

INSTRUCTIONS AND PARTS MANUAL

CBP-3000, CBP-4000 CIRCLE BURNER

Please record your equipment identification information below for future reference. This information can be found on your machine nameplate.

Model Number _____

Serial Number _____

Date of Purchase _____

Whenever you request replacement parts or information on this equipment, always supply the information you have recorded above.

LIT-CBP3-CBP4-IPM-0218

Bug-O Systems is guided by honesty, integrity and ethics in service to our customers and in all we do.



BUG-O SYSTEMS

A DIVISION OF WELD TOOLING CORPORATION



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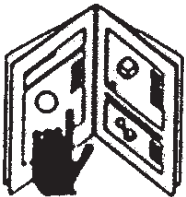
SAFETY

PROTECT YOURSELF AND OTHERS FROM SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. BE SURE THAT ALL INSTALLATION, OPERATION, MAINTENANCE AND REPAIR PROCEDURES ARE PERFORMED ONLY BY QUALIFIED INDIVIDUALS.



ELECTRIC SHOCK CAN KILL.

- 1) The equipment is not waterproof. Using the unit in a wet environment may result in serious injury. Do not touch equipment when wet or standing in a wet location.
- 2) The unused connectors have power on them. Always keep the unused connectors covered with the supplied protective panels. Operation of the machine without the protective panels may result in injury.
- 3) Never open the equipment without first unplugging the power cord or serious injury may result.
- 4) Verify the customer supplied power connections are made in accordance with all applicable local and national electrical safety codes. If none exist, use International Electric Code (IEC) 950.
- 5) Never remove or bypass the equipment power cord ground. Verify the equipment is grounded in accordance with all applicable local and national electrical safety codes. In none exist, use International Electric Code (IEC) 950.



READ INSTRUCTIONS.

Read the instruction manual before installing and using the equipment.



EQUIPMENT DAMAGE POSSIBLE.

- 1) Do not plug in the power cord with out first verifying the equipment is OFF and the cord input voltage is the same as required by the machine or serious damage may result.
- 2) Always verify both the pinion and wheels are fully engaged before applying power or equipment damage may occur.
- 3) Do not leave the equipment unattended.
- 4) Remove from the work site and store in a safe location when not in use.



FALLING EQUIPMENT can cause serious personal injury and equipment damage.

Faulty or careless user installation is possible. As a result, never stand or walk underneath equipment.



MOVING PARTS can cause serious injury.

- 1) Never try to stop the pinion from moving except by removing power or by using the STOP control.
- 2) Do not remove any protective panels, covers or guards and operate equipment.

HIGH FREQUENCY WARNINGS

SPECIAL PRECAUTIONS ARE REQUIRED WHEN USING PLASMA, TIG OR ANY WELDING PROCESS THAT USES HIGH FREQUENCY TO STRIKE AN ARC.



WARNING: HIGH FREQUENCY CAN EFFECT MACHINE OPERATION AND THEREFORE, WELD QUALITY.

Read the precautions below before installing and using the equipment.

PRECAUTIONS:

- 1) Some plasma or welding cables are strong sources of high frequency interference. NEVER lay a plasma or welding cable across the controls of the machine.
- 2) Always physically separate the plasma or welding cable leads from the machine cables. For example, the plasma or welding cable leads should NEVER be bundled with a pendant cable or the machine power cord. Maximize the separation between any machine cables and the plasma or welding cables.
- 3) Strictly follow the grounding procedures specified for the plasma or welding unit. NOTE: Some plasma and welding units produce exceptionally large amounts of high frequency noise. They may require a grounding rod be driven into the earth within six feet (2 meters) of the plasma or welding unit to become compatible with an automatic cutting or welding process.
- 4) If the high frequency is produced using a spark gap, adjust the points so the gap is as small as possible. The larger the gap, the higher the voltage and the higher the interference.
- 5) Some plasma or welding units will inject high frequency interference into the AC power line. Use separate power line branches whenever possible to power the plasma or welding source and the machine. Do not plug them into the same outlet box.
- 6) High frequency noise may enter the machine through the plasma or welding supply remote contactor leads. Some plasma and welding sources can produce noise spikes of up to several thousand volts. These sources are not compatible with automated cutting and welding equipment. It is recommended that the remote contactor leads on these plasma or welding sources not be connected to the machine. An alternate solution is to purchase a separate remote contactor isolation box.

CBP-3000, CBP-4000 CIRCLE BURNER

INSTRUCTIONS AND PARTS MANUAL

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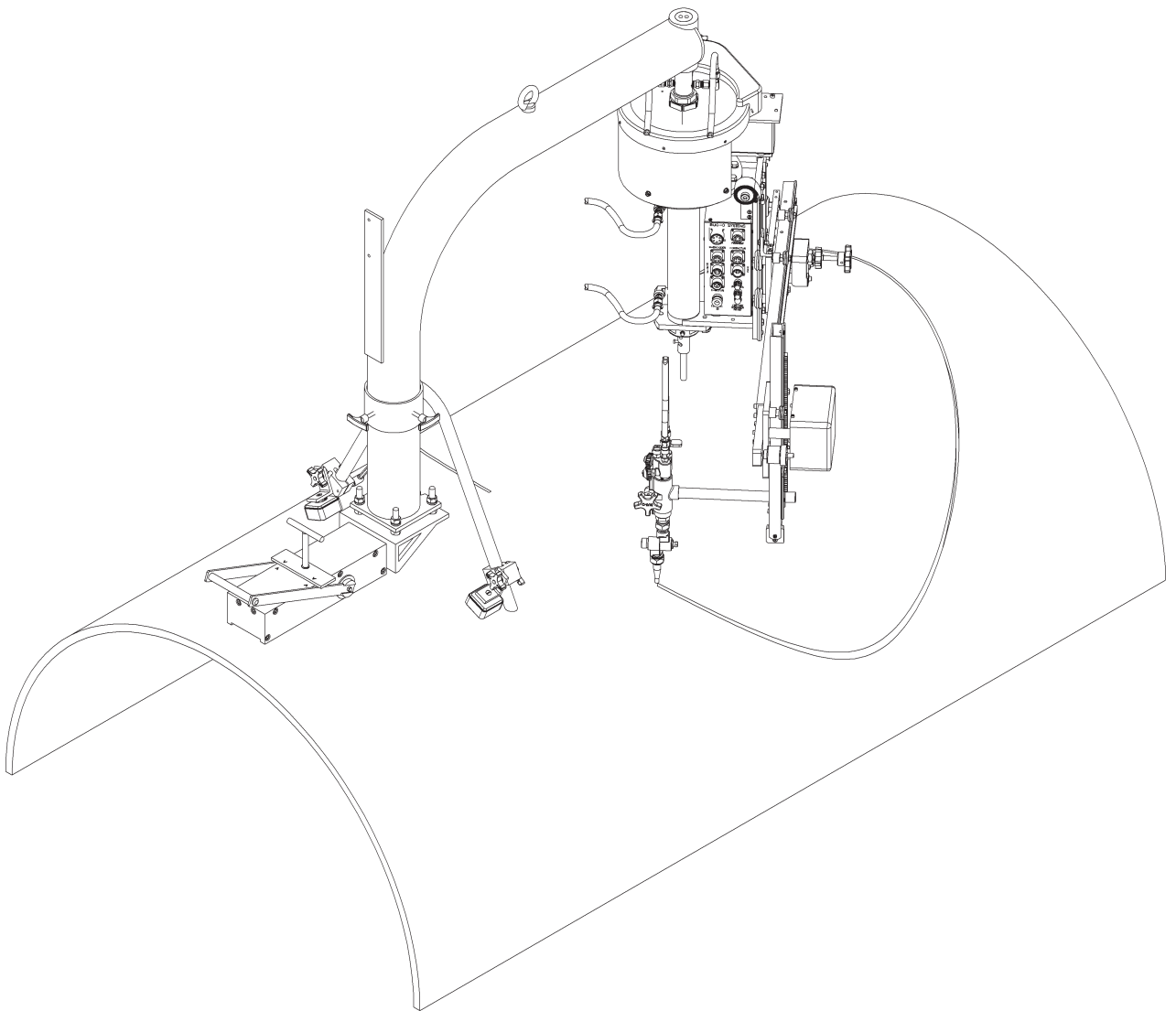
INTRODUCTION

The CBP-3000 (CBP-3002) Circle Burner uses oxy-fuel for square or beveled hole cuts using a single cutting pass. The CBP-3000 is mounted on a special frame with a releasable permanent magnet base specially designed for use on vessels and large diameter pipe.

The CBP-4000 (CBP-4002) Circle Burner also uses oxy-fuel for single pass, square or beveled hole cuts. Mounted on a column and boom, manipulator or fixture, the CBP-4000 is designed for use on vessels, large diameter pipe, domed heads and flat plate.

FEATURES

- 1-1/2 h.p. P.M. Motor and rotational speed control
- Rotation speed of 0.1-2 r.p.m.
- 100% duty cycle
- Adjustable vertical and horizontal torch positioning system
- 2 hose machine torch w / tip adjuster, includes tips
- Cutting capacities: 1.5"- 42" (38-1067 mm) bevel cut holes, 4"- 48" (102-1219 mm) square cut holes
- Brushes and collector rings for all controls, eliminates cable and hose wrap
- Encoder controlled rise and fall of torch



SETUP AND OPERATION

All page numbers referred to in this section are from this manual unless otherwise specified.

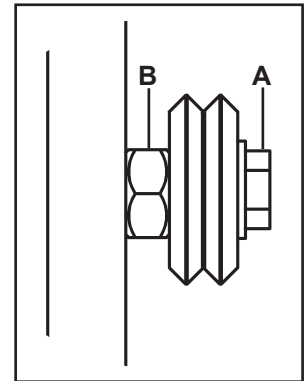
POWER SUPPLY: CBP-3000, CBP-4000 use standard 120/50-60/1 VAC.
CBP-3002, CBP-4002 use 220/50-60/1 VAC.

OXY-FUEL CUTTING TORCH: The CBP-3000, CBP-4000 Circle Burner is equipped with a Victor 2-Hose Machine Oxy-Fuel Torch model 204-A w/rack. Refer to the Victor Oxy-Fuel Cutting Torch instruction manual supplied with this machine for general operation and set-up information.

FIXTURING: The CBP-4000 series of circle burners have to be fixtured in some manner from the top of the shaft. This may be achieved in one of the following; column & boom, manipulator or a fixture devise.

OXYGEN / FUEL CONNECTIONS: The CBP-3000, CBP-4000 Circle Burner is designed to accept standard oxy-fuel hose fitting connections. These connections are located at the top of the shaft on all models.

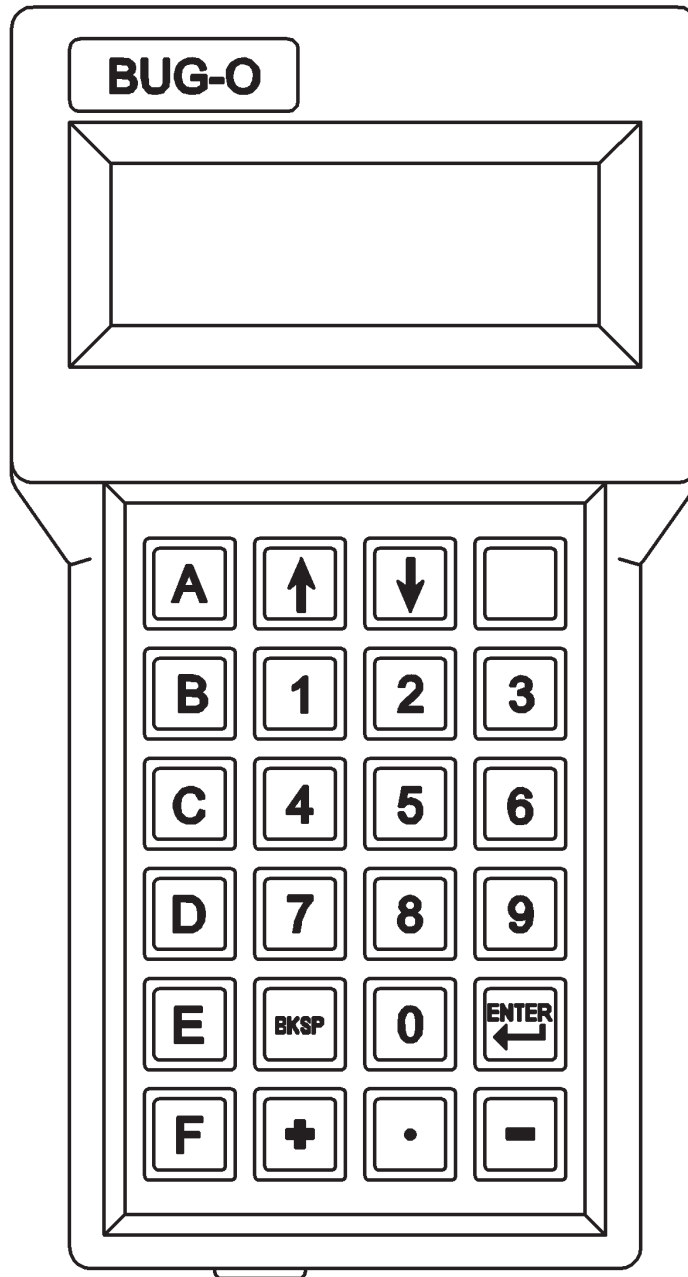
WHEEL ADJUSTMENT: The CBP-3000, CBP-4000 Racking System is equipped with adjustable wheels. Always check these components for proper wheel adjustment before using the machine. The wheels need adjustment if you can cock or wiggle the components out of alignment. The wheels should be snug but not prohibit movement along the path of travel. The wheels with the hex stand off are adjustable. To adjust the wheels loosen the hex bolt (A) until the adjustable bushing (B) can be rotated. Correct the wheel alignment by rotating the adjustable bushing (B). Once adjusted, hold the adjustable bushing (B) while tightening the hex bolt (A). Recheck alignment.



MACHINE CONTROLS: Various speed and directional capabilities can be controlled using the CBP-1550 Control Box. Please refer to CBP-1550 Control Box (page 12) section in this manual.

BUG-6050 PENDANT CONTROL

The handheld terminal with keypad and text display or pendant control is used for entering the dimension and weld parameter data. It plugs into the Pendant connection on the CBP-1550 control box.



ALPHA KEYS: Press keys A, B, C, D, E, or F for the desired program function.

DIGIT KEYS: Use the digit keys to enter pipe diameters or dimensions.

ENTER: Push the enter button to store the numeric value keyed.

BACKSPACE: The backspace key removes the last digit keyed in before pushing the enter button, if a correction is required.

SHIFT: The blank key at the top right corner of the keypad is the SHIFT key. Use this key to access additional programming options.

ARROW KEYS: Used to Jog vertical axis during auto-run program to set new torch position.

PROGRAMMING

ALPHA KEYS

Dimensions and weld parameter data is entered on the handheld terminal with keypad and text display. The alpha keys used are listed below, with their functions:

- A:** To enter dimensions.
- C:** To change Program Number in memory (0 – 99).
- D:** To display all programmed parameters for the current program.
- E:** To enter the number of passes (1 – 99)
- F:** To enter the start angle, so cut can start at the preferred point around the joint (see page 12).

Three other useful key functions are:

- Shift 9:** Set units, english (inch) or metric (meters)
- Shift 8:** Test drives & encoders
- Shift E:** Version number (have this information ready when calling for service)

DATA REQUIRED

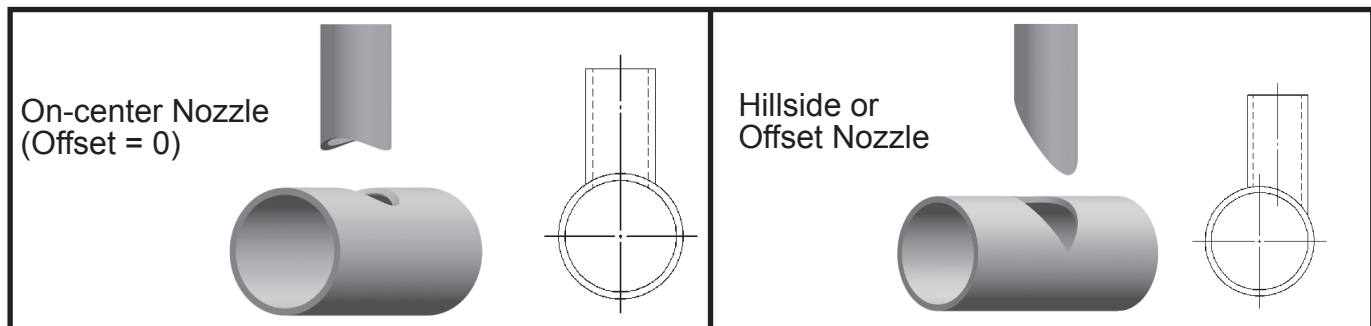
The following five (5) parameters are entered for each program:

1. Small diameter (diameter of cut) - inches X 100 or mm X 10.
2. Large diameter (work O.D.) - inches X 100 or mm X 10.
3. Offset - inches X 100 or mm X 10. Enter "0" if nozzle is on centerline of vessel.
4. Overlap (additional rotation on end of pass) - degrees X 100.
5. Start Angle - degrees X 100. Enter "0" for top dead center.

In addition, background parameters that are retained for all programs, and are individually set are:

- Number of Passes (when multiple passes required. Default setting is 1).

NOTE: If the STOP / RESUME button is pressed, the machine will be in pause mode, and cannot be programmed. Press the RESET button to get back to the ready mode for programming.



PROGRAMMING, CONT'D.

DATA ENTRY

When entering data with the pendant keypad, multiply inches, degrees, or seconds by 100 and enter the number without a decimal point. For metric dimensions, multiply mm X 10 or cm X 100.

Example: 350 for 3.5 inches,
 800 for 80 mm, on metric machines

Press "ENTER" on the keypad after the number is entered.

SAVING PROGRAMS

The machine has 100 storage areas or cut programs, numbered 0 to 99 in memory. Push the "C" button on the pendant keypad to change (or set) the program number and enter the desired number. Program data is retained until reprogrammed. At any time, one of these numbers is selected, it will stay selected even when power is shut off and turned back on, it will not change until the program number is changed by the operator. Settings for time delay and number of passes are not saved as part of a program.

MAKING A CUT:

1. Position the torch to the starting location using the CWP-1635 Racking System. Ensure that the torch is at the appropriate position, standoff distance and angle.
2. Ignite torch. Refer to the torch manufacture instructions.
3. Preheat the spot where the cut is to be started. Before cutting action can start, the base metal must be preheated to a bright cherry red. When the red spot appears, depress the cutting oxygen lever slowly and firmly.
4. Start cutting rotation (forward or reverse) by pressing the Cycle Start button ("L" on pg. 12) located on the CWP-1550 Control Box.
5. The machine will then run the complete cut program.

WARNING: IT IS NECESSARY TO USE CORRECT EYE, HEAD, AND BODY PROTECTION.

TECHNICAL DATA: CBP-3000 CIRCLE BURNER

Rotation speed: 0.1 - 2 r.p.m.

Cam Range: 0 - 7" (0 - 178 mm)

Cutting Radius:

For Square Cut Holes: 2" - 24" (51 - 610 mm)

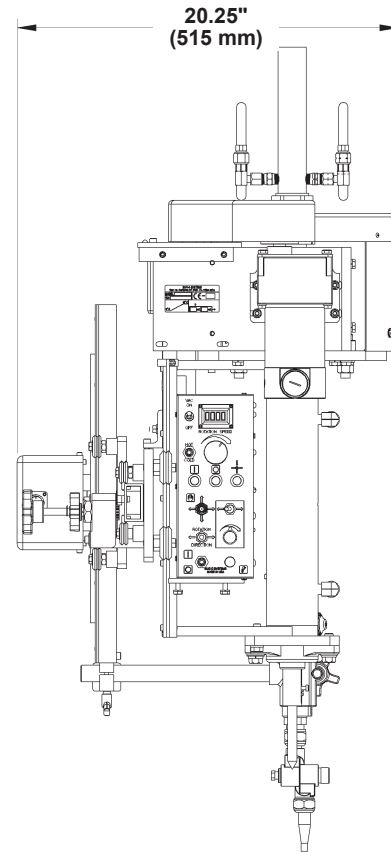
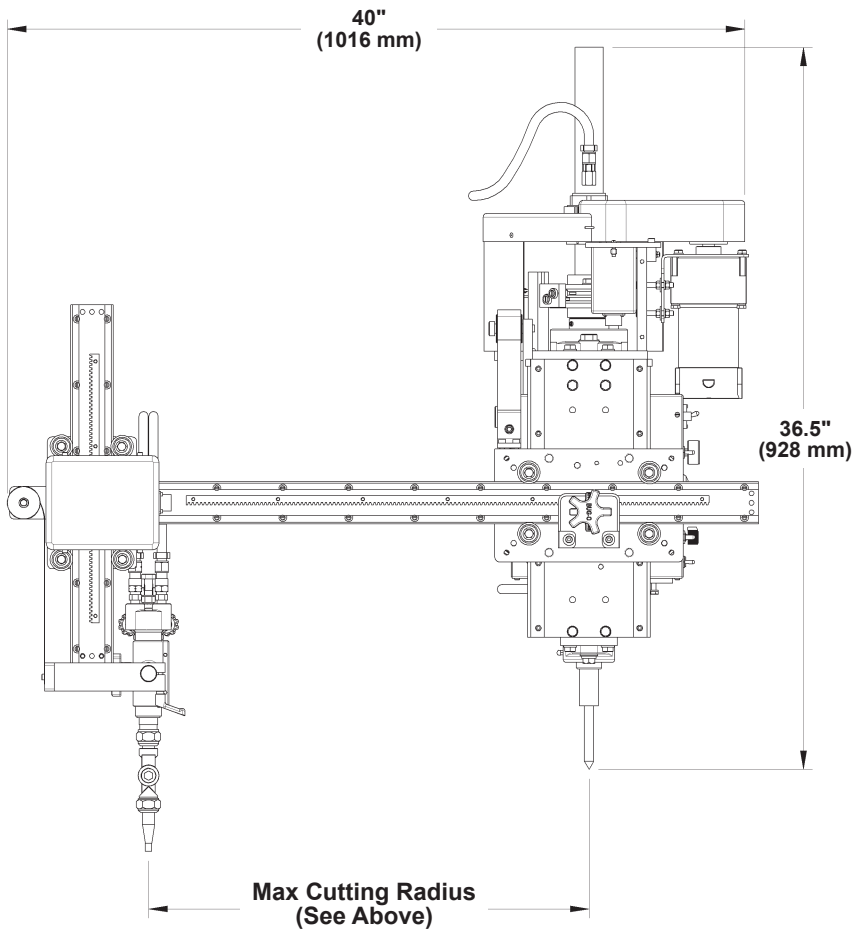
For Bevel Cut Holes: 0.75" - 21" (20 - 534 mm)

Height: 34.5" (877 mm)

Net Weight: 125 lbs. (56.7 kg)

Shipping weight: 230 lbs. (104.3 kg)

DIMENSIONS:



TECHNICAL DATA: CBP-4000 CIRCLE BURNER

Rotation speed: 0.1 - 2 r.p.m.

Cam Range: 0 - 7" (0 - 178 mm)

Cutting Radius:

For Square Cut Holes: 2" - 24" (51 - 610 mm)

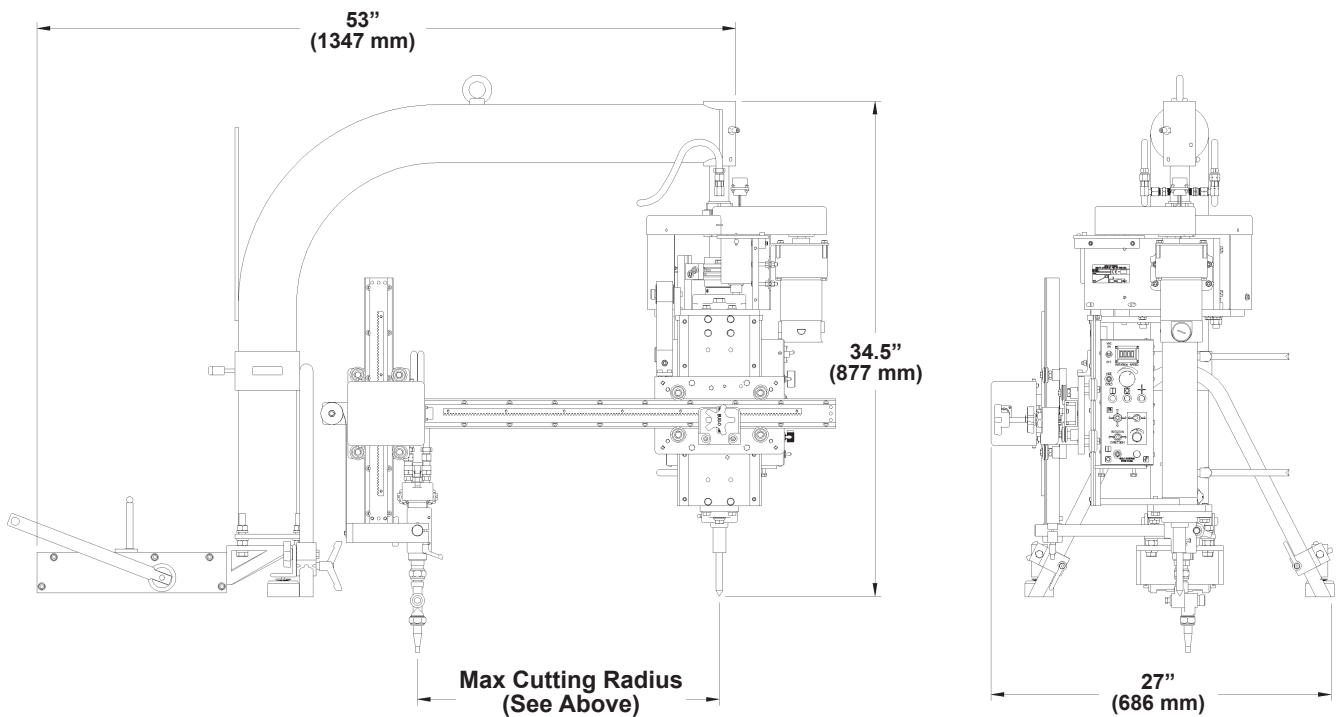
For Bevel Cut Holes: 0.75" - 21" (20 - 534 mm)

Height: 37" (940 mm)

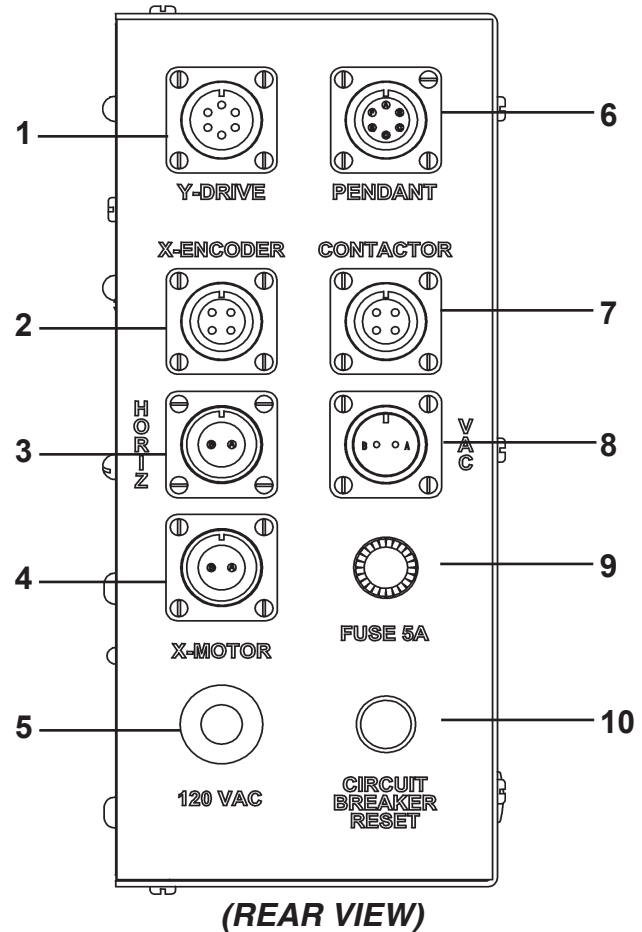
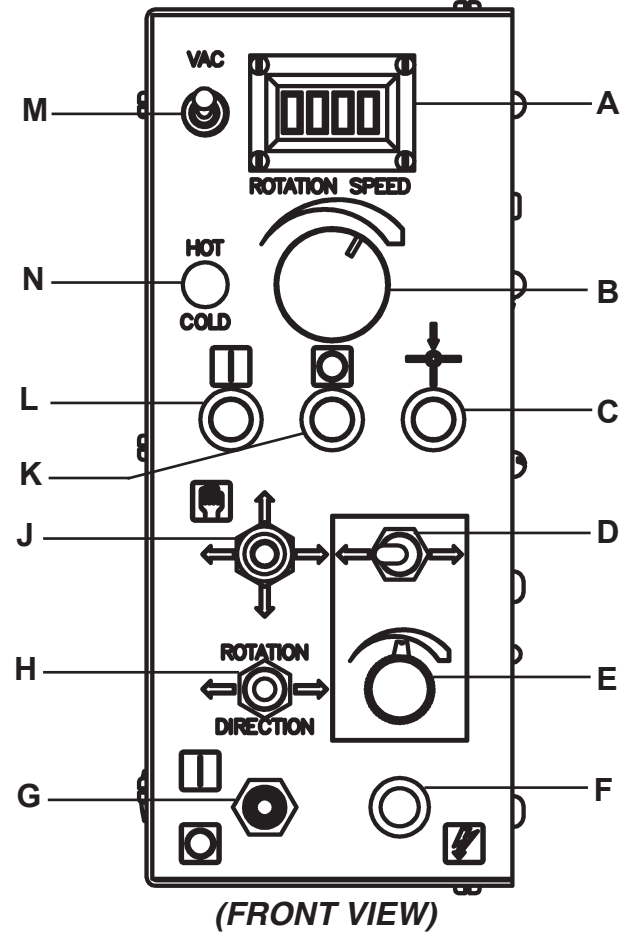
Net Weight: 210 lbs. (95.3 kg)

Shipping weight: 290 lbs. (132 kg)

DIMENSIONS:



CBP-1550-F CONTROL BOX

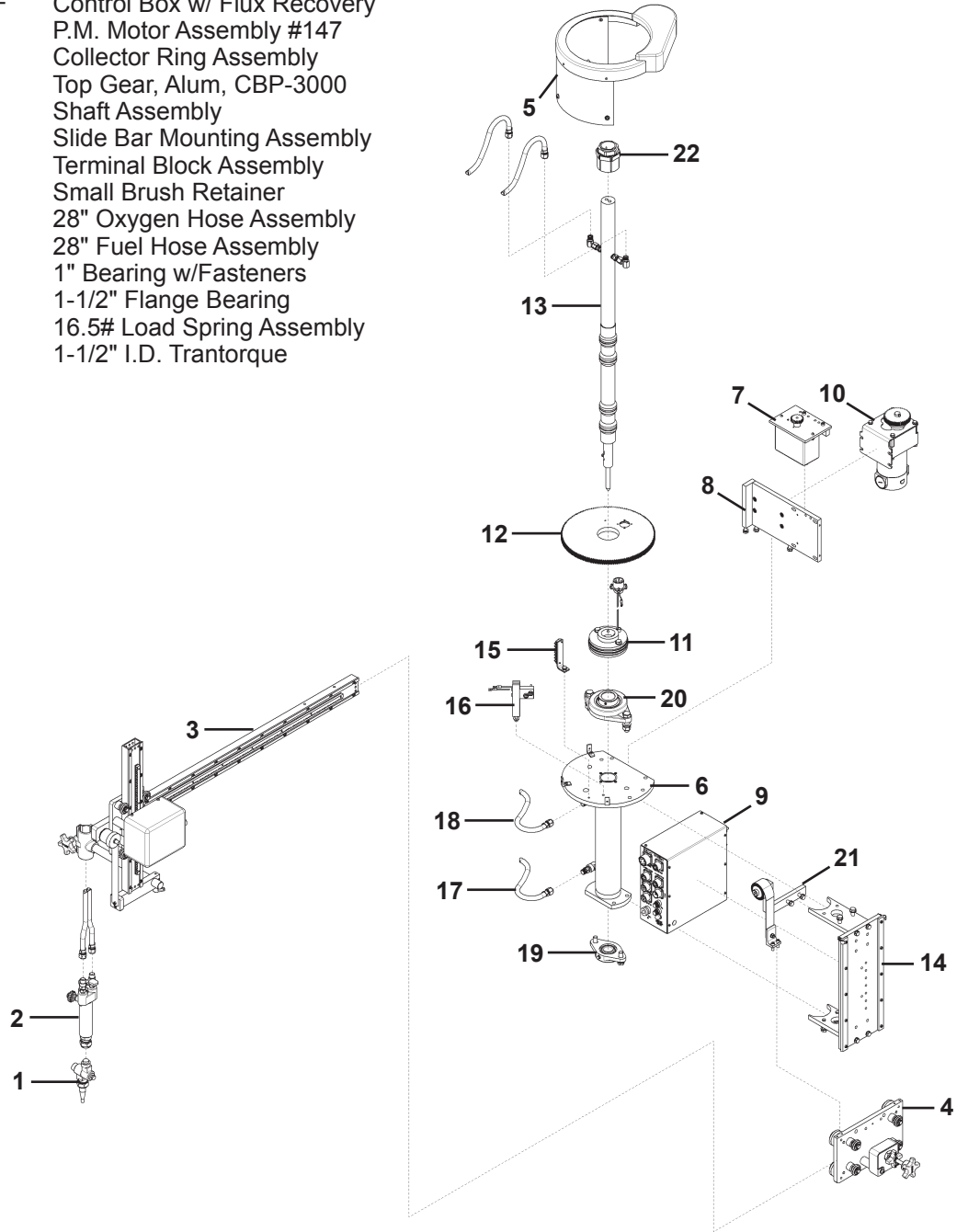


- A. **DIGITAL READOUT** - Displays rotation speed as a reference value.
- B. **SPEED CONTROL** - Increases or decreases the rotation speed.
- C. **RESET** - Resets Home or weld start position.
- D. **HORIZONTAL JOG** - Drives the horizontal racker left and right.
- E. **HORIZONTAL SPEED CONTROL** - Increases or decreases speed of horizontal racker.
- F. **PILOT LIGHT** - Illuminated when power is ON to rotation control box.
- G. **ON/OFF SWITCH** - Enables / disables power to the rotation control box.
- H. **ROTATION DIRECTION SWITCH** - Changes rotation direction.
- J. **MANUAL JOG** - Manually drives the torch tip while machine is stopped or paused.
- K. **STOP/PAUSE** - Stops cut program and rotation.
- L. **START/RESUME** - Starts cut program and rotation.
- M. **VAC** - On/Off switch for flux recovery vacuum (welding models only).
- N. **HOT/COLD SWITCH** - Changes whether the rotation control uses the wire feeder (welding models only).

- 1. **Y-DRIVE** - Connects to Vertical Racking Motor
- 2. **X-ENCODER** - Connects to Encoder
- 3. **HORIZ** - Connects to Horizontal Racker Motor
- 4. **X-MOTOR** - Connects to Terminal Block Assembly
- 5. **120 VAC** - Input power
- 6. **PENDANT** - Connects to Pendant
- 7. **CONTACTOR** - Connects to welding power source.
- 8. **VAC** - Connects to vacuum pump for flux recovery.
- 9. **FUSE** - Access to 5 Amp fuse.
- 10. **CIRCUIT BREAKER RESET** - Press to reset circuit breaker after overload.

CBP-3000 CIRCLE BURNER / EXPLODED VIEW / PARTS LIST

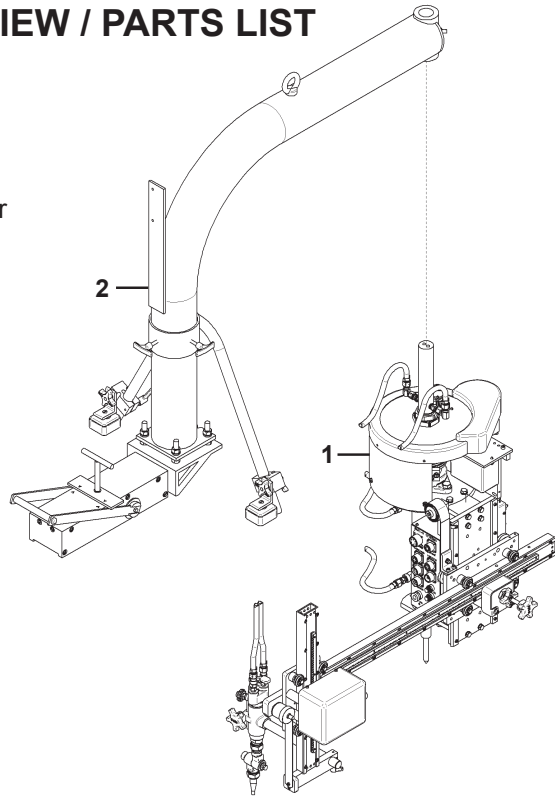
<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	BUG-1259	Adjustable Tip Adaptor
2	1	BUG-1298	2-Hose Mechanical Torch
3	1	CWP-1635	Racking Group
4	1	CWO-1690	Large Horizontal Racker
5	1	CWO-3137	Plastic Guard Assembly
6	1	CWO-3193	Housing Assembly
7	1	CBP-1595	Encoder Assembly
8	1	CWO-3358	Motor & Transmission Plate Assembly
9	1	CBP-1550-F	Control Box w/ Flux Recovery
10	1	CWO-3361	P.M. Motor Assembly #147
11	1	CWO-3366	Collector Ring Assembly
12	1	CWO-3445	Top Gear, Alum, CBP-3000
13	1	CWO-3501	Shaft Assembly
14	1	CWO-3920	Slide Bar Mounting Assembly
15	CWO-3935	Terminal Block Assembly	
16	1	CWO-3960	Small Brush Retainer
17	1	CWO-3996	28" Oxygen Hose Assembly
18	1	CWO-3997	28" Fuel Hose Assembly
19	1	CWO-4050	1" Bearing w/Fasteners
20	1	CWO-4340	1-1/2" Flange Bearing
21	1	CWO-4910	16.5# Load Spring Assembly
22	1	CWO-5074	1-1/2" I.D. Trantorque



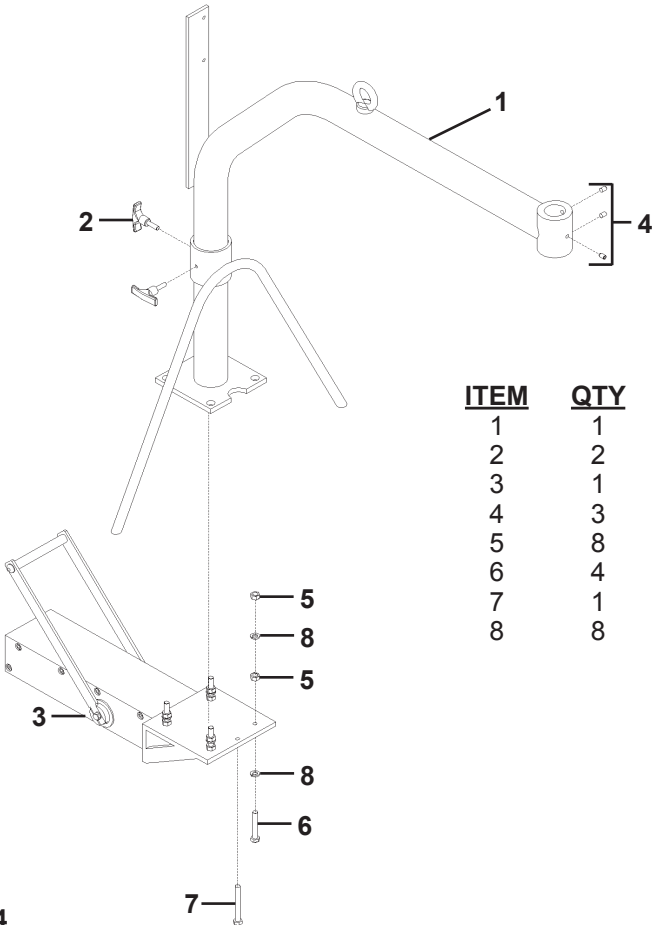
CBP-4000 CIRCLE BURNER / EXPLODED VIEW / PARTS LIST

<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	CBP-3000*	Programmable Circle Burner
2	1	CBO-3073	CB-2 Frame

* See page 13 for exploded view / parts list

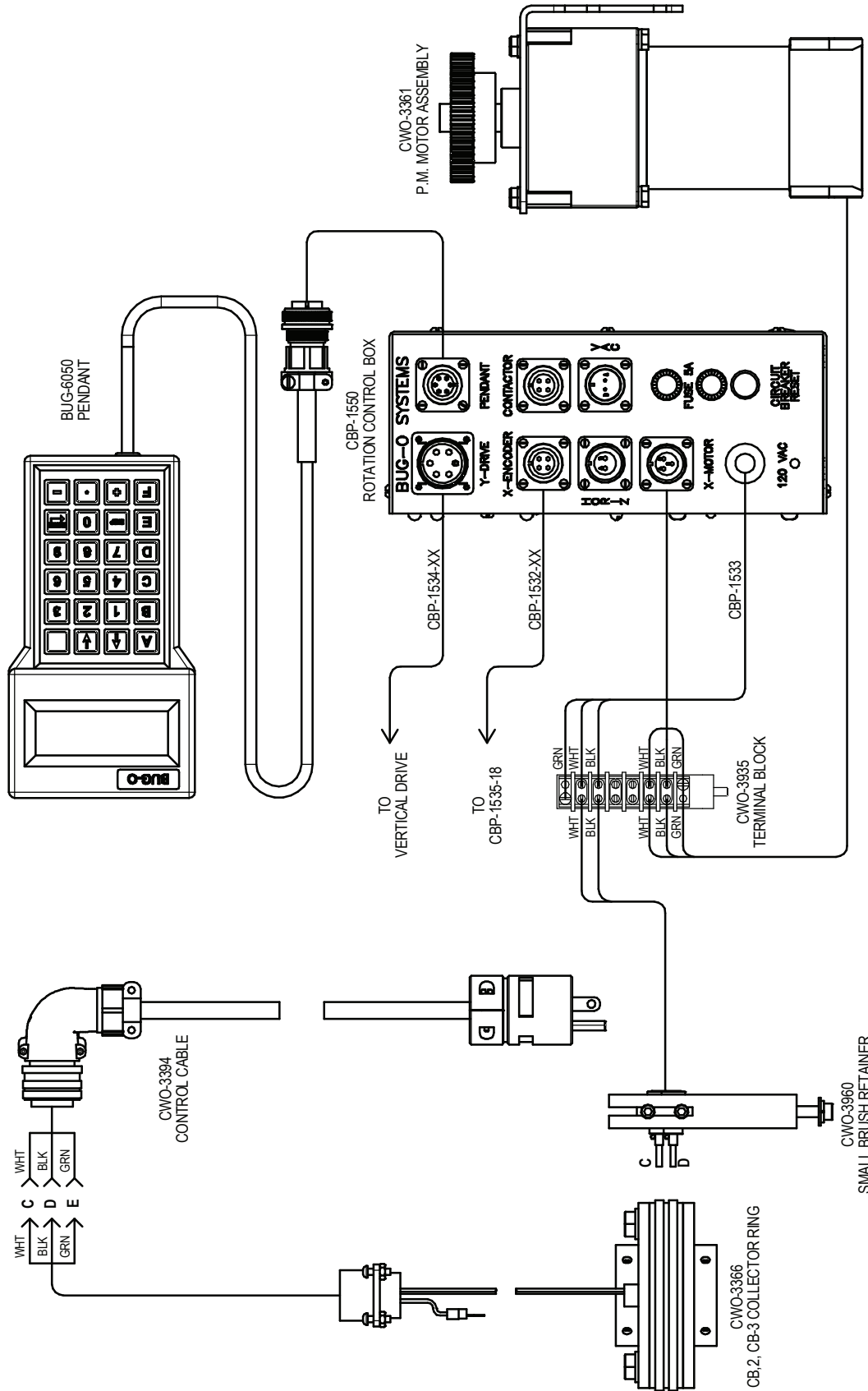


CWO-3073 CBP-3000 FRAME / EXPLODED VIEW / PARTS LIST



<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	CWO-3072	Frame Weldment
2	2	CWO-3777	T-Handle, Knob 5/16-18 x .98"
3	1	CWO-4590	Magnet / CBP-3000 Frame
4	3	FAS-0495	Set Scr 3/8-16 x 1/2" Cup Point
5	8	FAS-1390	Hex Nut 3/8-16
6	4	FAS-2396-FT	Hex Hd Cap Scr 3/8-16 x 2-1/4"
7	1	FAS-2398	Hex Hd Cap Scr 3/8-16 x 3"
8	8	WAS-0262	3/8" Split Lock Washer Zinc Plated

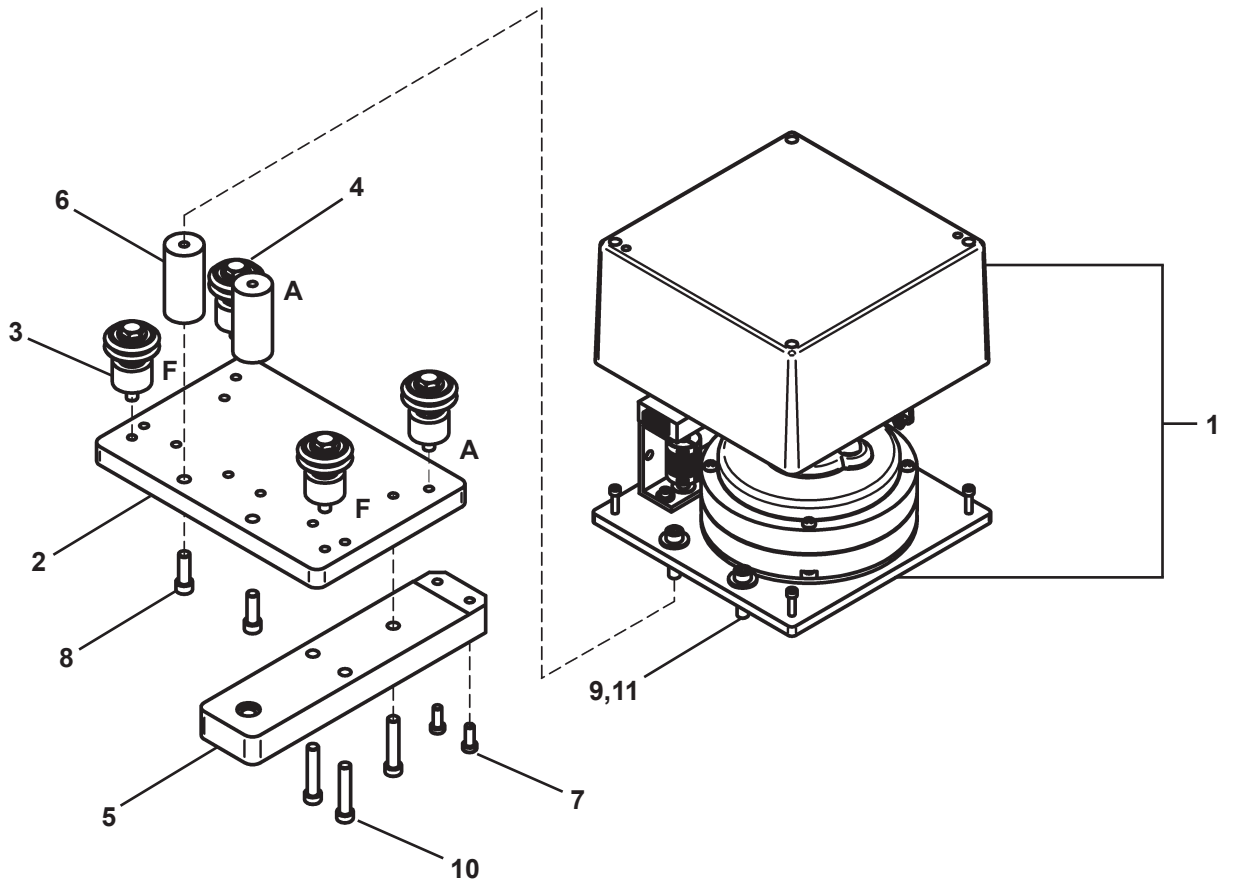
CBP-3000, CBP-4000 CIRCLE BURNER / WIRING DIAGRAM



CBP-3000, CBP-4000 CIRCLE BURNER / ELECTRICAL COMPONENT CHART

ITEM	DESCRIPTION	CBP-1550 120 VAC
1	Pendant	BUG-6050
2	Collector Ring	CWO-3366
3	Control Box	CBP-1550
4	P.M. Motor Assembly	CWO-3361
5	Terminal Block	CWO-3935
6	Small Brush Retainer	CWO-3960
7	Motor Cable	CBP-1533
8	Control Cable	CWO-3394

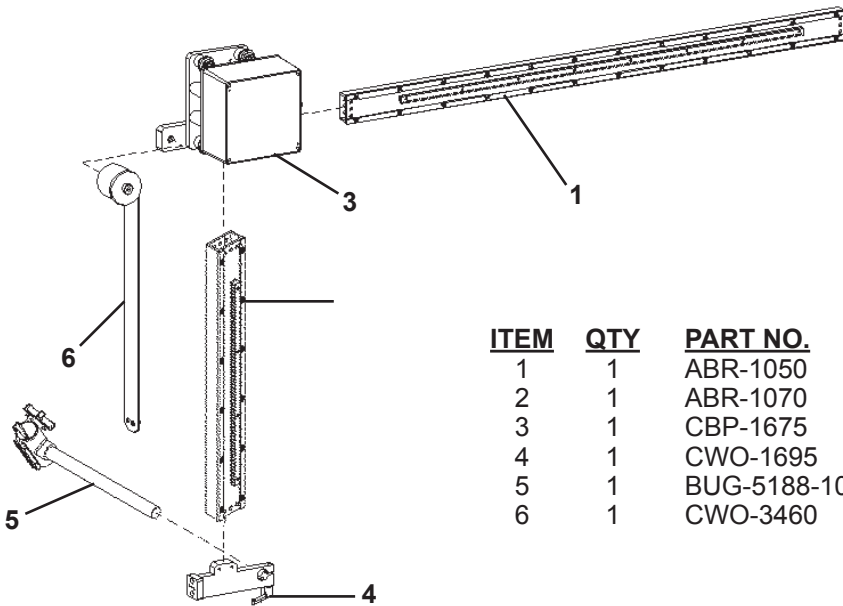
CBP-1675 MOTORIZED RACKER / EXPLODED VIEW / PARTS LIST



A = Adjustable Wheel Placement
 F = Fixed Wheel Placement

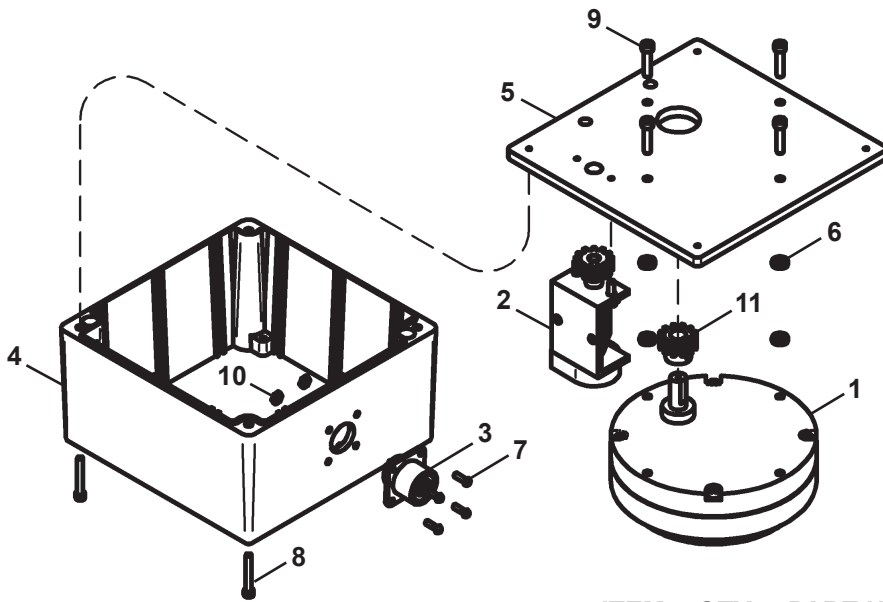
<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	CBP-1590	Drive Box
2	1	CWO-1677	Mount Plate
3	2	CWO-1680	W2 Fixed Leg & Wheel Assembly
4	2	CWO-1681	W2 Adj. Leg & Wheel Assembly
5	1	CWO-1682	Racker Mount Bar
6	2	CWO-1694	Stand-Off
7	2	FAS-0555	Screw, Soc Hd Cap 1/4-20 x 1/2
8	2	FAS-0557	Screw, Soc Hd Cap 1/4-20 x 3/4
9	2	FAS-0559	Screw, Soc Hd Cap 1/4-20 x 1
10	3	FAS-2551	Screw, Soc Hd Cap 1/4-20 x 1 1/4
11	2	WAS-0240	Washer, SAE 1/4

CWP-1635 MOTORIZED RACKING SYSTEM / EXPLODED VIEW / PARTS LIST



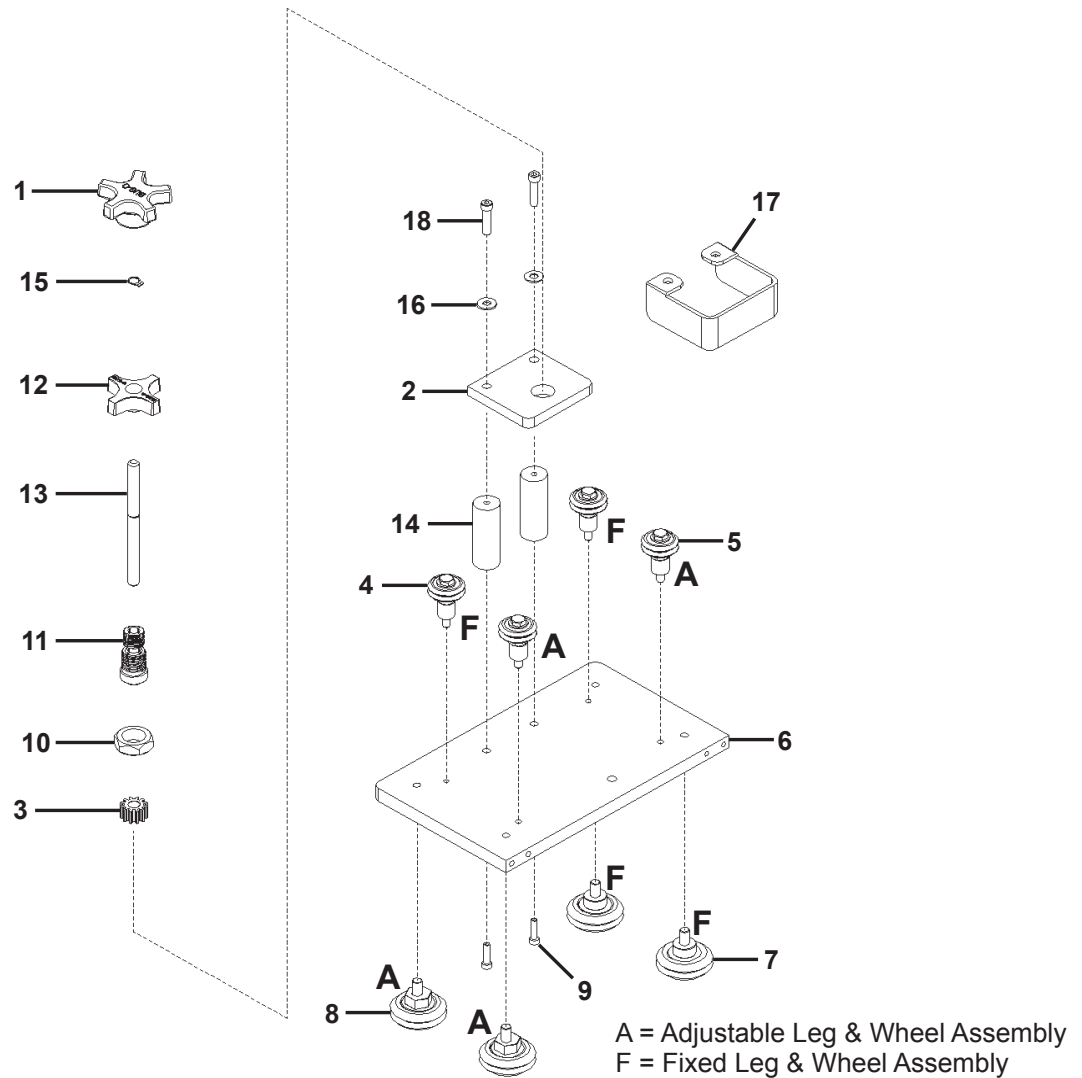
<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	ABR-1050	V-Guide Way, 40"
2	1	ABR-1070	V-Guide Way, 19"
3	1	CBP-1675	Motorized Racker
4	1	CWO-1695	Attachment Block
5	1	BUG-5188-10	Torch Holder
6	1	CWO-3460	33# Load Spring Assembly

CBP-1590 DRIVE BOX / EXPLODED VIEW / PARTS LIST



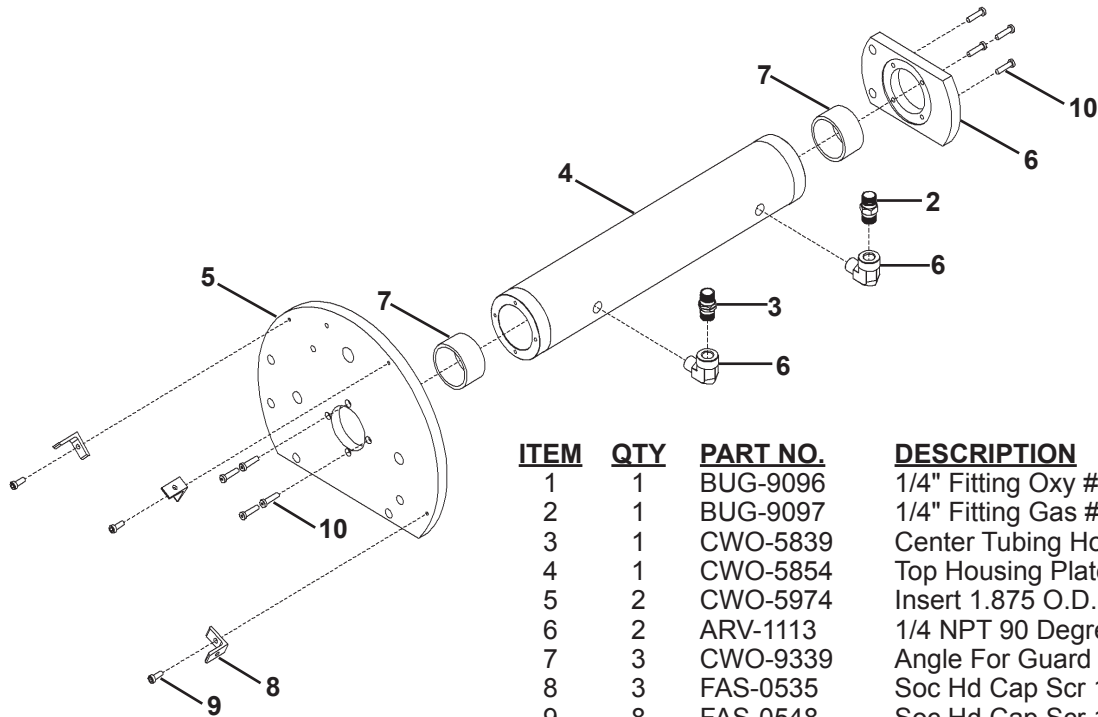
<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	BUG-1550	Gear Motor (150:1)
2	1	BUG-6040	Gear / Encoder Assembly
3	1	BUG-9909	Panel Connector, 6-T, M
4	1	CBP-1585	Drive Box Enclosure
5	1	CBP-1586	Drive Plate
6	4	AFR-1015	Spacer Washer
7	4	FAS-0204	Screw, Rnd Hd Slit 4-40 x 3/8
8	4	FAS-0519	Screw, Soc Hd Cap 6-32 x 1
9	4	FAS-0527	Screw, Soc Hd Cap 8-32 x 3/4
10	4	FAS-1305	Hex Nut 4-40
11	1	GOF-3014	Drive Pinion

CWO-1690 LARGE HORIZONTAL RACKER / EXPLODED VIEW / PARTS LIST



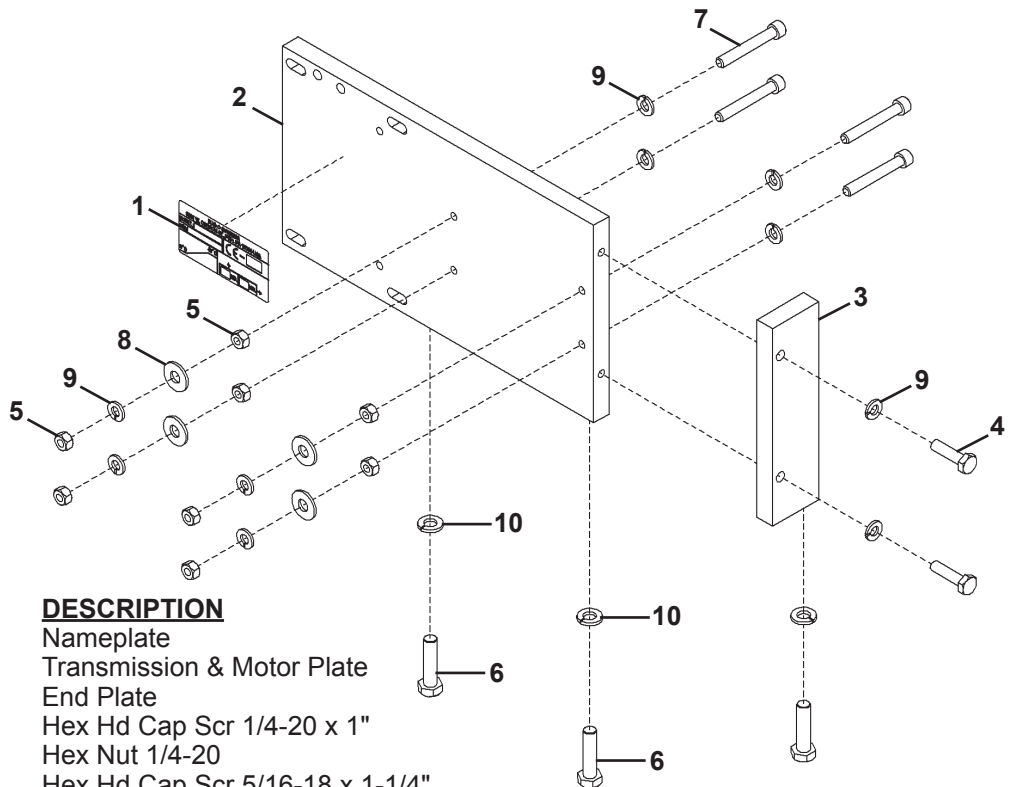
<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	BUG-2032	Knob, Black
2	1	CWO-1678	Racker Plate
3	1	CWO-1679	Pinion 11T
4	2	CWO-1680	W2 Fixed Leg & Wheel Assembly
5	2	CWO-1681	W2 Adj. Leg & Wheel Assembly
6	1	CWO-1687	Mount Plate (Large Racker)
7	2	CWO-4326	Fixed Leg & Wheel Assembly
8	2	CWO-4326	Adj. Leg & Wheel Assembly
9	2	FAS-0557	Soc Hd Cap Scr 1/4-20 x 3/4"
10	1	FAS-1307	Hex Jam Nut 3/4-16
11	1	MUG-1141	Bearing Collet
12	1	MUG-1142	Knob, Locking
13	1	MUG-1144	Shaft
14	2	MUG-1453	Stand-Off
15	1	MUG-1579	Retaining Ring
16	3	WAS-0204	1/4" SAE Washer
17	1	CWO-1671	Racker Shield
18	2	FAS-0559	Soc Hd Cap Scr 1/4-20 x 1"

CWO-3193 HOUSING ASSEMBLY / EXPLODED VIEW / PARTS LIST



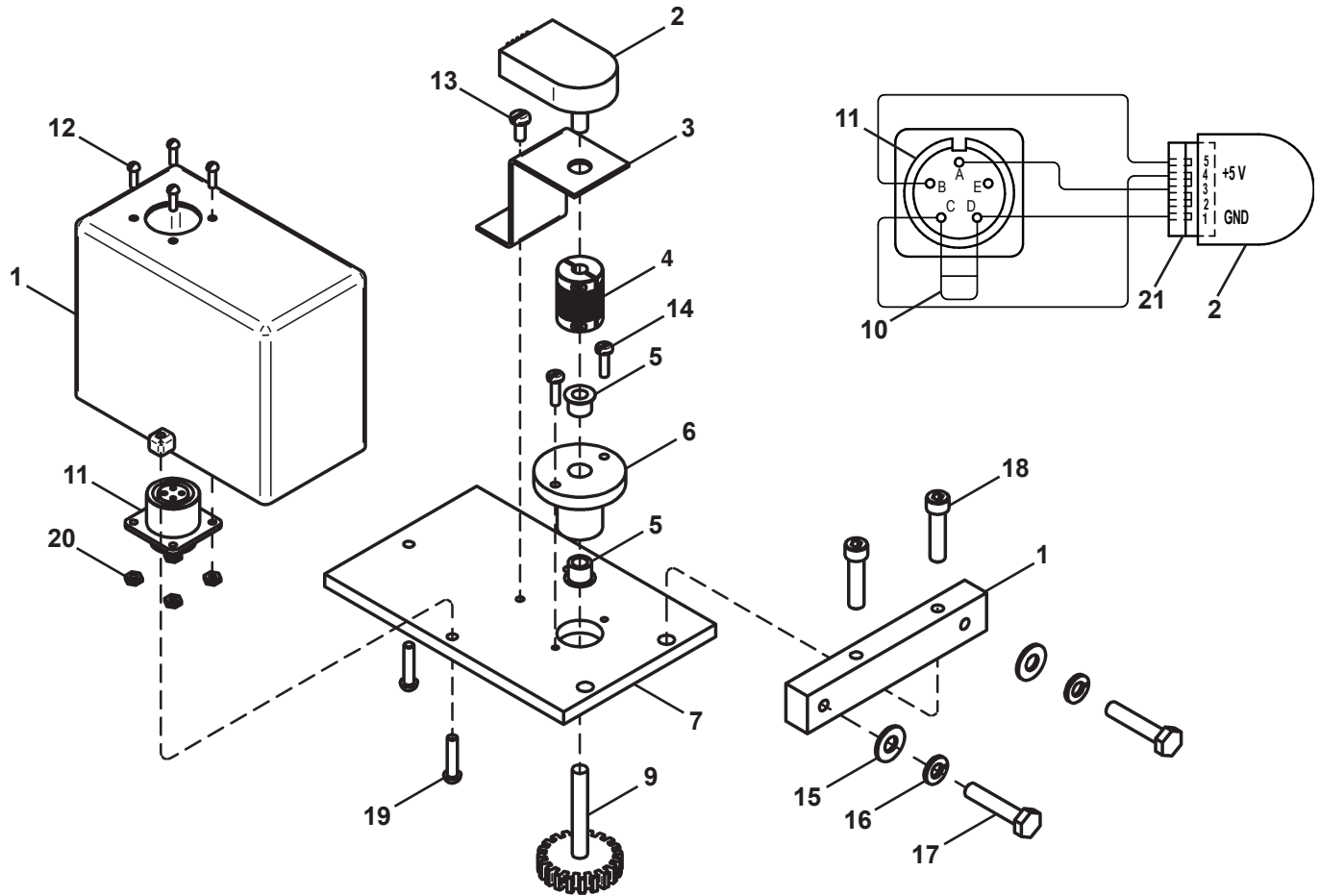
<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	BUG-9096	1/4" Fitting Oxy #32
2	1	BUG-9097	1/4" Fitting Gas #33
3	1	CWO-5839	Center Tubing Housing CBP-3000
4	1	CWO-5854	Top Housing Plate
5	2	CWO-5974	Insert 1.875 O.D. x 1.625 I.D.
6	2	ARV-1113	1/4 NPT 90 Degree st. elbow
7	3	CWO-9339	Angle For Guard
8	3	FAS-0535	Soc Hd Cap Scr 10-24 x 1/2"
9	8	FAS-0548	Soc Hd Cap Scr 10-32 x 3/4"

CWO-3358 MOTOR & TRANSMISSION PLATE / EXPLODED VIEW / PARTS LIST



<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	BUG-1338	Nameplate
2	1	CWO-5885	Transmission & Motor Plate
3	1	CWO-5886	End Plate
4	2	FAS-0359	Hex Hd Cap Scr 1/4-20 x 1"
5	8	FAS-1351	Hex Nut 1/4-20
6	3	FAS-2372	Hex Hd Cap Scr 5/16-18 x 1-1/4"
7	4	FAS-2554	Soc Hd Cap Scr 1/4-20 x 1-3/4"
8	4	WAS-0241	1/4" USS Zinc Flat Washer
9	10	WAS-0243	1/4" Split Lockwasher
10	3	WAS-0251	5/16" Split Lockwasher

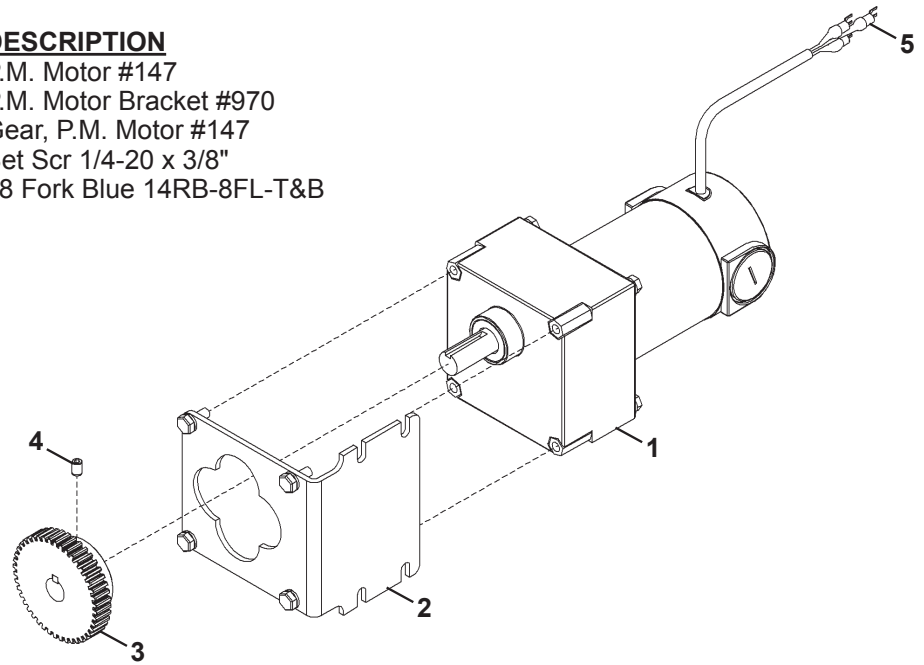
CBP-1535-18 ENCODER ASSEMBLY / EXPLODED VIEW / PARTS LIST / WIRING DIAGRAM



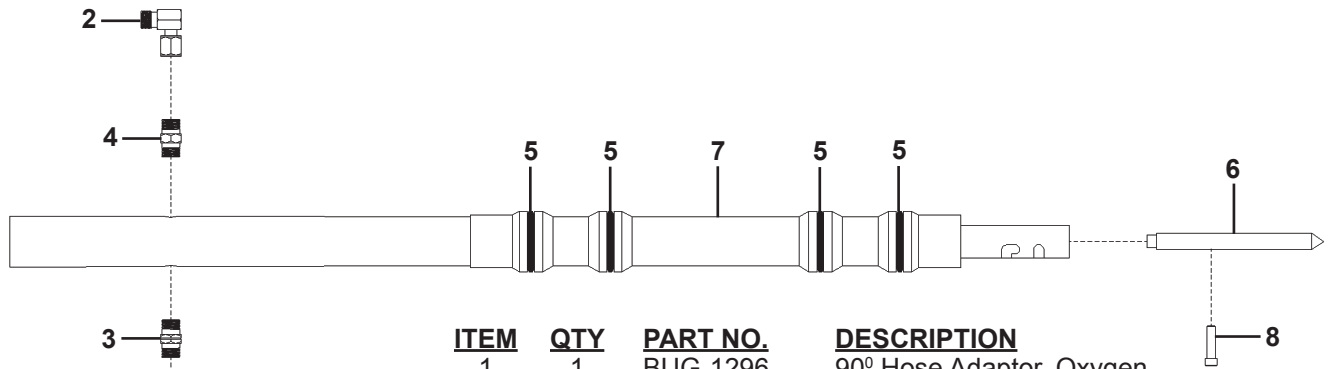
<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	CBP-1603	Encoder Enclosure For CWP-18
2	1	CBP-1549	Encoder, 512 CPR
3	1	MUG-1592	Bracket
4	1	BUG-6044	Flexible Coupling
5	2	SFX-1218	Bearing-Flg 1/4 ID x 3/8 OD x 5/16 Lg
6	1	MUG-1593	Pod
7	1	CBP-1601	Encoder Mount Plate For CWP-18
8	1	CBP-1602	Encoder Mounting Bar For CWP-18
9	1	CBP-1593	Gear Shaft Assembly
10	1	CAP-1105M	1Uf 50V 10% Radial
11	1	CON-1305P	Panel Connector, 5-T, M
12	4	FAS-0204	Rnd Hd Slit Scr 4-40 x 3/8 Zinc
13	1	FAS-0124	8/32 x 3/8 Pan Hd, Di-Chrome
14	2	FAS-0115	6-32 x 1/2 Pan Head, Zinc
15	2	WAS-0240	1/4 SAE Flat Washer
16	2	WAS-0243	1/4" Split Lock Washer
17	2	FAS-2351	Hex Hd Cap Scr 1/4-20 x 1-1/4
18	2	FAS-0559	Soc Hd Cap 1/4-20 x 1
19	3	FAS-0227	Rnd Hd Scr 8-32 x 3/4
20	4	FAS-1305	Hex Nut 4-40
21	1	CBP-1598	Connector Cable

CWO-3361 P.M. MOTOR ASSEMBLY #147 / EXPLODED VIEW / PARTS LIST

<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	CWO-4067	P.M. Motor #147
2	1	CWO-4147	P.M. Motor Bracket #970
3	1	CWO-5767	Gear, P.M. Motor #147
4	1	FAS-0454	Set Scr 1/4-20 x 3/8"
5	1	TER-WTE-1508	#8 Fork Blue 14RB-8FL-T&B

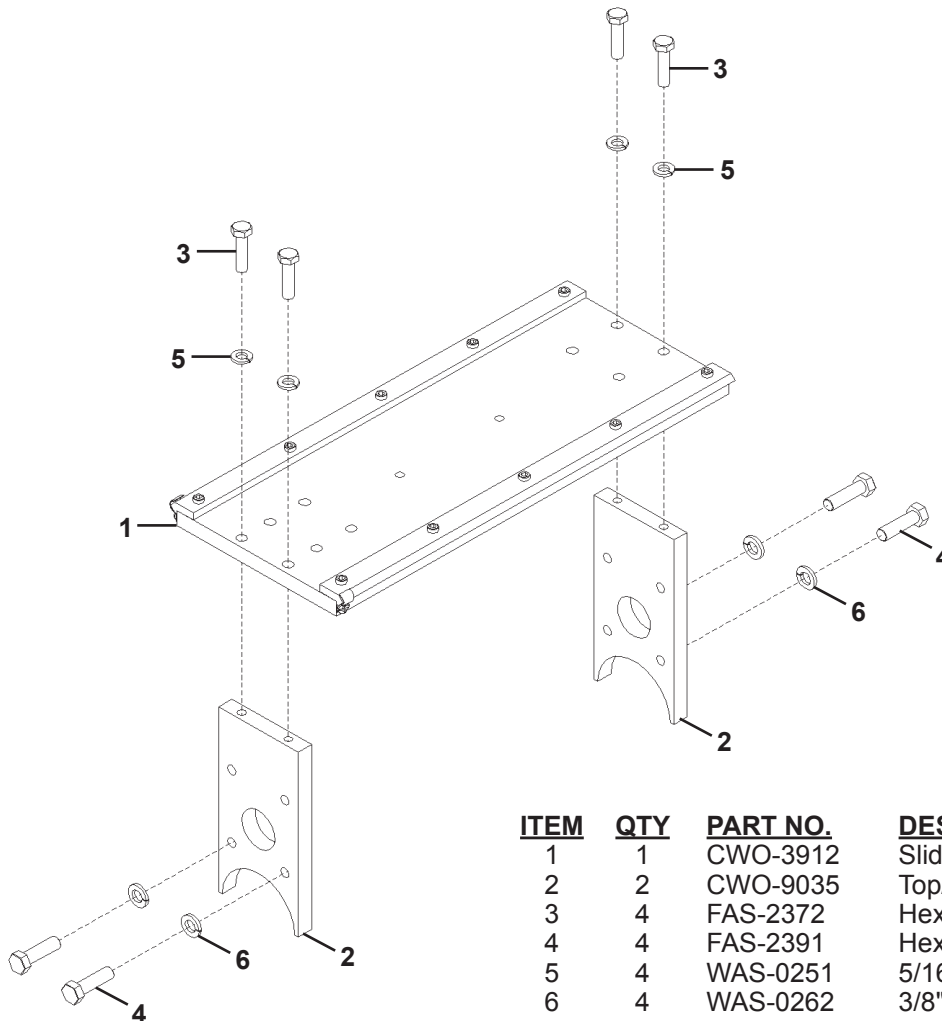


CWO-3501 SHAFT ASSEMBLY / EXPLODED VIEW / PARTS LIST



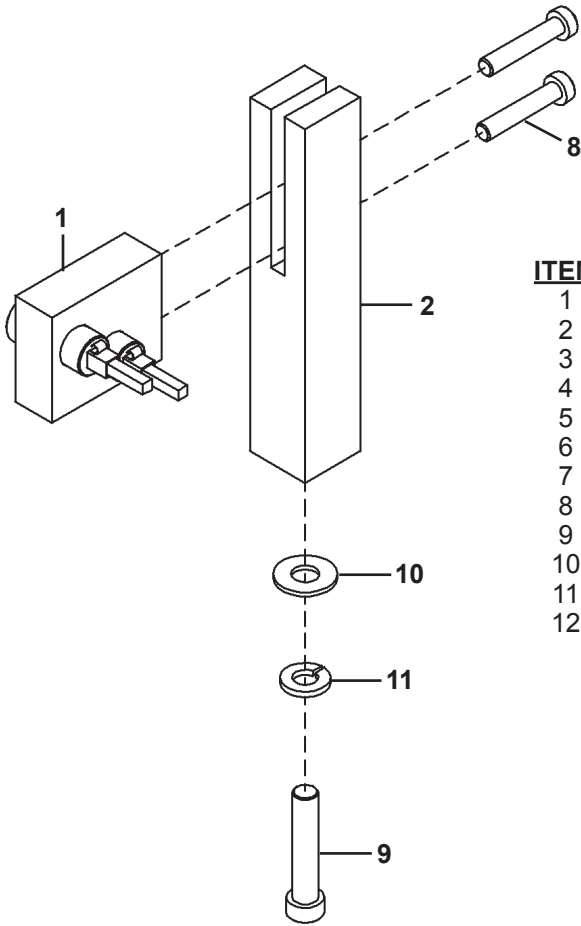
ITEM	QTY	PART NO.	DESCRIPTION
1	1	BUG-1296	90° Hose Adaptor, Oxygen
2	1	BUG-1297	90° Hose Adaptor, Fuel
3	1	BUG-9096	Outlet Bushing, Oxygen
4	1	BUG-9097	Outlet Bushing, Fuel
5	4	CWO-4049	O-Ring, Oxygen, Fuel
6	1	CWO-3502	CB-1P, CBP-3000 Pointer
7	1	CWO-5577	Shaft
8	1	FAS-0539	Soc Hd Cap Scr 10-24 x 1"

CWO-3920 SLIDE BAR MOUNTING ASSEMBLY / EXPLODED VIEW / PARTS LIST



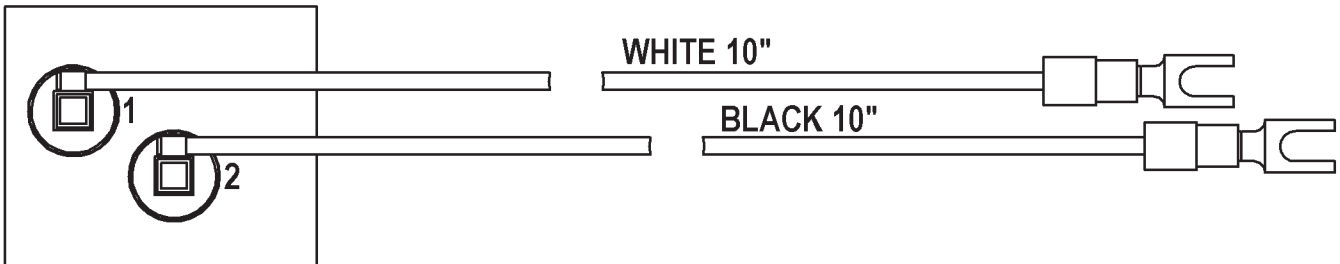
ITEM	QTY	PART NO.	DESCRIPTION
1	1	CWO-3912	Slide Bar Assembly
2	2	CWO-9035	Top/Bottom Vert Slide Plate
3	4	FAS-2372	Hex Hd Cap Scr 5/16-18 x 1-1/4"
4	4	FAS-2391	Hex Hd Cap Scr 3/8-16 x 1-1/4"
5	4	WAS-0251	5/16" Split Lock Washer
6	4	WAS-0262	3/8" Split Lock Washer

CWO-3960 SMALL BRUSH ASSEMBLY / EXPLODED VIEW / PARTS LIST

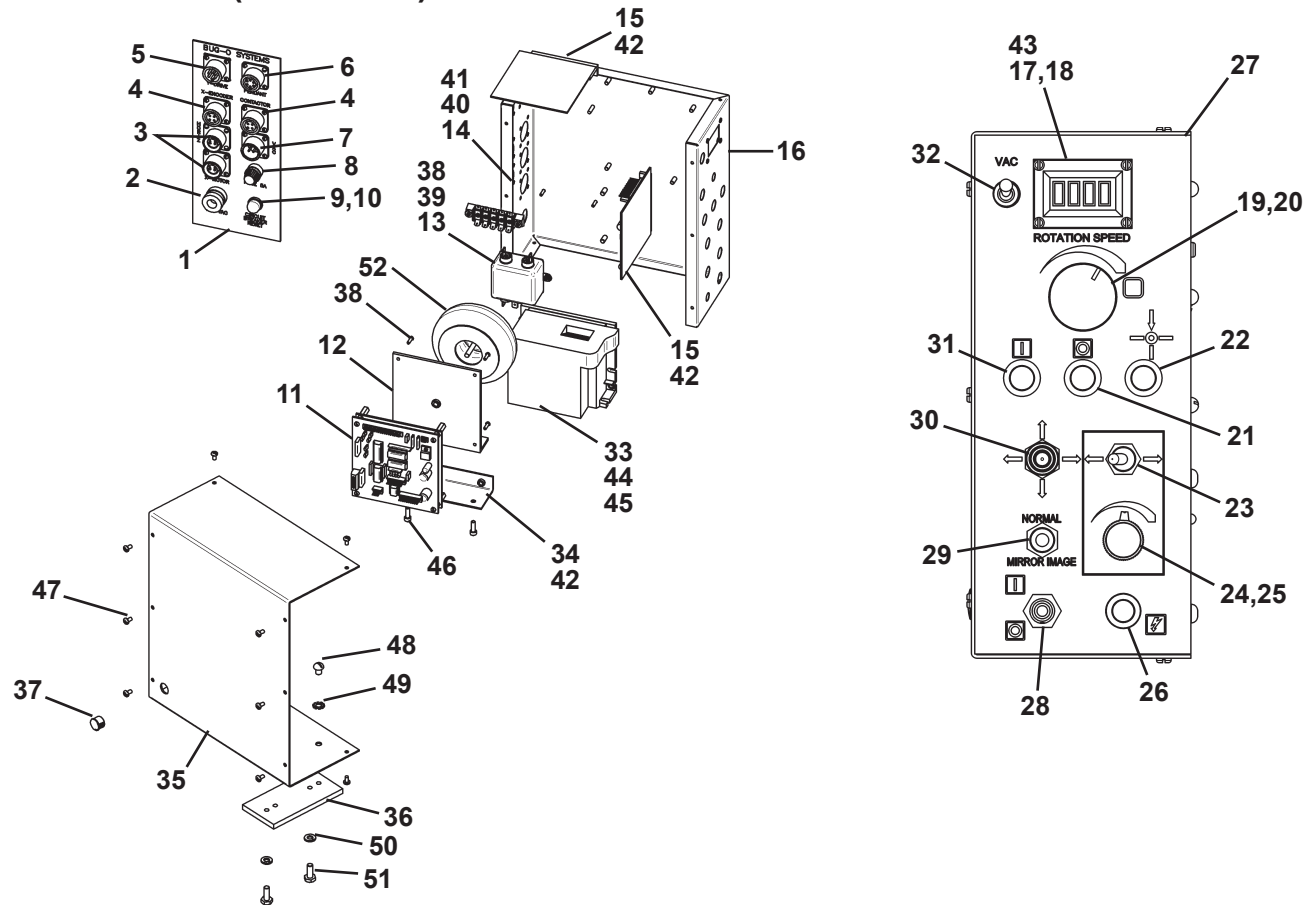


<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	CWO-3961	CBP-3000 Small Retainer Block
2	1	CWO-9076	Small Retainer Support
3	2	CWO-5831	1/8" x 1/8" x 7/8" Brush
4	2	CWO-5874	1/8" Brush Holder
5	2	CWO-5875	Cap
6	2	CWO-5876	Clip
7	1	CWO-9108	CBP-3000 Small Brush Block
8	2	FAS-0539	Soc Hd Cap Scr 10-24 x 1"
9	1	FAS-2551	Soc Hd Cap Scr 1/4-20 x 1-1/4"
10	1	WAS-0240	1/4" SAE Washer
11	1	WAS-0243	1/4" Split Lock Washer
12	2	TERM WTE-0602	#6 Fork Blue

CWO-3961 SMALL RETAINER BLOCK / DETAIL VIEW

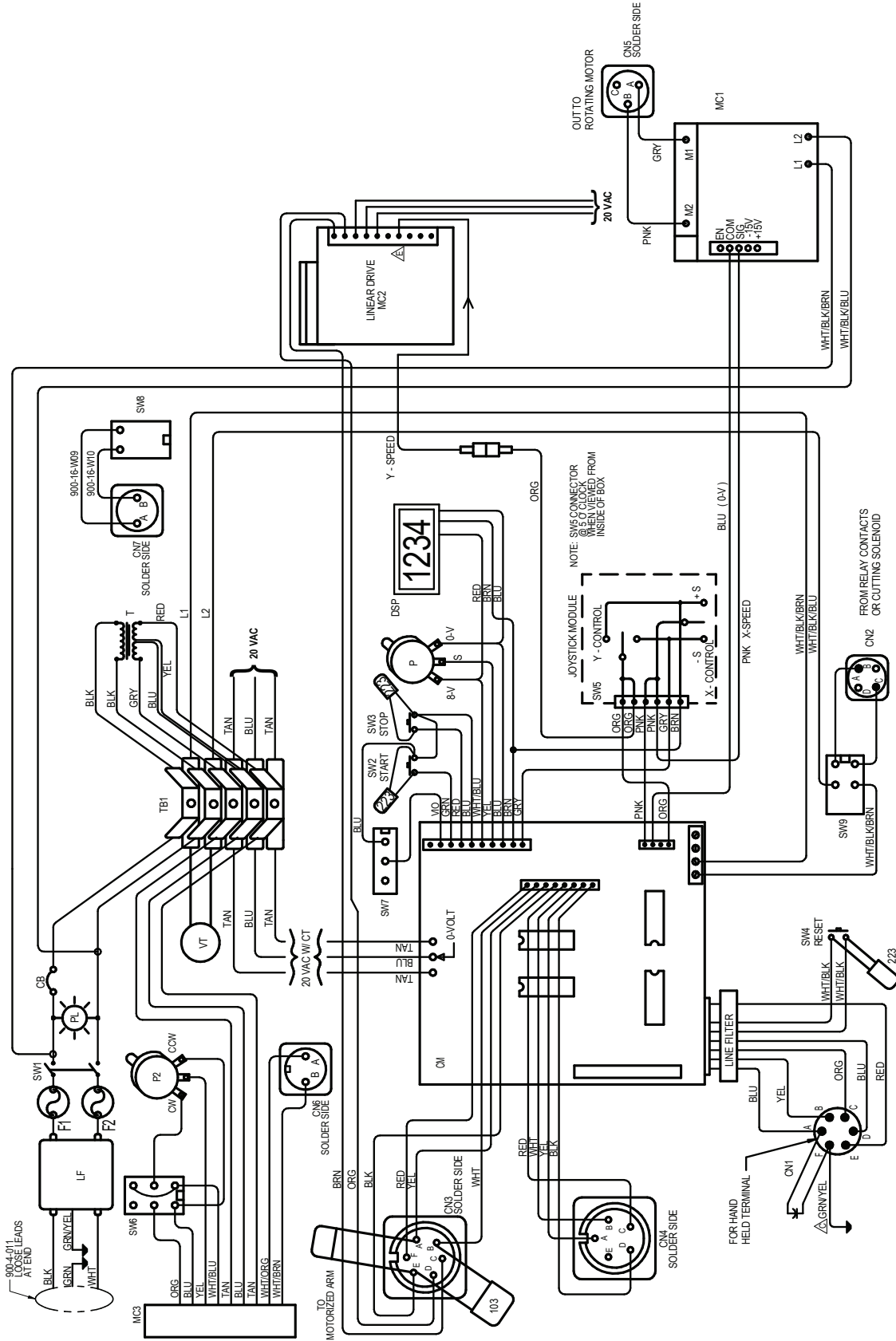


CBP-1550-F (CBP-1502) CONTROL BOX / EXPLODED VIEW / PARTS LIST



ITEM	QTY	PART NO.	DESCRIPTION	ITEM	QTY	PART NO.	DESCRIPTION
1	1	CBP-1556	Rear Legend Plate	27	1	CBP-1553	Front Legend Plate
2	1	BUG-9446	Cord Grip	28	1	ARM-2279	Toggle Switch, DPST
3	2	BUG-9856	Panel Connector, 2-T, F	29	1	SWT-3601	Toggle Switch, 4PDT
4	2	MUG-1156	Panel Connector, 4-T, F	30	1	PRS-1065	Joystick
5	1	BUG-9909	Panel Connector, 6-T, M	31	1	SWT-1113	Push Button Switch, Green
6	1	BUG-9902	Panel Connector, 6-T, F	32	1	ABP-1069	Toggle Switch, SPST
7	1	BUG-9486	Panel Connector, 2-T, M	33	1	CWO-6520	4-Quadrant Speed Control
8	1	FHO-0188	Fuse Holder, Panel Mount	34	1	CBP-1511	Transformer Bracket
9	1	BUG-2923	Circuit Breaker, 0.7 Amp	35	1	CBP-1551	Control Cover
10	1	BUG-2924	Reset Seal, Transparent	36	1	CWO-6417	Wire Feeder Mount Plate
11	1	CBP-6030	Control Module	37	1	MUG-1589	Hole Plug, 0.500"
12	1	BUG-6029	Bracket	38	34	FAS-0204	Screw, Rnd Hd Slit, 4-40 x 3/8
13	1	BUG-6031	Filter	39	30	FAS-1305	Hex Nut, 4-40
14	1	BUG-6028	Terminal Block, Kulka	40	2	FAS-0115	Screw, Pan Hd, 6-32 x 1/2
15	2	BUG-1770	Motor Control Board	41	2	FAS-1310	Hex Nut, 6-32
16	1	CBP-1557	Control Case	42	6	FAS-0224	Screw, Rnd Hd, 8-32 x 3/8
17	1	BUG-1764	Meter Display Board Ass'y	43	4	FAS-0104	Screw, Pan Hd, 4-40, Black
18	1	MDS-1011	Display Bezel	44	4	FAS-0244	Screw, Rnd Hd, 10-32 x 3/8
19	1	BUG-1562	Potentiometer, 10k, 3 Turn	45	4	FAS-1340	Hex Nut, 10-32
20	1	BUG-5757	Knob, Black	46	2	FAS-0525	Screw, Soc Hd Cap, 8-32 x 1/2
21	1	SWT-1112	Push Button Switch, Red	47	10	SCW WTE 0264	Screw, #6 x 1/4" Pan Hd
22	1	SWT-1111	Push Button Switch, Black	48	2	FAS-0253	Screw, Rnd Hd, 1/4-20 x 5/16"
23	1	MUG-1199	Toggle Switch, DPDT	49	2	WAS-0242	1/4" External Star Lockwasher
24	1	BUG-9677	Potentiometer, 10k ohms	50	2	WAS-0243	1/4" Split Lock Washer
25	1	MDS-1044	Knob, Yellow	51	2	FAS-0356	Screw, Hex Hd Cap, 1/4-20x5/8
26	1	CWO-6206	Red Neon Lamp, 125V	52	1	BUG-5218	Transformer, 117V 50/60 HZ
*	1	BUG-1428	Pilot Light, 240V	*	1	BUG-5231	Transformer, 240 VAC

CBP-1550-F (CBP-1502) CONTROL BOX / WIRING DIAGRAM



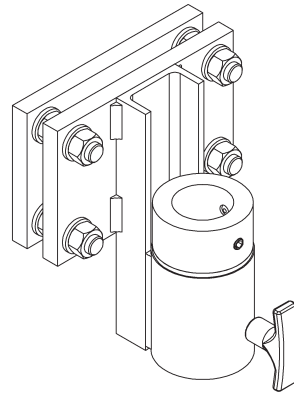
CBP-1550-F (CBP-1502) CONTROL BOX / ELECTRICAL COMPONENT CHART

ITEM	DESCRIPTION	CBP-1550-F 120 VAC	CBP-1502 240 VAC
CB	Circuit Breaker	BUG-2923	
PL	Pilot Light	LED-2111	BUG-1428
T	Transformer	BUG-5218	BUG-5231
VT	Volt Trap	BUG-1393	BUG-1563
MC1	4-Quadrant Speed Control	CWO-6520	
CM	Control Module	CBP-6030	
CN1	Connector (Pendant)	BUG-9902	
CN2	Connector (Solenoid)	MUG-1156	
CN3	Connector (Motor Arm)	CON-06RP06F	
CN4	Connector (Aux.)	CON-1305S	
CN5	Connector (Rot. Motor)	CON-03RS03F	
CN6	Connector (Racker)	BUG-9856	
CN7	Connector (Vacuum)	BUG-9486	
DSP	Digital Display	BUG-1764	
LF	Line Filter	BUG-6031	
MC2	Motor Control Board	BUG-1770	
MC3	Speed Control (Racker)	CAS-1770	
P	Potentiometer	BUG-1562	
P2	Potentiometer (Racker)	BUG-9677	
SW1	Toggle Switch (Power)	ARM-2279	
SW2	PB Switch (Start)	SWT-1113	
SW3	PB Switch (Stop)	SWT-1112	
SW4	PB Switch (Reset)	SWT-1111	
SW5	Joystick Switch	PRS-1065	
SW6	Switch (Racker)	MUG-1199	
SW7	Mirror Switch	BUG-2626	
SW8	Switch (Vacuum)	ABP-1069	
SW9	Switch (Dry Run)	ARM-2279	
TB1	Terminal Block	BUG-6028	
F1,F2	5A Fuse	CWO-7076	

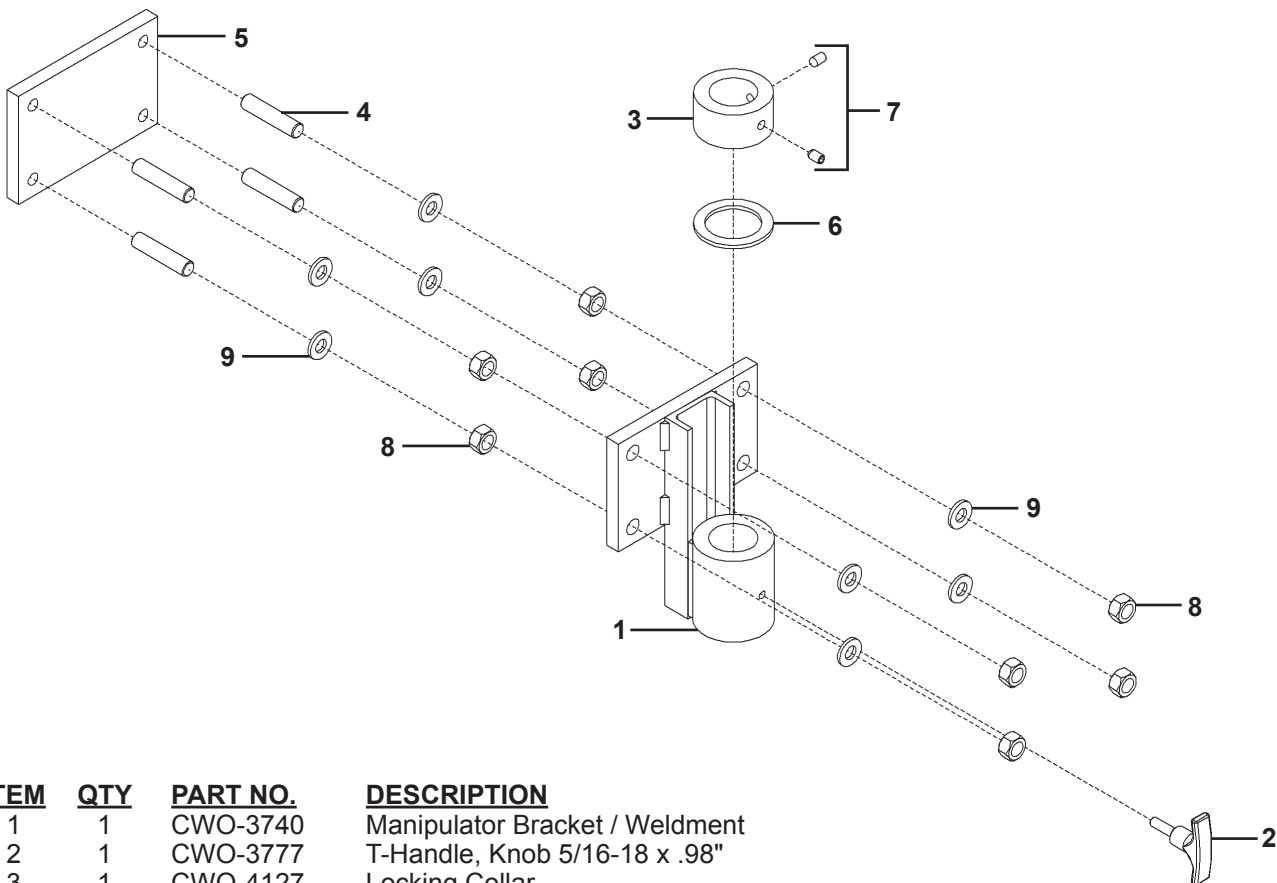
ACCESSORIES

CWO-3744 MANIPULATOR BRACKET

The Manipulator Bracket is a mounting devise that was designed to be used on some Circle Welders and Circle Burners. It attaches to an existing fixture and can be easily adjusted to make sure that the Circle Welder/Burner remains square on the work piece.



CWO-3744 MANIPULATOR BRACKET / EXPLODED VIEW / PARTS LIST



<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	CWO-3740	Manipulator Bracket / Weldment
2	1	CWO-3777	T-Handle, Knob 5/16-18 x .98"
3	1	CWO-4127	Locking Collar
4	1	CWO-4421	1/2-13 x 2-1/2" All Thread Rod
5	1	CWO-5551	Bracket / Mount Plate
6	1	CWO-5982	Oillite Thrust Bearing
7	2	FAS-0495	Set Scr 3/8-16 x 1/2"
8	8	FAS-1301	Hex Nut 1/2-13
9	12	WAS-0280	1/2" Washer

PREVENTIVE MAINTENANCE / CBP-3000, CBP-4000 CIRCLE BURNER

CAUTION: Make sure the input power to the Rotation Control is disconnected from the power source.

AFTER DAILY USE:

Refer to CBP-3000, CBP-4000 Exploded View Parts List (Page 13).

Racking System (Item #3): Inspect gear rack; hardened ways and wheels (remove all dirt, grease, and rust). Check hardened ways for nicks and replace if necessary. Lubricate with a dry spray lubricant. Adjust wheels for snug fit and smooth operation. Lubricate racker pinion with a dry teflon or graphite spray lubricant.

Large Horizontal Racker (Item #4): Inspect wheels (remove all dirt, grease, and rust). Adjust wheels for snug fit and smooth operation. Lubricate racker pinion and wheels with a dry Teflon or graphite spray lubricant.

Slide Bar Mounting Assembly (Item #14): Inspect hardened ways (remove all dirt, grease, and rust). Check hardened ways for nicks and replace if necessary. Lubricate the hardened ways with a dry Teflon or graphite spray lubricant.

Refer to CBP-3000, CBP-4000 Electrical Wiring Diagram (Page 15).

Collector Ring (Item #2): Inspect cable connections for damages and that the connector is not cracked. Ensure that the connector is fastened properly to the Top Aluminum Gear (Item #12) on the CBP-3000, CBP-4000 Exploded View Parts List.

EVERY SIX MONTHS:

Refer to CBP-3000, CBP-4000 Exploded View Parts List (Page 13).

Top Aluminum Gear (Item #12): Do not grease this gear. Inspect gear teeth (remove all dirt, grease, and rust). Lubricate with a dry Teflon or graphite spray lubricant. Replace gear if excessively worn.

P.M. Motor Assembly (Item #10): Do not grease this pinion. Inspect the drive pinion (remove all dirt, grease, and rust). Lubricate with a dry Teflon or graphite spray lubricant. Replace pinion if excessively worn. Check set screw and tighten if necessary. Adjust motor assembly using the four adjustable mounting fasteners so that proper gear mesh is achieved between the Top Aluminum Gear (Item #12) and the motor drive pinion.

PREVENTIVE MAINTENANCE / CBP-3000, CBP-4000 CIRCLE BURNER

Control Box (Item #9): Open control box use an air hose to blow out dust and dirt. Check all wires for breaks and replace if necessary. Check all electrical connectors and plugs if an electrical component fails refer to CBP-1550 Rotation Control electrical component chart (page 27) for replacement parts or return for service.

Small Brush Retainer (Item #16): Inspect black brush holders for cracks and replace if needed. Check and make sure all wires are soldered properly to the holders. Replace the brushes when their length is less than ½ inch long. Remove the brushes and sand them to ensure a smooth contact surface. Make sure all fasteners are tight.

Terminal Block Assembly (Item #15): Inspect the plastic terminal strip make sure it is not cracked, replace if necessary. Make sure all terminal connections are tight. Make sure all ground wires are connected to the mounting screws of the terminal strip.

EVERY TWELVE MONTHS:

Refer to CBP-3000, CBP-4000 Exploded View Parts List (Page 13).

1" Bearing with Fasteners (Item #19): Do not grease the bearing it is greased for life by the manufacturer. If the grease fitting has not been removed and plugged we suggest that you do so now. Earlier models may not have been plugged at time of assembly.

1-1/2" Flange Bearing (Item #20): Do not grease the bearing it is greased for life by the manufacturer. If the grease fitting has not been removed and plugged we suggest that you do so now. Earlier models may not have been plugged at time of assembly.

P.M. Motor Assembly (Item #10): Bodine gear motor lubrication. Fill gear motor to oil level indicator with worm gear oil conforming to AGMA#5EP compounded (SAE#90) oil or Bodine lubricant #LO-23. Do not overfill.

Refer to CBP-3000 CBP-4000 Electrical Component Chart (Page 16).

Collector (Item #2): The collector ring should be sanded once a year. If the collector ring is pitted too badly it should be replaced. Inspect all wires coming out of the collector ring for cut or missing insulation. All wires should be fastened to the center shaft with a nylon cable tie. Tighten four set screws if needed.

WARRANTY

Limited 3-Year Warranty

Model _____
Serial No. _____
Date Purchased: _____
Where Purchased: _____

For a period ending one (1) year from the date of invoice, Manufacturer warrants that any new machine or part is free from defects in materials and workmanship and Manufacturer agrees to repair or replace at its option, any defective part or machine. HOWEVER, if the invoiced customer registers the Product Warranty by returning the Warranty Registration Card supplied with the product within 90 days of the invoice date, or by registering on-line at www.bugo.com, Manufacturer will extend the warranty period an additional two (2) years which will provide three (3) total years from the date of original invoice to customer. This warranty does not apply to machines which, after Manufacturer's inspection are determined by Manufacturer to have been damaged due to neglect, abuse, overloading, accident or improper usage. All shipping and handling charges will be paid by the customer.

The foregoing express warranty is exclusive and Manufacturer makes no representation or warranty (either express or implied) other than as set forth expressly in the preceding sentence. Specifically, Manufacturer makes no express or implied warranty of merchantability or fitness for any particular purpose with respect to any goods. Manufacturer shall not be subject to any other obligations or liabilities whatsoever with respect to machines or parts furnished by Manufacturer.

Manufacturer shall not in any event be liable to Distributor or any customer for any loss of profits, incidental or consequential damages or special damages of any kind. Distributor's or customer's sole and exclusive remedy against Manufacturer for any breach of warranty, negligence, strict liability or any other claim relating to goods delivered pursuant hereto shall be for repair or replacement (at Manufacturer's option) of the machines or parts affected by such breach.

Distributor's Warranty:

In no event shall Manufacturer be liable to Distributor or to any customer thereof for any warranties, representations or promises, express or implied, extended by Distributor without the advance written consent of Manufacturer, including but not limited to any and all warranties of merchantability or fitness for a particular purpose and all warranties, representations or promises which exceed or are different from the express limited warranty set forth above. Distributor agrees to indemnify and hold Manufacturer harmless from any claim by a customer based upon any express or implied warranty by Distributor which exceeds or differs from Manufacturer's express limited warranty set forth above.

HOW TO OBTAIN SERVICE:

If you think this machine is not operating properly, re-read the instruction manual carefully, then call your Authorized BUG-O dealer/distributor. If they cannot give you the necessary service, write or phone us to tell us exactly what difficulty you have experienced. BE SURE to mention the MODEL and SERIAL numbers.