



# HIRA-TO®

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SCISSORS  
SHARPENING  
SYSTEM

# Operators Manual

CUSTOMER SERVICE (800) 888-3832

*developed and manufactured in the USA by Wolff Industries, Inc.*

for creating the world's finest convex edge.

2/18/2019

## *History of Wolff Industries, Inc.*

In 1957 Lee Wolff, Inventor of the Twice As Sharp® started a sewing machine sales and service business. Fabrics and a complete line of sewing needs were added in 1963, and the number of employees grew to 25 to handle the volume. During those years Lee did a great deal of scissors sharpening and repair and made important modifications on the available scissors sharpening equipment.

In 1971 Lee and Mary Wolff became the first major importer and distributor of plastic handled scissors in the United States. They started to manufacture sewing scissors in 1973 under the trade name of KNIP. A U.S. patent was granted on the KNIP.

The scissors factory was sold to American Scissors Corp. in 1980 and moved to the south. Lee set up the factory and innovated many new manufacturing processes. The July 1983 Consumers Reports rates the American Scissors designed and produced by Lee Wolff as a best buy. He also designed a full line of unique plastic handled scissors with interchangeable parts.

Lee worked on the perfecting of scissors sharpening equipment for many years. It is necessary to accurately control the cutting angles, reduce burr formation during sharpening, and do deburring and micro-sharpening as a final process. This method produces scissors that are normally twice as sharp, hence the name Twice As Sharp®. A US patent was granted along with several foreign patents.

Wolff Industries has grown rapidly with many new products for scissors sharpeners. In 1990 a technical department and additional equipment were added so that we will always be able to bring to you the most advanced scissors sharpening equipment.

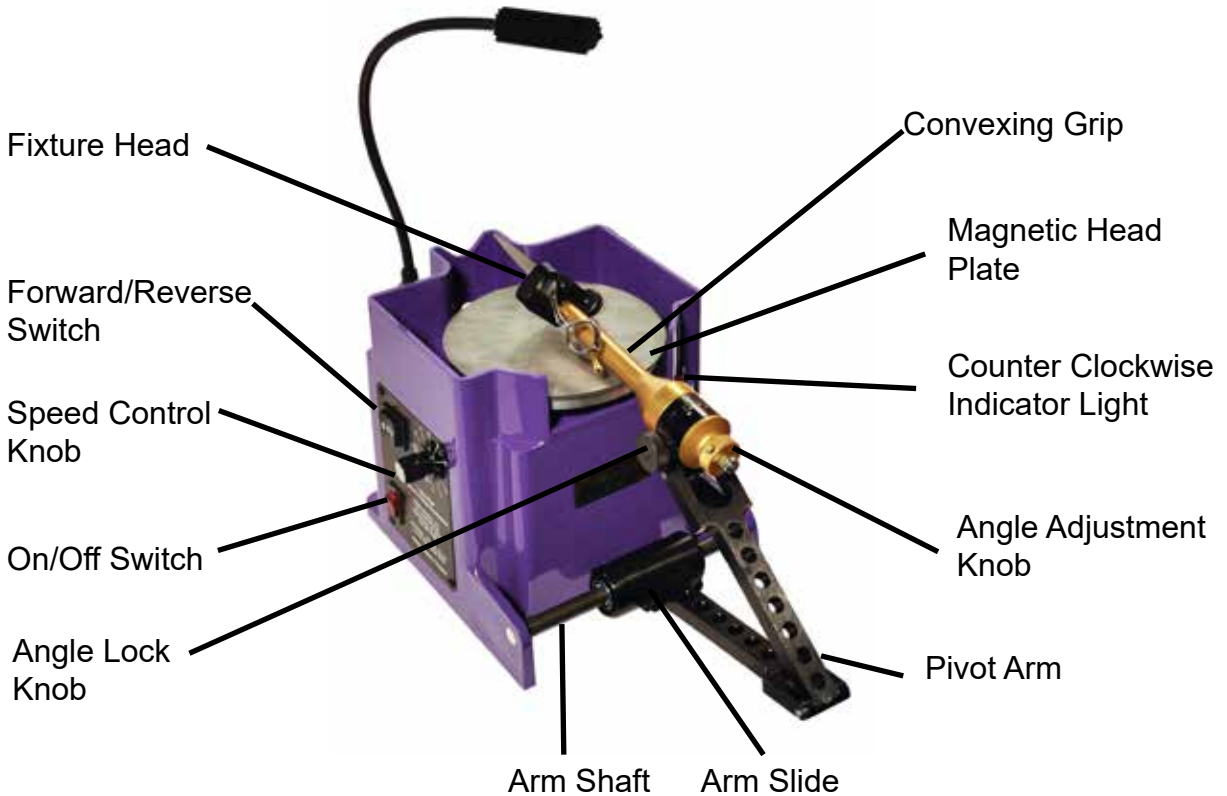
Technical support is available Monday through Friday 8:00 AM to 5:00 PM eastern standard time. Call with your sharpening questions. If it is regarding a specific shear, please have the shear in hand. If your question is regarding a problem with the sharpener, please have the sharpener nearby.

Wolff®, Twice As Sharp® and Hira-To® are registered trademarks of Wolff Industries, Inc. and may only be used in regard to items sharpened by using the equipment and methods described in this manual. Any other uses are forbidden without written permission from Wolff Industries, Inc.

## ***Table of Contents***

<b>Subject</b>	<b>Page</b>
History . . . . .	2
Technical Support, Trademark Usage . . . . .	2
Table of Contents . . . . .	3
Parts Names for the Hira-To® . . . . .	4
Set up and Safety . . . . .	5
Analyze the Shear . . . . .	6
Setting the Angle for a Right Hand Shears . . . . .	7
Setting the Angle for a Left Hand Shears . . . . .	8
Clamping the Blade . . . . .	9
Matching your Angle . . . . .	10
Machine Controls . . . . .	11
Bringing up the Edge with a 30 Micron Disc . . . . .	12
Smoothing the Convex Surface with a 15 Micron Disc . . . . .	13
Smoothing the Convex Surface with a 9 Micron Disc . . . . .	14
Working the Inside Line . . . . .	15
Applying Diamond Paste on new Felt Pad . . . . .	17
Reapplying Diamond Paste on used Felt Pad . . . . .	18
Polishing the Blade . . . . .	19
Reassembling a Shear . . . . .	21
Removing the Burr . . . . .	23
Balance the Shears . . . . .	24
Testing the Shears . . . . .	24
Consumables for the Hira-To® . . . . .	25
Parts Included with the Hira-To® . . . . .	26
Notes . . . . .	27
Limited Warranty, Disclaimer, Guarantee . . . . .	28

## Part Names for the Hira-To®



### ***Attaching abrasive Disc's on the metal plates***

- PSA - remove the backing and stick the abrasive to the soft backing plate.
- H&L - press the loop backed abrasive onto the metal plate with the hook pad on it.



## ***Set up and Safety***

- a. Inspect machine for shipping damage. Look for broken or bent parts. Notify freight carrier if damaged.
- b. Plug machine into a 3 wire grounded receptacle only.
- c. Use safety glasses and face mask to catch dust and grit. (Glasses provided are only for protection from flying grit and not intended for production work with danger from flying parts.)
- d. For true left hand shears turn the motor on counter-clockwise and the red counter-clockwise LED will flash.

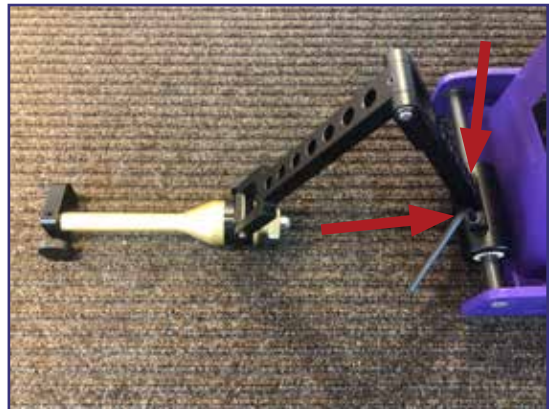


## ***Attaching the Hira-To<sup>®</sup> Arm Assembly***

- a. Lay the Arm in front of the Hira-To as pictured



- b. Attach the arm assembly to the arm slide using the two allen screws and the 3/16" allen wrench.



## Hira-To® Sharpening System

### 1. Analyze the shear

- A. Check to see if the shear has been sharpened before and that it has been sharpened properly, whether it is a convexed or beveled edged shear.
- B. Check for knicks visually on the edge. Then slowly close the shear to feel if there are any knicks along the edge as you close.
- C. Check the shear tips to see if they are not closing correctly or to see if the blades overlap.



Clicker and Spring



Split Screw

- D. Visually check the set of the scissor to see if it is over or under-set.
- E. Check the bumper to make sure it is there and not damaged.
- F. Check for any damage on the screw or parts of the pivot assembly.
- G. Disassemble the shear and inspect all screws, washers, nuts, bolts, and bearings, storing all parts in a secure container. When taking apart scissors with tension assemblies, be sure to pay close attention to how the shear came apart so you can reassemble it properly after sharpening.
- H. At this point it is good to clean the pivot holes and check for cracks in the shear and for pits in the washer seat.
- I. Examine the ride line and cutting edge to determine how much work needs to be done on the inside and how much metal needs to be removed from the edge.
- J. Check for any loose or missing finger tangs.

## 2A. Setting the Angle for a Right Hand Shear



Loosen the Angle Lock Knob

- A. Loosen the angle lock knob.
- B. Turn the angle adjustment knob on the rear of the fixture while applying light counter pressure to the convexing grip until the right hand angle mark (R) is about 42°.
- C. Snug down the angle lock knob.



Turn the angle adjustment knob

- D. Now that there is light tension on the internal angle adjustment shaft, turn the angle adjustment knob clockwise and set your fixture to 45°.



Tighten the Angle Lock Knob

- E. Once your right hand angle mark is set at 45°, tighten the angle lock knob.
- F. Follow steps A - E for other angle settings.

## 2B. Setting the angle for a True Left Hand Shear

*The blades are reversed on a true left hand shears*

- A. Loosen the angle lock knob.
- B. Rotate the angle adjustment knob on the rear of the fixture counter-clockwise while applying light pressure to the counter pressure to the convexing grip until the left hand angle mark (L) is at about 42°.

**Note: Remember your angles are reversed when sharpening a true left hand shears.**

- C. Snug down the angle lock knob.
- D. Now that there is light tension on the internal angle adjustment shaft, turn the angle adjustment knob counter-clockwise and set your fixture to 45°.
- E. Once your left hand angle mark is set at 45°, tighten the angle adjustment knob.



Angle Lock Knob



Angle Adjustment Knob

### **WARNING - to prevent damage to the disk or shears**

When sharpening a right hand shears the disc must be turning “CLOCKWISE”

When sharpening true left hand shears the disc should be turning “COUNTER CLOCK WISE”

**Note - the Red Counter Clockwise Indicator Light will be flashing when the disk is running counter clockwise**

**Note: When you are sharpening a left hand shear, the 45° mark on your fixture will remain constant, all the other angle markings will be reversed. This means that the 65° angle mark is actually 25° when sharpening a true left hand shears. The 25° angle mark is actually 65° when sharpening a true left hand shears.**





### 3. Clamping the blade



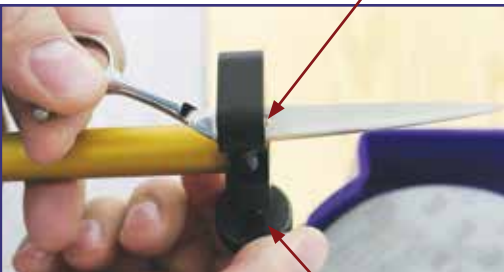
- A. Hold the fixture with your left hand as shown.

Inside of the blade



- B. Holding the blade with your thumb insert the blade into the clamp. The inside of the blade should be facing up.

Screw hole



Clamp screw

- C. Tighten the clamp screw to lock the blade in the clamp. Make sure 1/2 of the screw hole is covered by the clamp as shown.

## 4. Matching your angle

*Note: For true left hand scissors turn motor on counter-clockwise.*

A. After clamping the blade in the head of the fixture and with the fixture set at 45°, place a 30 micron disc on the head of the machine. While holding the fixture at the set angle- stop position, set the Hira-To® speed to 2 and turn the machine on so the disc is spinning clockwise. Holding your blade against the 45° stop lightly touch the 30 micron disc and then lift it off the disc.



B. Rotate the head of the fixture around to see where the blade has been scratched by the pad.

C. If the scratch on the blade is farther from the edge, this means your angle is too steep. Adjust your angle to 40° and test your blade again.



Fixture

If the scratch on the blade is riding the edge, your angle is too flat. Adjust your angle to 50° and test your blade again.

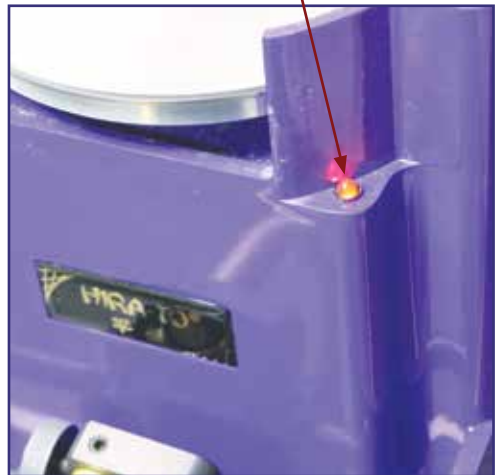
***\*The purpose of the scratch test is to match the angle as closely as you can without making the angle too steep or too flat.***

*Note: Most high-end beautician shears should be sharpened at 45°.*

## 5. Machine controls



Reverse LED  
Counter Clockwise  
True left hand scissors



## 6. Bringing up an edge with a 30 micron disc

- A. Start the sharpening process with a 30 micron disc. Set the Hira-To® to the neutral position, install the 30 micron disc.



*Note: For true left hand scissors turn motor on counter-clockwise.*

- B. Set the Hira-To® speed to 5 (50%) and turn the machine on so the disc is spinning clockwise.



- B. Lay the blade on the disc and gently rotate the blade back and forth in the fixture while watching for a burr to come up. **Be careful to lighten pressure on the tip and the throat of the blade. Do your best to follow the gentle curve of the cutting edge.**



- C. Once you see that your burr has come up, lift the blade off the disc, rotate the fixture, check the cosmetics (dead spots, appearance of the convex front surface, etc.), and feel for a burr. \*If the blade needs more work or if you cannot feel a burr, continue to work the blade on the disc until you achieve a satisfactory edge.



Burr

## 7. Smoothing the convex surface with a 15 micron disc



- A. Once you have completed your sharpening on the 30 micron disc, set the Hira-To® to the neutral position, remove the 30 micron disc, and replace it with a 15.



*Note: For true left hand scissors turn motor on counter-clockwise.*

- B. Set the Hira-To® speed set to 6 and turn the machine on so the machine is spinning clockwise.



- C. Lay the blade on the disc and gently rotate the blade back and forth in the fixture. **Be careful to lighten pressure on the tip and the throat of the blade. Do your best to follow the gentle curve of the cutting edge.**
- D. After working your blade on the 15 micron disc, lift the blade off the disc, rotate the fixture, and check the cosmetics (appearance of the convex front surface).



Burr

*\*If the scratches are still too deep from the 30 micron disc, continue to work the blade on the disc until you smooth the convex surface of the blade (Note: We do this step to smooth over the scratches from the 30 micron disc).*

## 8. Smoothing the convex surface with a 9 micron disc

- A. Once you have completed your sharpening on the 15 micron disc, set the Hira-To® to the neutral position, remove the 15 micron disc, and replace it with a 9.



*Note: For true left hand scissors turn motor on counter-clockwise.*

- B. Set the Hira-To® speed at 8 and turn the machine on so the machine is spinning clockwise.



- C. Lay the blade on the disc and gently rotate the blade back and forth in the fixture. **Be careful to lighten pressure on the tip and the throat of the blade. Do your best to follow the gentle curve of the cutting edge.**



- D. After working your blade on the 9 micron disc, lift the blade off the disc, rotate the fixture, and check the cosmetics (appearance of the convex front surface).

*\*If the scratches are still too deep from the 15 micron disc, continue to work the blade on the disc until you smooth the convex surface of the blade. (Note: We do this step to smooth over the scratches from the 15 micron disc.)*



Burr

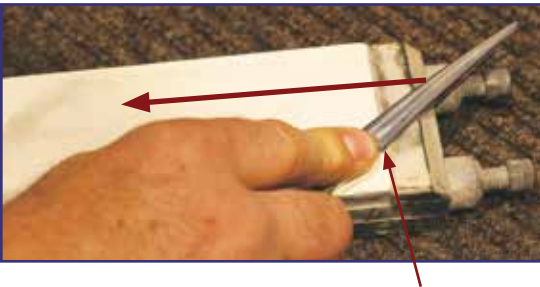
## 9. Working the Inside Ride Line



- A. Remove the blade from the Hira-To® fixture and set it aside. Wet your Shapton 6,000 grit water-stone and clean and flatten the stone with a DMT W8 water stone sharpener or similar flattening stone as shown.



- B. Wipe the water-stone clean and wet it down..



- C. Place your blade on the block as shown. Pull the blade towards you keeping it flat against the water-stone to remove the burr, only move it in the direction shown.. This will pull back your burr.

Using the edge of the water stone to remove the burr

## 9. Working the Inside Ride Line - continued

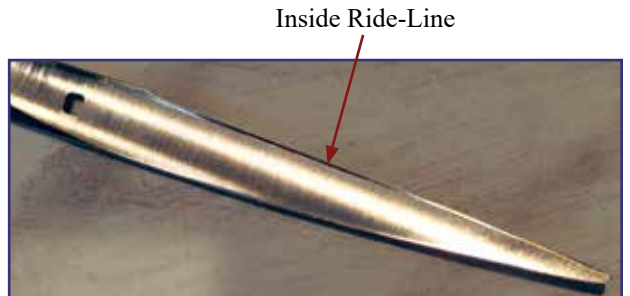
- E. Place the blade on the water-stone at 45° as shown.



- F. Place your fingers on the blade as shown, With about 10 - 12 lbs of pressure on the screw hole work the blade back and forth until a consistent ride-line is achieved.



- G. Make sure you have a consistent ride-line from pivot to tip is not repeat step 9-F.



10. Repeat step 6, on page 12 to step 9 for the second blade.



## 11A. Applying diamond paste on new felt pad



A. Place your felt disc on the head of the Hira-To®.

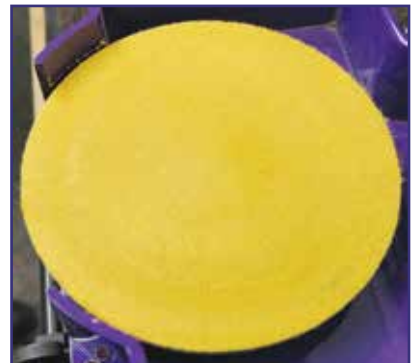
B. Apply six lines of paste to the disc in a pie shaped pattern. Between the pie wedges apply 2 lines of paste.



C. Once the paste is applied, rub it into the felt pad with your finger.



D. Add diamond paste to the felt pad until the the entire felt pad is covered as shown.



## 11B. Applying diamond paste on used felt pad

- A. Place your felt disc on the head of the Hira-To®. Run your finger across the felt disc, do you feel the diamond polishing compound on your finger. If you have compound move to step 12.



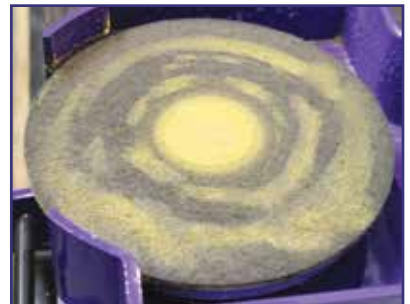
- B. Put the diamond paste of the felt pad as shown.



- C. Once the paste is applied, rub it into the felt pad with your finger.



- D. Felt pad will look like these after adding diamond paste.



***NOTE***  
***Each application of Diamond Paste should last for about 10 shears (20 blades).***

## 12. Polishing the Blade

*Note - if you are sharpening - polishing a true left hand shears start the machine with the head turning in the counter clockwise direction. The red counter clockwise indicator light will be flashing.*



- A. Set the Hira-To® speed at 10 and turn the machine on so the machine is spinning clockwise.



- B Spray a light mist of water on the plate while running at 10, wipe the excess water off. This will reduce dust from the earlier steps.

- C.. Insert the blade into the Hira-To® clamp.



## 12. Polishing the Blade - continued

D. Place your blade on the spinning disc and gently rotate the blade back and forth in the fixture

E. Be sure to rotate your fixture to the full stop position on every rotation to ensure proper polishing of the cutting edge.



F. After polishing the blade for 30 seconds or so, lift your blade off the disc, rotate the head of your fixture, and check your cosmetics. You are checking to see if the blade is finely polished and the majority of the scratches have been removed. You will **NOT** be able to feel a burr.



G. Carefully wipe the blade to remove any diamond polishing paste.

H. Once you have achieved a finely polished edge, repeat step 12, page 19 for your second blade.

*Note: The polishing pad will turn black with use, no need to clean the pad only add additional polishing compound as needed.*

## 13A. Reassembling a Spring Tension-Clicker Shear



***\*\*Make sure you keep the shear in the open position while you put it together.***

A. If your shear has a tension-adjusting assembly, take the threaded stud of the assembly and washer, and place it into the recessed hole in the thumb blade.



B. Hold the stud in the thumb blade with the first finger of your left hand and slip the finger blade onto the threaded stud. Apply a drop of the scissors lube to the screw.



C. Take your tension plate and slide it over the threaded stud; mount it properly on the finger blade.



D. Take your knurled tension-adjusting knob and screw it, ridges down, onto the threaded stud until you make contact with the tension plate.

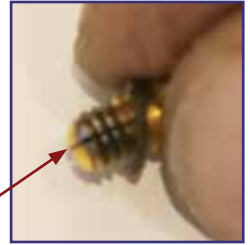


Clicker spring plate

## 13B. Reassembling a Split Screw Shear

***\*\*Make sure you keep the shear in the open position while you put it together.***

Split screw



- A. Now that both of your blades have been polished, put your shear back together.
- B. Make sure the washer is installed on the screw.
- C. Place the blades as shown with the recessed opening up.



- D. Install the split screw and washer into the blades, finger tighten.



- E. Put a drop of the scissors lube on the screw.



- F. Pick up your screw driver and turn the screw clockwise until you feel the screw seat itself into the hole to start your threads.
- G. Turn your screw to the right to tighten the screw.

- H. **Do not over-tighten the screw because this can collapse the split end screw. Simply tighten the screw until the blades are reasonably snug together.**



## 14. Removing the Burr

- A. With the shear in the open position, hold them in your right hand.
- B. Remove the burr by slowly cutting through a piece of paper towel or a two ply facial tissue. This will help to ease the burrs off of the blades.



## 15. Balance the Shears

- A. To test the balance the shear or set the freefall, start by holding the thumb blade with the point pointing straight up at the ceiling so it is at 90° in front of you, and lift the finger blade until it is 180° in front of you.
- B. Holding the thumb blade firmly, let go of the finger blade and see if the finger blade drops all the way to the tip.
- C. If the blade drops all the way to the tip, tighten your screw and test your balance and freefall again. Continue to do this until the finger blade stops at somewhere between the middle to two-thirds of the way up the blade.
- D. Once your freefall is set properly, you need to seat your washer.
- E. To do this, open the shear all the way, firmly hold the thumb blade with your left hand and torque the finger blade in a rocking motion to allow the washer to seat over the head of the screw.
- F. Once you have done this, test your freefall again. If you find your shear has loosened up, tighten your screw and adjust your balance and freefall until the finger blade comes to a stopping point halfway or two-thirds up the way of the blade.



## 16. Testing the Shears




- A. To test how your shear cuts, take a 2-ply facial tissue and separate it into two separate ply's.
- B. Using one ply, hold the facial tissue in front of you with your left hand. With your right hand, close the shear on the single ply of facial tissue all the way to the tip and then pull straight down.
- C. The shear should cut through the single ply of facial tissue cleanly and without snagging at the tip.
- D. Once you have tested your shear on dry facial tissue, take a spray bottle filled with water, and wet the same sheet of facial tissue.
- E. Take your shear and cut through the wet facial tissue all the way to the tip, again pulling straight down when the close is complete. The shear should cut cleanly through the wet single ply facial tissue without any catch or snag at the tip.
- F. Test cut the single ply wet facial tissue palm up. The shear should cut cleanly through the wet single ply facial tissue without any catch or snag at the tip.
- G. Test cut the single ply wet facial tissue palm down. The shear should cut cleanly through the wet single ply facial tissue without any catch or snag at the tip.



*\*If your shear does not cut cleanly through the single ply wet facial tissue, repeat step 12, page 19, polishing the blades.*



## Consumables for the Hira-To®

<i>Part Number</i>	<i>Description</i>	
FH-PSA-9 FH-HL-9 FH-PSA-15 FH-HL-15 FH-PSA-30 FH-HL-30 FH-PSA-60 FH-PSA-80 FH-HL-80	9 micron 3M disc - PSA 9 micron 3M disc - Hook and Loop 15 micron 3M disc - PSA 15 micron 3M disc - Hook and Loop 30 micron 3M disc - PSA 30 micron 3M disc - Hook and Loop 60 micron 3M disc - PSA 60 micron 3M disc - Hook and Loop 80 micron 3M disc - PSA 80 micron 3M disc - Hook and Loop	
FH-PSA-2000 FH-HL-2000 FH-PSA-1200 FH-HL-1200 FH-PSA-500 FH-HL-500	9 micron Korean disc - PSA 9 micron Korean disc - Hook and Loop 15 micron Korean disc - PSA 15 micron Korean disc - Hook and Loop 30 micron Korean disc - PSA 30 micron Korean disc - Hook and Loop	
FH-FP FH-DP	Felt pad Diamond paste	
FH-50503 20700	Shapton waterstone Shear lube	

## Parts included with the Hira-To®



### Comes with:

- 30 micron discs
- 15 micron discs
- 9 micron discs
- Metal plates
- Deluxe pliers kit
- Felt Pad
- Diamond polishing paste
- Ceramic water stone
- 3/16" Allen wrench
- Water stone holder
- Practice shears
- Shear lube
- Training DVD
- Owner's manual
- Safety goggles
- Set adjust tool
- Dust mask
- 2 1/4-28 x 3/4" screws

\* All discs available in PSA or Hook & Loop

**NOTES:**

## LIMITED WARRANTY

Two year warranty from date of purchase against defective parts or workmanship with the exception of the sharpening and polishing discs. Warranty limited to replacement of parts. Buyer must return warranty card to manufacturer for coverage of warranty. This warranty covers only the original purchaser. Use of non-factory parts voids any warranty. This warranty gives you specific rights. You may also have other rights which vary from state to state. Some states do not allow limitations or implied warranties or consequential damages, so these may not apply to you.

## DISCLAIMER

There is no expressed warranty other than limited warranty stated above. There is no implied warranty for the merchantability of for fitness for a particular purpose. Wolff Industries, Inc., will not be responsible for any consequential damages. Damages are limited to the replacement of defective parts.

## GUARANTEE

If you are not satisfied during the first (30) days, return the merchandise for a complete refund, less shipping.

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