SUPERIOR

Outside Diameter Mount Flange Facing Machines (ODFF) Operating Manual

DOCUMENT NUMBER SPR-MAN-ODFF

REV 02

SUPERIOR

One Company, *Superior* Results.

THIS PAGE INTENTIONALLY LEFT BLANK

ABOUT US

Superior Portable Machine Tools (SPR) is your go-to source for specialty tools and equipment in the Oil and Gas, Mining, Heavy Construction, Shipbuilding, Aerospace, Defense, and Power Generation industries. With a strong presence across locations in the US and Canada, as well as a global network of dealers, we proudly offer a comprehensive range of cutting-edge machinery. From portable line boring machines and auto bore welders to linear/gantry and rotary milling machines, our lineup covers all your needs. We also provide top-of-the-line Aggressive® clamshells (pipe cutters), ID/OD flange facers, end-prep bevelers, and weld isolation and test plugs. Additionally, our expertise extends to the production and maintenance of heat exchangers, condensers, and boilers through our partnership with Maus Italia. SPR's engineering group is ready to customize existing products or create tailor-made solutions from scratch, and we excel in precision grinding and tooling services, offering a wide assortment of custom and standard tool bits.

We go above and beyond by providing value-added engineering, comprehensive training programs, and unwavering operational support. Rest assured, we prioritize the highest health, safety, and environmental standards in the industry. Our extensive experience in service, deep understanding of equipment requirements, and unwavering dedication to customer satisfaction are the pillars of our commitment to delivering exceptional equipment and unmatched customer care.

YORK
PORTABLE MACHINE TOOLS

SUPERIOR
PLANT RENTALS

CLIFF'S BITS
PRECISION GRINDING & TOOLING

YORK MACHINE SHOP
CUSTOM MACHINING, MANUFACTURING, AND REPAIRS

SUPERIOR HEAT EXCHANGERS
PORTABLE TOOLS AND MACHINERY

WARNING:

SPR is committed to continued product improvement; therefore, the machine you received may be slightly different than the one described herein. This manual and the information provided is a basic guideline for our customers. SPR will do its best to ensure that the information and procedures contained in this manual are correct and up-to-date. Superior cannot guarantee that the information and procedures contained herein are correct for all applications or situations.

The contents of this manual are subject to change without notice. It is the obligation of the user to read all information in this manual, become familiar with the equipment to be used, and exercise the utmost care in equipment operation. **Do not make any modifications to this equipment. Any modifications will void all warranty claims, as well as increase the risk of injury or harm.** Do not operate this equipment if all parts are not functioning at 100% efficiency. Notify us immediately for any needed repairs.

Note - SPR will supply all repair and replacement parts necessary for maintenance and operation of this machine. For repair, service, or additional information, please locate repair and replacement part description/part numbers within the O&M manual in the exploded view section and contact us for ordering.

USA

Superior Plant Rentals LLC.
350 Dowdy Road, Gonzales, LA 70737 | Phone: 225.647.7771

Superior Plant Rentals LLC.
1530 Live Oak Street, Webster, TX 77598 | Phone: 281.554.9400

Superior Plant Rentals LLC.
5450 Avenue A, Bldg. 1, Beaumont TX 77705 | Phone: 409.853.4382

Superior Plant Rentals LLC.
1745 N. Lexington Blvd., Corpus Christi, TX 78409 | Phone: 361-299-0496

Superior Plant Rentals LLC.
2030 Gladwick St., Unit B, Rancho Dominguez, CA 90220 | Phone: 310.356.6105

Superior Plant Rentals LLC.
3958 Airway Drive, Rock Hill, SC 29732 | Phone: 803.659.9822

Superior Plant Rentals LLC.
8001 Hwy 90, Moss Point, MS 39562 | Phone: 251.370.8039

INTERNATIONAL

SPR York Portable Machine Tools
1641 17th Ave, Campbell River, BC, Canada, V9W 4L5 | Phone: 250.286.6400

TABLE OF CONTENTS

SUPERIOR

One Company, *Superior* Results.

THIS PAGE INTENTIONALLY LEFT BLANK

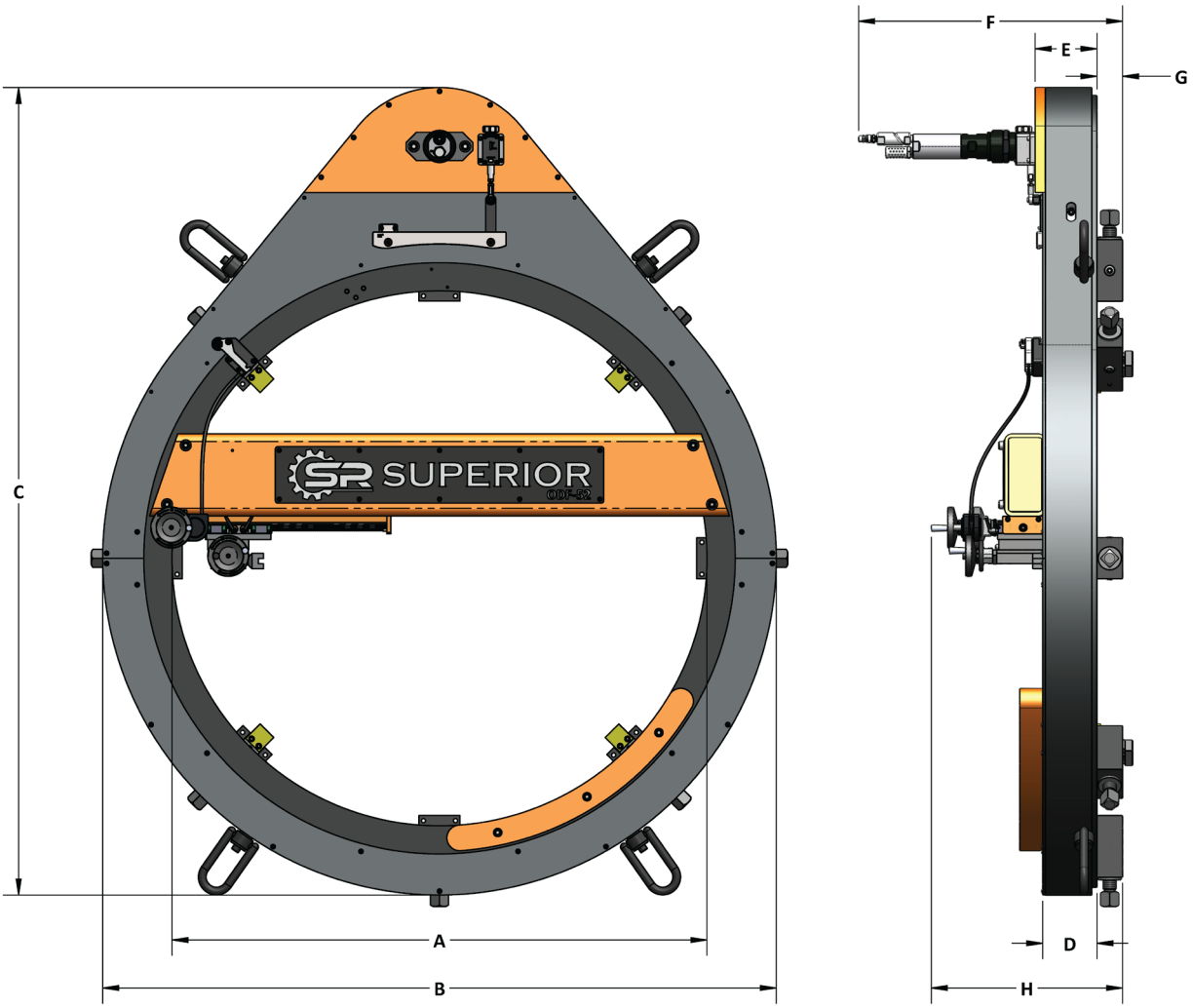
INTRODUCTION

SPR's OD Mount Flange Facers (ODFFs) are designed to cover a wide range of applications with operator efficiency built into the overall design, rigging, and packaging of each unit. SPR's machines are belt-driven with adjustable cam bearings and driven with a pneumatic motor, allowing them to be used in more precise applications.

RECEIPT AND INSPECTION

The ODFF is generally shipped in one crate. Inspect the machine for shipping damage. Verify that all of the parts listed below, or on the Bill of Materials, are present. If any parts are missing, or if you have questions regarding the ODFF, please contact a Superior Plant Rentals or SPR York location nearest you immediately.

Steel OD Flange Facer (ODFF)



SPECIFICATIONS CHART

Steel FF	A	B	C	D	E	F	G	H
SFF 21”	21.125” (536.575 mm)	34.5” (876.3 mm)	41.5” (1054.1 mm)	4.375” (111.125 mm)	5” (127 mm)	20” (508 mm)	3.5” (88.9 mm)	13.5” (342.9 mm)
SFF 30”	30” (762 mm)	43.375” (1101.725 mm)	57” (1447.8 mm)	5.25” (133.35 mm)	5.75” (146 mm)	20” (508 mm)	3.5” (88.9 mm)	13.5” (342.9 mm)
SFF 32”	32.125” (815.975 mm)	45.125” (1146.175 mm)	67.25” (1708.15 mm)	5.25” (133.35 mm)	5.75” (146 mm)	20.75” (527 mm)	3.5” (88.9 mm)	13.5” (342.9 mm)
SFF 40”	40” (1016 mm)	54.625” (1387.475 mm)	67.25” (1708.15 mm)	5.25” (133.35 mm)	5.75” (146 mm)	20.75” (527 mm))	3.5” (88.9 mm)	13.5” (342.9 mm)
SFF 42”	42.125” (1069.975 mm)	54.625” (1387.475 mm)	67.25” (1708.15 mm)	5.25” (133.35 mm)	5.75” (146 mm)	20.75” (527 mm)	3.5” (88.9 mm)	13.5” (342.9 mm)
SFF 52”	52.125” (1323.975 mm)	66.75” (1695.45 mm)	79.5” (2019.3 mm)	5.25” (133.35 mm)	6.25” (158.75 mm)	21.25” (539.75 mm)	3.5” (88.9 mm)	13.5” (342.9 mm)
SFF 62”	62.125” (1577.975 mm)	75.25” (1911.35 mm)	88.25” (2241.55 mm)	5.25” (133.35 mm)	6.25” (158.75 mm)	21.25” (539.75 mm)	3.5” (88.9 mm)	13.5” (342.9 mm)
SFF 72”	72.125” (1831.975 mm)	83.375” (2117.725 mm)	97” (2463.8 mm)	5.25” (133.35 mm)	6.25” (158.75 mm)	21.25” (539.75 mm)	3.5” (88.9 mm)	13.5” (342.9 mm)
SFF 82”	82.125” (2085.975 mm)	95.25” (2419.35 mm)	108.25” (2749.55 mm)	5.25” (133.35 mm)	6.25” (158.75 mm)	21.25” (539.75 mm)	3.5” (88.9 mm)	13.5” (342.9 mm)
SFF 102”	102.125” (2593.975 mm)	115.625” (2936.875 mm)	128.75” (3270.25 mm)	5.5” (139.7 mm)	6.5” (165.1 mm)	21.75” (552.45 mm)	3.5” (88.9 mm)	14” (355.6 mm)

SAFETY PRECAUTIONS

The operator must read and understand this entire manual before attempting to operate any SPR O.D. mount machine. Failure to do so and to follow all safety precautions may result in serious personal injury and/or damage to the equipment.

When operating the O.D. mount machines, follow the safety guidelines below:

- Always follow company and OSHA safety rules.
- Guards and covers must be securely in place during machine use. If removed for inspection purposes, or adjustments, they must be reinstalled before machine operation.
- Never attempt to disconnect or override the safety features or mechanisms on the machine.
- Before operating the machine, you must receive training specific to the safe operation of this machine by a qualified person.
- Do not operate the machine while under the influence of drugs or alcohol.
- Protective clothing must be worn, including safety glasses, steel toe footwear, ear plugs, gloves, and proper clothing.
- Loose clothing, jewelry, and long hair must be kept away from the machine during operation. Personal injury may occur.
- Obey all warnings sign and labels.
- Stay clear of all rotating and moving parts. Never reach or lean into an operating machine.
- Do not use the machine in any hazardous environments, such as radiation areas, flammable or explosive areas, and around toxic fumes.
- Only use this machine for it's intended use. Do not modify or change any parts on the machine without written permission from SPR personnel.
- Keep all cords, hoses, lanyards, etc. away from moving and rotating parts.
- Establish a work zone around the vicinity of the machine. Keep this area clean and free of any debris, or any other persons not involved in the safe operation of the machine.
- Do not place hands or any other body parts on any sharp edges on the machine while the machine is operating.
- Disconnect the air source before changing tool bits or performing any machine set up, disassembly, or maintenance.

- Make sure all components are securely tightened before starting the machine.
- Make sure the work piece is stable and can fully support the weight of the machine before mounting.
- Only lift the machine at designated points with proper lifting equipment, straps, chokers, etc., and use tag lines when necessary.
- Check all lifting swivel eyes and bridles for up to date inspection tags.
- Close air control valves before connecting the air supply lines to the air motor.
- Use only proper air supply lines with 90 psig and 90 cfm and follow all OSHA guidelines.

For maximum safety and performance, read the entire instruction manual before operating this machine.

WARNING!
MOVING PARTS.
Keep hands, loose clothing, and hair away from rotating or moving parts. Disconnect the air supply from the machine and unplug all equipment prior to adjusting or servicing. If electric, remove power from the machine prior to adjusting or servicing.

WARNING!
ELECTRICAL SHOCK.
Possible shock if not handled properly.

WARNING!
KEEP DRY.
Keep all equipment and components away from any water source.

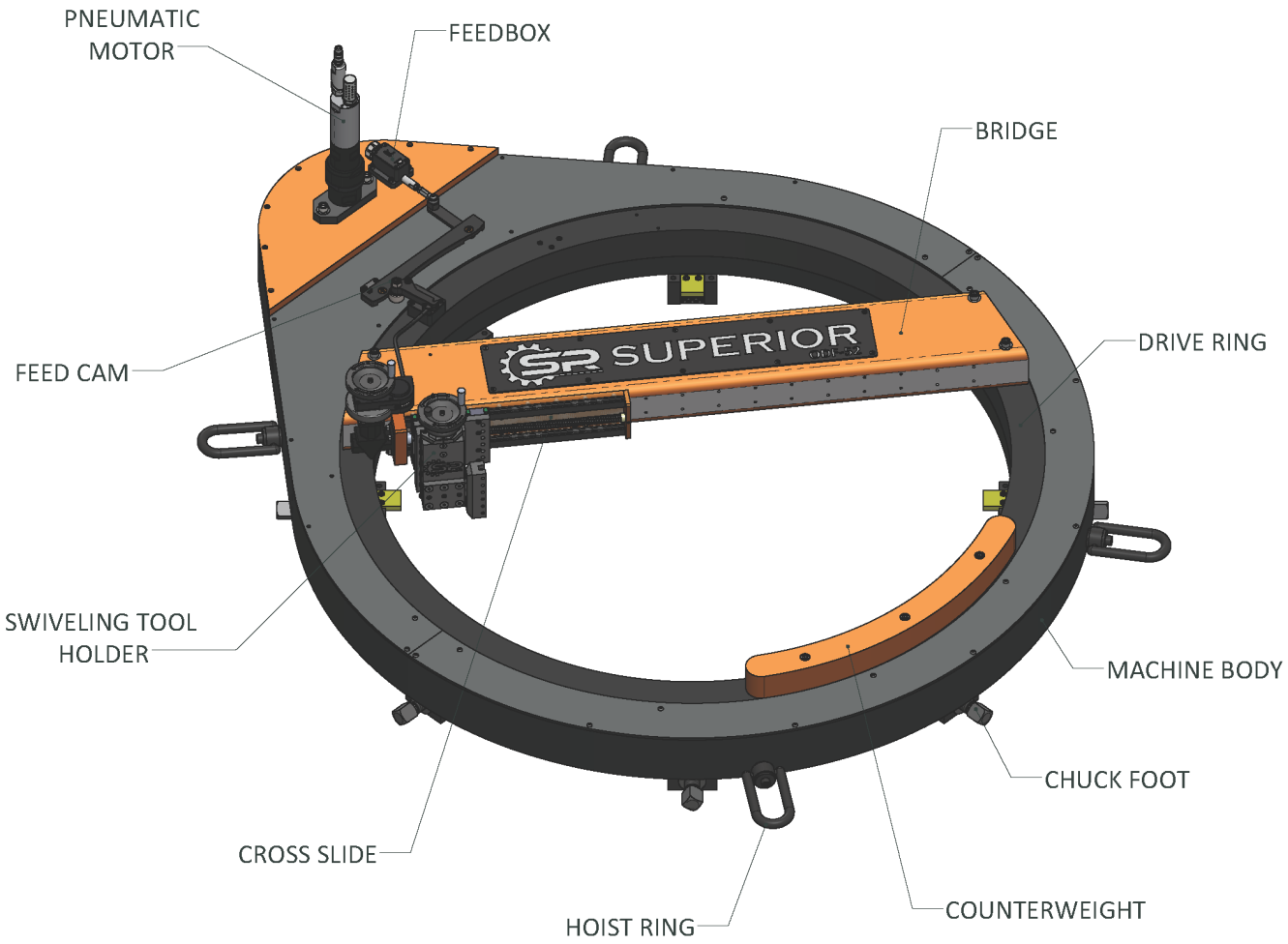
WARNING!
EYE PROTECTION.
Eye protection must be worn while operating or working near powered equipment.

WARNING!
EAR PROTECTION.
Ear protection should be worn while operating or working near loud equipment.

WARNING!
FOOT PROTECTION.
Foot protection must be worn while operating or working near heavy equipment.

GENERAL OVERVIEW

The Superior Plant Rentals outside diameter mount machines can perform a variety of flange facing operations including facing, boring, beveling and different RMS finishes. It can machine raised face, flat face, male/female, lens rings, Graylocs, and Ring Type Joint flanges as wells as exchangers and others.



MACHINE COMPONENTS

1. **Machine Base** - The base is designed to allow the machine to operate with minimal deflection and vibration.

2. **Machine Ring** - The ring is designed to resist the loads and forces generated from the tool pressure, bearing loads, and rotational forces of the machine.

3. **Bridge** - The bridge is attached to the ring and holds the compound and slide.

4. **Compound and Slide** - Holds the tool holder and is used to perform the cutting operation. It allows different angles, machining configurations and RMS finishes to be accomplished.

5. **Tool holders** - Several different tool holders are provided depending on which type of flange needs to be machined.

6. **Mounting Jaws** - Two type of jaws are used; fixed and adjustable. The jaws are used to securely mount the machine to the work piece and align the machine to the flange.

7. **Swivel Lifting Lugs and Lifting Bridles** - Used to lift the machine into place. Small aluminum machines have lifting handles instead of swivel lifting lugs.

8. **Air Motor** - Used as the driving force to rotate the machine. It rotates the machine with the combination of vee belts and pulleys.

9. **Air Caddy and Hose (not shown)** - Used to provide the air motor with dry compressed air and lubrication. The valve on the hose is also used to turn the machine rotation on and off.

10. **Aluminum Safety Covers** - Used to protect the operator from rotating parts and keeps dirt and debris from getting into the bearings.

11. **Hands Free Automatic Feed** - Used to feed the tool bit without the operator having to touch or place hands on the machine while it is rotating. This will protect the operator from injuries due to rotating parts.

SET-UP AND OPERATION

While setting up the machine, make sure the air supply line is disconnected to prevent accidental start up while hands are being placed inside the machine.

Note - Chips and shavings created during the cutting process can be extremely sharp and can cause lacerations. Do not grab chips. Take precautions and use a brush to sweep and pick up these chips.

SELECTING THE RIGHT MACHINE

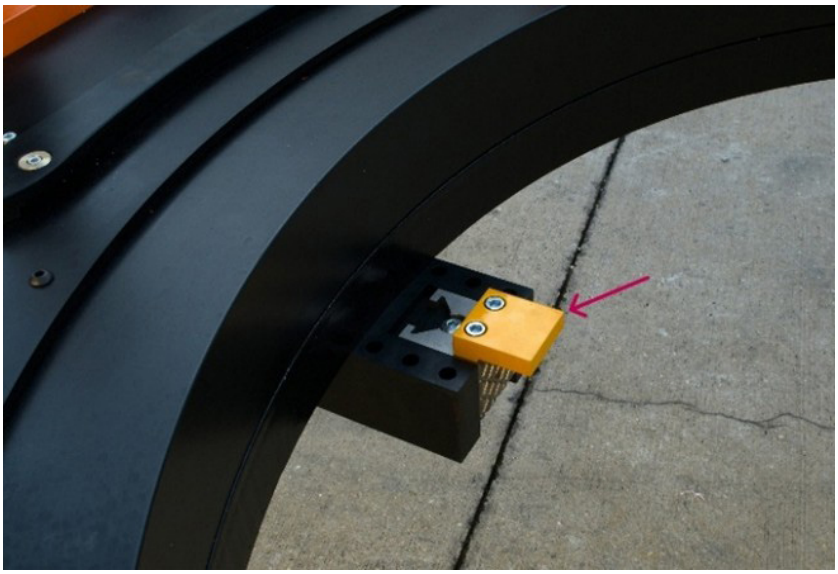
Warning - Failure to secure the machine with the proper lifting bridles, rigging, and tethers may cause the machine to shift or fall during set-up.

- Measure the largest diameter of the workpiece or flange to be machined.
-
- Choose the OD Flange Facing machine that has an inside diameter hole larger than the diameter measured.

MACHINE SET UP

Using the measurement taken above, bolt the jaws on the machine using the provided 3/8” diameter bolts so that the jaws are spaced far enough apart to mount to the outside diameter of the flange.

Note - If the jaws are positioned inside the ring of the machine, the locator plates can be bolted onto the jaws and can be used to help quickly place the machine somewhat parallel to the flange face. If the jaws are bolted onto the machine where they do not stick out from under the ring, the locator plates will not be able during that application.



- Lift the machine into place using the lifting bridle provided. The lifting bridle has four legs, two of each, are color coated. The bridle is made so that the two short legs with the same color are made to hook onto the two lifting eyes towards the teardrop side of the machine. This will keep the machine very near the horizontal position when lifted. Use the bridle and lift the machine into place so that the jaw feet are near the flange O.D. and the machine and as close as possible to level with the top face of the flange.

- Tighten the 4 adjustable jaws so that they slightly contact the outside edge of the flange. Note: If a machine also has fixed jaws, leave them loose for now.

- At the location of an adjustable jaw, take a measurement from the ID of the ring on the machine to a spot on the flange (ex: edge of bolt face, or edge of bolt hole, etc.) and duplicate this measurement on the opposite side of the machine. Compare the two measurements.

- Using the correct box end wrench, adjust both jaws simultaneously (plus or minus as necessary) to center the machine the same distance from the flange on both sides, 180 degrees apart.

- Repeat this process above at the location of the other two adjustable jaws located 90 degrees on the machine.

- Now use the box end wrench and tighten the 4 adjustable jaws with a little more pressure to hold the machine onto the flange.

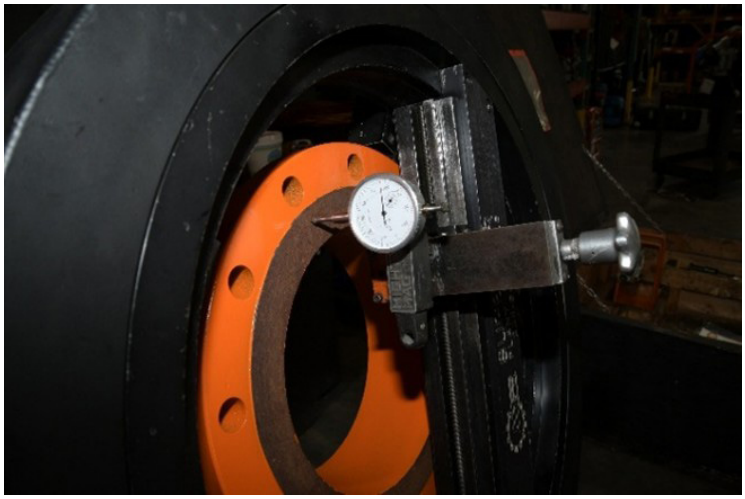
Note - Do not over-tighten the jaws. This will cause several problems with the machine. It can cause distortion of the machine base and it can also apply too much friction and pressure on the bearings causing the bearings and ring to generate heat during the cutting operation.

INDICATING THE MACHINE PARALLEL TO THE FLANGE

- Make sure the air valve is in the closed position and connect the air hose to the air motor.

Note - When opening air supply valves, sudden start up of rotation can occur. Slowly open air valves at first, to eliminate this possibility.

- Place a magnetic swivel base with a 1” travel dial indicator on the bridge (or on the slide) and set the 1” dial indicator so that it contacts the gasket surface and the indicator is depressed and engaged half way. This will allow the indicator to have space to travel ½” up or down as needed.



- Using the air motor on the machine, slightly open the air valve to slowly rotate the machine until the indicator tip is positioned adjacent to one of the adjustable jaw locations on the machine. Now close the valve to stop the machine rotation.

- Turn the dial on the indicator face until the needle is positioned on the zero mark.

- Open the air valve and rotate the machine until the machine travels 90 degrees and the indicator stops at the next adjustable jaw location 90 degrees away.

Note - Watch the needle on the indicator and see if the indicator is rotating in the clockwise or counterclockwise during the machine rotation: Document the indicator reading:

- Now complete the action above and again rotate the machine to the next adjustable jaw location and document that reading.

- Rotate the machine to the last adjustable jaw and document that reading.

- Now compare the difference of the readings from each set of jaws 180 degrees apart from each other. Compare the readings of (Jaws 1 and 3), and the readings of (Jaws 2 and 4).

- The opposite set of jaws with the greatest difference, will be where the first adjustment will be made. Here are some examples of indicator readings to compare.

  Example 1: First jaw = 0.000", second jaw = + 0.030", third jaw = + 0.040", forth jaw = - 0.020"
  Jaws 1 and 3 are 0.040" difference, and 2 and 4 are 0.050" difference.
  Here we would make the first adjustment on the machine at jaws 2 and 4.

  Examples 2: First jaw = 0.000", second jaw = - 0.030", third jaw = + 0.028", forth jaw = - 0.020"
  Jaws 1 and 3 are 0.028" difference, and 2 and 4 are 0.010" difference.
  Here we would make the first adjustment on the machine at jaws 1 and 3

- Let's use example 1 above: The first adjustment needs to be made at jaws #2 and #4. We will start at jaw #2.

- Now open the air valve and rotate the machine until the dial indicator tip is at the location of jaw #2. Zero the indicator here.

- Open the air valve and rotate the machine to jaw #4. The indicator should read = + 0.050". We want to adjust half of the adjustment on each side of the machine, not all out of one side.

- Also, on our first adjustment, we don't want to adjust the machine 100% of what is needed. We only want to take about 80% of what is required and see how much is left for the second adjustment. So, 80% X 0.050" = 0.040" total. So, we will adjust 0.020" out of each jaw, one side up 0.020" at jaw #4, and one side down 0.020"at jaw #2.

- Now starting at jaw #4, we will move the machine -0.020”. Using the allen wrench, turn the screw on the adjustable jaw foot in the correct direction so the indicator moves from +0.050” in the negative direction (counterclockwise) until it gets to +0.030”. This will be the -0.020” adjustment required at this jaw.

- Now, turn the dial on the indicator to zero at jaw #4. Open the air valve and rotate the machine 180 degrees until the indicator stops at jaw #2. The indicator should now read somewhere around -0.030”.

- Place the allen wrench into the slot on the adjustable jaw foot and turn the wrench while watching the indicator until the indicator starts moving from -0.030” in the positive direction (clockwise) until it gets to -0.010”. This will be the +0.020” adjustment required at this jaw.

- Now zero the indicator at jaw #2, and open the air valve to rotate the machine 180 degrees to jaw #4. Inspect the reading. Make the final adjustment at this jaw #4 until the indicator reads zero.

- Rotate the machine back and forth between the two jaws #2 and #4 and check that the indicator reads the same, (zero) at both jaws #2 and #4. Make any final adjustments, if necessary, for the indicator to read zero.

- Now repeat this entire process mentioned above, for jaws #1 and #3 until those two jaws have the same zero reading compared to each other. Now the machine should be parallel to the flange at all four jaw locations.

- So even though the machine is parallel to the flange, (using this example #1), the flange is still warped a total of 0.050” It will require at least 0.050” to be machined off of the flange surface to get it flat and put the correct RMS finish on the gasket surface.

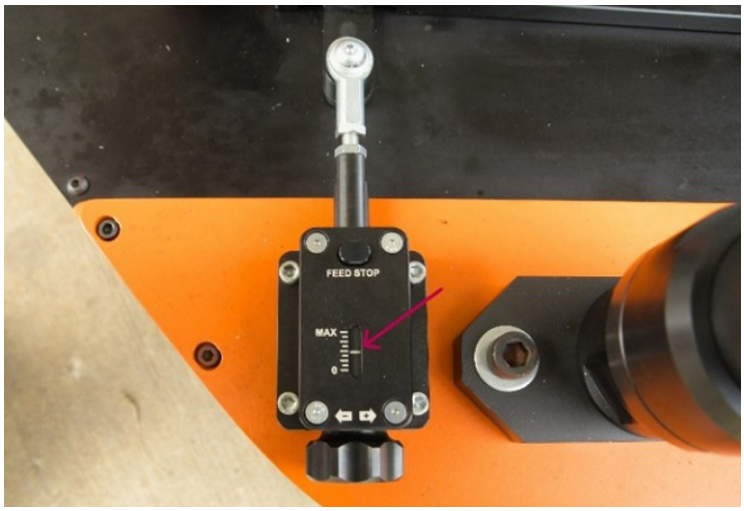
- Once all four adjustable jaws have been positioned so the machine is parallel to the flange, use the wrench to tighten a little more pressure to the outside diameter to the flange. Also, if the machine is a 52” diameter OD machine or larger, tighten the additional 4 fixed jaws to the outside diameter of the flange for support.

- The machine is now ready for the cutting operation.

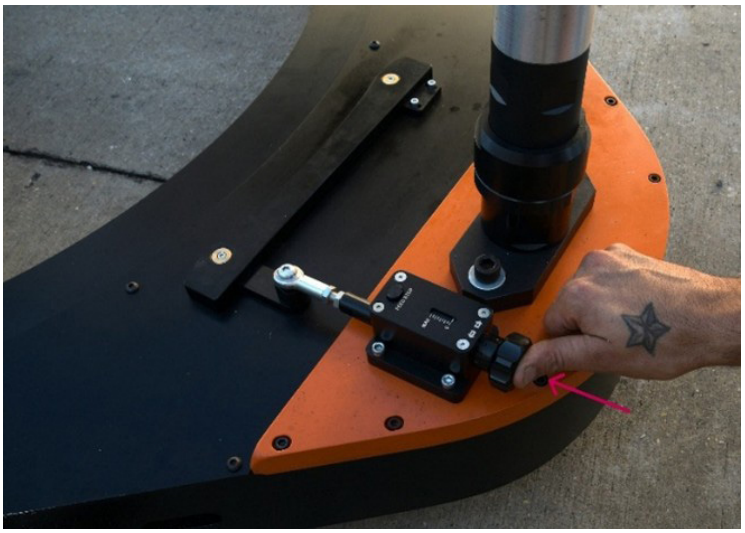
AUTO-FEED OPERATION

- Before we start machining the flange surface, you must have a thorough understanding of how the auto feed works on the machine.

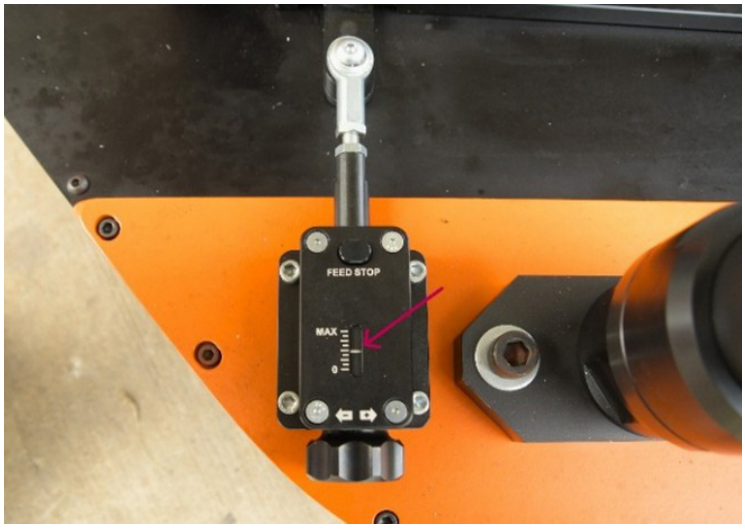
- The feed box, located on the drive plate of the machine, has a dual purpose. It is used to engage/ disengage the feed, and it is also used to set the amount of feed the tool bit will travel per revolution of the machine.



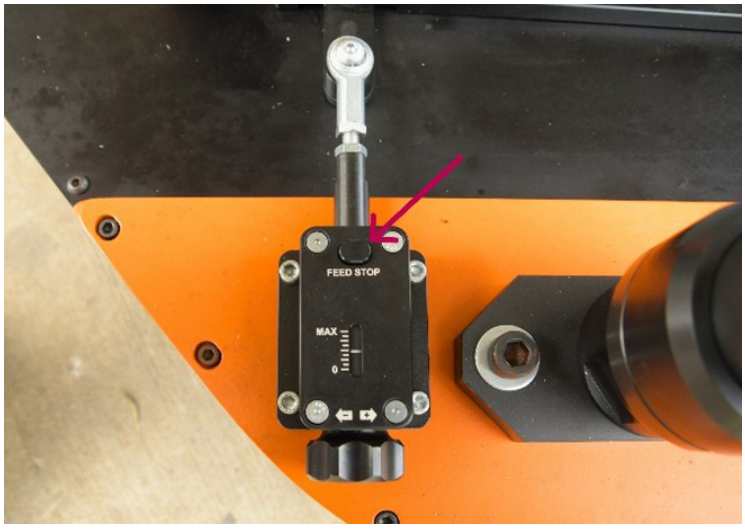
- To engage the auto feed, push inward on the end of the handle on the feed box until it locks into place. The amount of engagement is shown by the linear scale tick marks on top of the box.



- To set the amount of feed the tool bit will travel per revolution of the machine, turn the handle on the feed box until the desired amount on the linear scale is achieved.



- To disengage the feed, push the small button on top of the box. The handle will retract to zero and the feed will be disengaged.

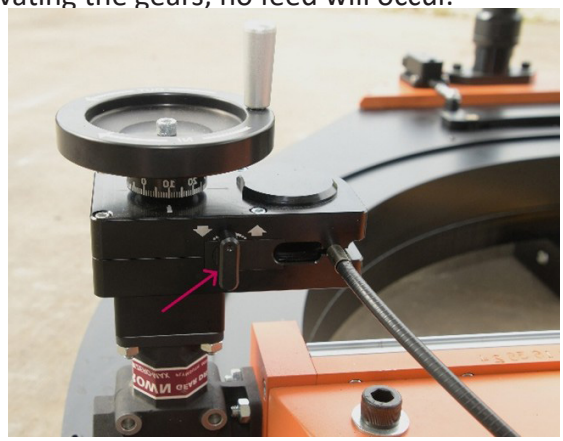


- When the feed is engaged, the feed box pushes the feed arm out towards the inside of the ring. When the machine rotates around, the feed arm will contact and activate the roller block and the roller block will pull on the cable. The amount the cable is pulled is determined by how far out the feed arm is pushed by the feed box.

- When the cable is pulled, it activates the gear box by the amount of travel on the cable.

GEARBOX OPERATION

- The Gearbox has a flip handle on the side of the box. The handle has a detent mark near one end of the handle. When the detent is in the up position, the gearbox is in the neutral position, and even though the cable is pulling and activating the gears, no feed will occur.



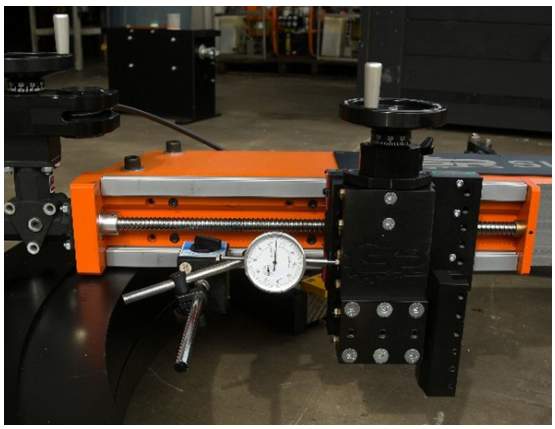
- With the detent turned to the left when the cable is pulled, the gear box will turn the lead screw on the slide to feed the tool bit in the left direction. When the detent is turned to the right and the cable is pulled, the gear box will turn the lead screw on the slide to feed the tool bit in the right direction.

Note - The amount of feed is determined by the amount of engagement on the feed box setting.

- To set the proper RMS finish needed for the cut, follow these steps:

1. Push the feed box handle in to engage the feed box and turn the handle until the tick mark is in the middle of the scale.

2. Place a swivel magnetic base on the slide and contact the indicator tip on the side of the vertical



compound base. Turn the indicator dial to zero.

3. Flip the lever on the gearbox either left or right to allow the gearbox to feed.

4. Open the air valve and rotate the machine one complete revolution until the roller block contacts and passes across the feed arm one time.

5. Now close the air valve and stop the machine.

6. Inspect the reading on the indicator to see how far the slide has traveled. The amount needed for a 125-250 rms is 0.014” per revolution. This would be a good place to start.

7. Turn the feed knob handle on the feed box to adjust the feed to get to 0.014” of travel.

8. If more feed is needed, turn the knob clockwise to feed in or if less feed is needed, turn the feed knob counterclockwise to feed out.

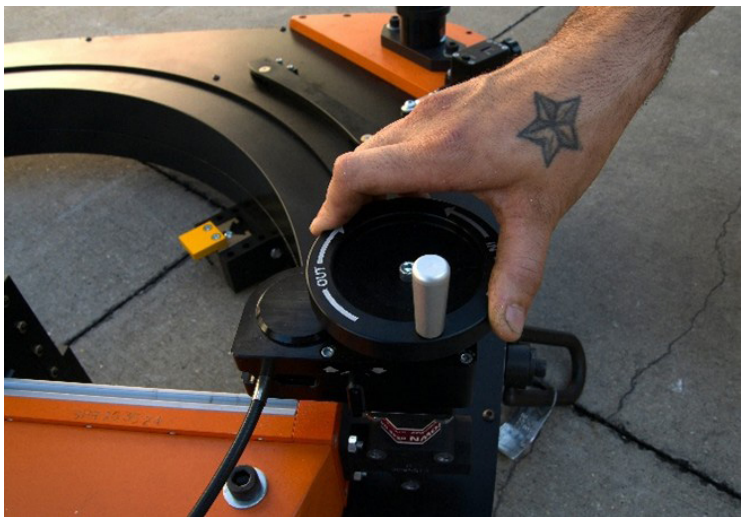
9. Zero the indicator again.

10. Turn the air on again and rotate the machine again one revolution and check the dial indicator.

11. Make the necessary adjustments to the feed knob handle until 0.014” of travel for every revolution of the machine is achieved.

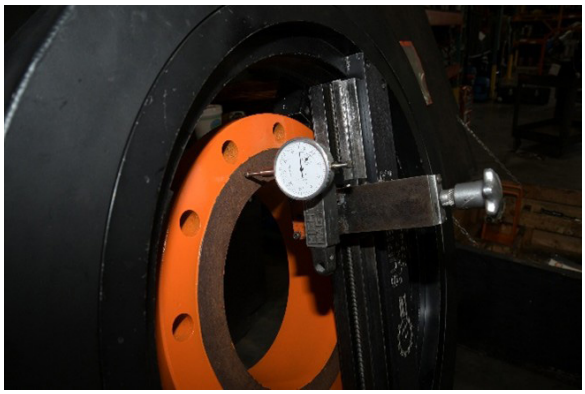
12. The machine is now set for the cutting operation.

- At any given time, the user can turn the round handle on top of the gearbox and manually feed the slide to set the tool bit in the position needed. If the handle will only turn in one direction, flip the handle on the side on the gearbox to neutral. Now you can turn the handle in either direction.



SETTING THE TOOL BIT FOR CUTTING

- Place a magnetic swivel base with a 1” travel dial indicator on the slide or compound and set the 1” dial indicator so that it contacts the gasket surface and the indicator is depressed and engaged half way. This will allow the indicator to have space to travel ½” up or down as needed to the machine



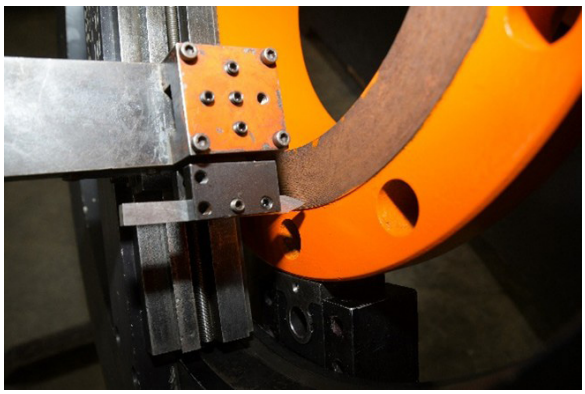
- Zero the dial on the indicator.

- Open the air valve very slowly and rotate the machine while watching the dial on the indicator. Make a full revolution of the machine and determine the location on the flange where the highest plus reading on the dial indicator occurs. This will be the high spot on the flange in reference to the machine. This is the location will be where we will set the tool bit up to start cutting.

- Open the air valve to rotate the machine until the tool holder is located over the high spot on the flange. Now stop the motor.

- Manually turn the feed handle on top of the gearbox on the slide by hand, either in or out until the tool holder is in position near the outer edge of the gasket surface.

- Take a tool bit and place it in the tool holder so that the cutting tip is pointing in the proper direction and it is slightly touching the gasket surface. Tighten the set screws to hold the tool bit in place.

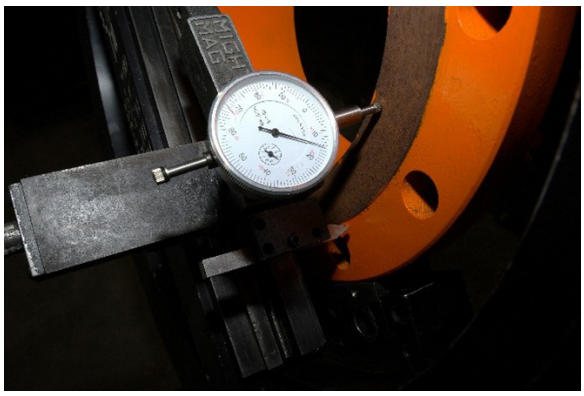


- Now manually turn the handle on the slide counterclockwise until the cutting tip of the tool bit travels outward off the gasket surface by approximately 1/8”.

STARTING THE CUTTING OPERATION

- Place the swivel dial indicator on the vertical compound and place the indicator tip onto the gasket area. Zero the dial on the indicator.

- Manually turn the handle on the vertical compound lead screw clockwise to feed the tool bit down until the indicator reads + 0.015”.



- Remove the dial indicator. Flip the lever on the side of the feed gearbox to the right so the tool bit will travel inwards.
- Push the handle on the feed box inward until in locks in place to engage the feed arm to the roller.
- Open the air valve fully to turn the motor on and start the machine rotation.
- After the machine makes several revolutions around, the gearbox will have fed the tool bit inwards far enough and the tool bit will start cutting the gasket surface. It will only be cutting at the high spots on the flange and start removing material at a depth of 0.015”. The RMS finish of the area machined will be a 125 RMS finish.
- Once this machining pass is fed all the way across to the inside of the gasket surface, close the air valve and stop the machine.

- Set up the dial indicator like before and turn the compound handle clockwise to feed down another 0.015”. Remove the dial indicator. Flip the lever on the gearbox 180 degrees to point the detent outwards to feed in the opposite direction.
- Open the air valve on the motor to start another cut, traveling from inside to out across the gasket surface.
- Keep repeating these steps until the entire gasket surface has been cut flat.
- For the final pass on the gasket surface to achieve the proper RMS finish, use the dial indicator like before, and set the tool bit depth of cut at 0.005” deep. Proceed with this cut across the gasket surface. Now the gasket is complete.
- Now we must cut the bolt face to remove approximately the same amount of material removed from the gasket area to maintain the correct height of the raised gasket face.
- Using a depth micrometer, or a venier caliper, measure the height of the gasket face above the bolt face plane. Take this reading at multiple places around the diameter of the flange. The height should be 1/16” or 0.063”. If the measurement is less 0.063” that is the amount of material that must be removed off of the bolt face to achieve a 1/16” raised face.
- Using the cutting methods above, make several 0.015” deep cuts across the bolt face area up to the outer edge of the raised gasket face until the height of the gasket area is 0.063” above the bolt face.
- Loosen the screws and remove the tool bit from the tool holder.
- Disconnect and remove the air hose from the motor.
- Using a clean rag, wipe off any oil, water, dirt, and debris on the machine.
- Using a file, deburr all the edges on the bolt holes and inside and outside of the flange. Call for inspection to come approve and buy off on the flange.
- Once the surface has been approved by inspection, you can remove the machine from the flange.
- Connect the proper lifting straps to the machine before loosening any jaws.
- Loosen the jaws and remove the machine off the flange.
- Use the lifting bridle provided and reverse the procedures used to mount the machine to the flange to remove the machine.
- Clean up the work area.
- Place the machine and other components back in the work box for transport.

ADDITIONAL THINGS TO KNOW

HOW TO SWIVEL THE COMPOUND FOR ANGLED CUTS

- On the steel od flange facers there are two 3/8” diameter allen bolt heads at the top of the compound just under the handle. Use a 3/16” allen wrench and unscrew the ¼” bolt to remove the circular feed handle on top of the vertical compound. Using a 5/16” allen wrench turn these two bolts counterclockwise until they back out approximately ¼”.

- Now take a hammer and a punch and tap on the allen heads and tap them downward. This will release the bolts from being locked onto a taper. The compound will now swivel to any desired angle off of vertical.

- Place the compound at the desired angle and tighten both allen heads using the 5/16” allen wrench to lock the compound at the new angle. Re-install the circular feed handle and tighten the ¼” allen head bolt.

HOW TO ADJUST THE ROLLER BEARINGS ON THE MACHINE

- Periodically, it will be necessary to make adjustments to the roller bearings on the machine. If the bearings are too tight, the friction can cause excessive heat, and if they are too loose they can allow the machine to vibrate or cause chatter during the cutting operation.

- Loosen and remove all of the ¼” diameter allen head bolts and remove the aluminum covers off the machine.

- On the steel OD Flange Facers you will need a 5/16” allen wrench and a 7/8” diameter deep socket to make the adjustments.

- Now open the air valve on the motor to rotate the machine very slowly.

- Visually glance at all of the roller bearings and see if any are not turning. These will be addressed first.

- Go to one of the roller bearings that is not turning. Take the 5/16” allen wrench and tighten the 3/8” bolt on the center pin in the bearing.

- Now use the 7/8” deep socket and turn the hex portion on the center pin clockwise until the bearing slightly touches the ring and the bearing starts turning.

Note: If the bearing momentarily skips but it is less than 20% of the time, this is ok.

- Repeat this step with another roller bearing and continue this until all of the roller bearings are now turning.

- Now go to a roller bearing and using the 7/8” deep socket, turn the socket counter clockwise until the roller bearing stops turning, then slowly turn the 7/8” deep socket clockwise until the bearing slightly touches the ring and starts turning again.

- Now repeat this step above at every bearing on the machine until all of the roller bearings on the machine are adjusted with a slight amount of pressure on the ring and all of the bearings are turning.

- Note: If less than 20% of the bearings momentarily skip less than 20% of the time, this is ok.
- Take some light weight oil and drip it onto the bevel of the bearing surface on several bearings around the machine so a coat of oil is between the roller bearings and the ring grooves.
- Close the air valve to turn off the motor and reinstall the aluminum covers back on the machine.
- The machine is now ready to restart the cutting operation.

HOW TO ADJUST THE TENSION ON THE DRIVE BELTS

- Loosen and remove all of the ¼" diameter allen head bolts and remove the aluminum covers off the machine.
- Loosen the ½" diameter socket head allen bolt holding the pulley bracket.

- Now using a 5/16" allen wrench turn the jack screw clockwise to push the pulley bracket inward to tighten the belt.

- Re-tighten down the ½" diameter socket head allen bolt holding the pulley bracket.
- If more tightening of the belt is needed, repeat the entire process on the pulley bracket on the opposite side of the machine to take up more slack.

WARRANTY

Superior Plant Rentals, LLC (SPR) warrants that the equipment manufactured by it will: (i) conform to SPR's written specifications and descriptions, and (ii) be free from substantial defects in design, materials, and workmanship for a period of one year from date of shipment to the original buyer, or six months from date of placing in service by buyer, whichever date is earlier.

During this period, if any equipment is proved to SPR's satisfaction to be defective, SPR will, at our sole and absolute discretion, and as SPR's sole warranty liability and buyer's sole remedy, repair, replace, or credit buyer's account for any equipment that fails to conform to the warranties, provided that: (i) SPR is notified in writing within 10 days following discovery of such failure with a detailed explanation of any alleged deficiencies; (ii) SPR is given a reasonable opportunity to investigate all claims; and (iii) SPR's examination of such equipment confirms the alleged deficiencies and that the deficiencies were not caused by accident, misuse, neglect, improper use, unauthorized alteration, repair, or improper testing.

Shipping cost of the alleged defective equipment to SPR is to buyer's account. However, if SPR agrees that the equipment is defective, then pursuant to this warranty, SPR will reimburse buyer its shipping cost to return the equipment to SPR.

The warranty against defects does not apply to: (1) consumable components or ordinary wear items, and (2) use of the equipment with equipment, components, or parts not specified or supplied by SPR or contemplated under the equipment documentation.

The following actions will void the one-year warranty:

1. Repairs or attempted repairs have been made by persons other than SPR personnel, or authorized service repair personnel;

2. Repairs are required because of normal wear;

3. The tool has been abused or involved in an accident;

4. There is evidence of misuse such as overloading of the tool beyond its rated capacity, use after partial failure, or use with improper accessories.

5. Damage to the motor due to lack of oiler/mister while tool was in use (pending motor type).

NO OTHER WARRANTY IS VALID

SUPERIOR

One Company, ***Superior*** Results.

Beaumont, TX | Campbell River, BC | Corpus Christi, TX
Edmonton, AB | Gonzales, LA | Houston, TX | Moss Point, MS
Rancho Dominguez, CA | Rock Hill, SC | Webster, TX