# SZR

## USER MANUAL

Model 66-66C-96-96C

Star Universal (Gosport) Ltd Unit 2, Clarence Wharf, Mumby Road, Gosport, Hampshire, United Kingdom, PO12 1AJ

> Tel: + (44) 23 9258 2857 Fax: + (44) 23 9251 1731 Email: sales@staruniversal.com Web: www.staruniversal.com

Star Universal (Gosport) Ltd Unit 2, Clarence Wharf Mumby Road Gosport Hampshire PO12 1AJ Telephone Number: 023 9258 2857 Fax Number: 023 9251 1731 Website: www.staruniversal.com Email: sales@staruniversal.com



All rights reserved. Nothing from this edition is allowed to be copied and/or made public by means of print, photocopy or any other way without previous written permission of **Star Universal (Gosport) Ltd** 

Star Universal (Gosport) Ltd reserves the right to change spare parts and/or specifications without previous notice. Contents of this manual can also be changed without previous warning.

Star Universal (Gosport) Ltd cannot be held responsible for eventual damage caused by specifications deviating from the standard model.

Although extreme care has been exercised during the writing of this manual, Star Universal (Gosport) Ltd will not accept any liability for eventual errors in this manual and/or for the consequences of (mis)interpretation of the contents.

Star Universal (Gosport) Ltd is not responsible for damage or problems which result from the use of other than the original spare parts.

If this manual has not been supplied with instructions for certain repairs, adjustments and maintenance, you should contact Star Universal (Gosport) Ltd

### STAR UNIVERSAL

#### Contents

1	Introduction and check list	3
2	Safety Instructions	4
3	Machine Settings	5&6
4	Error Codes and Fault Finding	7
5	Inside the Machine	8
6	Maintenance	9
7	Jaw Maintenance	9-11
8	Heated Jaw Tension Assembly	12
9	Changing the Blade Manual Cutter	13
10	Star 66 Stand Assembly	14
11	Wiring Diagrams	15
12	Electrical Parts List	16
13	Technical Specification	17
14	Environmental Policy	18
15	Warranty Policy	18

#### 1 INTRODUCTION

With the purchase of this heat sealing machine you will be able to pack a great variety of products. **Star Universal (Gosport) Ltd** has ensured that all the machines, from the smallest to the largest model, fulfil the greatest demands. All the machines are built in-house to the highest standards and undergo vigorous testing.

#### Unpacking

The heat sealing machine is packed in either a box or pallet. We recommend you keep the box/pallet so you can transport the heat sealer safely in the future if ever required.

#### Use the following list to check the contents of the box/pallet:

Manual	✓
Heat Sealer	
Stand (if applicable)	
Spares Kit	
Additional Spares (if applicable)	

#### 2 SAFETY

#### SAFETY INSTRUCTIONS FOR HEAT SEALER OPERATION



WARNING this manual should be read in full prior to operating this heat sealing machine. Ensure all the operators are aware of how to use it safely.

All users of this product are requested to follow all warnings and instructions contained in this manual. In addition, all warnings and instructions affixed to the machine should be followed.

This heat sealer is supplied with a 3 wire power cable and a moulded 13 amp fused plug. A secondary fuse is located on the circuit board for additional protection. Increased user safety can be achieved by the provision of a residual current device (RCD) being used on the supply circuit to the machine.

The machine is not rated for direct water contact unless otherwise stated.

Ensure the power is switched off and the plug removed from the socket prior to carrying out any service work.

The machine should be regularly serviced using genuine Star parts and is subject to the portable appliance test regulations.

When not in use switch the machine off.

The sealer is designed to be installed on a flat level surface to ensure stability during operation.

The sealer is a heavy unit, take extra care when moving the machine using appropriate methods and equipment. For machine weights and dimensions see later in the manual.

Heat sealers are not designed to be used in flammable or explosive environments.

With repeated cycling residual heat can build up on the sealing jaws. Avoid touching them wherever possible.

Keep hands clear of the sealing jaws when operating the machine.

Always use heat sealers in a ventilated environment as sealing certain plastics may create fumes. Check with your bag/material manufacturer.

Star Heat Sealers meet the health and safety requirements of The Supply of Machinery (Safety) Regulations 1992 No. 3073 and The Machinery Directive 2006/42/EC. The CE mark will be affixed to the product where applicable.

A request is made that any known incidents that result in injury to an operator from the legitimate use of this heat sealer is reported to Star Universal Technical Department. Tel: 02392 582857 e mail: info@staruniversal.com

#### 3 MACHINE SETTING



56/56C

SETTING THE WELD AND COOL TIMES/TEMPERATURES.

Set the weld and cool times as below. Place some of the material you wish to seal between the sealing jaws, close them and cycle the machine by pressing the foot switch/push button. When the cycle finishes open the jaws, if the material has not welded increase the weld and cool times. If the weld looks molten decrease the weld and cool times. Repeat the above process until you achieve a flat strong weld.

#### Weld Time/Temperature

With the machine turned on press the weld control  $\blacktriangle$  or  $\triangledown$  key and release, the amber weld indicator will flash. To increase the weld time/temperature press the weld control  $\blacktriangle$  key, to decrease press the weld control  $\triangledown$  key. As a starting point use 0.7/80. After 5 seconds the screen will default back and save the figure entered.

#### **Cool Time/Temperature**

With the machine turned on press the cool control  $\blacktriangle$  or  $\blacktriangledown$  key and release, the blue cool indicator will flash. To increase the cool time press the cool control  $\blacktriangle$  key, to decrease press the cool control  $\blacktriangledown$  key. Cool time should be approximately 3 times weld time. After 5 seconds the screen will default back and save the figure entered. Certain bag materials may require more or less cool time than advised above, adjust this as required.

#### SETTING THE COMPENSATION, KEY LOCK AND JAWS TIMEOUT

During machine operation a residual heat build-up can affect the quality of the weld. To try and minimise this the sealer has built in compensation which you can set. Firstly, set the weld and cool times as above from a cold start then repeat the steps as below to achieve consistent weld quality.

#### Heating Compensation (time control only)

This relates to the amount of time the controller reduces the weld time after each operation to compensate for residual heat. A value of 0 indicates that heating compensation is disabled. A low value will reduce the weld time by a small amount and is suitable for a machine that warms up very slowly. A high value will reduce the weld time by a larger amount and is suitable for a machine that warms up very quickly.

To adjust the value, with the machine turned on, press both of the weld control  $\blacktriangle$  and  $\triangledown$  keys for 2 seconds and release when **hc** appears on the screen. To increase or decrease the figure use the heat  $\blacktriangle$  or  $\triangledown$  key. After 5 seconds the screen will default back and save the figure entered. Cycle the machine 15-20 times weld one of your bags. If the seal fails decrease the figure, if it is molten increase the figure.

#### Cooling Compensation (time control only)

This relates to how quickly the controller increases the weld time when the machine is idle, compensating for the machine cooling down when not being used. A value of 0 indicates that cooling compensation is disabled. A low value will increase the weld time by small amount and is suitable for a machine that cools down very slowly. A high value increases the weld time by a larger amount and is suitable for a machine that cools down more rapidly.

To adjust the value, with the machine turned on press both of the cool control  $\blacktriangle$  and  $\triangledown$  keys for 2 seconds and release when cc appears on the screen. To increase or decrease the figure use the cool  $\blacktriangle$  or  $\triangledown$  key. After 5 seconds the screen will default back and save the figure entered. Cycle the machine 15-20 times, allow it to cool for a few seconds and weld one of your bags. If the seal fails decrease the figure, if it is molten increase the figure.

#### Key Lock

To prevent unauthorised alteration, the Star MkVI has a control lockout. If the green keypad locked light is on the feature is not engaged. To engage or disengage press the cool  $\blacktriangle$  or  $\checkmark$  key and release to display the cool time, the blue indicator will flash. Press and hold both of the weld  $\blacktriangle$  and  $\checkmark$  keys for 2 seconds. The green **keypad** locked light will come on or go off once the two seconds is up. Release the keys and wait for the screen to go back to default.

#### **Jaws Timeout**

This is the time allowed for the jaws to close, jaws to open or automatic knife to complete its travel before the alarms engage. To alter press the cool  $\blacktriangle$  key and weld  $\triangledown$  key for 2 seconds until the display shows 2 digits with a decimal point between them. To alter this figure, use the weld  $\blacktriangle$  and  $\triangledown$  keys. After 5 seconds the screen will default back and save the figure entered.

#### 4 ERRORS AND FAULT FINDING (To reset the machine after an error, turn the power off for 5 seconds and then turn on again)

Error	Possible Cause	Solution		
	• The plug is not inserted into the plug socket	<ul> <li>Check machine is plugged in</li> </ul>		
The machine doesn't turn on	Fuse blown	Replace fuse, external/internal		
	Internal error	Contact Star Universal		
E1				
(power detected across	Power relay stuck on	Replace relay		
elements when the machine	Board fault	Replace board		
is not cycling)				
<b>E2</b>	Jaws timeout too low	<ul> <li>Increase jaws timeout (see p6)</li> </ul>		
(Jaws failed to close after	Board fault	Replace board/contact Star universal		
start signal received)		· · ·		
E3	Broken element	Replace element		
the element when the	Power relay stuck off	Replace power relay		
machine is running a weld	Board fault	Replace board/contact Star Universal		
cycle)	Transformer blown	Contact Star Universal		
E4	Jaws timeout too low	Increase jaws timeout (see p6)		
(Jaws Failed to open after	Relay stuck on	Replace tapes (leaving loose)		
cycle)	Board fault	Replace board		
<mark>E5</mark> (Knife failed)	Link on KNIFE I/P broken	Replace link		
	Timeout not set right	Adjust timeout (see p6)		
E6	Broken element	Replace element		
(Temperature rise in element	Power relay stuck off	Replace power relay		
not sensed within timeout)	Board fault	Replace board/contact Star Universal		
	Transformer blown	Contact Star Universal		
		• Check thermocouple is connected to board		
	Thermocouple not connected	input		
E7	Thermocouple broken	• Check thermocouple is in the correct		
(Over Temperature)	Power relay stuck on	position on jaw (see p)		
	Board fault	Replace thermocouple		
		Replace power relay		
		<ul> <li>Replace board/contact Star Universal</li> </ul>		

#### 5 INSIDE THE MACHINE



#### 6 MAINTENANCE



WARNING! Unplug machine before any maintenance is carried out

DAILY MAINTENANCE				
Visually check barrier tape	Change tapes if there are any burn marks, rips OR			
	damage.			
Jaws move freely	Before turning machine on, manually close the jaws			
	and ensure they move freely.			
MONTHLY MAINTENANCE				
Sealing jaws	Change tapes, element and rubber if necessary. Check			
	end blocks are not damaged.			
6 MONTH N	<b>MAINTENANCE</b>			
Repeat monthly maintenance as above	A 6-month maintenance kit can be ordered from Star			
	Universal.			
Internal inspection	Visually check weld relay - if discoloured replace.			
	Lubricate solenoids using graphite powder and check			
	alignment. Ensure solenoid micro switches are			
	correctly aligned.			
ANNUAL MAINTENANCE				
Contact Star Universal	You can request an onsite visit or send the machine to			
	Star Universal (Gosport) Ltd.			

#### 7 JAW MAINTENANCE AND SERVICE SPARES

Under normal operating conditions it will be necessary to replace certain consumable items that are readily available from our spares department. Use of non-Star genuine parts or the incorrect part number can cause damage to the machine and invalidate the warranty.

Before replacing any sealing jaw items ensure the machine is switched off and unplugged.

#### **Replacing consumable items**

**Barrier Tape:** The barrier tape is a brown Teflon coated cloth designed to prevent plastic sticking to the element ribbon and electrically isolate the elements from each other. If this becomes burnt or damaged peel the old tape off, removing any excess adhesive from the jaws. Take a length of new tape, remove one of the adhesive backing strips and stick it to one side of the jaw, remove the other adhesive backing strip and stick to the back of the jaw. The tape should be applied loosely so it is not in contact with the element ribbon when the jaws are open.





**Element Ribbon:** Remove the barrier tape as above. Place the loading pins through the expansion blocks at either end of the jaw so it is held under pressure and loosen the Allen key bolt. Remove the old ribbon. Cut a length of new element ribbon slightly longer than the jaw and fold one end back on itself by about 5mm. Place this end in one of the expansion blocks and tighten the Allen bolt. Measure the length of ribbon required to fit into the other expansion block, cut to length and fold the end back 5mm. Fit in the other expansion block and tighten the Allen bolt. Remove the loading pins and re-cover with barrier tape. Import on double heat machines the two elements must line up to produce a good seal.





**Brass Shim:** Remove barrier tape and element ribbon as above. Remove the brass clamp by fully unscrewing the Allen bolt. Replace the brass shim, attach the brass clamp and re fit the ribbon and tape as above.



**Backing Tape:** Remove the barrier tape and element ribbon as above. Peel the backing tape off the silicone rubber and clean any residual adhesive left behind. Cut the new backing tape to length and peel off the yellow adhesive backing strip. Stick the new backing tape onto the silicone ensuring a smooth even surface. Replace the element ribbon and barrier tape as above.





**Silicone Rubber/Sponge:** Remove the barrier tape and element ribbon as above. Peel the silicone rubber away from the aluminium sealing jaw and clean any residual adhesive left behind. Apply a NARROW bead of silicone adhesive to the channel, cut a piece of silicone rubber to length and press into the channel ensuring a smooth even surface. Replace the element ribbon and barrier tape as above.







**Compression Spring and Ball Bearing:** Remove barrier tape and element ribbon as above, remove loading pin taking extra care due to the spring being under compression. Replace the compression spring and ball bearing and press the end block in to re fit the loading pin. Refit element ribbon and tape as above.



**Thermocouple:** If the silicone has been replaced cut a shallow V in it just deep enough for the thermocouple wire to sit flush with the rubber, the tip/disc should be sat on top of the rubber. Place the thermocouple through the hole and fasten in place with thermocouple adhesive strip. The tip of the thermocouple should be in the centre of the silicone. The backing tape should be applied to cover the thermocouple.

1. Cut V shape into rubber:



2. Place thermocouple through hole in jaw:



3. Secure thermocouple using the thermocouple adhesive strip:



4. Place backing tape over length of rubber and replace the element ribbon:





**STAR** 

#### 8 HEATED JAW TENSION ASSEMBLY



Diag No	Part No	Description		
1	B018003	10m roll Barrier Tape		
NA	B018022	10m roll Backing Tape		
2	E024002	10m roll Element Ribbon		
2	B017002	1m Silicone Rubber		
5	B017007	1m Silicone Sponge		
4	M202005	Expansion Block (Pair)		
NA	E015007	Expansion Block Eyelet (Pair)		
5	M202004	Brass Shim		
6	B021005	Compression Spring		
7	B022002	Ball Bearing		
8	B023002	Roll Pin		
9	B029002	Allen Key		
10	M202009	Loading Pin (Pair)		
NA	B017014	85g Silicone Glue		
NA	S001001	Spares Kit (10m backing and barrier tape, 10m element ribbon, 3m silicone rubber/sponge, 85g silicone glue, pair loading pins & allen key)		

#### 9 CHANGING THE CUTTER BLADE (MANUAL KNIFE)



Take extreme care when handling the cutter blade

Loosen the two allen bolts at either end of the cutter runner. The cutter carriage should now be loose and lift out.

#### The blade is now exposed, take extra care.

Remove the screw from the blade, being careful not to let the spring fall off, and remove the old blade. Take the new blade and replace the locking screw, ensuring the sprung blade guard is in the same position as when it was removed.

Replace the cutter carriage back on the runner, and replace the allen bolts.

#### Always dispose of the old cutter blade carefully, it will still be sharp.



Part No	Diag No	Description	
B027014	ALL	Cutter Assembly Complete	
B027010	1	Cutter Assembly Body	
B027012	2	Cutter Spring	
B027006	3	Cutter Blade	
B024013	4	Cutter Screw	
B024011	5	Cutter Slide	
B017013	NI/A	SA 12x5mm Neoprene Sponge/m	
B017016	N/A	SA 12x8mm Neoprene Sponge/m	
S001006	N/A	Cutter Spares Kit (Comprises complete	
		cutter, 5 spare blades, spare slide and 3m neoprene sponge)	

#### 10 STAR 66 STAND OPTIONS



#### SACK SUPPORT PLATFORM STAND

**TRIPOD STAND** 







STAR



#### 12 PARTS LIST

Diag No	Part No	Description				
C\\/1	E010001	On/Off Switch				
2001	E010036	On/Off Switch Cover (IP44/65 machines only)				
TR	E001001	Transformer				
D1	E003008	Weld Relay				
K1	E003007	Solid State Weld Relay				
S	E021003	Suppressor				
501	E002001	Solenoid				
30L	E002005	Solenoid Plunger				
D1	E022002	Solenoid Diode				
DC1	E011011	Jaws Closed Micro Switch				
ROI	B001031	Micro Switch Bracket				
TD1	E010005	Foot Switch				
IKT	E010006	Heavy Duty Shrouded Foot Switch (stainless steel machines only)				
т⊔126	E005001	MkVI Circuit Board				
11120	E005028	MkVI C Circuit Board				
F1	E017008	Solenoid Fuse				
F2	E017005	Main Board Fuse				
тс	E019005	Welded Tip Thermocouple				
	E019006	Disc Thermocouple				
	E013016	Mains Lead and Plug UK				
NA	E013020	Mains Lead and Plug EU				
	E013038	Mains Lead and Plug US				
	E009004	Cable Gland				
NA	E009015	Grommett				
	B013001	P Clip				
NA	E014001	Terminal Block (Strip of 12)				
NA	M202007	Solenoid Pin				
NA	B013015	Solenoid Pin Starlock Washer				
NΛ	M002001	Brass Link Star 66				
NA	M003001	Brass Link Star 96				
NA	B021006	Solenoid Return Spring				
NA	B001032	Solenoid Return Spring Pin				
NA	B014002 Membrane Keypad					
NA	B016001	Jaw Arm Gaiter				
NA	B013013	Jaw Arm Nylon Washer				
NA	B030001	E Clip				

#### 13 TECHNICAL SPECIFICATION

#### STAR 66/66C

Seal Length	650mm	1200mm		
Seal Width	6mm Standard, 2.5mm, 9.5mm 12.5mm and 20mm options			
Jaw Opening	Solenoid approx. 30mm, Pneumatic approx. 45mm			
Max Material thickness		1000μm approx. (4000g)		
Sealing Cycle Time		Typically, 4-10s		
Power Supply	230	V 50/60Hz Single Phase, 115V Optio	onal	
Average Power Consumption / Cycle		0.01kWh		
Average Power	Weld 1730W, Cool 250W, Standby 25W			
Air Supply Pneumatic Machine Only	6-8 Bar Clean Dry Air			
Air Consumption / Cycle	0.525 NI at 6 Bar			
Overall Length	Solenoid 660mm, Pneumatic 750mm			
Machine Body Width	405mm 405mm 600mm			
Overall Jaw Width	715mm	965mm	1265mm	
Body Height	200mm			
Jaw Height	Tripod Stand 760-1000mm, Bag Support Stand 965mm			
Bag support Platform Adjustment	160-650mm Below Sealing Jaws			
Weight Solenoid Machine	30kg 32kg 34kg			
Weight Pneumatic Machine	27kg	29kg	31kg	
Stand Weight	10-25kg			

#### STAR 96/96C

Seal Length	400mm	600mm	750mm	900mm	1050mm	1200mm	
Seal Width	6mm Standard, 2.5mm, 9.5mm 12.5mm and 20mm options						
Jaw Opening	Solenoid approx. 30mm, Pneumatic approx. 45mm						
Max Material thickness	1000µm approx. (4000g)						
Sealing Cycle Time	Typically, 4-10s						
Power Supply	230V 50/60Hz Single Phase, 115V Optional						
Average Power Consumption / Cycle			0.01	kWh			
Average Power	Weld 1730W, Cool 250W, Standby 25W						
Air Supply Pneumatic Machine Only	6-8 Bar Clean Dry Air						
Air Consumption / Cycle	0.525 NI at 6 Bar						
Overall Length	Solenoid 660mm, Pneumatic 750mm						
Machine Body Width	400mm	600mm	750mm	900mm	1050mm	1200mm	
Overall Jaw Width	465mm	665mm	815mm	965mm	1115mm	1265mm	
Maximum Cut	300mm	500mm	650mm	800mm	950mm	1100mm	
Jaw Height	220mm						
Weight Solenoid Machine	30kg	32kg	34kg	37kg	39kg	41kg	
Weight Pneumatic Machine	27kg 29kg 31kg 34kg 36kg 39kg				39kg		

All the above weights and dimensions are approximate and based on the standard machine E&OE. Star Universal reserves the right to change the above specifications without prior notice.

#### 14 ENVIRONMENTAL RESPONSIBILITY

#### MACHINE RECYCLING



As this machine contains electrical and electronic components it must be disposed of correctly and not in general land fill.

As Star Universal only build industrial equipment to individual customer requirements the responsibility for the disposal lies with the end user.

Star Universal will offer a collection service for machines we have built at the end of their useful life for recycling.

Please contact us for prices stating the machine model and serial number. Producer Registration No. WEE/MM7018AA

#### 15 STAR UNIVERSAL WARRANTY POLICY

The Company provides a 1-year warranty from the date of delivery on all Star Heat Sealing machines. If any part is found defective due to faulty manufacture, Star Universal will affect the repair or replacement to the customer free of charge providing:

- a) The fault is reported directly to the Service Department.
- b) The fault is not caused by misuse, neglect or faulty adjustments by the customer.
- c) The machine failure has not occurred through normal wear and application usage.
- d) The machine has not been serviced or repaired by any person not authorised by Star Universal during the warranty period.
- e) The machine is returned to Star Universal at the address below.

Consumable items like the jaw barrier tape and heating elements are not covered by the warranty but are readily available at a charge from the Service Department.

Travel time to attend a machine on site may be charged at the current applicable rates.

This warranty is additional to the normal customer statutory rights.



**Star Universal (Gosport) Ltd** Unit 2, Clarence Wharf, Mumby Road, Gosport, Hampshire, United Kingdom, PO12 1AJ

> Tel: + (44) 23 9258 2857 Fax: + (44) 23 9251 1731 Email: sales@staruniversal.com Web: www.staruniversal.com