CASTLE INC

Owner's Manual

AT Race Arm Upgrade

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1 Introduction

Thank you for making the Castle AT Race Arm Upgrade the latest addition to your shop. Since 1985 our goal has been to manufacture and develop machines that make cabinet making and casework easier, faster and more profitable for the woodworker. This machine represents our commitment to your productivity. Castle machines are made in Petaluma, California and are manufactured to the highest standards using local vendors wherever possible.

This instruction manual is intended for use by anyone setting up or servicing this machine. It should be kept available for immediate reference so that all operations can be performed with maximum efficiency and safety.

Note: Do not attempt to perform maintenance or operate this machine until you have read and understand the information contained in this manual.

2 Machine Safety

NOTICE: The Castle AT Race Arm Upgrade was designed with operator safety as a priority. This machine was carefully prepared for shipment at our factory. Upon receipt of the machine, inspect for shipping damage. Report any damage **IMMEDIATELY** to the freight company, your Castle dealer and to Castle, Inc. DO NOT attempt to operate the machine if you observe any physical damage. Contact Castle, Inc. at 800.282.8338 for instructions.

2.1 Safety Rules

1. **USE CAUTION WHEN OPERATING THIS MACHINE!** Only skilled operators should use this machine or be within ten feet when the machine is in operation.

2. Read the Operator Manual carefully before operating. An Operator Manual should be attached to this machine. It contains important information and warnings concerning the use and operation of this machine. Improper use of this machine may result in serious injuries to persons and property.

3. Always wear protective eyewear when operating or standing near an operating machine.

4. Keep all body parts away from the moving parts of this machine whether it is in operation or at rest.

5. Do not place hands or fingers between the work piece and the clamp or near the cutters at any time. Always use a securing device when undertaking close work.

6. Do not wear gloves or loose clothing (such as sweaters, jackets, or jewelry) when operating or standing near an operating machine.

7. Before attempting adjustments, maintenance, or repair, **DISCONNECT** this machine from its air supply. Wait for all motion to stop.

8. Always keep the area around this machine clean and uncluttered. Poor housekeeping could result in slips, falls, or other injuries.

9. Concentrate at all times. Failure to pay attention to the task at hand is the cause of most accidents.

2.2 Key Features

Your Castle AT Race Assembly Arm has a highly efficient design that allows the hold-down cylinders to be repositioned and clamped in one quick smooth action for fast production. The super rigid, precision beam is both light and strong and moves effortlessly on ball bearings.

The Castle AT Race Assembly Arm is equipped with a pressure regulator, pressure gauge and hose for a pneumatic air screw driver (sold separately). The convenient driver holster is inches away from the work at all times.

2.3 Machine Requirements

Your Castle AT Race Assembly Arm requires a minimum of **85 PSI** air not to exceed 150 PSI.

- Supply Line should be a minimum of ¼" line.
- Install an air filter trap to reduce the potential for foreign particles and water from your air supply prior to entry into the machine. The filter should be mounted to the wall where your supply comes from and SHOULD NOT be mounted to your machine.

3 Installing your AT Race Assembly Arm

3.1 Getting Started

Safe installation of your Castle AT Race Arm Upgrade takes **two** people. In addition, you will need the following tools:

1. 1/2” Open End Wrench
2. 1/2” Socket w/ratchet
3. Socket extension
4. 5/32” Allen Wrench
5. Framing square

3.2 Unpacking your Arm

1. Remove the Beam Brackets (Fig 1) and Clamp Arm Assembly (Fig 2)

Fig 1

Fig 2

3.3 Uninstalling the old Clamp Arm

1. Begin by removing the stop bolts from each side of the machine. (Fig 3)

Fig 3

2. Remove shop air line from the back of the upper arm bracket.
3. Loosen the 2 upper arm bracket bearings on the top of the beam. (Fig 4)

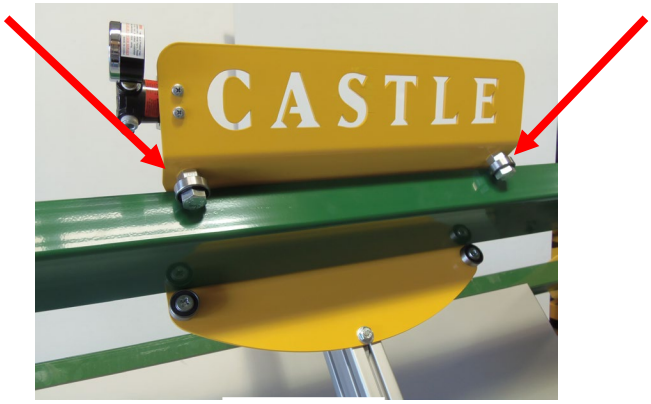

Fig 4

4. Remove the 2 upper arm bracket bearings on the bottom of the beam. (Fig 5)

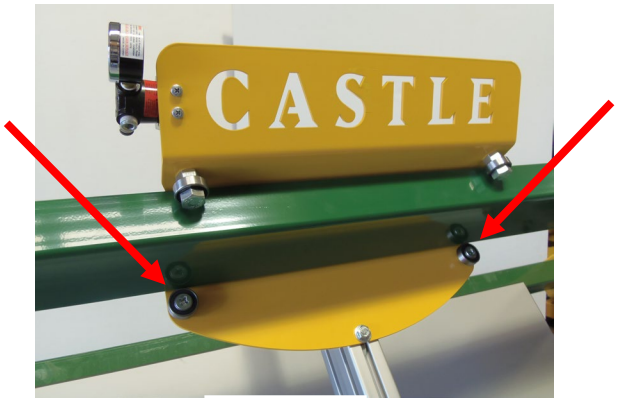

Fig 5

NOTE: This part of the installation may require (2) two people

5. Loosen the 2 upper arm bracket bolts as shown in Fig 6 and Fig 7.

Fig 6

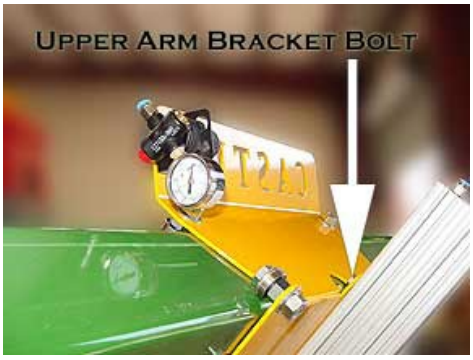

Fig 7

6. Pull down on the bottom bracket to position the lower bracket bearings forward of the front frame flange so the front bracket can be lifted up away from the table. (Fig 8)

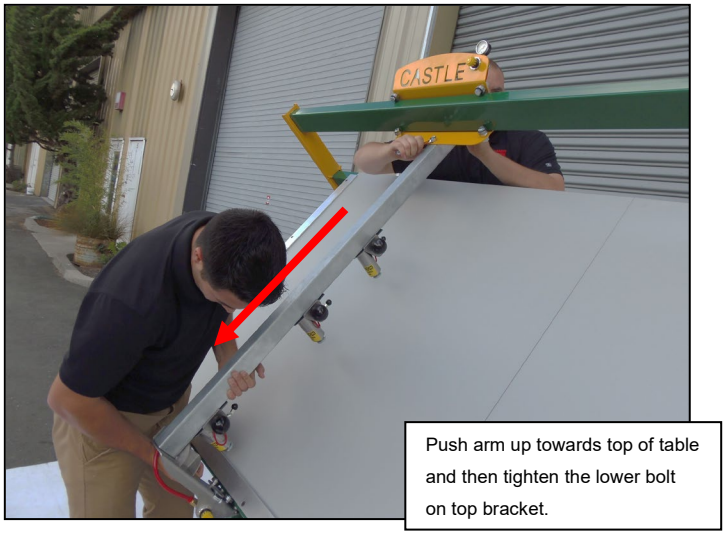

Fig 8

7. Lift up on the old clamp arm enough to where it can be removed from the green beam. Set old clamp arm aside. (Fig 9)

Fig 9

3.4 Open Back Beam Installation

NOTE: This part of the installation may require (2) two people

1. Loosen the set screens on the left and right yellow beam brackets on the top of the table. (Fig 10)

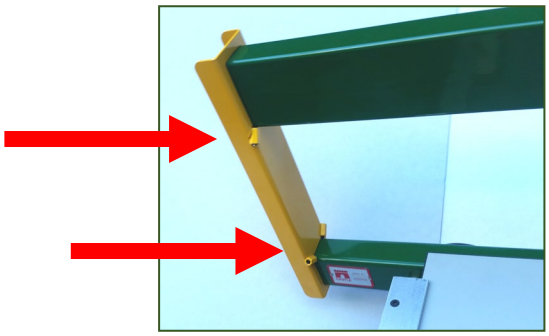

Fig 10

2. Remove each beam bracket one at a time and replace each one with the new yellow beam beams brackets. The new beam brackets are shorter than the old brackets. Note the position of the upper set screw. (Fig 10)
3. Once the new beam brackets are in place lightly tighten the set screws in the beam brackets in all (3) places on each using a 7/64" Allen Wrench. (Fig 11)

Fig 11

NOTE: For proper alignment of the upper beam to the table, use a framing square to ensure that the beam is 90 degrees to the table. If not, loosen the set screws at the bottom of each [yellow] beam bracket and rotate the [green] beam up until it is 90 degrees to the tabletop.

3.5 Clamp Arm Installation

1. Once the beam is reinstalled and secured, the arm is installed.
2. Remove the bottom bearing assemblies on the upper bracket. (Fig 12 & 13)

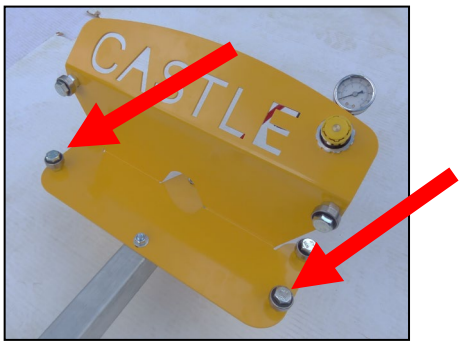

Fig 12

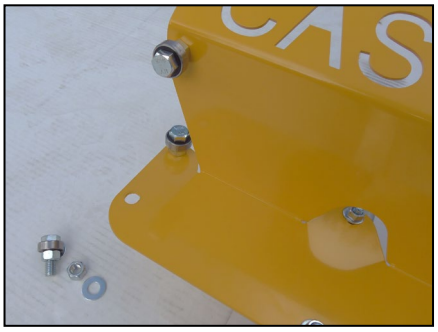

Fig 13

3. Tip the arm up and position the top bracket under the upper beam as shown. (Fig 14)
4. Rotate the beam down and position the upper bearings on the top bracket on TOP of the upper beam. (Fig 15)
5. Swing the arm down so that the top bracket sits as shown. (Fig 16)

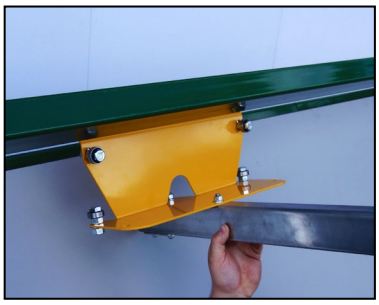

Fig 14

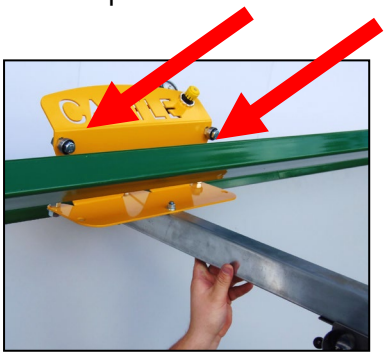

Fig 15

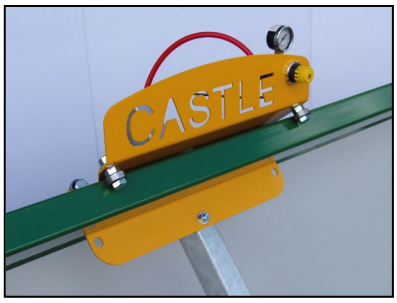

Fig 16

6. Slightly loosen the (2) bolts that attach the arm to the top bracket. (Fig 17)

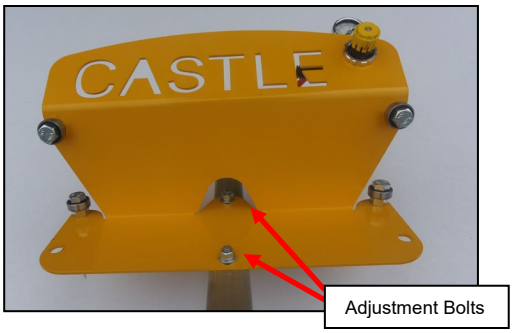

Fig 17

7. Pull down on the bottom bracket to position the bearings on and below the front flange of frame.(Fig 18) Note: your 2 bottom bearings will be different from Fig 18. (Fig 20)

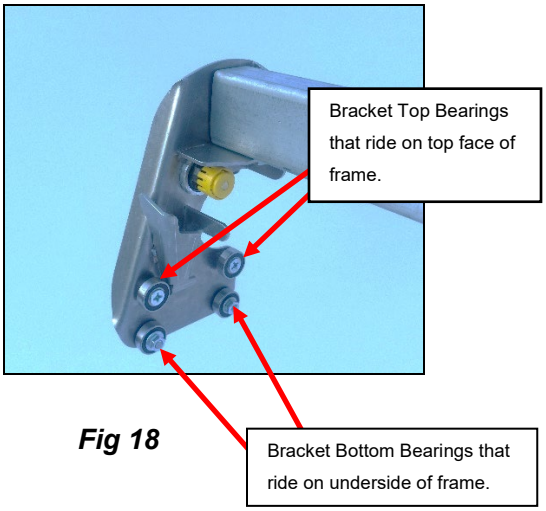

Fig 18

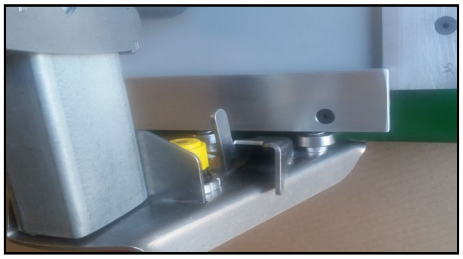

Fig 19

Fig 20

NOTE: This part of the installation may require (2) two people

8. Move the arm up to be sure the bearings are in full contact with the bottom of the frame. (Fig 19)
9. You may need help to push up on the arm and bottom bracket to properly position the bottom bracket bearings on the bottom of the table frame. (Fig 20)

10. The bearing should be 90% engaged with the channel at the lower part of the table frame. (Fig 21)
11. Once the arm has been properly positioned, tighten up the lower bolt on the top bracket to secure the arm. (Fig 22) *NOTE: you will only need to tighten the lower bolt on the top bracket. The upper bolt will be tightened once the arm has been adjusted to be parallel to the left fence.*

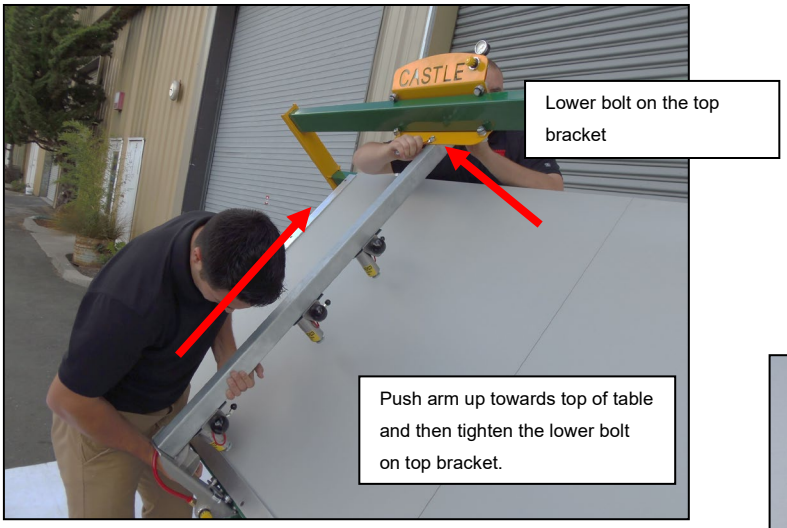

Fig 38

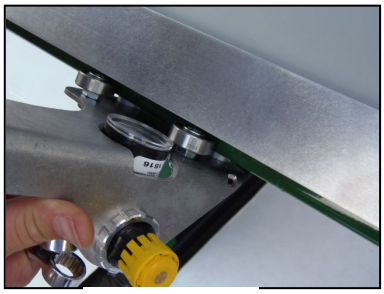

Fig 21

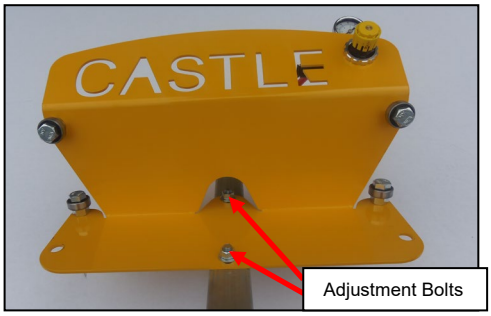

Fig 22

12. Next you will need to position the arm parallel to the left fence on the table. To do so, move the arm as close to the left fence as you can. Visually confirm the space between the fence and arm at the top and bottom of the arm. Once the position has been verified, tighten the upper bolt that secures the arm to the top bracket. (Fig 22)

13. Reinstall the 2 bearing assemblies on the bottom of the upper bracket that were removed before the arm was placed on the beam. (Fig 23)

14. Shims are provided to place between the beam and the bracket for proper tension. Adjust the upper bearings with the shims in place. (Fig 24)
15. Once adjusted, remove the shims.

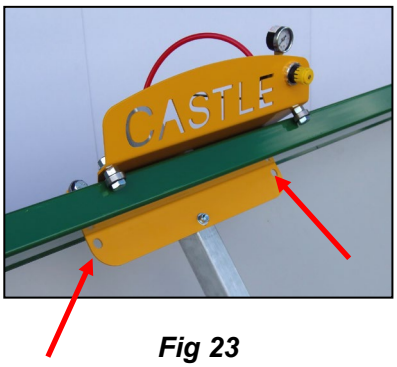

Fig 23

Fig 24

3.6 Connecting Air

1. A connector to provide air to the table is included (Fig 25). The tube end is pressed into the push in fitting on the top bracket (Fig 26 & Fig 27)

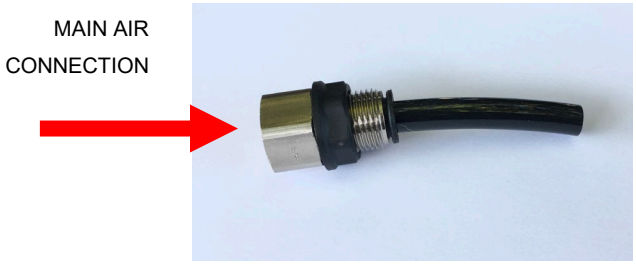

Fig 25

2. Also included is an air hose (Red 3/8” Hose) for use with an air drill [optional, visit CastleUSA.com]. The red hose travels down the arm to a second regulator on the bottom bracket where an air drill can be installed.

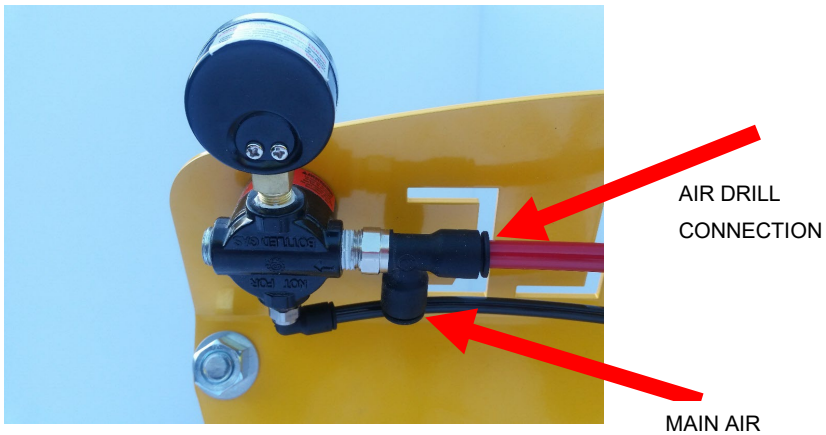

Fig 26

Fig 27

3. For an Air Drill use, remove the plug on the Air Regulator and connect the end of the 3/8” Red Hose on the bottom bracket.
4. To set the Air Pressure, pull out the yellow knob on the regulator and turn the knob until the pressure measures **85 PSI** on the gauge. (Fig 28)

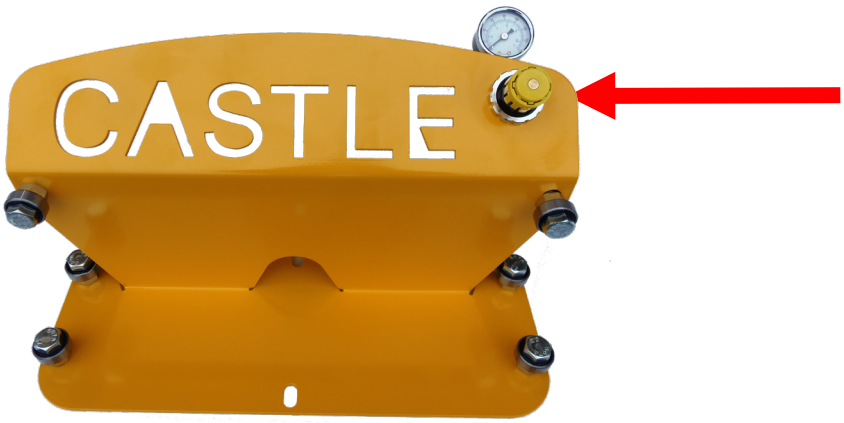

Fig 28

4 Operating Instructions

Warning: Always wear eye protection when operating pneumatic equipment.

4.1 Cylinder Actuation

To operate the clamp cylinder, locate the toggle switch on the Clamp Valve. Moving this lever up and down will clamp and release the cylinder.

1. The AT Race Clamps have been created for ambidextrous use. Each clamp has its own 3-Way valve with toggle switch for clamping and releasing. (Fig 29 & 30)
2. The clamps are manually positioned on the Clamp Arm by pushing or pulling on either side of the clamp assembly. A drag keeps the Clamp in place when activating the toggle switch.

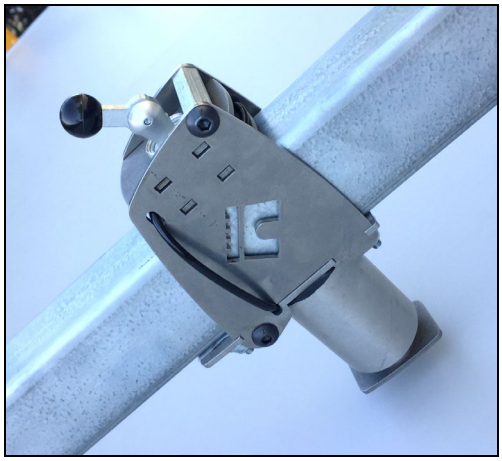

Fig 29

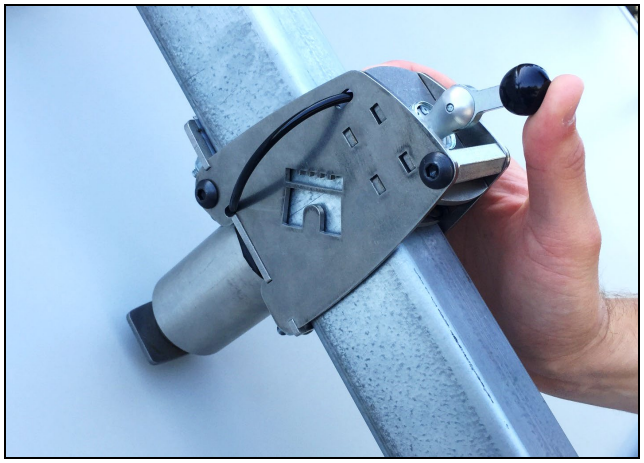

Fig 30

4.2 Drill Holster

The Clamp Arm Bottom Bracket includes a holster for your drill. Your driver tip will sit in the hole in the corner of the bracket and rest on the bottom shelf. This positions your driver ideally for easy reach and keeps the drill chuck away from the bracket. (Fig 31)

Fig 31

5 Maintenance

Castle recommends that your tabletop be periodically cleaned of excess glue and/or dust. The Poly Foot pads are subject to wear over time and should be replaced. Replacement pads (Part #N70148) are available on our web store at store.castleusa.com.
If you detect a considerable slowdown in the speed of the cylinder actuation, the cylinder may need to be rebuild using the AT Race Cylinder Rebuild Kits (Part #K48004). (Fig 32)

See section 6.3 of this manual for instructions on how to remove your cylinder(s).

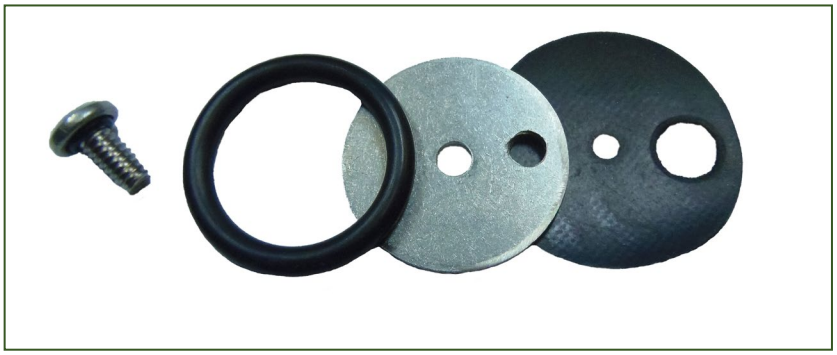

Fig 32

6 Trouble Shooting Guide

6.1 Adjusting the Arm Bearings

Your Assembly Table Arm rides on two sets of bearings; one at the bottom bracket and one at the upper bracket. If the arm becomes loose or rides on the beam roughly, these bearing sets may need to be tightened. This procedure is performed best with two people.

1. Loosen the two bolts in the top bracket that hold the arm in place while someone holds the bottom bracket firmly in place against the table.
2. **Do not** loosen the bottom bracket bolts.
3. Locate the bearings attached to the upper brackets that ride on the top of the beam. Tighten the bolt head on one side of the bearing while holding the on the other side of the bearing.

Note: For smooth operation of your Assembly Table Arm, it is important that the bearing bolts be tightened down firmly.

4. After tightening the bearing nut on the front of the upper bracket, the nut on the rear of the upper bracket should be tightened next.
5. Do this by holding the nut closest to, and in front of the bracket, while tightening the nut at the rear of the bracket.
6. If the bearings were loose, the tightening procedure could change the arm positioning. Test the positioning of the arm by rolling it along the beam. It should roll smoothly the whole way and be parallel to the tabletop.

6.2 Aligning the Arm

When your Castle AT-Race Assembly Table is set up or reassembled after relocation, the arm may need to be aligned to ensure proper operation.

NOTE: This procedure is best done with two people.

1. Loosen the two bolts on the top bracket that hold the arm in place while a second person holds the bottom bracket firmly in place on the table.
2. **Do not** loosen the bottom bracket bolts!
3. Adjust the arm in the upper bracket until the desired position is achieved.
4. Tighten the bolts in the upper bracket
5. Test the positioning by rolling the arm along the beam. It should roll smoothly across the entire work top.
6. You may need to repeat steps 3 through 7 to achieve proper adjustment and smooth functioning of the arm.

6.3 Removing the Cylinder

Over time your cylinders may slow down due to wear. It may be necessary to rebuild your cylinder by replacing the larger internal O-ring, the gasket, stainless steel washer and screw.

1. Turn off the airline to the regulator. The line is connected to the regulator by a push-in fitting. Push in on the outer ring to release the tension on the air line as you pull the airline out.

2. Remove the rear plumbing bracket located at the upper end of the Clamp Arm. (Fig 33)

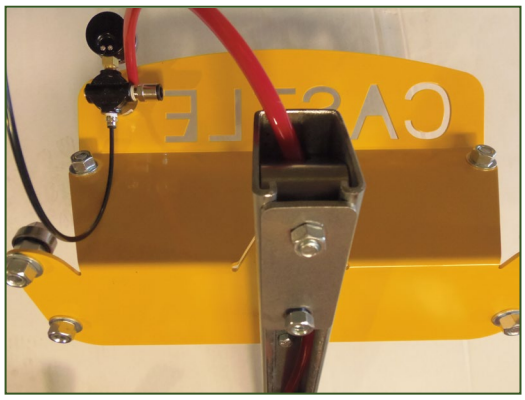

Fig 33

3. Slide the cylinders out of the Clamp Arm by pushing them through the top of the Upper Clamp Arm Bracket. (Fig 34)

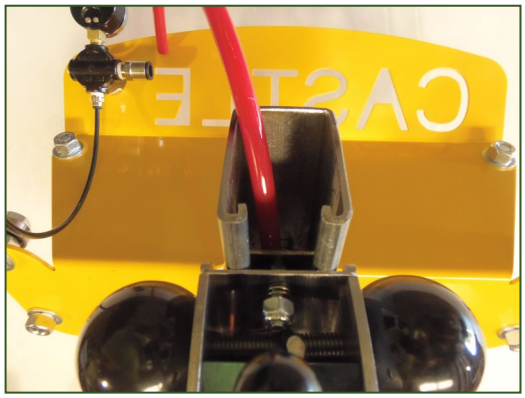

Fig 34

WARRANTY INFORMATION

Castle, Inc. uses only the highest quality materials available for the construction of our machines. Your AT Race Arm is warranted for one (1) full year from the date of purchase against workmanship or material defects under normal use and service. Castle, Inc. is not responsible for failures or injuries due to negligence, misuse, alteration, unauthorized service, or accidents.

Owners of new machines are obligated to contact their dealer AND Castle before contracting for or attempting warranty repairs or service.

If Castle or dealer technicians determine that reasonably simple adjustments or tests are necessary in delivering remedy to a failed machine, owners of warrantied machines are obligated to exercise due diligence while assisting in the execution of these simple adjustments or tests.

When a problem cannot be resolved via telephone support, Castle will, at its expense, send replacement parts and instructions to the purchaser necessary to cure the defect. Castle will not be responsible for providing labor on repairs that are deemed reasonable for the owner to accomplish. Castle, Inc., at its sole discretion, will elect to either repair (by a Castle technician or dealer technician) or replace a machine in the case of warranty issues that exceed reasonable owner repair expectations. Alternatively, Castle will factory repair any machine provided the machine is returned to Castle, shipping prepaid, within the warranty period.

Castle will not, under any circumstances, be liable for consequential, incidental, special or exemplary damages, or for loss of time, revenue or production. Further, Castle disclaims any warranty, expressed or implied, as to the merchantability or fitness of a Castle product for any particular purpose.

30 Day Refund Policy

Any Castle machine that is un-altered and in almost new condition may be returned by the purchaser, for any reason, within 30 days of the purchase date for a full refund. Please contact your Castle authorized dealer for more information.

For Technical Assistance, Parts & Tooling contact your local Castle Dealer or Castle Inc. at 800-282-8338 Monday through Friday, 7:30am – 3:30pm, Pacific Time.