Columbia Taping Tools

Hydra Reach Handle

Manual

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Warning- SAFETY FIRST!

- We take no responsibility for any misuse of the equipment used while loading the handles.
- It is the customer's responsibility to ensure the air tank they are using is capable of withstanding the operating pressures.
- We also recommend using safety glasses and gloves.

If already familiar with the Hydra Reach Handle please go directly to loading instructions on page 7

Introduction

The following is a comprehensive manual designed to guide you through the repairing, upgrading and maintaining of Columbia Taping Tools Hydra-Reach Handle.

Columbia's first hydra handle has gone through a lot of changes since it first arrived on the scene in 2005. Columbia is always striving to provide the customer with the best product possible. Thanks to our ability to design, manufacture, and assemble under one roof, we have made the Hydra-Reach handle into the best lightweight extendable box handle on the market.

What makes the Hydra-Reach Handle stand above the competition is its ability to continuously brake throughout extension. We have managed to achieve this by using a hydraulic oil system. This brings us to the main point of the manual: how to reload and upgrade Hydra-Reach handles with a pressurized fill system. We have provided a step by step process for both setting up the loading system and the loading itself.

Also included throughout the manual are fixes and tips you will find useful in operating and maintaining your handle.

If you have any questions throughout this process please do not hesitate to contact us on our technical support line @ 1-800-663-5761. *Coming soon is our YouTube video to follow along with us while loading a Hydra-Reach handle.*

Note on terms and part numbers

Throughout the manual parts will be described by both their description and part number. This is to aid you in identifying the correct part of the handle you are working on. A list of descriptions, part numbers, and pictures are located at the end of the manual. Please use this to cross-reference while reading the manual.

What you need to know before you start

What version is your handle?

There are 3 versions of the handle in circulation. Some of the handles you come across may be hybrids of the following as changes may have been in mid process when the handle was being assembled.

Version 1.0

Our first model can be most easily recognized by the metal thumb click extension mechanism (HH5), and the reservoir (HH3) that sits above the octagon (HH10). It is also slightly shorter than the 2 later models.

If you have this version we strongly recommend getting in touch with us to exchange your handle with a switch out, or arrange for it to be sent back to us for a rebuild. Due to the amount of work and parts required to rebuild the handle this may be a more cost efficient option.

Version 2.0 and 3.0

The second and third versions of the handle are quite similar so close attention should be paid to the distinguishing features. Version 2.0 can come with either an **old style** casting head (HH2, as seen in above picture) or a **new style** 180 grip head (HH2, below).

What makes the versions 2.0 and 3.0 different from each other are the type of reservoir (HH3) used. If it has a cap (HH19) and gasket (HH20) then it is Version 2.0. If it has a solid top with a brass bleeder screw (HH16A) then it is Version 3.0. Any Version 2.0 should be upgraded to Version 3.0.

Version 2.0

Version 3.0

What problem are you having with the handle?

There are 2 issues that can occur with the handle:

1. The handle will no longer retract/close to the smallest extension setting. If this is the case please go to page 13
2. The handle has lost power or is no longer holding in position. If this is the case before you attempt to reload the handle, go to page 12 and try adjusting the feel of the handle. An adjuster screw that has wound down can sometimes be mistaken for a loss of power. If this fails to resolve your problem return to this page.

Reservoir Upgrade

If your handle is a Version 2.0 you will need to replace the reservoir (HH3) with a 3.0 Version. If this is the case follow the instructions below, however if you already have a Version 3.0 please go to page 6.

- Start by removing the trigger (HH4). Back out the 2 side screws (FA 260). Remove pivot screw (FA 276) and the bushing (HH24A).
- Remove the 2 screws (FA 259) and star washers (FA 252) securing the reservoir (HH3) to the octagon (HH10).
- Lift the reservoir (HH3) out of the octagon (HH10), exposing the brass connector (HH17).
- Loosen the brass nut (HH17B) with a 3/8 wrench, until it disconnects from the reservoir (HH3). Discard the old reservoir. You are now ready to install the Version 3.0 reservoir.

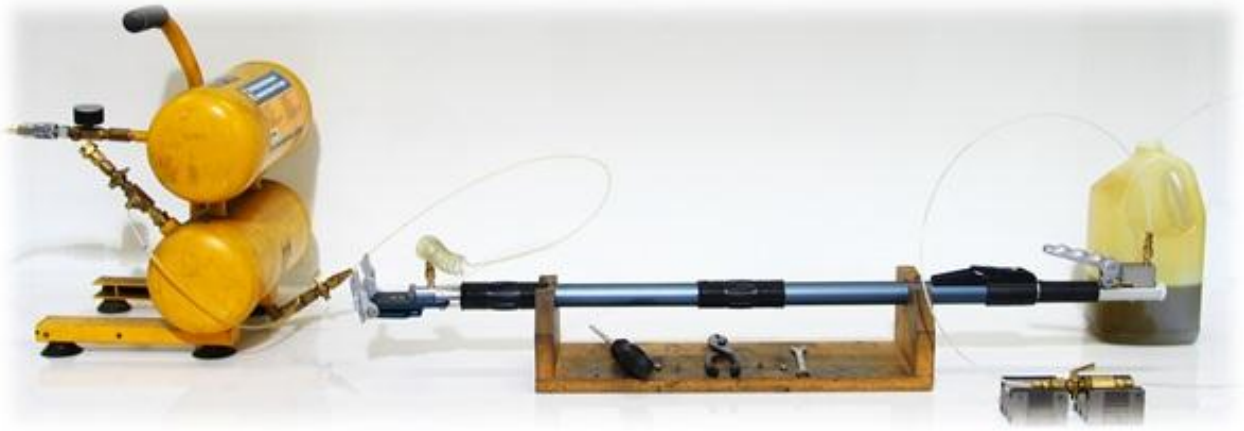
- Take your Version 3.0 reservoir (HH3) and reattach the line (HH9) by tightening the brass nut (HH17B).
- Replace the 2 screws (FA 259) and star washers (FA 252) using Loctite to secure the new reservoir (HH3).
- Reattach the trigger (HH4) by inserting the bushing (HH24A) and using Loctite on all 3 screws (FA 276, FA 260).

Please Continue to Loading Instructions

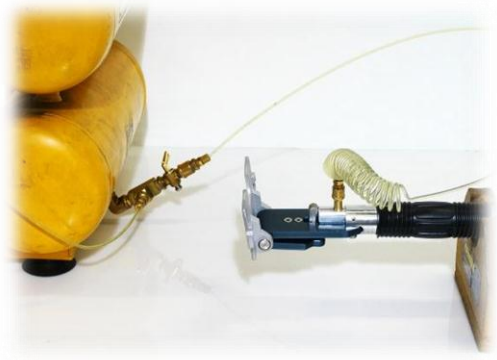
Setting up the loading system

What you need

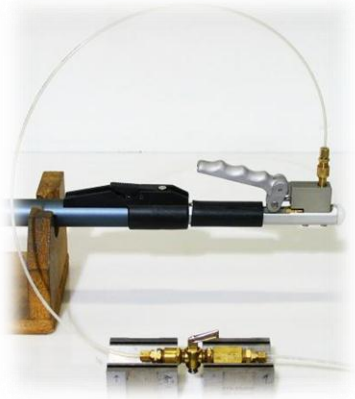
- An **air tank**. Although not required we recommend a twin tank, one for the oil, and one for the air.
- **Air compressor/supply** capable of providing at least 80 PSI. Less can be used but it will slow down the process.
- **Hydraulic Oil**. Many different kinds can be used but we recommend Chevron Rando HD ISO 10. The lighter the oil the quicker the loading process.
- **Attachments and Line,** these are provided by Columbia.
- **2 shut off valves** that can be attached to the line we provided to you**.**
- **Tools**
    - 1/8” Driver
    - 5/32” Driver
    - 3/8” Wrench
    - 1/2” Wrench
    - Safety Glasses
    - Gloves
    - Loading Cradle, or clamp to secure handle to table



1. Set up tank so it can easily be connected to the air supply, and so that the primary valve can be easily reached while loading takes place.



2. The line coming out of the Primary valve needs to reach where you decide to place the head (HH2) of the handle.



3. At the opposite end of the handle the reservoir (HH3) needs to have the secondary valve located near it with a line connecting them.

4. The final piece of line then goes from the secondary valve to the container where your excess oil will go.

Loading

* Before you start do you know the following part numbers and descriptions? If not please familiarize yourself on page 15

- HH2 Head
- HH3 Reservoir
- HH4 Trigger
- HH8 Tube
- HH9 Coil
- HH16 Piston Housing
- HH16A Brass Bleeder
- HH23 O-ring

Prep your loading system

- Fill tank with oil.
    - If using single tank fill half with oil leaving room for air
    - If using twin tank fill bottom tank with oil
- Ensure primary valve is closed, then attach air supply to tank
- Secondary valve should be open
- Line attached to secondary valve leads to a collection point for the oil

Loading

Loading can be broken down into 3 steps

1. Connecting the handle and getting the oil to flow through it.
2. Bleeding out air bubbles
3. Sealing the handle

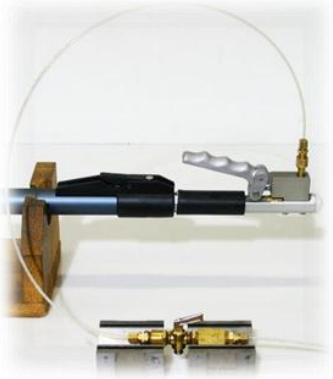
Step 1: *Connecting the handle and getting the oil to flow through it.*

- If you have an **old style** head spin it 180 degrees to allow the handle to sit flat. If you have a **new style** 180 grip head no action is required.
- To remove head please see instructions on page 13.

Old Style Head

New Style Head

- Remove brass bleeders (HH16A) from the reservoir (HH3) and the piston housing on the head (HH16). Ensure O-rings (HH23) are removed along with the brass bleeders (HH16A)
- Replace the now removed brass bleeders (HH16A) with the 2 adaptors provided by Columbia. (Ensure each adaptor has its own O-ring). The adaptors do not need to be over tightened.
- Attach the line from the primary valve to the adaptor in the piston housing (HH16).



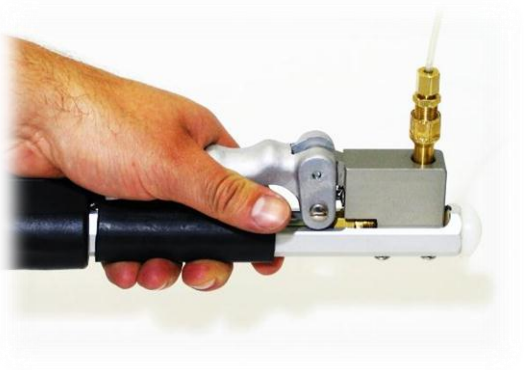
- Attach the line from the secondary valve to the adaptor in the reservoir (HH3).
    - Both of these connections should be tight but not over tightened.
- Remove the handle head (HH2) from the tube (HH8) exposing the coil (HH9). This will allow you to later see both the oil flow through, and the air bubbles trapped inside.
- If possible have the head (HH2) lower than the rest of the handle. This allows the air to come up.

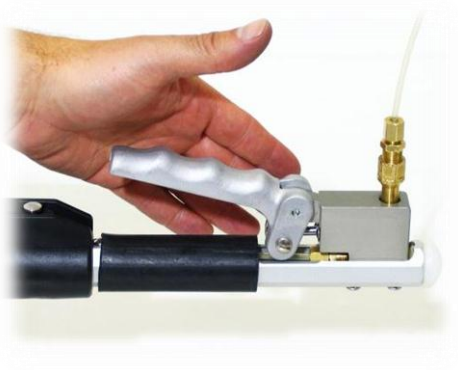
- Open the primary valve.
- With the head (HH2) removed flowing oil will be visible through the exposed coil (HH9).
- Press down and release the trigger (HH4) 3 times to help aid the flow of oil. While doing this lift head and return to work bench several times to shake lose any air.

- By this time you should see the oil coming out of the reservoir (HH3) into the line through the secondary valve and into your collection point. If this is yet to happen try working the trigger (HH4) a few more times.
- Once you see the oil has made it through the whole system press down on the trigger (HH4), but do not release it. Close the secondary valve and primary valve in that order. You can now release the trigger (HH4).
- Well done you have completed step 1!

Step 2: *Bleeding out air bubbles*

- Press and release the trigger (HH4) 10 times. Press down slowly and release quickly. This should bring up air from within the head (HH2) which can be seen in the coil (HH9).





- Open the secondary valve
- Again press and release the trigger 10 times.
- Open the primary valve. This will flush out any air bubbles. Pump the trigger (HH4) 3 times to aid the process.
- Press down on the trigger (HH4), but do not release it. Then close the secondary valve and primary valve in that order. You can now release the trigger (HH4).
- Return to the beginning of step 2.

*This step is repeated several times (usually a minimum of 3) until you no longer see any air in the coil (HH9).

- Once you are satisfied there are no longer any air bubbles, you can move to step 3!

Step 3: *Sealing the handle*

- Before sealing you want to give it one last flush
- Open both valves, and hold the handle up (so it is elevated) at the reservoir (HH3) end, pump the trigger (HH4) 3 more times just as a precaution.
- Return the handle to its regular position, pause for 5 seconds and close only the primary valve.
- Put the head (HH2) back into the tube (HH8). There is no need to seal it, however put 1 screw (FA 213) back in to the head to hold it in place.
- Remove both the adaptors from the handle along with their O-rings (HH23).
- Place on a slight incline with the head (HH2) raised. Leave handle to sit for 5 minutes allowing any last air bubbles to work their way out.
- If oil levels look a little low top up with a bit of oil. Then place the brass bleeders (HH16A) back into both ends of the handle and ensure brass bleeders have their O-rings (HH23).
- We recommend letting the handle sit for at least an hour (this time in a standing up position, with the head on the floor).
- After an hour has elapsed pull the head (HH2) out of tube (HH8) exposing the coil (HH9).
- Pump the trigger (HH4) and look at the exposed coil (HH9) to see any signs of air bubbles.
- If no air appears you are ready to reattach the head (HH2) to the tube (HH8). A small amount of air appearing is acceptable. If a lot of air does appear you need to return to the beginning of **Step 2** and repeat the bleeding process to remove the air.
- When reattaching the head (HH2) it is important to clean around the head and apply Loctite, or some other type of glue to the part of the head that is inserted into the tube (HH8).
- Replace both of the screws (FA 213) into the head (HH2) using Loctite.
- You have reloaded the handle!
- For instructions on adjusting the feel of the handle please see Page 12.

Adjusting the Feel of the Handle

You can adjust the feel of your handle in 2 different ways.

1. The feel of the trigger.
2. The tightness of the head (only for 180 grip handle).

Feel of the trigger

- Extend your handle to the first extension point
- Underneath the trigger (HH4) there is a small binder slot screw (FA 215) which when turned adjusts the height of the trigger and the feel of the handle.

- To have a tighter feel turn the screw to the right (clockwise)
- To have a looser feel turn the screw to the left (counter clockwise)
- It should be noted that if you loosen the screw too much it can have an effect on the amount of pressure the brake applies, possibly allowing your Box to slip on the handle.

Tightness of the head (only for 180 grip handle)

- Lay the handle flat, and get a 1/8 Allen Key
- On the head (HH2) the Anchor Block (HH7) has a set screw (FA 302) in it.
- To tighten the head (HH2) turn the set screw to the right (clockwise).
- To loosen the head (HH2) turn the set screw to the left (clockwise).

Handle will not close/fully retract

The Hydra-Reach Handle is able to extend because of an internal coil (HH9.). As per the warning on the tube we recommend when the handle is not in use it be fully retracted. Failure to fully retract a handle for an extended period of time can result in the warping of the coil (HH9), and the inability to fully retract the handle.

To Fix

- Remove the 2 screws (FA 213) that attach the head (HH2) to the blue tube (HH8).
- Place the handle head (HH2) in a vise and then apply pressure to the opposite end of the handle wiggling it back and forth (as per pictures below). You will hear a crack which is the Loctite (glue) being broken.
- Continue wiggling and spinning until head (HH2) is separated from the tube (HH8)

- When the coil (HH9) is exposed you will find that it is larger than the diameter of the tube (HH8), (as seen in below left picture).
- Spin the head (HH2) to the left (counterclockwise) this will tighten the coil back up. (below right)
- Once the coil is smaller than the diameter of the tube (HH8) you are ready to re-attach the head

- When reattaching the head (HH2) it is important to apply Loctite, or some other type of glue to the part of the head that is inserted into the tube (HH8). Failure to do so can lead to a warping of the tube (HH8) when pressure is applied to the handle during use.
- Replace the 2 screws (FA 213) using Loctite, and allow time for the Loctite/glue to dry.

Maintaining

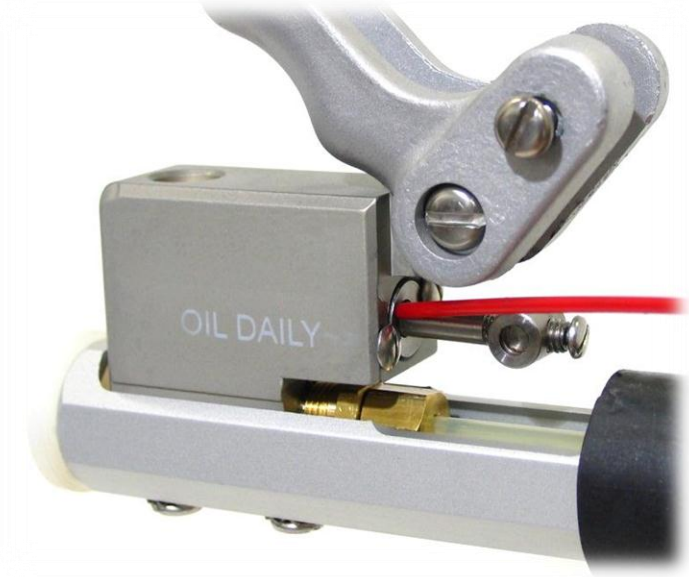
Maintaining your handle is important to keeping it in work condition and extending its longevity. Below are a few procedures you should regularly carry out.

1. Always fully retract your handle when not in use. This will maintain the coils elasticity.

2. Clean the handle. Special attention should be paid to both the octagon (HH8) and around reservoir (HH3). Keeping the octagon clean will ensure the handle extends smoothly. Keeping the reservoir clean will keep the feel of the handle consistent.

3. As well as cleaning the reservoir (HH3) we recommend oiling the reservoir daily. Failure to do so can lead to drying up in the piston shaft. This will reduce the travel of the trigger (HH4) and result in a soft feel to the handle. Below shows where the oil should be applied. Any lubricant such as WD40 can be used as long as it is not corrosive to rubber.

   (*Note: trigger does not have to be raised to apply oil, only for demonstrative purposes)



Part Numbers and Descriptions

It is important to know whether you have the new or old style head on your handle. When ordering parts for the N**ew** S**tyle** 180 Grip head you should use the Hydro Handle Parts List. When ordering parts for the **Old Style** metal casting head you should use the Old Style Parts List. When placing your order you should specify this.

If you are unsure what style head you have please refer back to the bottom of page 8.

Hydro Handle Parts

HH 1 - Plate
HH 2A - Collar
HH 2 - Head
HH 3 - Reservoir
HH 4 - Trigger
HH 5 - Black Extension Housing
HH 6 - Axle
HH 7 - Anchor
HH 8 - Tube
HH 9 – Line/Coil
HH 10 - Octagon
HH 10A - Octagon Tube Guide
HH 10B - End Cap
HH 12 - Head Spring
HH 13 - Cam
HH 14 - Slave Piston
HH 15 - Grip Sleeve Octagon
HH 16 - Piston Housing
HH 16A - Brass Bleeder X2
HH 17 - Brass Connector* X2
*HH 17A - Socket
*HH 17B - Nut
*HH 17C - Crimp
HH 21 - Reservoir Piston Spring
HH 22 - Reservoir Piston
HH 23 - O-Ring X6
HH 24 - Piston Driver
HH 24A - Trigger Bushing
HH 27 - Pressure Adjuster
HH 30 - Clip
HH 31 - Clip Pin
HH 32 - Bushing
HH 33 - Clip Spring
HH 35 - Grip Sleeve Tube X2

Hydro Handle Fasteners

FA 212 - 4-40 x 3/16 Truss Slot (2)
FA 213 - 4-40 x 1/4 Binder Slot (2)
FA 215 - 4-40 x 5/16 Binder Slot (1)
FA 237 - 6-32 x 3/16 Binder Slot (3)
FA 252 - #8 Star Washer (2)
FA 256 - 8-32 x 3/16 Pan Slot (4)
FA 259 - 8-32 x 5/16 Binder Slot (2)
FA 260 - 8-32 x 3/8 Pan Slot (2)
FA 276 - 10-24 x 7/8 Pan Slot (1)
FA 280 - #10 Belleville (1)
FA 302 - 1/4-28 x 1/4 Socket Head Set Screw (1)
FA 311 - 1/4-28 x 1/2 Socket Head (2)
FA 312 - 10-24 x 1/4 Socket Head Set Screw (2)
FA 314 - Split Pin 5/32" x 7/8"
FA 315 - 10-32 x 1/4 Flat Head Socket (2)
FA 316 - 10-32 x 1/2 Flat Head Socket (2)

Old Style Parts

HH 1 - Plate
HH 2 - Head
HH 6 - Axle
HH 7 - Brake
HH 11 - Brake Pin Housing
HH 12 - Brake Pin Return Spring
HH 13 - Brake Pin
HH 14 - Slave Piston
HH 16 - Piston Housing
FA 215 - 4-40 x 5/16 (1)
FA 227 - 6-32 x 1/4 Flat Slot (3)
FA 310 - 6-32 x 3/8 Socket Set Screw (1)

Schematic (Coming Soon)