 ;  
T6 ;  
T7 ;  
T8 ;  
T7 ;  
T6 ;  
T5 ;  
T4 ;  
T3 ;  
T2 ;  
M99 ;  
;  
;  
;  
%
```



NOTE:

Use T-address codes to operate the tool changer. For example, T303 rotates the tool changer to the number 3 tool position, and uses offset 3. Add the T-address code to the program like the other lines of code. Refer to the Lathe Operator's manual for more information on the T-codes and tool offsets.

2. Press **[CYCLE START]**.

2.5.2 ATT8 Tool Change Recovery

To recover the tool changer from an incomplete tool change:

1. Press **[MDI DNC]**.



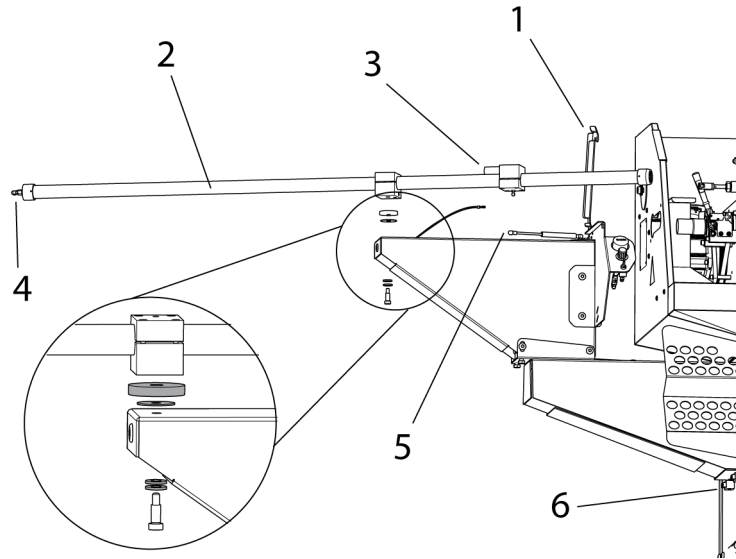
CAUTION:

*The tool changer moves rapidly when you push **[TURRET FWD]** or **[TURRET REV]**. To prevent injury, give the turret sufficient clearance.*

2. Press **[TURRET FWD]** or **[TURRET REV]**.

2.6 Bar Pusher Installation

F2.5: Bar Pusher Installation

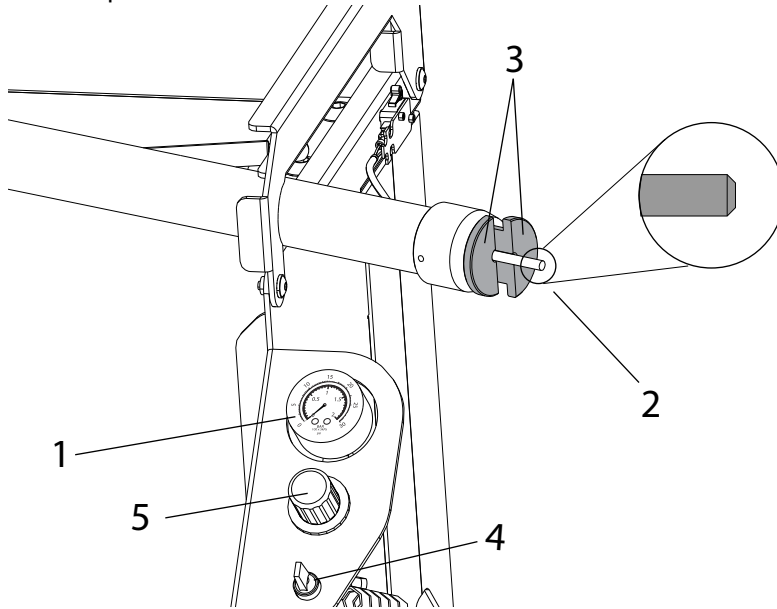


To install the bar pusher:

1. Open the bar retainer [1] on the pusher mount.
2. Place the bar pusher tube [2] on the mount and install the hardware as illustrated.
3. Connect the wire to the EOB pressure switch [3]. Connect the 1/4" air hose to the end of the pusher tube [4].
4. Connect the strut [5] to the pusher tube.
5. Rotate the pusher tube [2] into the Run position and secure the bar retainer [1].

2.6.1 Bar Pusher Setup - Load Bars

F2.6: Load the bar pusher



NOTE:

The bar pusher can only be used with a collet. Do not use a chuck with the pusher option.

To set up the bar pusher:

1. Check the bar pusher air pressure gauge [1], it should read 0 PSI/BAR. If not press **[RESET]** on the control.
2. With the operator door open, rotate the bar pusher tube to the load position.
3. Insert one piece of bar stock into the pusher tube [2] and install a two piece support collar [3] in the end of the pusher tube.

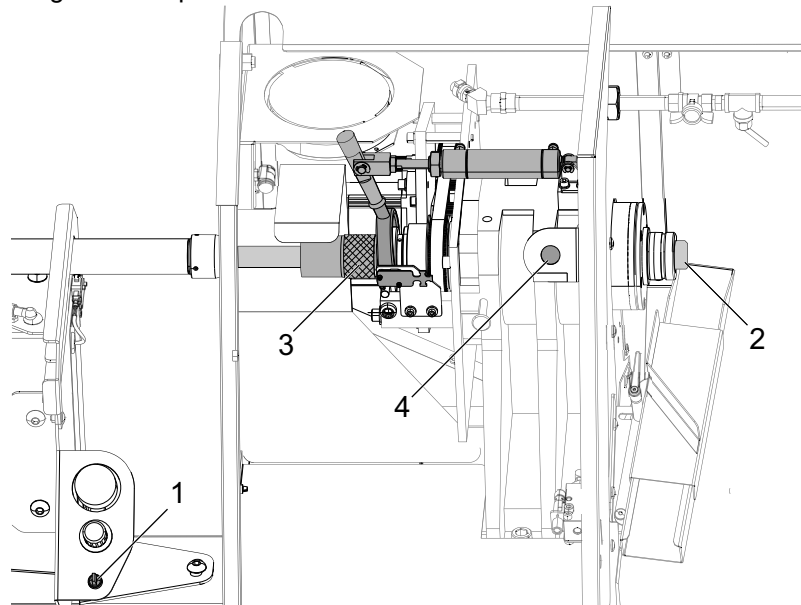


NOTE:

The bar stock should have a slight chamfer on both ends to prevent binding and inconsistent push lengths. For bars over 0.750" add a chamfer to make sure they fit correctly on the cone.

4. Manually feed the bar using the manual feed switch [4]. Adjust the pusher air regulator [5] until the bar pushes out smoothly. Larger bar stock will require more air pressure. Stop feeding the bar when adjusted and push it back into the pusher tube.

F2.7: Adjusting the Clamp Force



5. Rotate the bar pusher tube back to the run position.
 - a) Using the manual feed switch [1] manually feed the bar stock into the collet to the position where it will be cut off [2].
 - b) Turn the knurled knob clockwise [3] until the part is tight in the collet, then loosen the knob about one half-turn.
 - c) Press the clamp button to clamp the collet [4]. The part is properly clamped when the draw bar arm hesitates during clamping, then continues to the end of the piston stroke. The mechanism makes a distinct sound when it clamps.



WARNING:

If the part is in place, but the collet and the part are not tight, do not operate the spindle.



WARNING:

If the arm does not go to full stroke, the collet has not properly clamped the part. The machine will not start the spindle until the micro switch is tripped when the collet is clamped.



WARNING:

If the arm does not hesitate while the part is clamped, the part will not be clamped tightly and it may spin when the tool makes contact. The part may also come out, causing damage or injury.

2.6.2 Bar Pusher - Setup Screen

F2.8: Bar Pusher Operation Values Setup Display

The screenshot shows the 'Bar Pusher' setup screen. At the top, there are tabs for 'Devices', 'Timers', 'Macro Vars', 'Active Codes', 'ATM', 'Calculator', and 'Media'. Below these is a 'Mechanisms' tab with 'Bar Pusher' selected. A diagram on the left shows a bar with dimensions A, B, C, and D. A table below the diagram lists the following values:

	Bar Pusher Operation Values	Value	Unit
2	Push Length (D)	1.3500	IN
3	Parts Counter (0 = Unlimited)	0	
4	Push Delay	2.0	Sec
5	Turn Bar Push Air ON at Cycle Start	Yes	
6	Bar Stop Approach Distance	0.0500	IN
Bar Pusher G105 Setup Procedure			
	Set up 1 : Set Bar Stop Tool [F2]	6	
	Set up 2: Set Bar Stop Tool Position X [F3]	-16.3358	IN

Enter push length (D) = Cutoff Width (A) + Part Length (B) + Facing Allowance (C)

1. Set setting 336 Bar Feeder Enable to **ON**. Press the **[CURRENT COMMANDS]** button. Navigate to the Bar Pusher tab [1].
2. Push Length (D) [2]. Enter the part length plus cut off width and facing allowance.
3. Parts Counter (0 = Unlimited) [3]. Enter the Maximum Number of Parts. Set to 0 to run unlimited number of parts.
4. Push Delay [4]. Enter the time in seconds for the air push delay. This setting controls the length of time the machine waits for the bar pusher to pressurize before advancing the bar.
5. Bar Push Air ON at Cycle Start [5]. Press **[RIGHT]** arrow to select Yes or No from the drop down menu. This feature when set to YES will keep constant air pressure to the pusher to support the part.

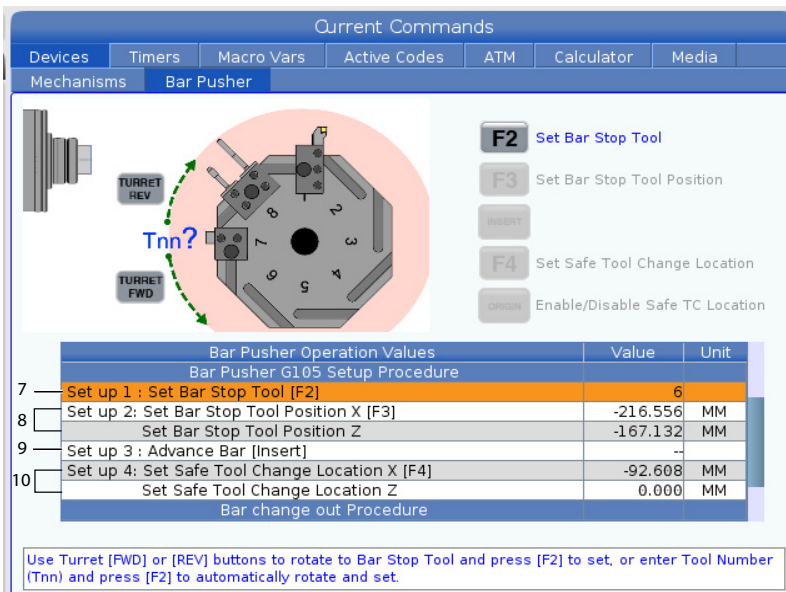


NOTE:

Smaller diameter material should have Bar Push Air On at Cycle Start setting set to Yes to prevent bar whip while running.

6. Bar Stop Approach Distance [6]. This setting is used for positioning the turret at the start and end of the bar feed operation.

F2.9: Bar Pusher G105 Setup Procedure Display



Bar Pusher Operation Values		Value	Unit
Bar Pusher G105 Setup Procedure			
7	Set up 1 : Set Bar Stop Tool [F2]	6	
8	Set up 2: Set Bar Stop Tool Position X [F3]	-216.556	MM
	Set Bar Stop Tool Position Z	-167.132	MM
9	Set up 3 : Advance Bar [Insert]	--	
10	Set up 4: Set Safe Tool Change Location X [F4]	-92.608	MM
	Set Safe Tool Change Location Z	0.000	MM
Bar change out Procedure			

Use Turret [FWD] or [REV] buttons to rotate to Bar Stop Tool and press [F2] to set, or enter Tool Number (Tnn) and press [F2] to automatically rotate and set.

7. Select a tool with a flat edge that you want to use for the bar pusher stop. Handle jog the tool until the X and Z are even with the cutoff position. [7].

Set up 1: Set Bar Stop Tool [F2] This setting sets the bar stop tool. Use the turret **[FWD]** or **[REV]** buttons to rotate to the Bar Stop Tool and press **[F2]** to set, or enter the tool number (Tnn) and press **[F2]** to automatically rotate and set.

8. Set up 2: Set Bar Stop tool Position X [F3], Set Bar Stop Tool Position Z [8]. Press the **[HANDLE SCROLL]** button to handle jog the turret. Handle Jog the Bar Stop tool to the Z part-off position and press **[F3]** to save the X and Z positions.
9. Set up 3: Advance Bar [Insert] [9]. This setting advances the bar. This setting is used to advance the bar. Press **[INSERT]** to perform a G105 and advance the bar to the Part Zero (Work Offset) position.



NOTE:

*The stock must be manually pushed back to the cut off position before pressing **[INSERT]** again.*

10. Set up 4: Set Safe Tool Change Location X [F4], Set Safe Tool Change Location Z. Handle Jog the turret to a safe tool change location. Press **[F4]** to save the X and Z positions.

2.6.3 Bar Pusher Operation

F2.10: Bar Pusher Program Sample

```
Operation: MEM | CPU: 6.00% | 02:02:43
MEM Memory/O00010.nc NO
O00010;
Z-0.95 ;
N102 X0.4 ;
;
G00 G53 X-18.6 Z-3. ;
(PART-OFF) ;
T505 ;
G50 S4000 ;
S4000 M03 ;
G00 G54 X0.4 Z0.1 ;
M08 ;
G01 Z-0.87 F0.01 ;
M36 ;
G04 P1. ;
X-0.025 F0.002 ;
M37 ;
G00 X0.4 Z0.1 ;
;
G00 G53 X-18.6 Z-3. ;
M01 ;
;
;
G105 (BARFEED) ;
;
M99 ;
```

To operate the bar pusher:

1. After the bar pusher has been set up, the push is activated by a G105 command in a program. Above is an example of a bar push after a part cutoff at the end of a program.
2. At the end of the pusher stroke the piston will push out the collars and activate the EOB pressure switch.

2.6.4 Bar Pusher - Change Bars

F2.11: Procedure to Change Out a Bar - Remove Old Bar Display

1

Current Commands

Devices Timers Macro Vars Active Codes ATM Calculator Media

Mechanisms Bar Pusher

If the remaining bar is short, remove it through the front of the spindle.
If the remaining bar is too long, first retract the bar push rod from the spindle, and then swing the bar pusher to the load position. Manually push the remaining bar stock back through the spindle and remove it.

DELETE Remove Old Bar
INSERT Advance Bar

Bar Pusher Operation Values			Value	Unit
Set Bar Stop Tool Position Z			-167.132	MM
Set up 3 : Advance Bar [Insert]			--	
Set up 4: Set Safe Tool Change Location X [F4]			Inactive	MM
Set Safe Tool Change Location Z			Inactive	MM
Procedure to Change Out a Bar				
2	1: Remove old Bar [Delete]		--	
	2: Load new Bar		--	
	3: Advance Bar [Insert]		--	

Press [Delete] to turn off the air, and follow the instructions above to remove the old bar.

1. Press the **[CURRENT COMMANDS]** button. Navigate to the Bar Pusher tab. Press **[PAGE DOWN]** until you find Procedure to Change Out a Bar settings.
2. 1: Remove old Bar [Delete] [1]. Use this setting to remove a bar. Press **[DELETE]** to turn off the air. Follow the instructions on the screen to remove the old bar.

F2.12: Procedure to Change Out a Bar - Load new Bar Display

3

Current Commands

Devices Timers Macro Vars Active Codes ATM Calculator Media

Mechanisms Bar Pusher

Retract the bar push rod from the spindle, if necessary, and swing the bar pusher into the load position. Insert the new bar stock until it contacts the bar pusher face.

Swing the bar pusher back to the feed position and use the air pressure on/off switch mounted on the bar pusher to push the bar into the spindle until the bar is flush or even with the collet face.

Press the button to close the collet and clamp the bar.

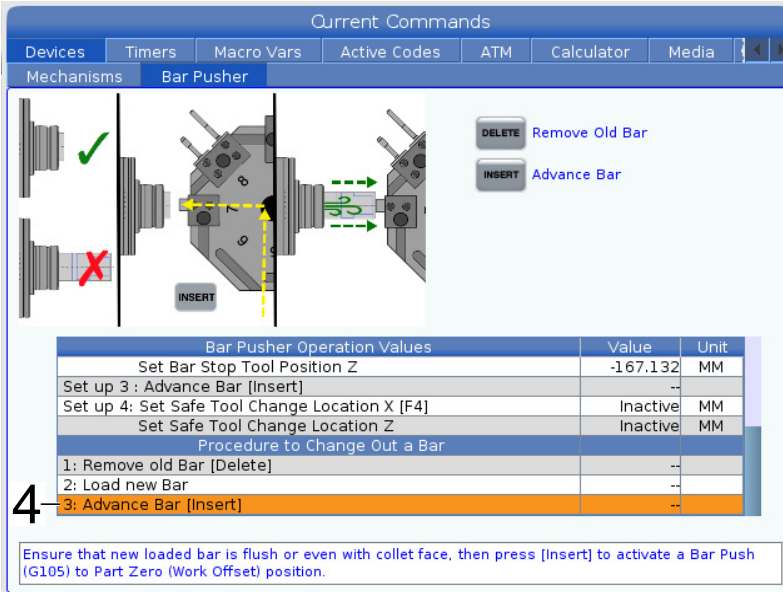
DELETE Remove Old Bar
INSERT Advance Bar

Bar Pusher Operation Values			Value	Unit
Set Bar Stop Tool Position Z			-167.132	MM
Set up 3 : Advance Bar [Insert]			--	
Set up 4: Set Safe Tool Change Location X [F4]			Inactive	MM
Set Safe Tool Change Location Z			Inactive	MM
Procedure to Change Out a Bar				
	1: Remove old Bar [Delete]		--	
	2: Load new Bar		--	
	3: Advance Bar [Insert]		--	

Follow the instructions above to load a new bar.

- 2: Load new Bar [2]. Use this setting to load a new bar. Follow the instructions on the screen to load a new bar.

F2.13: Procedure to Change Out a Bar - Advance Bar Display



Bar Pusher Operation Values		
	Value	Unit
Set Bar Stop Tool Position Z	-167.132	MM
Set up 3 : Advance Bar [Insert]	--	--
Set up 4: Set Safe Tool Change Location X [F4]	Inactive	MM
Set Safe Tool Change Location Z	Inactive	MM
Procedure to Change Out a Bar		
1: Remove old Bar [Delete]	--	--
2: Load new Bar	--	--
3: Advance Bar [Insert]	--	--

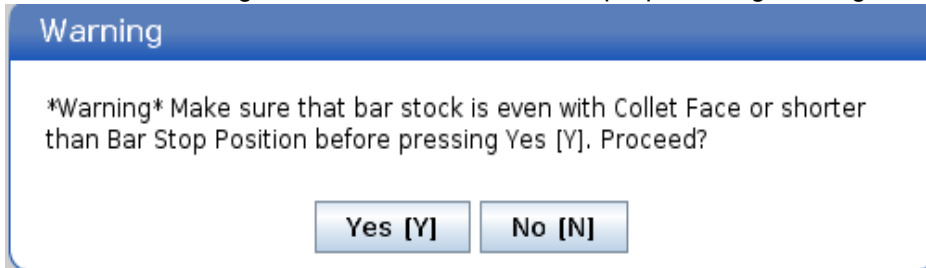
4

Ensure that new loaded bar is flush or even with collet face, then press [Insert] to activate a Bar Push (G105) to Part Zero (Work Offset) position.

- 3: Advance Bar [Insert] [3]. This setting is used to advance the bar. Press **[INSERT]** to perform a G105 and advance the bar to the Part Zero (Work Offset) position.

A warning pop up box will appear after you press **[INSERT]**.

F2.14: Procedure to Change Out a Bar - Advance Bar Pop Up Warning Message



Warning

Warning Make sure that bar stock is even with Collet Face or shorter than Bar Stop Position before pressing Yes [Y]. Proceed?

Yes [Y] No [N]

Press **[Y]** to proceed or **[N]** to cancel.

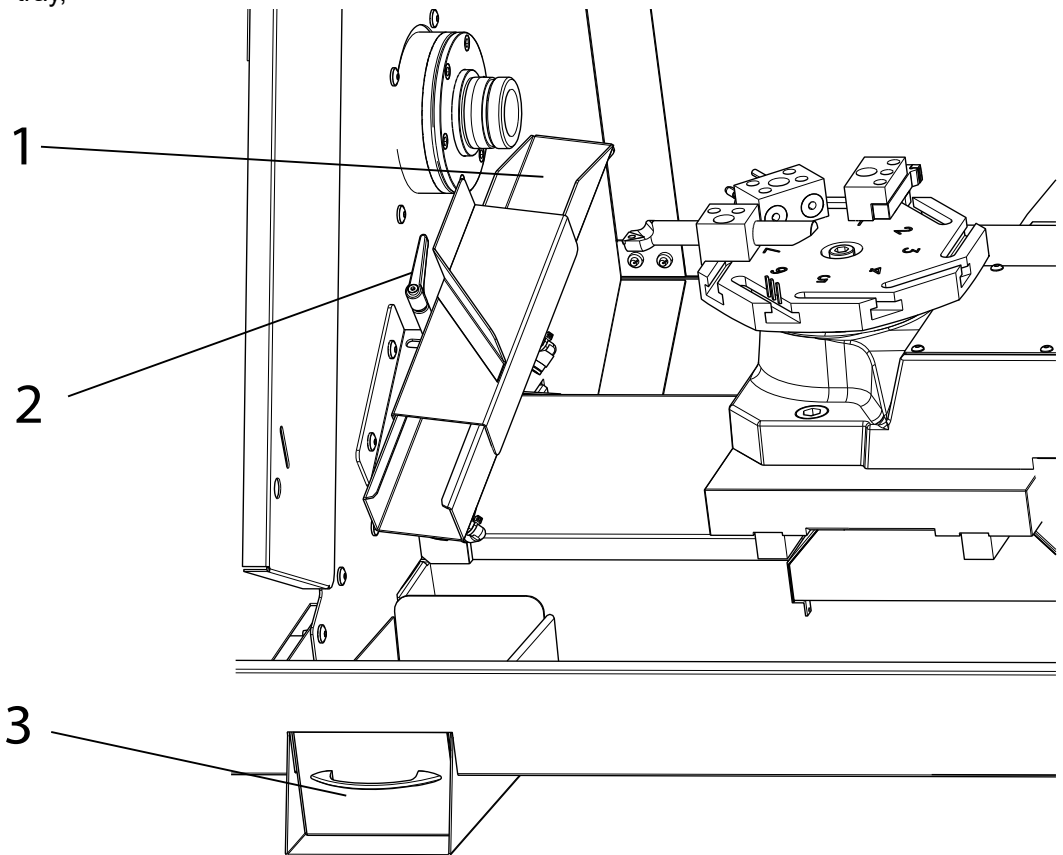


NOTE:

*The stock must be manually pushed back to the cut off position before pressing **[INSERT]** again.*

2.7 Chucker Lathe Parts Catcher Setup

F2.15: Chucker Lathe Parts Catcher: [1] part chute, [2] side-to-side adjustment clamp [3] parts tray,



To setup the parts catcher:

1. Extend the stock out of the collet to the length of the finished part. Clamp the collet.
2. Command an **M36** to extend the part chute [1]. Loosen the adjustment clamp [2] and position the part chute as needed to catch the stock.
3. Press **[RESET]** to retract the parts chute.

2.7.1 Chucker Lathe Parts Catcher Operation

To operate the parts catcher:

1. The parts catcher is activated with an **M36** and is deactivated with an **M37**.
2. With the parts catcher setup, use an **M36** while the part is being cut off.

F2.16: This is an example program using the parts catcher during a part off.

```
ACTIVE PROGRAM - 000213
;
;
G00 G53 X-18.6 Z-3. ;
M01 ;
;
;
N2 ;
G00 G53 X-18.6 Z-3. ;
(PAART OFF) ;
T505 ;
G50 S4000 ;
S4000 M03 ;
G00 G54 X0.4 Z0.1 ;
M08 ;
G01 Z-0.87 F0.01 ;
M36 (PART CATCHER ON) ;
G04 P1. ;
X-0.025 F0.002 ;
M37 (PART CATCHER OFF) ;
G00 X0.4 Z0.1 ;
;
G00 G53 X-18.6 Z-3. ;
M01 ;
;
;
;
G105 (BARPUSH) ;
;
M30 ;
```

3. The cutoff parts will fall into the part tray. Pull out the tray and empty the parts as needed.

Chapter 3: Maintenance

3.1 Introduction

Regular maintenance is important to make sure that your machine has a long and productive life with minimal downtime. The most common maintenance tasks are simple and you can do them yourself. You can also ask your HFO about their comprehensive preventive maintenance program for complex maintenance tasks.

3.2 CL Lubrication

The linear guides and ball screws are automatically lubricated. The Chucker Lathe uses the Haas Liquid Grease system. Refill the liquid grease canister as needed.

Manually lubricate the bar pusher piston bi-monthly. Use the manual feed switch to push the piston out of the pusher tube. Wipe off the piston with a clean cloth. Apply a thick layer of grease (SHC460 or Mobil 1 Synthetic grease) to the piston and insert it into the pusher tube.

Lubricate the collet and spindle contact points with a light coat of molybdenum grease (Haas p/n 99-0007 or Mobil p/n CM-P) once a month. Make sure collets are in good condition and free from burrs. Following this procedure will extend the life of the spindle/collet, and help prevent sticking.

The current maintenance schedule and recommended type of lubricant is found in the Haas Resource Center on the Haas website. diy.haascnc.com

3.3 Troubleshooting

T3.1: Symptoms

Symptom	Possible Cause	Corrective Action
Part push-back	Drawbar adjusted too loose	Re-adjust drawbar clamp position.
	Low air pressure will reduce the available clamp force.	Correct low pressure condition. Pressure should be above 80 psi. 100 psi is recommended.
	Excessive thrust loads	Utilizing a collet stop will prevent push-back. The collet stop is not an option when using the bar pusher. Do not exceed 3,000 RPM.
	The collet is not correct for the material.	Verify the collet is properly sized for the bar stock per the manufacturers recommendations. Use serrated collets when needed.
Bar pusher vibration	Excessive spindle speed.	Reduce spindle speed to 3,000 RPM or less. Larger bar stock is more susceptible to vibrations at speed.
	Bar stock chamfer not centered.	Center chamfer both ends of the bar stock.
	Bar pusher support collars are worn.	Replace worn out support collars.
	G105 bar pusher air option is off when it should be on.	Maintain air pressure with G105 Option Air "Yes" on the setup page.
	Bar pusher air pressure too high or too low.	Adjust Bar pusher air pressure to meet bar stock size. Larger bars 15-20 psi, smaller bars 10-15 psi.
Collet sticking and/or insufficient clamping pressure.	Excessive spindle/collet friction	Lubricate spindle and collet interface with a Molybdenum disulfide grease.

Symptom	Possible Cause	Corrective Action
Chips clogging coolant nozzles.	The coolant level is low.	Remove chips from nozzle and adjacent plumbing and always maintain a coolant level in the tank above 2". Coolant levels lower than 2" will allow chips to enter the pump.
Chips not flowing into the chip bin.	Build-up of stringy chips.	Review tooling and feedrates to eliminate stringy chips.

3.4 More Information Online

For updated and supplemental information, including tips, tricks, maintenance procedures, and more, visit the Haas Service page at www.HaasCNC.com. You can also scan the code below with your mobile device to go directly to the Haas Service page:



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