

INSTRUCTIONS AND PARTS MANUAL

STW-2000 PROGRAMMABLE STIFFENER WELDER

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.



B U G - O S Y S T E M S

A DIVISION OF WELD TOOLING CORPORATION



3001 WEST CARSON STREET PITTSBURGH, PENNSYLVANIA USA 15204-1899
PHONE: 1-800-245-3186 <http://www.bugo.com> TELEFAX: 1-412-331-0383

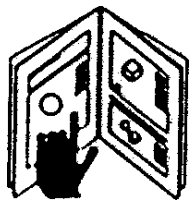
SAFETY

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 without 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 worksite 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.

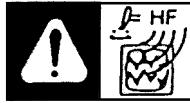


MOVING PARTS can cause serious injury.

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.

STW-2000

PROGRAMMABLE STIFFENER WELDER

INSTRUCTIONS AND PARTS MANUAL

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- 25** ... (STW-2120) Drive Unit Assembly / Exploded View
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INTRODUCTION:

The Programmable Stiffener Welder mechanizes two wire feeders to weld various types of stiffeners on one or both sides simultaneously. The unit features independent wire feeder controls for voltage, wire feed speed, cold wire jog and gas purge. When intermittent stitch welding is required the unit feature programmable control of weld length and travel speed, skip length, reverse drive crater fill, pre-weld and post-weld gas purge times. Please see the Technical Data information in this manual for unit capacities.

SET-UP & OPERATION:

(Refer to the Controls Sections pg. 6, 7 and Major Components section pg. 9, 10 in this manual.)

1. Center the unit over the work piece. Connect welding cables and wire feeder control cables for each feeder to the welding power sources. Connect the welding gas hoses to each **Flow Meter/Valve Assembly**. Plug the unit into an available 110 VAC 50/60 Hz power source.
2. Turn power “**ON**” to both welding power sources. Turn power “**ON**” to the control panel by toggling the “**ON/OFF**” switch on the upper rear left hand side of the control box to the “**ON**” position. Turn “**ON**” power to both feeders by toggling the feeder “**ON/OFF**” switches located on the front lower left and right of the control box to the “**ON**” position.

NOTE: Ensure that the **Emergency Stop** Switch located on the top of the control box is in the released position or no power will be supplied to the unit.

3. Adjust the **Capture Wheel Assemblies** so that they contact the side of the work. Swing the **Drive Unit** into position against the work piece and engage the **Drive Latch** and tighten to ensure constant pressure on the work piece between the Drive Assembly, Work Piece and Capture Wheel Assemblies.

NOTE: Move the unit forward and reverse using the **Travel Manual Jog** switch located on the front bottom center of the control box to ensure proper tension has been applied by the **Drive Latch** to move the unit smoothly along the work piece.

4. Align the left and right **Corner Followers** and welding guns for the desired weld placement. The **Corner Followers** can be adjusted up, down, in and out to achieve the placement you desire. The **Corner Followers** are also equipped with a gun angle adjustment knob to achieve the desired torch angle. Purge the shield gas to each welding gun by pressing the **Shield Gas Purge** button located on the left and right sides of the control panel for each **Flow Meter/Valve Assembly**.
5. Set all welding parameters. Each wire feeders wire speed and voltage are set independently from each other utilizing the controls to the left and right of the soft touch **Programming Center** located on the control panel. All other welding parameters are set using the soft touch **Programming Center**. Please refer to the controls section of the manual.
6. When you are ready to begin your weld cycle press the **Weld Cycle Start** button located on the control panel below the soft touch **Programming Center**. To stop the weld cycle pres the **Weld Cycle Stop** button.

NOTE: In case of emergency press the **Emergency Stop** switch located on the top of the control box to kill all power to the unit including the weld cycle. Once the **Emergency Stop** switch is returned to the released position you will need to press the **Cycle Start** button to resume your cycle.

CONTROLS (MAIN):

VOLTAGE CONTROL: Regulates welding voltage for the assigned feeder.

WIRE SPEED CONTROL: Regulates the wire feed speed for the assigned feeder.

WIRE JOG: Allows wire to be fed without closing the weld current contact.

WIRE FEEDER POWER INDICATOR LIGHT: Illuminate when power is being supplied to the assigned wire feeder.

WIRE FEEDER ON/OFF SWITCH: Allows operator to turn power on or off to the assigned wire feeder.

SHIELD GAS PURGE: Allows operator to activate shield gas solenoid to purge welding gun and check the gas rate on the units regulators.

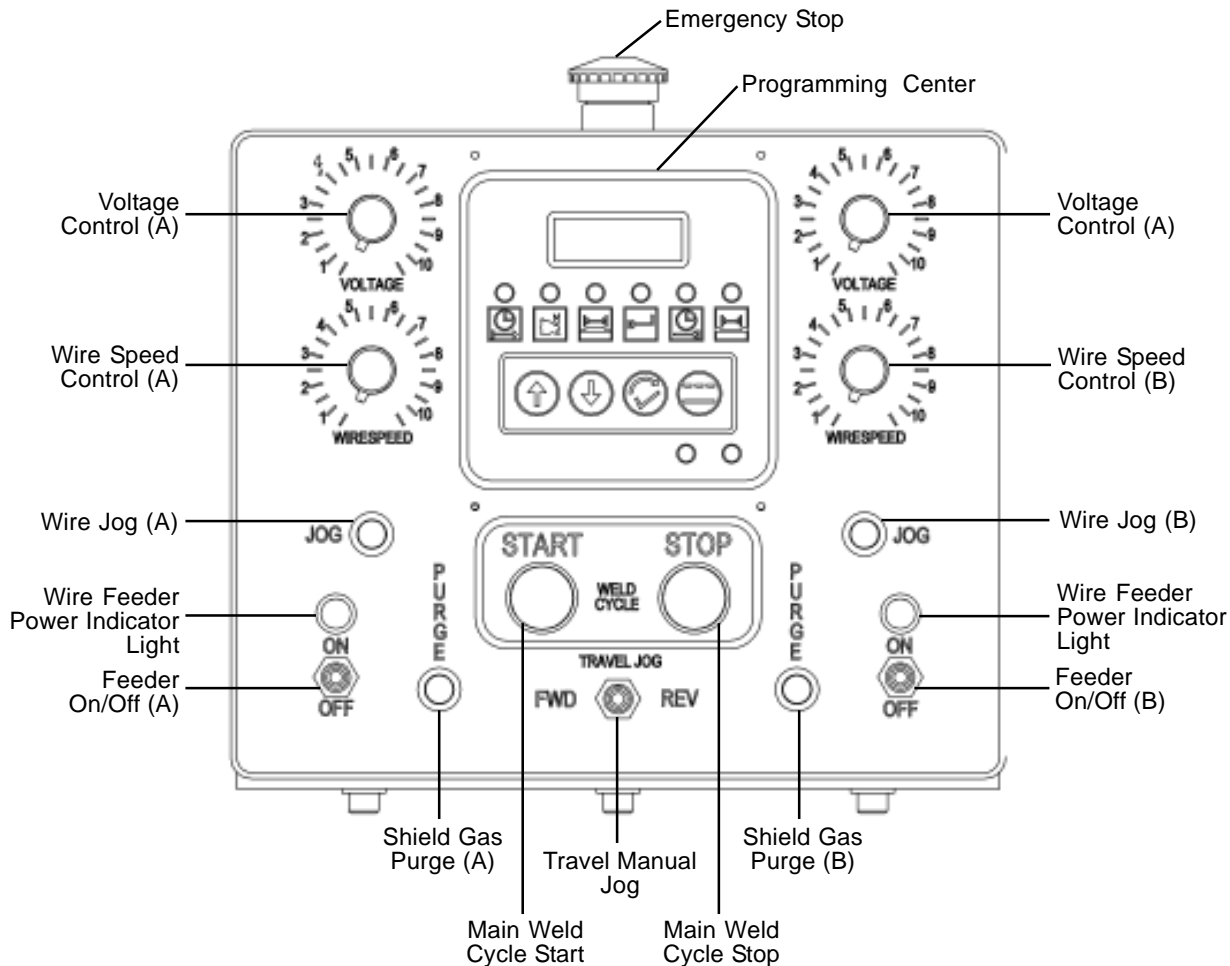
MAIN WELD CYCLE START: Initiates automated weld cycle.

MAIN WELD CYCLE STOP: Halts automated weld cycle.

TRAVEL MANUAL JOG: Allows operator to move the unit forward or backward without welding.

EMERGENCY STOP: When pressed causes all functions to stop.

PROGRAMMING CENTER: See controls for programming center pg. 7.



CONTROLS (PROGRAMMING CENTER):

DIGITAL DISPLAY: Visual display to supply welding motion information to operator.

GAS PREFLOW DELAY: Programmable time for gas to purge lines before weld start.

TRAVEL SPEED: Speed at which the unit moves during welding.

WELD LENGTH: Distance the unit travels forward while welding.

BACKUP DISTANCE: Distance the unit travels in reverse after completed weld length.

GAS POSTFLOW DELAY: Programmable time for gas to shield weld at arc stop.

SKIP LENGTH: Distance between welds. (Must include backup distance).

INCREASE VALUE: Pressing this button increases the value shown in the digital display.

DECREASE VALUE: Pressing this button decreases the value shown in the digital display.

FUNCTION SELECT: Allows the user to cycle through the welding programming functions.

SKIP/CONTINUOUS MODE SELECT: Allows the user to select skip mode or continuous mode for the welding operation.

SKIP INDICATOR LIGHT: When illuminated the machine will weld in skip mode.

STRAIGHT LINE INDICATOR LIGHT: When illuminated the machine will weld in continuous mode.

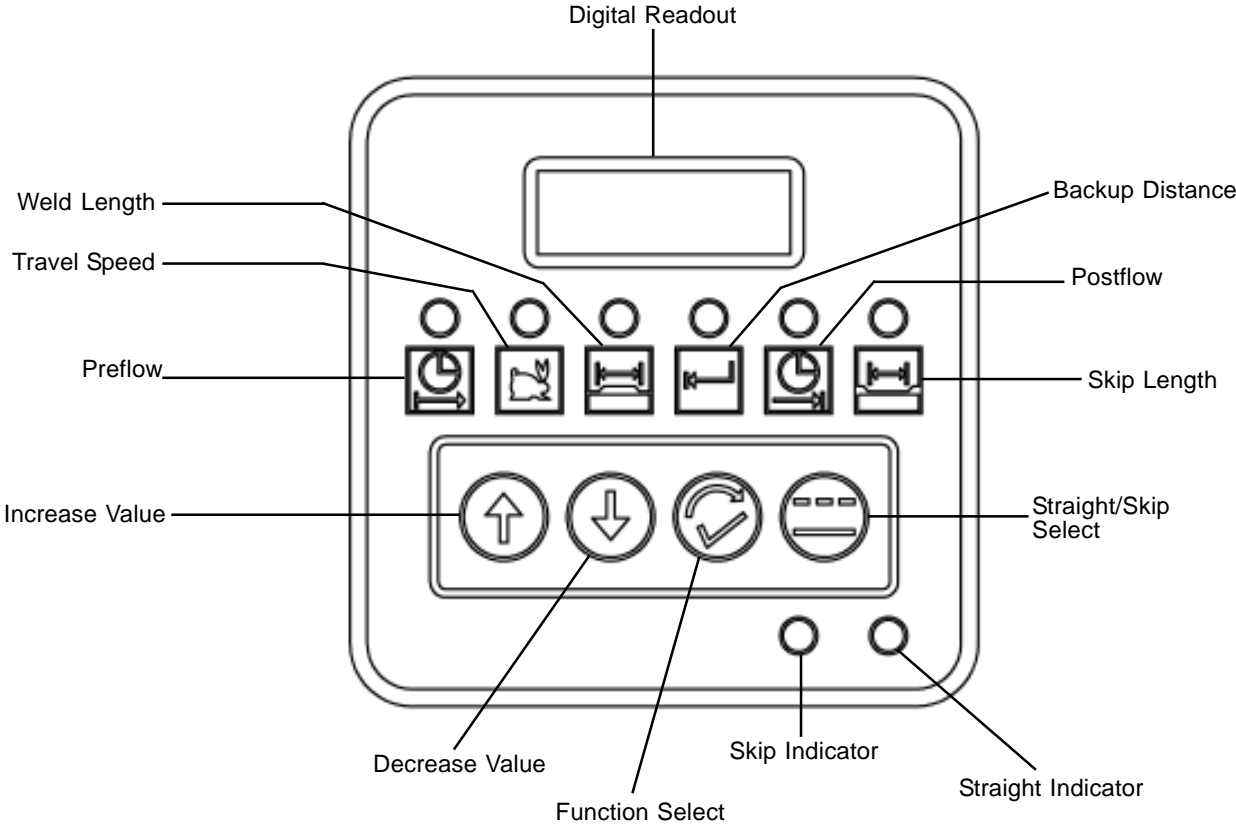
PUDDLE DELAY:

There are two internal settings in the Control Module that do not appear in the normal setting selection on the control panel keypad/display. These are time delays at weld start and stop, when the wire feed is on but travel is stopped, in order to allow for puddle buildup.

To set the time delays:

1. Power off, (power switch on back of control box); hold Cycle Stop button in, and turn power on. Release Stop button. LED No.1 and 3 should light; and the display shows the start puddle build time.
2. Adjust delay time as required using UP and DOWN arrow buttons.
3. Briefly push Function Select (cycle settings) button. LED No. 3 and 5 should light, and display shows the end crater fill time.
4. Adjust delay time as required.
5. Push Function Select button again, then power off.
6. Power on to operate machine as usual, now with new settings in place.

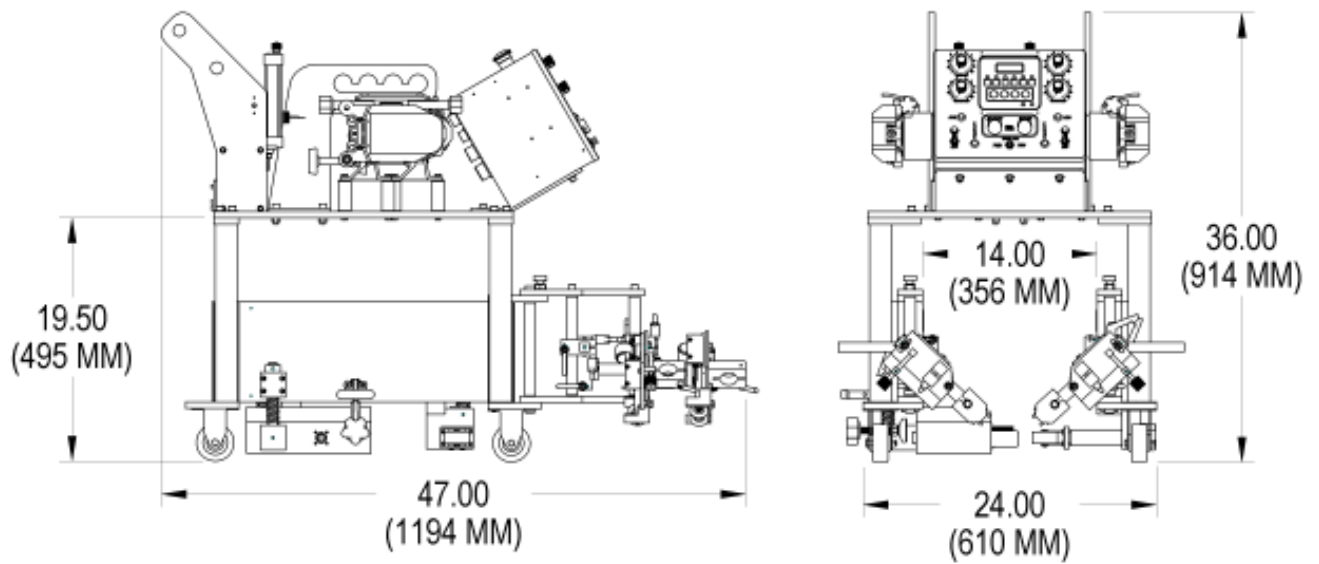
CONTROLS (PROGRAMMING CENTER CONT'D.):



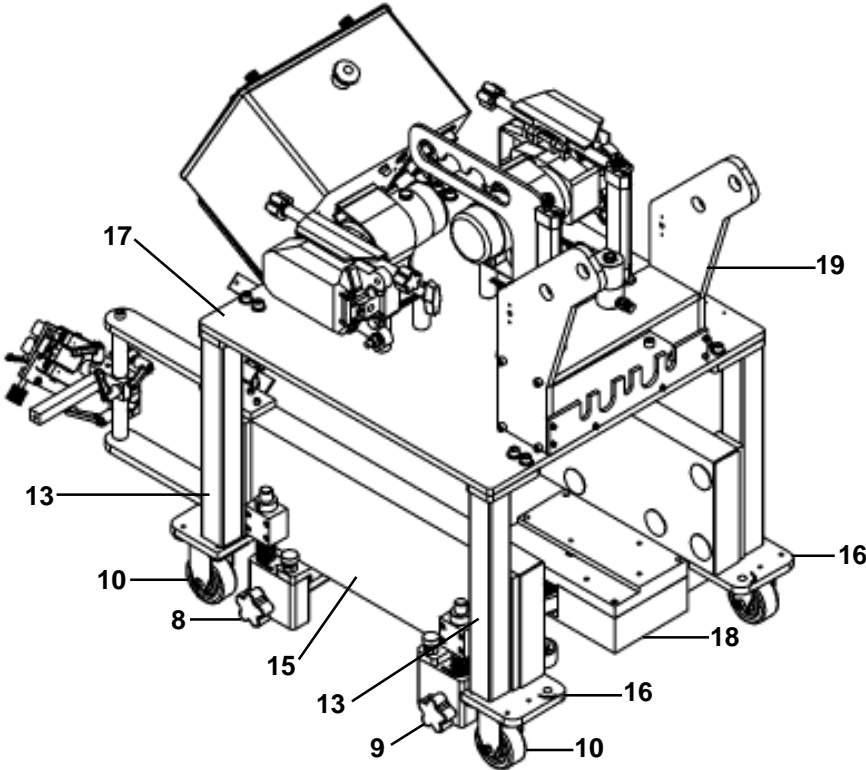
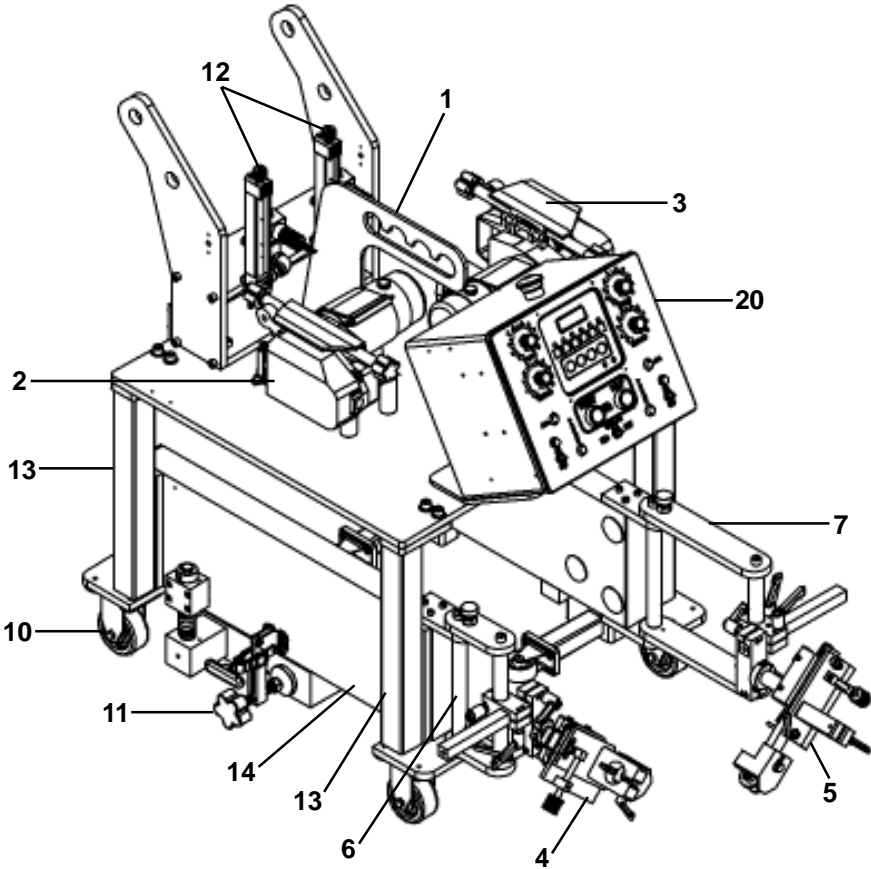
TECHNICAL DATA:

Programmable Weld/Skip Travel Speed:	0"-36" ipm (0-900mm/min)
Programmable Reverse Drive Crater Fill:	0"-1" (0-25mm)
Programmable Pre-Weld/Post Weld Gas Purge:	0-10 seconds
Net Weight:	250 lbs. (113 kg)
Stiffener Size Range:	Height 4"-18" (102-457mm) Width 4"-12" (102-305mm)
Wire Spool Capacity:	10, 20, 60 lbs. each side

DIMENSIONS:



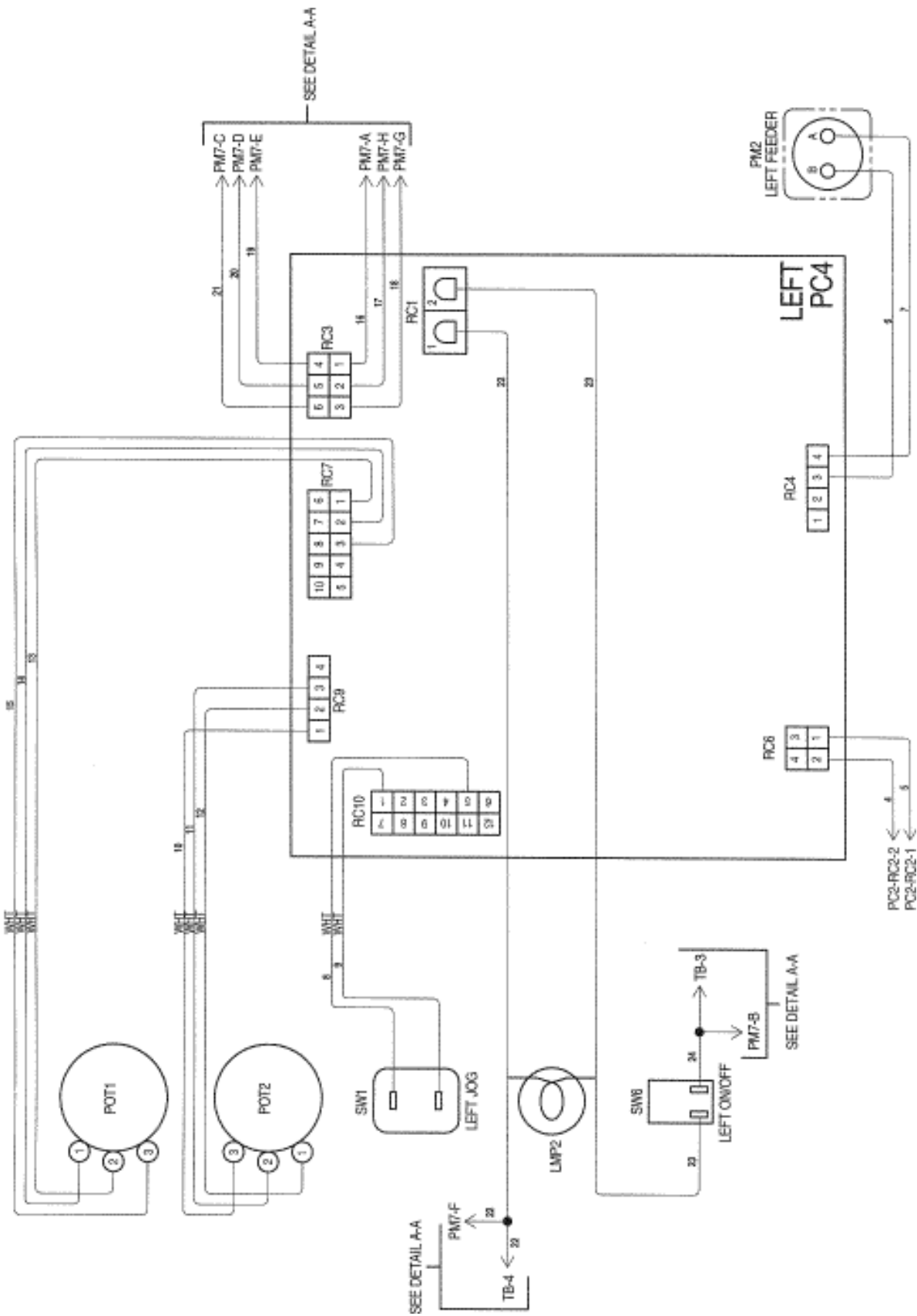
(STW-2000) STIFFENER WELDER / MAJOR COMPONENTS



(STW-2000) STIFFENER WELDER / PARTS LIST

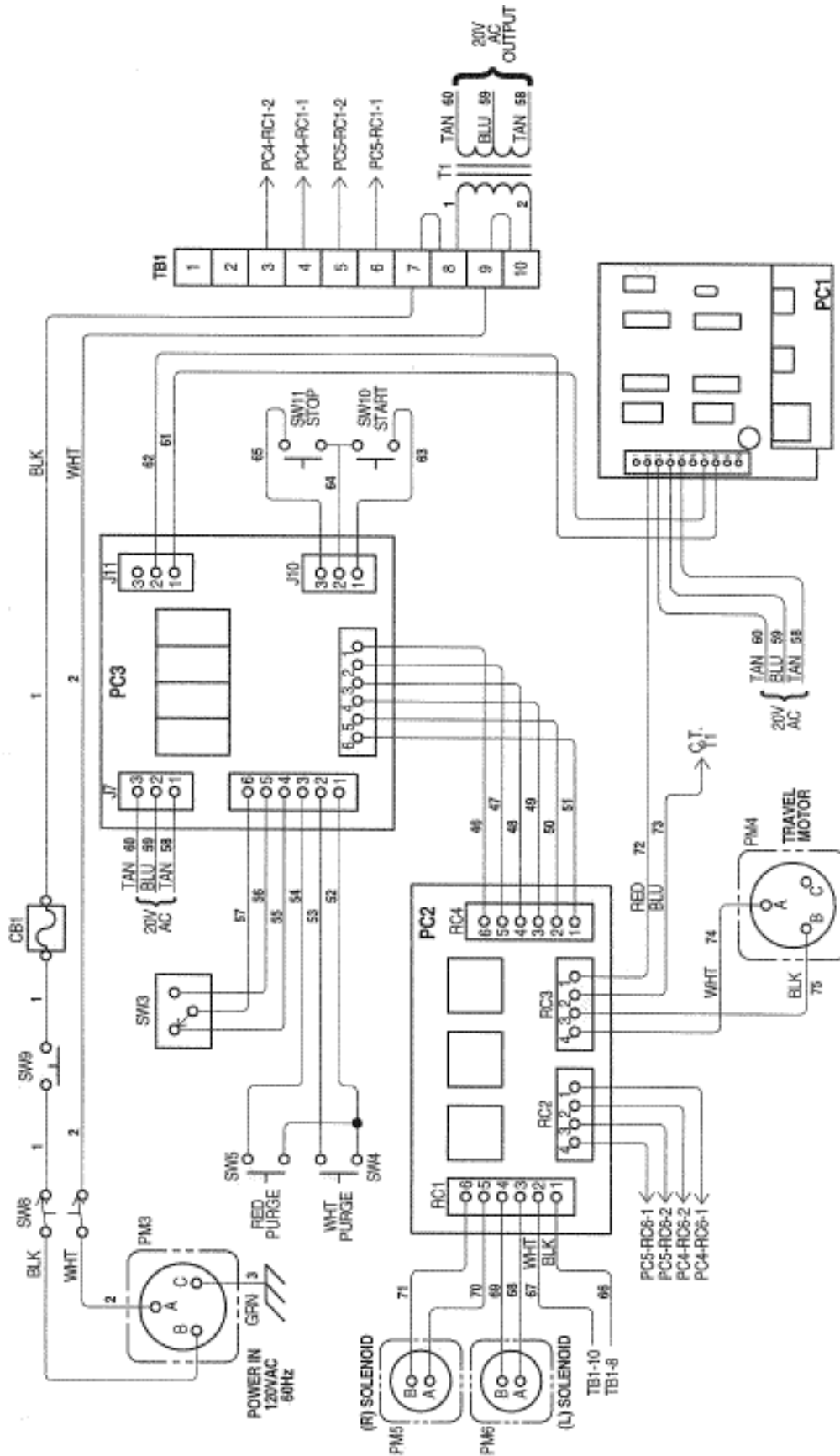
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	STW-2050	Lifting Lug
2	1	STW-2080-L	Wire Feeder (Miller) Left
3	1	STW-2080-R	Wire Feeder (Miller) Right
4	1	STW-2140-L	Corner Follower Left
5	1	STW-2140-R	Corner Follower Right
6	1	STW-2150-L	Gun Hinge Left
7	1	STW-2150-R	Gun Hinge Right
8	1	STW-2170-A	Capture Wheel Assy. "A"
9	1	STW-2170-B	Capture Wheel Assy. "B"
10	4	STW-2142	3" Phenolic Caster
11	1	STW-2115	Drive Latch
12	2	STW-2060	Flow Meter / Valve Assy.
13	4	STW-2190-18	Leg 18"
14	1	STW-2066	Left Leg Support
15	1	STW-2067	Right Leg Support
16	2	STW-2151	Wheel Mt. Plt.
17	1	STW-2054	Deck Plt.
18	1	STW-2120	Drive Unit
19	1	STW-2195	Spool Support Bracket
20	1	STW-2230	STW Control Box

WIRING DETAIL / LEFT WIRE FEEDER CONTROL



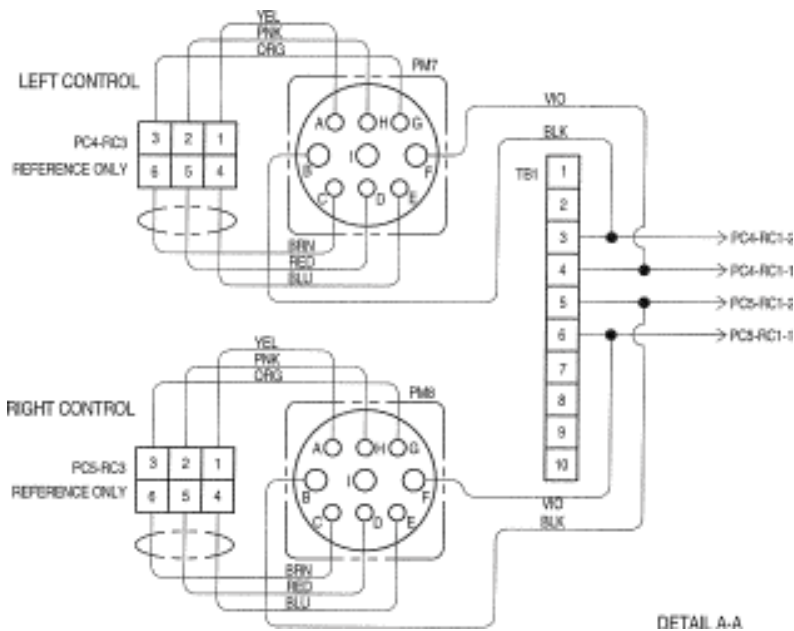
See Electrical Component Chart pg. 14

WIRING DETAIL / MOTION AND SOLENOID CONTROL



See Electrical Component Chart pg. 14

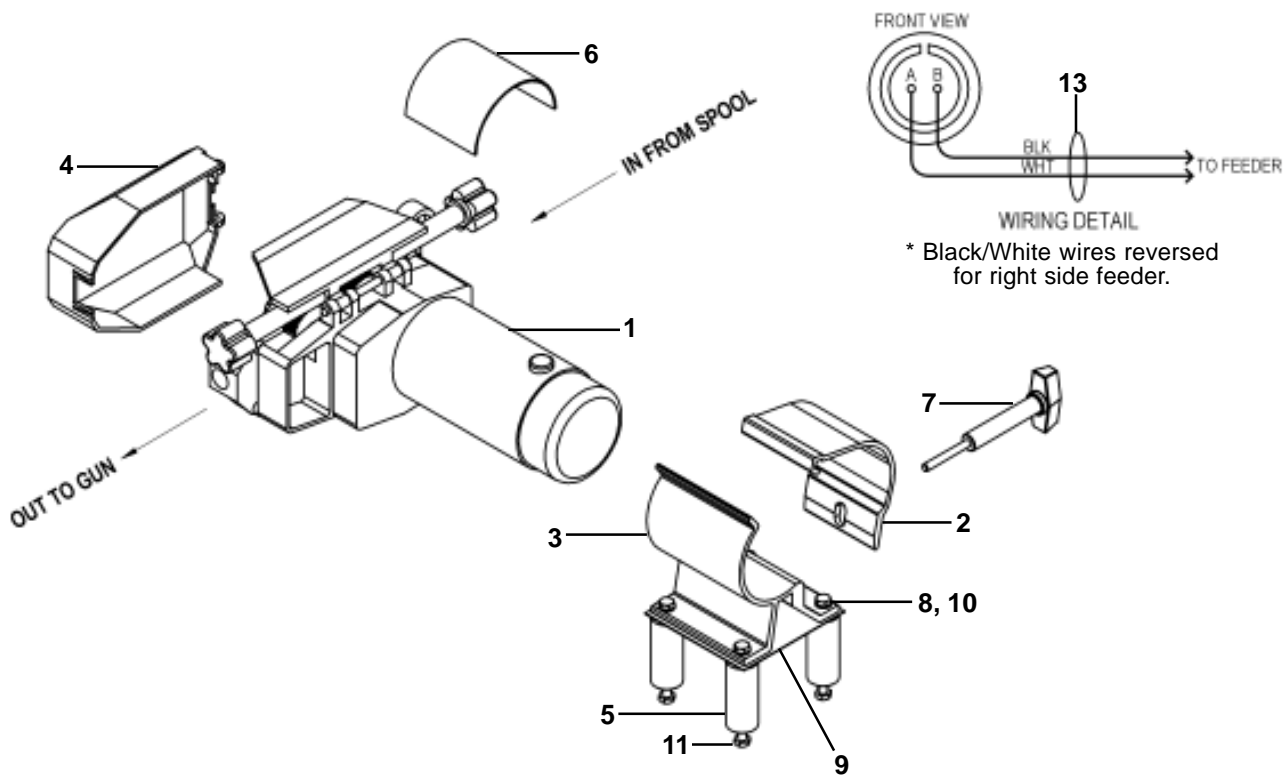
WIRING DETAIL A-A / ELECTRICAL COMPONENT CHART



ELECTRICAL COMPONENT CHART

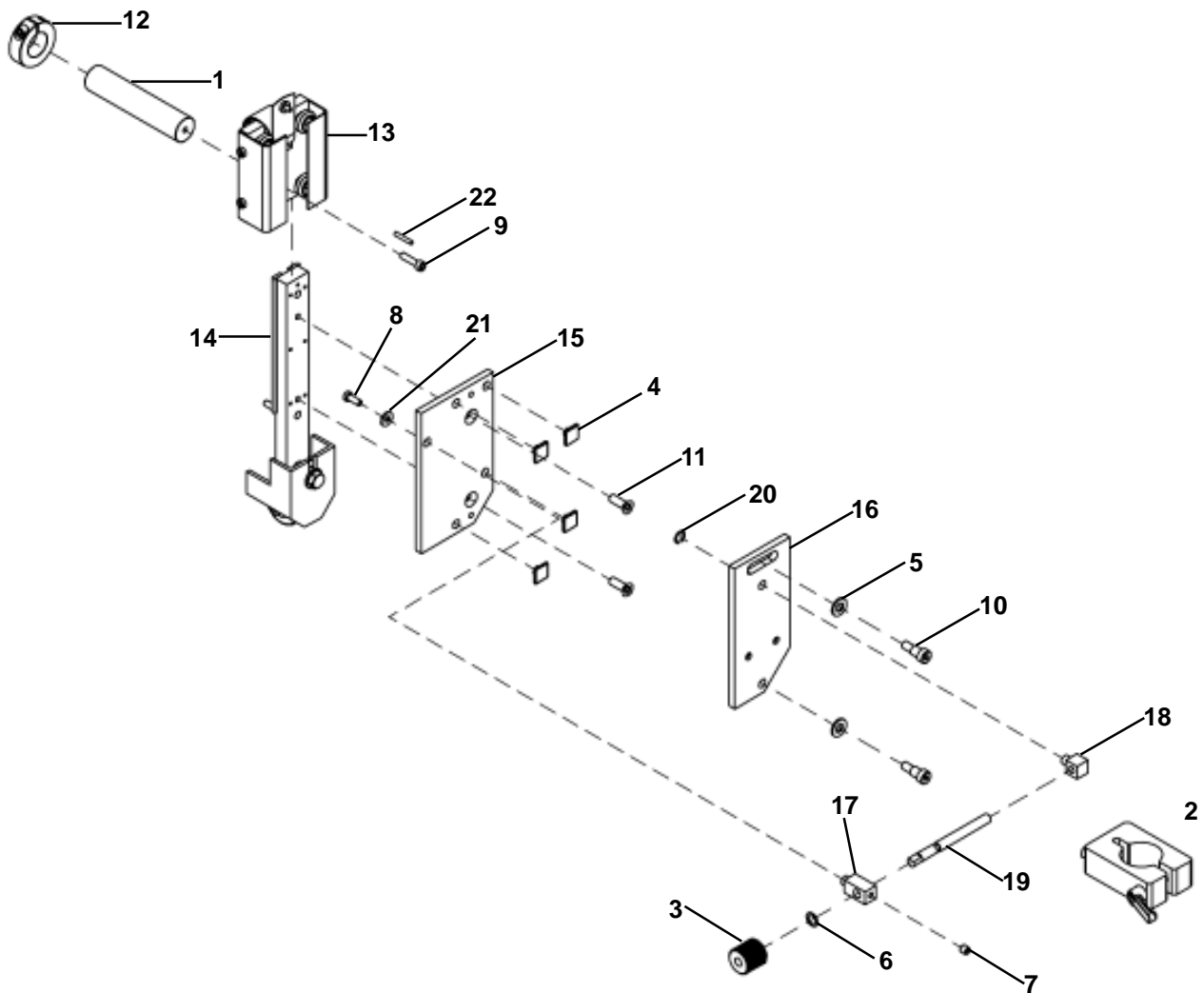
ELECTRICAL COMPONENT CHART		
ITEM	PART #	DESCRIPTION
CB1	BUG-2923	.7 AMP CIRCUIT BREAKER
LMP1	LAMP-1090	28 VAC, GREEN LIGHT
LMP2	LAMP-1090	28 VAC, GREEN LIGHT
PC1	BUG-1770	MOTOR CONTROL BOARD
PC2	PCB-2231	RELAY BOARD
PC3	STW-2235	CONTROL MODULE
PC4	PCB-204519	MOTOR CONTROL PCB W/PROGRAM
PC5	PCB-204519	MOTOR CONTROL PCB W/PROGRAM
PM1	BUG-9856	PANEL CONNECTOR, 2-T,F
PM2	BUG-9856	PANEL CONNECTOR, 2-T,F
PM3	CON-04RP03M	SHELL 16S, RECEPTACLE, PANEL
PM4	CON-04RP03M	SHELL 16S, RECEPTACLE, PANEL
PM5	CON-06RP04F	SHELL 18, RECEPTACLE, PANEL
PM6	CON-06RP04F	SHELL 18, RECEPTACLE, PANEL
PM7	CON-07RP09M	SHELL 20, RECEPTACLE, PANEL
PM8	CON-07RP09M	SHELL 20, RECEPTACLE, PANEL
SW1	ARM-2279	TOGGLE SWITCH, DPST, ON NONE ON
SW2	BUG-2255	TOGGLE SWITCH, DPDT, ON OFF ON
SW3	SWT-1111	NOR, OPEN PUSH BUTTO, BLACK
SW4	SWT-1111	NOR, OPEN PUSH BUTTO, BLACK
SW5	SWT-1111	NOR, OPEN PUSH BUTTO, BLACK
SW6	SWT-1111	NOR, OPEN PUSH BUTTO, BLACK
SW7	SWT-5225	TOGGEL SWITCH
SW8	SWT-5225	TOGGEL SWITCH
SW9	SWT-EPFH	ROUND MUSHROOM, LATCHINH, RED SWITCH
SW10	SWT-EPF3	ROUND, FLUSH, GREEN SWITCH
SW11	SWT-EPF4	ROUND, FLUSH, RED SWITCH
T1	BUG-9680	120 VAC DELAY TIMER RELAY
TB1	TMB-0261	10 POS, TERM. BLOCK 28-14 AWG

(STW-2080) WIRE FEEDER / EXPLODED VIEW / PARTS LIST



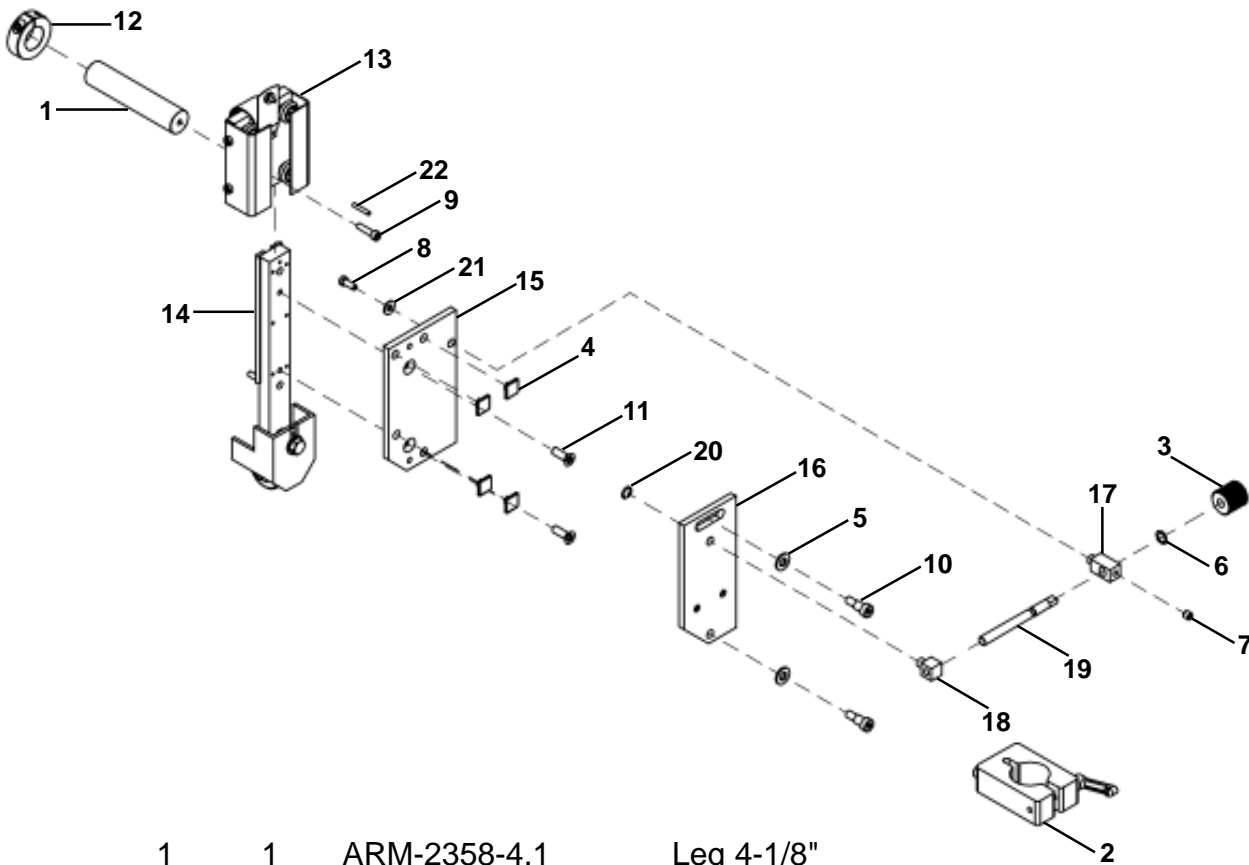
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	STW-2081	Drive Assy.
2	1	STW-2082	Clamp Motor Top
3	1	STW-2083	Clamp Motor Base
4	1	STW-2084	Knob w/Extension
5	1	STW-2085	Cover, Drive Roll
6	4	STW-2086	Feeder Standoff
7	2	STW-2087	Strip, BUNA-N
8	4	STW-2088	Insulator, Screw
9	4	STW-2089	Insulator, Machine Clamp
10	4	FAS-0357	Hex Hd Cap Scr 1/4-20 x 3/4"
11	4	FAS-0359	Hex Hd Cap Scr 1/4-20 x 1"
12	1	BUG-9857	Plug, Straight, 2 PIN, Male
13	15'	900-4-001	18/2 SJO 300V Cable

(STW-2140-L) CORNER FOLLOWER LEFT / EXPLODED VIEW / PARTS LIST



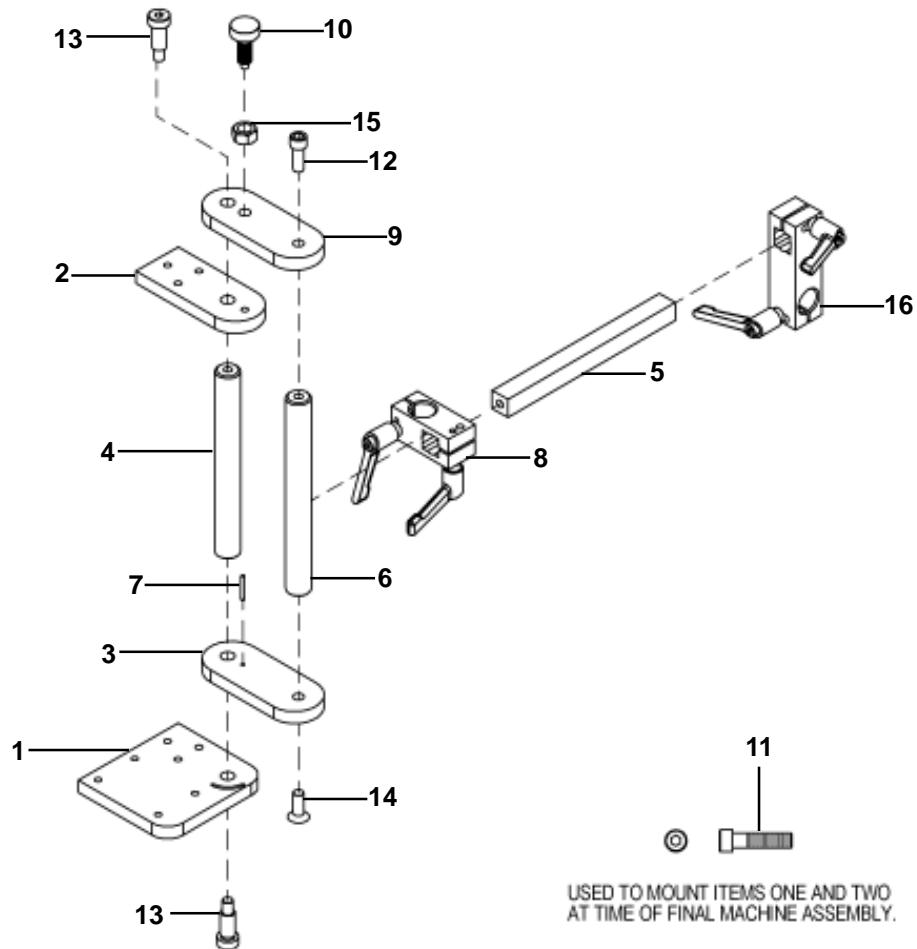
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ARM-2358-4.1	Leg 4-1/8"
2	1	BGV-1215	Clamp Block Assy.
3	1	BUG-1857	Knob w/Set Screw
4	4	BUG-2593	Glide "Flat"
5	2	BUG-2841	Washer 5/8" O.D. x 5/16" I.D.
6	1	CON-1029	Washer 5/16" x .015" Thk.
7	1	FAS-0453	Set Scr 1/4-20 x 1/4" HDP
8	1	FAS-0535	Soc Hd Cap Scr 10-24 x 1/2"
9	1	FAS-0557	Soc Hd Cap Scr 1/4-20 x 3/4"
10	2	FAS-0654	Soc Hd Shd 5/16" x 3/8" x 1/4-20
11	2	FAS-0957	Flt Hd Soc 1/4-20 x 3/4"
12	1	MUG-1515	Collar
13	1	PAN-1235	Slide Assy.
14	1	PAN-2125	Mounting Arm Assy.
15	1	PAN-2131-L	Mounting Plate, Left
16	1	PAN-2133-L	Slide Plate
17	1	PAN-2134	Screw Retainer
18	1	PAN-2135	Screw Block
19	1	PAN-2136	Adjusting Screw
20	1	PAN-2137	External Retaining Ring
21	1	WAS-0230	#10 SAE Washer
22	1	RPS-0179	Roll Pin

(STW-2140-R) CORNER FOLLOWER RIGHT / EXPLODED VIEW / PARTS LIST



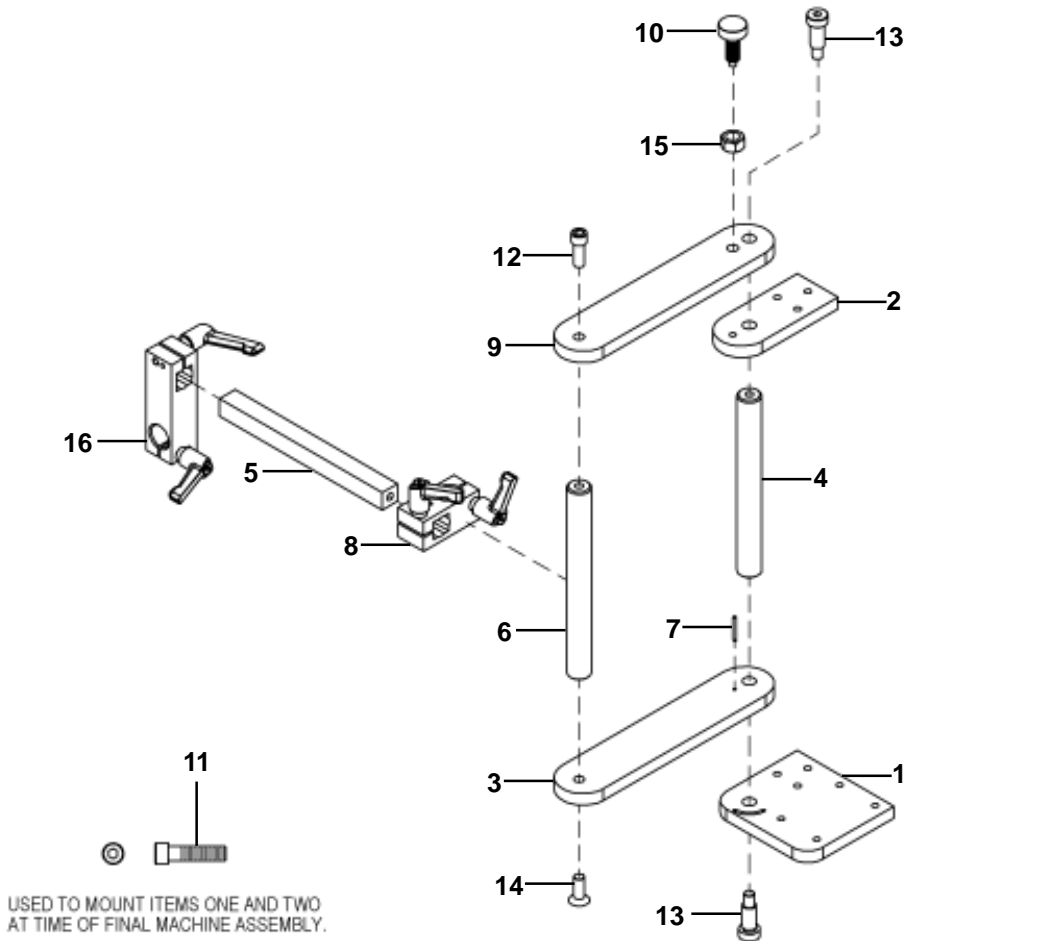
1	1	ARM-2358-4.1	Leg 4-1/8"
2	1	BGV-1215	Clamp Block Assy.
3	1	BUG-1857	Knob w/Set Screw
4	4	BUG-2593	Glide "Flat"
5	2	BUG-2841	Washer 5/8" O.D. x 5/16" I.D.
6	1	CON-1029	Washer 5/16" x .015" Thk
7	1	FAS-0453	Set Scr 1/4-20 x 1/4" HDP
8	1	FAS-0535	Soc Hd Cap Scr 10-24 x 1/2"
9	1	FAS-0557	Soc Hd Cap Scr 1/4-20 x 3/4"
10	2	FAS-0654	Soc Hd Shd 5/16" x 3/8" x 1/4-20
11	2	FAS-0957	Flt Hd Soc 1/4-20 x 3/4"
12	1	MUG-1515	Collar
13	1	PAN-1235	Slide Assy
14	1	PAN-2125	Mounting Arm Assy
15	1	PAN-2131-R	Mounting Plate, Left
16	1	PAN-2133-R	Slide Plate
17	1	PAN-2134	Screw Retainer
18	1	PAN-2135	Screw Block
19	1	PAN-2136	Adjusting Screw
20	1	PAN-2137	External Retaining Ring
21	1	WAS-0230	#10 SAE Washer
22	1	RPS-0179	Roll Pin

(STW-2150-L) GUN HINGE LEFT / EXPLODED VIEW / PARTS LIST



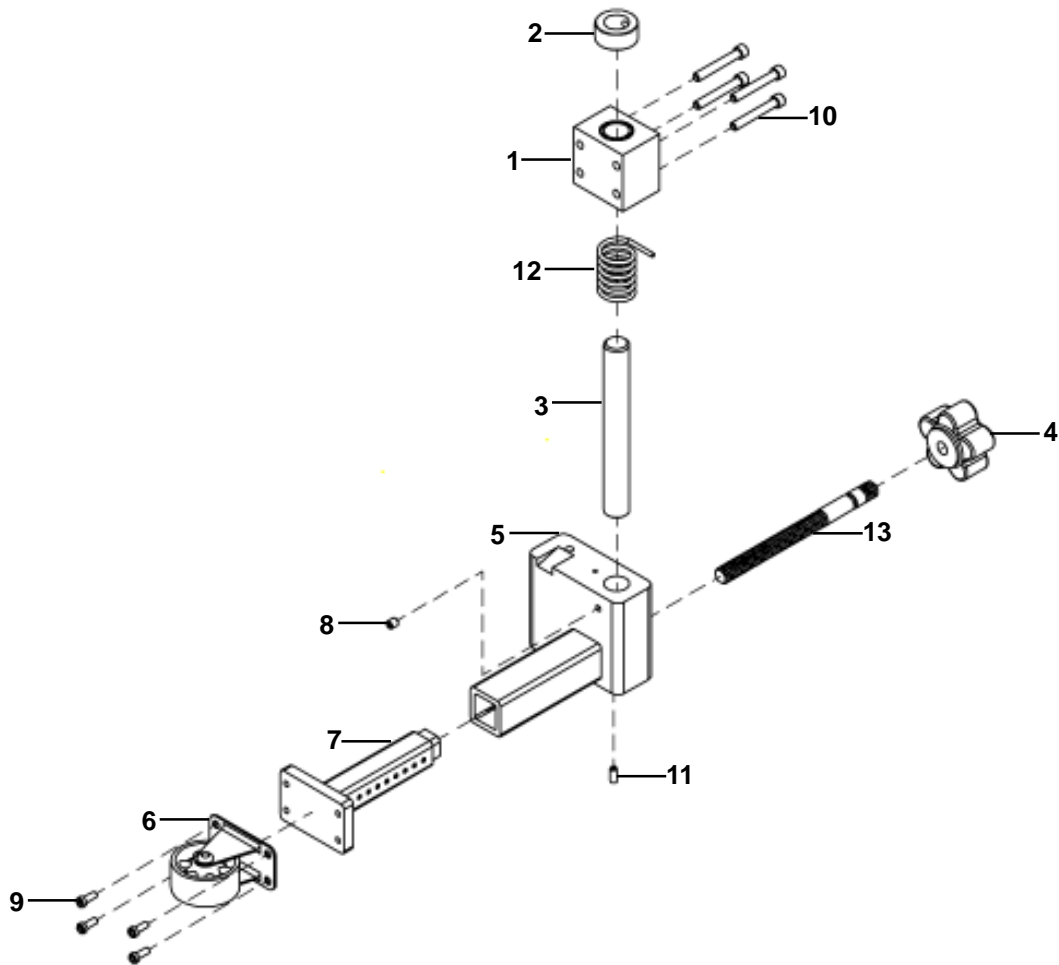
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	STW-2151	Wheel/Hinge Plate
2	1	STW-2152	Hinge Plate "A"
3	1	STW-2154	Hinge Plate "C"
4	1	STW-2155	Hinge Rod
5	1	STW-2156	Mounting Bar
6	1	STW-2158	Vertical Mounting Rod
7	1	STW-2159	SS Pin 1/8" Diameter x 1"
8	1	STW-2160	Clamp Block (Round/Square)
9	1	STW-2168	Hinge Plate "E"
10	1	STW-2178	Knurled Knob Plunger
11	6	FAS-0559	Soc Hd Cap Scr 1/4-20 x 1"
12	1	FAS-0599	Soc Hd Cap 3/8-16 x 1"
13	2	FAS-2693	Soc Hd Shr 1/2" x 1" x 3/8-16
14	1	FAS-0999	Flt Hd Soc 3/8-16 x 1"
15	1	FAS-1301	Hex Nut 1/2-13
16	1	STW-2165	Clamp Block LG (Round/Square)

(STW-2150-R) GUN HINGE RIGHT / EXPLODED VIEW / PARTS LIST



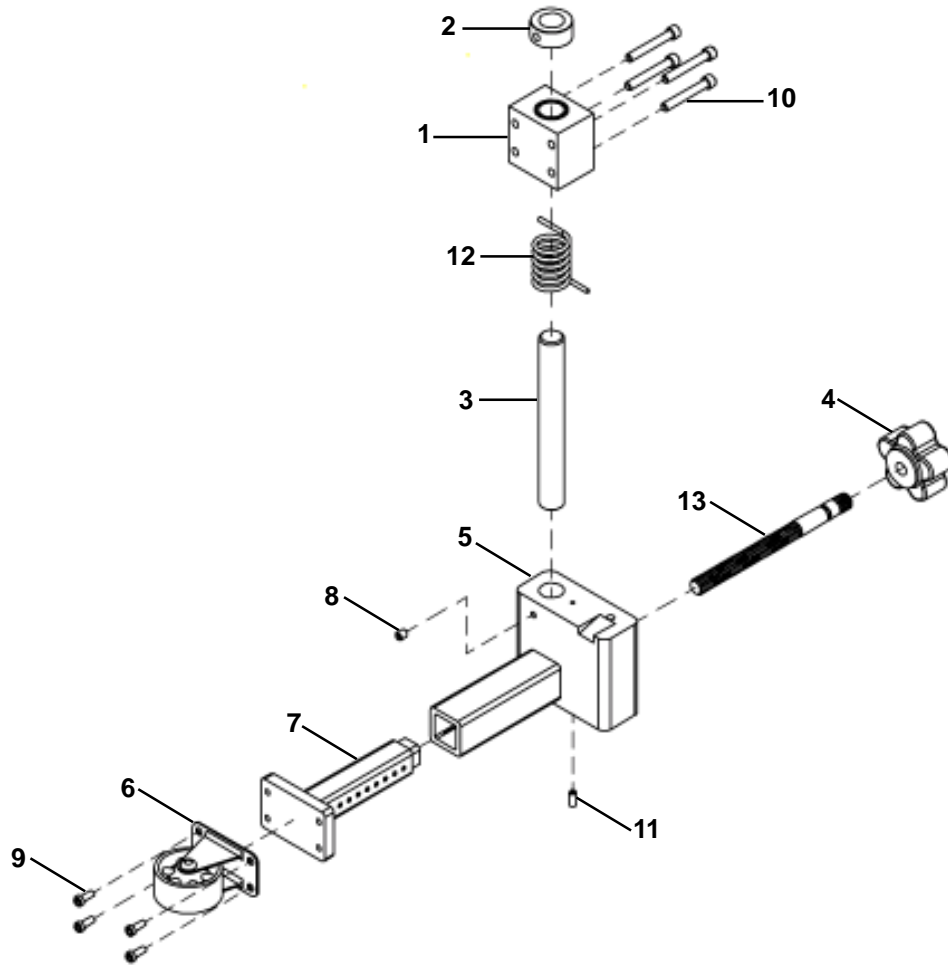
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	STW-2151	Wheel/Hinge Plate
2	1	STW-2152	Hinge Plate "A"
3	1	STW-2153	Hinge Plate "B"
4	1	STW-2155	Hinge Rod
5	1	STW-2156	Mounting Bar
6	1	STW-2158	Vertical Mounting Rod
7	1	STW-2159	SS Pin 1/8" Diameter x 1"
8	1	STW-2160	Clamp Block (Round/Square)
9	1	STW-2167	Hinge Plate "D"
10	1	STW-2178	Knurled Knob Plunger
11	6	FAS-0559	Soc Hd Cap Scr 1/4-20 x 1"
12	1	FAS-0599	Soc Hd Cap 3/8-16 x 1"
13	2	FAS-2693	Soc Hd Shr 1/2" x 1" x 3/8-16
14	1	FAS-0999	Flt Hd Soc 3/8-16 x 1"
15	1	FAS-1301	Hex Nut 1/2-13
16	1	STW-2165	Clamp Block LG (Round/Square)

(STW-2170-A) CAPTURE WHEEL ASSEMBLY "A" / EXPLODED VIEW / PARTS LIST



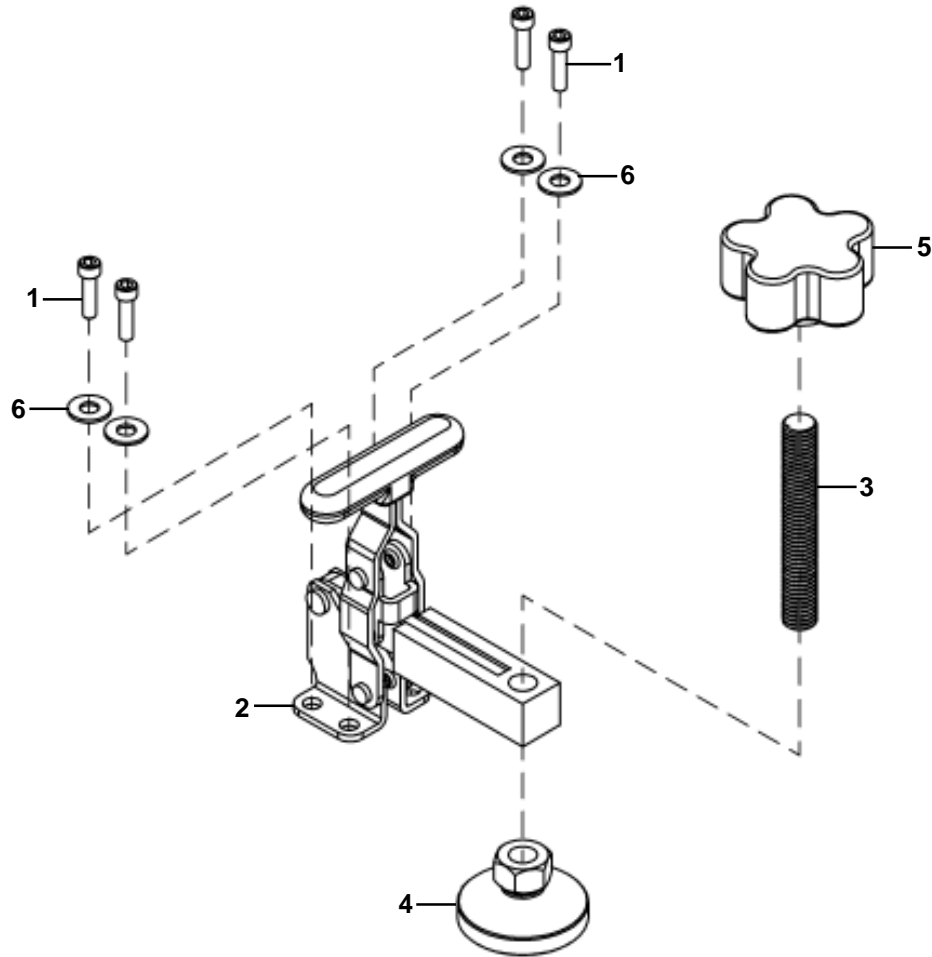
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	STW-2135	Hinge Bearing Block
2	1	STW-2138	Shaft Collar 3/4" I.D.
3	1	STW-2173	Follower Hinge
4	1	STW-2174	Five Lobe Knob / Insert
5	1	STW-2175-A	Female Tube Weldment
6	1	STW-2179	2" Caster / Iron Wheel
7	1	STW-2180	Male Tube Weldment
8	1	FAS-0454-Cone	Set Scr 1/4-20 x 3/8" Cone Point
9	4	FAS-0555	Soc Hd Cap Scr 1/4-20 x 1/2"
10	4	FAS-2554	Soc Hd Cap Scr 1/4-20 x 1-3/4"
11	1	FAS-0455-HDP	Set Scr 1/4-20 x 1/2" Half Dog
12	1	SPR-1001-LH	Left Follower Spring

(STW-2170-B) CAPTURE WHEEL ASSEMBLY "B" / EXPLODED VIEW / PARTS LIST



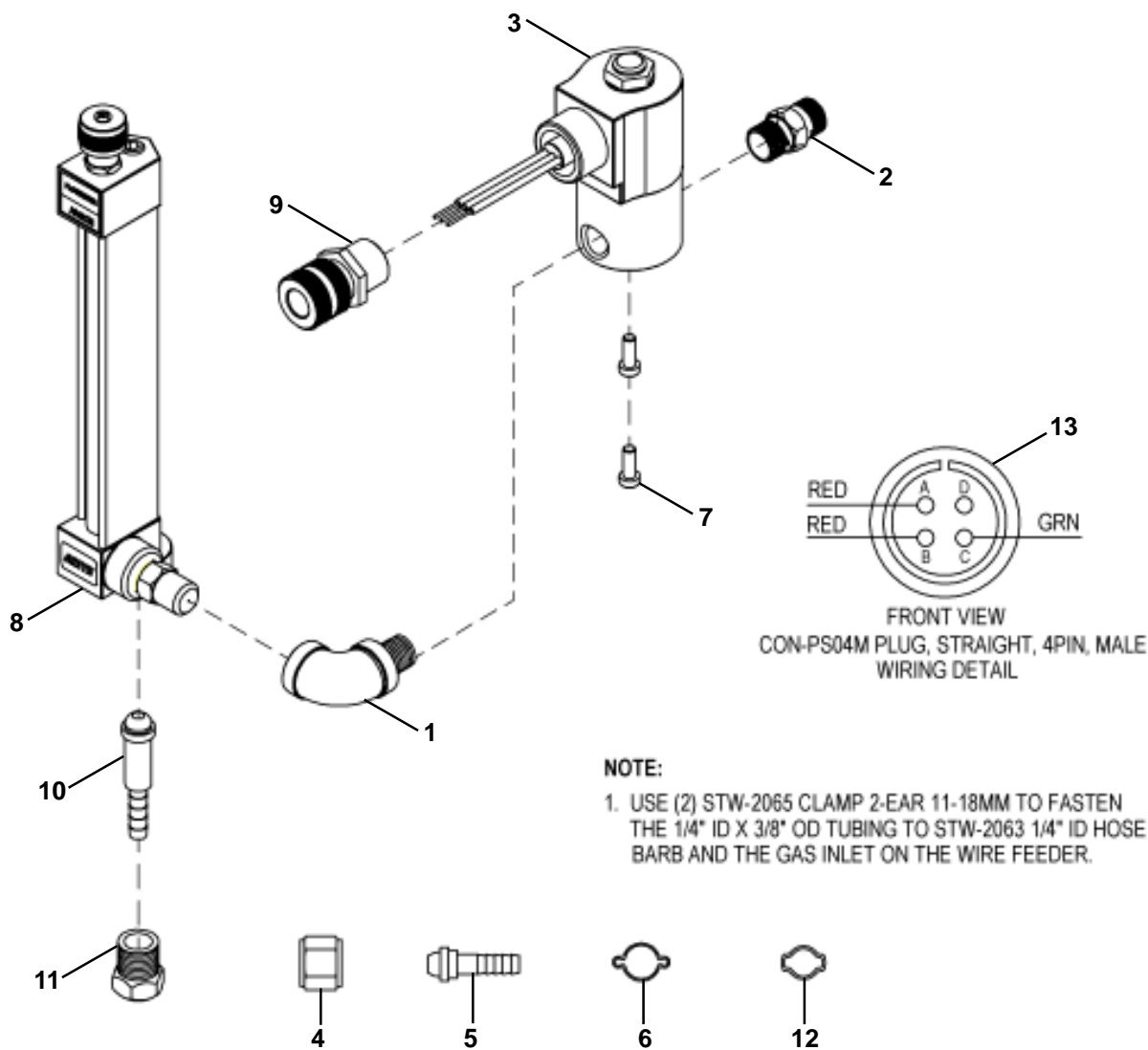
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	STW-2135	Hinge Bearing Block
2	1	STW-2138	Shaft Collar 3/4" I.D.
3	1	STW-2173	Follower Hinge
4	1	STW-2174	Five Lobe Knob/Insert
5	1	STW-2175-B	Female Tube Weldment
6	1	STW-2179	2" Caster/Iron Wheel
7	1	STW-2180	Male Tube Weldment
8	1	FAS-0454-Cone	Set Scr 1/4-20 x 3/8" Cone Point
9	4	FAS-0555	Soc Hd Cap Scr 1/4-20 x 1/2"
10	4	FAS-2554	Soc Hd Cap Scr 1/4-20 x 1-3/4"
11	1	FAS-0455-HDP	Set Scr 1/4-20 x 1/2" Half Dog
12	1	SPR-1001-RH	Right Follower Spring

(STW-2115) DRIVE LATCH / EXPLODED VIEW / PARTS LIST



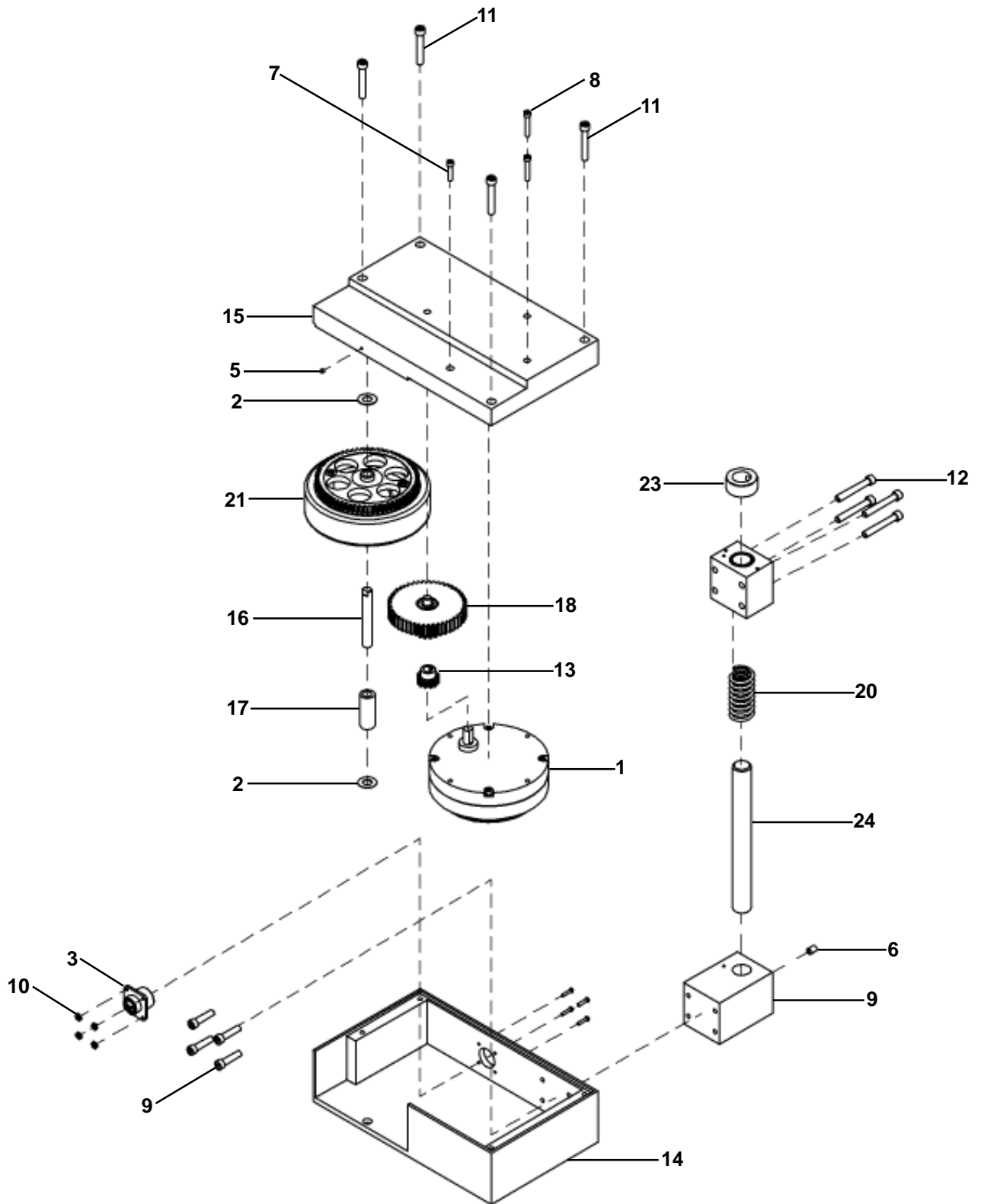
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	FAS-0557	Soc Hd Cap Scr 1/4-20 x 3/4"
2	1	STW-2116	Drive Latch Weldment
3	1	STW-2118	Screw 1/2-13 x 3-1/2"
4	1	STW-2119	Level Mount
5	1	STW-2174	Five Lobe Knob Insert 1/2-13 RT
6	4	WAS-0240	1/4" SAE Washer

(STW-2060) FLOW-METER & VALVE ASSEMBLY / EXPLODED VIEW / PARTS LIST



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ARV-1113	1/4 NPT 90° Street Elbow
2	1	BUG-9096	Outlet Bushing, Oxygen, Right
3	1	BUG-9102	Magnetic Valve For Use With Oxygen
4	1	CIR-1012	Hose Nut, Oxygen, Right Hand
5	1	CIR-1013	1/4" Hose Nipple
6	1	CIR-1016	Hose Clamp 9/16" Crimp Type
7	2	FAS-0545	Soc Hd Cap Scr 10-30 x 1/2"
8	1	STW-2061	Argon Flowmeter
9	1	STW-2062	Modified Cord Grip
10	1	STW-2063	1/4" I.D. Hose Barb
11	1	STW-2064	Inert Gas Male RH
12	2	STW-2065	Clamp 2-Ear 8-11mm
13	1	CON-PS04M	Plug, Straight, 4 Pin, Male
NS	26"	1000-4-002	1/4" I.D. x 3/8" O.D. Tube

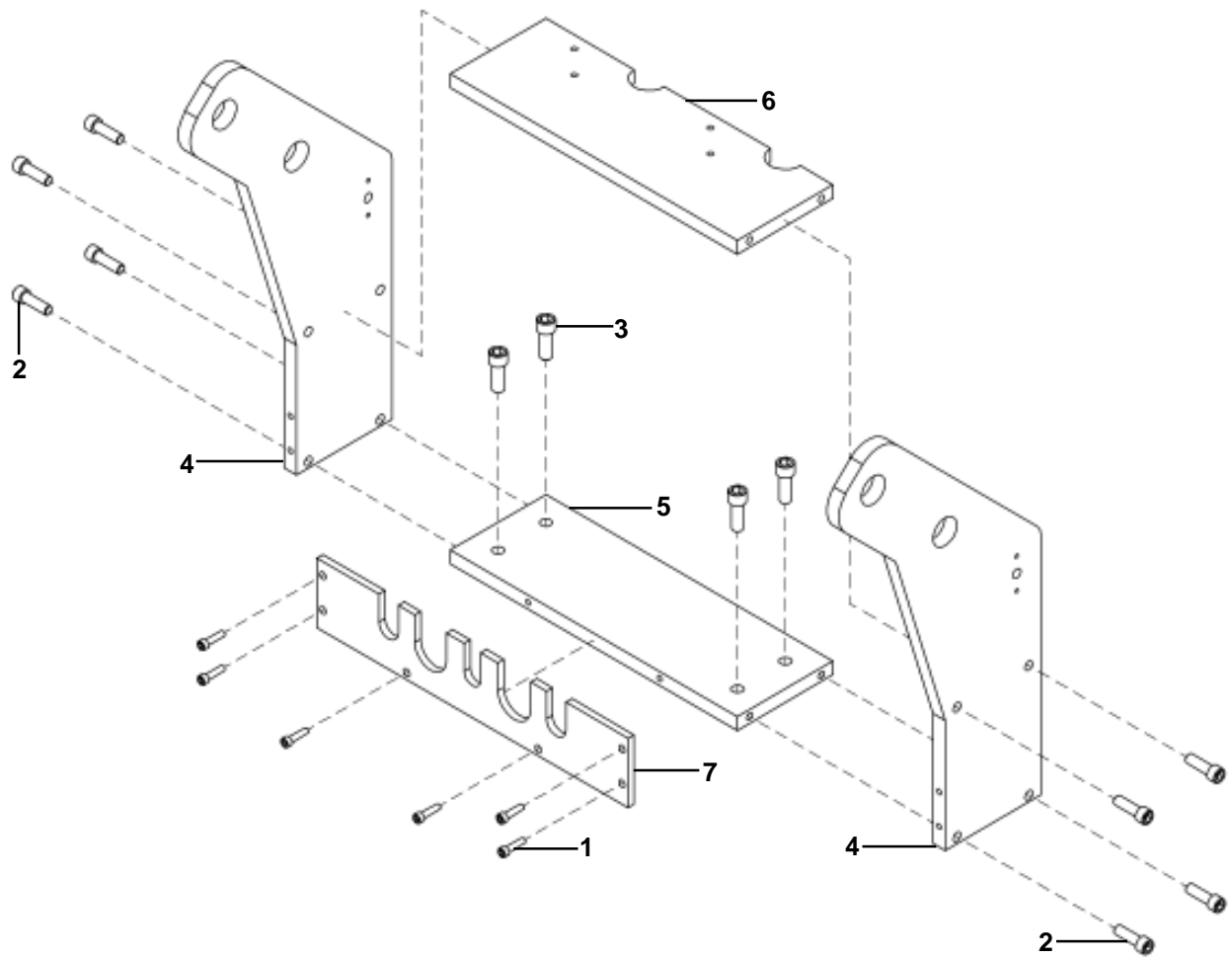
(STW-2120) DRIVE UNIT ASSEMBLY / EXPLODED VIEW



(STW-2120) DRIVE UNIT ASSEMBLY / PARTS LIST

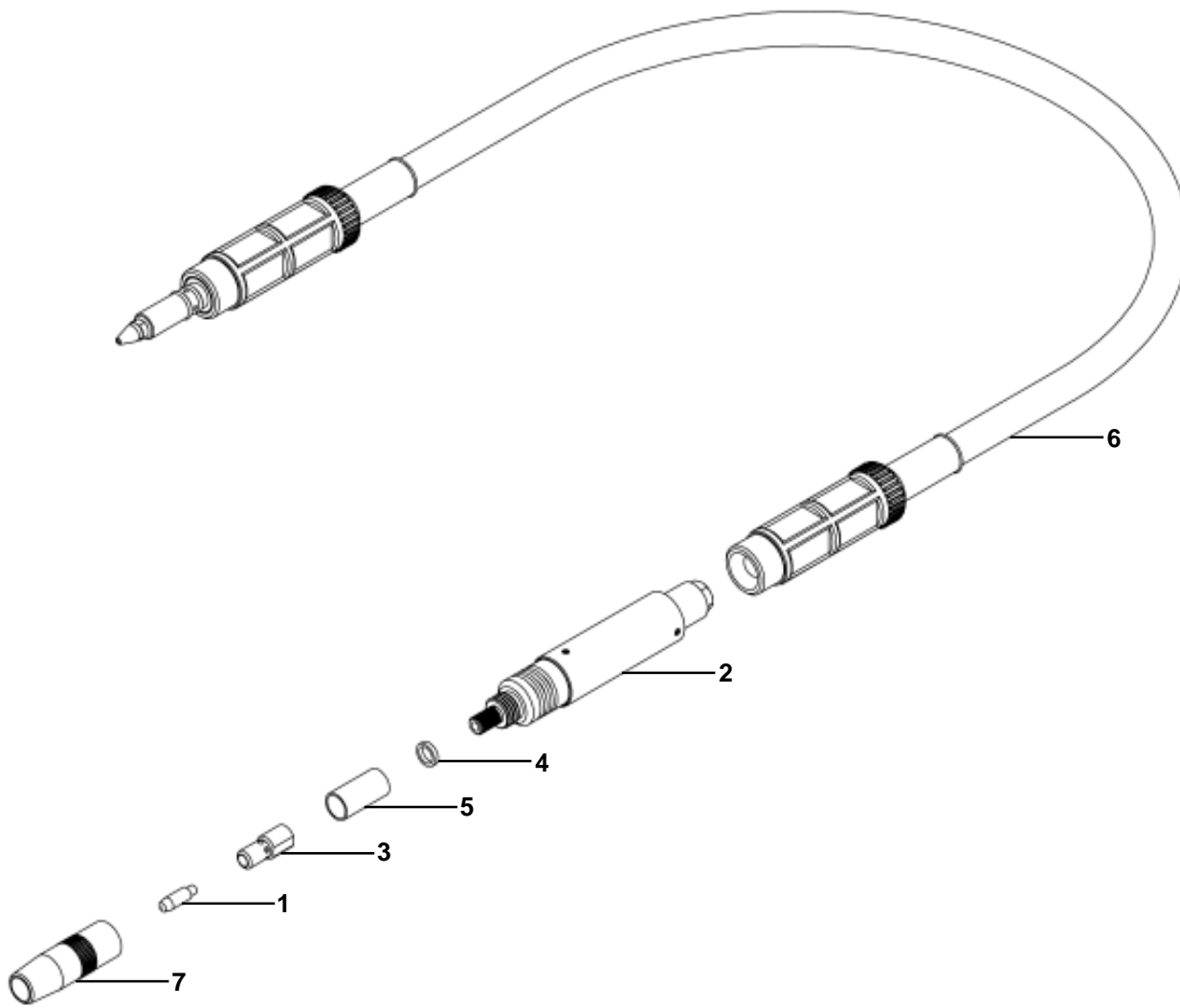
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	BUG-1550	Gear Motor (150:1)
2	2	BUG-2268	Thrust Washer
3	1	BUG-9856	Panel Connector 2-T, Female
4	4	FAS-0205	Rnd Hd Scr 4-40 x 1/2"
5	1	FAS-0410	Set Scr 6-32 x 1/8" Cup Point
6	1	FAS-0454	Set Scr 1/4-20 x 3/8" Cup Point
7	1	FAS-0527	Soc Hd Cap Scr 8-32 x 3/4"
8	2	FAS-0529	Soc Hd Cap Scr 8032 x 1"
9	4	FAS-0559	Soc Hd Cap Scr 1/2-20 x 1"
10	4	FAS-1305	Hex Nut 4-40
11	4	FAS-2553	Soc Hd Cap Scr 1/4-20 x 1-1/2"
12	4	FAS-2554	Soc Hd Cap Scr 1-20 x 1-3/4"
13	1	GOF-3014	Drive Pinion w/Key & Set Screw
14	1	STW-2121	Drive Unit Bottom Cover
15	1	STW-2122	Drive Unit Top Cover
16	1	STW-2123	Drive Shaft
17	1	STW-2124	Bushing
18	1	STW-2125	Drive Gear Assembly
19	1	STW-2128	Drive Unit Mounting Block
20	1	STW-2129	Spring
21	1	STW-2130	Drive Wheel Assy.
22	1	STW-2135	Hinge Bearing Assy.
23	1	STW-2138	Locking Collar
24	1	STW-2139	Drive Unit Shaft

(STW-2195) SPOOL SUPPORT BRACKET / EXPLODED VIEW / PARTS LIST



ITEM	QTY	PART NUMBER	DESCRIPTION
1	6	FAS-0557	Hex Hd Cap Scr 1/4-20 x 3/4"
2	8	FAS-0579	Hex Hd Cap Scr 5/16-18 x 1"
3	4	FAS-0599	Hex Hd Cap Scr 3/8-16 x 1"
4	2	STW-2069	Spool Mount Plate
5	1	STW-2196	Mount Plate
6	1	STW-2197	Guage Mount Plate
7	1	STW-2198	Cable Mount

(CSM-1100) 500 AMP AIR-COOLED GUN / EXPLODED VIEW / PARTS LIST

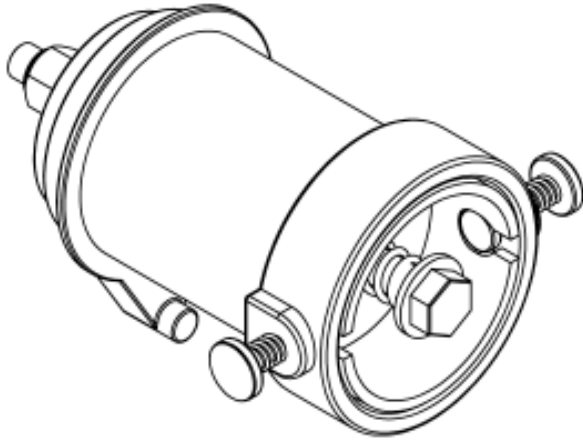


PARTS LIST				WIRE SIZE			
ITEM	QTY	PART NUMBER	DESCRIPTION	.035	.045	.052	.062
1	1	CSM-1091	Contact Tip .035"	X			
1	1	CSM-1092	Contact Tip .045"		X		
1	1	CSM-1093	Contact Tip .052"			X	
1	1	CSM-1094	Contact Tip .062"				X
2	1	CSM-1080	Neck Assy. For 500A-180-03M-BGO	X	X	X	X
3	1	CSM-1081	Gas Diffuser / Tip Holder	X	X	X	X
4	1	CSM-1082	Insulating Washer	X	X	X	X
5	1	CSM-1083	Nozzle Insulator	X	X	X	X
6	1	CSM-1084	3' 500 AMP Power Cable	X	X	X	X
*	1	CSM-1086	Liner (.035-.062)	X	X	X	X
7	1	CSM-1087	5/8" Bore Conical Noz. NI. PLTD. Copper	X	X	X	X
*	1	CSM-1088	5/8" Bore Conical Noz. Bare Copper	X	X	X	X
*	1	CSM-1089	9/16" Bore Tapered Noz. NI. PLTD. Copper	X	X	X	X
*	1	CSM-1090	9/16" Bore Tapered Noz. Bare Copper	X	X	X	X

* ITEMS NOT SHOWN

** ITEMS SOLD SEPARATELY

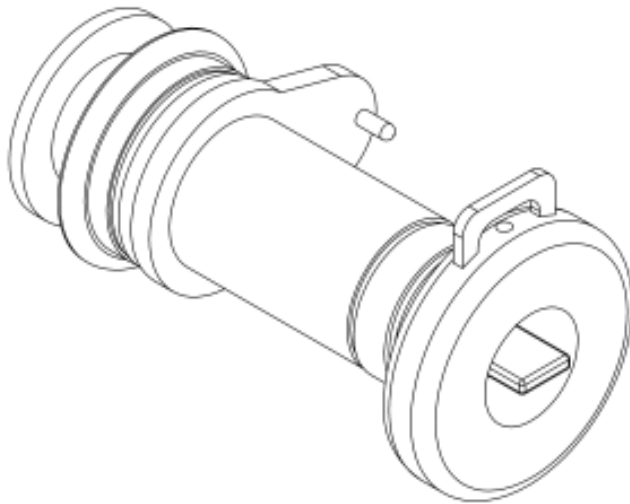
ACCESSORIES (SPOOLS):



10 lb. Spool Kit

The 10 lb. spool kit accepts 10 lb. spools of wire and mounts to the spool mounting bracket on the rear of the welding unit.

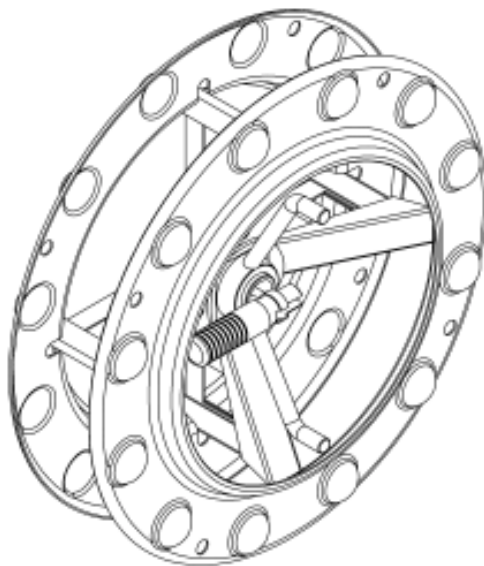
Order **#STW-2100**
Comes in quantities of 1.



30 lb. Spool Kit

The 30 lb. spool kit accepts 30 lb. spools of wire and mounts to the spool mounting bracket on the rear of the welding unit.

Order **#WFU-1041**
Comes in quantities of 1.



60 lb. Spool Kit

The 60 lb. spool kit accepts 60 lb. spools of wire and mounts to the spool mounting bracket on the rear of the welding unit.

Order **#BUG-3293**
Comes in quantities of 1.

WARRANTY

Limited Warranty

Model _____
Serial No. _____
Date Purchased: _____

For a period of twelve (12) months from delivery, Bug-O Systems warrants to the original purchaser (does not include authorized distributors), that a new machine is free from defects in material and workmanship and agrees to repair or replace, at its option, any defective parts or machine. This warranty does not apply to machines, which after our inspection, are determined to have been damaged due to neglect, abuse, overloading, accident or improper usage. All shipping and handling charges will be paid by customer.

Bug-O Systems makes no warranty of merchantability and makes no other warranty, expressed or implied, beyond the warranty expressly set forth above. Buyer's remedy for breach of warranty, hereunder, shall be limited to repair or replacement of non-conforming parts and machines. Under no circumstances shall consequential damages be recoverable.

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 he 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.