

# Sequence of Operations

**Model #:** 2170216

**Description:** Roller Shear

## **Machine Operation – Immediate Start**

- Plug machine into 115 volt power source.
- Open side doors to access roller mechanism and specimen mount plate.
- Lift roller mechanism up and place "T" handle pin into upper cross hole thus holding mechanism up.
- Position specimen onto perforated plate per the procedure described in the ASTM procedure.
- Remove the "T" handle pin and allow the roller mechanism to come down onto test specimen.
- Crank the support plate up or down as required to get the roller mechanism to a level position. Use the bubble level mounted on the side arm to determine when roller mechanism is level.
- Close both doors to engage door interlocks. Test will not run with doors open.
- Turn on the main power switch, which is located on the rear of the enclosure.
- Turn the 'delayed start' selector knob to 'off'.
- Make sure the black plastic arm on the extruded upright is set all the way to the top of the post.
- Set the counter to the desired number of cycles (See counter set-up below for details).
- Press the reset button on the front panel to reset counter to zero.
- Press the Green "START" button and test will begin.
- Pushing the red "STOP" button on the control panel stops the test anytime. (Count does not reset.)
- When the number of cycles is complete, the oscillating plate automatically stops.
- The reset button under the counter must be pushed before a new test can be run.

## **Machine Operation – Delayed Start**

- Complete the first 8 steps from the setup above.
- Set the “DELAYED START” selector knob to “ON”.
- Lift the roller into the “up” position and lock it in place with the included quick-release pin.
- Jog the sample plate to the rear of the machine. The extruded upright attached to that plate should be underneath the raised roller.
- Adjust the black plastic arm on the upright until it is directly under the aluminum catch plate on the roller. Lock the arm in place with the black plastic knob.
- Set the counter to the desired number of cycles (See counter manual for details).
- Set the timer to the desired delay time (See timer user manual for details).
- Press the reset button on the front panel to reset counter to zero.
- Press the Green “START” button and the timer will begin counting down.
- The test will start automatically when the timer counts down to zero.
- Pushing the red “STOP” button on the control panel stops the test anytime. (Count does not reset.)
- When the number of cycles is complete, the oscillating plate automatically stops.
- The reset button on the counter must be pushed before a new test can be run.
- Note: If the “DELAYED START” knob is switched off while the timer is running, the machine will immediately start running.

## **Stroke Adjustment**

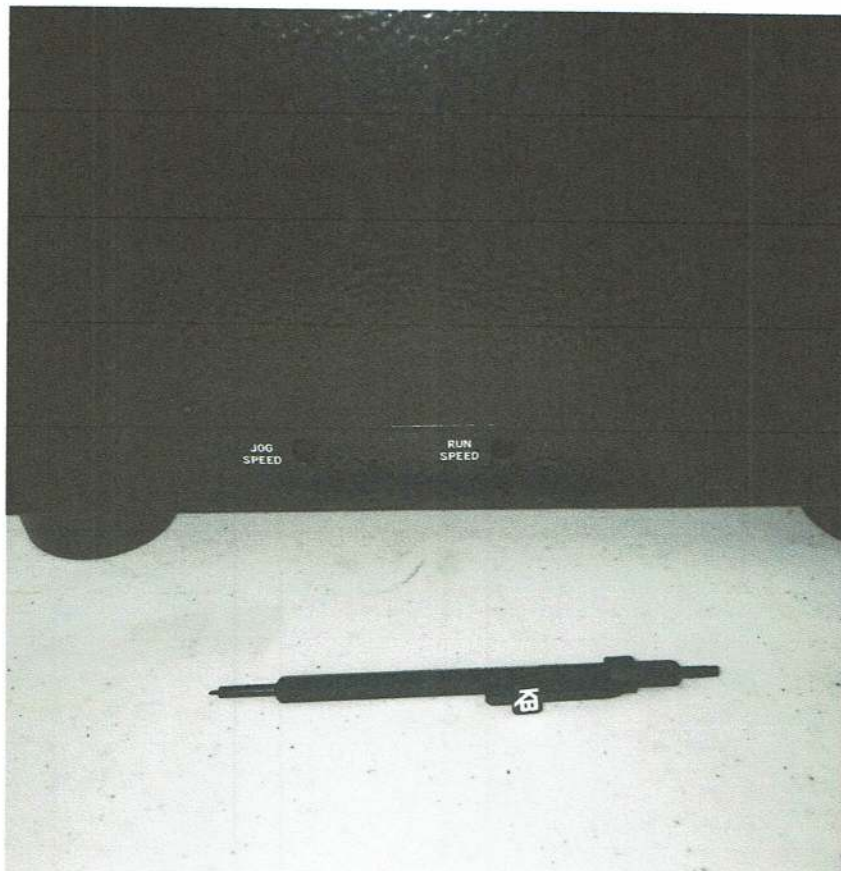
- Machine comes preset to the 300mm stroke length.
- Jog the drive arm so that it points toward the control enclosure.
- Using a ratchet wrench, remove the nut on the bottom of the cam follower stud.
- Loosen the cap screw that holds the drive arm on the reducer output shaft.
- The drive arm will slide down the reducer drive shaft.
- When the drive arm is low enough, remove the cam follower and relocate in the alternate hole – either lengthening or shortening the stroke.
- Raise the drive arm, engaging the cam follower into the cam track.
- Tighten the drive arm screw.
- Reattach the hex nut to the bottom of the cam follower stud.

## **Roller Shear Speed & Jog Adjustment Speed: 30 CPM**

**See Photo, Figure 1., below:**

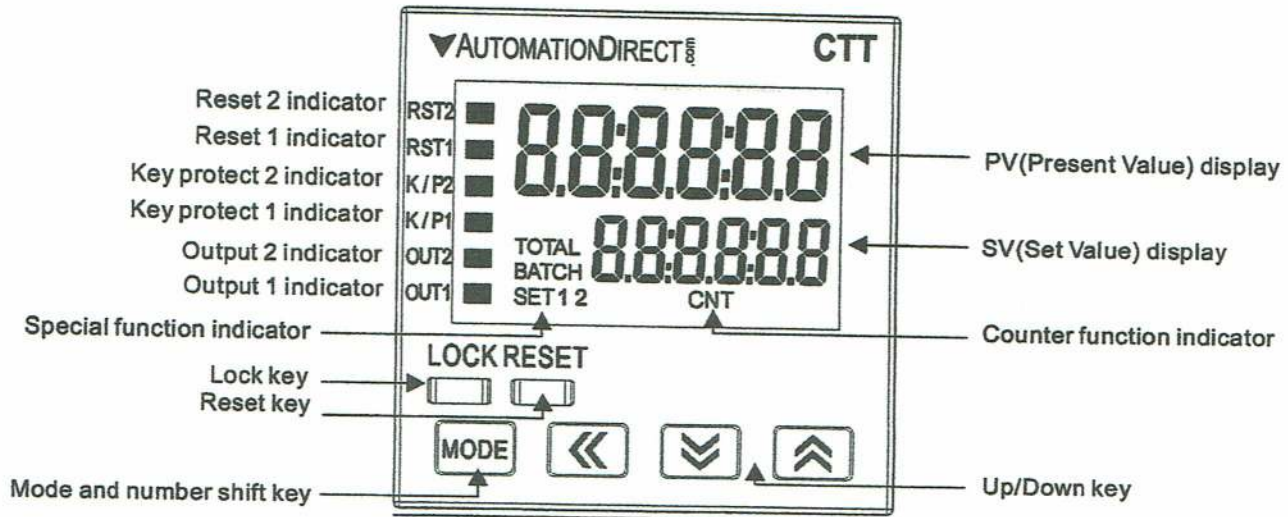
**Remove protective plugs.**

**Using small flat blade screwdriver, turn adjustment screw clockwise or counter-clockwise, to desired JOG or RUN speeds.**

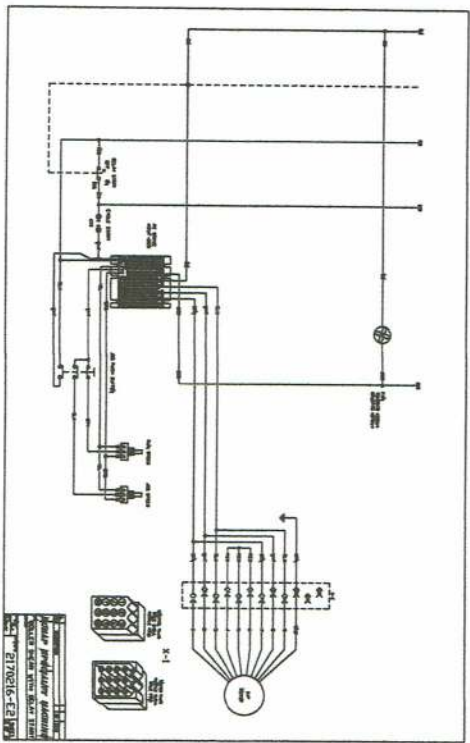
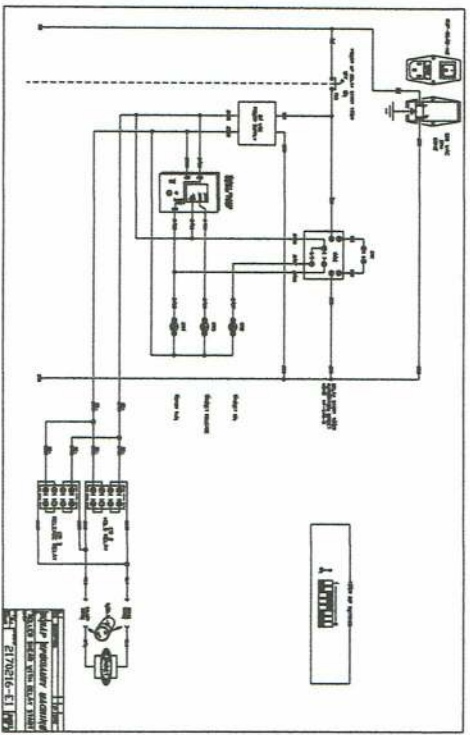
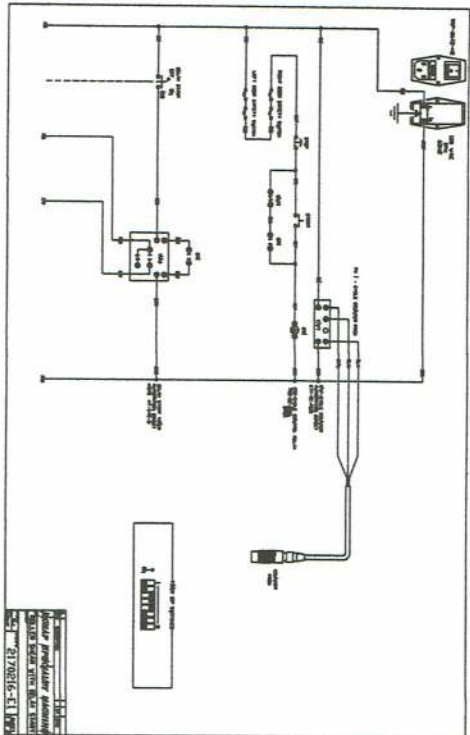
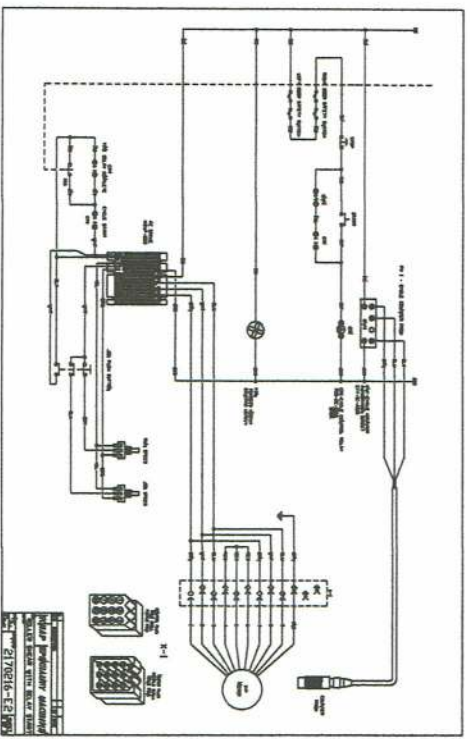




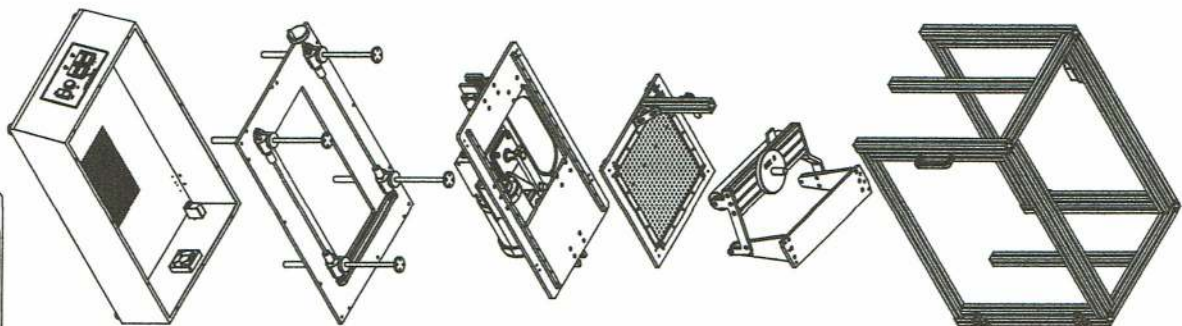
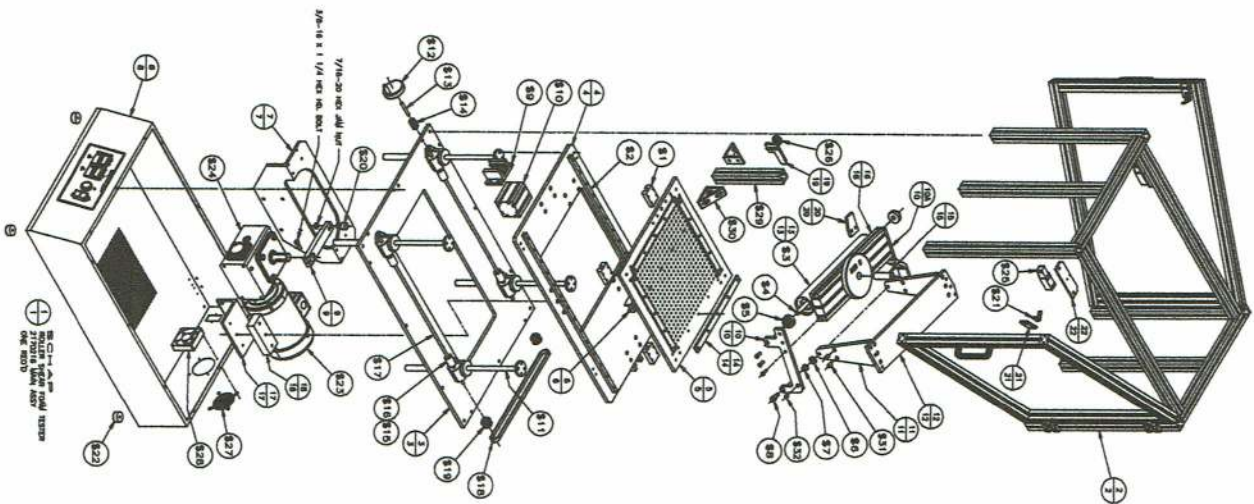
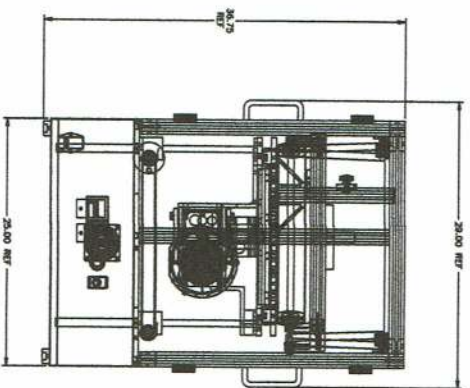
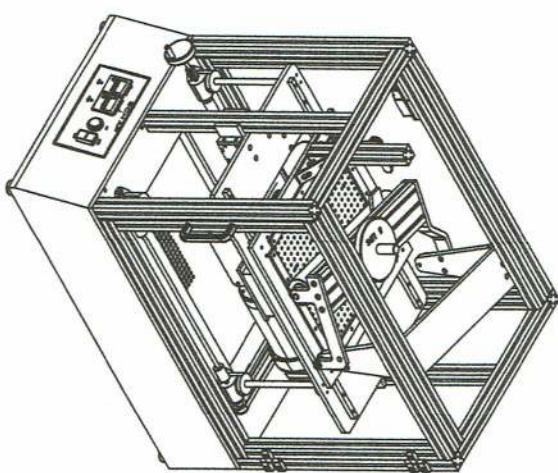
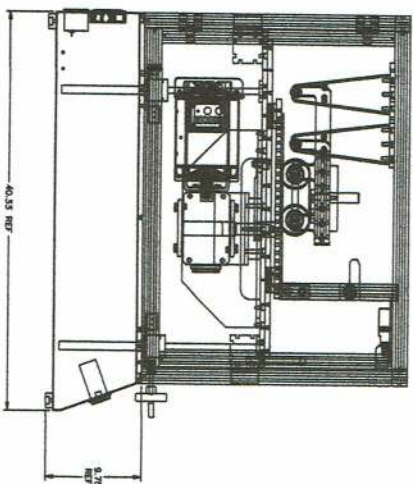
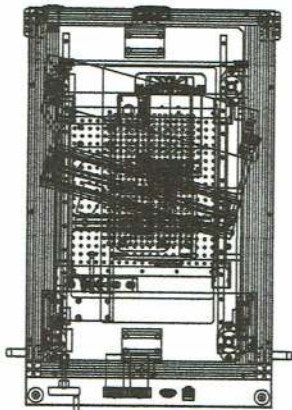
## Display, Indicators and Keys



LCD Display and Indicators			
<b>RST 1/2</b>	Light on when reset signal is detected	<b>BATCH</b>	"Batch Counting Mode" in Counter
<b>K/P 1/2</b>	Light on when key-protected mode is enabled	<b>SET 1 2</b>	SV1, SV2 display
<b>OUT 1/2</b>	Light on when output is executing	<b>CNT</b>	Light on in Counter function
<b>TOTAL</b>	"Total Counting Mode" in Counter function		
Key Operation			
	Increase and decrease SV or change parameter settings		
	Left move 1 digit of the selected digit. The indicator of the selected digit will flash.		
	Save the set parameters or switch among functions.		
<b>LOCK</b>	Prevent settings from being changed. Key-protected mode still works after the power is switched off. Press LOCK to enter key-protected mode. In non-key-protected status, press LOCK to enter Lock 1, press LOCK again to enter Lock 2. Press  and  at the same time to disable key-protected mode.  (Lock 1) disables the functions of all keys.  (Lock 2) allows users to change SV and functions of RESET remain. LOCK only functions in non-key-protected status.		
<b>RESET</b>	Clear and reset PV.		
Modes: Operation Mode and Configuration Mode			
<b>Operation</b>	When the power is on, the timer/counter/tachometer is in the operation mode. Press  to change SV, or  to select digit to change. The indicator of the selected digit will flash. After the change is made, press  to save the setting. If SV or parameters are not changed, press  once to switch between SET1 and SET2.		
<b>Configuration</b>	Press  in operation mode for more than 3 seconds to enter configuration mode. Press  once to switch among parameters. To return to operation mode, press  for more than 3 seconds.		

[illegible]





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DETAIL #	DESCRIPTION	VENDOR	PART #	Order Dt.	Qty per	QTY.	Received	Notes
#2170216 Schap Roller Shear Tester								
\$1	Accu-Tech Linear Bearing with Seals	Accu-Tech	SHS15C eq.	4/19/2017	4			
\$2	Accu-Tech Linear Bearing Rail 820mm Long	Accu-Tech	SHS 15 eq.	4/19/2017	2			
\$3	3" O.D. X 18 1/4" Long Stainless Steel Tube - See Detail #13 for Assembly	McMaster	4466K62		1			
\$4	5/8 Dia. X 20 1/8" Long Steel Shaft - See Detail #13 for Assembly	McMaster	1886K33		1			
\$5	5/8 Bore X 1.75 O.D. Extended Ring Brg. - See Detail #13 for Assembly	Applied	S8702-88		2			
\$6	1/2 I.D. X 1/8 Thick Washer/Spacer Stainless Steel - 1.12 Max. O.D.	McMaster	98370A033		2			
\$7	1/2 I.D. X 5/8 O.D. X 1/2 Long Bronze Flange Bearing	McMaster	7815K29		2			
\$8	1/2 Dia. X 3/8-16 Thrd. X 3/4 Long Stainless Steel Shoulder Screw	McMaster	90298A710		2			
\$9	80/20 15 Series Linear Bearing Single for 1 1/2 X 1 1/2 Extrusion	80/20	6825	4/25/2017	2			
\$10	80/20 Extrusion 3" X 3" X 4" to 6" Long	80/20	3030	4/25/2017	2			
\$11	Joyce WJ 500 Machine Screw Jack 500 Lb 1/2" Screw - 8" Travel	Joyce	WJ500U2S-8-STD-X		4			
	Upright with Type 2 Load Pad		STD-X					
\$12	Hand Wheel with Folding Crank 3/8 Dia. Bore	Essentra	JCL-1325		1			
\$13	Stub Shaft for \$12 Hand Wheel 3/8 Dia. X 2" long Steel	Various			1			
\$14	3/8 I.D. (2) piece Shaft Coupler	McMaster	61005K422		1			
\$15	Spider Shaft Coupler - 3/8 Bore Aluminum	Motion Ind.	#00772535		8			
\$16	Spider Coupling Buna-N	Motion Ind.	#00516333		4			
\$17	3/8 Dia. X 20 1/4 Long Steel Rod - Chamfer Both Ends	Alro		4/25/2017	2			
\$18	L Series 104 Tooth Timing Belt	Motion Ind.	390L050		1			
\$19	L Series 3/8 Bore Timing Pulley 1.194 P.D. Flanges on Both Sides	Motion Ind.	10L050		2			
\$20	Fastenal Cam Follower 1" Dia w/ Crowned Face	Essentra	CCF-25		1			
\$21	Automation Direct Key	ADC	KEY17		2			
\$22	RECESSED BUMPER w/ WASHER - 1.50 DIA. x .75 H.	Essentra		In stock	4			
\$23	Motor Automation Direct 56C Face	ADC	MTRP-001-3BD18		1			
\$24	Gear Reducer Automation Direct	ADC	WG-262-060-R		1			
\$25	Automation Direct Safety Switch	ADC	SP2K120W02		2			
\$26	80/20 Brake - Star Handle	80/20	6802		1			
\$27	Fan Grille	Newark	56P2988	In stock	1			
\$28	Ventilation Fan (110VAC)	Newark	70K8570	In stock	1			
\$29	80/20 15 Series 1 1/2 X 1 1/2 X 12" Long Extrusion 5/16-18 Tap One End	80/20	1515-Lite	4/25/2017	1			
\$30	80/20 15 Series (4) Hole Inside Gusset Corner Bracket	80/20	4336	4/25/2017	2			
\$31	1/4 I.D. X 1/2 O.D. X 3/4 Long Steel Drill Bushing	McMaster	8491A292		4			
\$32	1/4 I.D. X 1/2 O.D. X 1/2 Long Steel Drill Bushing	McMaster	8491A272		2			
\$33								