



## HAAS SERVICE AND OPERATOR MANUAL ARCHIVE

### Haas Tailstock Operators Manual 96-5000 RevW English June 2009

- This content is for illustrative purposes.
- Historic machine Service Manuals are posted here to provide information for Haas machine owners.
- Publications are intended for use only with machines built at the time of original publication.
- As machine designs change the content of these publications can become obsolete.
- You should not do mechanical or electrical machine repairs or service procedures unless you are qualified and knowledgeable about the processes.
- Only authorized personnel with the proper training and certification should do many repair procedures.

**WARNING: Some mechanical and electrical service procedures can be extremely dangerous or life-threatening. Know your skill level and abilities.**

**All information herein is provided as a courtesy for Haas machine owners for reference and illustrative purposes only. Haas Automation cannot be held responsible for repairs you perform. Only those services and repairs that are provided by authorized Haas Factory Outlet distributors are guaranteed.**

**Only an authorized Haas Factory Outlet distributor should service or repair a Haas machine that is protected by the original factory warranty. Servicing by any other party automatically voids the factory warranty.**



# Haas Tailstock Operator's Manual

JUNE 2009

**HAAS AUTOMATION INC. • 2800 STURGIS ROAD • OXNARD, CA 93030**

**TEL. 888-817-4227 FAX. 805-278-8561**

**[www.HaasCNC.com](http://www.HaasCNC.com)**





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## HAAS AUTOMATION, INC. LIMITED WARRANTY CERTIFICATE

Covering Haas Automation, Inc. CNC Equipment  
Effective January 1, 2009

Haas Automation Inc. ("Haas" or "Manufacturer") provides a limited warranty to all new mills, turning centers and rotary machines (collectively, "CNC Machines") and its components (except those listed below under Limits and Exclusions of Warranty) ("Components") that are manufactured by Haas and sold by Haas or its authorized distributors as set forth in this Certificate. The warranty set forth in this Certificate is a limited warranty and it is the only warranty by Manufacturer and is subject to the terms and conditions of this Certificate.

### Limited Warranty Coverage

Each CNC Machine and its Components (collectively, "Haas Products") are warranted by Manufacturer against defects in material and workmanship. This warranty is provided only to the final purchaser and end-user of the CNC Machine (a "Customer"). The period of this limited warranty is one (1) year, except Toolroom Mills and Mini-Mills have a six (6) month warranty period. The warranty period commences on the date the CNC Machine is delivered to the Customer's facility. Customer may purchase an extension of the warranty period from Haas or an authorized Haas distributor (a "Warranty Extension").

### Repair or Replacement Only

Manufacturer's sole liability, and customer's exclusive remedy, with respect to any and all Haas products shall be limited to repairing or replacing, at the discretion of manufacturer, the defective Haas product under this warranty.

### Disclaimer of Warranty

THIS WARRANTY IS MANUFACTURER'S SOLE AND EXCLUSIVE WARRANTY AND IS IN LIEU OF ALL OTHER WARRANTIES OF WHATEVER KIND OR NATURE, EXPRESS OR IMPLIED, WRITTEN OR ORAL, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY, IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, OR OTHER WARRANTY OF QUALITY OR PERFORMANCE OR NONINFRINGEMENT. ALL SUCH OTHER WARRANTIES OF WHATEVER KIND ARE HEREBY DISCLAIMED BY MANUFACTURER AND WAIVED BY CUSTOMER.

### Limits and Exclusions of Warranty

Components subject to wear during normal use and over time, including, but not limited to, paint, window finish and condition, light bulbs, seals, chip removal system, etc., are excluded from this warranty. Manufacturer's specified maintenance procedures must be adhered to and recorded in order to maintain this warranty. This warranty is void if Manufacturer determines that (i) any Haas Product was subjected to mishandling, misuse, abuse, neglect, accident, improper installation, improper maintenance, improper storage, or improper operation or application, (ii) any Haas Product was improperly repaired or serviced by Customer, an unauthorized service technician, or other unauthorized person, (iii) Customer or any person makes or attempts to make any modification to any Haas Product without the prior written authorization of Manufacturer, and/or (iv) any Haas Product was used for any non-commercial use (such as personal or household use). This warranty does not cover damage or defect due to an external influence or matters beyond the reasonable control of Manufacturer, including, but not limited to, theft, vandalism, fire, weather condition (such as rain, flood, wind, lightning, or earthquake), or acts of war or terrorism.

Without limiting the generality of any of the exclusions or limitations described in this Certificate, this warranty does not include any warranty that any Haas Product will meet any person's production specifications or other requirements or that operation of any Haas Product will be uninterrupted or error-free. Manufacturer assumes no responsibility with respect to the use of



any Haas Product by any person, and Manufacturer shall not incur any liability to any person for any failure in design, production, operation, performance or otherwise of any Haas Product other than repair or replacement of same as set forth in this warranty above.

### **Limitation of Liability and Damages**

Manufacturer will not be liable to customer or any other person for any compensatory, incidental, consequential, punitive, special, or other damage or claim, whether in an action in contract, tort, or other legal or equitable theory, arising out of or related to any Haas product, other products or services provided by manufacturer or an authorized distributor, service technician or other authorized representative of manufacturer (collectively, "authorized representative"), or the failure of parts or products made by using any Haas product, even if manufacturer or any authorized representative has been advised of the possibility of such damages, which damage or claim includes, but is not limited to, loss of profits, lost data, lost products, loss of revenue, loss of use, cost of down time, business good will, any damage to equipment, premises or other property of any person, and any damage that may be caused by a malfunction of any Haas product. All such damages and claims are disclaimed by manufacturer and waived by customer. Manufacturer's sole liability, and customer's exclusive remedy, for damages and claims for any cause whatsoever shall be limited to repair or replacement, at the discretion of manufacturer, of the defective Haas product as provided in this warranty.

Customer has accepted the limitations and restrictions set forth in this Certificate, including, but not limited to, the restriction on its right to recover damages, as part of its bargain with Manufacturer or its Authorized Representative. Customer realizes and acknowledges that the price of the Haas Products would be higher if Manufacturer were required to be responsible for damages and claims beyond the scope of this warranty.

### **Entire Agreement**

This Certificate supersedes any and all other agreements, promises, representations or warranties, either oral or in writing, between the parties or by Manufacturer with respect to subject matter of this Certificate, and contains all of the covenants and agreements between the parties or by Manufacturer with respect to such subject matter. Manufacturer hereby expressly rejects any other agreements, promises, representations or warranties, either oral or in writing, that are in addition to or inconsistent with any term or condition of this Certificate. No term or condition set forth in this Certificate may be modified or amended unless by a written agreement signed by both Manufacturer and Customer. Notwithstanding the foregoing, Manufacturer will honor a Warranty Extension only to the extent that it extends the applicable warranty period.

### **Transferability**

This warranty is transferable from the original Customer to another party if the CNC Machine is sold via private sale before the end of the warranty period, provided that written notice thereof is provided to Manufacturer and this warranty is not void at the time of transfer. The transferee of this warranty will be subject to all terms and conditions of this Certificate.

### **Miscellaneous**

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.

### **Warranty Registration**

Should you have a problem with your machine, please consult your operator's manual first. If this does not resolve the problem, call your authorized Haas distributor. As a final solution, call



Haas directly at the number indicated below.

**Haas Automation, Inc.**  
**2800 Sturgis Road**  
**Oxnard, California 93030-8933 USA**  
**Phone: (805) 278-1800**  
**FAX: (805) 278-8561**

In order to record the end-user customer of this machine for updates and for product safety notices, we must have the machine registration returned immediately. Please fill out completely and mail to the above address to ATTENTION (HPTS9, HTS5, etc. — whichever is applicable) REGISTRATIONS. Please include a copy of your invoice to validate your warranty date and to cover any additional options you may have purchased.

**Company Name:** \_\_\_\_\_ **Contact Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

\_\_\_\_\_

**Dealer:** \_\_\_\_\_ **Date Installed:** \_\_\_\_/\_\_\_\_/\_\_\_\_

**Model No. :** \_\_\_\_\_ **Serial Number:** \_\_\_\_\_

**Telephone:** ( \_\_\_\_ ) \_\_\_\_\_ **FAX:** ( \_\_\_\_ ) \_\_\_\_\_

### IMPORTANT NOTICE!!! PLEASE READ IMMEDIATELY!

This warranty is void if the unit is subject to misuse, neglect, accident, disassembly, improper installation or application. We are not liable for any additional or incidental damage to parts, fixtures or machines that may be caused by malfunctions.

Haas Automation will provide free service at the factory, including parts, labor, and ground freight back to the customer, for any malfunction of its products. You must pay for shipping the unit to us. If you wish to have the unit shipped back to you other than by UPS ground you will be billed for all shipping charges.

### Freight collect shipments will be refused

If you have a problem with your unit, a phone call to us or a rereading of the manual might solve the problem. Some problems might require you to return the unit for repair. **If you need to return the unit, you must call us for a repair authorization before sending the unit.** In order to speed return of the repaired unit please tell us precisely what the problem is and give us the name of a person whom we can contact who observed the problem. Describing the problem is essential in intermittent cases or where the unit fails to perform consistently but continues to operate.

Returned units should be packed in the original shipping cartons. We are not responsible for damage done in transit.



Shipments must be sent freight pre-paid to:

Haas Automation  
2800 Sturgis Road  
Oxnard, CA 93030  
Phone (805) 278-1800

## **Customer Satisfaction Procedure**

Dear Haas customer,

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

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

Contact Haas Automation's Customer Service Center by calling 800-331-6746 and ask for the Customer Service Department. So that we may resolve your concerns as quickly as possible, please have the following information available when you call:

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

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

Haas Automation, Inc.  
2800 Sturgis Road  
Oxnard, CA 93030  
Att: Customer Satisfaction Manager  
e-mail: [Service@HaasCNC.com](mailto:Service@HaasCNC.com)

Once you contact the Haas Automation Customer Service Center, we will make every effort to work directly with you and your distributor 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.

### **Customer Feedback**

If you have any concern or questions in regards to this Haas Programming and Operations manual, please contact us via our E-mail, [pubs@haascnc.com](mailto:pubs@haascnc.com). We look forward to any suggestions you may have.



The Information contained in this manual is constantly being updated. The latest updates, and other helpful information is available online as a free download in .pdf format (go to [www.HaasCNC.com](http://www.HaasCNC.com) and click on “Manual Updates” under the “Customer Services” drop-down menu in the navigation bar).

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**Original instructions**







## TAILSTOCK SETUP

**IMPORTANT!** Warranty card should be filled out prior to operation.

**When using Servo 5C Indexers, Haas Automation recommends using LIVE CENTERS ONLY!**

**Tailstocks cannot be used with the HRT320FB table.**

## PREPARATION

Clean bottom surface of tailstock casting before mounting to mill table. If there are any noticeable burrs or nicks on the mounting surface, clean them with a deburring stone.

## TAILSTOCK ALIGNMENT

1. Mount the supplied 0.625 dia. locating pins to bottom of tailstock using **1/4-20 x 1/2" socket head cap screw (SHCS)**.
2. Mount tailstock to clean mill table.
3. Fasten lightly to mill table using **1/2-13 hex head bolt (HHB), hardened tooling washers** and **1/2-13 T-Nuts**.
4. Extend the tailstock spindle from the body. Use the spindle surface to sweep the spindle center line to rotary product center line, align to within 0.003 TIR. Once the unit is properly aligned, torque the 1/2-13 nuts to 50 ft-lb.

## INSTALLATION/REMOVAL OF MORSE TAPER ACCESSORIES

1. Inspect and clean tailstock taper and tapered surface of live center.
2. Apply a light coat of oil on the center, before inserting into the spindle. This aids in removing the center and also prevents corrosion buildup.

## MANUAL TAILSTOCK

**Live or dead centers:** Retract the spindle into the body and the leadscrew will force the center out.

## PNEUMATIC TAILSTOCK

**Live centers:** Wedge an aluminum bar between the face of the spindle and the rear surface of the live centers' flange.

**Dead centers:** Thread dead centers are recommended (often called N/C Dead Centers). Use a wrench to hold the center in place and turn the nut until it backs the center out from the spindle.



## TAILSTOCK OPERATION

### MANUAL TAILSTOCK OPERATION

1. The tailstock should be positioned so that after approximately 1" of spindle travel, the center comes into contact with the work piece/fixture. If the tailstock needs to be repositioned, repeat Step 4 of Tailstock Alignment.
2. Once in contact, apply only enough force on the handwheel to hold the work-piece/fixture securely.

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**NOTE:** The force required on the hand wheel is similar to the force used in closing a typical garden faucet.

3. Tighten the spindle lock at this time.

### PNEUMATIC TAILSTOCK OPERATION

1. The tailstock should be positioned so that after approximately 1" of spindle travel, the center comes into contact with the work piece/fixture. If the tailstock needs to be repositioned, repeat Step 4 of Tailstock Alignment.
2. Use of the spindle lock is optional when using pneumatic tailstock models. Use the following information to determine tailstock air pressure:

- **Rotary Tables: Normal operating range 10-60 psi (.7-4.1 bar), Max: 100 psi (7bar)**

- **Servo 5c indexers\*: Normal operation range 5-40 psi. (.3-2.7 bar) Max: 60 psi. (4.1 bar) Live Centers Only!**

- **Maximum Air pressure = 150 psi (10.3 bar) results in 450 lbs (204kg) tailstock force.**

- **Minimum Air pressure = 5 psi (.3 bar) results in 15 lbs (6.8kg) tailstock force.**

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**NOTE:** Excessive tailstock force and misalignment greater than 0.003 tir will cause premature wear on the geartrain and motor.

### MAINTENANCE

- **Daily:** Use a shop rag to thoroughly clean the unit free of chips and apply a rust preventative such as WD-40.
- **Weekly:** Use a standard grease gun and apply 1 full stroke to the top mount Zerk fitting, for a pneumatic tailstock.

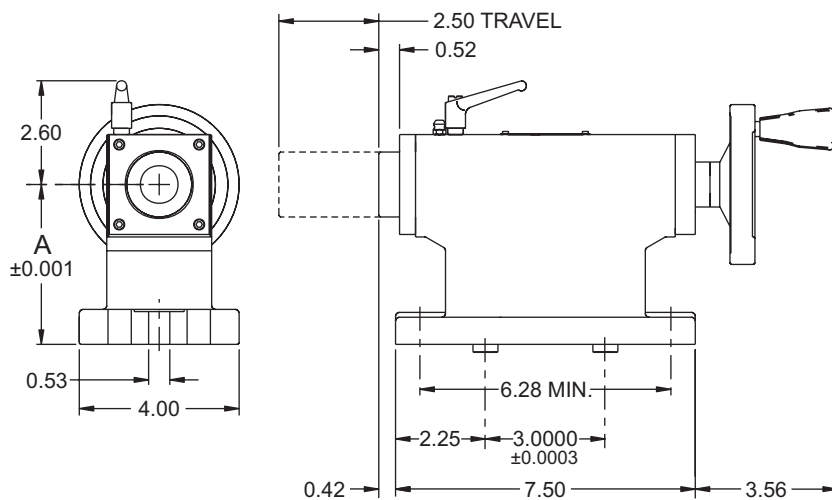


• **Monthly:** Use a standard grease gun and apply 1-2 full strokes to the top mount Zerk fitting, for a manual tailstock.

**Lubrication:** Use Mobil multipurpose grease with Moly (Molybdenum disulfide) or equivalent.

## ASSEMBLY DRAWINGS

### HTS 4, 5, 6, 9 MANUAL TAILSTOCKS



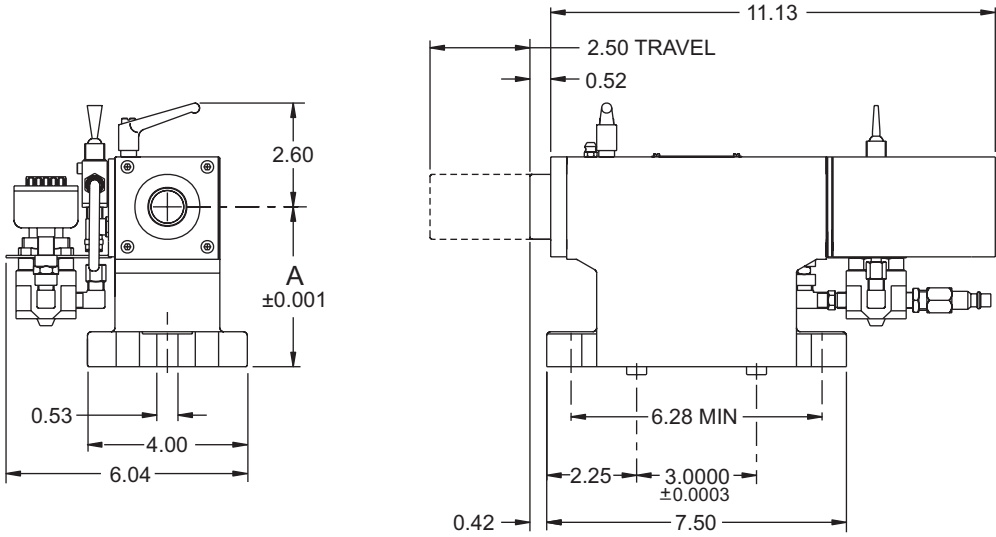
NOTES: UNLESS OTHERWISE SPECIFIED

BODY - TAILSTOCK

DIM A	{	20-5000 (4.000)
		20-5001 (5.000)
		20-5002 (6.000)
		20-5013 (9.000 WITH SPACER)

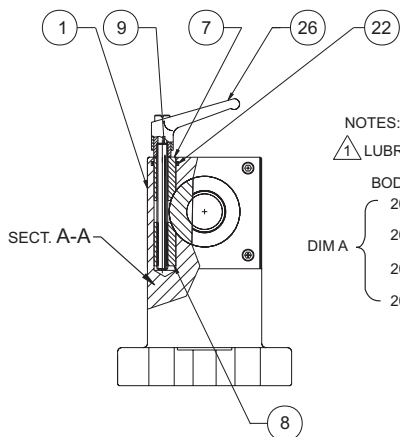
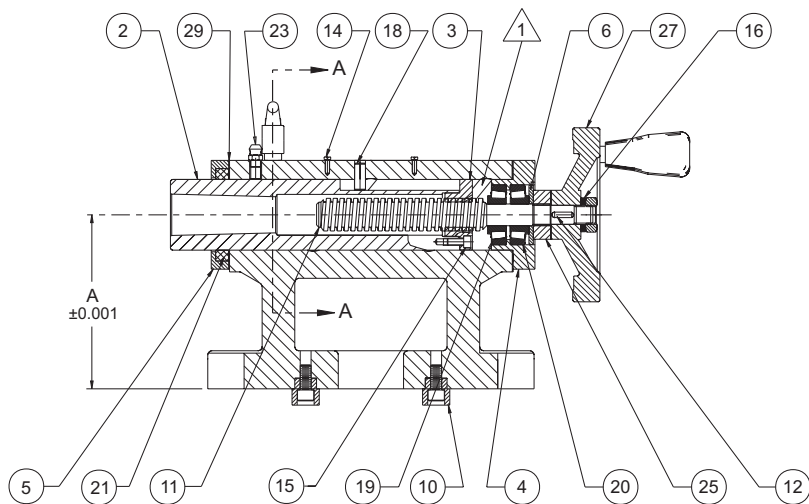


## HPTS 4, 5, 6, 9 PNEUMATIC TAILSTOCKS





# HTS MANUAL TAILSTOCKS



NOTES: UNLESS OTHERWISE SPECIFIED

1 LUBRICATION PATH

BODY - TAILSTOCK

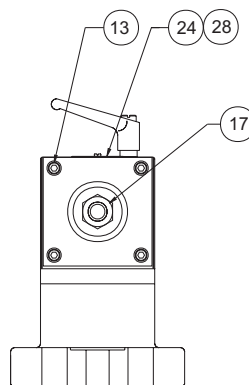
20-5000 (4.000)

20-5001 (5.000)

20-5002 (6.000)

20-5013 (9.000 WITH SPACER)

DIMA



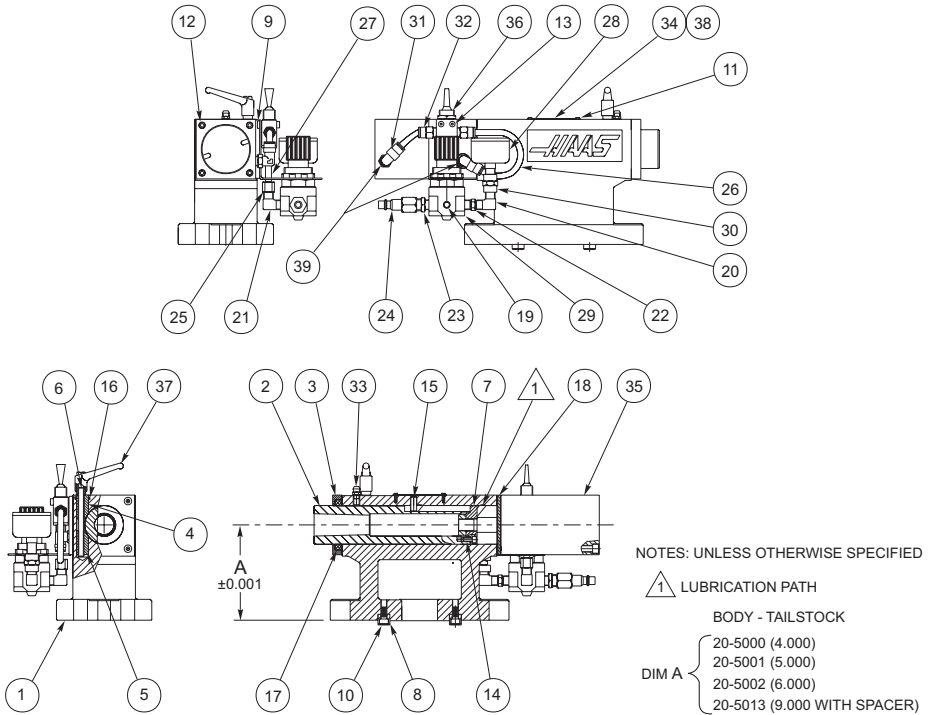
NOTE: HANDWHEEL OMITED IN THIS VIEW

## 30-5000 TAILSTOCK ASSEMBLY DWG.

1	1	20-5000	BODY - TAILSTOCK 4"	14	2	40-1666	MC.DR.SCREW #2 x 1/4"RD.HEAD
1	1	20-5001	BODY - TAILSTOCK 5"	15	4	40-1801	SHCS,8-32 x 3/8"
1	1	20-5002	BODY - TAILSTOCK 6"	16	1	45-1680	FLAT WASHER,7/16 SAE
1	1	20-5013	BODY - TAILSTOCK 7.25"	17	1	46-1660	HEX. JAM NUT,7/16-20
2	1	20-5003	SPINDLE	18	1	48-0060	PULL PIN 1/4 x 5/8 LG.
3	1	20-5005	NUT, LEAD SCREW	19	2	51-5000	BEARING CAP,TIMKEN #A 4138
4	1	20-5006	BEARING HOUSING	20	2	51-5010	BEARING CONE,TIMKEN #A 4050
5	1	20-5007	SEAL CAP	21	1	57-5012	WIPER,1/4"THICK
6	1	20-5008	THRUST WASHER	22	1	57-0058	O'RING,2-014
7	1	20-5009	UPPER CLAMP	23	1	59-2016	GREASE FITTING
8	1	20-5010	LOWER CLAMP	24	1	59-2091	NAME PLATE, GENERAL PURPOSE
9	1	20-5011	CLAMP STUD	25	1	59-6010	SHAFT COLLAR,#TCL8-20F
10	2	22-5017	LOCATING PIN	26	1	59-6700	CLAMPING HANDLE
11	1	22-5004	LEAD SCREW	27	1	59-6800	HANDWHEEL,GN 321-100-B10D
12	1	22-5014	SQUARE KEY, 1/8	28	1	29-5022	TAILSTOCK LABEL
13	10	40-1632	SHCS,1/4-20 x 1/2"	29	2	57-5020	GASKET, AIR CYLINDER



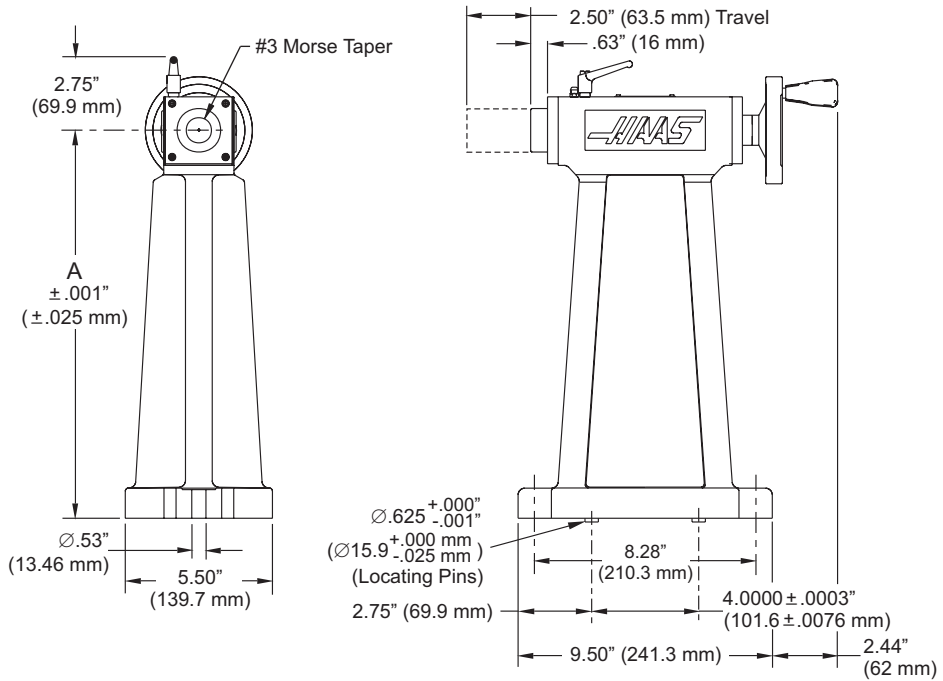
## HPTS PNEUMATIC TAILSTOCKS



IT	QTY	HAAS P/N	TITLE	IT	QTY	HAAS P/N	TITLE
1	1	20 - { 5013 5002 5001 5000 }	7.25" 6" 5" 4" } BODY -TAILSTOCK	19	1	58 - 1627	1/8 - 27 PIPE PLUG
				20	1	58 - 16700	STREET ELBOW 1/8"
				21	1	58 - 16705	MALE ELBOW 1/8 M TO 1/8 M
				22	1	58 - 16732	1/1 x 1/8 MALE HEX JOINT
2	1	20 - 5003	SPINDLE	23	1	58 - 1674	ADAPTER MALE 1/4 NPT
3	1	20 - 5007	SEAL CAP	24	1	58 - 1675	QUIK RELEASE FITTING, FEMALE
4	1	20 - 5009	UPPER CLAMP	25	2	58 - 16755	MALE AIR FITTING
5	1	20 - 5010	LOWER CLAMP	26	2 FL	58 - 1981	TUBING, AIR LINE, 1/4 O.D.
6	1	20 - 5011	CLAMP STUD	27	2"	58 - 19900	COPPER TUBING
7	1	20 - 5016	NUT, AIR CYLINDER	28	1	58 - 27395	AIR PRESSURE GAUGE
8	2	22 - 5017	LOCATING PIN	29	1	58 - 2740	AIR REGULATOR
9	1	25 - 5021	VALVE, BRACKET	30	1	58 - 2746	1/8 TO 1/8 FEMALE COUPLER
10	6	40 - 1632	SHCS, 1/4-20 x 1/2"	31	2	58 - 3050	ELBOW 1/8 NPT - 1/4
11	2	40 - 1666	MC.DR.SCREW #2 x 1/4" RD.HEAD	32	2	58 - 3070	FITTING, 1/8 NPT - 1/4
12	4	40 - 1696	SHCS, 1/4-20 x 4 1/2"	33	1	59 - 2016	GREASE FITTING
13	2	40 - 1800	SHCS, 8 - 32 x 3/4"	34	1	59 - 2091	NAME PLATE, GENERAL PURPOSE
14	4	40 - 1801	SHCS, 8 - 32 x 3/8"	35	1	59 - 2736	AIR CYLINDER, #QJ 92-1673
15	1	48 - 0060	PULL PIN 1/4 x 5/8"	36	1	59 - 2746	4 WAY VALVE, CLIPPARD, #TV-4DP
16	1	57 - 0058	O'RING, 2 - 014	37	1	59 - 6700	CLAMPING HANDLE
17	1	57 - 5012	WIPER, 1/4" THICK	38	1	29 - 5022	TAILSTOCK LABEL
18	2	57 - 5020	GASKET, AIR CYLINDER	39	2	58-4040	AIR CHOKER DISK



## HTS 11.5 AND HTS 14.5 MANUAL TAILSTOCKS



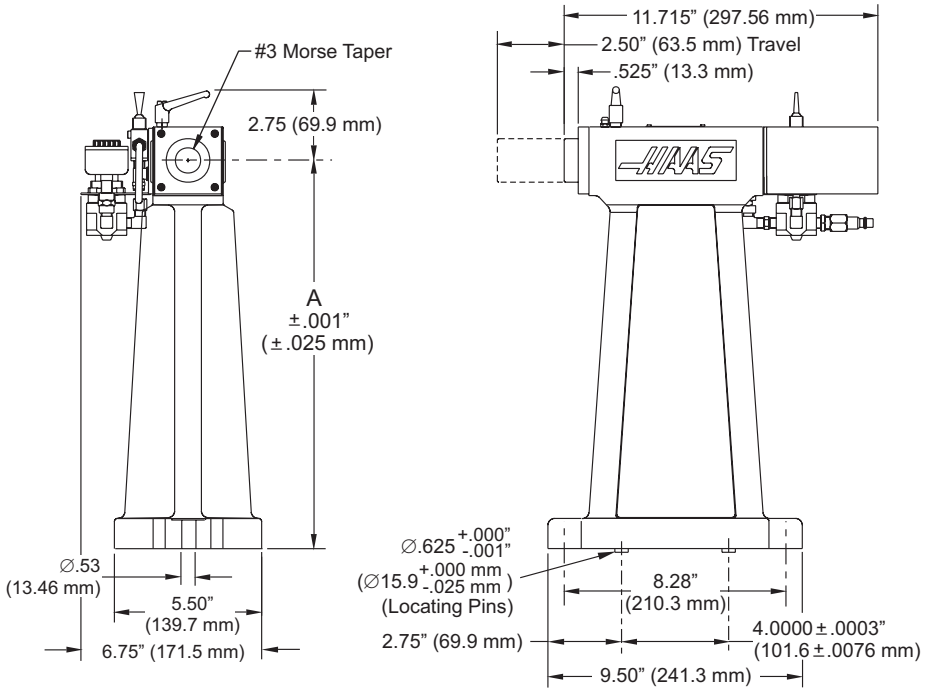
NOTES: Unless otherwise specified  
Body - Tailstock

Dim. A { 20-5025 (11.500" (292.1 mm))  
20-5026 (14.500" (368.3 mm))





## HPTS 11.5 AND HPTS 14.5 PNEUMATIC TAILSTOCKS



NOTES: Unless otherwise specified  
Body - Tailstock  
Dim. A { 20-5025 (11.500" (292.1 mm))  
          20-5026 (14.500" (368.3 mm))