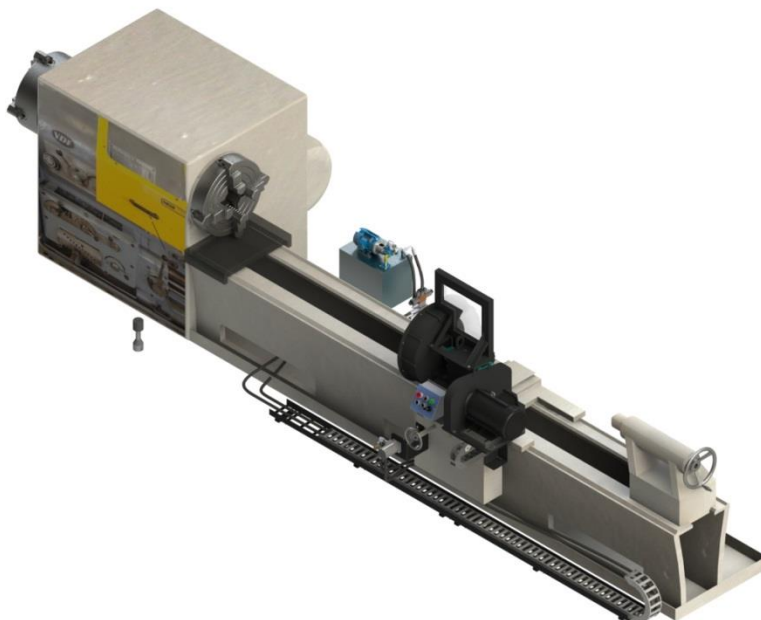


# HUB CITY IRON WORKS VDF Lathe Grinder

## Operation and Maintenance Manual



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Customer: \_\_\_\_\_  
Location: \_\_\_\_\_  
Serial #: \_\_\_\_\_  
Job#: \_\_\_\_\_  
Local Rep: \_\_\_\_\_  
Rep Phone: \_\_\_\_\_

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### Service

Call: 337.334.6969

Email: [servicerequest@hubcityironworks.com](mailto:servicerequest@hubcityironworks.com)

### Spare Parts

Call: 337.334.6969

Visit: [www.hubcityironworks.com](http://www.hubcityironworks.com)

### Sales

Call: 337.334.6969

Email: [sales@hubcityironworks.com](mailto:sales@hubcityironworks.com)

## Introduction

### VDF Lathe Grinder 900-000-032-00

The Hub City Iron Works Lathe Grinder is designed and manufactured for the heavy duty grinding of carbide tools. As the name suggests, the grinder can be mounted to a lathe to facilitate the grinding process. It can be sold individually or in combination with custom fabrication for attachment to existing machines.

## Safety

Hub City has provided operating procedures and safety information to ensure the wellbeing of both the operator and the equipment.

This operating manual contains important safety information - please read it thoroughly.

### Safety Features Include:

- Safety guards
- Equipment safety labels.



## Machine Specifications

### Standard Features

- 20" x 3" Silicon Carbide grinding stone (1.75" Arbor)
- 5 HP 220/480V electric motor (1170 RPM)
- Wheel speed: Approximately 1,900 RPM (7,000 SFM)

### Optional Features

- Hydraulic powered feed for increased control
- Protective Way Bellow

### Specifications

- 14" Max OD of work piece
- Dimensions
  - Length 22'-0"
  - Width 5'-6"
  - Height 5'-6"

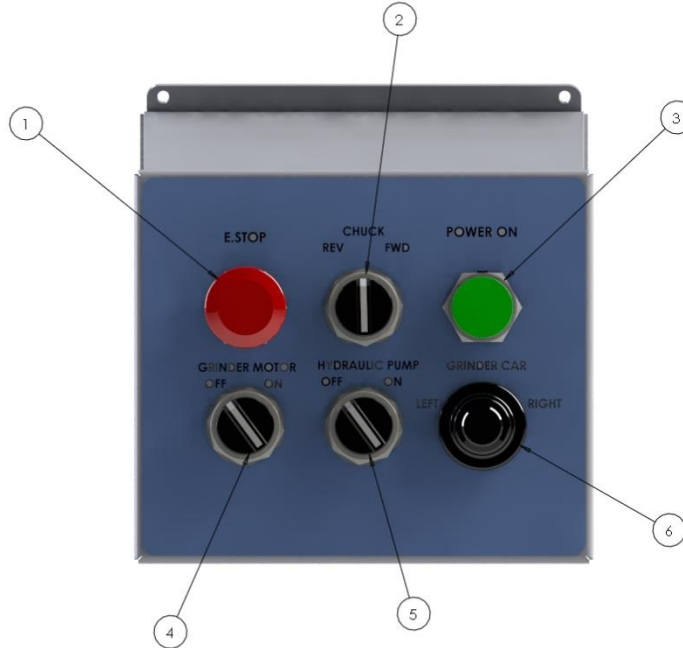
### Plant Requirements

- 220/480V, 3 Phase, 60 Hz
- Adequate ventilation for carbide grinding process
- Respirators for operators and personnel nearby

## Machine Setup

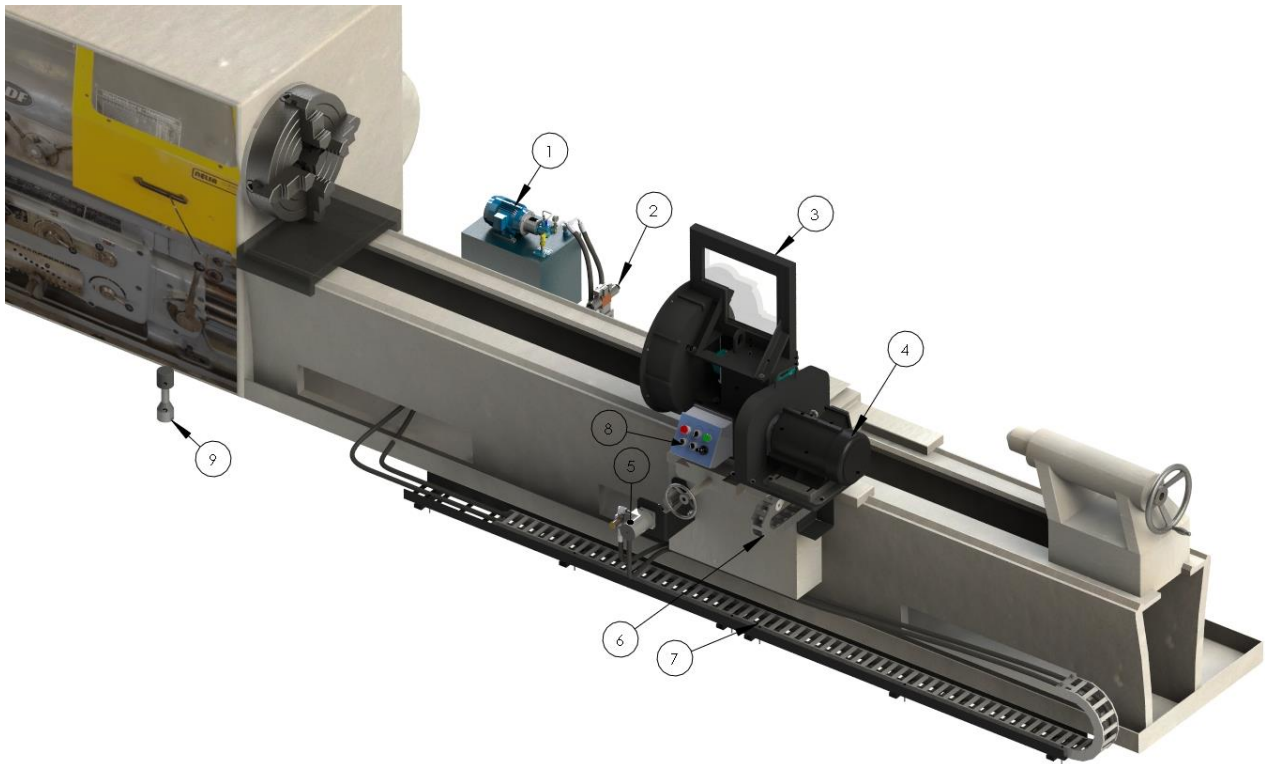
1. Machine to be installed on concrete level surface and leveled to within  $\pm 0.125''$
2. Anchor machine securely to concrete

## Controls



	<u>Function</u>	<u>Description</u>
1	Emergency Stop	Stops all movement of machine
2	Chuck Rotation	Rotates chuck CW or CCW
3	Power Indication	Displays when power is on
4	Grinder Motor	Turns grinder on
5	Hydraulic Pump	Turns hydraulic pump on for feed
6	Grinder Car	Moves carriage left or right

## Equipment



	<u>Function</u>	<u>Description</u>
1	Hydraulic Power Unit	Supplies power to hydraulic motor
2	Valve Stack	Controls flow to hydraulic motor
3	Grinding Assembly	Grinding assembly w/ guards
4	Electric Motor	5HP electric motor powers grinder
5	Hydraulic Motor	Provides power to feed carriage
6	Cross Slide E-Chain	Carries power to electric motor
7	Large E-Chain	Carries power (Electric/Hydraulic)
8	Controls	Operator controls
9	ID Grinding Adapter	Screw on adapter for ID grinding

## Process Setup

1. Verify all hardware components are tightened securely
2. Make sure all supplied guards are in position
3. Ensure grind stones being used are rated for at least the maximum RPM of the Spindle (2,000 RPM)
4. Inspect stones for damage (DO NOT USE STONES IF DAMAGED OR CRACKED)
5. Ensure work area is clear and everyone has appropriate safety equipment. (Face shield, respirator etc.)
6. Move grinder to appropriate location relative to work piece
7. Turn grinder on and begin to make shallow passes on work piece until desired diameter is reached
8. If ID grinding is to be performed, remove stone guard from machine and screw ID grinding adapter onto spindle. (ALWAYS APPLY ANTI-SEIZE BEFORE ATTACHING). Repeat steps 1-6

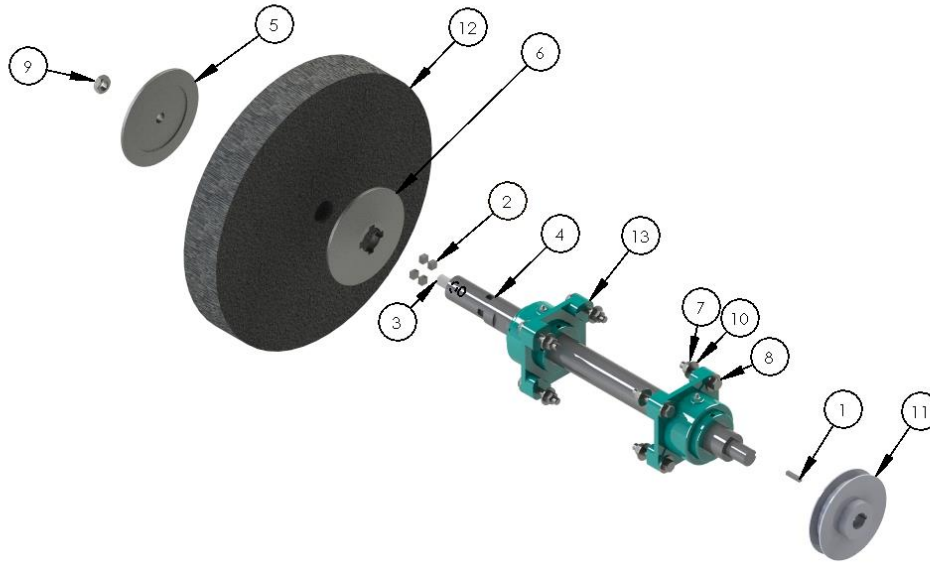
## Troubleshooting Guide

<b>Problem</b>	<b>Corrective Action</b>
Grinding/Lathe won't turn on	Verify power is supplied to machine
Grinder Vibrates excessively	<ul style="list-style-type: none"><li>• Balance grinding stone</li><li>• Remove uneven surfaces w/ dresser</li></ul>
Cross slide is difficult to move	Remove debris from ways
Carriage is difficult to move	Remove debris from ways

# Parts List

## Bearing/Spindle Assembly

Revision: A

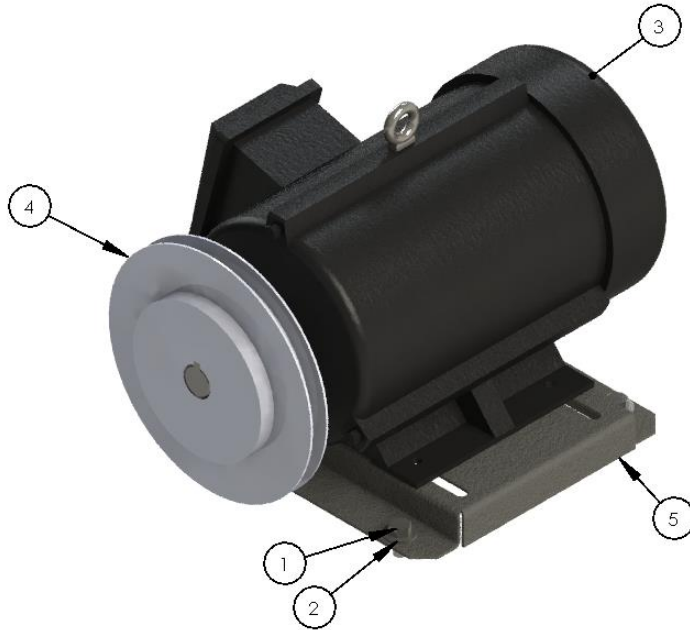


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	900-100-714-XXX	.25" KEY	1
2	900-100-870-XXX	.5" KEY	4
3	900-100-884-XXX	SPINDLE ATR	1
4	900-100-942-012	SHAFT, 20" WHEEL, VDF	1
5	900-250-003-018	LOOSE FLANGE_20" WHEEL	1
6	900-250-004-018	FIXED FLANGE_20" WHEEL	1
7	14124	NUT, HEX, .5" NC	8
8	14360	BOLT, HHCS, .50" X 3" NC GR5	8
9	16520	NUT, JAM, .75" NC	1
10	17649	WASHER, FLAT, .50"	16
11	28556	V-PULLEY	1
12	44588	STONE, GRINDING 20" X 3"	1
13	46053	BEARING, FLANGE	2



# Motor Assembly

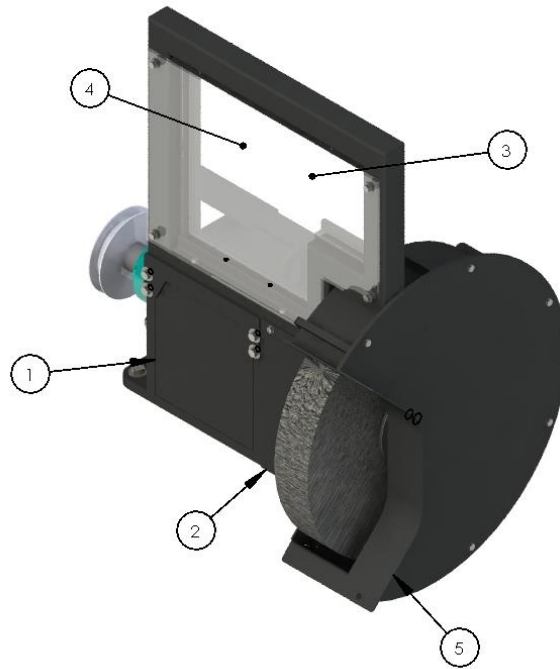
Revision: A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	14358	BOLT, HHCS, .50" X 1" NC GR5	4
2	17649	WASHER, FLAT, .50"	4
3	28381	MOTOR, 5 HP 3-PHASE	1
4	28557	V PULLEY	1
5	28559	NEMA BASEPLATE	1

# Grinding Assembly

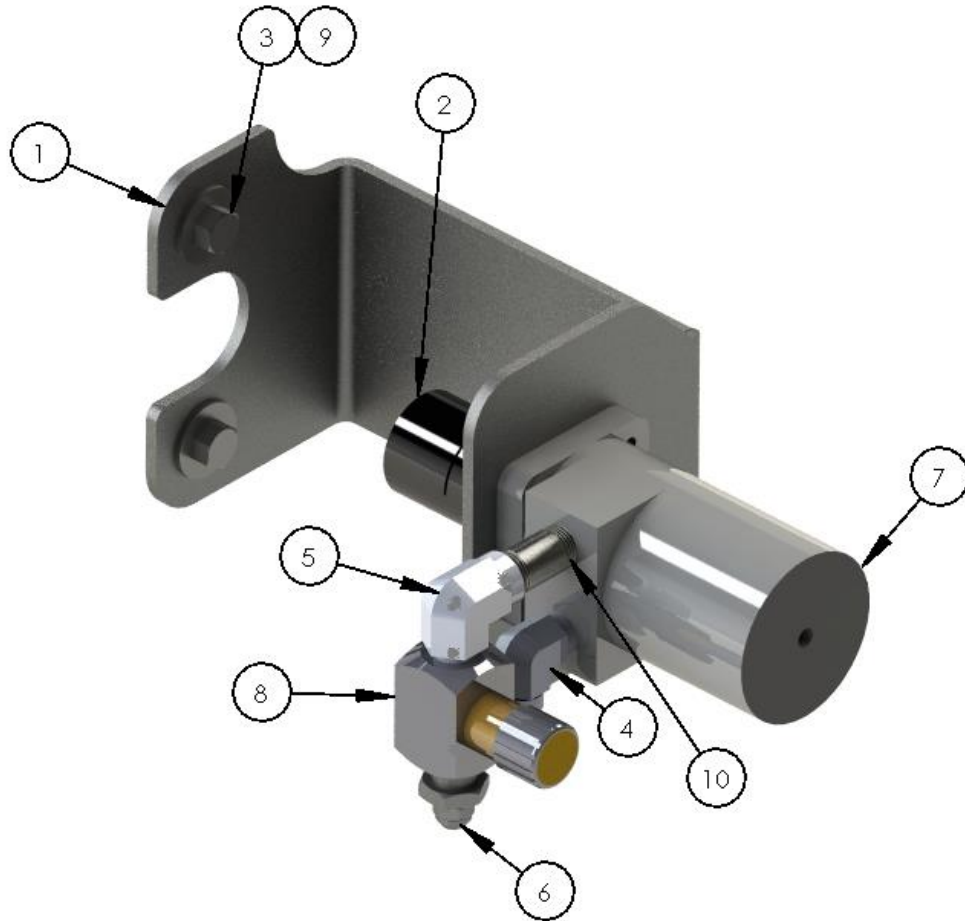
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	900-100-916-018	SHAFT GUARD, VDF	1
2	900-100-923-018	PROTECTION SHEET	1
3	900-100-927-XXX	BULLET RESISTANT PLEXIGLASS SHIELD, VDF	1
4	900-100-941-XXX	GLASS PROTECTOR	1
5	900-700-346-00	20" GRINDER COVER W/ EXTENSION	1

## Hydraulic Motor Asm

Revision: A




ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	900-100-926-018	MOTOR BRACKET, VDF LATHE	1
2	14000	1" x 3" RIGID SHAFT COUPLING	1
3	14358	BOLT, HHCS, .50" X 1" NC GR5	2
4	15583	#8 MNPT X #8 MJIC 90° ELBOW, 2024-8-8, (8-8 CTX-S)	1
5	15622	# 8 FNPT X # 8 MNPT 90° ELBOW, (2089-8-8)	1
6	15648	# 8 MNPT X # 8 MJIC ADAPTOR, (2021-8-8)	1
7	16390	CHARLYNN HYDRAULIC MOTOR P/N - 101-1002-009	1
8	17639	VALVE, HYD, N800S NEEDLE	1
9	17655	WASHER, FLAT, .5625"	2
10	41435	NIPPLE, .50" X 2.50" SCH80 3000# PSI 7733K104	1

## Recommended Spare Parts

<b>Level A Items (Frequent)</b>		
<b>Part #</b>	<b>Description</b>	<b>Qty</b>
44588	20" x 3" Grinding Stone	2
43144	3 X 2 X 5/8-11 ID Plug Wheel	2
900-100-941-XXX	Glass Protector	1
<b>Level B Items (Moderate)</b>		
46053	Spindle Bearing	2
28556	Small Pulley	1
28557	Large Pulley	1
900-100-942-012	Spindle	1
900-100-895-012	ID Grinding Adapter	1
900-250-004-018	Fixed Flange	1
900-250-003-018	Loose Flange	1
<b>Level C Items (Intermittent)</b>		
16390	Hydraulic Motor	1
45592	Hydraulic Power Supply	1
28381	5HP Electric Motor	1

**Preventative Maintenance**

	<b>VDF Lathe Grinder</b>			
	<i>Interval</i>			
	<i>Daily</i>	<i>Weekly</i>	<i>Quarterly</i>	<i>Yearly</i>
Clean Ways	X			
Inspect for hydraulic leaks	X			
Inspect stones for damage (Do not use stones if damaged)	X			
Dress & Balance Stone (Before operation of machine)	When needed			
Ensure gibs are snug against ways		X		
Align pulleys		X		
Grease spindle bearings		X		