

# Sampson

Insole Rib & Rib Attaching Machinery



## SRA-LX1

Sampson Insole Rib  
Attaching Machine  
**PARTS MANUAL**



*A Worthen Industry*

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## SLX Parts List

Part number	Part Description	Part number	Part Description
SLX-001	Main Head	SLX-043	SDA 20X20 Chute Cylinder
SLX-002	Main Head Pillar	SLX-044	Chute Cylinder Mounting Plate
SLX-003	Inner Seat Connecting Sleeve	SLX-045	Chute Cylinder Clevis End
SLX-004	Spool Holder Mounting Plate	SLX-046	Chute Cylinder Clevis Rod Connector
SLX-005	Knife Actuating Mounting Arm	SLX-047	CS1-J Chute Cylinder Position Switch
SLX-006	Heater Guard	SLX-048	Tape Guide Wheel Mount Arm
SLX-007	Control Arm	SLX-049	Tape Guide Wheel
SLX-008	Control Arm Shaft	SLX-050	Knife Cylinder
SLX-009	Pulley Side Drive Shaft Bearing (NSK 6203Z)	SLX-051	Knife Cylinder Clevis
SLX-010	Drive Shaft	SLX-052	Knife Cylinder Clevis Pin
SLX-011	Drive Shaft Pulley	SLX-053	Knife Cylinder Shaft Clevis
SLX-012	Drive Belt	SLX-054	Knife Cylinder Shaft Nut
SLX-013	Inner Bearing Block	SLX-055	Knife Linkage
SLX-014	Outer Bearing Block	SLX-056	Knife Linkage Clevis Pin
SLX-015	Top Bearing Block Plate	SLX-057	Knife Linkage Shoulder Bolt
SLX-016	Inside Drive Shaft Bearing (NSK 6002Z)	SLX-058	Knife Link
SLX-017	Eccentric Drive Shaft Bearing (NTN 6902Z)	SLX-059	Knife Slide Plate
SLX-018	Eccentric Drive Shaft Bushing	SLX-060	Knife Slide
SLX-019	Outside Drive Shaft Bearing (NSK 6001Z)	SLX-061	Knife Slide Holder
SLX-020	Outside Drive Shaft Bushing	SLX-062	Cutting Knife
SLX-021	Right Foot Holder	SLX-063	Cutting Guard
SLX-022	Left Foot Holder	SLX-064	Control Arm Cylinder
SLX-023	Foot Holder Eccentric Bearing (NSK 6001Z)	SLX-065	Control Arm Cylinder Clevis Mount
SLX-024	Foot Holder Eccentric Bushing	SLX-066	Control Arm Cylinder Clevis
SLX-025	Drive Shaft Washer	SLX-067	Control Arm Cylinder Clevis Pin
SLX-026	Drive Shaft Hex Nut	SLX-068	Control Arm Cylinder Connecting Pin
SLX-027	Right Foot	SLX-069	Control Arm Swivle Block
SLX-028	Left Foot	SLX-070	Swivle Block Connecting Pin
SLX-029	Drop Down Guide Slide Mount	SLX-071	Swivle Block Margin Pin
SLX-030	Drop Down Guide 3-Iron	SLX-072	Swivle Block Thumb Screw
SLX-031	Triangular Lift Block	SLX-073	Swivle Block handle
SLX-032	Drop Down Guide Spring	SLX-074	Micro Switch Mounting Plate
SLX-033	Chute Cylinder Arm	SLX-075	Micro Switch ZV-155-1C25
SLX-034	Chute Cylinder Arm Pivot Pin	SLX-076	Micro Switch Trigger
SLX-035	Chute Base Heat Supply	SLX-077	Margin Guide Swivle Block Link Bracket
SLX-036	Chute Tape Guide	SLX-078	Margin Guide Adjustment Thumb Screw
SLX-037	Rib Lock Lever	SLX-079	Margin Guide Adjustment Clevis Screw
SLX-038	Rib Lock Lever Pin	SLX-080	Margin Guide Adjustment Spring
SLX-039	Rib Lock Lever Spring	SLX-081	Margin Guide Slide
SLX-040	Cylinder Pillar Connecting Plate	SLX-082	Margin Guide Slide Mounting Plate
SLX-041	Clevis Cylinder Threaded Adaptor M6 X M4	SLX-083	Margin Guide
SLX-042	Headless Clevis Pin w/ Retaining Rings	SLX-084	Margin Guide Bearing

## SLX Parts List

Part number	Part Description
SLX-085	Insole Guide Wheel Mount
SLX-086	Insole Guide Wheel
SLX-087	Insole Guide Wheel Bearing
SLX-088	Control Arm Tension Knob
SLX-089	Control Arm Tension Screw
SLX-090	Control Arm Tension Spring
SLX-091	Control Arm Tension Clevis Block
SLX-092	Spool Holder Mounting Base
SLX-093	Spool Holder Stationary Arm
SLX-094	Spool Holder Swing Arm
SLX-095	Spool Holder Wheel
SLX-096	Spool Holder Bearing
SLX-097	Spool Holder Wheel Bearing Shaft
SLX-098	Spool Holder Grab Handle
SLX-099	Spool Holder Swing Arm Pin
SLX-100	Spool Holder Swing Arm Spring
SLX-101	Clutch Drive Motor
SLX-102	Air Pump Motor
SLX-103	SNS 4V210-08 Solenoid Valve
SLX-104	3 port/2-way Solenoid Valve for table cylinder
SLX-105	IDEC RH2B DC24V Relay
SLX-106	Relay Socket SH3B-05
SLX-107	Omron G4Q-212S Ratchet relay
SLX-108	Shihlin AC Contactor S-P11 Coil
SLX-109	Shihlin TH-P12E 3 Pole Thermal Overload Relay
SLX-110	RT18-32X 10X38 Fuse Holder
SLX-111	RCK rex-c100fk02 Temperature Controller
SLX-112	AFC-2000 Air Filter Regulator Lubricator
SLX-113	LA38 Rotary Switch
SLX-114	Transformer
SLX-115	Rectifier
SLX-116	Thermocouple
SLX-117	Heating Element

## Operator Position

The operator should be seated directly in front and facing the Sampson Rib Attaching (SRA), within easy reach of both Foot Pedals, and the Margin Guide Handle.

Note: Turn the SRA on five minutes before operating, to give the SRA time to reach the proper heat level.

## Operator Instructions

1. The operator begins by placing a spool of Sampson Rib in the Rib Holder, located at the top of the SRA. The rib is then fed through the Tapered Guide Roll into the Rib Chute and then through the Slotted Foot.
2. With the control arm in the lowest position, the operator takes a cemented insole and places it against the Margin Guide, at the desired starting point. Pressing the trigger (located below the handle) will lift the control arm, and hold the insole in place.
3. To operate the SRA, apply pressure to the Right Foot Pedal, at the same time guide the insole around, keeping the insole against the Margin Guide.
4. To stop or slow the SRA down, release the Right Foot Pedal.  
To cut the rib, apply pressure to the Left Foot Pedal. This will lift the Rib Chute. The Knife will extend and cut the rib, and then retract. Apply pressure to the Right Foot Pedal, and press the Trigger to reset for the next insole

*Caution:* Pressing the Left Foot Pedal (which activates the Knife) and the Trigger at the same time will cause poor adhesion of the rib to the insole at the point it is being cut.

## Sampson Rib Attacher (SRA) Adjustments

### Control Arm / Feet Adjustments:

With the machine turned on, press down on the Right Foot Pedal slowly, making sure that the two Feet are not hitting the insole guide wheel. There should be 1/16" or 1.6MM between the Feet and the insole guide wheel at their lowest point, if not, loosen the control arm stop adjusting bolt. Adjust by unlocking the knob and turning it up or down.

Both Feet have a slight forward and backward adjustment. This is so you can adjust the Feet to the same height off the insole guide wheel. This can be checked by running an insole without the rib --- look at the pattern the feet leave on the insole after you have run it without the rib. By looking at the pattern left on the insole you can determine if you have the correct height adjustment. You can adjust the pressure by turning the Tension Knob.

The insole guide wheel and the outside of the Slotted Foot should line up evenly. Aligning the Feet and the insole guide wheel can be done two different ways. First, loosen the two insole guide wheel Mounting Screws and then move the insole guide Wheel left or right, to line it up with the Slotted Foot. Or, you can loosen the center screw on the Right Foot Holder and move the Right Foot Holder to the left or right, but make sure the Feet are not hitting each other.

## **Rib / Chute / Feet Alignment Adjustments:**

There are two adjustments for the Rib Chute. The bottom two screws on the Chute Bracket are to adjust the way the rib fits in the Chute. The rib should be tight enough so it does not flip over, but loose enough that it does not cause the insole to curl. If the Chute is too loose, the margin can vary, resulting in problems with the rib cutoff.

The second adjustment requires a complete Chute adjustment. There are four screws on the Chute, the top two are for the complete Chute adjustment. The best way to adjust the Chute is to start with your thickest insole:

- A. Adjust the height of the Chute. It should be slightly above the insole, if not it will create a drag, which can cause the insole to curl as the rib is being attached.
- B. With the Slotted Foot all the way forward, move the Chute as closed to the Slotted Foot as possible. If it is too close it will cause the Chute and the Drop Down Guide to bind. After the rib is inserted through the Chute, the rib should not touch the top of the opening on the Slotted Foot with the Slotted Foot in the lowest position.

## **Rib Length through the Feet:**

The length of the rib, after cutting, has to be long enough to fall back into the Slotted Foot after the SRA has reset. There are two adjustments that have to be made if you need to alter the length of the rib through the Slotted Foot.

- A. Loosen both Jam Nuts located on the front of the Chute Cylinder Adjustable Clevis. Turn the Jam Nuts towards the front of the Chute Cylinder Adjustable Clevis to increase the length of the rib, towards the back will decrease the length of the rib.

\*Even with the proper adjustment a broken Chute Cylinder Spring can cause the rib length to vary. A broken Rib Lock Lever Spring or a dull point on the Rib Lock Lever can cause the same problem.

## **Replacing the Drop Down Guide Spring:**

Remove the Cotter pin from the Safety Pin and remove the Safety Pin. Lift the Chute cylinder Arm. In the back of the Drop Down Guide Slide Mount there is a small stop screw. Loosen the Stop screw, it does not have to be removed. While holding up the Chute Cylinder Arm, loosen the screw until the Drop Down Guide and the Drop Down Guide Spring come all the way out. Replace the spring and reverse the procedure.

## **Rib / Chute / Drop Down Guide / Slotted Foot Alignment:**

When you push the rib through the Chute it should line up with the Drop Down Guide and the Slotted Foot. To confirm you have the proper alignment, with the rib in the Chute and the heat and air off, lift the Chute. This will allow the slotted part of the Drop Down Guide to catch the standing section of the rib. If it does not catch the rib you will have difficulty cutting the rib. At the same time check to see how the rib lines up with the Slotted Foot. To adjust, loosen the two screws located on the Chute / Drop Down Guide Base Mount and move the base left or right to get proper alignment.

## **Cutoff Knife / Knife Cylinder Adjustments:**

Periodically the Knife will need to be sharpened. You should use a hand stone or sandpaper; using a grinding wheel may change the hardness of the steel. There are four adjustments that can affect the way the knife works:

**A. Centering the Knife Mount on the Knife Slide Assembly:** Remove the Knife Guard by loosening the two screw that hold it in place. The Knife Cylinder Clevis is mounted to the Knife Slide Assembly. Turn the air to the SRA off and remove the Knife. With your finger, push the Knife Mount as far as you can to the left and check for clearance. If you have to make an adjustment loosen the lock nut on the Knife Cylinder Shaft, using a wrench, turn the Knife Cylinder Shaft left to bring the knife mount closer to the right, or turn the shaft right to bring the knife mount closer to the left.

**B. Centering the Knife in the Drop-Down Guide:** The whole Knife Slide Assembly is mounted on the Knife Mounting Bracket. The Knife Mounting Bracket has four slotted holes, which are used to move the Knife forward or back. This will allow you to center the knife in the Drop-Down Guide.

**C. Knife cutting height:** With the SRA turned on, and the heat and the air off, insert the rib into the Chute through the Slotted Foot. Put an insole between the insole guide Wheel and the Feet and Bring the table up. Run the insole forward two inches and stop. Lift the Chute to its highest point and manually push the Knife forward, towards the rib. The bottom of the Knife should be  $\frac{1}{8}$  of an inch below the rib, if not, remove the Knife and adjust the Knife Slide Assembly.

The Knife slide is mounted to the Knife Mounting Bracket by four screws. Remove the Knife, loosen the four mounting screws on the Knife Slide Assembly and move the Knife slide Assembly up or down until you think the gap is about  $\frac{1}{8}$  of an inch. Tighten two mounting screws to secure. Put the Knife back on and lift the Chute to its highest point and manually push the Knife forward, towards the rib. The bottom of the Knife should be  $\frac{1}{8}$  of an inch below the rib, if not, remove the Knife and continue to adjust the Knife Slide Bracket. When it is in the correct position make sure to tighten all four mounting screws, put the Knife and the Knife Guard Back on.

## Cam Adjustments:

The Cam Assembly is the most important part of the SRA. If you take it out for any reason, it must be re-installed correctly, because the Knife Mounting Bracket is adjusted to this setting. Insert the Cam Assembly (the shaft) into the Head, pushing the Shaft through the Rear Bearing. Lightly tighten the Front Bolts (which are counter sunk). Lift the Cam Assembly to its highest position, then tighten the Front Bolt just enough to keep the Cam Assembly from moving. Tighten the bottom Clamp Bolt located on the bottom and left of the Head and then tighten the Front Bolts, and finally tighten the Set Screws on the Rear Bearing.

## Margin Adjustments

**1. Single Margin** (Example will use a setting of 3 for the margin, which is 3/16 of an inch.)

The Thumb Lever should be set against the Stop on the Thumb Lever Plate. Tighten both Left and Right Screws. Adjust the margin by turning the screw right or left.

## Trouble Shooting and Repairs

### 1. The SRA Does Not Start

- A. Check the electrical outlet.
- B. Check the power cord 220 volt.
- C. Check main fuse.
- D. Check for loose wires

Reset main switch and try again.

### 2. SRA Speed Varies (slows down when operating)

- A. A Loose nylon lock nut on the Cam Assembly Shaft.

The drive belt or the drive pulley is loose.

- C. Motor pedal adjustment.
- D. Table Tension Adjustment.
- E. Insole guide Wheel and Feet Height Adjustment.

### 3. No Heat

- A. Check the heat ON / OFF Switch located on the left side of the electric panel.
- B. Check fuse in Electrical Control Panel.
- C. Check voltage to heating element.

Other possibilities: bad solid state control unit, faulty adjustable heat potentiometer, bad heating element.

### 5. Knife Does Not Activate During Cutoff:

- A. Check the air inlet, pressure should be 80 pounds per square inch.
- B. The Spring on the Knife Pedal could be broken and will need to be replaced. (Page 11)
- C. Too much space between the Safety Switch and the Safety Pin.
- D. There is not enough pressure to the Knife Regulator. Too much pressure will cause the Knife to double fire.

## Daily Maintenance & Performance Check

**ALWAYS FOLLOW LOCK OUT TAG OUT POLICIES AS INSTRUCTED BY YOUR COMPANY TO ISOLATE & DE-ENERGIZE ENERGY SOURCES. RIB LAYERS HAVE TWO MAIN POWER SOURCES, WHICH ARE COMPRESSED AIR AND ELECTRICAL.**

1. Keep the machine off during this check. Before turning on the machine check to insure there is no visible wear or damage to the silicone heater hose. Replace if signs of wear or breaks. **CAUTION:** Do not touch hose during operation because it will become hot and could cause injury.
2. **Oil daily:** The Prime and Sampson machines have multiple lubrication ports. A few drops daily in each will help minimize wear resulting in better operation and increase the life of the parts. Lubricating friction spots in the elbows and joints, as instructed in the operation manual is important as well. Do not lubricate parts that come in to contact with the rib or cemented insole board, as oil contamination can affect the bonds.
3. Airflow check: Turn on the power to the rib layer but turn off the power to the heater by putting the toggle in the off position. Place your hand in front of the chute to insure you feel air flow. Maintaining sufficient air flow is important to move the necessary heat to activate the adhesive on the rib and insole board. Set main air regulator for heater to 3 PSI or more. **NOTE:** Air flow is also important for the heater to operate properly. **DO NOT RUN** the heater without air flow because it will damage the internal construction of the heater and shorten its lifespan.
4. Turn On Machine & Heater: Let the machine run for 5-10 minutes to allow the necessary time for the heater to get to temperature. Some machines have an adjustable dial, set point read out, and in some cases just a on& off switch. For machines without adjustment, the heater will run max temp, which is determined by the incoming voltage. The rib adhesive has an activation temperature of 160F (71°C). It is recommended that the desired set point be 300F (149°C) in order to attain enough heat coming out of the chute to activate the adhesive. With that said, the necessary temperature varies based upon the speed of the operator/machine, along with quality of insole, cement, and proper machine operation. It is recommended that the chute temperature should be between 198°F/92°C & 250°F/121°C with the ideal target 225°F(107°C). You can check the chute temperature using a calibrated handheld IR gun within 1-3 inches (25-76mm) away from the bottom of the chute. *See demonstration on the next page.*



The closer you are to the exit airflow of the chute will provide the most accurate temperature.

**Feet Pattern Check:** Using a cellulose insole, run it through the rib layer upside down without rib. Check to see that the foot pattern of the right and left feet has even depth and pattern consistency. Proper setting will help insure necessary nip and surface contact to attain bond on the inside & outside rib margins. The foot should be set as close to the guide wheel without making contact.

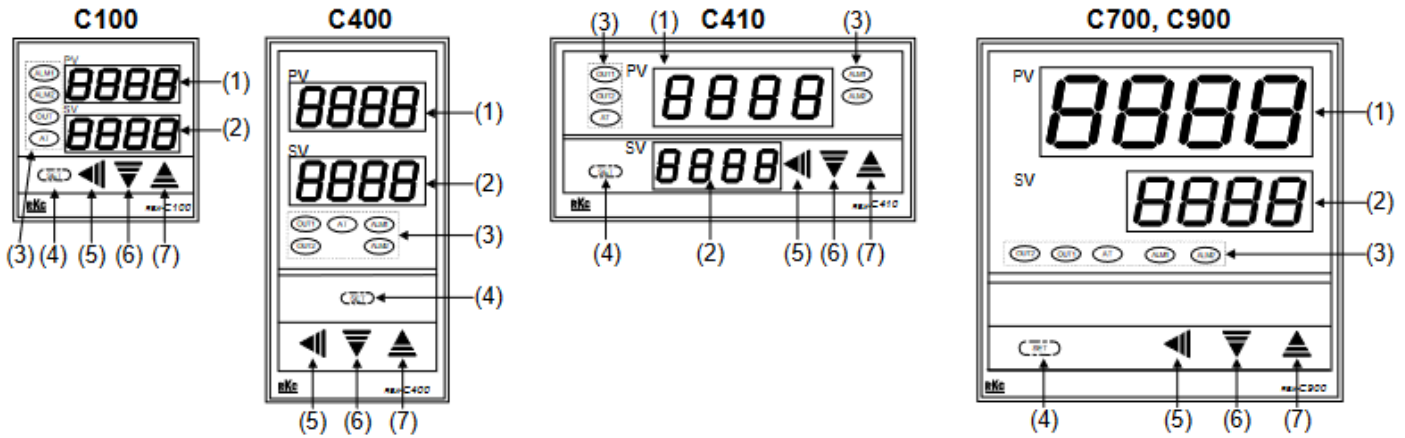




The foot pattern should show a nice consistent pattern for each foot to insure proper nip of the inside and outside margins.

Proper Chute Location: Ideally the chute should be  $\frac{1}{4}$ " (6-7mm) from the right foot at its farthest forward position. The chute should be located as close to the insole without making contact.

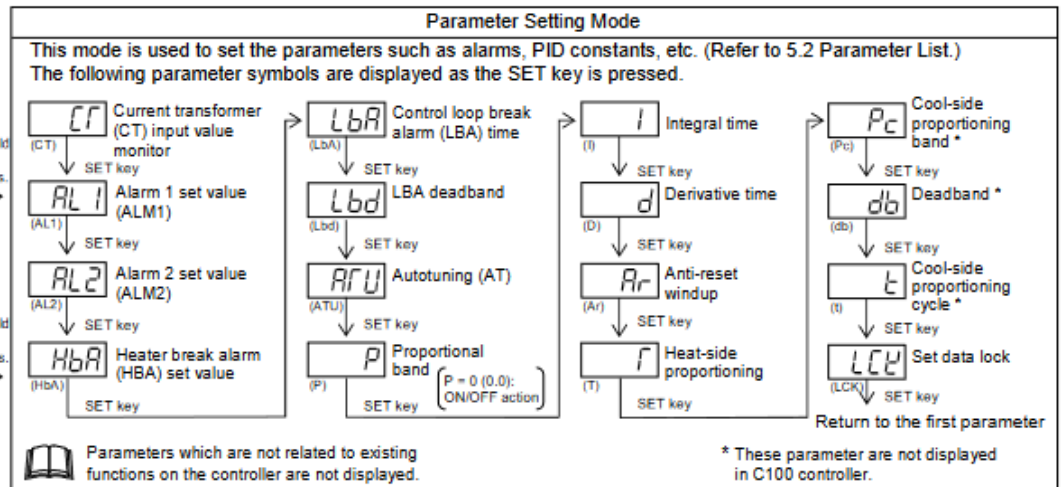
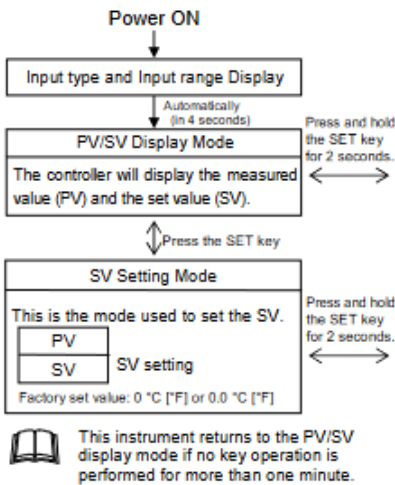
Parts Description



- (1) Measured value (PV) display [Green]  
Displays PV or various parameter symbols.
- (2) Set value (SV) display [Orange]  
Displays SV or various parameter set values (or CT input value).
- (3) Indication lamps  
Alarm output lamps (ALM1, ALM2) [Red]  
ALM1: Lights when alarm 1 output is turned on.  
ALM2: Lights when alarm 2 output is turned on.
- (4) Autotuning (AT) lamp [Green]  
Flashes when autotuning is activated.  
(After autotuning is completed: AT lamp will go out)
- (5) Control output lamps (OUT1 [Yellow], OUT2 [Green])  
OUT1: Lights when control output is turned on.\*  
OUT2: Lights when cool-side control output is turned on.
- (6) (SET) (Set key)  
Used for parameter calling up and set value registration.
- (7) (DOWN key)  
Decrease numerals.
- (8) (UP key)  
Increase numerals.

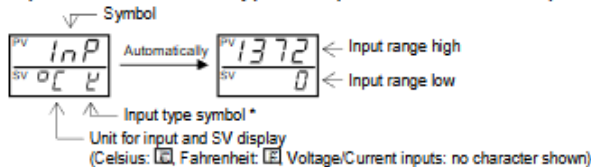
To avoid damage to the instrument, never use a sharp object to press keys.

**5.1 Operation Menu**



**Input type and input range display**

This instrument immediately confirms the input type symbol and input range following power ON.  
 Example: When sensor type of input is K thermocouple.



\* Input Type Symbol Table

Symbol	K	J	R	S	B	E	T	N	PL II	WSRe/ W28Re	U	L	JP 100	Pt 100	V	I
Input type	Thermocouple (TC)										RTD		Voltage input	Current input		

## 5.2 Parameter List

The following parameter symbols are displayed as the SET key is pressed.



Parameter symbols which are not related to existing functions on the controller are not displayed.

Symbol	Name	Setting range	Description	Factory set value
CT	Current transformer (CT) input value monitor	0.0 to 100.0 A [Display only]	Display input value from the current transformer. [Displayed only when the instrument has the heater break alarm (HBA)]	
AL1	Alarm 1 set value (ALM1)	TC/RTD inputs: Deviation alarm, Process alarm: ~ 1999 to +9999 [ ] [ ] or ~ 199.9 to +999.9 [ ] [ ]	Set the alarm 1 set value and alarm 2 set value. For the alarm action type, refer to page 7.	TC/RTD inputs: 50 (50.0)
AL2	Alarm 2 set value (ALM2)	Voltage/Current inputs: Deviation alarm: ~ 199.9 to +200.0 % Process alarm: 199.9 to +300.0 %	Alarm differential gap: TC/RTD inputs: 2 or 2.0 [ ] [ ] Voltage/Current inputs: 0.2 % of input span	Voltage/Current inputs: 5.0

Symbol	Name	Setting range	Description	Factory set value
HbA	Heater break alarm (HBA) set value <sup>1</sup>	0.0 to 100.0 A	Alarm value is set by referring to input value from the current transformer (CT). Used only for single-phase.	0.0
LbA	Control loop break alarm (LBA) time <sup>2</sup>	0.1 to 200.0 minutes	Set control loop break alarm (LBA) set value.	8.0
Lbd	LBA deadband <sup>3</sup>	TC/RTD inputs: 0 to 9999 [ ] [ ] Voltage/Current inputs: 0 to 100 % of input span	Set the area of not outputting LBA. No LBA deadband functions with 0 set. Differential gap: TC/RTD inputs: 0.8 [ ] [ ] Voltage/Current inputs: 0.8 % of input span	0
ATU	Autotuning (AT)	0: AT end or cancel 1: AT start or execution	Turns the autotuning ON/OFF.	0
P	Proportional band	TC/RTD inputs: 1 (0.1) to span 0.1 [ ] [ ] resolution: Within 999.9 [ ] [ ] Voltage/Current inputs: 0.1 to 100.0 % of input span 0 (0.0): ON/OFF action	Set when PI, PD or PID control is performed. Heat/Cool PID action: Proportional band setting on the heat-side.  ON/OFF action differential gap: TC/RTD inputs: 2 (0.2) [ ] [ ] Voltage/Current inputs: 0.2 % of input span	TC/RTD inputs: 30 (30.0)  Voltage/Current inputs: 3.0
I	Integral time	1 to 3600 seconds (0 second: PD action)	Set the time of integral action to eliminate the offset occurring in proportional control.	240
d	Derivative time	1 to 3600 seconds (0 second: PI action)	Set the time of derivative action to improve control stability by preparing for output changes.	60
Ar	Anti-reset windup (ARW)	1 to 100 % of heat-side proportional band (0 %: Integral action OFF)	Overshooting and undershooting are restricted by the integral effect.	100
f	Heat-side proportioning cycle	1 to 100 seconds (Not displayed if the control output is current output.)	Set control output cycle. Heat/Cool PID action: Heat-side proportioning cycle	Relay contact output: 20 Voltage pulse output/ Trigger output for triac driving: 2
Pc	Cool-side proportional band	1 to 1000 % of heat-side proportional band	Set cool-side proportional band when Heat/Cool PID action.	100
db	Deadband	TC/RTD inputs: ~ 10 to +10 [ ] [ ] or ~ 10.0 to +10.0 [ ] [ ] Voltage/Current inputs: 10.0 to +10.0 % of input span	Set control action deadband between heat-side and cool-side proportional bands. Minus ( ) setting results in overlap.	0 or 0.0
t	Cool-side proportioning cycle	1 to 100 seconds (Not displayed if the control output is current output.)	Set control cool-side output cycle for Heat/Cool PID action.	Relay contact output: 20 Voltage pulse output: 2
LCK	Set data lock (LCK)	0100: No set data locked (All parameters changeable) 0101: Set data locked (All parameters locked) 0110: Only the set value (SV) is changeable with the set data locked	Performs set data change enable/disable.	0100

### 1 Heater Break Alarm (HBA) function

The HBA function monitors the current flowing through the load by a dedicated current transformer (CT), compares the measured value with the HBA set value, and detects a fault in the heating circuit.

#### Low or No current flow (Heater break, malfunction of the control device, etc.):

When the control output is ON and the current transformer input value is equal to or less than the heater break determination point for the preset number of consecutive sampling cycle, an alarm is activated.

#### Over current or short-circuit:

When the control output is OFF and the current transformer input value is equal to or greater than the heater break determination point for the preset number of consecutive sampling cycle, an alarm is activated.

#### Precaution for HBA setting:

- Displayed only for when HBA is selected as Alarm 2.
- HBA is not available on a current output.
- Set the set value to approximately 85 % of the maximum reading of the CT input.
- Set the set value to a slightly smaller value to prevent a false alarm if the power supply may become unstable.
- When more than one heater is connected in parallel, it may be necessary to increase the HBA set value to detect a single heater failure.
- When the current transformer is not connected or the HBA set value is set to "0.0," the HBA is turned on.

### 2 Control Loop Break Alarm (LBA) function

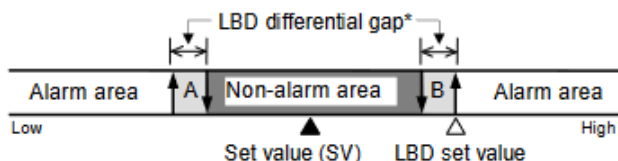
The LBA function is used to detect a load (heater) break or a failure in the external actuator (power controller, magnet relay, etc.), or a failure in the control loop caused by an input (sensor) break. The LBA function is activated when control output reaches 0 % or 100 %. LBA monitors variation of the measured value (PV) for the length of LBA time. When the LBA time has elapsed and the PV is still within the alarm determination range, the LBA will be ON.

#### Precaution for LBA setting:

- Displayed only for when LBA is selected as Alarm 1 or Alarm 2.
- No LBA function can be used at Heat/Cool PID control action.
- The LBA function can not be activated when AT function is turned on.
- The LBA function is activated when control output reaches 0 % or 100 %. The time required for the LBA output to turn on includes both the time from the initial occurrence of loop failure and the LBA setting time. Recommended setting for LBA is for the set value of the LBA to be twice the value of the integral time (I).
- If LBA setting time does not match the controlled object requirements, the LBA setting time should be lengthened. If setting time is not correct, the LBA will malfunction by turning on or off at inappropriate times or not turning on at all.

### 3 LBA Deadband function

The LBA may malfunction due to external disturbances. To prevent malfunctioning due to external disturbance, LBA deadband (LBD) sets a neutral zone in which LBA is not activated. When the measured value (PV) is within the LBD area, LBA will not be activated. If the LBD setting is not correct, the LBA will not work correctly.



A: During temperature rise: Alarm area  
During temperature fall: Non-alarm area  
B: During temperature rise: Non-alarm area  
During temperature fall: Alarm area

- \* TC and RTD inputs: 0.8 (fixed)
- Voltage/Current inputs: 0.8 % of input span (fixed)

## 5.3 Changing Parameter Settings

Procedures to change parameter settings are shown below.

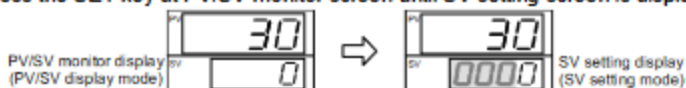
To store a new value for the parameter, always press the SET key. The display changes to the next parameter and the new value will be stored. A new value will not be stored without pressing SET key after the new value is displayed on the display. After a new value has been displayed by using the UP and DOWN keys, the SET key must be pressed within 1 minute, or the new value is not stored and the display will return to the PV/SV monitor screen.

#### ● Change the set value (SV)

Change the set value (SV) from 0 to 200

##### 1. Select the SV setting mode

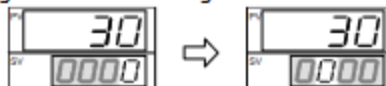
Press the SET key at PV/SV monitor screen until SV setting screen is displayed.



##### 2. Shift the high-lighted digit

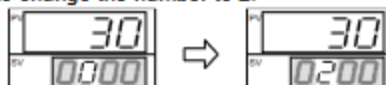
Press the shift key to high-light the hundreds digit.

The high-lighted digit indicates which digit can be set.



##### 3. Change the set value

Press the UP key to change the number to 2.



##### 4. Store the set value

Press the SET key to store the new set value. The display returns to the PV/SV monitor screen.



#### ● Change parameters other than the set value (SV)

The changing procedures are the same as those of example 2 to 4 in the above "● Change the set value (SV)". Pressing the SET key after the setting end shifts to the next parameter. When no parameter setting is required, return the instrument to the PV/SV display mode.

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