



HAAS SERVICE AND OPERATOR MANUAL ARCHIVE

Tailstock Operator Manual 96-500 RevL English June 2005

- 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./lbs.

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, Max: 100 psi

•Servo 5c indexers*: Normal operation range 5-40 psi. Max: 60psi.
*LIVE CENTERS ONLY!

•Maximum Air pressure = 150 psi (lbs/sq/in.) results in 450 lbs tailstock force.

•Minimum Air pressure = 5 psi (lbs/sq/in.) results in 15 lbs tailstock force.

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

MAINTENANCE

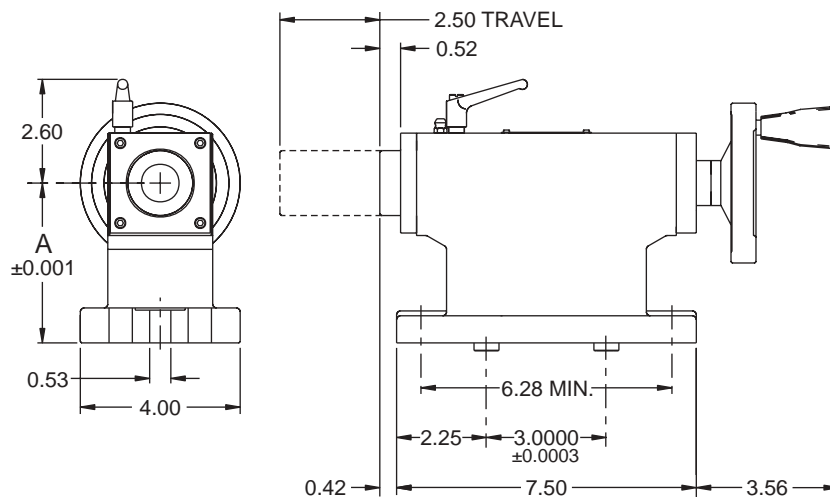
- Daily: Use a shop rag to thoroughly clean the unit free of chips and apply a rust preventative such as WD-40.
- Weekly: Use a standard grease gun and apply 1 full stroke to the top mount zerk fitting, for a pneumatic tailstock.
- Monthly: Use a standard grease gun and apply 1-2 full strokes to the top mount zerk fitting, for a manual tailstock.

Lubrication: Use MOBIL multipurpose grease with MOLY (Molybdenum disulfide) or equivalent.



ASSEMBLY DRAWINGS

HTS 4,5,6,9 MANUAL TAILSTOCKS

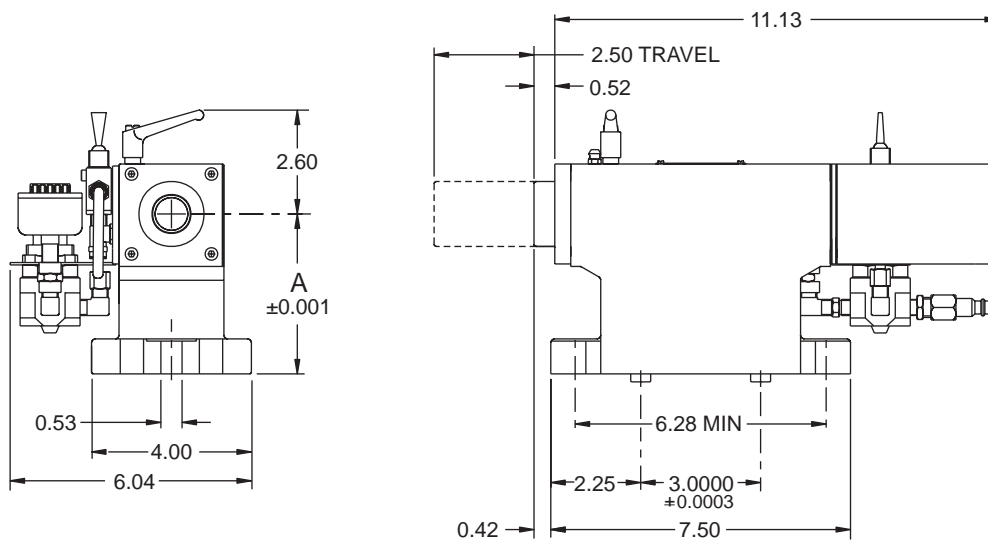


NOTES: UNLESS OTHERWISE SPECIFIED

BODY - TAILSTOCK

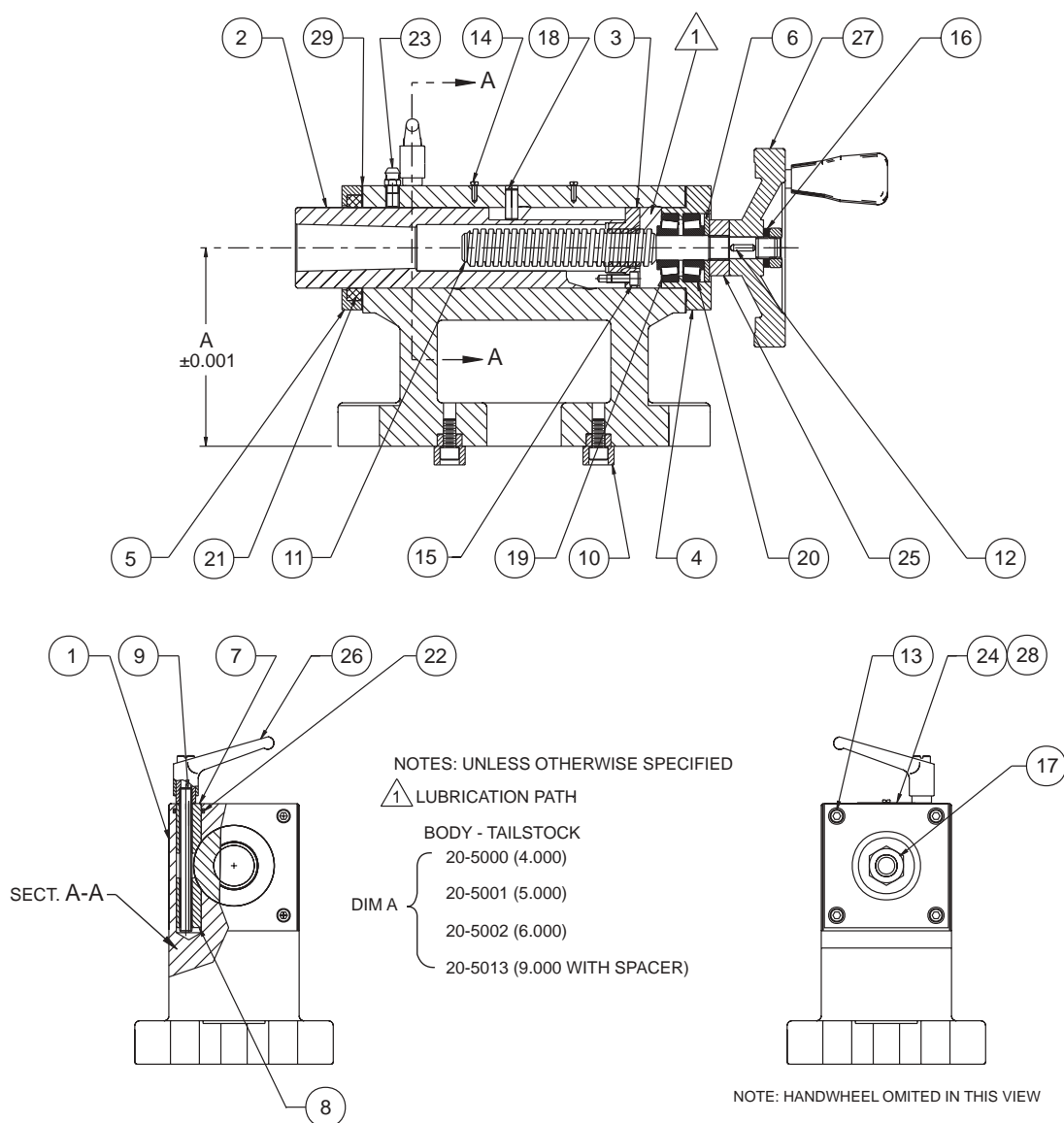
DIM A { 20-5000 (4.000)
20-5001 (5.000)
20-5002 (6.000)
20-5013 (9.000 WITH SPACER)

HPTS 4,5,6,9 PNEUMATIC TAILSTOCKS





HTS MANUAL TAILSTOCKS

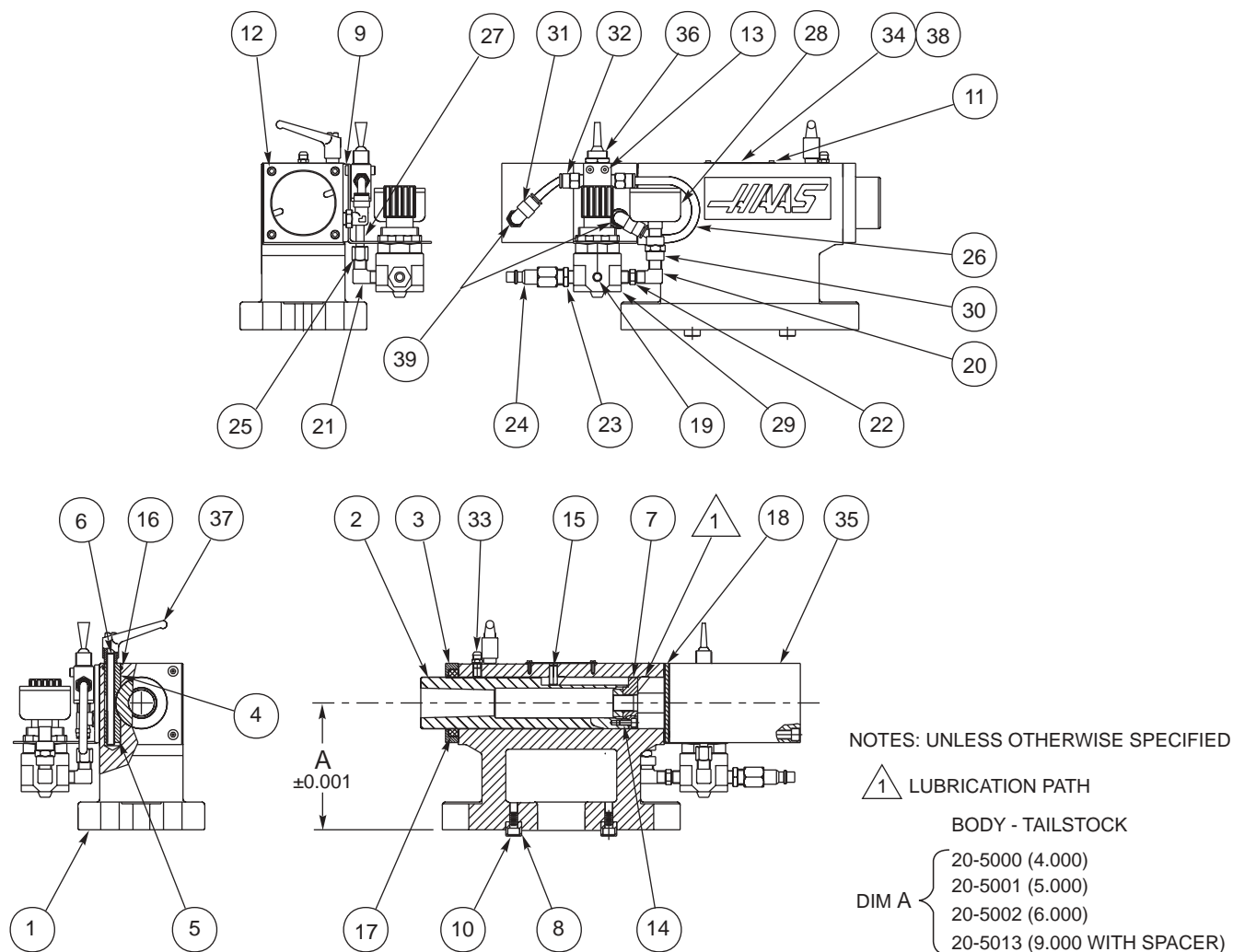


30-50000 TAILSTOCK ASSEMBLY DWG.

| | | | |
|----|----|---------|------------------------------|
| 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 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 |



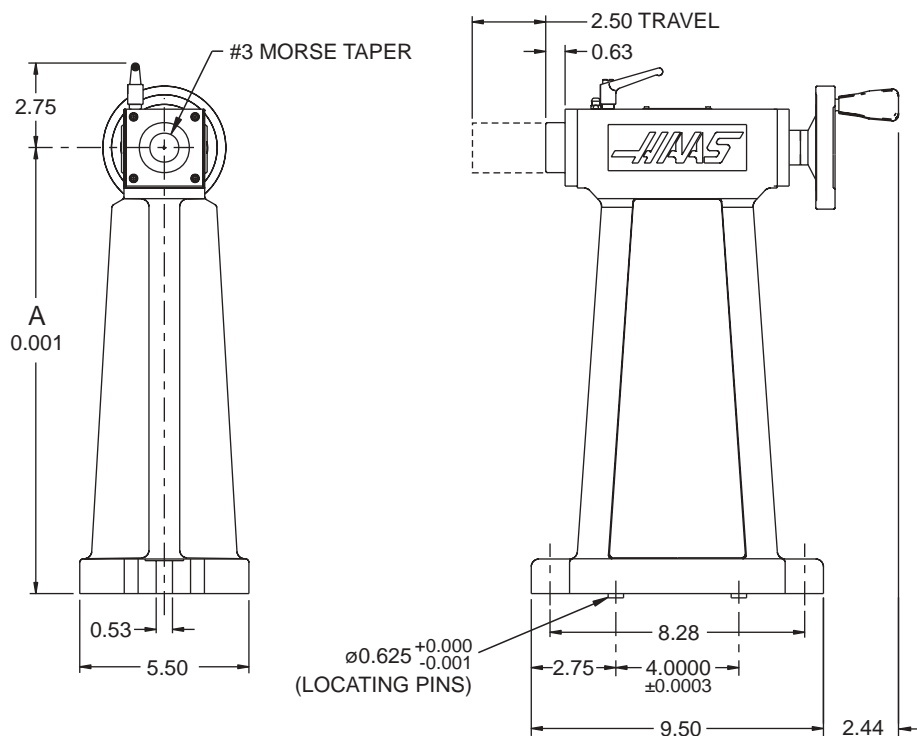
HPTS PNEUMATIC TAILSTOCKS



| 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 |
| 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

