TROUBLE SHOOTING & MAINTENANCE GUIDE

COLUMBIA TAPING TOOLS™

TABLE OF CONTENTS

COLUMBIA TAPING TOOLS™

Automatic Taper Maintenance

3) Taper troubleshooting

4) Overview- tools required

5) Cutter blade replacement

6) Replace cutter chain rollers

9) Cable replacement

13) Feed needle adjustment

14) Fix leaking filler valve

15) Adjust/ replace brake roller and axle wire

21) Replace nyliners and head bushings

22) Replace tape wheels

23) Final re-assembly summary; *Contact information for additional technical support.*

****When you are doing repairs, I will occasionally show a small "No Muscle" figure. Small screws do not need a great amount of tightening- snug + 1/8 turn is plenty when you see this symbol**

COLUMBIA TAPING TOOLS™

Automatic Taper Troubleshooting

The Columbia Automatic Taper is an extremely high-quality tool that should give many years of solid, reliable performance with basic care and maintenance.

Some issues that may arise with continued use are as follows:

- Tape cutting is difficult or tape is not cutting cleanly. The first thing to check is the cutter blade. If it is worn or damaged, it may not cut the tape cleanly. If the tape looks more torn than sliced, most likely the blade needs to be changed. Refer to page 6 for quick replacement instructions. If the control tube is difficult to operate, the cutter chain rollers may be worn, allowing the cutter chain to drag in the guide tube. A new set of cutter chain rollers can make your taper cut like new again. Refer to pages 6-8.

- Mud is not feeding with tape, even after checking gate to make sure it is open and disengaging lever is in proper run position. Most likely the cause of this issue is a broken or disconnected cable. Refer to pages 9-12 for quick, easy instructions for replacing cable.

- Tape does not advance properly. The feeder needle should be sharp and properly adjusted for easy tape feeding. See page 13 for proper adjustment and setting for the feed needle.

- Mud leaks out of filler valve when operating the taper. What a nuisance this can be! Usually this is caused by a small bit of dried mud compound sticking filler open, or possibly a small bit of debris has been stuck between valve and filler body. Make sure pump has good, clean screen in place, and see page 14 for quick tips on clearing valve to stop leakage.

- Tape wheels roll backwards (brake roller not working properly). This can cause areas of no mud behind the tape or "blisters." It is most likely a simple matter of adjusting the brake dog (page 15) or replacing the brake dog and ratchet rod (pages 15-17).

- Taper leaks from behind creaser pulley or large drive chain gear. This is most likely time for some maintenance. See pages 18-21 for instructions to replace nyliner seals.

OVERVIEW/ TOOLS REQUIRED

In this section, we will cover the basic maintenance steps most often required to properly maintain your auto taper. All of these steps will be used when doing further maintenance and rebuilding of the taper head area.

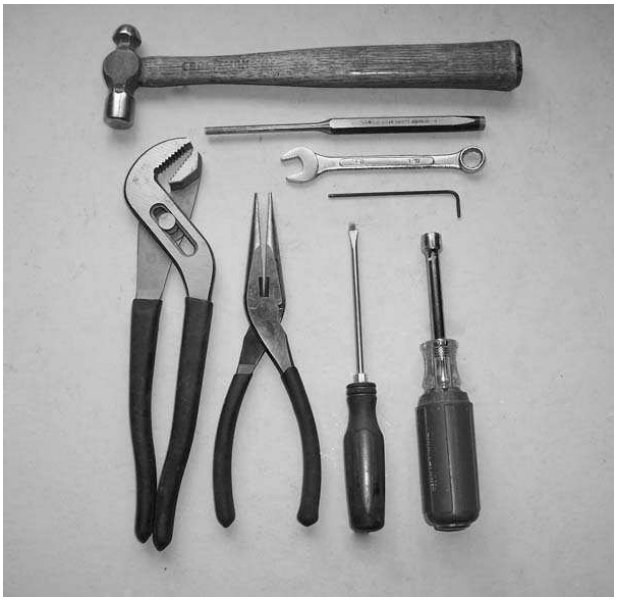
It is very important when working on the taper head area to begin with the tool as clean as possible. If you clean and lubricate your tool regularly, this will provide the best situation for maintenance. If it's been a while since good running water was handy, it might be a good idea to use a pressure washer before beginning the following maintenance.

One major rule of successful repairing/ rebuilding- it may be necessary to use moderate force to remove components that may be bound with dried mud compound. **BUT!- Parts should never be forced back together during re-assembly! Clean, properly aligned parts make for great rebuilds!

TOOLS REQUIRED FOR BLADE, CUTTER CHAIN ROLLERS, CABLE, LOCKING ROLLER AXLE and NYLINER REPLACEMENT

- Small hammer
- 3/16" long shank pin punch
- 7/16" wrench
- 5/64" hex key
- Channel locking pliers
- Needle nose pliers
- Small screwdriver
- 11/32" Nut driver or wrench

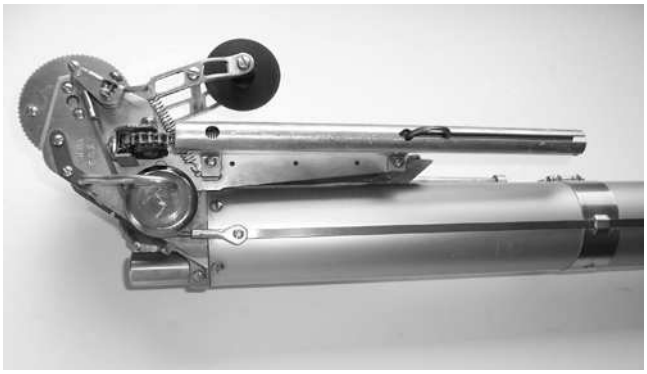
Handy parts kits:
Taper Repair Kit (CTR-1)
Taper Repair Kit (CTR-2) (Shown page 18)



Cutter Blade Replacement

After a good amount of regular use, the cutter blade may become dull or damaged. Signs of cutter blade wear/ damage are more difficult cutting or uneven cutting. When the blade is worn, tape cuts may appear more torn than sliced. This is a quick, simple situation to cure.

1) Begin by turning key ring ¼ turn to release tension on cutter return spring. Key ring slides in slot in return spring tube.



2) Use small flat blade screwdriver to loosen screw holding cutter blade. ½ to ¾ turn is plenty- this screw does not need to be removed!

3) Although the cutter blade may not be cutting the tape properly, IT MAY STILL HAVE SHARP AREAS! Use needle-nose pliers to remove old blade.

4) Install new blade CT 42A, tighten screw and return key ring for return spring tension.

Replace Cutter Chain Rollers

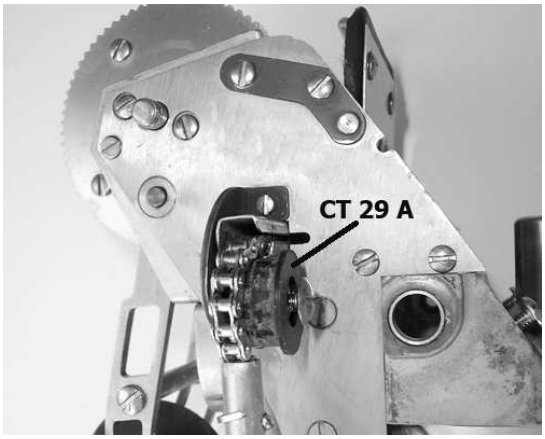
The Columbia taper is one of the smoothest-cutting automatic taper on the market. Special cutter rollers are used for ease of operation. In the event the rollers become worn, a few minutes' work with a couple simple tools will make your taper cut like new again!

1) Remove nut holding chain tension/guide bracket.

2) Remove chain tension/guide bracket.

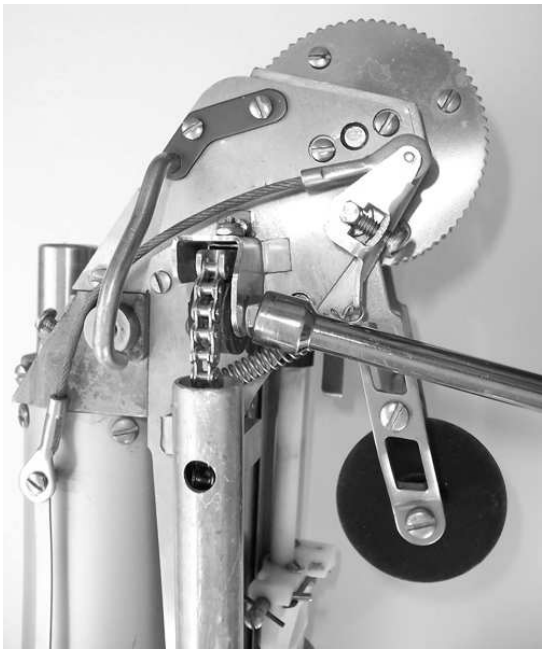
3) Remove screw holding cutter chain roller CT 29A (This is the larger of the two cutter chain rollers for better chain control.)

4) Replace with new roller CT 29A and attach roller, bushing and bolt to bracket.

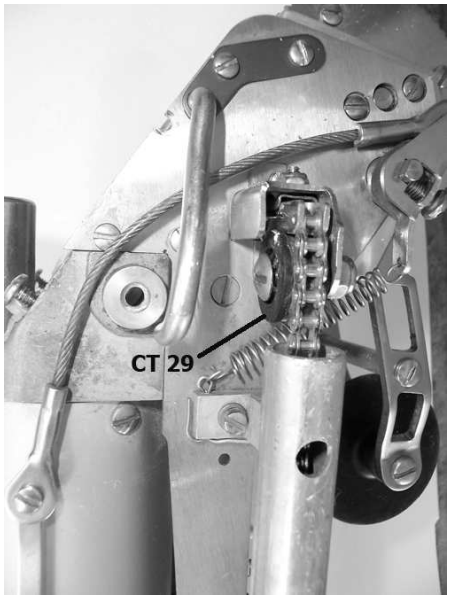


5) Replace tensioner/ guide bracket and re-install lock nut.

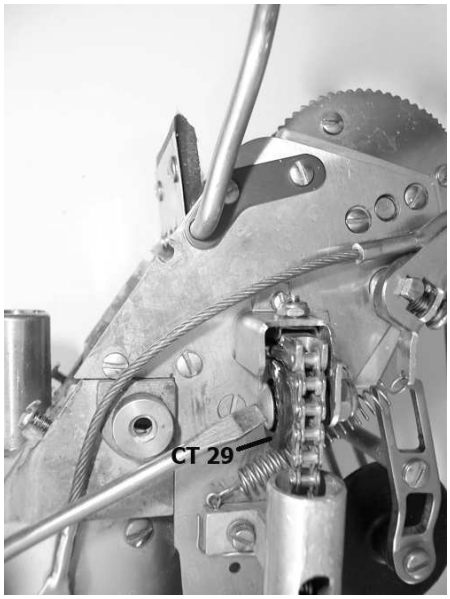
6) On the other side of the taper, remove lock nut from screw that holds chain roller. (This is the smaller of the two chain rollers.)



7) Remove screw that attaches roller and bushing to bracket. Remove old roller from screw and bushing.



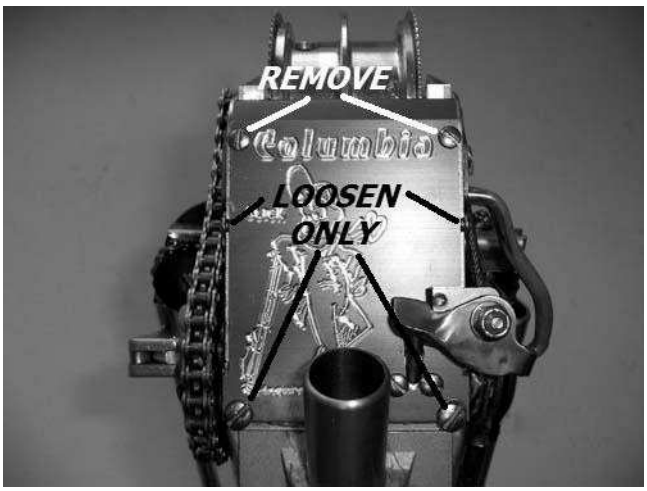
8) Install new roller CT 29 on screw and bushing and re-attach to bracket.



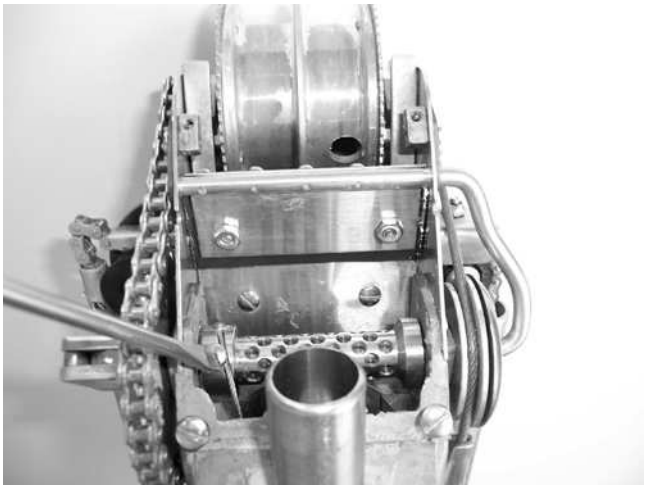
9) Re-attach lock nut to front of screw on bracket.

Replace broken cable

1) To replace the cable in the Columbia taper, you must first remove the cover plate. Note that only the two screws closest to the tape wheels need to be removed. The other four screws only need to be loosened.



2) With cover plate off, loosen screw in cable drum that holds cable (CT 72).

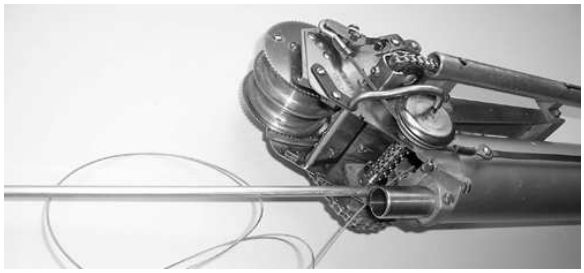


3) Unwind any cable (CT 72) still on the drum and lift ball end out of holding slot.

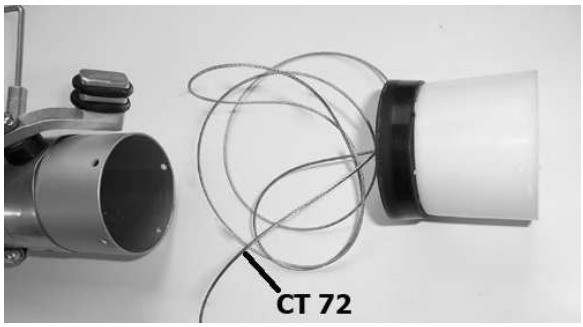
4) Remove three screws that hold guard ring on end of taper tube.

5) Remove guard ring.

6) Use small rod or wire (I like a piece of ceiling grid wire about 5' long) to push plunger out of tube. If you don't have a piece of wire handy, you can spray the chamber full of water to push piston out.

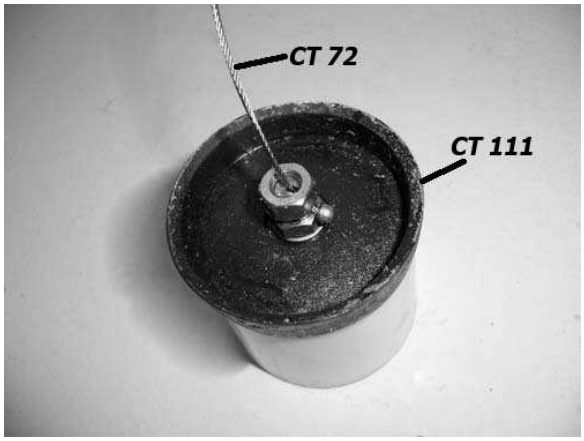


7) Piston out of taper.



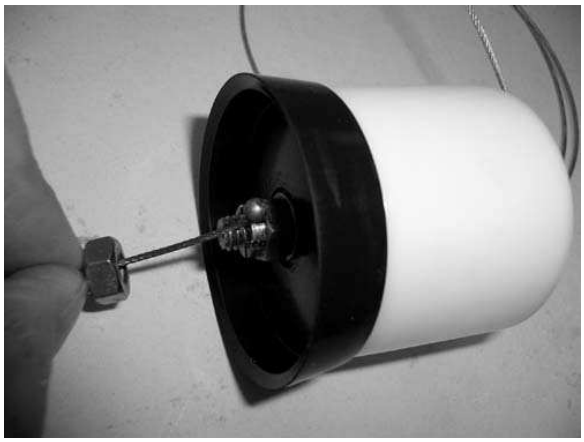
****If you are replacing nyliners, proceed to page 19.**

8) Close view of piston and cable.



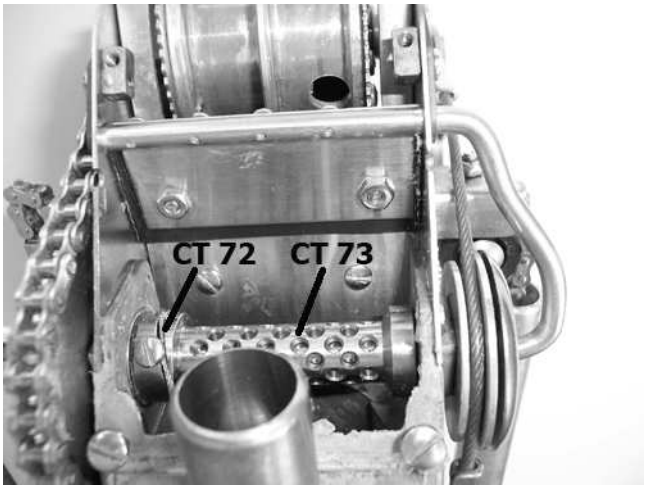
9) To replace cable, only the first retaining nut needs to be removed.

10) When attaching new cable, it should line up with groove in bolt and slot in special castle nut as shown.

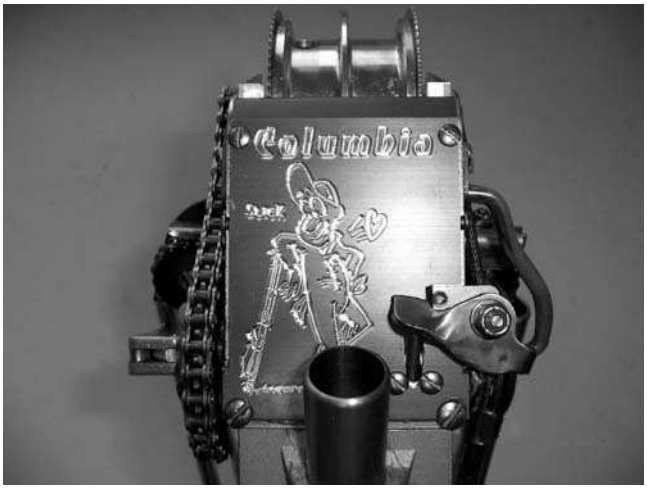


11) Insert piston back into taper tube and push in with wire at least half way up the tube.

12) Put ball end of new cable into notch in cable drum, tighten screw (snug is PLENTY!) and wind cable around drum until it is within 2”-3” of cable drum (CT 73).



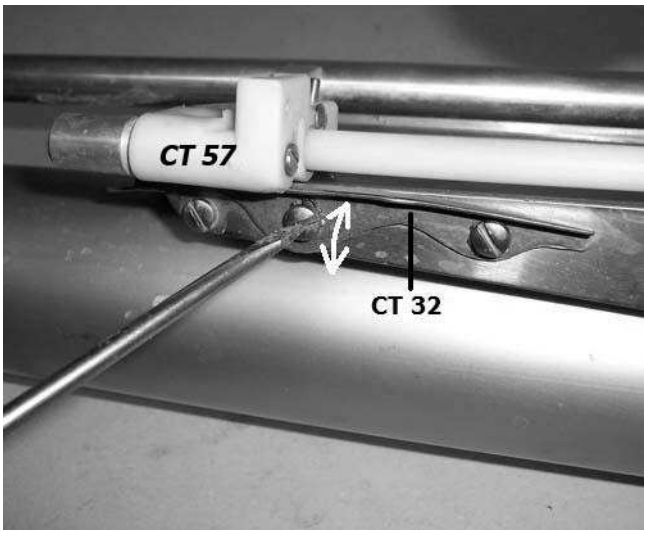
13) Re-attach cover plate and you’re set!



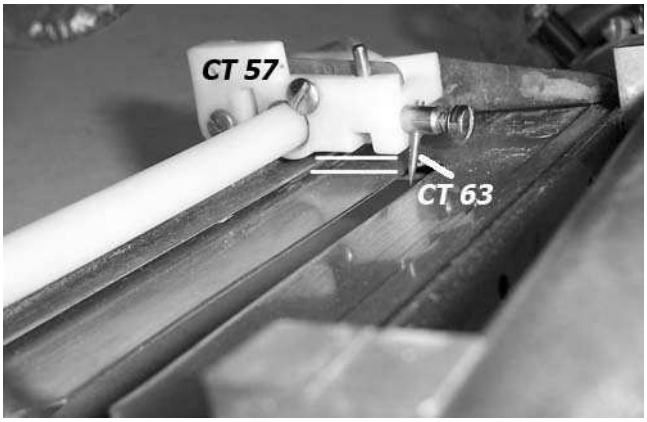
Set Feed Needle

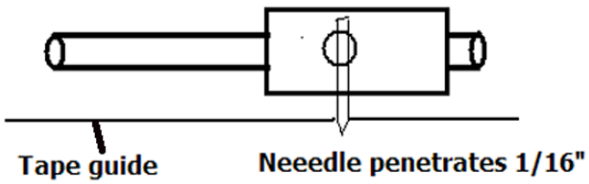
It is important to have the feed needle properly adjusted for the tape feed operation to work smoothly. There are a couple settings that should be checked if your tape is not feeding properly when you advance.

1) The first thing to check is the position of the Tape advance carriage (CT 57) It should be set level with the paper feed guide as shown in picture 2. If the carriage needs adjusting, loosen screw on carriage cam (CT 32) and adjust cam so carriage is level with feed guide. Re-tighten screw.



2) Set feed needle so the sharp point goes 1/16" through feed guide as shown in picture 2 and diagram. Tighten screw.



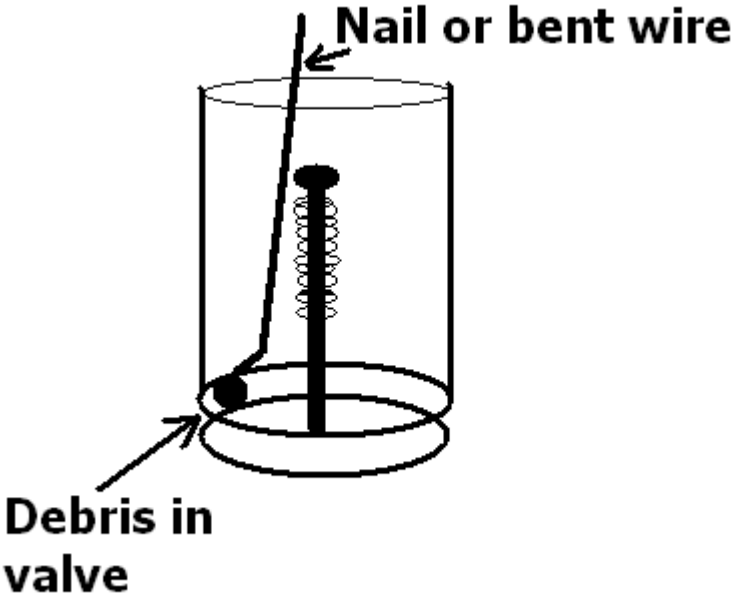


Mud Leaks Out of Filler Valve When Operating Taper

There are several things that can cause the mud supply valve to stick and allow mud to leak out as you are operating the taper. Precautions can be taken to avoid this.

- ✓ Always flush valve thoroughly with water when cleaning taper after use.
- ✓ Always keep good, clean screen in bottom of pump when filling taper.
- ✓ Mix mud compound thoroughly to avoid any lumps in mix.
- ✓ Be cautious on jobsites when working around other trades. For example, if a carpenter is cutting lumber in the same room where your mud bucket is, sawdust can get in the mud and be pumped into the taper when filling. Any foreign debris drawn through the pump can potentially cause the valve to stick.

The first thing to attempt to clear a sticking valve is a good blast of water from a garden hose or pressure washer. If that does not free the valve, see the following drawing for a quick remedy.



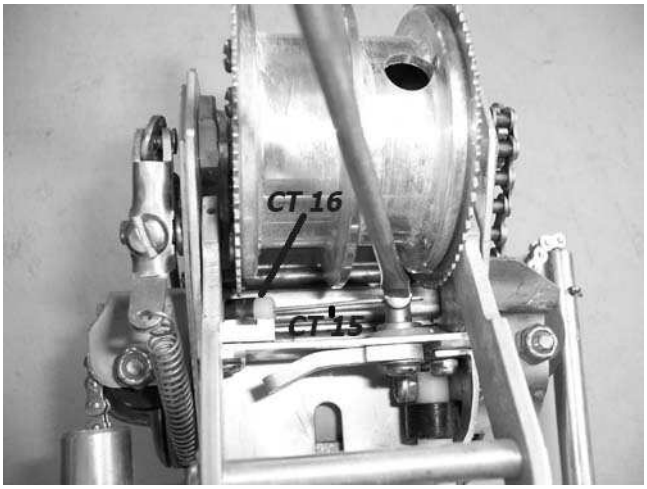
A small piece of uncoated copper wire or nail with a slight "L" bend at the end can be worked around the base of the valve housing to remove any debris lodged between housing and valve. After clearing around base of housing, flush again with water and the valve should no longer leak.

Adjust/Replace Brake Dog & Ratchet Rod

The Columbia taper has a handy adjustment feature that allows changing the brake dog tension (new style tools). If the tape wheels roll backward when operating the taper, check the brake dog tension setting first.

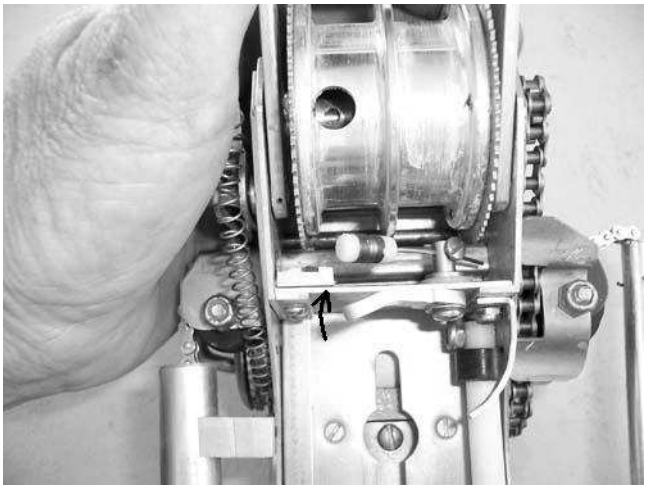
1) To adjust brake tension, push lever CT 14A either forward or backward until you get desired tension. If brake or ratchet rod are worn or missing and you can't get desired tension with adjusting lever, proceed to the next steps to replace.

2) Use small screwdriver to loosen retaining screw 1 turn only. *It does not need to be removed and can be a bugger to put back in!*

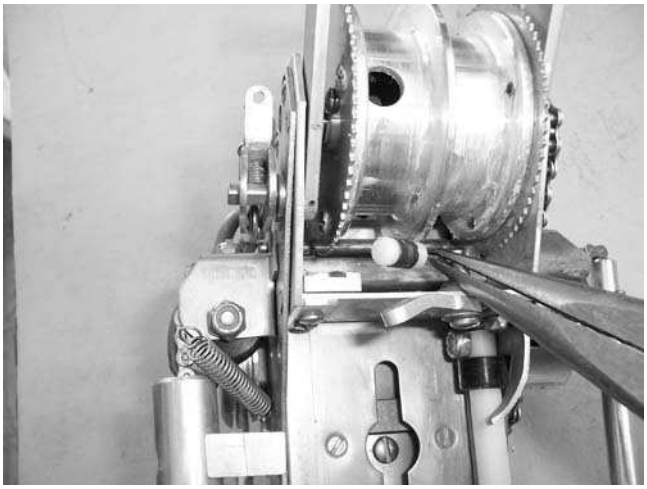


3) Use small screwdriver to push roller (CT 16) and ratchet rod (CT 15) in direction shown.

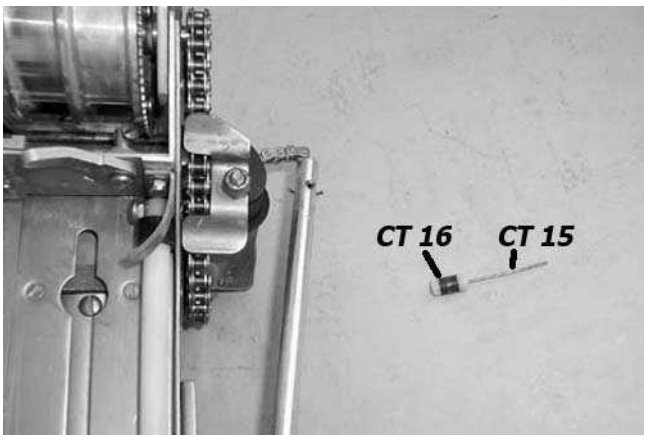
4) Turn adjusting lever outward until brake roller clears wheel.



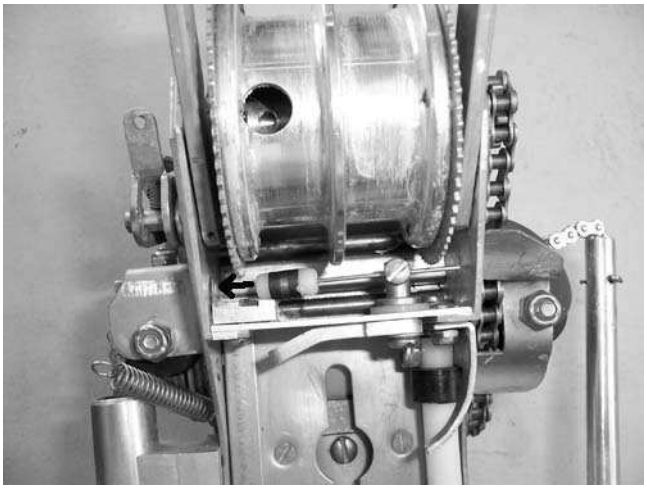
5) Use needle nose pliers to remove roller and rod.



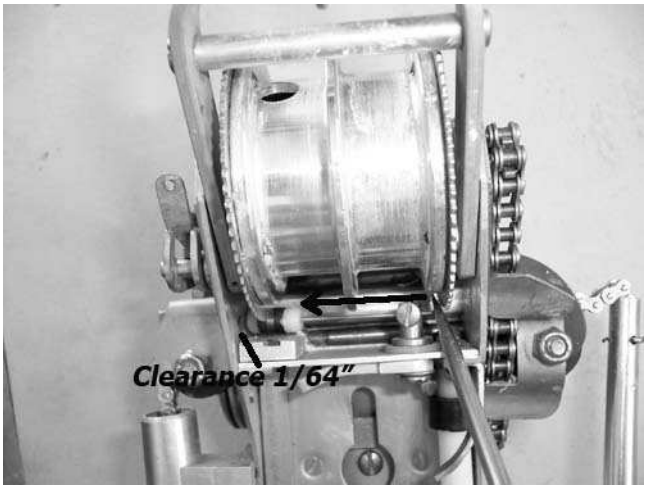
6) Brake roller and ratchet rod out. Put new roller and ratchet rod in holder and turn lever inwards until it looks like next picture.



7) Roller and rod in place.



8) Use end of small screwdriver to push rod and roller into position. The roller should have just enough clearance (approximately 1/64") from the side plate so that lever adjusts roller freely. Tighten set screw and adjust tension as desired.



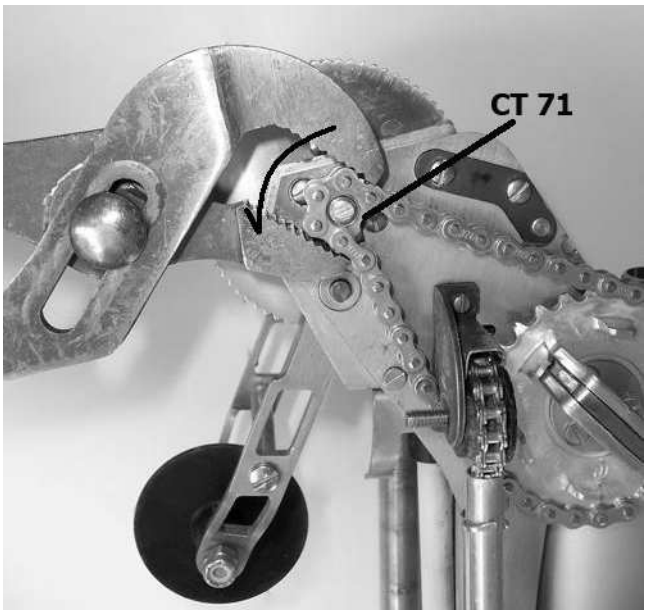
CTR-2 Kit- Nyliners & Ratchet Gears

Replace Nyliners

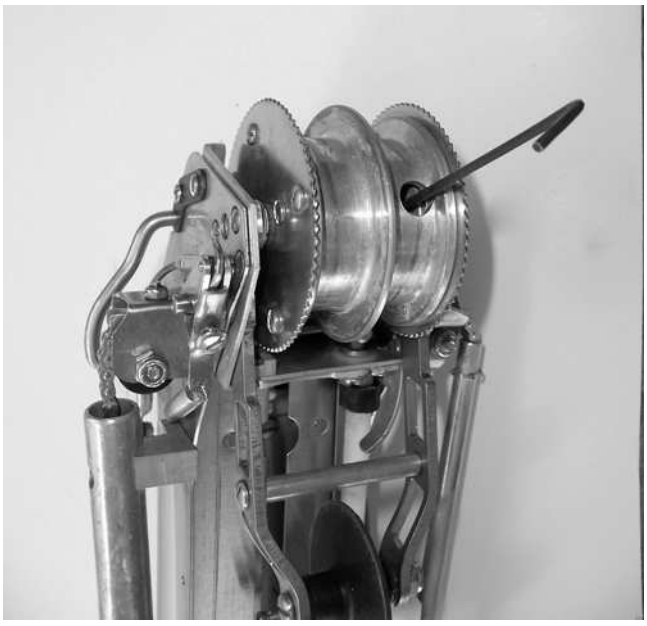
When nyliners become worn, taper may leak behind large gear or from behind cable guide pulley. Some minor maintenance at this time will save excessive wear on drive shafts and other important parts, and make your taper run cleaner as well! The CTR-2 kit has the parts you will need for these repairs.

When replacing nyliners, begin with instructions to remove cover plate, cable and piston (Pages 10-11)

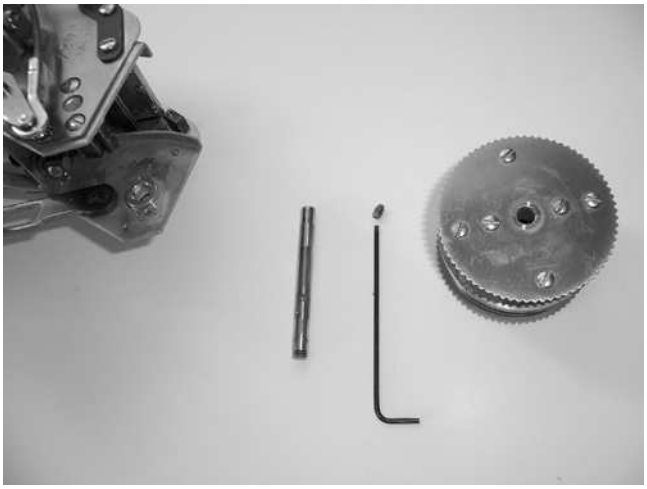
1) The drive drum with ratchet gears needs to be removed first. Small gear unthreads counter-clockwise to remove gear and chain.



2) Use 5/64” hex key to remove set screw that holds drive drum to drive shaft.

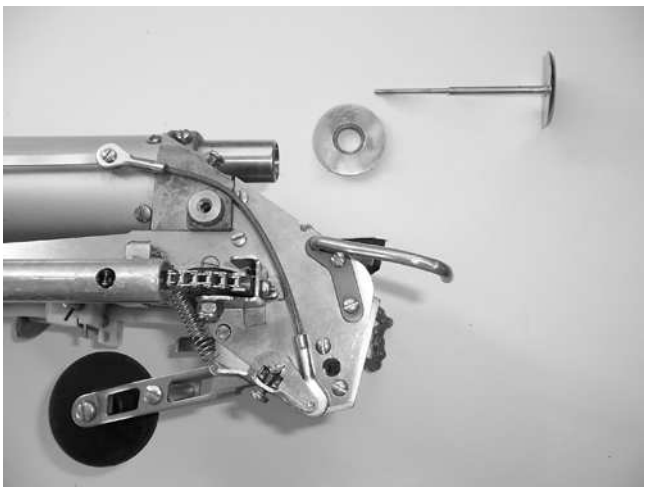


3) Drive drum and shaft removed.

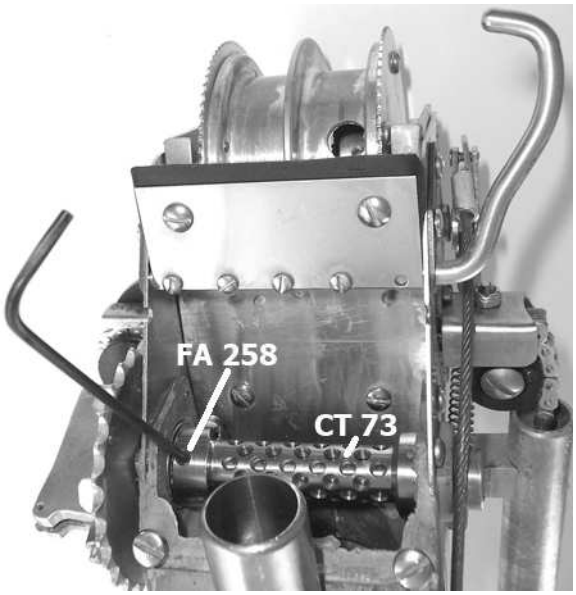


4) Turn mud shut off lever arm as shown to release cable guide pulley and clutch release shaft.

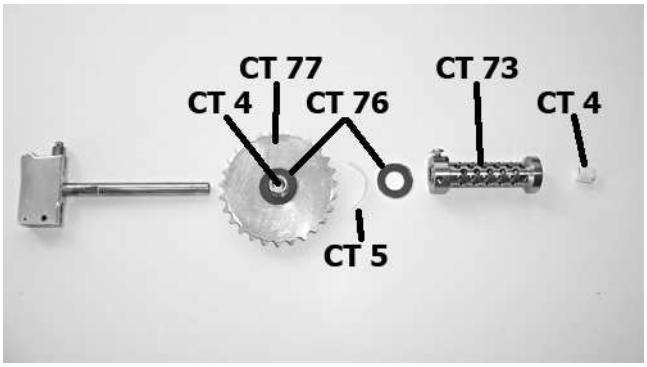
5) Remove pulley and shaft.



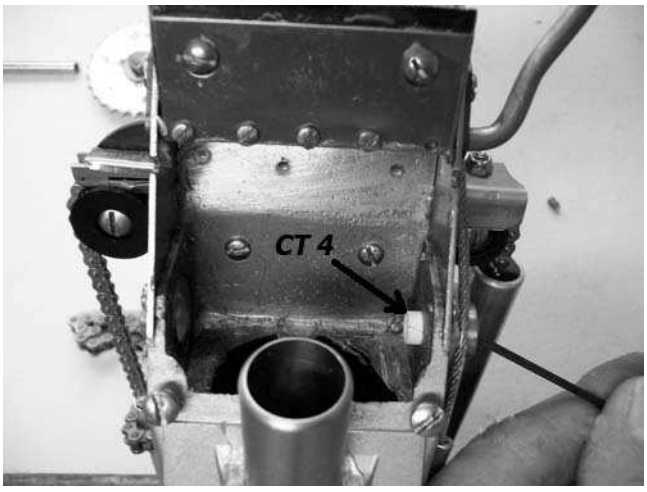
6) Use 5/64” hex key to remove set screw FA 258 from cable drum.



7) Note order of parts as this will be important when re-assembling. Also note there are two CT 76 nylatron washers- one goes between the large gear and head casting and the other goes between the cable drum and head bushing inside the head.

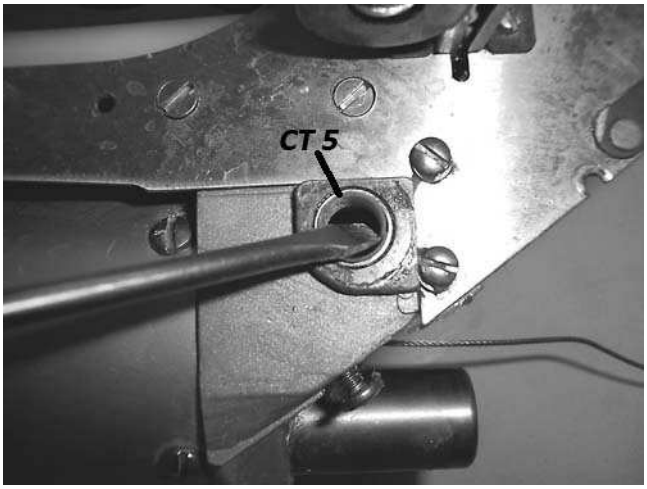


8) Use hex key to push old CT 4 nyliner out of head bushing. Replace with new CT 4.

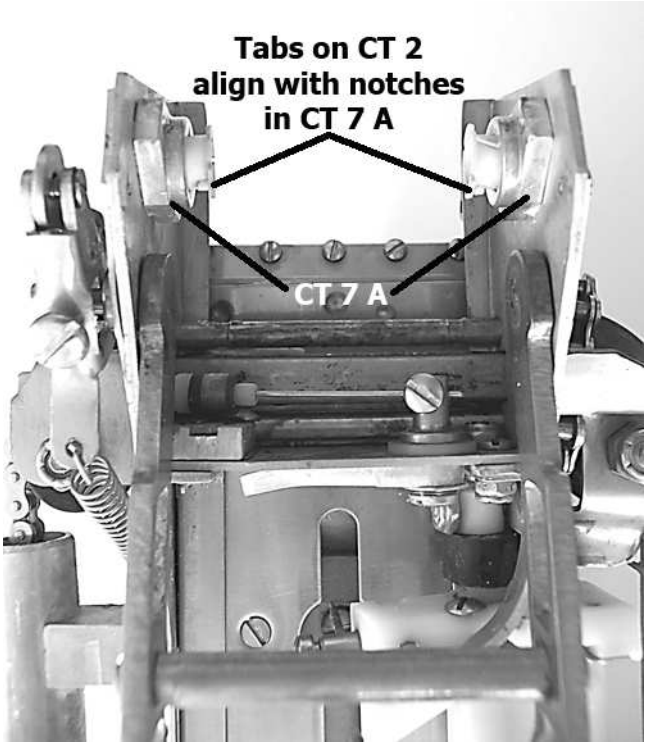


9) Use small screwdriver to push old CT 5 nyliner out of insert bushing.

10) When installing new CT 5 nyliner, roll it in a circle and insert into bushing. Use small screwdriver to work ends together so it fits evenly in insert.



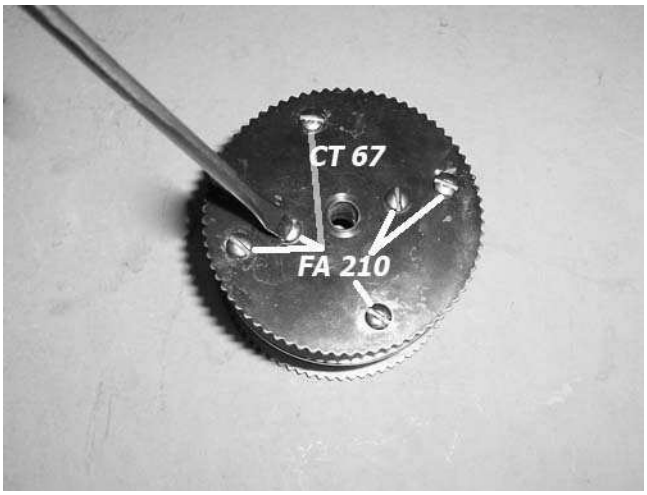
11) Remove old CT 2 nyliners from side plate hubs. When installing new CT 2's, note the locating tabs on the nyliners that fit into notches in side plate hubs.



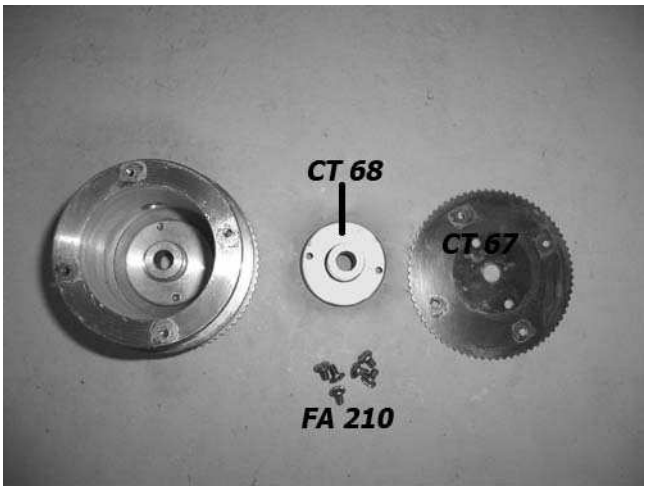
Replace Ratchet Gears (Tape Wheels)

Good, sharp teeth on ratchet gears will make the brake work easier and give a more positive drive when operating the taper.

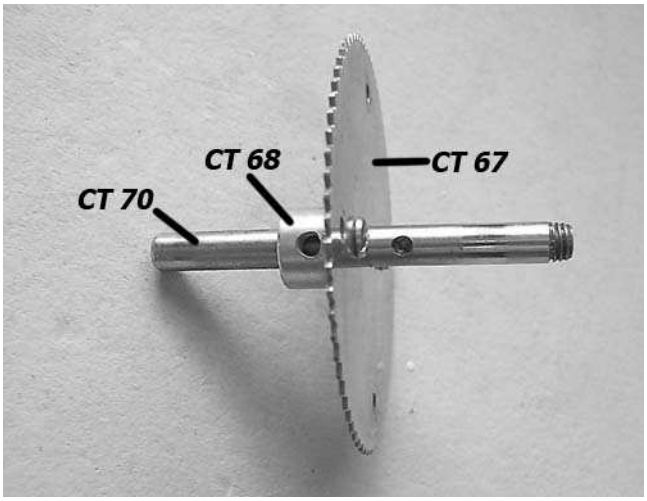
1) Remove the screws (FA 210) that hold ratchet gears to hub and drum.



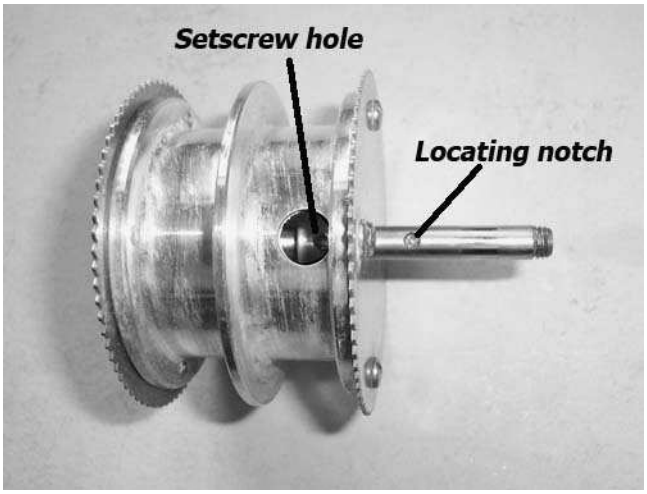
2) Ratchet gear removed from hub and drum.



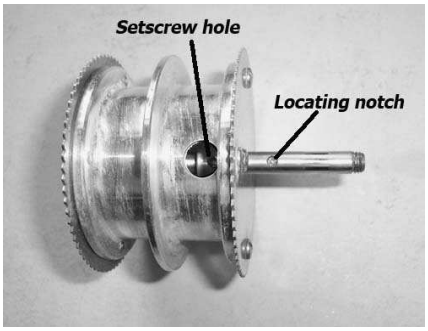
3) Install new ratchet gears to hubs first. Tighten Screws a little at a time, checking the alignment of the holes in gear and hub. When the screws are tight, the assembly should spin freely on drive shaft.



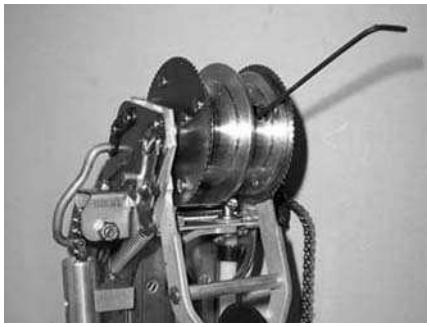
4) Attach both gear/hub assemblies to drum, tightening the screws a little at a time. Align with drive shaft. When gears are attached to drum, the assembly should spin freely on drive shaft. This is VERY IMPORTANT for easy re-assembly and future maintenance.
Also, pay attention to the locating notch on drive shaft. When installing drum and shaft on taper, this notch must align with set screw hole in hub.



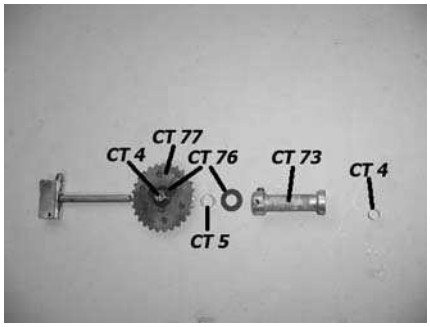
Let's get it all back together! (Summary)



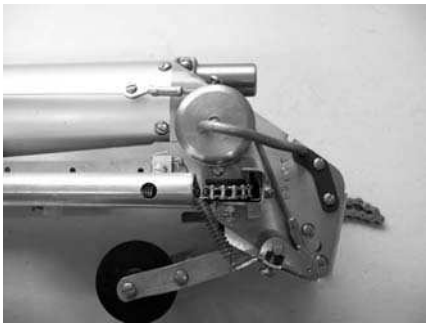
Re-install drive drum on tape



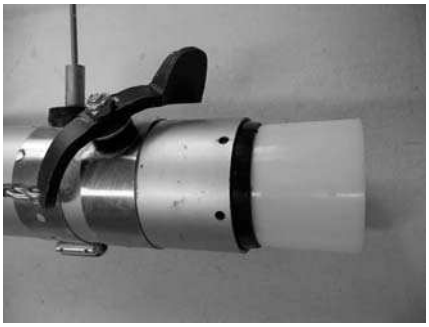
Tighten set screw



Install drive parts

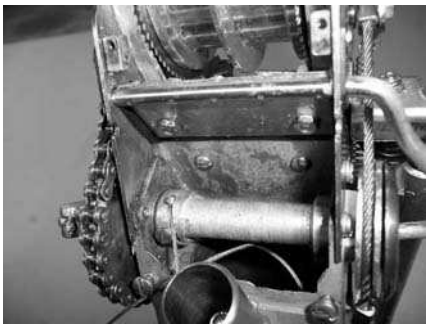


Install pulley & shaft



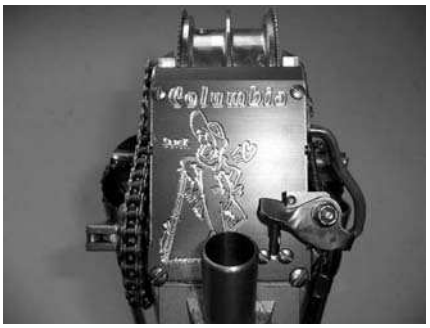
Install plunger

Attach guard ring



Attach cable

Install chain & gear



Replace cover plate

COLUMBIA TAPING TOOLS™

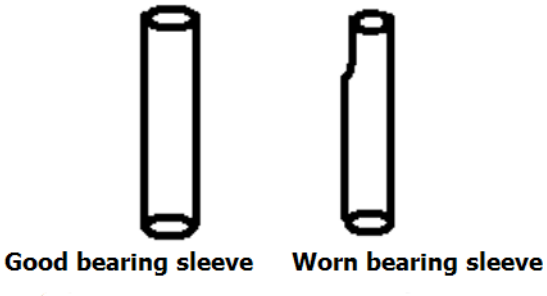
Corner Roller Troubleshooting

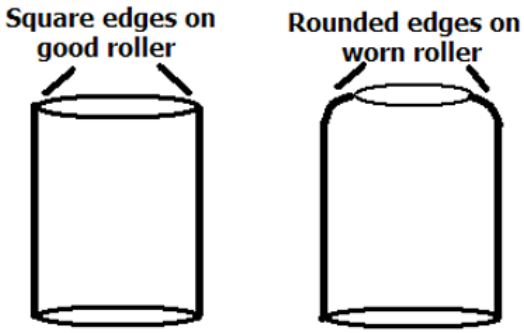
The Columbia corner roller is designed to give many years' trouble-free use and requires very little maintenance. After a long period of use, the rollers and/or bearing sleeves may become worn and need to be replaced.

Indications that your roller may require maintenance may include:

- Roller moves tape out of corner when rolling.
- Corner is rounded and angle head grabs when glazing corner.

If you experience these issues, check the following:





When the bearing sleeves become worn as shown, the roller may not track square in the corner. If your sleeves look like the worn version, they should be replaced.

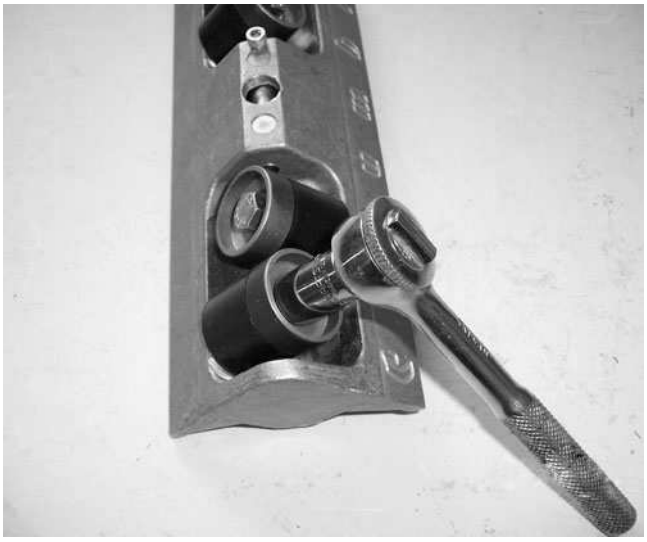
When rollers become noticeably worn as shown, they should be replaced.

Corner Roller Repair

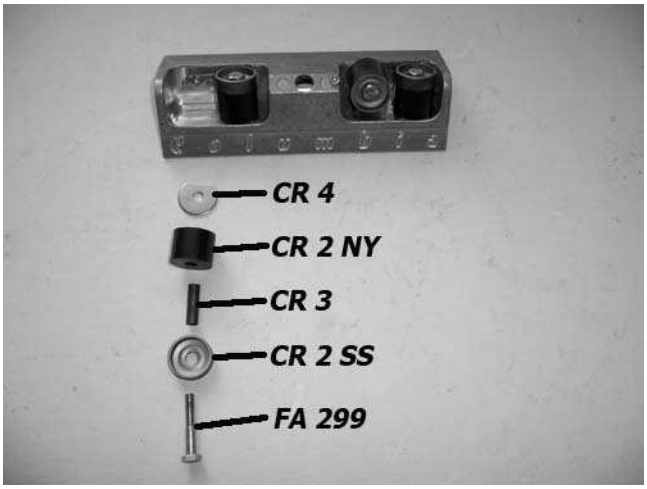
Tools Required

- 7/16” Socket & wrench or nut driver
- Corner Roller Repair Kit (CRA-2) (4 required)

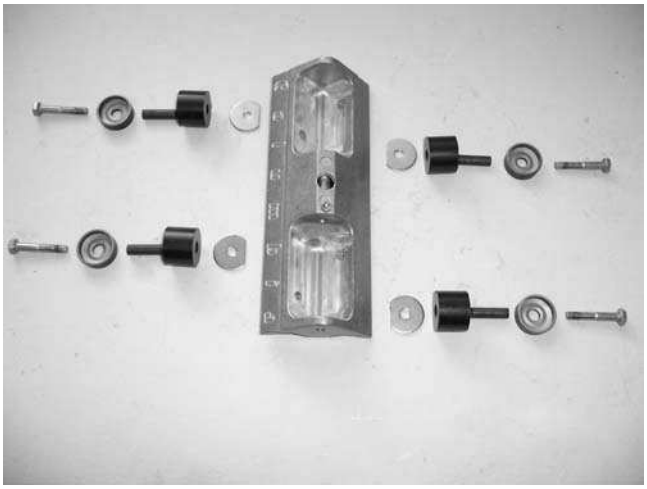
1) Use 7/16” wrench on nut driver to remove hex bolt that holds roller assembly to roller head casting.



2) Note order of parts when disassembled; this will be helpful for easy re-assembly.

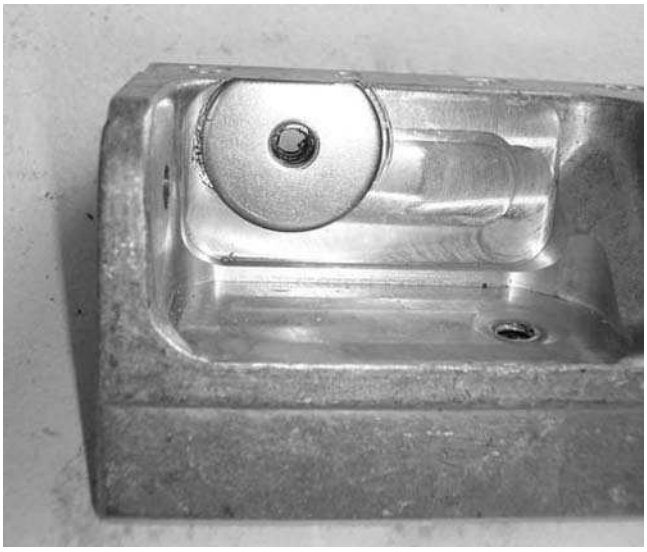


3) Roller parts removed from head casting.



4) New roller assembly. The Columbia corner roller uses components for the easiest, most reliable possible operation. The main nylatron part of the roller makes the operation easy. The steel finishing part provides a crisp, sharp bedding of the corner tape and long-term durability.

5) Place cut washer on head casting first. A small dab of axle grease can help to hold it in place.



6) Install hex bolt, steel/nylatron and bearing sleeve (per previous pictures) and tighten to head casting.

7) Repeat on other 3 wheels and you're done- WASN'T THAT EASY?

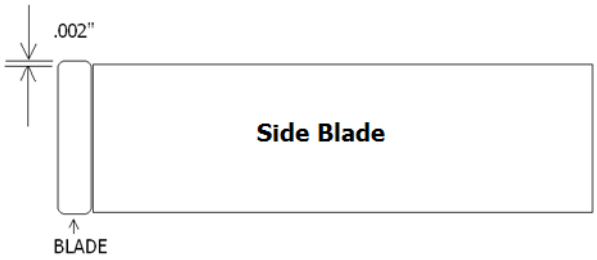
Congratulations on a job well done!

COLUMBIA TAPING TOOLS™

Angle Head Troubleshooting

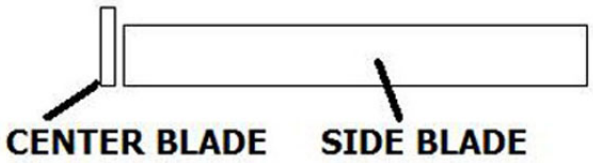
The Columbia angle heads are designed to create a smooth, consistent finish over the corner tape. When blades and frame retainer clips are in good condition and properly set, very little touch-up or sanding should be required in the corners. If you're not getting the finish results you like, check the following conditions to determine if adjustment or repair is required:

When the side blades and skids are properly set, the side blade should be set .002" lower than main blade. This is just enough to catch your thumbnail when you run it between the side blade and skid. This is the good setting for a good finish.



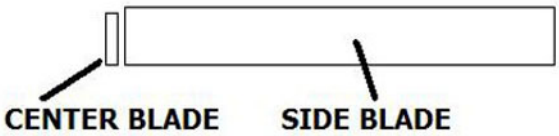
Right

If the side blade is too much lower than the main blade, the angle head will finish the corners, but it may leave a "trail" after the angle head which may require unnecessary sanding.



Wrong

If the side blade is too much lower than the main blade, the angle head may leave "edges", a thick finish that requires additional sanding.



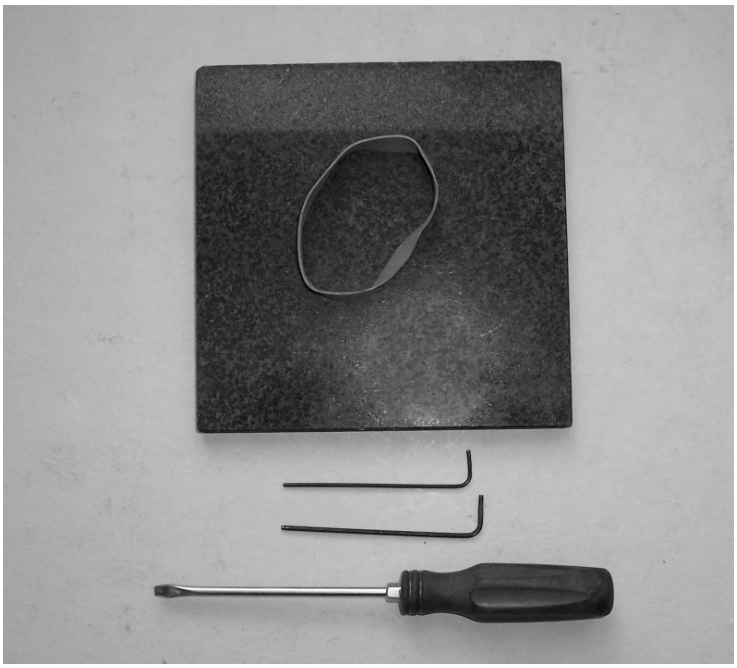
Wrong

Columbia Angle Head Repair

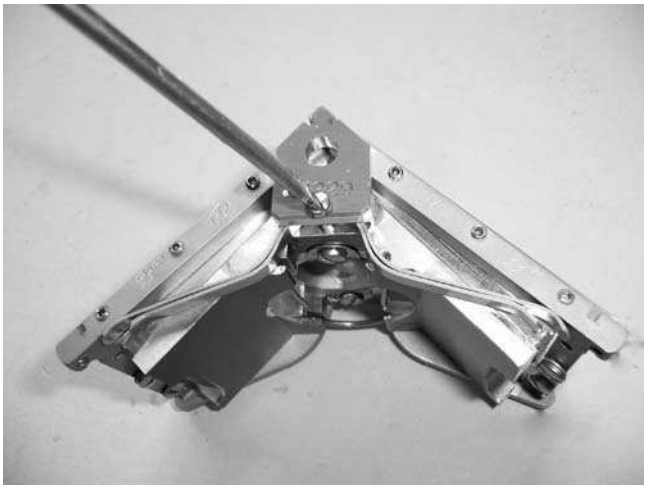
Tools Required

- Flat plate
- Small screwdriver
- 1/16" hex key
- 5/64" hex key
- Large rubber band (Yep, that's right!

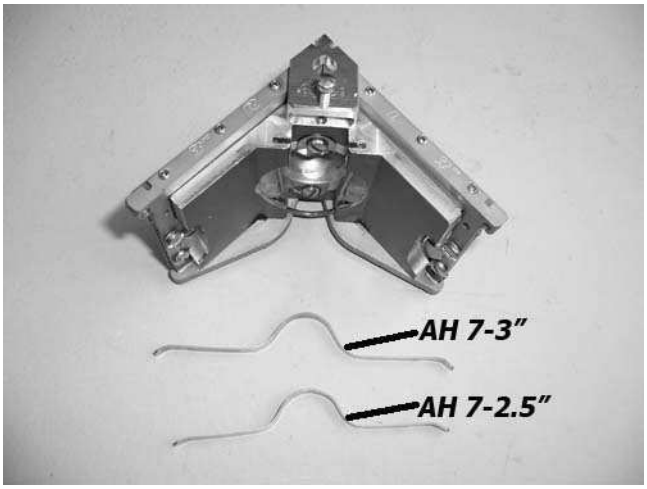
Handy Kits: AHR-1
AHR-2



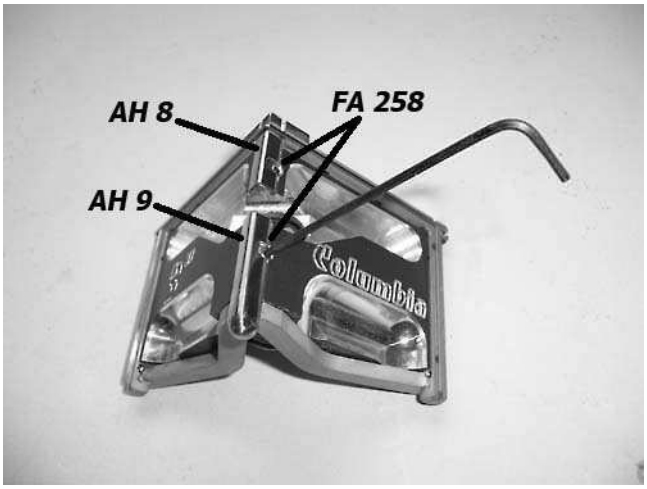
1) Remove screw that holds frame tension spring(s).



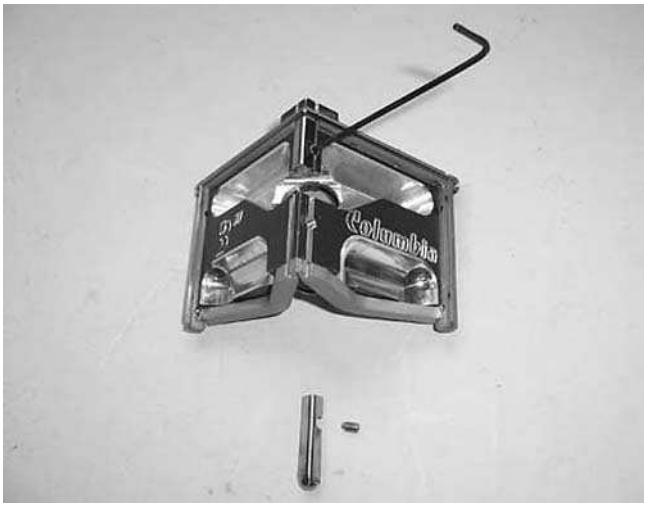
2) Frame tension springs off.



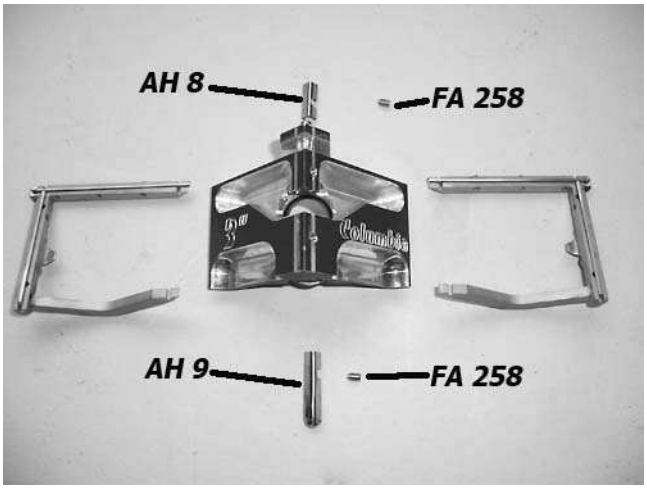
3) Remove retainer clips that hold frames together. 5/64" hex key fits these setscrews FA #258. Start with bottom clip AH 9



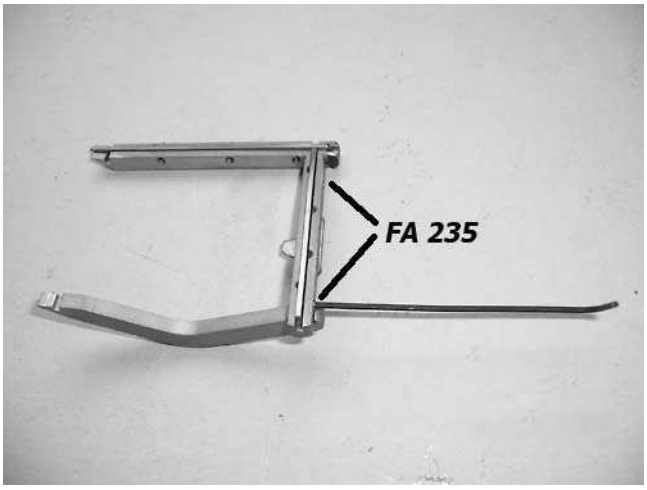
4) Bottom clip off. Next, remove top clip AH 8



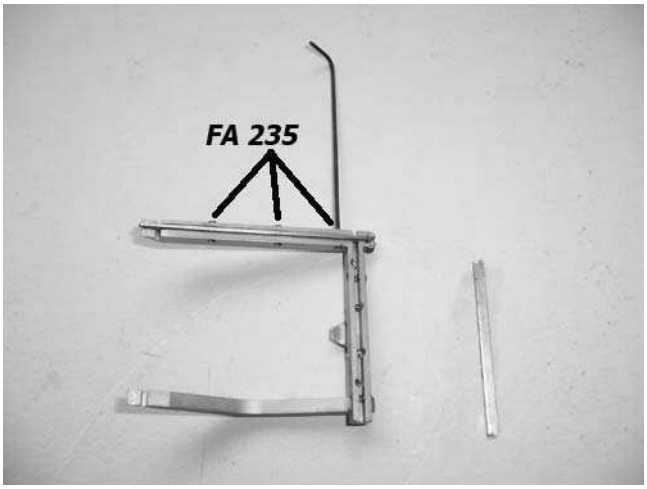
5) Clips off and frames removed from head casting.



6) Loosen set screws FA 235 that hold side blade. These just need to be loosened, not removed.

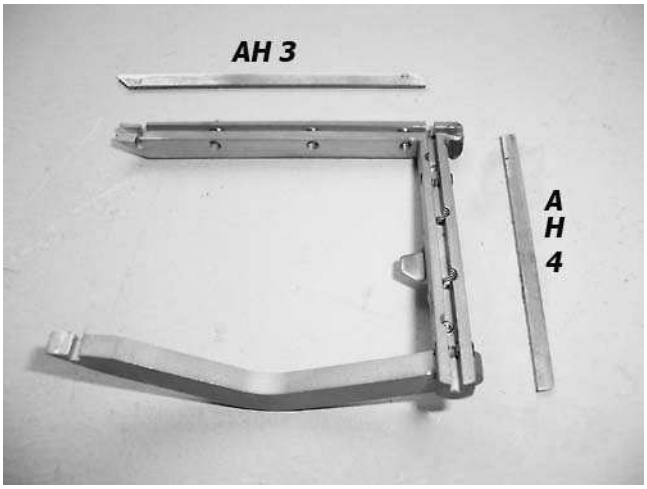


7) Side blade AH 4 out.



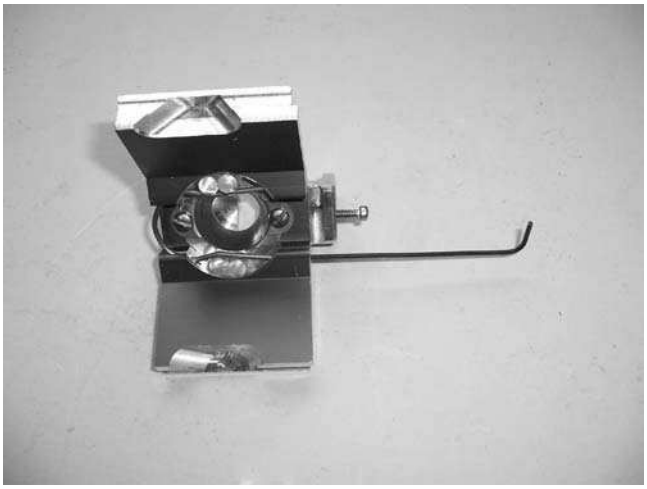
8) Loosen three set screws FA 235 that hold top blade AH 3 (Specify angle head size when ordering replacements.)

9) Side blade, AH 4 and top blade AH 3 out of frame.

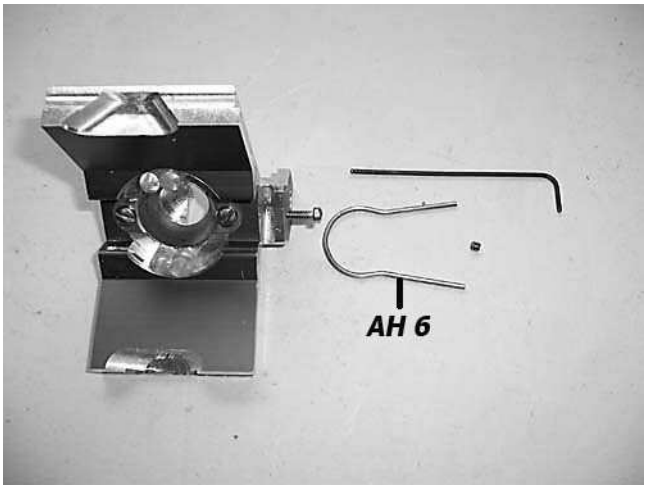


10) Before re-assembling, put frame on flat surface as shown (I use a small piece of granite tile, but a small piece of glass or mirror can work just as well.) Frame should not "rock" at either tip. If the frame does not rest perfectly flat, adjust tips a little at a time until frame no longer rocks at the tips.

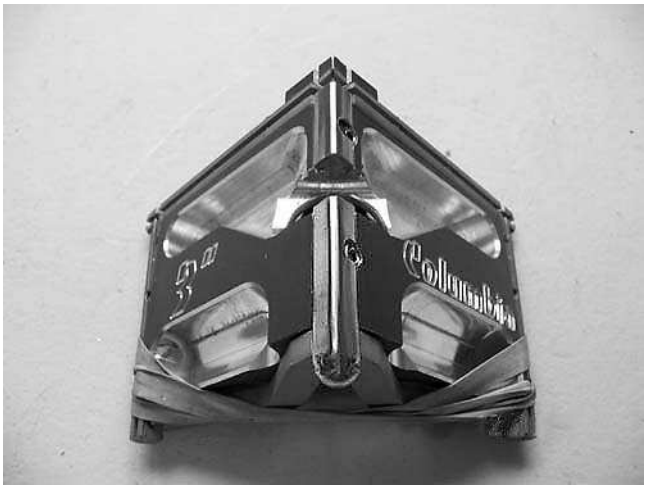
11) Remove set screw that holds retainer spring AH 6.



12) Remove retainer spring and replace with new one. Re-install set screw.



13) Install new retaining clips and compress frames as shown with large rubber band.**

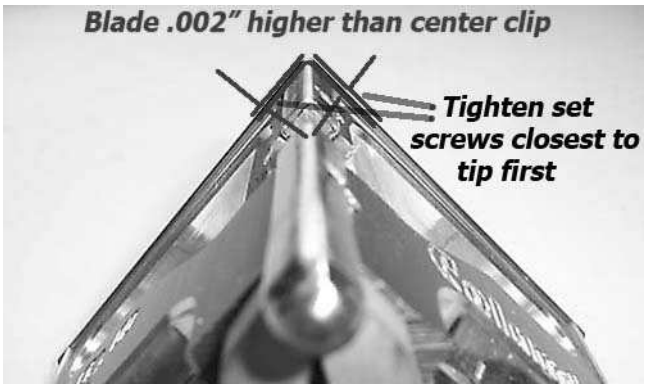


**OK- The story of the rubber band!

**Many years ago when I visited a major taping tool manufacturer, I spent some time with the man who built their angle heads. For setting up the angle heads he was using a very fancy, precision-made, accurately calibrated jig (VFPMACJ) worth about $3500. When I told him I used a large rubber band and flat plate to set angle heads, he laughed- *The challenge was on!* We each assembled an angle head, he with his VFPMACJ and me with my rubber band and flat plate. I was done about two minutes before he finished. NO WAY

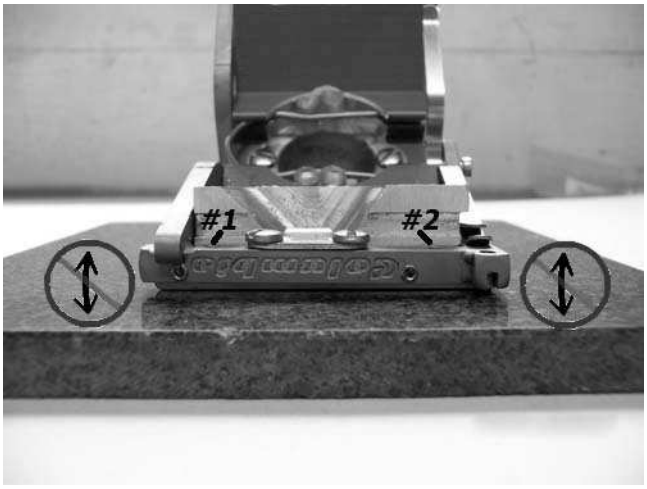
could my angle head be right! He carefully attached my angle head to his VFPMACJ to check the settings- Right on! About 6 months later I visited the same manufacturer and guess what- the VFPMACJ was sitting under the assembly bench with layers of dust and you'll never guess how the man was now setting his angle heads- yep! The rubber band and flat plate! I'll leave it up to you whether you want to get a fancy, expensive jig made, or use what works to get your angle head back in great condition!

14) With frames compressed, set top blades .002" higher than retainer clip. Tighten the two setscrews closest to the retaining clip ONLY! Remove rubber band.

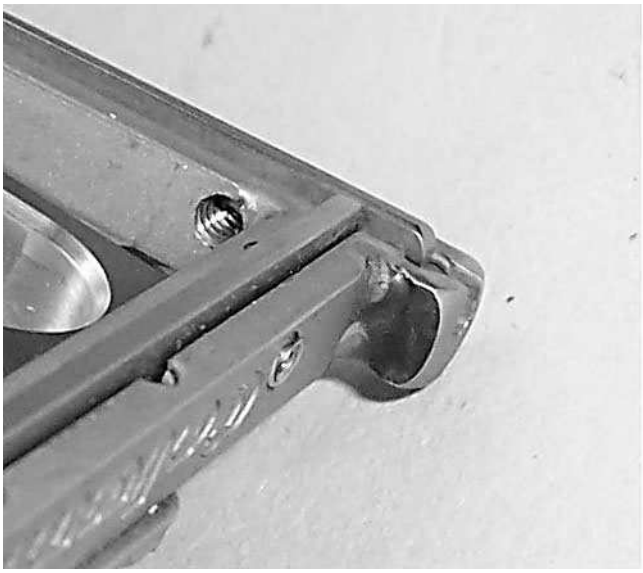


15) This is what your angle head blades should look like at this step. Tighten center setscrews and then outer setscrews.

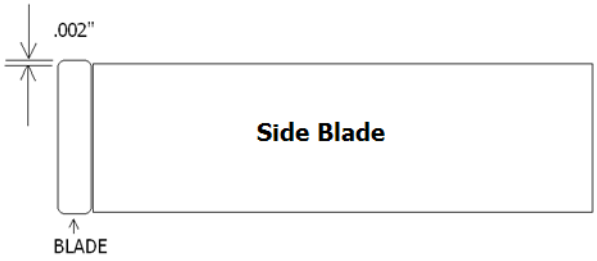
16) Install side blades and use adjusting setscrews to set blade so angle head sits level on flat plate. Adjust setscrew #1 first so there is no "rocking" at either corner. Then adjust setscrew #2 to align side blade properly with top blade- see following picture and diagram.



17) The side blade should be set so it is .002” LOWER than top blade as shown in picture. This is just enough that it will catch your thumbnail if you run it along side blade until it “catches” top blade. This is what we call a “thumbnail click” adjustment.



18) Side blade and top blade set properly. This will allow your angle head to do a nice, consistent finish in the corners.



Bingo! You’re ready to go taping again!

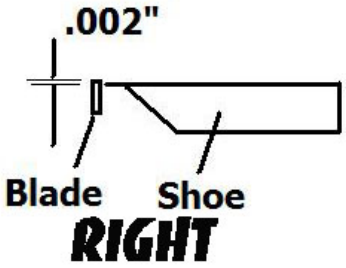
COLUMBIA TAPING TOOLS™

Flat Finisher Box Troubleshooting

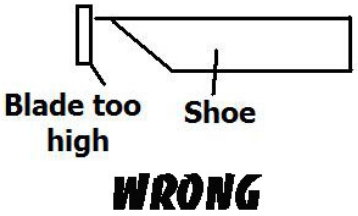
The Columbia flat boxes are designed to apply a smooth, consistent finish over tape seams. The flat boxes will give clean, reliable finish on many jobs with proper care and maintenance.

When the blade or shoes become worn, the finish will not be as smooth. There are some settings you can check to see if it's time to adjust or replace blade or shoes.

When the box blade and shoe are set properly, the blade will be approximately .002" higher than shoe, or a "thumbnail click" higher. This will give the best possible finish results.

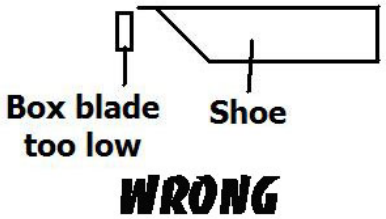


If the box blade is too much higher than the shoe, your box will leave "trails", in other words, the mud will finish to the sides of the seams, but box will leave a trail of mud on the sides of the finish.



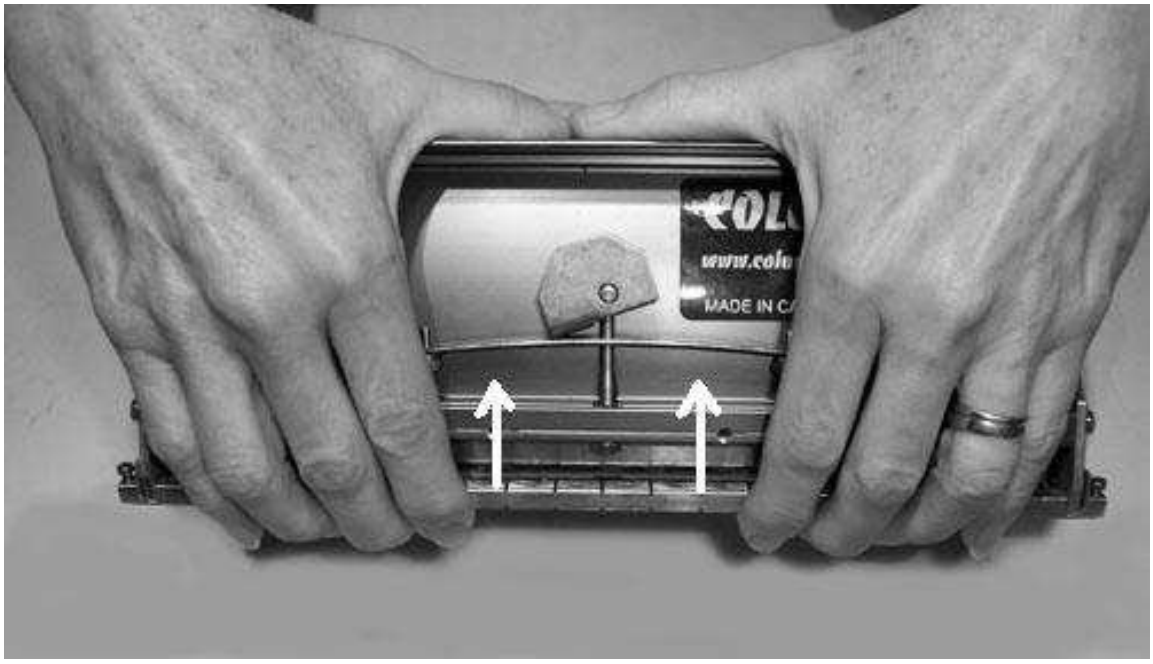
If the box blade is too much lower than the shoe, you will get "edges", in other words, the mud will not feather smoothly at sides of the finish and leave thick areas that require additional sanding or touch-up.

****If you are experiencing "trails" or "edges", proceed to the next section to make your flat boxes finish like new again!**



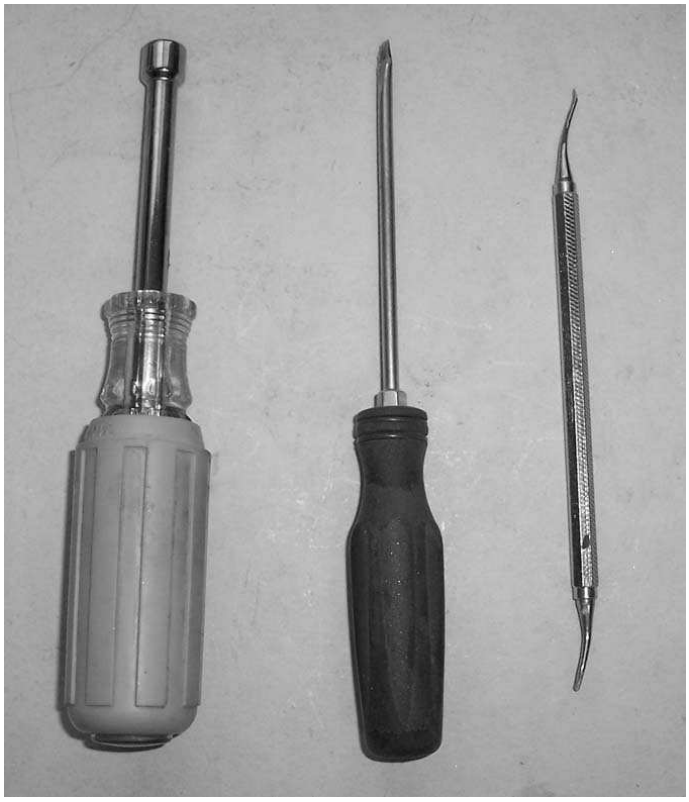
Columbia Flat Boxes- SPECIAL TIP!

If your flat box is not leaving enough mud on the flat seams, grab brass blade holder as shown and squeeze several times back towards adjuster setting clip. Often this will give enough crown to the blade to increase mud output for more mud on finish seams.



Tools Required and Helpful Kits

- 3/8” Nut driver or wrench
- Small flat blade screwdriver
- Small pick (helpful, but not mandatory)



FFBR-1

FFBA-6 (2 required)

FFBR-2

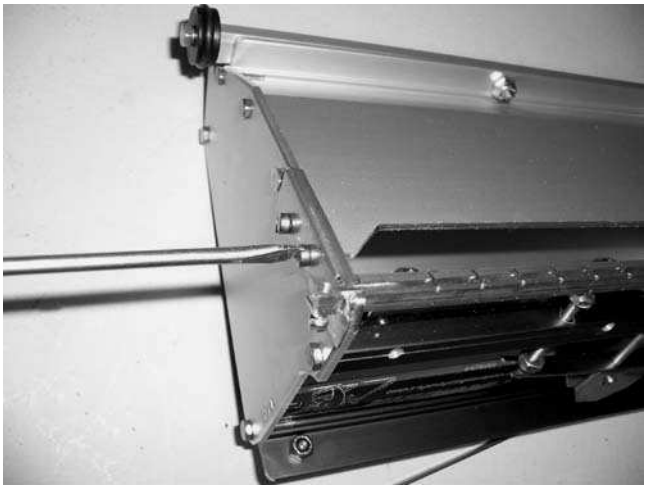
Flat Box Maintenance and repair

1) Turn adjusting screw clockwise to push blade out of holder.

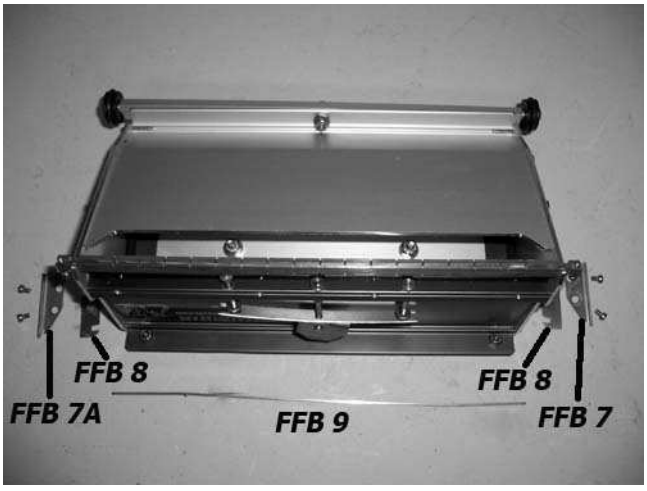
2) Use screwdriver to carefully lift old blade (FFB 9) out of blade holder. Back off adjusting screw so it is flush with bottom of blade holder slot.

3) Blade out. ***Notice slight bends at each end of blade. When installing new blade, it is important to bend each end slightly. This creates tension that keeps blade in holder.*

4) Remove screws that hold shoes and retainer clips.



5) Shoes and retainer clips off. **_If you are just replacing blade and shoes, proceed to step 11._



6) If blade bar or rubber gasket have been damaged, now is the time to replace them (Kit **FFBR -2**) **Specify size when ordering. Use 5/64" hex key to loosen setscrews that hold gasket retainer FFB 25.

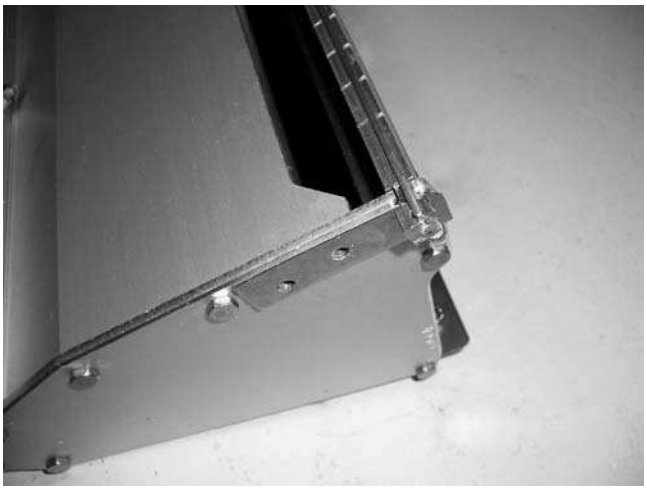
7) Setscrews (FA 258) should be loosened 2-3 turns to release tension on gasket holder. When the setscrews are loose, the blade bar assembly and gasket holder should slip easily away from the box.

8) Blade bar and gasket holder removed.

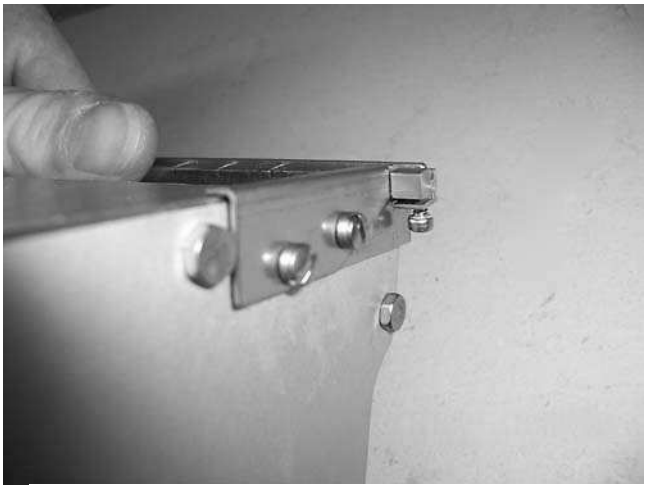
9) Start new blade bar assembly and gasket holder as shown, working from one end to the other. Gasket holder has slight bend that creates tension. Work carefully into slot.

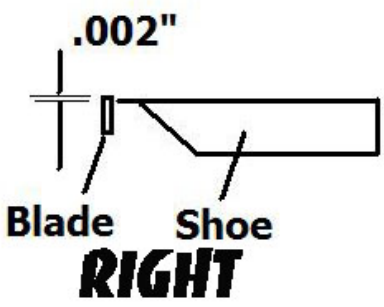
10) Tighten setscrews (snug plus ¼ turn is good, not overly tight)

11) Install new retainer clip as shown.



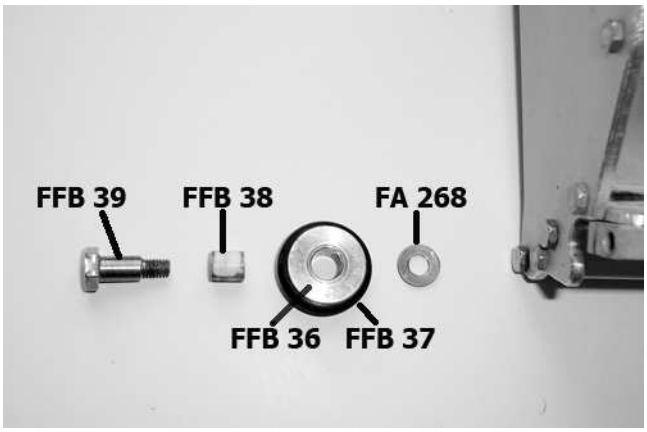
12) Install new shoe an adjust blade so it is .002" (or "thumbnail click") lower than blade. See diagram.





13) To replace wheels or bushings, use 5/16” nut driver or wrench to remove hex bolt.

14) Wheel assembly off. ***Note order of parts for re-assembly*
    a) Hex bolt FFB 39
    b) Nyliner FFB 38
    c) Roller & o-ring FFB 36 & FFB 37
    d) Flat washer FA 268



15) Installing new o-rings on wheels can make your box run more smoothly on finish seams. Use pick or small screwdriver to remove old o-ring.

16) New o-ring prior to installing on wheel.

17) Install new o-ring as shown.

18) Axle bolt, bushing, wheel assembly and flat washer on.

****Your box should finish just like new again!**

COLUMBIA TAPING TOOLS™

Flat Box Handle Repair

The Columbia flat box handle controls the use of the flat boxes. It is an extremely reliable tool and requires minimum maintenance.

Occasionally after much use, the friction brake disc or brake stop (older style handles) may become worn and require adjustment or replacement. Newer 180 Grip handles require little to no maintenance.

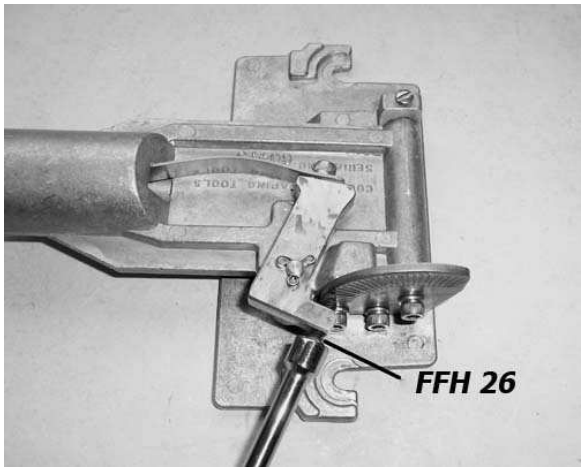
If the connecting strap breaks, it must be replaced.

Tools Required

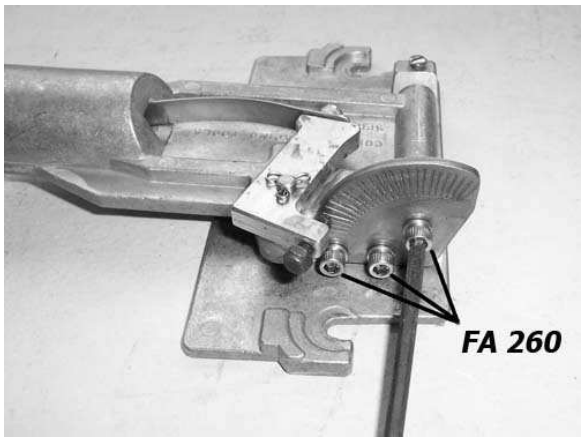
- Needle nose pliers
- Wire cutter
- ¼" Nut driver or wrench
- 9/64" hex key
- 1/8" hex key (180 Grip only)
- 5/64" hex key (180 Grip only)

Standard Flat Box Handle Tune-up

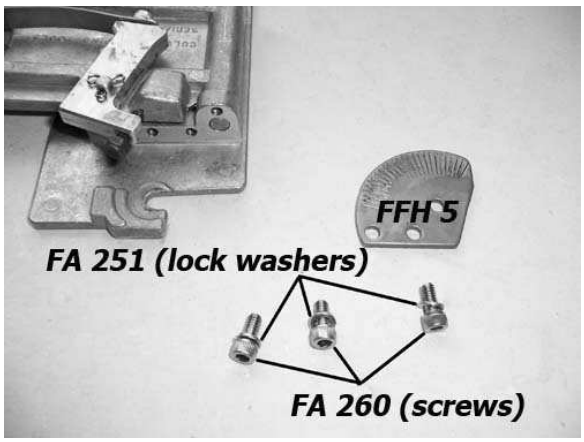
1) The first thing to check if you're not getting full braking action is the brake stop screw FFH 26. It may need to be tightened or replaced. Use ¼" nut driver or wrench for this.



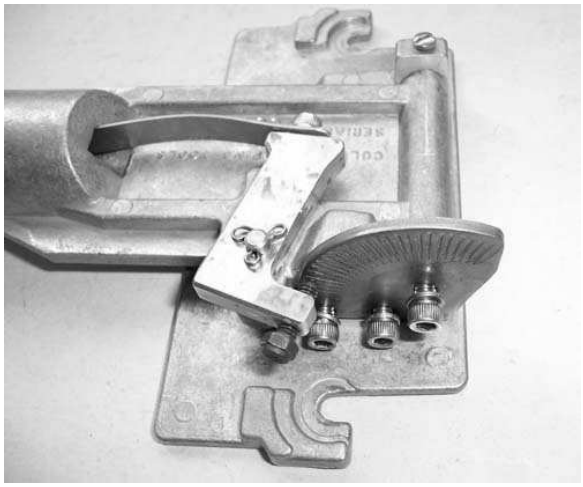
2) If the grooves in the friction brake disc, FFH 5 are worn, the braking action might not be firm. To replace, remove three screws FA 260. Note there should be a lock washer FA 251 on each screw to keep them tight.



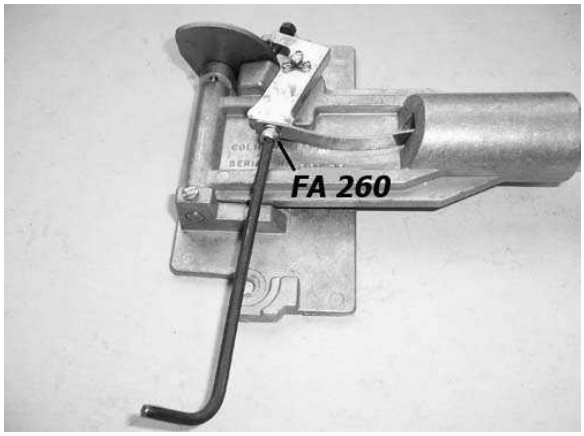
3) Friction brake disc and parts off.



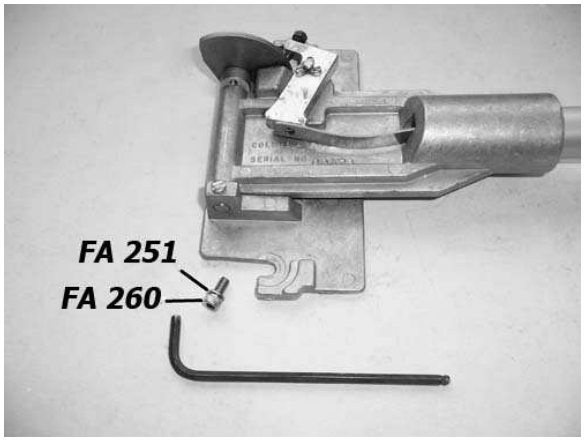
4) Replace with new friction brake disc and tighten three screws.



5) If the connecting strap FFH 9 breaks after long period of use, replace by first removing screw FA 260 from brass brake lever. This screw should also have a lock washer FA 251 to keep it tight.

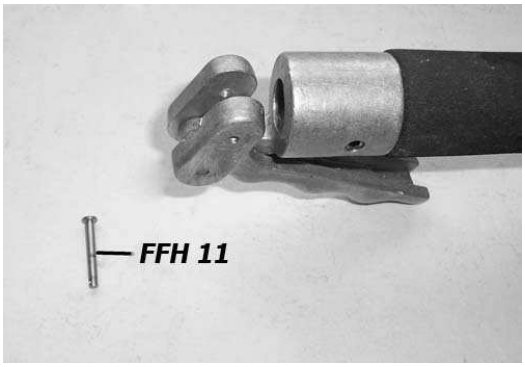


6) Connecting strap disconnected.

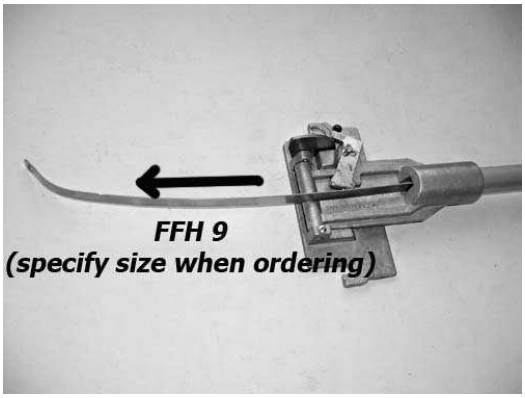


7) Remove cotter pin from strap connecting pin FFH 11. Remove pin.

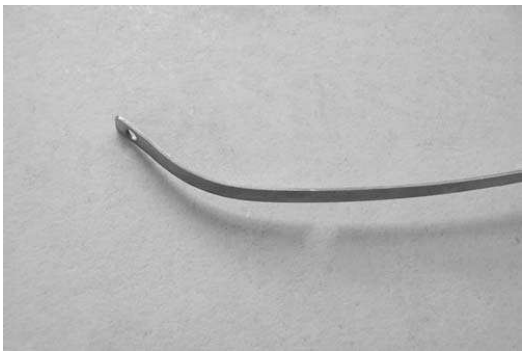
8) Connecting pin out.



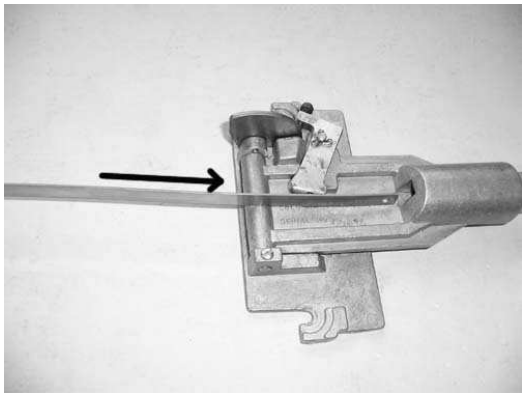
9) The brake connecting strap FFH 9 can come out either end, but I find it easier to remove from this end.



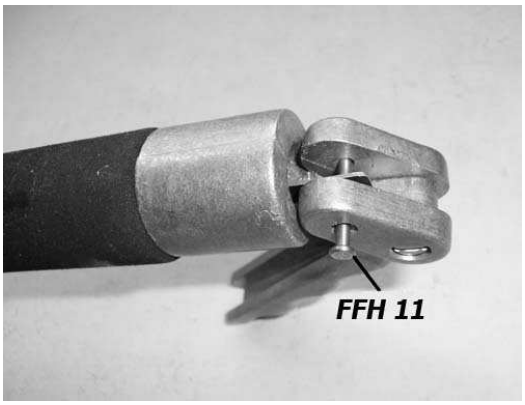
10) One end of the new strap has a larger hole. Bend slightly as shown- this will give the braking a return spring action.



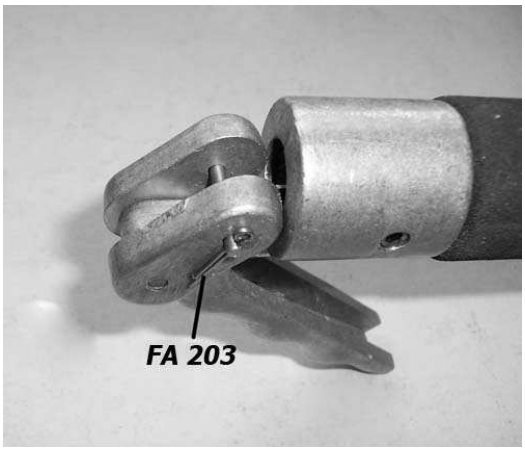
11) Insert end with smaller hole into handle tube and feed through.



12) Insert strap connecting pin as shown, so that head of pin goes into recess on brake lever.

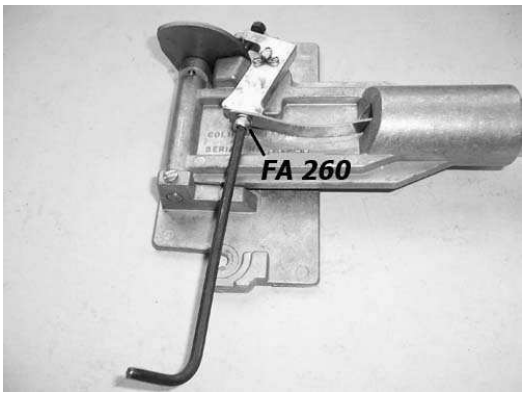


13) Insert cotter pin FA 203.



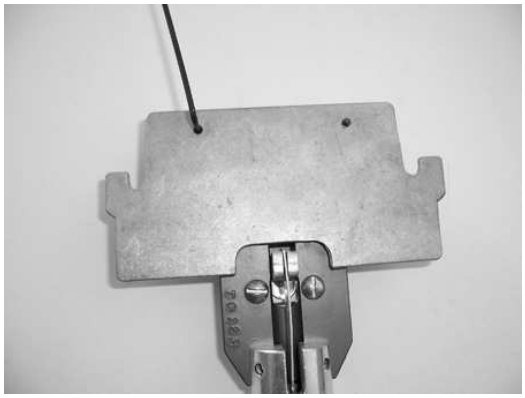
14) It's easiest to use needle nose pliers to bend ends of cotter pin to hold it in place. A nice curl on the ends of the cotter pin will keep it from catching your hand or glove when using the handle.

15) Re-connect other end of band to brass brake arm and you're set to go!

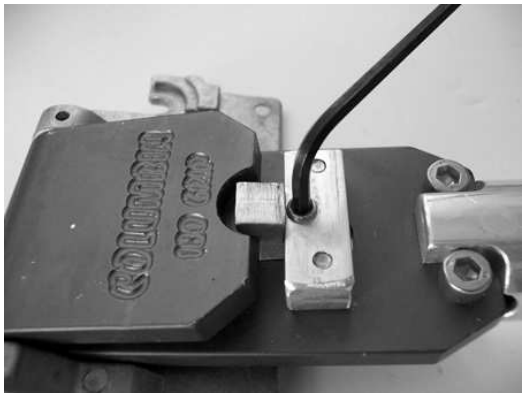


Columbia 180 Grip Handles

Columbia 180 Grip handles require almost no maintenance or service. The two pictures show possible areas that may need attention.



1) If set screws that hold foot plate to pivot pin become loose, braking may be affected. Tighten two set screws using 5/64" hex key.



2) To adjust braking power, you may tighten or loosen braking set screw with 1/8" hex key.

COLUMBIA TAPING TOOLS™

Nailspotter Troubleshooting

The Columbia nail spotter will give many months' problem-free service.
After a long period of use, the blade may become worn causing a less-clean finish. The blade may be turned over and re-set for additional use.

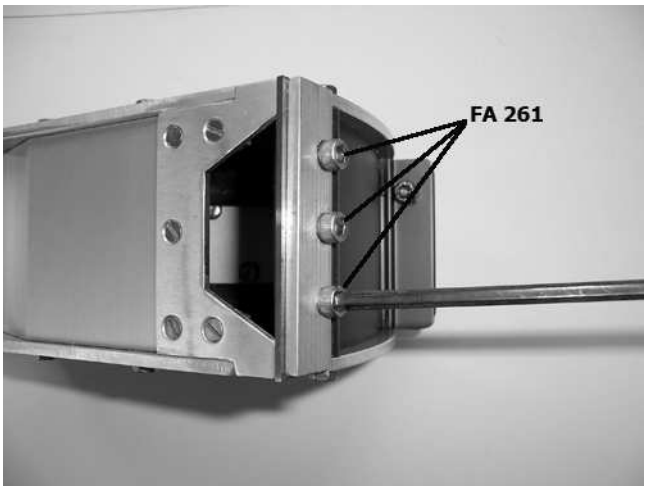
Also, if the nylatron washers become worn, the nail spotter head may become loose where it connects to the handle- NOT TO WORRY! It's quick and easy to fix either of these issues.

Tools Required

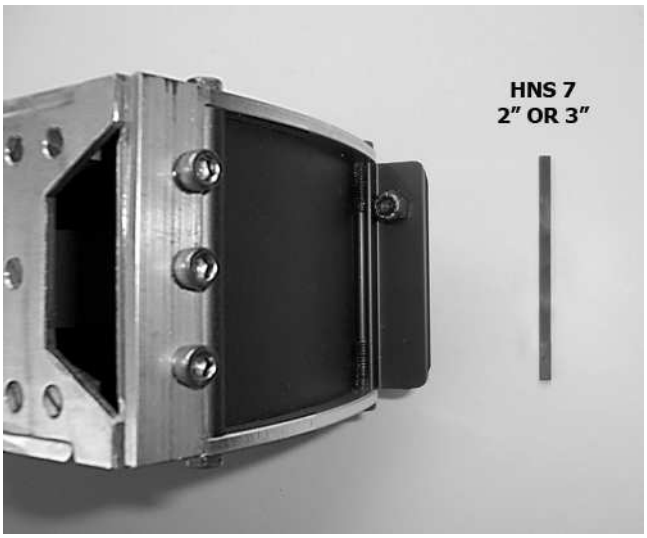
- 9/64" Hex key
- 3/8" Nut driver or wrench
- ¼" Nut driver or wrench
- Medium blade screwdriver

Nail Spotter Tune-up

1) Use 9/64" hex key to loosen screws that attach blade holder.

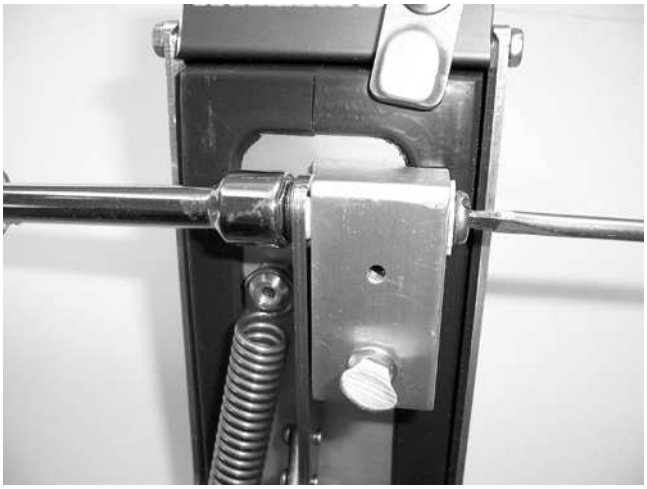


2) Remove old blade (HNS 7) and check for wear. A sign of wear is a shiny area on blade about ¼" from either end. If the blade is only worn on one side, it's OK to turn it over and use the opposite finishing side. When ordering replacement blade(s), specify either 2" or 3" HNS 7.

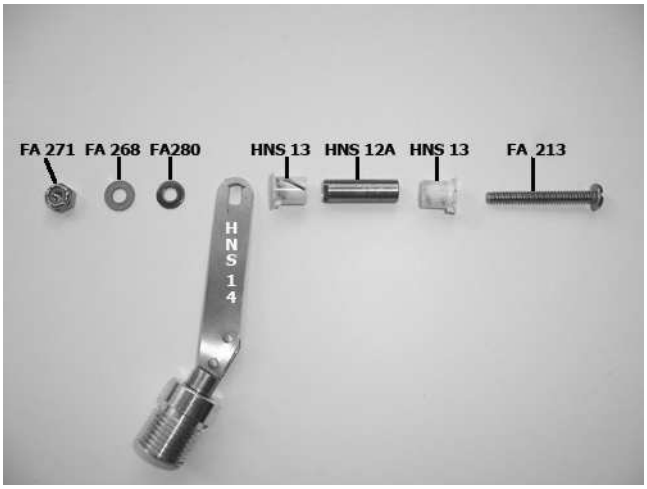


3) Blade should be set .002" or "thumbnail click" higher than body shoe where the blade and body meet.

4) To replace pivot parts, remove lock nut FA 271 with 3/8" nut driver or wrench and medium blade screwdriver.



5) Note order of pivot parts and handle spring. It is important to install new parts in EXACTLY THIS ORDER!
    a) FA 213 10-24 X 1 ½" Screw
    b) HNS 13 Roll pin bushing
    c) HNS 12A Handle Roll pin
    d) HNS 13 Roll pin bushing
    e) Connector assembly
    f) NS 280 #10 belleville washer
    g) FA 268 #10 Flat washer
    h) FA 271 10-24 Nyloc nut

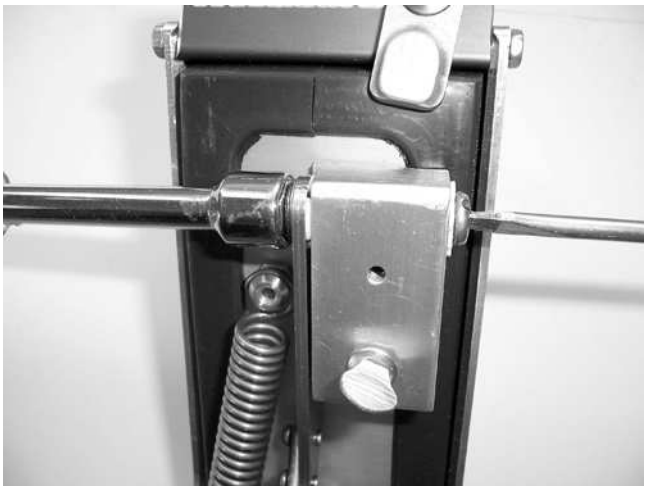


6) Insert roll pin bushings into handle clamp with tabs aligned with slot in clamp.

7) Insert handle roll pin with screw into bushings in clamp.

8) Attach connector assembly to clamp with roll pin seated into connector slot before tightening.

***** Many people do not use the spring and the nail spotter will work without it. HOWEVER, with the spring on, it makes it easier to pull nail spotter cleanly away from wall or ceiling without leaving a tail of mud.***



COLUMBIA TAPING TOOLS™

Mud Pump Troubleshooting

The Columbia mud pumps are reliable, durable tools and do not require frequent maintenance.

When using the hot mud pumps, it is a good idea to separate the pump cylinder from the head casting at least once a week and clean the areas where they clamp together. This will help greatly when it comes time to do any repair or maintenance.

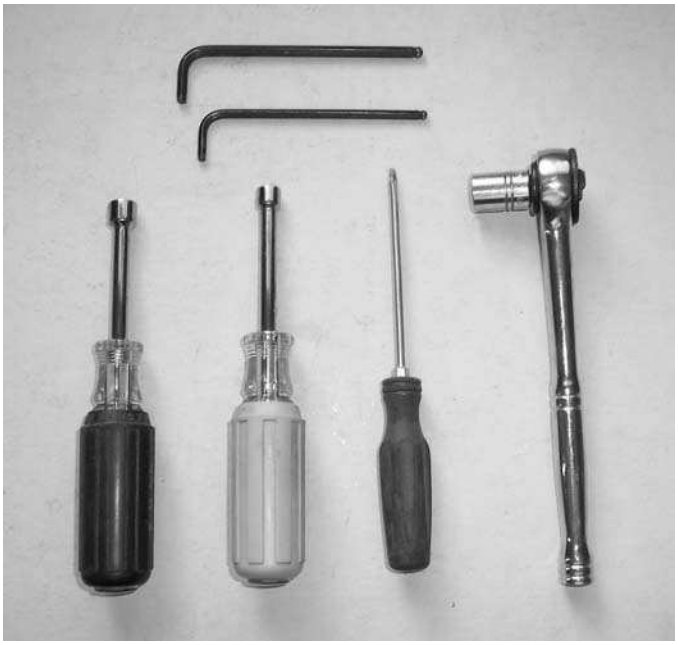
Other issues that can occur with mud pumps include:

1) Pump action is "springy" and pump does not load tools easily- This can be caused by debris or dried mud in screen in foot valve. Clean screen thoroughly first to see if this fixes it.
2) Pump takes many pumps to fill tool (A pump in good condition should fill a taper in 8-10 pumps, a flat box in 2-4 pumps or a nail spotter in ½-1 pump)- Clean pump thoroughly to see if this fixes the problem. If not, it may be worn or damaged flapper valves. See rebuilding section to solve this. ***Use kit MPR-1***
3) Pump leaks around top head bushing- the mud pump seal or head bushing may be worn. See rebuilding section for solution. ***Use kit MPR-1***

Rebuild Kit
MPR-1

Tools Required

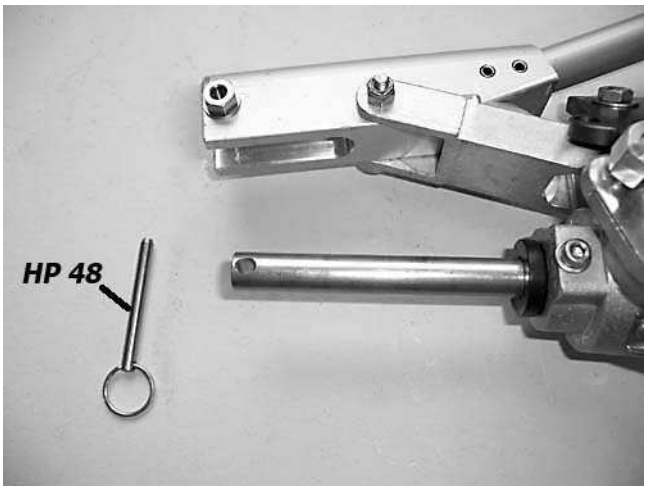
- 3/16" Hex key
- 5/32" Hex key
- 5/16" Nut driver or wrench
- 3/8" Nut driver or wrench
- ½" Ratchet or wrench
- Small screwdriver



Clean pump as thoroughly as possible prior to servicing.

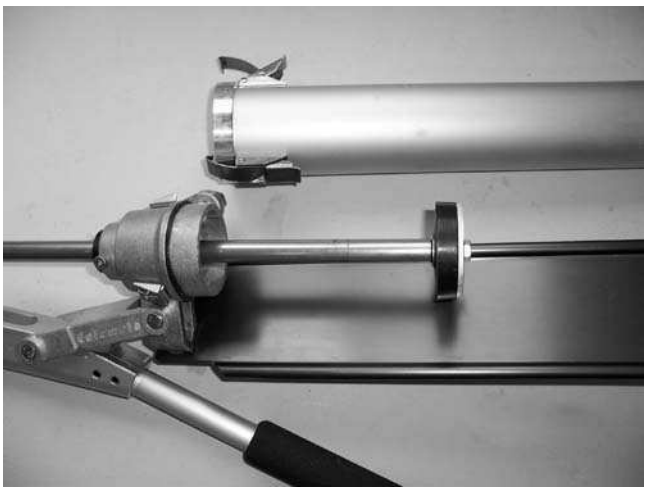
Mud Pump Rebuild

1) Remove handle pin HP 48.



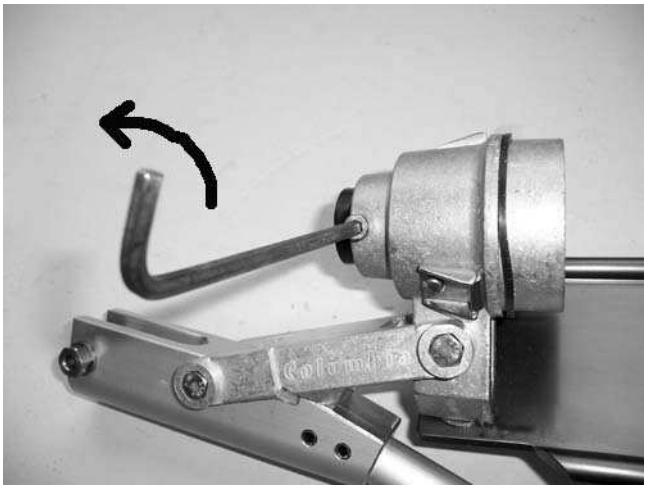
2) Release latch clamps and remove pump cylinder.

3) Pump cylinder off. Remove piston shaft assembly from pump head.

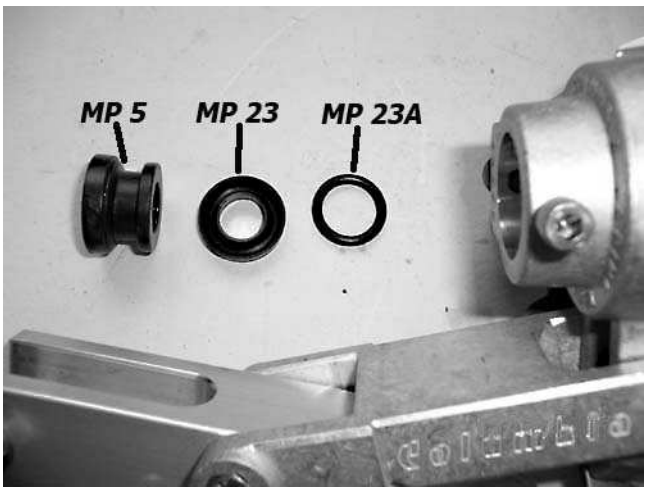


4) Cylinder and piston shaft off.

5) Loosen two screws that hold head bushing. Remove bushing, seal and o-ring.

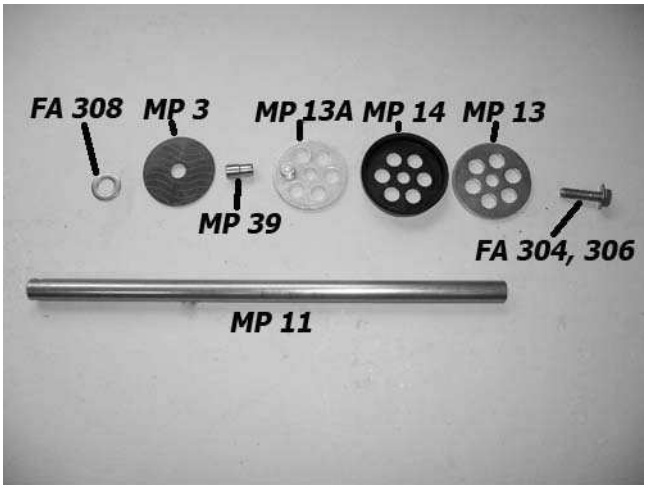


6) Bushing (MP 5), seal (MP 23) and o-ring (MP 23A) off. ***Note order of parts when re-assembling.*

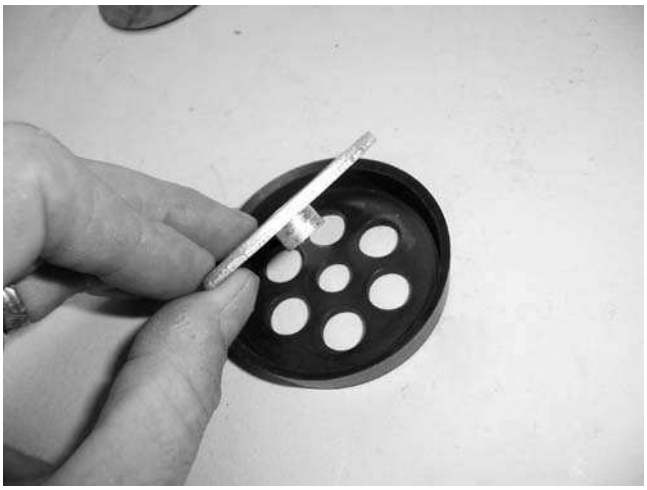


7) Remove hex bolt that holds piston cup assembly to shaft. Use ½" ratchet or wrench.

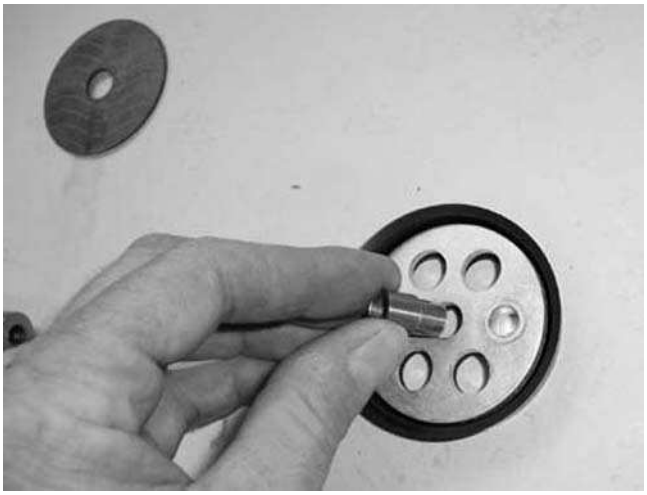
8) Piston shaft parts off- ***Note order of parts for re-assembly. It is important to install all parts in the order and direction according to instructions.*
   a) FA 308 Flat washer
   b) MP 3 Flapper valve
   c) MP 39 Sleeve
   d) MP 13A Small backing washer w/ locator
   e) MP 14 Piston cup
   f) MP 13 Large backing washer
   g) FA 304 Washer
   h) FA 306 Hex bolt
   i) MP 11 Piston shaft



9) Insert small backing washer with locator into piston cup.



10) Insert sleeve into center of backing washer/ piston cup.

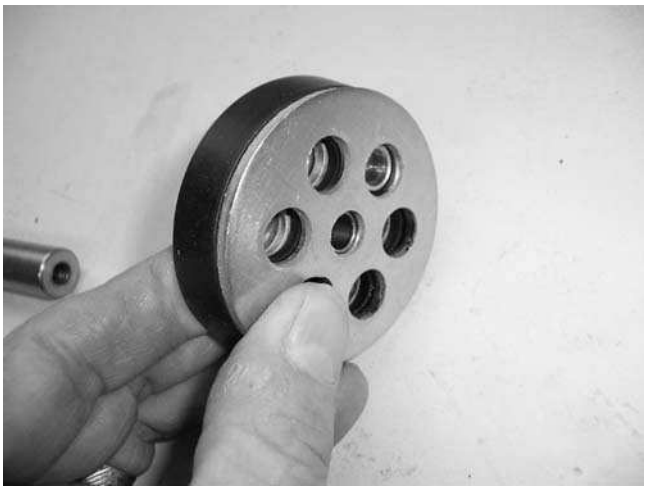


11) Sleeve and backer washer in place.

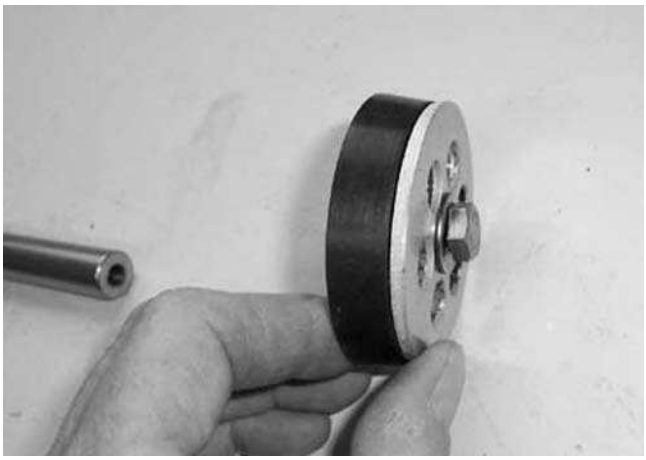
12) Put on flapper valve.

13) Install flat washer on cup assembly.

14) Put on large retainer assembly. The locator and sleeve will align everything properly.



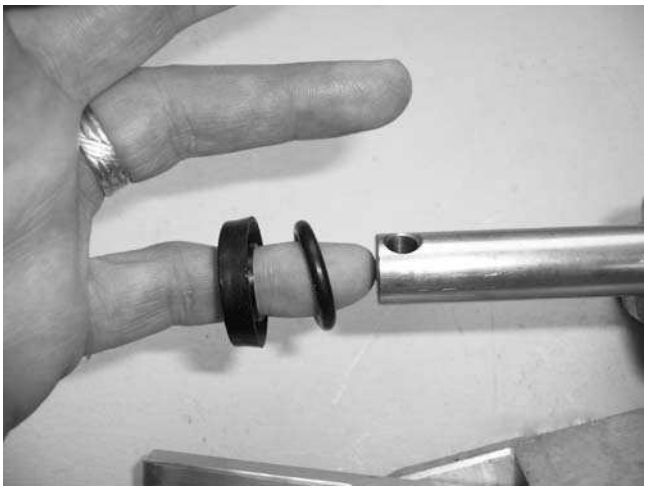
15) Hex bolt and washer in piston cup assembly.



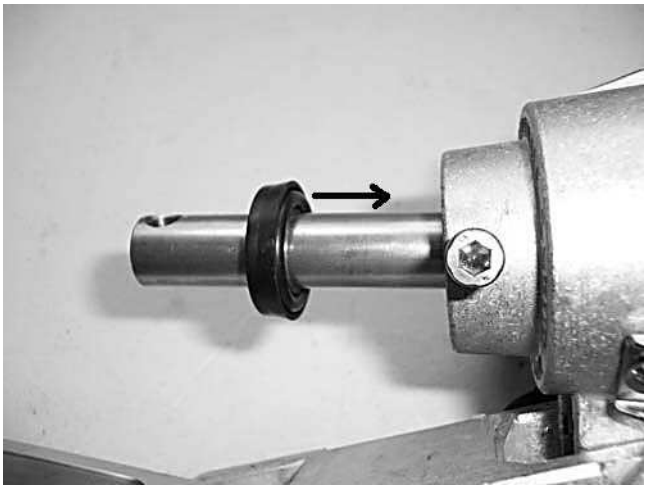
16) Second view of piston cup assembly with bolt and washer in place.

17) Install piston cup assembly to piston shaft and tighten bolt.
(Reverse of step 7)

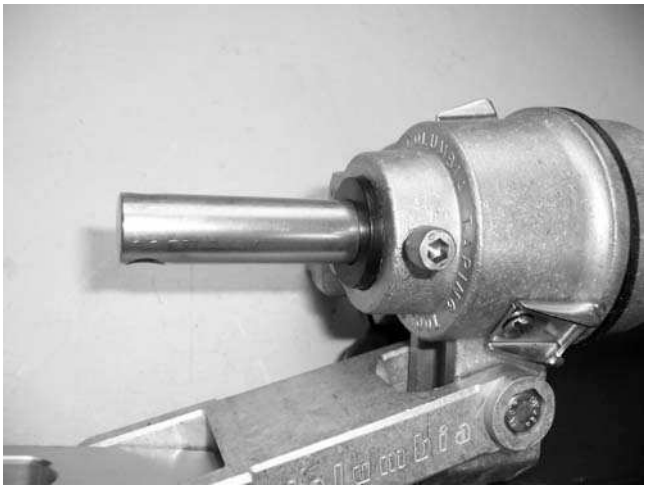
18) Install new seal and o-ring in order shown.



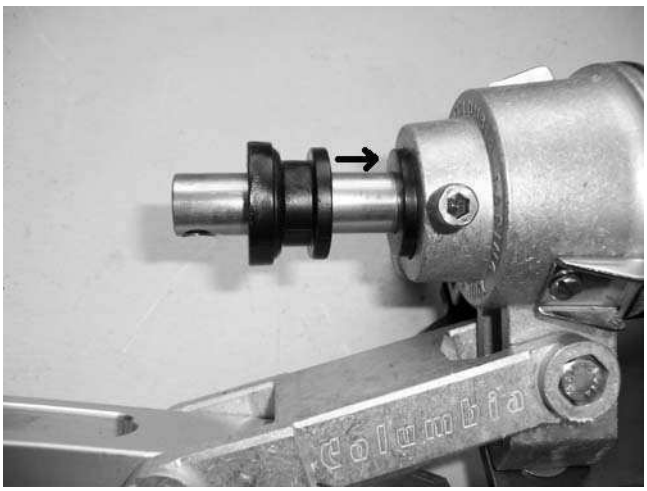
19) Slide seal and o-ring over shaft.



20) Seat seal and o-ring into head casting as shown.



21) Slide shaft guide onto piston rod and push into head casting to seat seal.



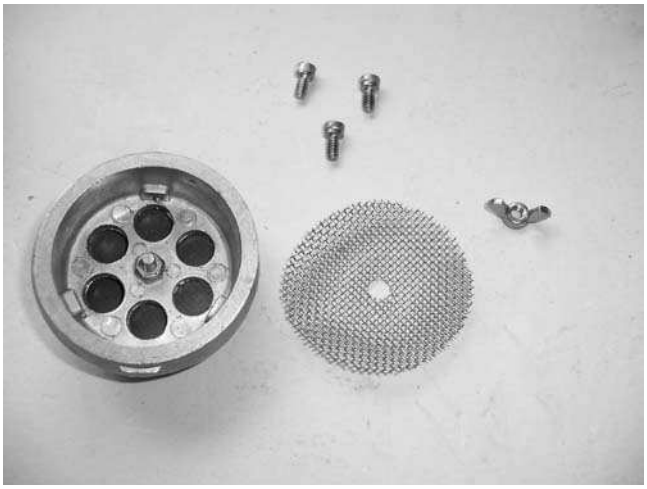
22) Tighten bolts that hold shaft guide in place.

23) Attach piston shaft to handle with handle pin.

24) If this is the first time for you to rebuild a pump, it helps to make reference marks with a pencil or marker to show alignment of valve casting and pump cylinder. Remove three screws that hold valve to cylinder (3/16” hex key)

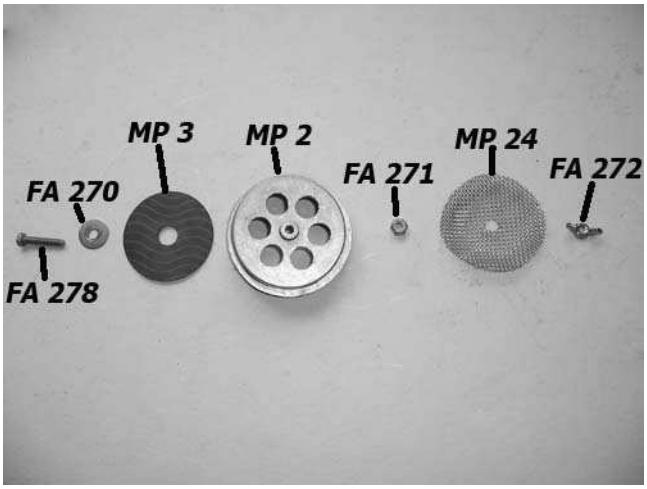
25) Valve off.

26) Remove wing nut and screen (MP 24) from valve assembly.

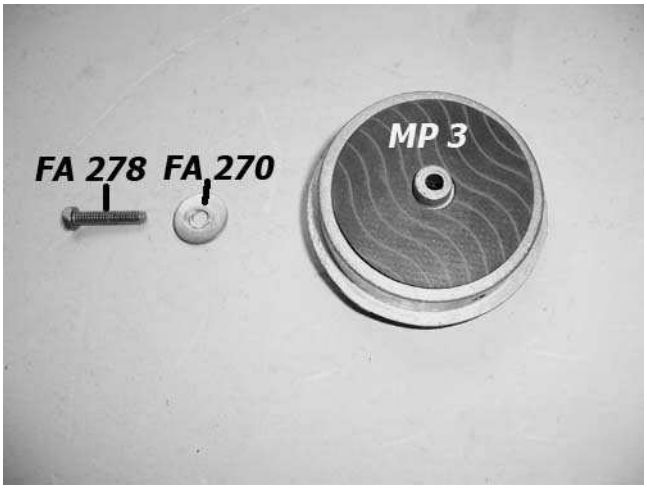


27) Use 5/16” wrench or nut driver to hold bolt on flapper valve side and 3/8” nut driver or wrench to remove lock nut on screen side.

28) Order of valve parts:
    a) FA 278 Hex bolt
    b) FA 270 Washer
    c) MP 3 Flapper valve
    d) MP 2 Valve casting
    e) FA 271 Nyloc nut
    f) MP 24 Screen
    g) FA 272 Wing nut



29) Install new flapper valve on casting.



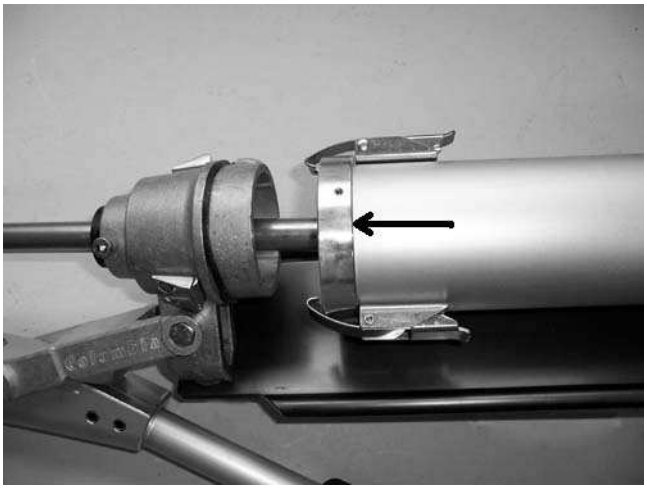
30) Install hex bolt and washer into valve flange.

31) Hold hex bolt with 5/16” wrench or nut driver and install lock nut with 3/8” nut driver.

32) Put good screen in valve casting, install wing nut and tighten.

33) Refer to your alignment marks on pump cylinder and valve casting. Install valve casting with three screws and tighten.

34) Re-install pump cylinder onto pump head and clamp latches.



35) If you followed instructions, when the pump cylinder is clamped to pump head, thicker part of valve casting will be closest to pump leg as shown.**

****In that case, you can give yourself an attaboy (or attagirl) and get back to taping!**