

ROTTLER

SG80A HEAVY DUTY CNC CYLINDER HEAD SEAT & GUIDE MACHINE INSTALLATION MANUAL



PARTS ORDERING

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For fastest service ordering parts or equipment, contact us via e-mail with the information below. For customers within the U.S., send emails to parts@rottermfg.com, for customers outside of the U.S., use intlparts@rottermfg.com

Have the following information on hand to expedite the ordering process:

1. Your name, business name, and contact number
2. Customer number, or your billing address if you do not have a customer number
3. Shipping address if different from the billing address
4. Machine model and serial number
5. Part number and description of the item(s) to order
6. Preferred method of shipment

For customers outside of the U.S. requiring faster service, contact your local distributor.

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THERE IS A MINIMUM ORDER OF \$25.00

MANUAL SECTIONS

INTRODUCTION

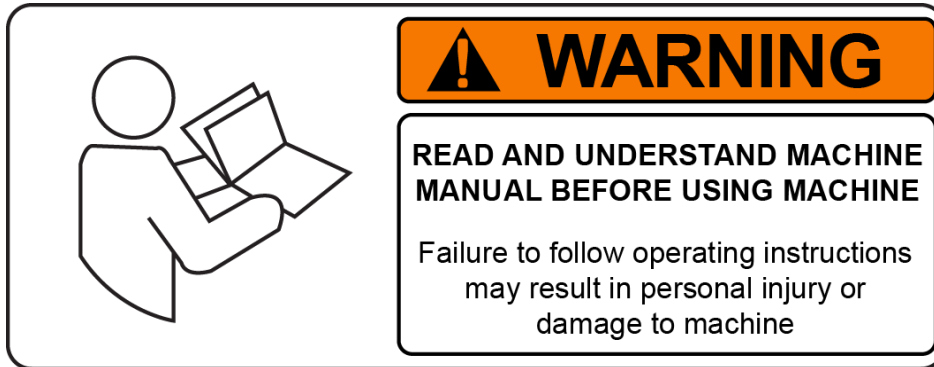
INSTALLATION

INTRODUCTION

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Introduction



READ THE SAFETY CHAPTER BEFORE INSTALLING MACHINE. THOROUGHLY UNDERSTAND ALL SAFETY ISSUES BEFORE OPERATING MACHINE.

ATTENTION OWNER/BUSINESS MANAGER

To validate the warranty on your new Rottler machine, please be sure to sign and complete the “Installation Report” located in the Installation Chapter of this manual.

We suggest that the new user of the SG80A read the CONTROL DEFINITIONS to get an idea how the machine operates.

The Operating Instructions chapter should be read in order to familiarize the user with the actual button pushing sequences required to carry out a job. These chapters in the manual should be considered an introduction. As the operators of the SG80A series machines gain experience with using the different functions of the machine, complicated setups and programs will make more sense.

The rest of the manual contains information and part number reference on fixtures, cutting tools, and machine maintenance. The operator should read and become familiar with these areas as well.

Description

The Rottler SG80A was created specifically for machine shops that rebuild small to large cylinder heads found in the heavy duty engine industry. Large cylinder heads come in many shapes and sizes, from 24 valve single casting cylinder heads to huge single cylinder heads used in natural gas, mining and marine workboat engines. We put our trusted engine block machining technology to work designing a heavy duty machine that handles many operations required on a wide variety of cylinder heads.

At Rottler we believed that many large cylinder heads could be “plunge cut” with fixed tooling to save time and money. We realized that plunge cutting would require a very rigid machine utilizing many of our already established design features such as Rottlers exclusive spindle design.

Over the decades, Rottlers spindle design has proven that our engine block machines are able to “plunge cut” wide counterbores found in large engine blocks with exceptional results. We used this spindle design for the SG80A and it has since been proven, in over 50 machines, that the SG80A is capable of plunge cutting large valve seats very quickly and with excellent CONCEN and surface finish.

Disclaimer

The SG80A Manual (henceforth to be referred to as the “Manual”) is proprietary to Rottler Manufacturing LLC. (“Rottler Manufacturing”) and no ownership rights are hereby transferred. No part of the Manual shall be used, reproduced, translated, converted, adapted, stored in a retrieval system, communicated or transmitted by any means, for any commercial purpose, including without limitation, sale, resale, license, rental or lease, without the prior express written consent of Rottler Manufacturing.

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Rottler Manufacturing and its employees or representatives are not responsible for any information regarding final specifications of any workpiece that is created as a final product when using Rottler equipment. It is the responsibility of the end user of Rottler equipment to determine the final dimensions and finishes of the workpiece that they are working on. Any information regarding final dimensions and finishes that appears in any Rottler literature or that is expressed by anyone representing Rottler is to be regarded as general information to help with the demonstration of or for operator training of Rottler equipment.

Limited Warranty

Rottler Manufacturing Company Model SG80A parts and equipment is warranted as to materials and workmanship. This limited warranty remains in effect for one year from the date of installation or two years from the date of the original shipment from Rottler or whichever date occurs first. This only applies if the machine is owned and operated by the original purchaser and is operated and maintained as per the instructions in the manual. A machine is warranted only if the Installation Report has been properly executed by a certified installation person and received by Rottler at the time of actual installation.

The products are warranted upon delivery to conform to their published specifications and to be free from defects in material and workmanship under normal use for a period of one year from shipment. Should a product not be as warranted, Rottler sole obligation shall be, at its option, to repair, correct or replace the product or to refund the amounts paid for the Product upon its return to a location designated by Rottler. No warranty shall extend to rapid wear Products (including tooling) or to Products which have been subject to misuse (including any use contrary to Rottler instructions), neglect, accident (including during shipment), improper handling or installation, or subject to any modification, repair or service not certified by Rottler. Rottler shall not be liable for any consequential, direct or indirect damages or for any other injury or loss. Buyer waives any right, beyond the foregoing warranty, to make a claim against Rottler. No warranty is provided for any Products not paid in full.

Merchandise cannot be returned to Rottler without prior approval. Customer must contact the Parts Department to get approval and to be issued a Return Goods Authorization number (**RGR#**). Merchandise authorized for return must be returned prepaid. If merchandise is returned with shipping charges collect, the actual amount of these charges may be deducted from any credit which may be due the customer. The **RGR #** assigned by the Parts Department should be written on the shipping label and must appear on a copy of the invoice(s) covering the original shipment. This invoice copy must be included in the box with the parts. Shipment must contain **ONLY** those items on the **RGR** as approved for return. Merchandise must be received within 10 days of the date of **RGR** or the **RGR** will be canceled. All returned merchandise may be subject to a 20% restocking fee on under \$1,000.00 amount or 10% on any items over \$1,000.00. Parts or tooling over 30 days old are considered as customer property and can only be returned with prior approval from Rottler Corporation Management.

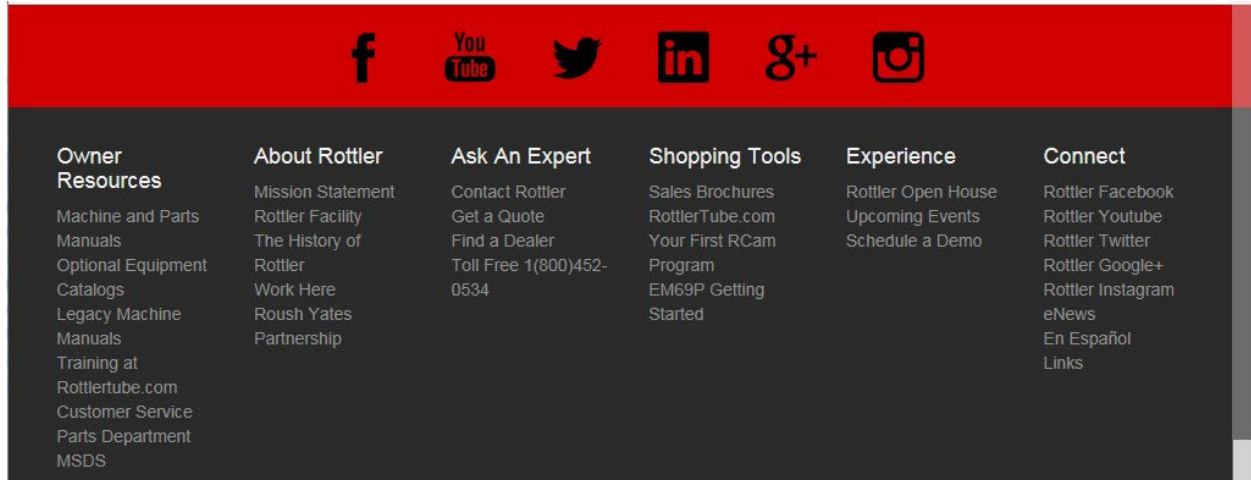
The issuance of a **RGR DOES NOT** guarantee credit - it is only authorization for the return of the goods. Credit for return merchandise is at the sole discretion of Rottler. Credit will be issued only after inspection of returned goods.

Tools proven to be defective within the warranty period will be repaired or replaced at the factory's option. We accept no responsibility for defects caused by external damage, wear, abuse, or misuse, nor do we accept any obligation to provide compensation for direct or indirect costs in connection with cases covered by the warranty.

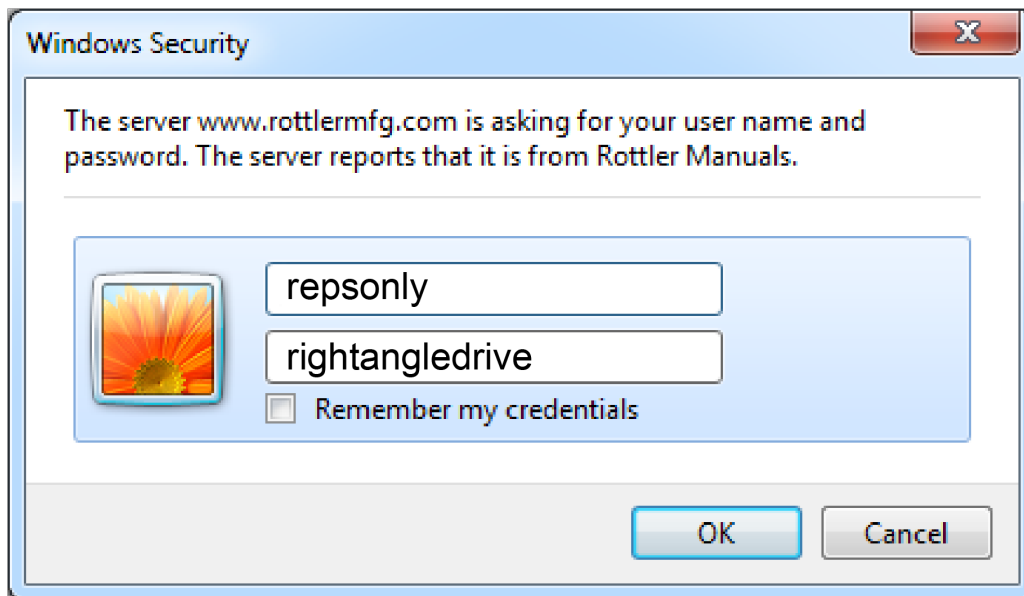
Online Documentation Access

Online documentation for machines and optional equipment can be accessed at the Rottler website. To access documentation open your browser and navigate to <https://www.rottlermfg.com>.

Scroll to the bottom of the page and under the Owner Resources title click the type of documentation you want to access.



If a log in window pops up asking for user name and password fill in the blanks as shown.



INSTALLATION

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ATTENTION OWNER/BUSINESS MANAGER

To validate the warranty on your new Rottler machine, please be sure to sign the installation report after the installation technician has installed the machine and verified the machine is operating correctly and given the operators operation and maintenance training.

Thank you for your cooperation and the opportunity to be of service to you.

ROTTLER MANUFACTURING**INSTALLATION REPORT**

SG80A

REV 020421

OFFICE USE ONLY

Route to:

Parts _____ Service Mgr _____ Assem Mgr _____ Eng Mgr _____ Parts _____ Andy _____ Parts _____

Warranty Exp Date _____

ROTTLER MANUFACTURING MUST HAVE THIS REPORT RETURNED TO PROPERLY QUALIFY WARRANTY ON EQUIPMENT

Customer: _____ Address: _____

City: _____ State: _____ Zip: _____ Phone: _____

Country: _____

Machine Model: _____ Serial Number: _____ Representative: _____

MACHINE INSTALLATION: Electrical information MUST be complete to validate this report.

Customer is responsible for providing electricity to machine in a manner that meets the local electrical code requirements.

_____ Check machine level for equal support on feet.

_____ This machine requires between 208 and 240 Volts AC, Single Phase, 50/60 Hz power supply.

Measure the incoming voltage between L1 and L2. Current requirements for this machine are 30 amps. Measure the incoming AC voltage at least twice during installation.

1) _____ VAC 2) _____ VAC

_____ Measure each leg of the incoming supply to ground. When using a one leg and neutral of a 380

VAC three phase supply L1 should measure 240 VAC and Neutral should measure almost 0

VAC. L1 to ground _____ VAC L2 to ground _____ VAC.

Make sure all electrical equipment has the proper overload protection. The SG80A should have a stable power supply to prevent damage and uncontrolled movement of the machine.



Neutral and machine ground are not the same thing. You should measure an open circuit between Neutral and ground.



IF VOLTAGE IS OUTSIDE THE CORRECT RANGE AT ANY TIME THE MACHINE WILL NOT OPERATE PROPERLY AND MAY BE DAMAGED.

_____ Relocate electrical enclosure from shipping location to operating location on lower right side of machine.

_____ Air of the proper pressure and capacity connected to the machine. Air supply must be free from oil and water. Oil or water will damage electrical and air components. Air pressure should never drop below 90 PSI at any time. Failure to provide adequate air supply may cause improper floating and clamping.

_____ **BEFORE** turning power on to the machine. Check all wires for security by using the correct screw driver and turning CW until movement stops. Stranded wire can “spread” slightly from vibration during transport.

- _____ Install electrical component covers inside the electrical enclosure with fasteners provided.
- _____ Remove all shipping brackets in accordance with the machine manual.
- _____ Clean any rust inhibitor from the machine surfaces. Slide the spindle base from side to side continually cleaning the machine base until all inhibitor is removed.
- _____ Have the operator read through the operation manual before training begins. This will help him be familiar with the button pushing sequences. Have the operator read through the manual again after training and some of the sequences will make more sense.

MACHINE START-UP



When starting the machine for the first time, it may move out of control. Make sure all hands are clear of machine parts. Be ready to press the Emergency Stop button if needed.

- _____ Turn main power on from the main incoming breaker box.

MACHINE MOVEMENTS

- _____ Make sure there is nothing obstructing the full vertical travel of the machine.
- _____ When the machine is on the clamp mode and the air pressure is with the requirements, try to move workhead to verify that you have a solid clamp of Work head.
- _____ Place the level on the leveling post. The level assembly is referenced to the spindle via the level pin. It is therefore important to check alignment of the pin in reference to the spindle. Even though the level has been carefully calibrated at the factory, it is a good idea to recheck calibration before putting the machine into service. In the event that the level is dropped or handled roughly then the following recalibration methods should be implemented. If calibration is required refer to the manual for Calibrating the Digital Level _____ Start the spindle and verify operation.

INSTRUCTING THE OPERATOR:

Note: Rottler employees and representatives per company policy are not permitted to provide end user of Rottler equipment with any OEM specifications for the workpiece that is created by end user using Rottler equipment.



- _____ Explain to the customer and operator that at NO time is there to be any software or hardware other than Windows Auto Update and Rottler installed on this machine. This includes screen savers, anti-virus software, and any hardware device that installs software on the machine. Installation of screen savers and anti-virus software can cause dangerous control problems. Any installation of software or hardware will void the warranty on the machine.
- _____ Explain to the customer and operator that the machine should be hooked up to the Internet anytime it is on. The software on the machine will automatically connect to our server to send back useful information on machine status.
- _____ Connect customer supplied Internet to the machine. Verify that the Internet is accessible from the machine.
- _____ Once the machine has been fully setup and is ready for operation create a Skype account for the machine following the instructions in the Installation Section of the manual.
- _____ Explain to the customer and the operator how the to log onto Skype and communicate with Rottler when needed.



- _____ Computer Viruses will cause the machine control system to become unstable. This may cause the machine to make uncontrolled moves which could create a dangerous environment for the machine operator.
- _____ Explain to the customer the proper way for turn the machine off when it is not in use. Do not leave the machine on overnight. It is important to close all programs followed by shutting down Windows before turning the main power switch off. Do not turn the main power switch off before shutting down Windows.
- _____ Using the operating manual as a guide explain the function of all buttons.
- _____ Cycle all machine movements and supervise the handling of same by operator.
- _____ Demonstrate the engaging of the fine feed system.
- _____ Point out safety features to customer and operator.

Do not push any buttons without thinking of safety first.



Do not assume the Digital level has been calibrated rotate 180 to verify alignment.

- _____ The following is a checklist to go through every time the machine is started to begin machining a seat.
 - Work piece secure
 - RPM set
 - Tool holder adjusted to the correct setting base on the type of seat you will be machining
 - Tool holder locked in place
 - Floating of the Workhead and clamping
- _____ Proceed to have operator to machine a seat under you control.
- _____ Parts ordering, refer to the operating manual for part numbers and description.
- _____ Review Emergency stop procedure and with operator per operating manual.
- _____ Explain to the customer the importance of backing up the block profiles to a separate device. Any computer failure or possible operator input error can result in the loss of all block profiles that were created for the machine. Refer to Chapter 5 of the machine manual for detailed instructions on backing up and restoring block profiles.

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General remarks on machine performance, adjustments as received and any further organization or parts required to complete the installation.

Instructions given to: _____

Sales/Service Technician: _____ Date _____

Shop Foreman/Superintendent or Owner: _____ Date _____

Once completed send this form to:

**Rottler Manufacturing
attn: Orders Department
8029 S 200 St
Kent, WA 98032 USA**

Alternately you may send this form via fax or e-mail:

**fax: [+1] 253-395-0230
e-mail: orders@rottermfg.com**

Installation Procedure

Location

The productivity of this machine will depend a great deal on its proper initial installation, particularly the means by which cylinder heads are lifted into the machine as well as the material handling to and from other operations in your shop.

The proper loading arrangement and location for your SG80A machine is extremely important.

A slow travel (6 to 10 feet / min.) power hoist operated from either a bridge crane or a jib crane arrangement works very well.

Unpacking

Carefully uncrate the machine. Remove all tooling from storage compartments and unpack. Locate the leveling bolts and leveling pads. Clean all surfaces with solvent and rags to remove protective shipping coatings.

Positioning the Machine



THIS MACHINE IS TOP-HEAVY. Use care when lifting and moving Machine. Approximate shipping Weight of Machine is 2800 lbs. (1258 kg).

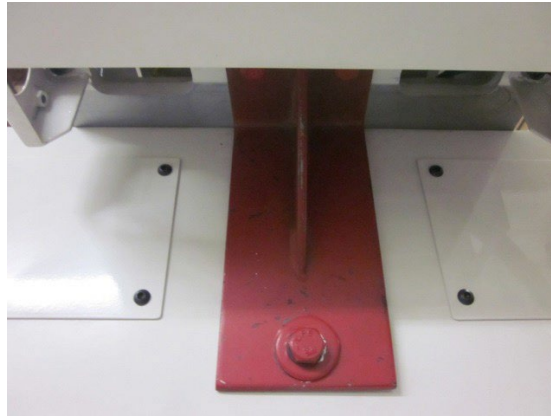
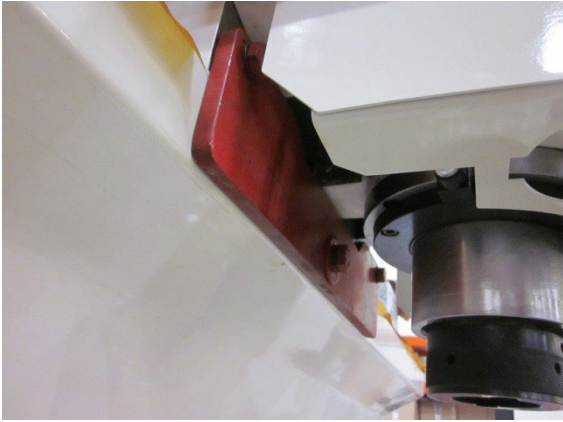
Move the skidded machine as close as possible to its final location.

Remove shipping bolts securing machine to pallet. Using the forklift cut-outs provided in base of machine, raise machine above pallet and remove pallet from under machine. When lifting machine always make sure that forks protrude all the way under and extend beyond the base of the machine. Move carefully to the final location. Be certain to allow sufficient clearance, 24" minimum from back wall to allow access to electrical enclosure and for leveling and also for connecting air and electrical lines. Lower machine onto leveling pads making certain that the leveling bolts engage into counter bore on leveling pads.

Be certain nothing interferes with air or electrical tracking running from the floating head assembly to the cabinet. Determine there is no possibility of air or electrical tracking dragging on wall surfaces or adjacent machinery.

Removing shipping brackets

Before leveling the machine, loosen and remove the all shipping brackets and bolts. (Figures 1 – 5)



Leveling the Machine

Use required machinist level. (Starret 98 or better).

NOTE: Rotate Level 180° to check that Level is properly adjusted. If Level does not read same in both directions, recalibrate level.



Use the level on the upper float surface, level the machine as precisely as possible, front to back and side to side.

Adjust 4 corners until level and then extend the 2 center leveling bolts to support machine. Tighten jam nuts on leveling bolts and recheck level

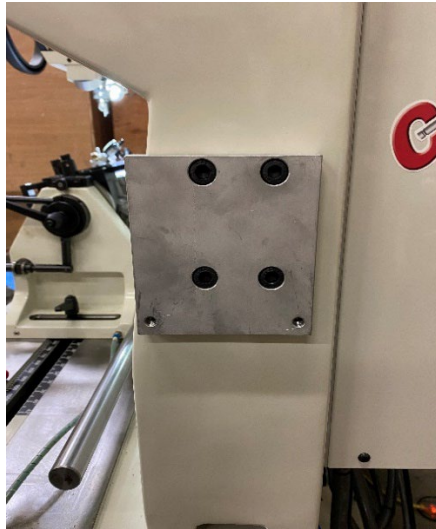


Insert Sharpener Installation

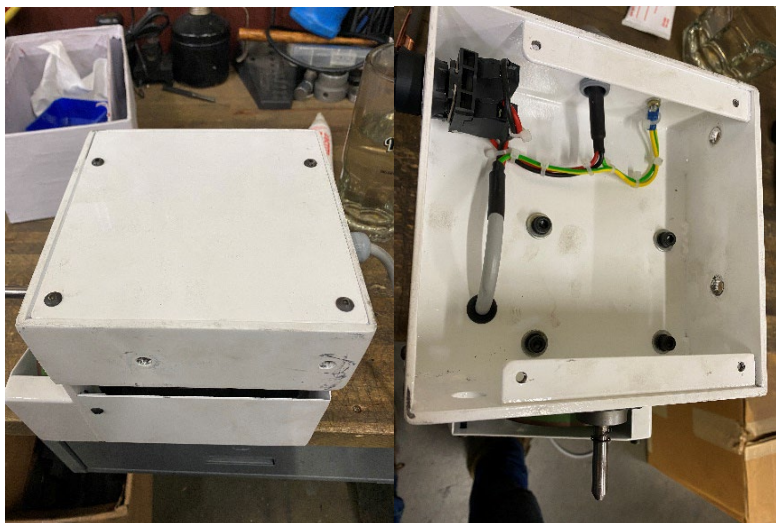
All Rottler Seat and Guide machines are supplied with an insert sharpening unit for dressing RCA and RCB inserts. On most machines, the sharpener may be attached to the right-hand side of the machine base. On machines such as the SG100XY model, the sharpener unit may be wired with a standard 220V single phase plug and used as a bench-top unit.

Installation:

Step 1: Install the aluminum mounting plate to the side of the machine



Step 2: Remove the 4 bolts that secure the bottom cover located on the bottom of the sharpener unit



Step 3: Mount the sharpener unit to the machine with the supplied bolts. The shaper mounts using the two holes accessed with the bottom cover removed and mounts to the threaded holes on the previously installed aluminum mounting plate.

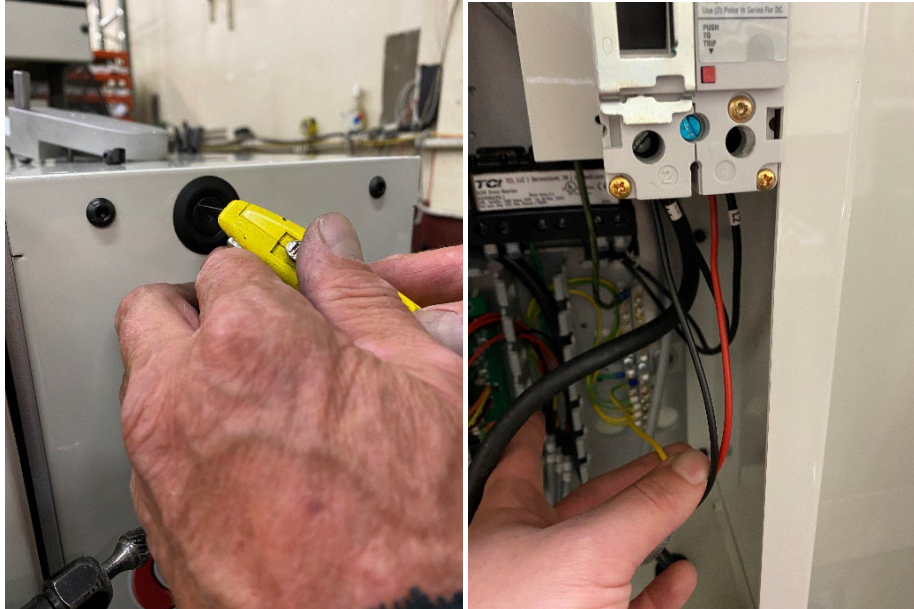


Step 4: The sharpener should now be installed on the side of the machine as shown in the figure below:



Step 5: Wire the sharpener by running the power cable through the side of the cabinet and over to the breaker in the electrical cabinet. The sharpener is wired by attaching the red and black power leads to the T1 and T2 terminals on the lower part of the breaker as shown in the figure below. The green and yellow ground cable can be connected to any open ground terminal in the terminal block behind the breaker.

NOTE: POWER MUST BE OFF DURING THIS PROCEDURE AND THE MACHINE SHOULD BE DISCONNECTED FROM ANY POWER SUPPLY!



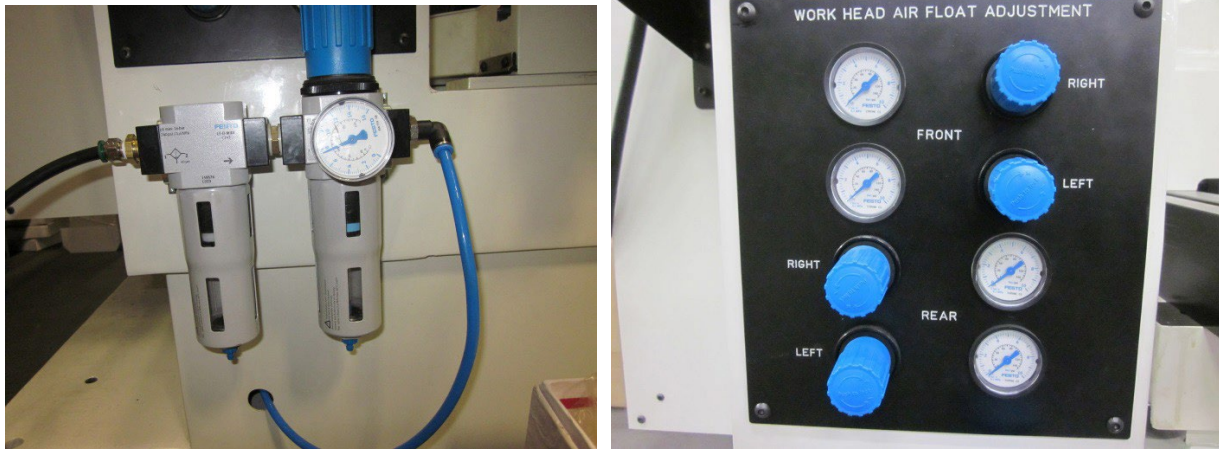
For operation instructions, see the Operations Manual.

Air Supply

It is very important the air source for the SG80A machine be moisture free. Water and oil in the line will result in early cylinder and valve failure. The factory recommends installing a water trap at the machine.

Attach an air source of at least 100 PSI to the appropriate intake on the main regulator located on the left side of machine under the workhead float regulator panel.

Bellow you will see the Air regulator panel for the different settings on the work head floating planes on the machine and the main air regulator.



Air Adjustments

Float

The Main and float regulators are located on the left side of machine base. Marked "Work Head Air Float Adjustment" Just below this is the Main regulator. If the work head is not floating properly it could be from too much or too little air from the regulator. Starting with all regulators set at 1 bar with "workhead float" button activated, slowly turn all up .5 bar at a time until workhead start to float. Pushing work head front to rear checking for stiff spots. If workhead is dragging in the forward position, (workhead pulled closest to operator) raise the 2 front regulators 1 mark until it floats without dragging. Same for rear. You may have to go back and forth a few times to get this correct. If workhead is not dragging lower the PSI until it does and then raise 1 notch at a time until it is free. Typically the front two regulators will be slightly higher than the rear two. Once the correct float is established lock the regulators in place by pushing in on the blue adjusting knob.

CAUTION

Use as little air as possible to achieve correct floatation. Using too much air will / could cause excessive movement of workhead.

Power Supply

This machine has the following power requirements:

- 208 to 240 VAC
- Single Phase Power
- 50 or 60 Hz
- 30 Amps

See illustration below for correct connection of incoming power. Measured power at the machine's main breaker must be within the required range listed above. If incoming power is not within range, a transformer must be used. Failure to do so will cause the machine to function abnormally and cause permanent damage to the electronic control system.

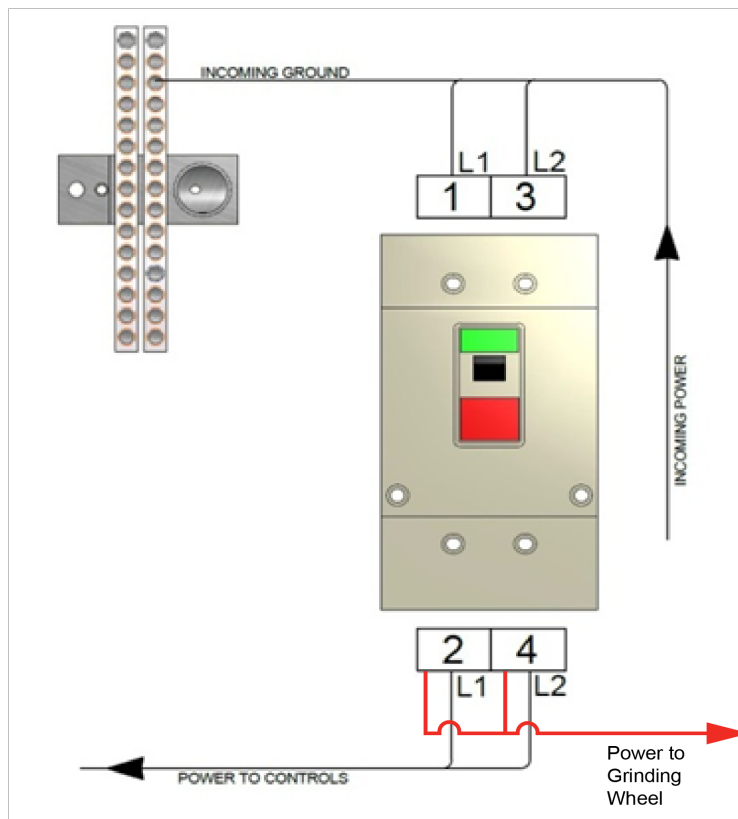
Some electrical services contain a "Hot Leg, High Leg, or Wild Leg", where single phase is derived from a three phase connection and one leg measures 208VAC to Ground instead of 120VAC. It is not permitted to use the "Hot Leg" for providing power to this machine. Voltage measured between the phases must be between 208VAC and 240VAC, while each phase to ground must be ~120VAC.

IMPORTANT *Electrically connect in accordance with national and local electrical codes.*



Do not attempt to connect more 240VAC to this machine.

Do not attempt to connect to Three Phase Power.



Grounding

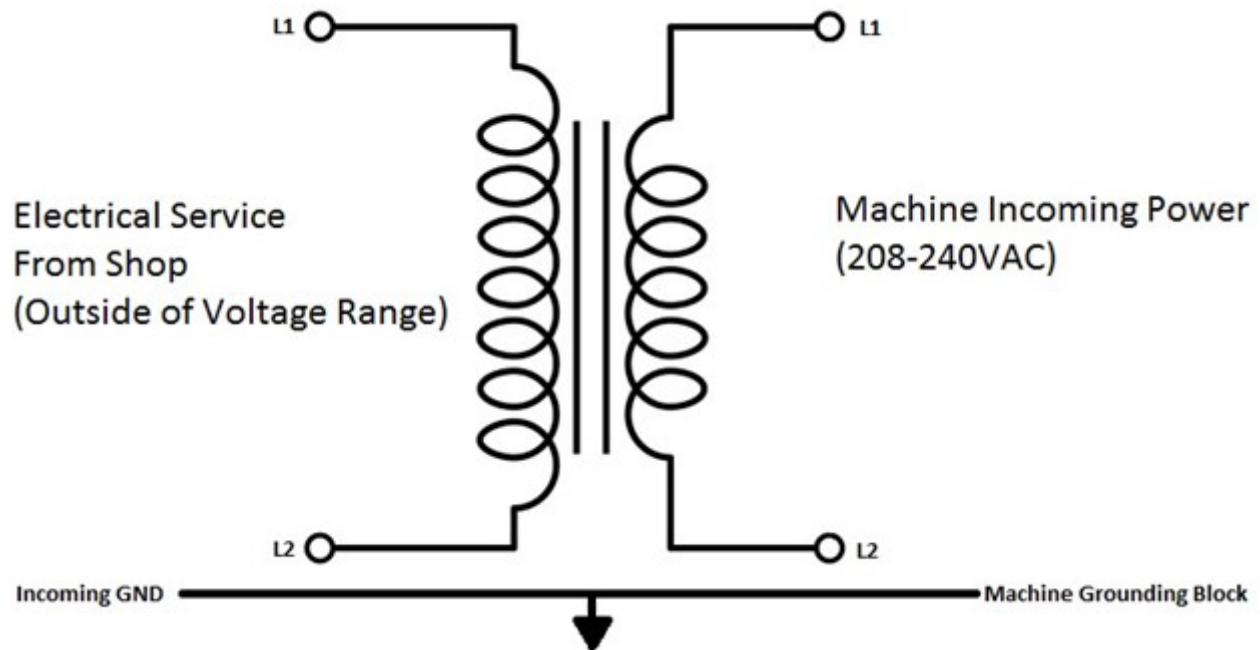
The machine requires a good earth ground. The grounding conductor from the incoming power source must be connected to the grounding block located inside of the electrical cabinet. A ground rod installed in addition to the electrical service grounding conductor is permitted, but must be connected directly to the grounding block inside of the electrical cabinet. Connecting the ground rod to the machine base is not permitted. Consult a Licensed Electrician in your area to assess the installation, and install the appropriate ground rod if necessary. Failure to do so may lead to an installation that is unsafe and does not meet national and local electric codes.

Transformer Connections

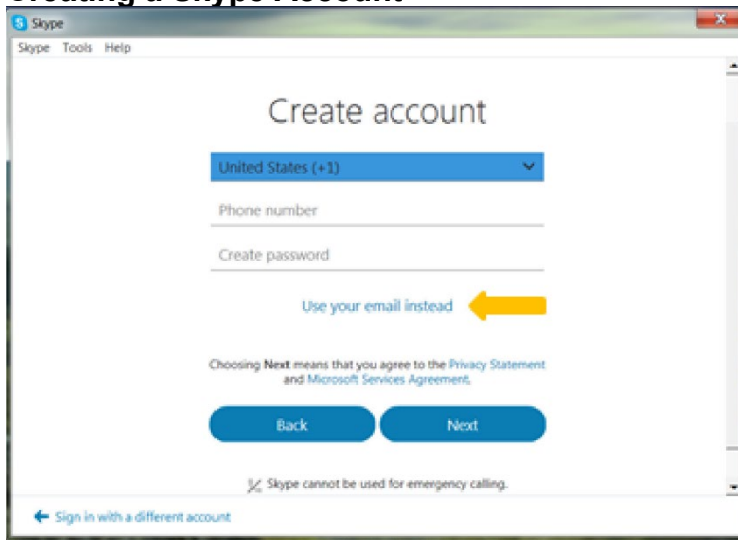
This machine has the following minimum transformer size requirement:

- 10 kVA

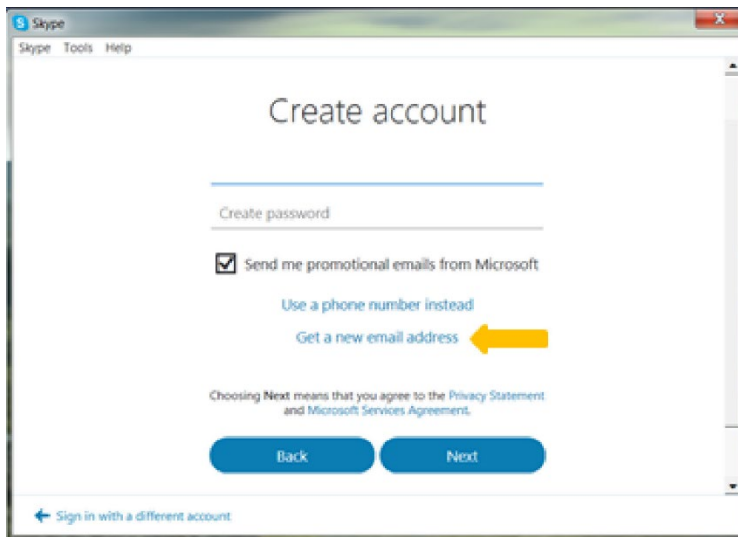
If a transformer is necessary for machine installation, please refer to the diagram below for connection information. Transformers must be sized to meet the minimum power requirements listed above. Consult a Licensed Electrician in your area for transformer selection and installation.



Creating a Skype Account



Click on "Create an account"



Click on "Use your email instead"



Click on "Get new email address"

Name the email account using the Rottler machine Model and Serial number.

Ex. H85A111, EM69P001

Create a password that is easy to remember.

Uncheck the box to receive emails from Microsoft.

First Name: Model-Serial Number

Ex. EM105-113

Last Name: RottlerMfg

Select your Country/Region

Birthday: Today's Date, 1992