



# **VR12 VALVE REFACER**

## **MACHINE MAINTENANCE AND PARTS**

### **MANUAL**





# MANUAL SECTIONS

INTRODUCTION

MAINTENANCE

TROUBLESHOOTING

MACHINE PARTS

OPTIONS

SDS

## ORDERING PROCEDURE

Contact your regional Rottler sales rep for assistance in ordering optional equipment, replacement parts, or tooling.

If you are unable to contact your regional Rottler sales rep, call the factory at (253)-872-7050 and ask to speak to the parts sales specialist.

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

You may also contact us via e-mail with the above information. For customers within the U.S., send emails to [parts@rottermfg.com](mailto:parts@rottermfg.com), for customers outside of the U.S., use [intlparts@rottermfg.com](mailto:intlparts@rottermfg.com)

In some cases you may be requested to send a photo of the part you are ordering if it is a replacement part or does not appear in our database.

If you are unsure which part you need to order, contact our service department, and ask to speak to one of our service consultants. They will assist you in determining which part(s) you require.

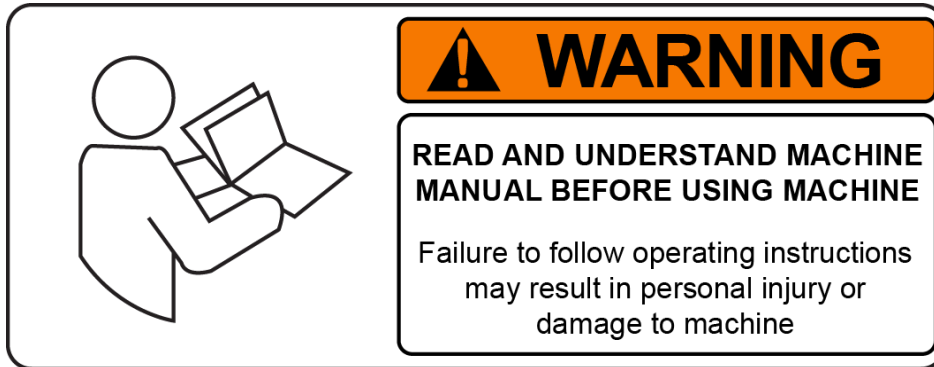
**THERE IS A MINIMUM ORDER OF \$25.00**

# INTRODUCTION

## Contents

<b>Introduction .....</b>	<b>1-1</b>
<b>Description .....</b>	<b>1-2</b>
<b>Disclaimer .....</b>	<b>1-2</b>
<b>Limited Warranty .....</b>	<b>1-3</b>
<b>Online Documentation Access .....</b>	<b>1-4</b>

## 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 VR12 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 VR12 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

Rottler's Centerless Grinding System is able to grind a set of valves to exact same length without adjusting settings.

The Centerless System rotates the valve stem on it's own centerline. Precision drive rollers rotate the valve stem and a pneumatic low friction steady rest support the valve stem similar to a precision balancing machine, resulting in extremely accurate valve stem to valve seat run out less than .0002" (.005mm) TIR. The Rottler Centerless System allows a wide range of valve stem diameters to be ground without changing any collets or chucks.

Stroking Handwheel - The new design stroking handwheel moves the valve back and forth over the grinding wheel. When operator's hand is removed from the stroking handwheel, the stroking system remains in position until the operator moves the handwheel again.

## Disclaimer

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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 VR12 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.

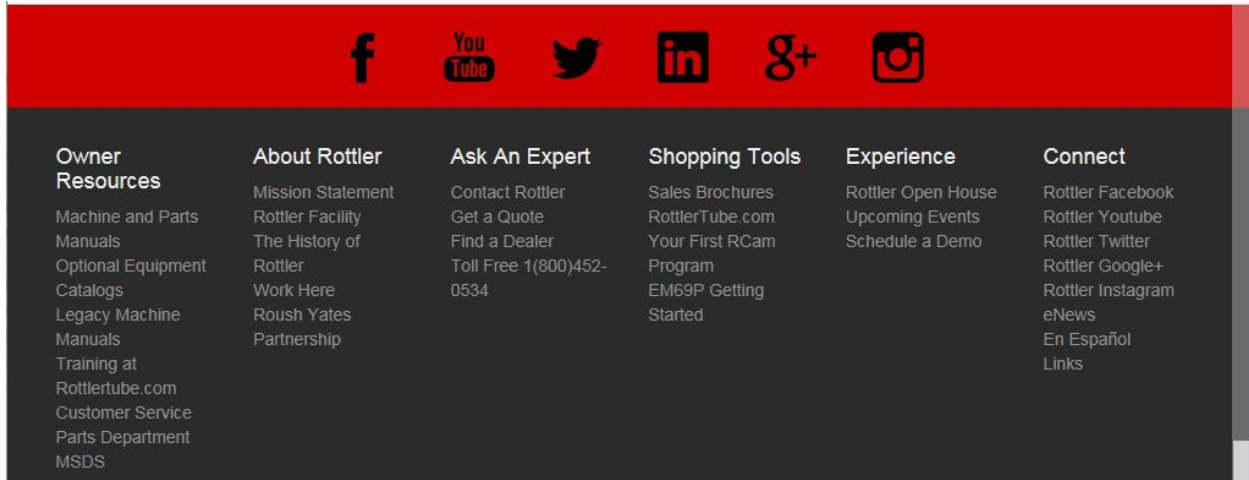
The issuance of a **RGR DOES NOT** guarantee credit - it is only authorization for the return of the goods. Credit for return merchandise is at the sole discretion of Rottler. Credit will be issued only after inspection of returned goods.

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.

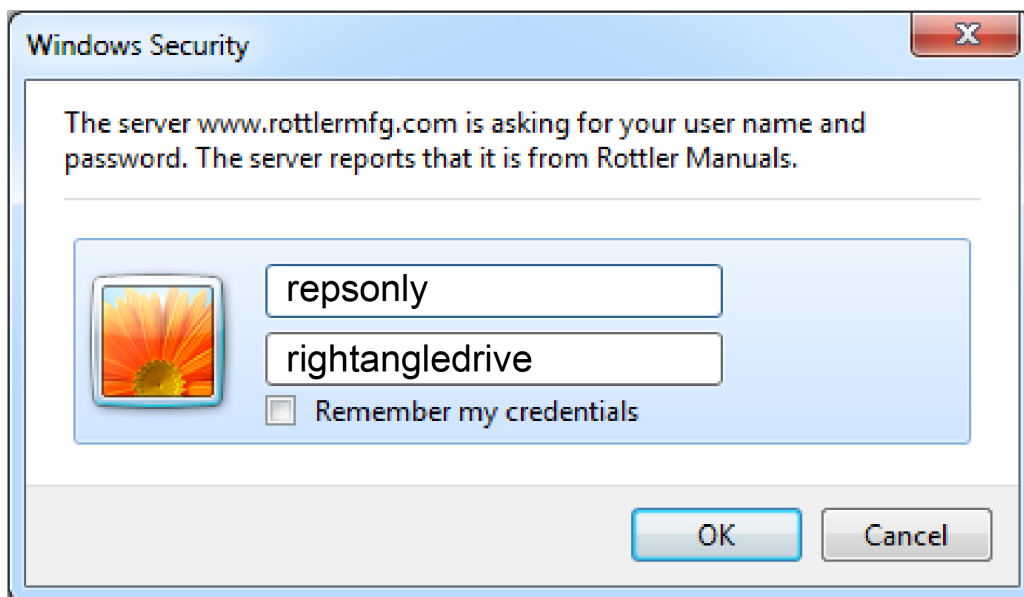
## Online Documentation Access

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.





# MAINTENANCE

## Contents

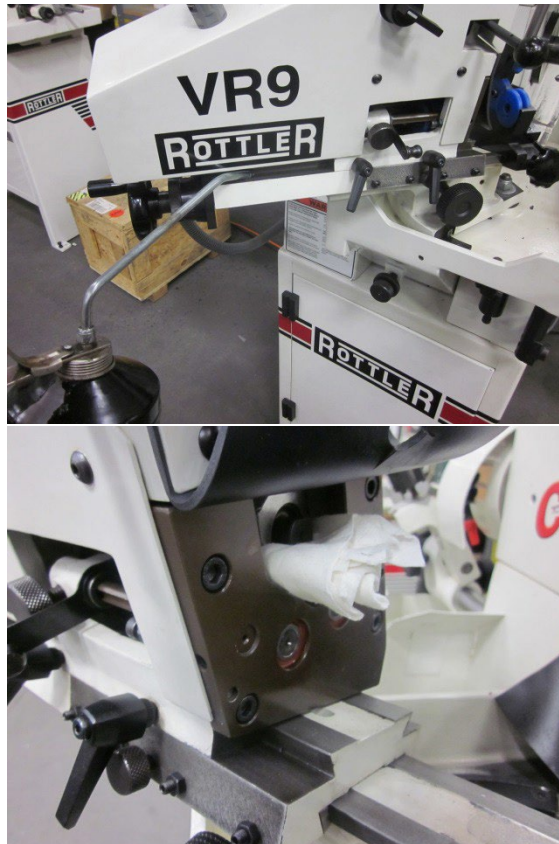
<b>Maintenance .....</b>	<b>2-2</b>
<b>Lubricating the Chuck Slideways .....</b>	<b>2-2</b>
<b>Cleaning Drive Rollers .....</b>	<b>2-2</b>
<b>Adjusting Gibs of Chuck Slideway .....</b>	<b>2-3</b>
<b>BALL CHUCK .....</b>	<b>2-4</b>
<b>Maintenance Procedure for VR Ball Chucks .....</b>	<b>2-4</b>
<b>Replacing Spindle Bearings .....</b>	<b>2-8</b>
<b>Replacing Piston Seal .....</b>	<b>2-</b>
<b>10</b>	
<b>SUGGESTED TIPS .....</b>	<b>2-12</b>

## Maintenance

The Rottler VR12 has been designed to be a low maintenance machine. However, some basic maintenance will ensure long life and accurate results.

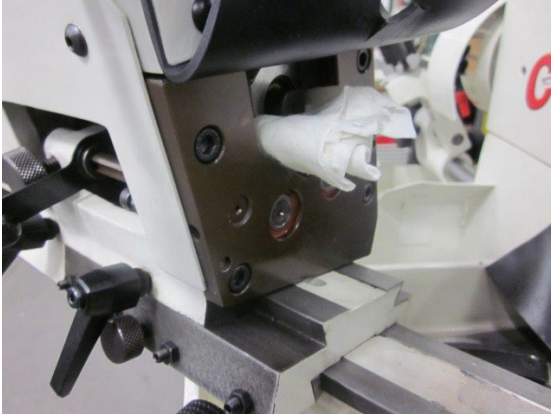
### Lubricating the Chuck Slideways

Lubrication –The slideways must be lubricated with *ISO VG 68 Way Oil* before starting a new machine and weekly during use of the machine.



### Cleaning Drive Rollers

These should be cleaned weekly – roll up a clean shop towel spray brake clean or similar cleaning solution on towel and clamp into rollers and turn on chuck. You may have to do this a couple times until towel is clean. Cleaning these will make the valve auto feed and spring release handle work much better.



### Adjusting Gibs of Chuck Slideway

After transport and use, the gibs of the chuck slideways may become loose and require some adjusting. Be sure that the gibs are well oiled as described in lubrication chapter before attempting to tighten the gibs. It is best to tighten the gib set screws without loosening the locknuts. Using a 3mm allen key, gently tighten the set screws. While slowly turning the feed handwheel, gently tighten the outside setscrews until some resistance is felt to the handwheel. Once outside set screws are adjusted, then use same procedure to tighten center set screws. Located in front of chuck assembly at the bottom.



## BALL CHUCK



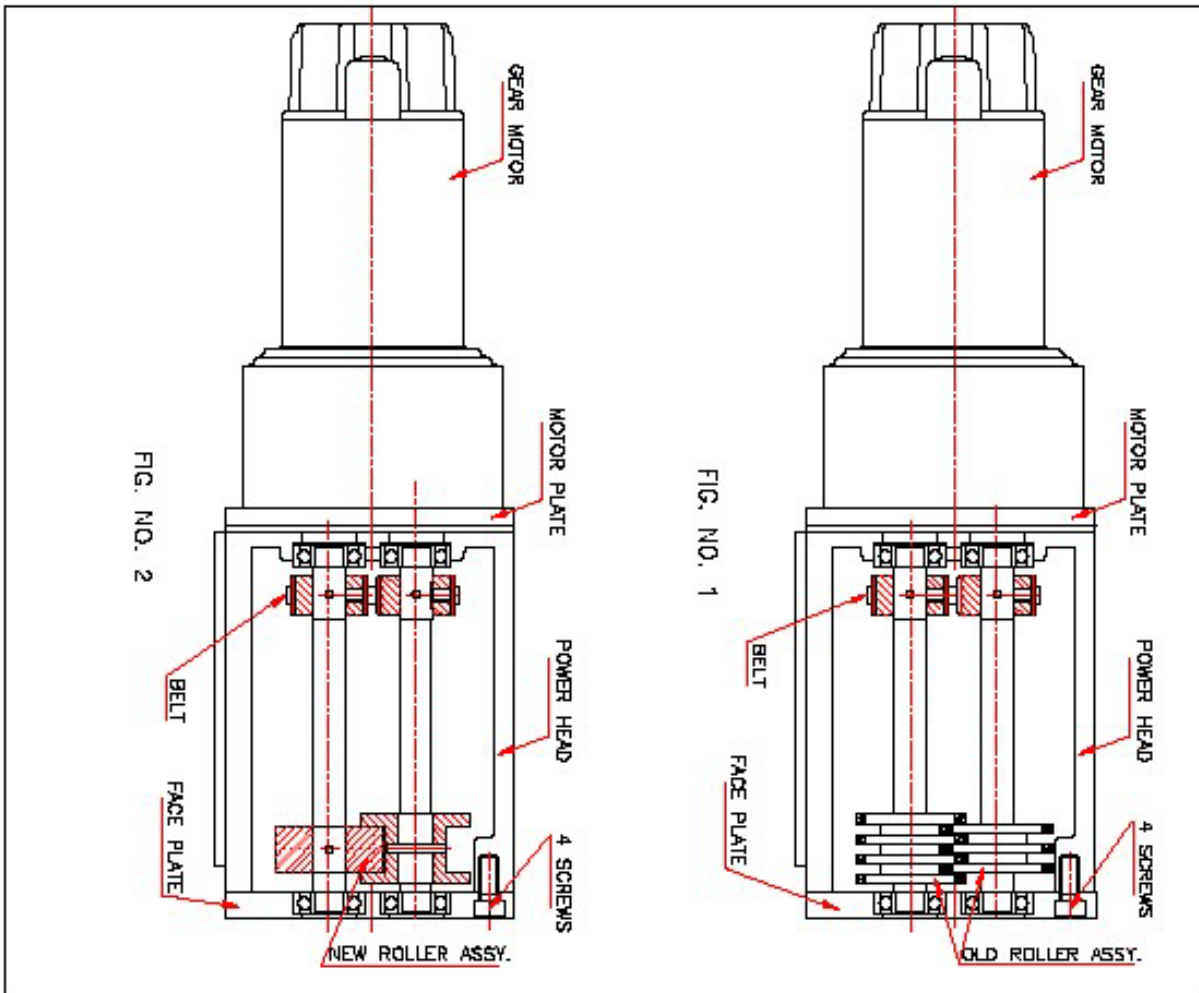
### Maintenance Procedure for VR Ball Chucks

The following procedure should be performed on a weekly a basis:

Use Dexron Automatic Transmission Fluid to perform following service.

1. Press the air button to release and open the ball chuck balls.
2. Squirt ATF fluid into the inside of the ball chuck. Be certain to squirt on each of the 6 balls to flush out any debris and ensure proper lubrication.

Contact the Service Department using the service form on the Rottler web site if further assistance is required



### CHANGE DRIVE ROLLERS

TO REPLACE DRIVE ROLLERS IN POWER HEAD PROCEED AS FOLLOWS  
SEE FIG. NO. 1 & FIG. NO. 2

1. TURN OFF POWER
2. DISCONNECT AIR PIPE FROM STEADY REST  
& SLIDE REST OFF DRIVE BASE.
3. REMOVE POWER HEAD COVER & AIR PIPE FROM POWER HEAD.
4. LOOSE BELT BY LOOSEN SCREWS IN GEAR MOTOR PLATE.
5. REMOVE STEM SHAFT, STOPPER ASSY. & FACE PLATE FROM  
POWER HEAD BY REMOVING 4 SCREWS.
6. SLIDE DRIVE ROLLER ASSEMBLES OUT OF POWER HEAD
7. SLIDE NEW DRIVE ROLLER ASSEMBLES (THRU. DRIVE BELT)  
IN TO HOLES IN POWER HEAD
8. RE INSTALL FACE PLATE, STEM SHAFT & STOPPER ASSY.  
& TIGHTEN 4 SCREWS.
9. RE INSTALL STEADY REST & CONNECT AIR PIPES.
10. TIGHT DRIVE BELT & GEAR MOTOR PLATE.  
DO NOT OVER TIGHTEN BELT.
11. TIGHT POWER HEAD COVER.

DATE: 30-01-09  
DRAWING NO: D05-VR8-401

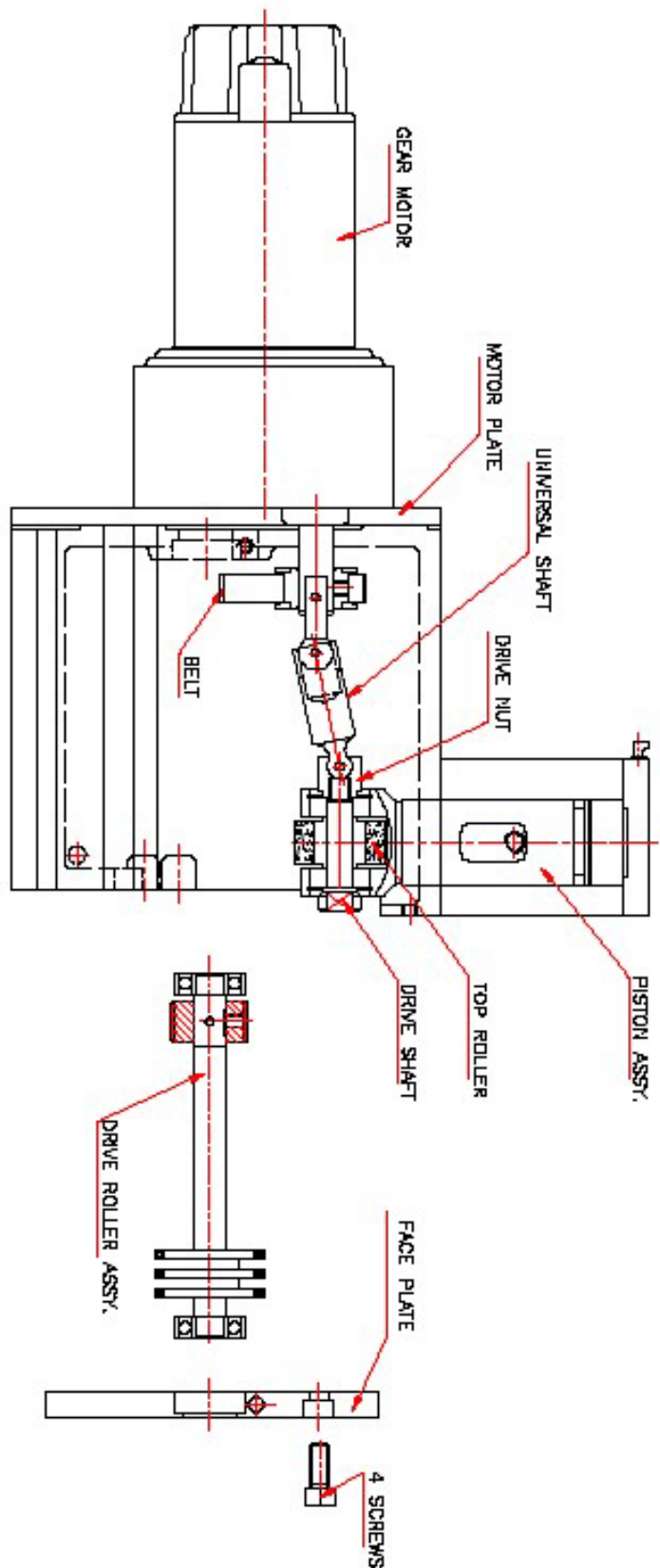


FIG. NO. 3

**CHANGE TOP ROLLERS**

TO REPLACE TOP ROLLERS IN POWER HEAD PROCEED AS FOLLOWS  
SEE FIG. NO. 3

1. TURN OFF POWER
2. DISCONNECT AIR PIPE FROM STEADY REST & SLIDE REST OFF DRIVE BASE.
3. REMOVE POWER HEAD COVER & AIR PIPE FROM POWER HEAD.
4. LOOSE BELT BY LOOSEN SCREWS IN GEAR MOTOR PLATE.
5. REMOVE STEM SHAFT, STOPPER ASSY. & FACE PLATE FROM POWER HEAD BY REMOVING 4 SCREWS.
6. SLIDE DRIVE ROLLER ASSEMBLES OUT OF POWER HEAD
7. REMOVE UNIVERSAL SHAFT & UNSCREW DRIVE NUT FROM DRIVE SHAFT.
8. REMOVE DRIVE SHAFT & TOP ROLLER FROM PISTON ASSY.
9. CHECK DRIVE BELT & REPLACE AS REQUIRED.
10. REPLACE NEW TOP ROLLER, SLIDE DRIVE SHAFT IN TO PISTON ASSY.
11. SCREW DRIVE NUT IN TO DRIVE SHAFT & REINSTALL UNIVERSAL SHAFT.
12. SLIDE DRIVE ROLLER ASSEMBLES THRU DRIVE BELT IN TO HOLES IN POWER HEAD.
13. REINSTALL FACE PLATE, STEM SHAFT & STOPPER ASSY. & TIGHTEN 4 SCREWS.
14. TIGHT DRIVE BELT & GEAR MOTOR PLATE DO NOT OVER TIGHTEN BELT.
15. REINSTALL STEADY REST & CONNECT AIR PIPES. BR TIGHTEN BELT.
18. TIGHT POWER HEAD COVER.

DATE: 30-01-09  
DRAWING NO: 555-VR0-902

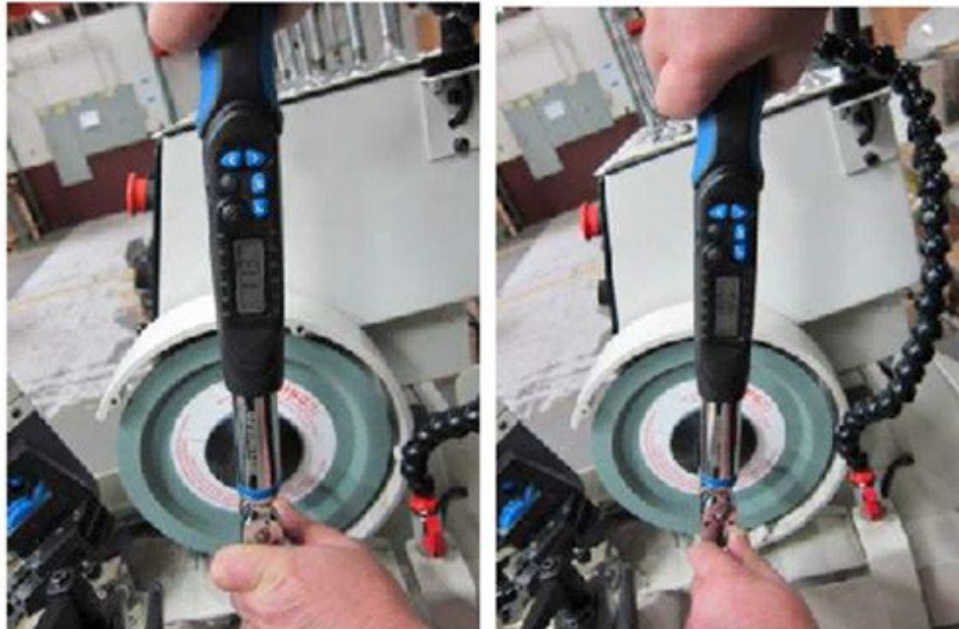
### **Rottler VR9 & VR8 Valve Refacers – Over Tightening of Bolt**

This Instruction Bulletin serves to notify all Rottler VR9 and VR8 model owners that over-tightening the MAIN grinding wheel attachment nut on the VR9 and VR8 model machines has potential to cause noise, irregular vibrations and damage to bearings.

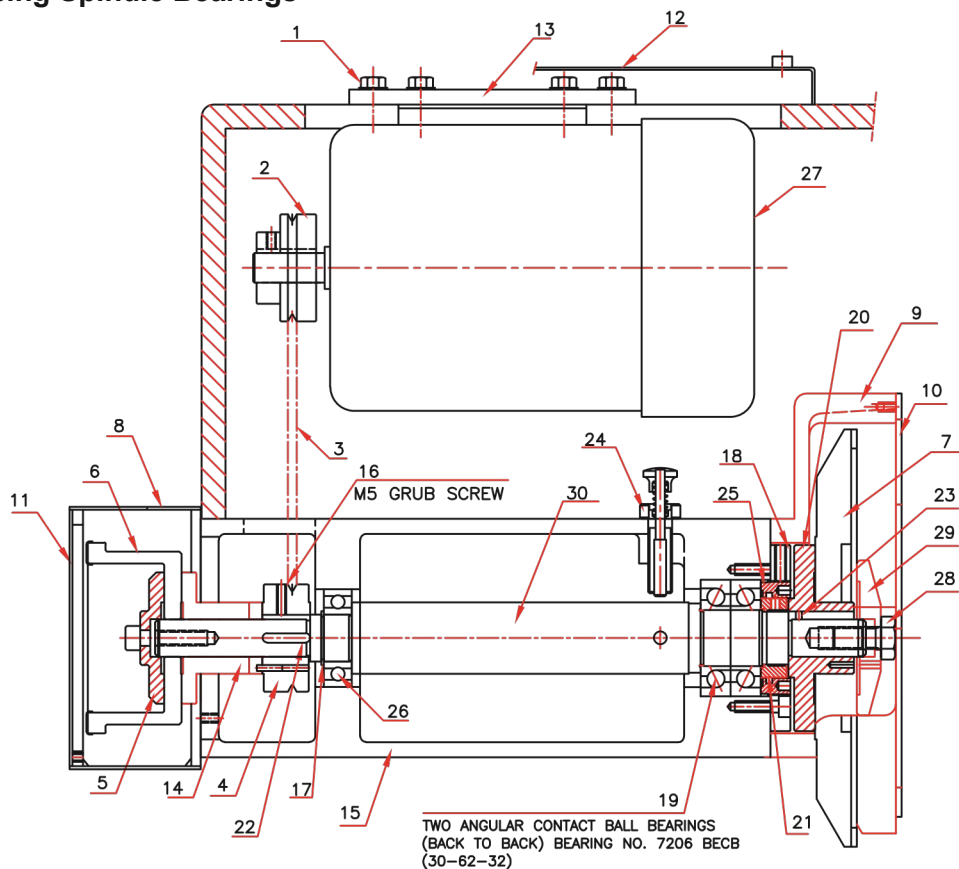
To prevent possible damage and inconvenience, torque this nut to a maximum of 100in/lbs or 11.3Nm. Do not torque the MAIN grinding wheel attachment nut any further than 100in/lbs or 11.3Nm.

Please post this bulletin on or near your machine so that all operators are aware of and may prevent any possible harm or inconvenience.

See photos below for reference. If you have any questions, please call the factory at +1 (253) 872-7050.



## Replacing Spindle Bearings

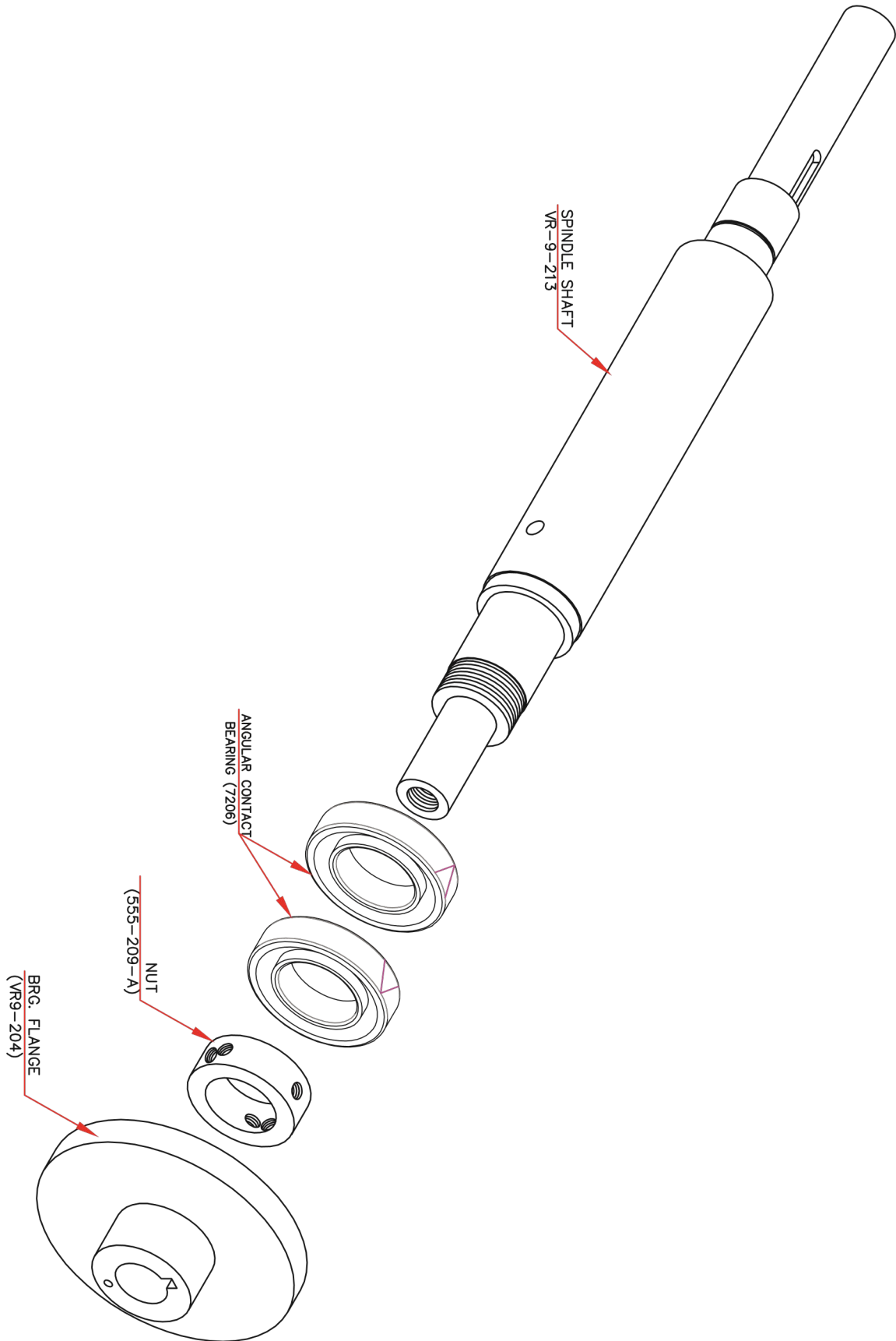


### PROCEDURE FOR CHANGE SPINDLE BEARINGS VR-9 / VR-12

TO REPLACE SPINDLE BEARINGS AND NEW BEARING CLAMP RING IN VR-9 / VR-12 PROCEED AS FOLLOWS

1. TURN 'OFF' POWER.
2. REMOVE WHEEL GUARD COVERS NO.(10) & (11).
3. REMOVE WHEEL NO. (6) & (7), AND FLANGE (14) & (20).
4. UNSCREW STOPPER ASSEMBLY (24).
5. REMOVE MOTOR COVER(12) & LOOSE BELT(3) BY LOOSEN SCREW(1). IN MOTOR PLATE(13).
6. REMOVE PULLEY (4) BY LOOSE SCREW (16) THROUGH HOLE (15).
7. REMOVE WHEEL GUARDS (8) & (9) AND CLAMP RING (18).
8. SLIDE SPINDLE ASSEMBLY OUT OF SPINDLE HOUSING & REMOVE KEY (22) & PIN (23).
9. REMOVE CIRCLIP (17) & UNSCREW LOCK NUT (21). REMOVE OLD BEARINGS & REPLACE NEW BEARINGS FILLED WITH GREASE (AS SHOWN IN FIG.), AFTER MATCHING BEARING INNER RACE MARKED 'O' AND BEARING O.D ARROW MARK (<->)
10. SCREW LOCK NUT (21) (USE TORQUE RANCH, TORQUE VALUE 3 Kgm) & REINSTALL CIRCLIP (17) AND KEY (22) & PIN (23).
11. CLEAN BEARING HOUSING BORE (USE EMERY PAPER 220) AND SLIDE SPINDLE ASSEMBLY IN SPINDLE HOUSING.
12. REINSTALL PULLEY (4), NEW CLAMP RING (18) AND LOCK BEARINGS BY LOCK NUT (25) (USE TORQUE RANCH, TORQUE VALUE 3 Kgm)
13. REINSTALL STOPPER ASSEMBLY (24).
14. TIGHT BELT (3) & MOTOR PLATE & COVER (DO NOT OVER TIGHTEN BELT).
15. REINSTALL WHEEL GUARDS (8) & (9) AND FLANGES (14) & (20).
16. REINSTALL WHEELS.
17. TIGHT GUARD COVERS.





### Replacing Piston Seal

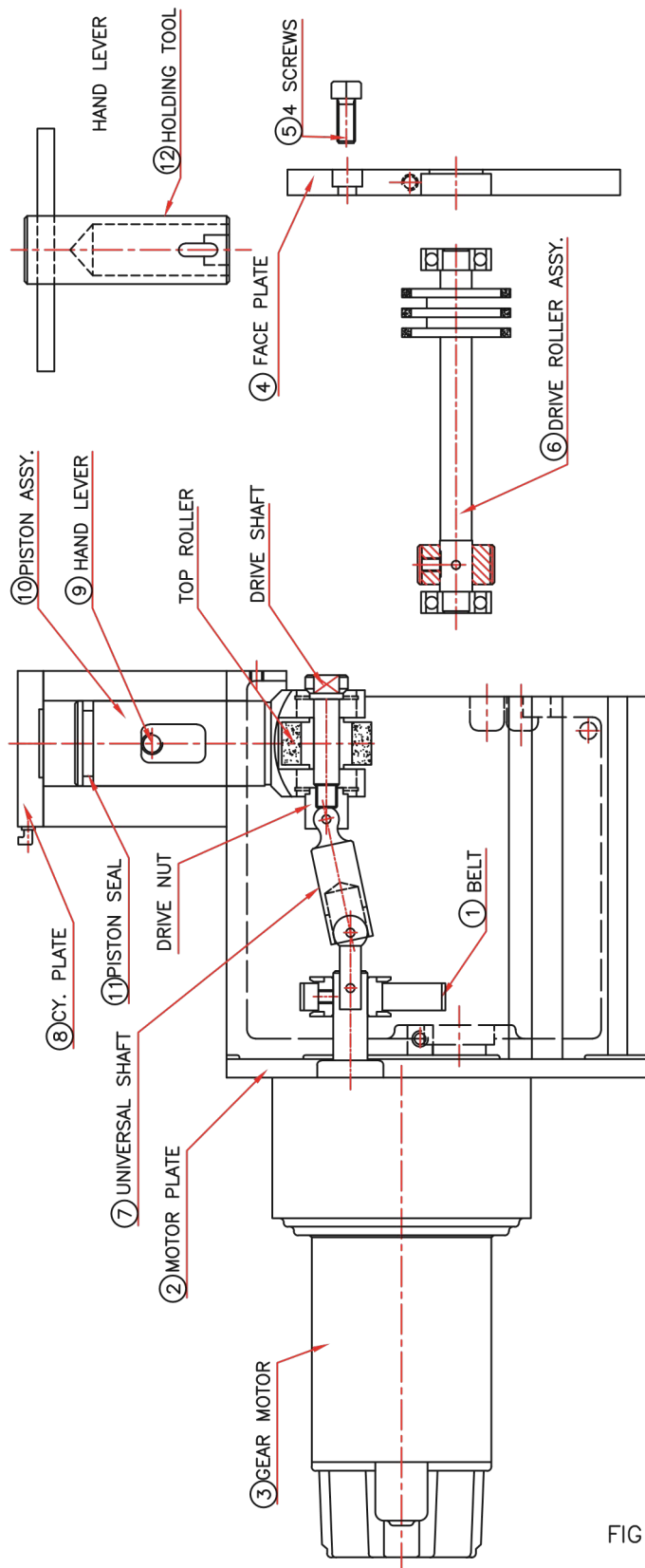


FIG NO 6

CHANGE PISTON SEAL

TO REPLACE PISTON SEAL IN POWER HEAD (VR-12) PROCEED AS FOLLOWS SEE FIG. NO-6

1. TURN OFF POWER
2. DISCONNECT AIR PIPE FROM STEADY REST & SLIDE REST OFF DRIVE BASE.
3. REMOVE POWER HEAD COVER & AIR PIPE FROM POWER HEAD.
4. LOOSE BELT ① BY LOOSEN SCREWS IN GEAR MOTOR PLATE ② .
5. REMOVE STEM SHAFT, STOPPER ASSY. & FACE PLATE ④ FROM POWER HEAD BY REMOVING 4 SCREWS ⑤ .
6. SLIDE DRIVE ROLLER ASSY. ⑥ OUT OF POWER HEAD
7. REMOVE UNIVERSAL SHAFT ⑦ .
8. REMOVE CYLINDER PLATE ⑧ .
9. REMOVE SPRING TENSION (USING SPECIAL HOLDING TOOL) ⑫ .
10. UNSCREW HAND LEVER ⑨ .
11. REMOVE PISTON ASSY. ⑩ AND CHECK PISTON SEAL ⑪ REPLACE PISTON SEAL AS REQUIRED .
12. REINSTALL PISTON ASSY. ⑩ & SCREW ON HAND LEVER ⑨ USING SEALING TAPE FOR AIR TIGHT.
13. ADD SPRING TENSION (USING SPECIAL HOLDING TOOL) ⑫ BY TURN ONE AND HALF CIRCLE MAX. ANTI-CLOCK WISE.
14. REINSTALL CYLINDER PLATE ⑧ & UNIVERSAL SHAFT ⑦ .
15. REINSTALL SLIDE DRIVE ROLLER ASSY. ⑥ (THRU. DRIVE BELT) IN TO HOLES IN POWER HEAD.
16. REINSTALL FACE PLATE ④ ,STEM SHAFT,STOPPER ASSEMBLY. & TIGHTEN 4 SCREWS ⑤ .
17. TIGHT DRIVE BELT ① . AND GEAR MOTOR PLATE ② DO NOT OVER TIGHTEN BELT.
18. REINSTALL STEADY REST & CONNECT AIR PIPES.
19. TIGHT POWER HEAD COVER.
20. TURN ON POWER SUPPLY.

## SUGGESTED TIPS

### **Familiarize yourself with your Rottler VR12 valve grinding machine.**

We recommend that before you start grinding on customer valves, use waste valves to practices. This will prevent any undue pressure or errors while learning on a customer valves.

**ALWAYS** cover the chuck before dressing the grinding wheel.

**ALWAYS** dress the grinding wheel after installation or whether new or reinstalling a grinding wheel

If the grinding wheel becomes impregnated with, grease or lubricating, oil, remove the wheel from the spindle and soak in solvent overnight, reinstall and turn the motor on. This will throw out the oil by centrifugal force.

**ALWAYS** use coolant when dressing or grinding.

To achieve a good result on the finish and the run out on the seat of the valve, take very light cuts, slowly pass, and cycle the wheel back and forth across the valve face many times.

**ALWAYS** clean and degrease valves before grinding to prevent the grinding wheel from loading up.

# **TROUBLESHOOTING**

## **Contents**

<b>Troubleshooting .....</b>	<b>3-1</b>
<b>    Pneumatic Circuit Diagram .....</b>	<b>3-1</b>
<b>    Control Circuit Diagram .....</b>	<b>3-2</b>
<b>    Power Circuit Diagram .....</b>	<b>3-3</b>

## Troubleshooting

Valve will not auto feed or release properly	Oil on drive rollers	Clean drive rollers, see instructions in Maintenance section
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## Pneumatic Circuit Diagram

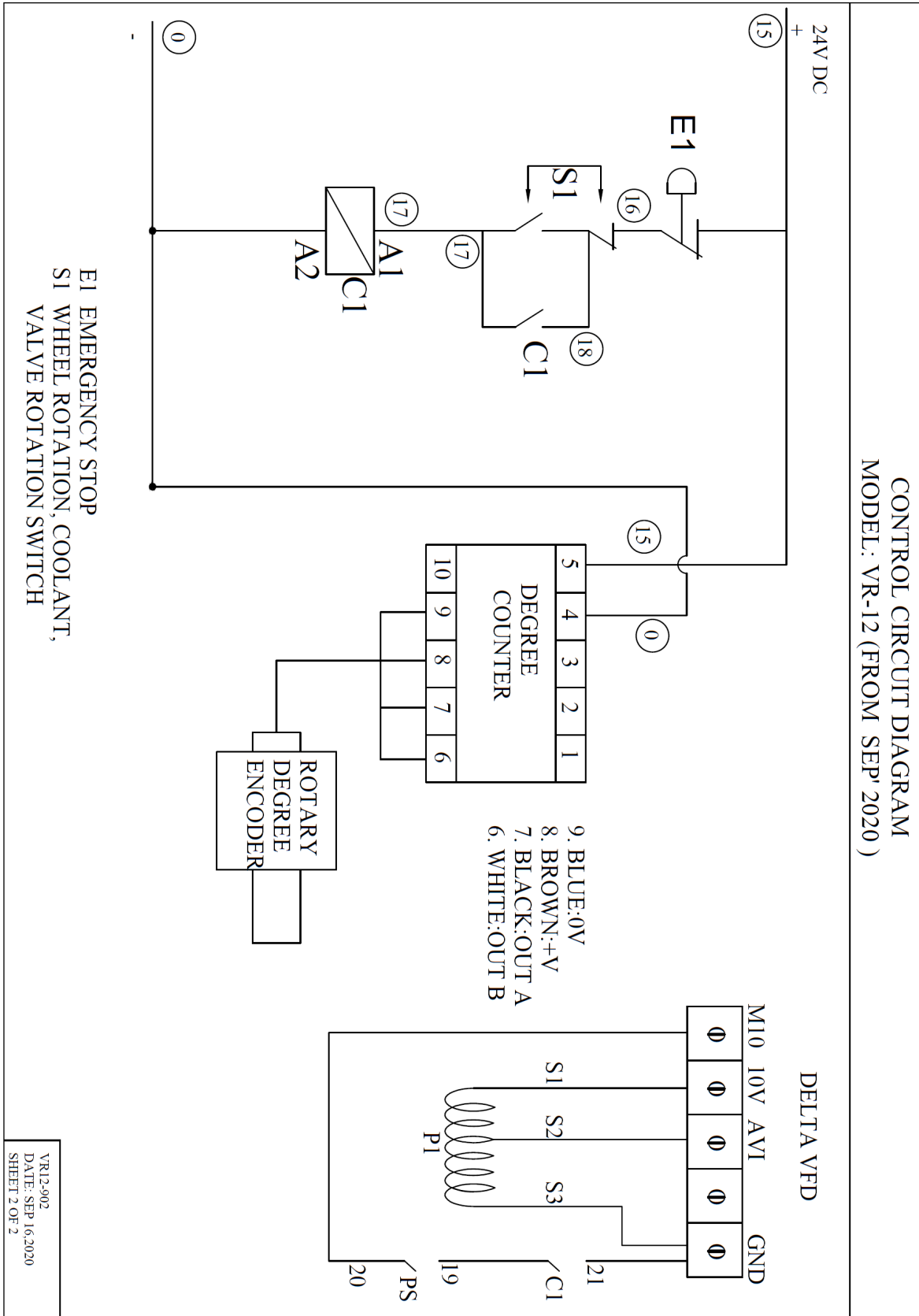
Image unavailable at this time.

Please visit the service tab of our web page at [Send a Service Request www.rottlermfg.com](http://www.rottlermfg.com) or contact the Rottler Factory Service at [service@rottlermfg.com](mailto:service@rottlermfg.com) for assistance and your service request.

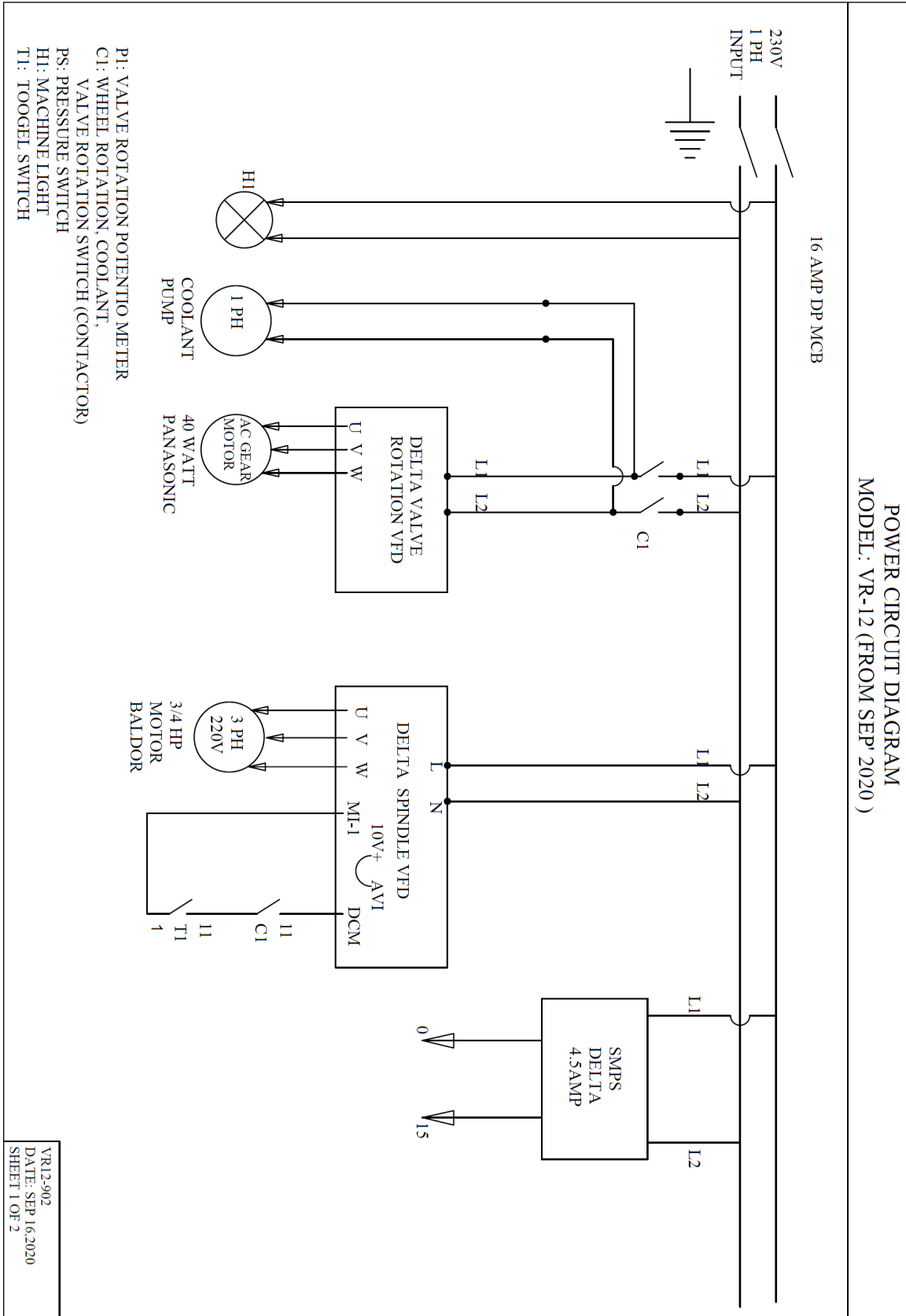
You may also call Rottler at 1-800-452-0534 or 1-253-872-7050

Please ensure you have the Machine Model and Serial Number available when contacting Rottler for Service

**Control Circuit Diagram**



**Power Circuit Diagram**





# MACHINE PARTS

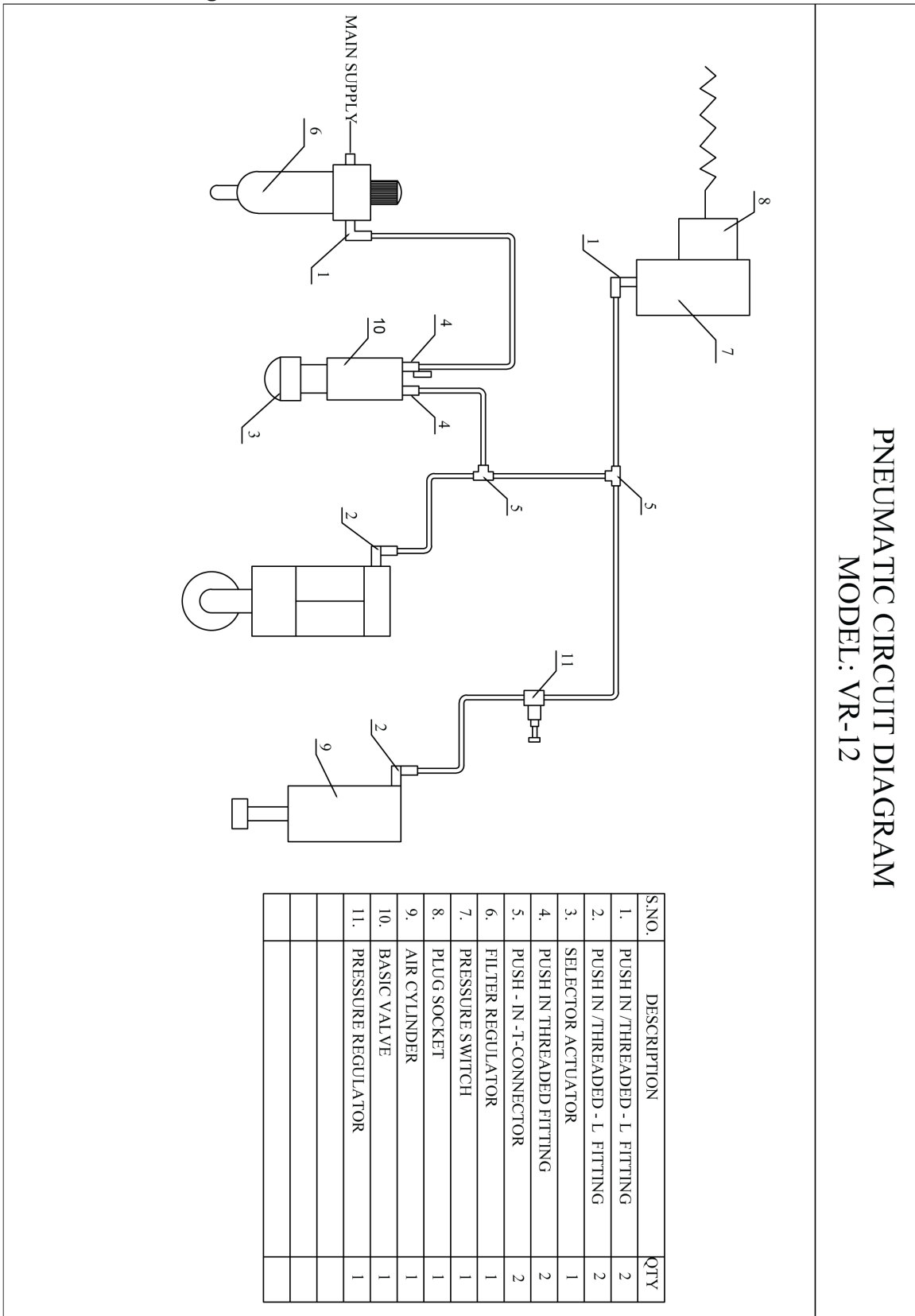
## Contents

<b>Consumable Parts for VR12 .....</b>	<b>4-1</b>
<b>Pneumatic Circuit Diagram .....</b>	<b>4-2</b>
<b>Machine Parts .....</b>	<b>4-3</b>
<b>Base Assembly .....</b>	<b>4-3</b>
<b>Base Assembly Parts List .....</b>	<b>4-4</b>
<b>Grinding Wheel Assembly .....</b>	<b>4-6</b>
<b>Grinding Wheel Assembly Parts List .....</b>	<b>4-7</b>
<b>Slide Support Assembly .....</b>	<b>4-8</b>
<b>Slide Support Assembly Parts List .....</b>	<b>4-9</b>
<b>Power Head Assembly .....</b>	<b>4-10</b>
<b>Power Head Assembly Parts List .....</b>	<b>4-11</b>
<b>Control Panel Assembly .....</b>	<b>4-13</b>
<b>Control Panel Assembly Parts List .....</b>	<b>4-14</b>
<b>Rocker Feed Assembly .....</b>	<b>4-15</b>
<b>Rocker Feed Assembly Parts List .....</b>	<b>4-16</b>

**Consumable Parts for VR12**

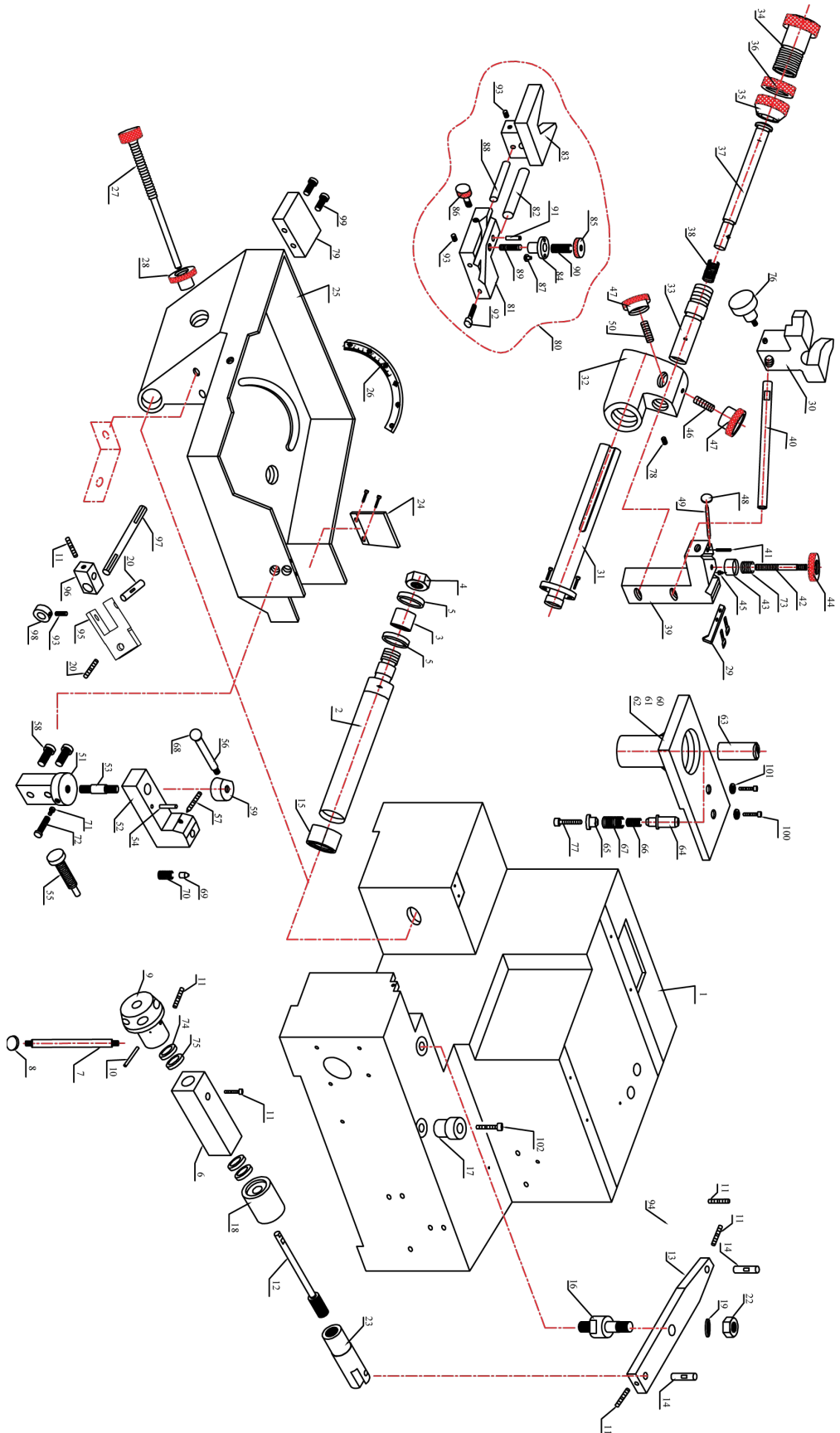
<b>Part Number</b>	<b>Description</b>
VTRW-10	Main Grinding Wheel 9.0" (200mm) Diameter General Purpose
VTRW-11	Main Grinding Wheel 9.0" (200mm) Diameter Special Applications, Titanium
VTRW-12	Main Grinding Wheel 9.0" (200mm) Diameter Special Applications, Stellite
VTRW-3	Butt Grinding Wheel, General Purpose
7609C	Grinding Oil-5 gal.
514-7-66F	Filter Paper (12 ½ x 6 ½) min. order 10ea
VTRW-4	Single Point Wheel Dressing Diamond-main wheel
VTRW-5	Single Point Wheel Dressing Diamond-butt wheel

**Pneumatic Circuit Diagram**



# Machine Parts

## Base Assembly

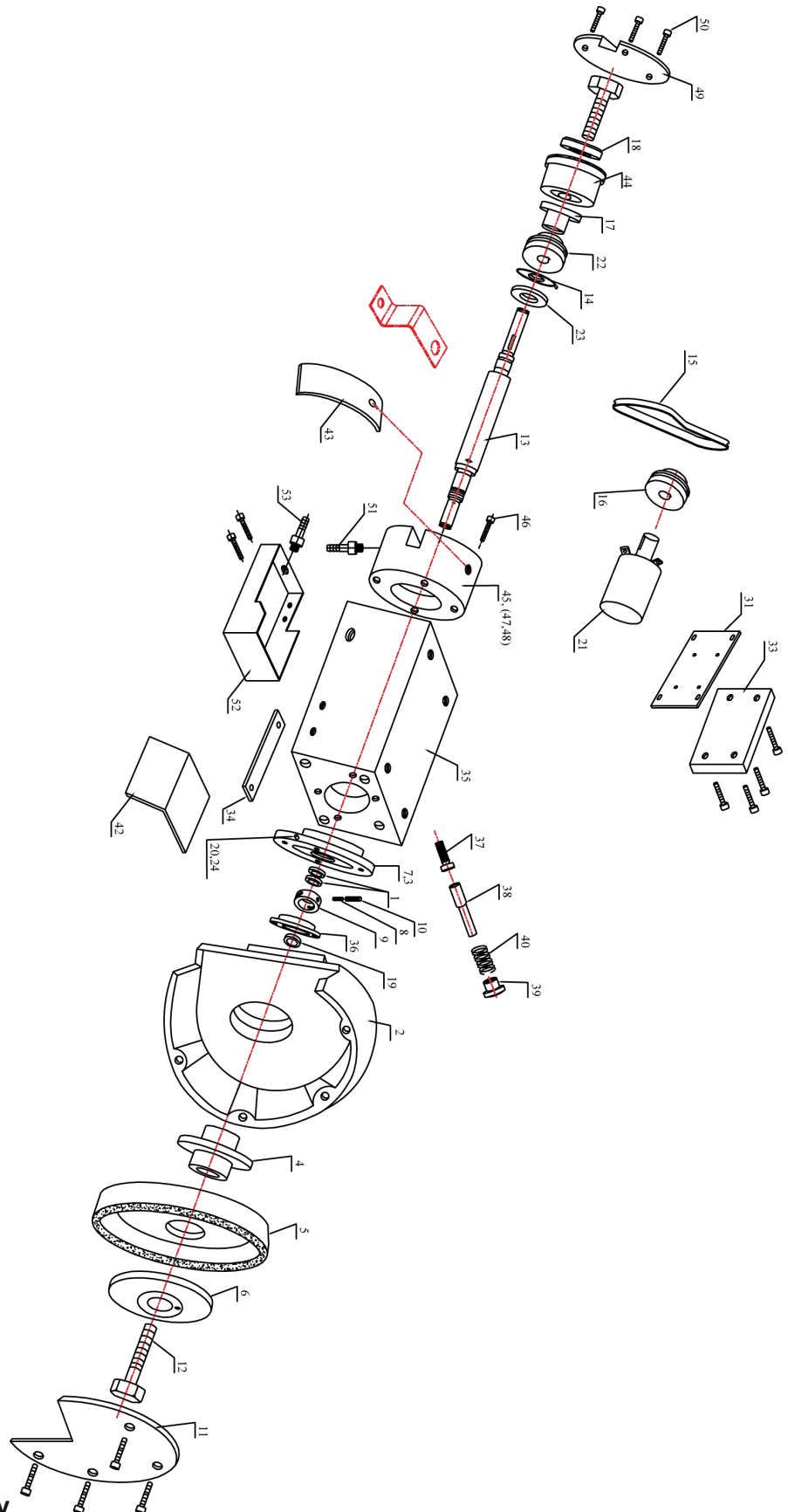


**Base Assembly Parts List****BASE ASSEMBLY PARTS LIST**

S. NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	<b>VR12-101</b>	<b>BASE</b>	<b>1</b>	
2	555-102	PIVOT PIN	1	
3	555-103	LINER	1	
4	<b>VR12-104</b>	<b>NUT</b>	<b>1</b>	
5		THRUST BEARING (25x42x4)	2	
6	<b>VR12-106</b>	<b>SQUARE BLOCK</b>	<b>1</b>	
7	<b>VR12-107</b>	<b>HAND LEVER</b>	<b>4</b>	
8		BALL KNOB	1	DIN 319-KU-35 M10-C
9	<b>VR12-109</b>	<b>HUB HAND WHEEL</b>	<b>1</b>	
10		ROLL PIN	1	<b>(DIA. 3x30mm)</b>
11		GRUB SCREW (M5x10)	5	
12	<b>VR12-112</b>	<b>LEAD SCREW</b>	<b>1</b>	
13	<b>VR12-113</b>	<b>SWING ARM</b>	<b>1</b>	
14	<b>VR12-114</b>	<b>PIVOT PIN</b>	<b>2</b>	
15	555-115	BUSH	1	
16	<b>VR12-116</b>	<b>SWING PIN</b>	<b>1</b>	
17	<b>VR12-117</b>	<b>STOPPER</b>	<b>1</b>	
18	<b>VR12-118</b>	<b>SCREW COVER</b>	<b>1</b>	
19		<b>WASHER Ø0.500"</b>	<b>1</b>	
20	<b>VR12-114B</b>	<b>HINGE PIN</b>	<b>2</b>	
21	555-121	SHIPPING CLAMP	1	
22		NYLOCK NUT	1	<b>M12</b>
23	<b>VR12-112 A</b>	<b>NUT (LEAD SCREW)</b>	<b>1</b>	
24	555-124	COOLANT GUARD FIXTURE	1	
25	<b>VR12-125</b>	<b>ROCKER</b>	<b>1</b>	
26	555-126	CLAMP RING	1	
27	555-127	STOP BOLT	1	
28	555-128	STOP KNOB	1	
29	555-129	STOPPER PLATE	1	
30	555-130	V-NEST STOP	1	
31	555-131	SUPPORT ROD	1	
32	555-132	SUPPORT BLOCK	1	
33	555-133	GUIDE BUSH	1	
34	555-134	FEED KNOB	1	
35	555-135	SETTING WHEEL	1	
36	555-136	LOCK NUT	1	
37	555-137	PIVOT PIN	1	
38	555-138	SPRING	1	
39	555-139	SWING ARM	1	
40	555-140	SUPPORT ROD	1	
40-1	555-140-1	SUPPORT ROD	1	
41	555-141	PIN	1	
42	555-142	STUD	1	
43	555-143	CLAMP RING	1	
44	555-144	KNOB	1	
45	555-145	CLAMP PAD	1	
46	555-146	SCREW SPACIAL	1	
47	555-147	KNOB (DIAMOND)	2	MBT 50B-M10
48	430-802	KNOB (M8Xø25mm OD)	1	
49	NC-39	LEVER	1	S&G
50	555-150	SCREW ASSY.	1	
51	555-151A	SUPPORT PIN	1	
52	555-152A	SWING BLOCK	1	

**BASE ASSEMBLY PARTS LIST**

S. NO.	PART NO.	DESCRIPTION	QTY	REMARKS
53	VR7-201	DRESSER PIVOT	1	
54	555-154	PIN	2	
55	555-155	DIAMOND DRESSING TOOL	1	
56	VR7-190	LEVER	1	
57		GRUB SCREW M5x6 LONG	1	
58		ALLEN HEAD SCREW (M8x30)	2	
59	VR7-202	CLAMPING COLLAR	1	
60	555-160	BRACKET WELDED		
61	555-161	BRACKET	1	
62	555-162	HOLDER	1	
<b>63</b>	<b>VR12-163</b>	<b>CYLINDER</b>	<b>1</b>	
64	555-164	PIN LARGE	1	
65	555-165	PIN SMALL	1	
66	555-166	SPRING	1	
67	555-167	SPRING	1	
68		KNOB	1	M6 (VR-7)
69	<b>VR7-108</b>	<b>PIN</b>	<b>1</b>	<b>VR-7</b>
70	<b>VR7-107</b>	<b>SPRING</b>	<b>1</b>	<b>VR-7</b>
71	-----	PLUG (BRASS)	1	DIA.0.180"x0.140" LONG
72	-----	GRUB SCREW	1	M6x6
73	555-173	SPRING	1	
<b>74</b>	<b>430-550</b>	<b>THRUST BEARING</b>	<b>2</b>	<b>(12-26-4)</b>
<b>75</b>	<b>430-551</b>	<b>NEEDLE BEARING</b>	<b>2</b>	<b>HK 1210</b>
76	555-176	HAND KNOB	1	
77	-	ALLEN HEAD SCREW (M8x35)	1	
<b>78</b>	<b>555-178</b>	<b>DOG POINT SCREW</b>	<b>1</b>	<b>M10X12</b>
<b>79</b>	<b>VR12-179</b>	<b>STOPPER</b>	<b>1</b>	
80		BUTT GRINDING FIXTURE( MINI )		
81	VR-9-181	V-BLOCK	1	
82	VR-9-182	LOCATING ROD	1	
83	VR-9-183	V-NEST STOP	1	
84	VR-9-184	CLAMP RING	1	
85	VR-9-185	KNOB	1	
86	VR-9-186	SETTING KNOB	1	
87	VR-9-187	PAD	1	
88	VR-9-188	SETTING ROD	1	
89	555-189	GRUB SCREW (M5x35)	1	
90	555-240	SPRING	1	
91	-	ROLL PIN (1/8"x3/4")	1	
92	-	AL.HD. SCREW (M6x20)	1	
<b>93</b>	-	<b>GRUB SCREW (M5x6)</b>	<b>4</b>	
<b>94</b>	<b>VR12-194</b>	<b>HOLDING BRACKET</b>	<b>1</b>	
<b>95</b>	<b>VR12-195</b>	<b>UNIVERSAL JOINT</b>	<b>1</b>	
<b>96</b>	<b>VR12-196</b>	<b>SPACING BLOCK</b>	<b>1</b>	
<b>97</b>	<b>VR12-197</b>	<b>PIVOT ROD</b>	<b>1</b>	
<b>98</b>	<b>VR12-198</b>	<b>STOP RING</b>	<b>2</b>	
<b>99</b>		<b>AL. HD. SCREW (M6x50)</b>	<b>2</b>	
<b>100</b>		<b>AL.HD. SCREW (M6x16)</b>	<b>2</b>	
<b>101</b>		<b>LOCK WASHER (Ø6MM)</b>	<b>2</b>	
<b>102</b>		<b>AL.HD. SCREW (M8x40)</b>	<b>1</b>	



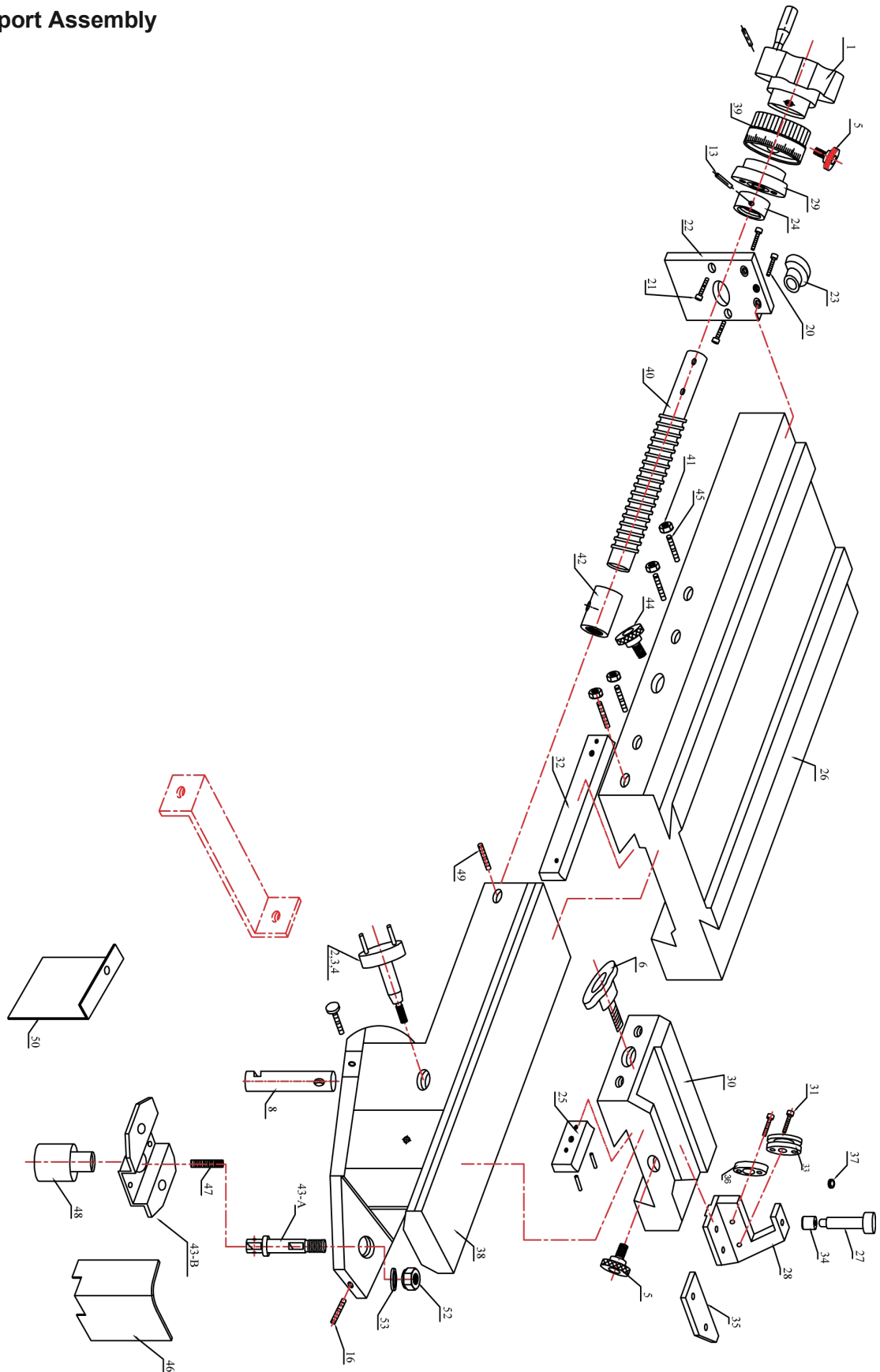
**Grinding Wheel Assembly**

**Grinding Wheel Assembly Parts List****GRINDING WHEEL AXLE ASSEMBLY PARTS LIST**

S. NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	-----	ANGULAR CONTACT BEARING (7206)	2	(30x62x32)
2	VR-9-202	WHEEL GUARD	1	
3	VR-9-203	LOCK NUT		
4	VR-9-204	BEARING FLANGE	1	
5	555-205	GRINDING WHEEL(8")	1	
5A	VR-9-205	GRINDING WHEEL(9")	1	NOT SHOWN
5B	VR-9-205-A	SPACER (FOR 8" WHEEL)	1	NOT SHOWN
6	555-206	FLANGE	1	
7	VR-9-207	CLAMPING RING	1	
8	555-208	NYLON PLUG	3	Ø0.150"X0.050"
9	555-209-A	NUT	1	
10	555-210	GRUB SCREW M5X5	3	FLAT POINT 0.150"LONG
11	VR-9-211	COVER	1	
12	555-212	HEX BOLT (M12x1" LONG)	1	
13	VR-9-213	SPINDLE SHAFT	1	
14		EXTERNAL CIRCLIP (25mm)	1	
15		POLY RIB BELT (5M 710)	1	
<b>16</b>	<b>VR12-216</b>	<b>MOTOR PULLEY</b>	<b>1</b>	
17	555-217	FLANGE INNER	1	
18	555-218	FLANGE OUTER	1	
19	VR-9-219	O-RING	1	42x3x48
20	VR-9-220	PLUG	1	DIA.0.170"x0.200"
<b>21</b>		<b>MOTOR (EM 31111)</b>	<b>1</b>	<b>3/4 HP , 3Ph, 3450</b>
22	555-222	SPINDLE PULLEY	1	
23	-----	BALL BEARING (6205 2 RSI)	1	25X52X15
24	VR-9-224	GRUB SCREW (M6x8)	1	
25				
26	-----	----	--	
27	-----	----	--	
28	-----	----	--	
29	-----	----	--	
30	-----	----	--	
<b>31</b>	<b>VR12-231</b>	<b>MOTOR MTG. PLATE</b>	<b>1</b>	
32	-----	----	--	
33	555-233	MOTOR COVER	1	
34	555-235-S	CLAMP STRIP	1	
35	VR-9-235	SPINDLE HOUSING	1	
36	555-236	RETAINER RING	1	
37	555-237	STOP BOLT	1	
38	555-238	STOP PIN	1	
39	555-239	PUSH BUTTON	1	
40	555-240	SPRING	1	
41	-----	----	--	
42	555-242	COOLANT GUARD	1	
43	555-243	COOLANT COVER	1	
44	555-244	GRINDING WHEEL (SMALL)	1	
45	555-245	COOLANT BOX WELDED	1	
46		ALLEN HEAD SCREW (M5x16)	4	
47	555-247	COOLANT HOUSING PLATE	1	
48	555-248	COVER RING	1	
49	555-249	COVER	1	
50		SLOTTED CAP SCREW (M5x8)	3	
51	555-251	NIPPLE	1	
52	555-252	COOLANT TANK	1	
53	555-253	NIPPLE	1	



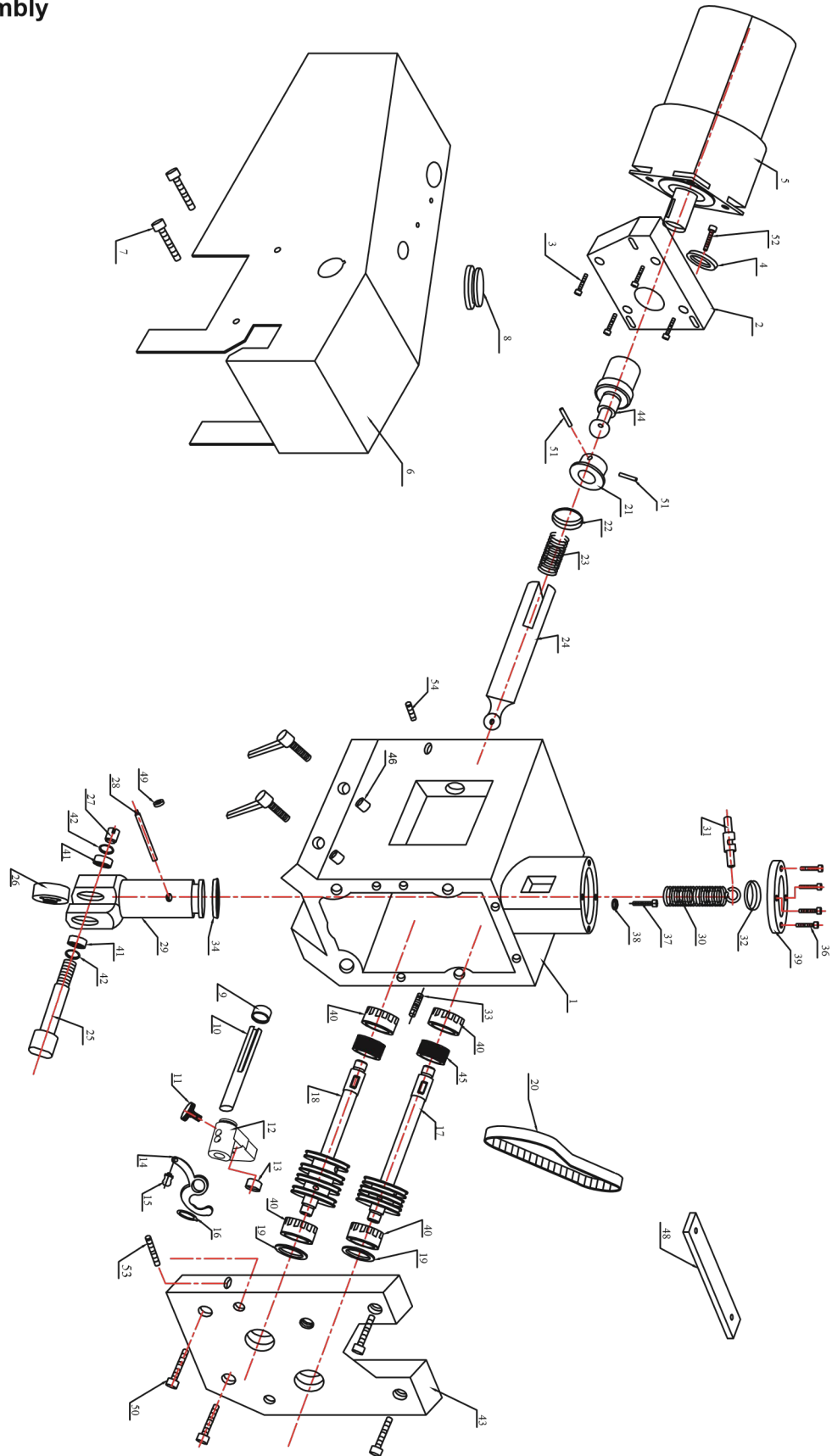
# Slide Support Assembly



**Slide Support Assembly Parts List****SLIDE SUPPORT ASSEMBLY PARTS LIST**

S. NO.	PART NO.	DESCRIPTION	Q TY	REMARKS
1	555-301	HAND WHEEL		VL 140/80+1
2	555-302	CLAMP KNOB ASSY.	1	
3	<b>VR12-302-1</b>	<b>KNOB PIN</b>	<b>2</b>	
4	<b>VR12-302-2</b>	<b>CLAMP KNOB</b>	<b>1</b>	
5	555-303	SETTING KNOB FLAT POINT	2	B193/15 P-M5x16
6	555-304	KNOB (STEADY)	1	VH 153/44 PM8x30
7	----	----	--	
8	555-306	CLAMP ROD	1	
9	----	----	--	
10	----	----	--	
11	----	----	--	
12	----	----	--	
13		ROLL PIN (1/8"x3/4")	1	
14	----	----	--	
15	----	----	--	
16		GRUB SCREW (M5x16)	1	
17				
18	----	----	--	
18A	----	----	--	
19	----	----	--	
20		ALLEN HEAD SCREW (M6x12)	2	
21		ALLEN HEAD SCREW (M6x16)	2	
22	VR-9-322	SUPPORT PLATE	1	
23	VR-9-322-A	STOPPER	1	
24	555-324	BEARING	1	
25	555-325	GIBB (STEADY)	1	
26	555-326	SLIDE	1	
27	555-327	AIR CYLINDER SMC	1	
28	VR-9-328-A	SUPPORT PLATE (STEADY REST)	1	
29	555-329	BEARING HOUSING	1	
30	555-330-A	BASE (STEADY)	1	
31		ALLEN HEAD SCREW (M6x12)	2	
32	555-332	GIBB	1	
33	VR-9-333-3	ROLLER (STEADY REST)	1	
34	555-334	PAD	1	
35	555-328-A1	SPACING PLATE	1	
36	VR-9-333-4	ROLLER (STEADY REST)	1	
37	555-327-1	SPACER	1	
38	555-338	DOVE TAIL SLIDE	1	
39	555-339	FEED KNOB	1	
40	555-340	LEAD SCREW	1	
41		NUT (M5)	4	
42	555-342	NUT	1	
43-A	555-343 A	PIVOT PIN	1	
43-B	555-343 B	SUPPORT BRACKET	1	
44	555-344	SLIDE LOCKING KNOB	1	
45	555-345	GRUB SCREW (M5x35)	4	
46	555-346	GUARD	1	
47	555-347	COUPLING	1	
48	555-348	ENCODER	1	
49	555-349	SCREW (M6x8)	1	
50	<b>VR12-350</b>	<b>ENCODER COVER</b>	<b>1</b>	
51	----	----	--	
52		NYLOCK NUT (M12)	1	
53		PLAIN WASHER(Ø12mm)	1	

### Power Head Assembly



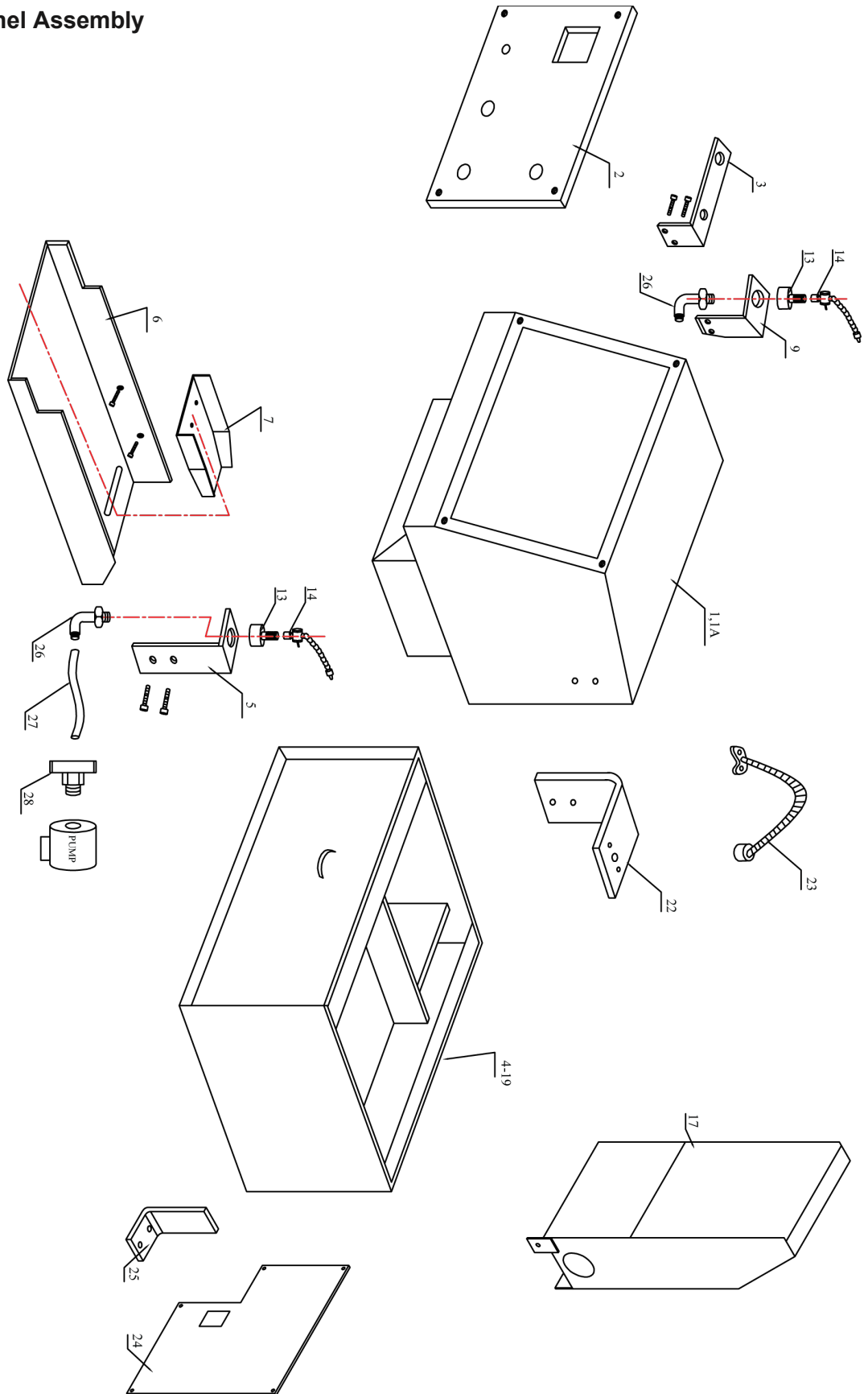
**Power Head Assembly Parts List****POWER HEAD ASSEMBLY PARTS LIST**

S. NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	555-401	POWER HEAD	1	
2	<b>VR12-402</b>	<b>MOTOR PLATE</b>	<b>1</b>	
3		ALLEN HEAD SCREW (10/32"x1")	4	
4		PLAIN WASHER (Ø5mm)	3	
5		MOTOR (DC) 1/17 HP		
6	<b>VR12-406</b>	<b>MOTOR COVER</b>	<b>1</b>	
7		BUTTON HEAD SCREW (M5x12)	4	
8	555-408	PLUG	1	
9	555-409	SPACER	1	
10	555-410	STEM SHAFT	1	
11	<b>VR12-411</b>	<b>THUMB SCREW</b>	<b>1</b>	
12	<b>VR12-412</b>	<b>STEM STOP BKT.</b>	<b>1</b>	
13	555-413	CARBIDE PAD (Ø 0.629"x0.130")	1	
14	555-414	FLIPPER	1	
15	555-415	KNOB	1	
16	555-416	EXT.CI RCLIP (5/8")	1	
17	VR9-417	ROLLER SHAFT ASSY.(REAR)	<b>1</b>	
	VR9-417-1	ROLLER SHAFT (REAR)	1	
	VR9-417-2	ROLLER (SMALL)	1	
18	VR9-418	ROLLER SHAFT ASSY. (FRONT)	<b>1</b>	
	VR9-418-1	ROLLER SHAFT (FRONT)	1	
	VR9-418-2	ROLLER (LARGE)	1	
19		DISC WASHER (26mm O.D)	2	
20		BELT XL - 80	1	80-XL-037
21	<b>VR12-421</b>	<b>MOTOR PULLEY</b>	<b>1</b>	
22	555-422	PAD	1	
23		SPRING	1	
24	VR-9-424	DRIVE SHAFT	1	
25	VR-9-425	TOP ROLLER SHAFT	1	
26	VR-9-426	TOP ROLLER	1	
27	555-427	DRIVE NUT	1	
28	555-428	PISTON HANDLE	1	
29	VR-9-429	PISTON	1	
30	555-430	SPRING	1	
31	555-431	TENSION SPRING PIN	1	
32		O-RING 3/32 X 1-1/2 X 1-11/16	1	
33	555-433	PIN	2	
34	555-434	U-CUP SEAL	1	
35	-----	----	--	
36		ALLEN HEAD SCREW (M5x6)	4	
37		ALLEN HEAD SCREW (1/4"x3/4")	1	
38		SPRING WASHER (1/4")	1	
39	555-439	CYLINDER CAP	1	
40	555-440	BEARING (10x26x8)	4	
41	555-441	BALL BEARING (9/32"x3/8"x7/8")	2	
42	555-442	INTERNAL CIRCLIP (7/8")	2	
43	555-443	FACE PLATE	1	
44	<b>VR12-444</b>	<b>DRIVE ADAPTOR</b>	<b>1</b>	
45	VR-9-445	DRIVEN PULLEY	2	
46	555-446	PLUG	2	
47	-----	-----	---	
48	555-401-S	CLAMP STRIP	1	
49	VGS-522	KNOB (1/4"x1" O.D.)	1	
50		ALLEN HEAD SCREW (M6x12)	4	

**POWER HEAD ASSEMBLY PARTS LIST**

<b>S. NO.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>REMARKS</b>
51	555-451	PIN (1/8"x0.610")	2	
<b>52</b>		<b>ALLEN HEAD SCREW (M5x35)</b>	<b>3</b>	
53	555-453	GRUB SCREW (M6x8)	1	FLAT POINT
54	555-454	DOG POINT SCREW (M6x12)	1	

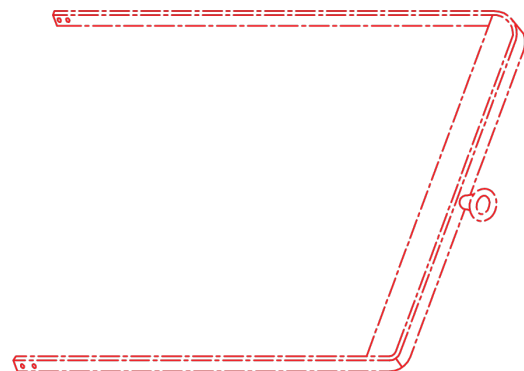
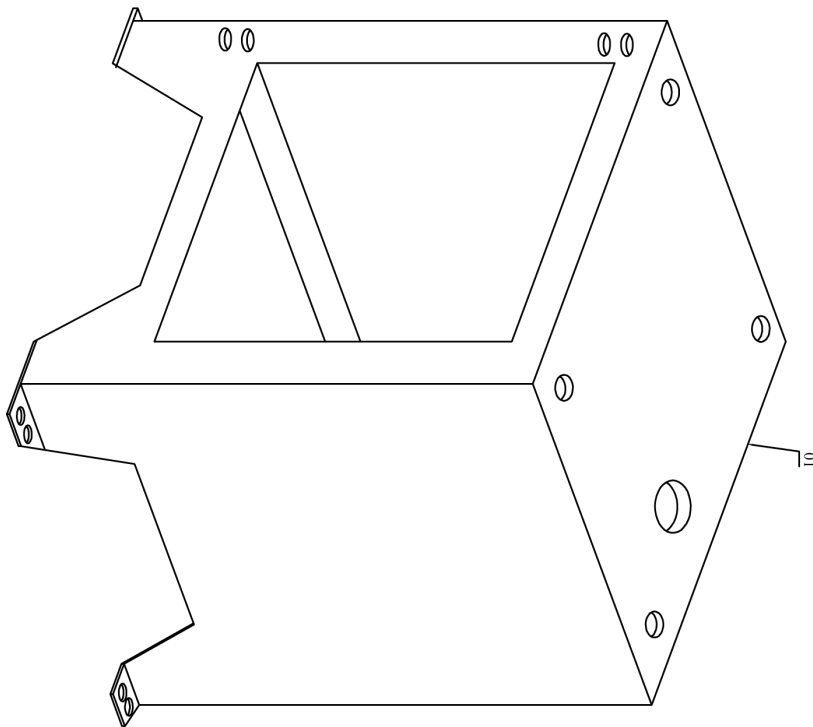
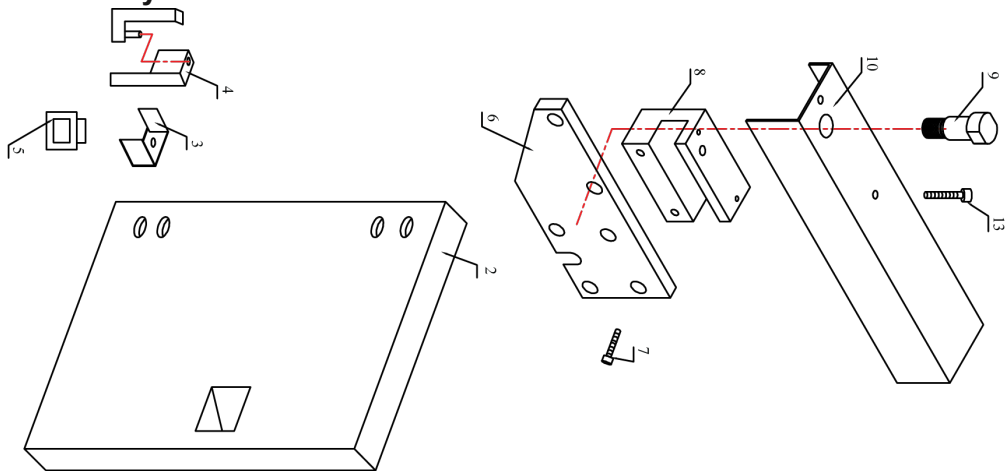
### Control Panel Assembly



**Control Panel Assembly Parts List****CONTROL PANEL ASSEMBLY PARTS LIST**

S. NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	555-501	PANEL BOX	1	
1A	555-501-1	BACK PLATE (NOT SHOWN )	1	
<b>2</b>	<b>VR12-502</b>	<b>PANEL PLATE</b>	<b>1</b>	
3	555-503	FILTER MOUNTING BRACKET	1	
4	555-504	COOLANT TANK	1	
5	555-505	COOLANT BRACKET	1	
6	555-506	FLOW CHANNEL	1	4-1/2x4-5/16x1-1/2XG16
7	555-507	CHANNEL	1	
8	-----	----	--	
9	555-509	BRACKET	1	
10	555-510	PNEUMATIC CIRCUIT DIAGRAM	1	
11	-----	----	--	
12	-----	----	--	
13	VR9-513	HOLDER	2	
14		NOZZLE	2	
15	555-515-I	POWER CIRCUIT DIAGRAM		
16	555-515-II	CONTROL CIRCUIT DIAGRAM		
17	555-517	COOLANT HOPPER	1	
18	-----	----	--	
19	555-519	COOLANT GRATE	1	NOT SHOWN
20	-----	----	--	
21	-----	----	--	
22	555-522	LIGHT MTG. BKT.	1	
23	555-523	LIGHT ASSY.	1	
24	555-524	PANEL COVER	1	
25	555-525	BRACKET	1	
26	164981	ELBOW 1/4x12MM	2	QSL-1/4-12 FESTO
27		PIPE	2	
28		T-CONNECTOR 3/8-12	1	

### Rocker Feed Assembly





**Rocker Feed Assembly Parts List****ROCKER FEED ASSEMBLY PARTS LIST**

<b>S. NO.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>REMARKS</b>
1	555-620	STAND ASSEMBLY	1	
2	555-631	DOOR	1	
3	555-632	CLAMP	1	
4	555-634	HINGE	2	
5	555-635	LOCK	1	
6	<b>VR12-613</b>	<b>SUPPORT BRACKET</b>	<b>1</b>	
7		<b>AL-HEAD SCREW (M8x20)</b>	<b>6</b>	
8	<b>VR12-628</b>	<b>GUIDE BLOCK</b>	<b>1</b>	
9	<b>VR12-629</b>	<b>STOPPER PIN</b>	<b>1</b>	
10	<b>VR12-630</b>	<b>COVER</b>	<b>1</b>	
11				
12	555-619	ANGLE SETTING STD.	1	NOT SHOWN
13		<b>ALLEN HEAD SCREW (M5x12)</b>	<b>2</b>	

# OPTIONS

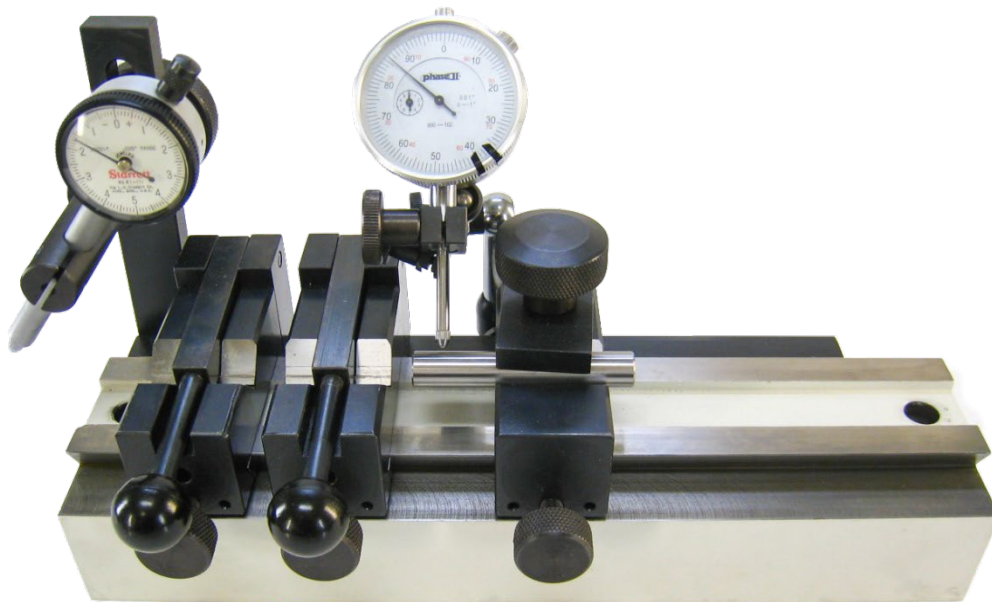
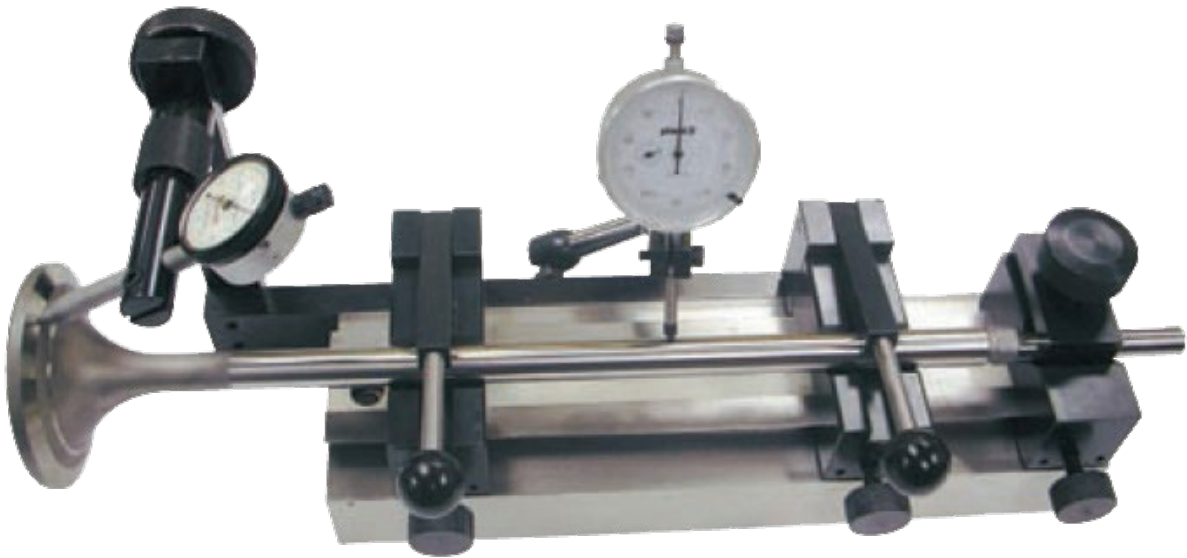
## Contents

<b>Valve Measuring Equipment .....</b>	<b>5-1</b>
<b>VALVE-CHECK .....</b>	<b>5-1</b>
<b>STEADY-REST .....</b>	<b>5-2</b>
<b>Grinding Wheels and Diamond Dressers .....</b>	<b>5-3</b>
<b>VTRW-11 Main Grinding Wheel Special Applications, Titanium .....</b>	<b>5-3</b>
<b>VTRW-12 Main Grinding Wheel Special Applications, Hard Valves .....</b>	<b>5-3</b>
<b>VTRW-10 Main Grinding Wheel General Purpose .....</b>	<b>5-4</b>
<b>VTRW-3 Butt Grinding Wheel .....</b>	<b>5-4</b>
<b>Parts and Supplies .....</b>	<b>5-5</b>
<b>7609C Grinding Oil 5 Gallon (20 Liters) .....</b>	<b>5-5</b>
<b>514-7-66F Filter Paper .....</b>	<b>5-5</b>
<b>VR5-TOPROLL .....</b>	<b>5-5</b>
<b>VR5-ROLLER .....</b>	<b>5-5</b>
<b>VR8-TOPROLL .....</b>	<b>5-6</b>
<b>VR8-ROLLER .....</b>	<b>5-6</b>

## Valve Measuring Equipment

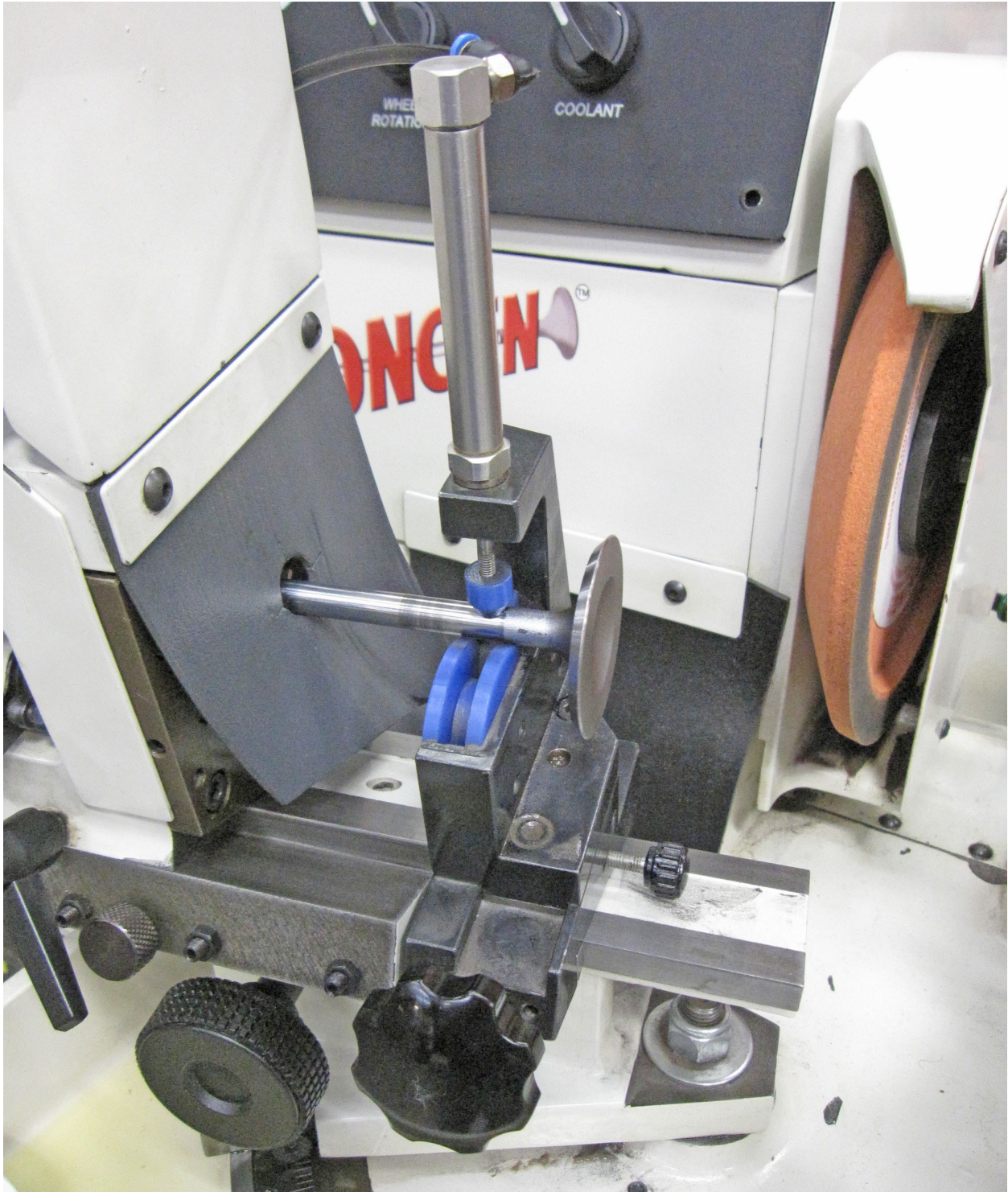
### VALVE-CHECK

Valve Stem Runout Fixture Assembly measures Valve Seat and Valve Stem Runout with two separate dial gages, specify Inch .0001" or Metric .002mm



## STEADY-REST

Steady rest with rotating rollers for grinding special material such as titanium valves



## Grinding Wheels and Diamond Dressers

Vitrified Grinding Wheels, require Grinding Oil 7609B

### VTRW-11 Main Grinding Wheel Special Applications, Titanium

9.0" (230mm) Diameter (Green)



### VTRW-12 Main Grinding Wheel Special Applications, Hard Valves

9.0" (228.6mm) Diameter (Pink)



### VTRW-10 Main Grinding Wheel General Purpose

9.0" (230mm) Diameter



### VTRW-3 Butt Grinding Wheel

General Purpose



## Parts and Supplies

### 7609C Grinding Oil 5 Gallon (20 Liters)

Water Soluble for CBN wheels - Mix 2%, 3% coolant with 97% to 98% water (1 Liter)



### 514-7-66F Filter Paper

Minimum order of (10) sheets, pricing per sheet



### VR9-TOPROLL

Top Roller for VR9/12



### VR9-ROLLER

Complete roller set for VR9/12 (includes top roller and bottom drive rollers, shafts, bearings and gears) **VR8-TOPROLL**

Image Currently Unavailable

Top Roller for VR8



**VR8-ROLLER**

Complete roller set for VR8 (includes top roller and bottom drive rollers, shafts, bearings and gears)





# SDS

The Safety Data Sheets list shown in this section are the substances and materials that an operator is most likely to come in contact with while using this machine.

Other substances and materials are used in the manufacture, testing, and shipping of this machine. A complete list of the Safety Data Sheets of substances and materials used by Rottler Manufacturing during manufacturing, testing, and shipping is located on the Manual flash drive shipped with the machine. Safety Data Sheets are also located on the company web site: <http://www.rottlermfg.com/documentation.php>

## 1) Honilo 710 Grinding Oil

# SAFETY DATA SHEET

## Section 1: Identification

**Product Name:** Honilo 710  
**SDS #:** 461349  
**Historic SDS #:** 05267  
**Code** 461349-US03

**Relevant identified uses of the substance or mixture, and uses advised against:**

**Product Use:** Metalworking fluid – neat  
For specific application advice, see appropriate Technical Data Sheet or consult our company representative

**Supplier:** Castrol Industrial North America, Inc.  
150W. Warrenville Road  
Naperville, IL 60563  
Product Information: +1-877-641-1600

BP Lubricants USA, Inc.  
1500 Valley Road  
Wayne, NJ 07470  
Telephone: 1-973-633-2200

**Emergency Spill Information:** CHEMTREC (USA): 1-800-424-9300

## Section 2: Hazards Identification

**OSHA/HCS Status:** This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

**Classification of the substance or mixture:** ASPIRATION HAZARD – Category 1

**GHS Label Elements**

**Hazard Pictograms:**



**Signal Word:** Danger  
**Hazard Statements:** May be fatal if swallowed and enters airways

**Precautionary Statements:**

**Prevention:** Not applicable.  
**Response:** IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.

**Storage:** Store locked up.

**Disposal:** Dispose of contents and container in accordance with all local, regional, national, and international regulations

**Hazards not otherwise Classified:** Defatting to skin

## Section 3: Composition/Information on Ingredients

Cooling agents for metal processing – Honing oils  
Substance/Mixture: Mixture

Ingredient Name	CAS Number	Concentration
Distillates, petroleum, hydrotreated middle	64742-46-7	≥75 - <90%
Triazole derivative	Proprietary	≥0.1 - <0.3%

## Section 4: First Aid Measures

### Description of Necessary First Aid Measures

<b>Eye Contact:</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.
<b>Skin Contact:</b>	Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
<b>Inhalation:</b>	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
<b>Ingestion:</b>	Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.
<b>Protection of First-aiders:</b>	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

### Most Important Symptoms/Effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

### Indication of Immediate Medical Attention and Special Treatment Needed, if Necessary

<b>Notes to Physician:</b>	Treatment should in general be symptomatic and directed by relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.
<b>Specific Treatments:</b>	No specific treatments.

## Section 5: Firefighting Measures

### Extinguishing Media

<b>Suitable Extinguishing Media:</b>	In case of fire, use foam, dry chemical, or carbon dioxide extinguisher or spray.
<b>Unsuitable Extinguishing Media:</b>	Do not use water jet.
<b>Specific hazards arising from the chemical:</b>	Swarf fires – Neat metal working oils may fume, thermally decompose, or ignite if they come into contact with red hot swarf. To minimize the generation of red hot swarf, ensure that a sufficient flow of oil is correctly directed to the cutting edge of the tool to flood it throughout cutting operations. As an additional precaution, swarf should be regularly cleared from the immediate area to prevent the risk of fire. In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous Combustion Products:</b>	Combustion products may include the following: Carbon dioxide Carbon monoxide
<b>Special Protective actions for Firefighters:</b>	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
<b>Special Protective Equipment for Firefighters:</b>	Firefighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

## Section 6: Accidental Release Measures

### Personal precautions, protective equipment, and emergency procedures

- For non-emergency Personnel:** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery, use care to avoid falling. Contact emergency personnel.
- For emergency Responders:** Entry into confined space or poorly ventilated area contaminated with vapor, mist, or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".
- Environmental Precautions:** Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil, or air).

### Methods and Materials for Containment and Cleaning up

- Small Spill:** Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste container. Dispose of via a licensed waste disposal contractor.
- Large Spill:** Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements, or confined areas. Contain and collect spillage with non-combustible, absorbent material (e.g. sand, earth, vermiculite, or diatomaceous earth) and place in container for disposal according to local regulations. Contaminated absorbent material may pose the same hazard as the spilled product. Dispose of via a licensed waste disposal contractor.

## Section 7: Handling and Storage

### Precautions for Safe Handling

- Protective Measures:** Put on appropriate personal protective equipment (see Section 8). Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue and can be hazardous. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth. Concentrations of mist, fumes, and vapors in enclosed spaces may result in the formation of explosive atmospheres. Excessive splashing, agitation, or heating must be avoided. During metal working, solid particles from workpieces or tools will contaminate the fluid and may cause abrasions of the skin. Where such abrasions result in penetration of the skin, first aid treatment should be applied as soon as reasonably possible. The presence of certain metals in the workpieces or tool, such as chromium, cobalt, and nickel, can contaminate the metalworking fluid, as can bacteria, and as a result may induce allergic and other skin reactions, especially if personal hygiene is inadequate.
- Advice on General Occupational Hygiene:** Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities:** Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool, well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8: Exposure Controls/Personal Protection

### Control Parameters Occupational Exposure Limits

Ingredient Name	Exposure Limits
Distillates, petroleum, hydrotreated middle	ACGIH (United States): TWA: 5 mg/m <sup>3</sup> 8hr Form: Oil mist, mineral OSHA (United States): TWA: 5 mg/m <sup>3</sup> 8hr Form: Oil mist, mineral
Triazole derivative	None

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor, or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

#### **Appropriate Engineering Controls:**

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition, and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organization for standards.

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

#### **Environmental Exposure Controls:**

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters, or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual Protection Measures Hygiene Measures:

Wash hands, forearms, and face thoroughly after handling chemical products, before eating, smoking, and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location

#### **Eye/Face Protection:**

Safety glasses with side shields

### Skin Protection Hand Protection:

Wear protective gloves if prolonged or repeated contact is likely. Wear chemical resistant gloves. Recommended: Nitrile gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposure). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions. Consult your supervisor or Standard Operating Procedure (S.O.P.) for special handling instructions.

#### **Body Protection:**

Use of protective clothing is good industrial practice. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

#### **Other Skin Protection:**

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory Protection:**

In case of insufficient ventilation, wear suitable respiratory equipment. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

## Section 9: Physical and Chemical Properties

**Appearance****Physical State****Color****Odor****Odor Threshold****pH****Melting Point****Boiling Point****Flash Point****Evaporation Rate****Flammability (solid, gas)****Lower and Upper Explosive****(flammable) Limits****Vapor Pressure****Vapor Density****Density****Solubility****Partition Coefficient: n-****octanol/water****Auto-ignition Temperature****Decomposition Temperature****Viscosity**

Liquid

Light Yellow

Mild

Not available

Not available

Not available

Not available

Open cup: 140°C (284°F) [Cleveland]

Not available

Not applicable. Based on – Physical State

Not available

Not available

Not available

<1000 kg/m<sup>3</sup> (<1 g/cm<sup>3</sup>) at 15.6°C

Insoluble in water

Not available

Not available

Not available

Kinematic: 5.2 mm<sup>2</sup>/s (5.2 cSt) at 40°C

## Section 10: Stability and Reactivity

**Reactivity:**

No specific test data available for this product. Refer to Conditions to Avoid and Incompatible Materials for additional information

**Chemical Stability:**

This product is stable

**Possibility of Hazardous Reactions:**

Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.

**Conditions to Avoid:**

Avoid all possible sources of ignition (spark or flame).

**Incompatible Materials:**

Reactive or incompatible with the following materials: Oxidizing materials.

**Hazardous Decomposition Products:**

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11: Toxicological Information

### Information on Toxicological Effects Aspiration Hazard

Name	Result
Distillates, petroleum, hydrotreated middle	ASPIRATION HAZARD – Category 1

**Information on the likely routes of exposure:** Routes of entry anticipated: Dermal, Inhalation

### Potential Acute Health Effects

**Eye Contact:** No known significant effects or critical hazards.  
**Skin Contact:** No known significant effects or critical hazards.  
**Inhalation:** Vapor inhalation under ambient conditions is not normally a problem due to low vapor pressure.  
**Ingestion:** Aspiration hazard if swallowed – harmful or fatal if liquid is aspirated into lungs.

### Symptoms related to the physical, chemical, and toxicological characteristics

#### Short Term Exposure

**Potential Immediate Effects:** Not available  
**Potential Delayed Effects:** Not available

#### Long Term Exposure

**Potential Immediate Effects:** Not available  
**Potential Delayed Effects:** Not available

#### Potential Chronic Health Effects

**General:** No known significant effects or critical hazards.  
**Carcinogenicity:** No known significant effects or critical hazards.  
**Mutagenicity:** No known significant effects or critical hazards.  
**Teratogenicity:** No known significant effects or critical hazards.  
**Developmental Effects:** No known significant effects or critical hazards.  
**Fertility Effects:** No known significant effects or critical hazards.

#### Numerical Measures of Toxicity

**Acute Toxicity Estimates:** Not available

## Section 12: Ecological Information

**Toxicity:** No testing has been performed by the manufacturer.

**Persistence and Degradability:** Expected to be biodegradable.

**Bioaccumulative Potential:** Not available

### Mobility in Soil

**Soil/Water Partition coefficient** Not available

**(K<sub>oc</sub>):**

**Mobility:** Non-volatile. Liquid. Insoluble in water

**Other Adverse Effects:** No known significant or critical hazards.

## Section 13: Disposal Considerations

**Disposal Methods:** The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions, and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

## Section 14: Transport Information

	DOT Classification	TDG Classification	IMDG	IATA
UN Number	Not regulated	Not regulated	Not regulated	Not regulated
UN Proper Shipping Name	-	-	-	-
Transport Hazard Class(es)	-	-	-	-
Packing Group	-	-	-	-
Environment Hazards	No	No	No	No
Additional Information	-	-	-	-

Special Precautions for User: Not available.

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code: Not available.

## Section 15: Regulatory Information

### U.S. Federal Regulations

United States Inventory (TSCA 8b) All components are listed or exempted.

### SARA 302/304

Composition/Information on No products were found.

### Ingredients:

### SARA 311/312

Classification: Not applicable

### SARA 313

### Form R – Reporting

### Requirements:

### Supplier Notification:

This product does not contain any hazardous ingredients at or above regulated thresholds.

This product does not contain any hazardous ingredients at or above regulated thresholds.

### State Regulations

#### Massachusetts

None of the components are listed.

#### New Jersey

None of the components are listed.

#### Pennsylvania

None of the components are listed

#### California Prop. 65

No products were found

### Other Regulations

#### Australia Inventory (AICS)

At least one component is not listed.

#### Canada Inventory

All components are listed or exempted.

#### China Inventory (IECSC)

At least one component is not listed.

#### Japan Inventory (ENCS)

Not determined.

#### Korea Inventory (KECI)

All components are listed or exempted.

#### Philippines Inventory (PICCS)

At least one component is not listed.

#### Taiwan Inventory (CSNN)

At least one component is not listed.

#### REACH Status

For the REACH status of this product, please consult your company contact, as identified in Section 1



## Section 16: Other Information

### National Fire Protection Association (U.S.A.)



### History

**Date of Issue/Date of Revision** 02/10/2016  
**Date of Previous Issue** 09/18/2015  
**Prepared By** Product Stewardship

### Key to Abbreviations

ACGIH = American Conference of Industrial Hygienists  
ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
CAS Number = Chemical Abstracts Service Registry Number  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
OEL = Occupational Exposure Limit  
SDS = Safety Data Sheet  
STEL = Short term exposure limit  
TWA = Time weighted average  
UN = United Nations  
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.  
Varies = may contain one or more of the following 101316-69-2, 101316-70-5, 101316-71-6, 101316-72-7, 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64741-97-5, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-64-9, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1, 74869-22-0, 90669-74-2

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