



HAAS SERVICE AND OPERATOR MANUAL ARCHIVE

Haas Tailstock Operators Manual 96-5000 RevU English June 2008

- 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.



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 workpiece/fixture securely.

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

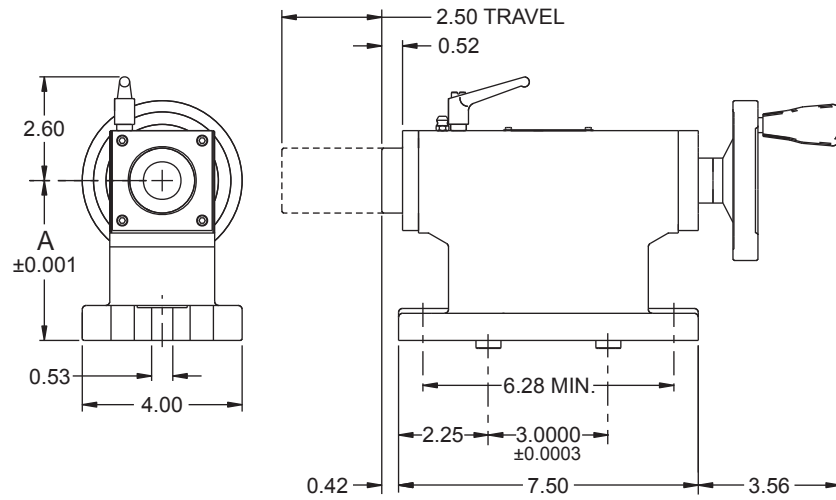
1. The tailstock should be positioned so that after approximately 1" of spindle travel, the center comes into contact with the work piece/fixture. If the tailstock needs to be repositioned, repeat Step 4 of Tailstock Alignment.
2. Use of the spindle lock is optional when using pneumatic tailstock models.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

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.

HTS 4, 5, 6, 9 MANUAL TAILSTOCKS

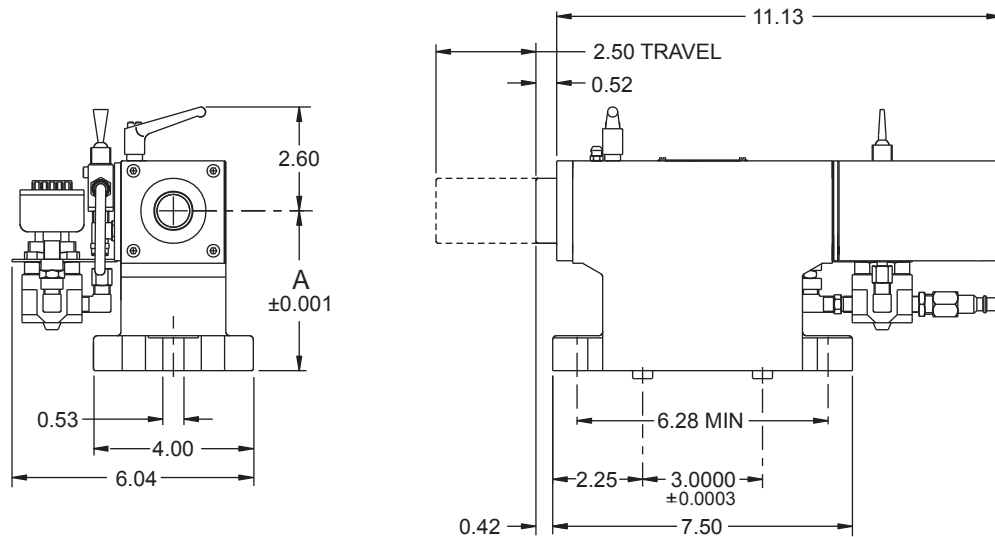


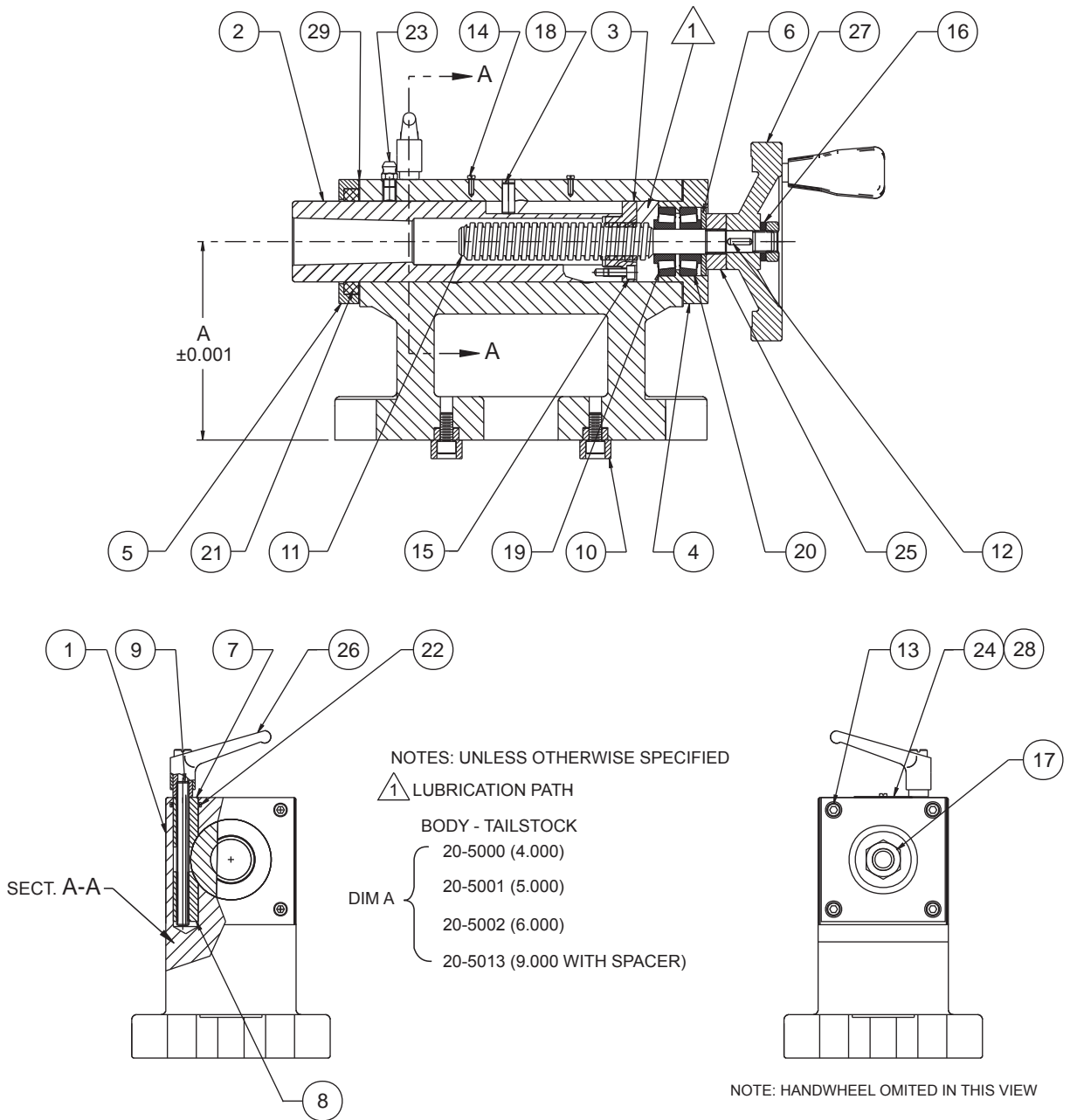
NOTES: UNLESS OTHERWISE SPECIFIED

BODY - TAILSTOCK

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

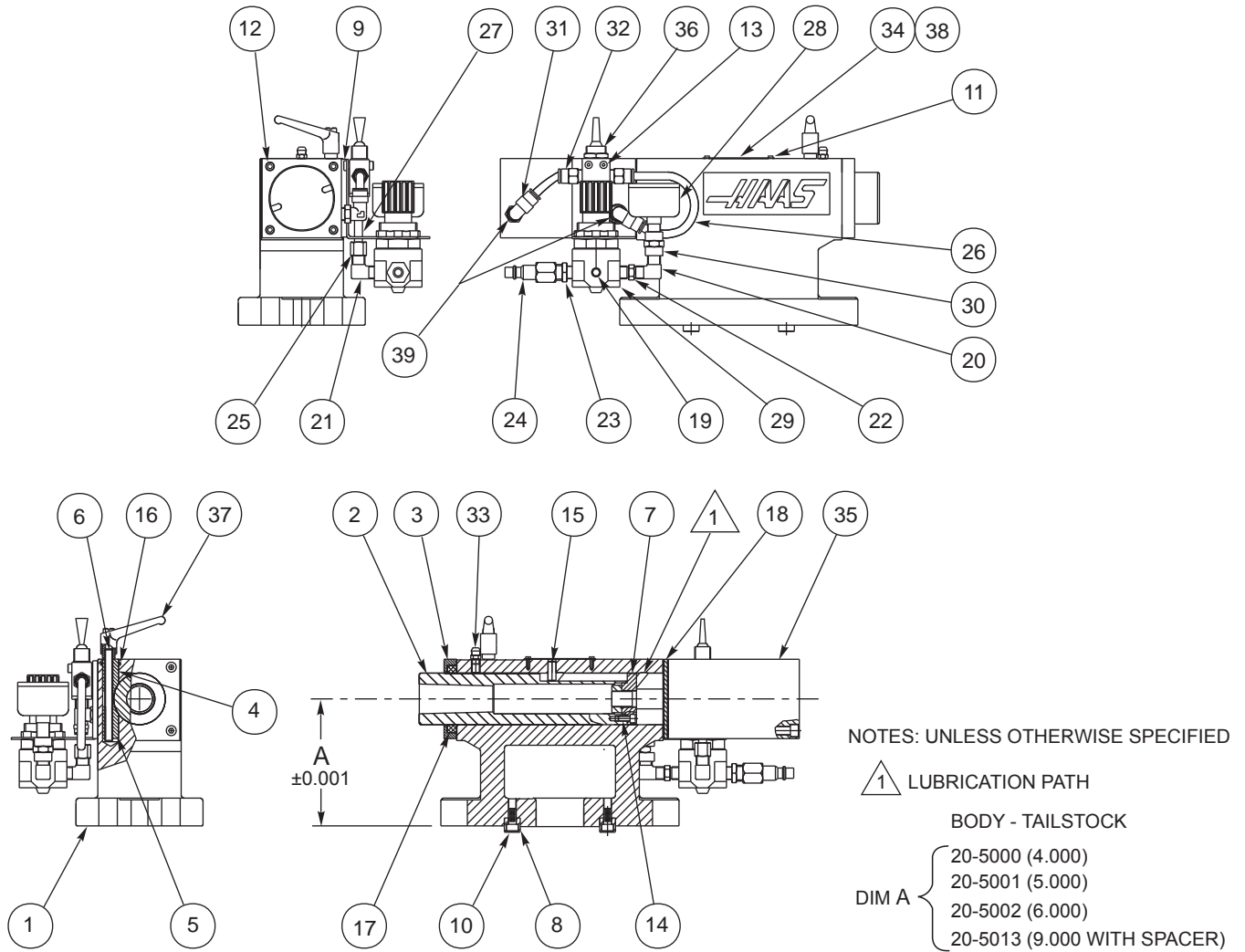
HPTS 4, 5, 6, 9 PNEUMATIC TAILSTOCKS





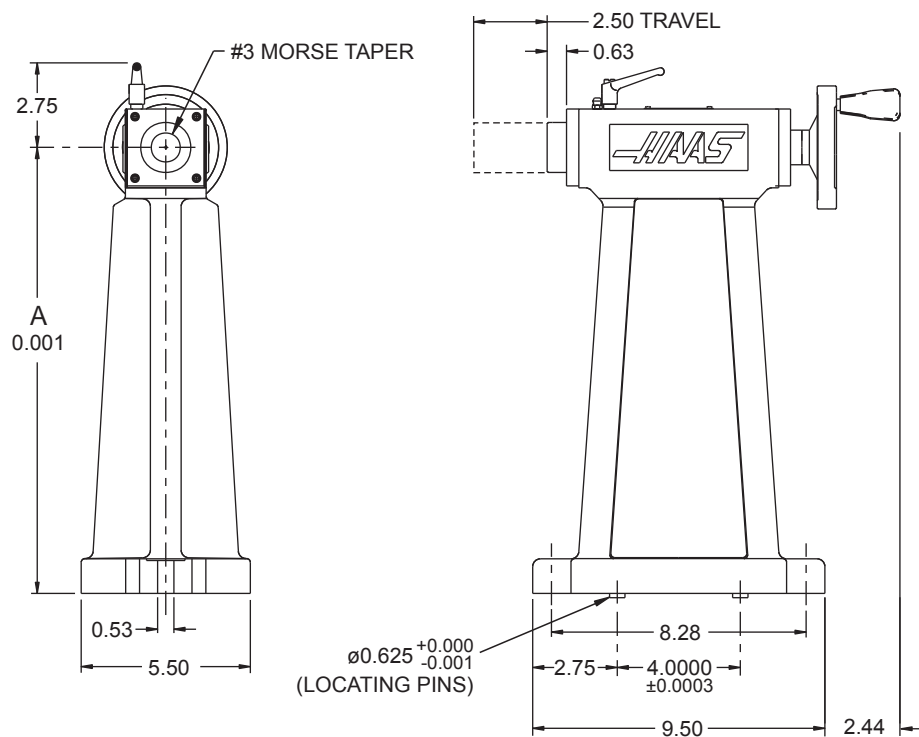
30-50000 TAILSTOCK ASSEMBLY DWG.

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



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

HTS 11.5 AND HTS 14.5 MANUAL TAILSTOCKS



HPTS 11.5 AND HPTS 14.5 PNEUMATIC TAILSTOCKS

