

STAR

USER MANUAL

Model 66-66C-96-96C Pneumatic Jaw

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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**

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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, although The machine is fitted with 2 safety microswitches, which only come into contact as the jaws come to a close. The heat will not activate until these microswitches make. These should be checked once a month to make sure they are still functioning

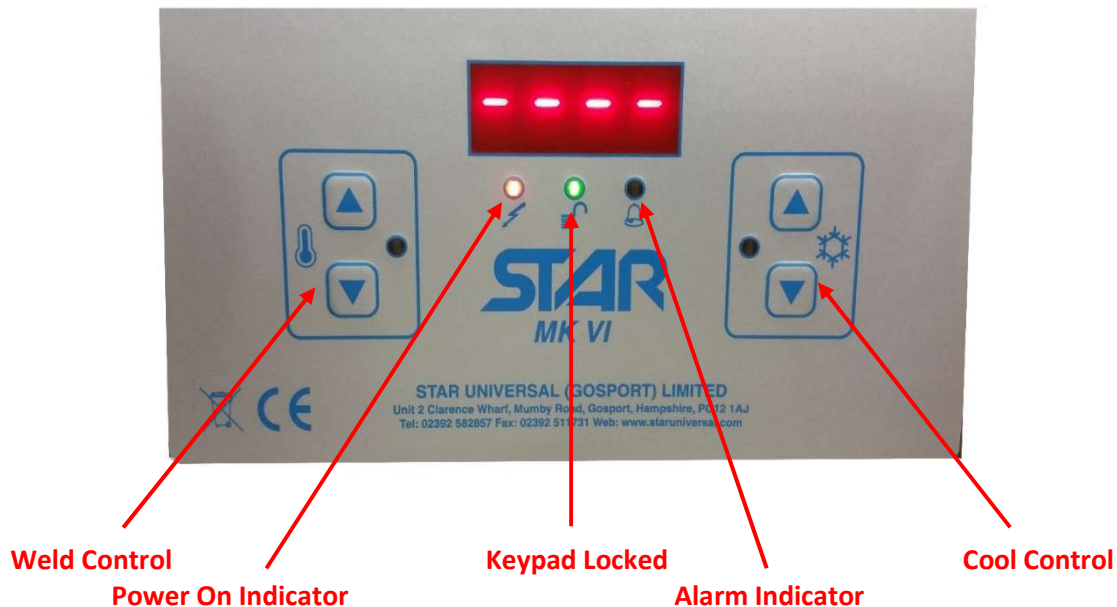
Always use heat sealers in a ventilated environment as sealing certain plastics may create fumes. Check with your bag/material manufacturer.

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

66/96/66C/96C



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 ▲ or ▼ key and release, the amber weld indicator will flash. To increase the weld time/temperature press the weld control ▲ key, to decrease press the weld control ▼ 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 ▲ or ▼ key and release, the blue cool indicator will flash. To increase the cool time press the cool control ▲ key, to decrease press the cool control ▼ 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 ▲ and ▼ keys for 2 seconds and release when **hc** appears on the screen. To increase or decrease the figure use the heat ▲ or ▼ 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 ▲ and ▼ keys for 2 seconds and release when **cc** appears on the screen. To increase or decrease the figure use the cool ▲ or ▼ 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 ▲ or ▼ key and release to display the cool time, the blue indicator will flash. Press and hold both of the weld ▲ and ▼ 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 ▲ key and weld ▼ key for 2 seconds until the display shows 2 digits with a decimal point between them. To alter this figure, use the weld ▲ and ▼ keys. After 5 seconds the screen will default back and save the figure entered.

Error	Possible Cause	Solution
The machine doesn't turn on	<ul style="list-style-type: none"> The plug is not inserted into the plug socket Fuse blown Internal error 	<ul style="list-style-type: none"> Check machine is plugged in Replace fuse, external/internal Contact Star Universal
E1 (power detected across elements when the machine is not cycling)	<ul style="list-style-type: none"> Power relay stuck on Board fault 	<ul style="list-style-type: none"> Replace relay Replace board
E2 (Jaws failed to close after start signal received)	<ul style="list-style-type: none"> Jaws timeout too low Board fault 	<ul style="list-style-type: none"> Increase jaws timeout (see p6) Replace board/contact Star universal
E3 (no power detected across the element when the machine is running a weld cycle)	<ul style="list-style-type: none"> Broken element Power relay stuck off Board fault Transformer blown 	<ul style="list-style-type: none"> Replace element Replace power relay Replace board/contact Star Universal Contact Star Universal
E4 (Jaws Failed to open after cycle)	<ul style="list-style-type: none"> Jaws timeout too low Relay stuck on Board fault 	<ul style="list-style-type: none"> Increase jaws timeout (see p6) Replace tapes (leaving loose) Replace board
E5 (Knife failed)	<ul style="list-style-type: none"> Link on KNIFE I/P broken 	<ul style="list-style-type: none"> Replace link
E6 (Temperature rise in element not sensed within timeout)	<ul style="list-style-type: none"> Timeout not set right Broken element Power relay stuck off Board fault Transformer blown 	<ul style="list-style-type: none"> Adjust timeout (see p6) Replace element Replace power relay Replace board/contact Star Universal Contact Star Universal
E7 (Over Temperature)	<ul style="list-style-type: none"> Thermocouple not connected Thermocouple broken Power relay stuck on Board fault 	<ul style="list-style-type: none"> Check thermocouple is connected to board input Check thermocouple is in the correct position on jaw (see p) Replace thermocouple Replace power relay Replace board/contact Star Universal

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

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 MAINTENANCE	
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.

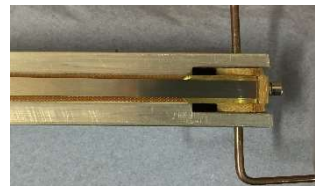
Before replacing any sealing jaw items ensure the machine is switched off and unplugged.

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.**



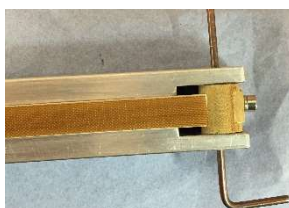
Element Ribbon: Remove the barrier tape as above. Place the loading pins through the expansion blocks at either end of the jaw so it is held under pressure and loosen the Allen key bolt. Remove the old ribbon. Cut a length of new element ribbon slightly longer than the jaw and fold one end back on itself 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.

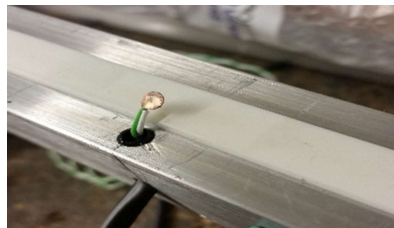


Thermocouple: If the silicone has been replaced cut a shallow V in it just deep enough for the thermocouple wire to sit flush with the rubber, the tip/disc should be sat on top of the rubber. Place the thermocouple through the hole and fasten in place with thermocouple adhesive strip. The tip of the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



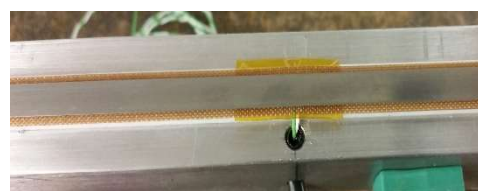
2. Place thermocouple through hole in jaw:



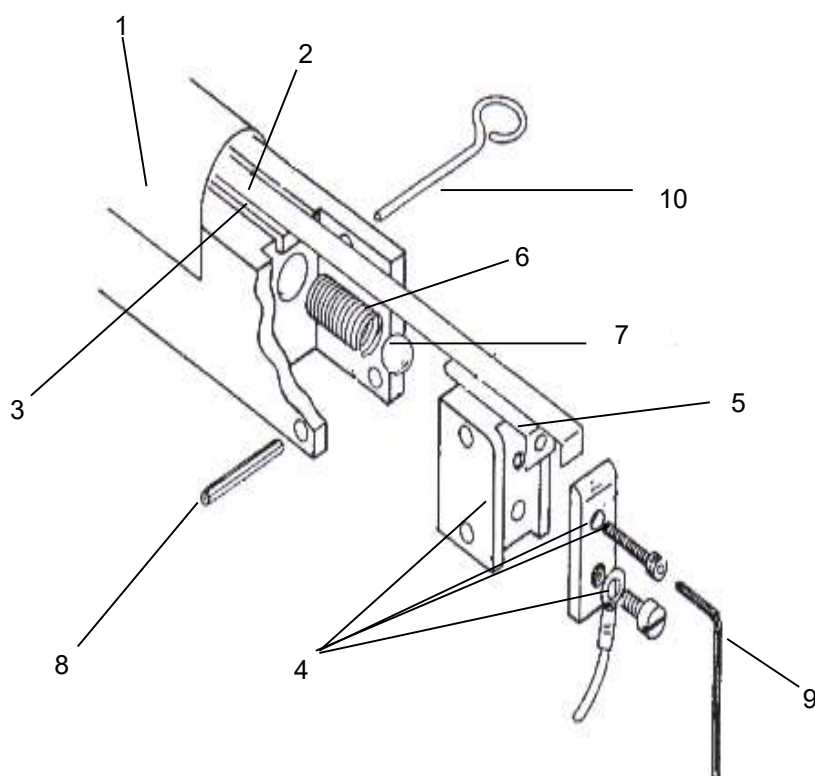
3. Secure thermocouple using the thermocouple adhesive strip:



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



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
3	B017002 B017007	1m Silicone Rubber 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

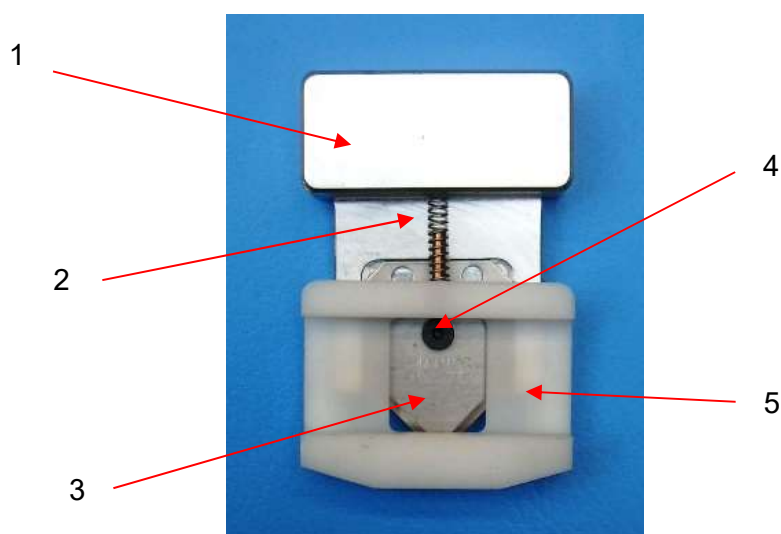
Loosen the two allen bolts at either end of the cutter runner. The cutter carriage should now be loose and lift out.

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.

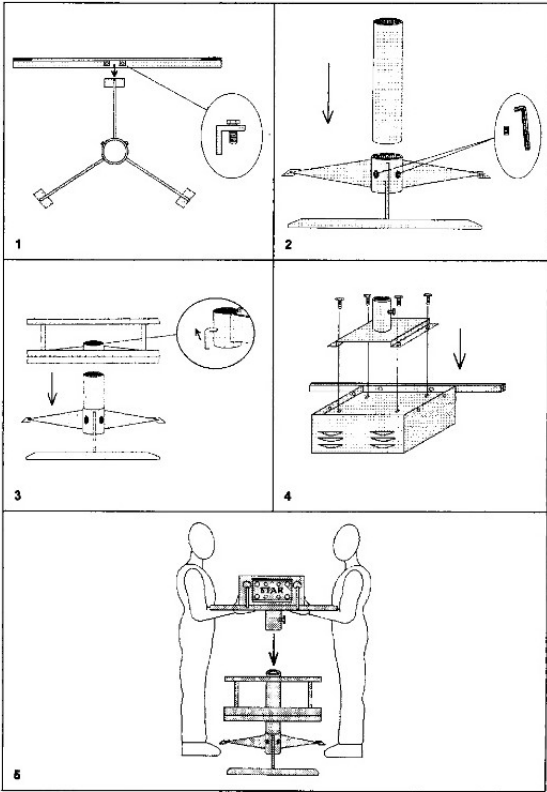


Part No	Diag No	Description
B027014	ALL	Cutter Assembly Complete
B027010	1	Cutter Assembly Body
B027012	2	Cutter Spring
B027006	3	Cutter Blade
B024013	4	Cutter Screw
B024011	5	Cutter Slide
B017013 B017016	N/A	SA 12x5mm Neoprene Sponge/m SA 12x8mm Neoprene Sponge/m

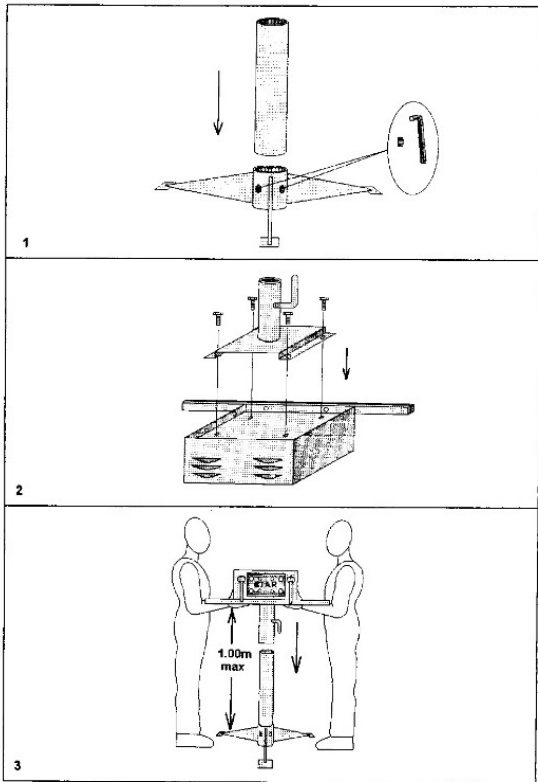
S001006	N/A	Cutter Spares Kit (Comprises complete cutter, 5 spare blades, spare slide and 3m neoprene sponge)
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10 STAR 66 STAND OPTIONS

SACK SUPPORT PLATFORM STAND

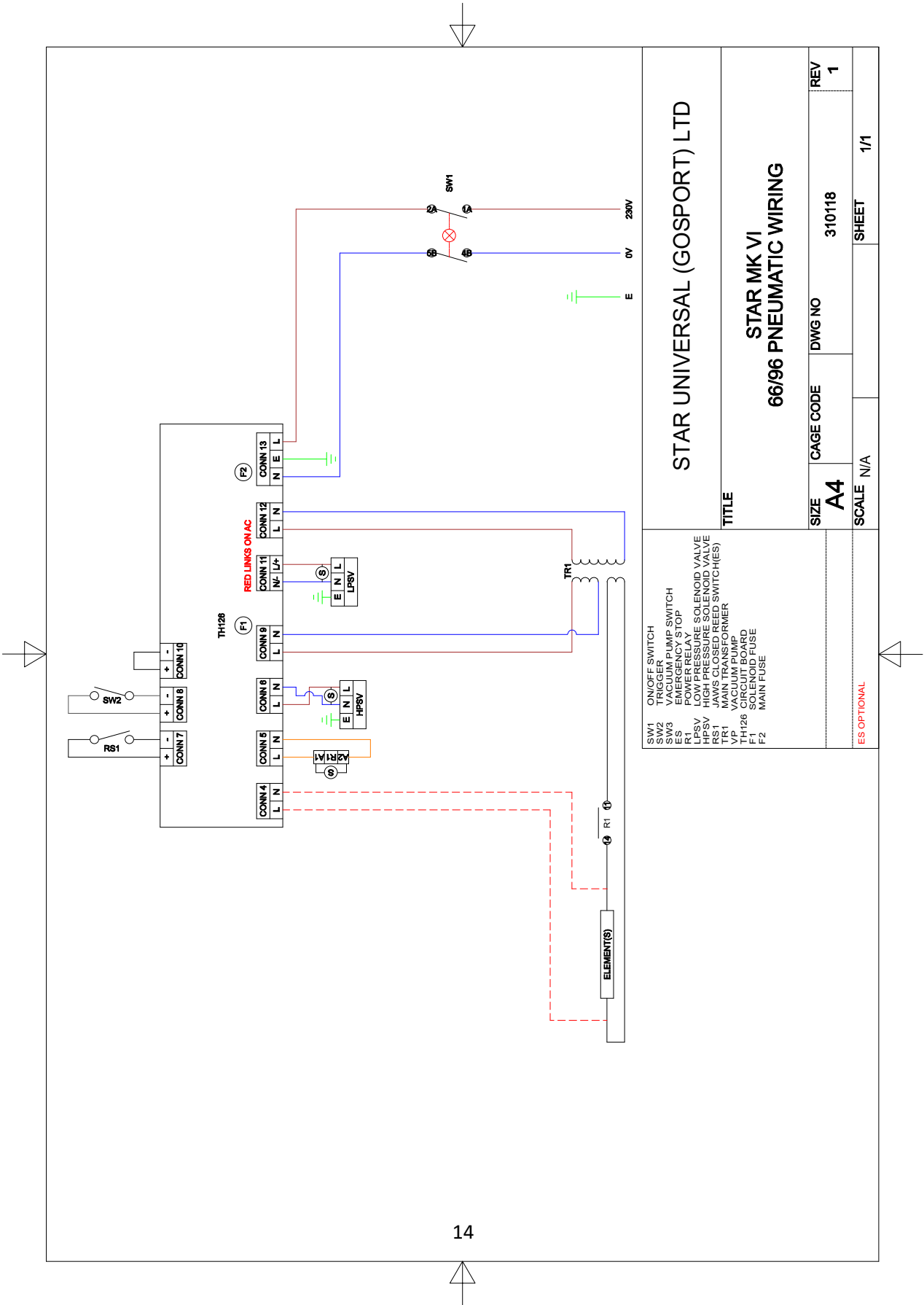


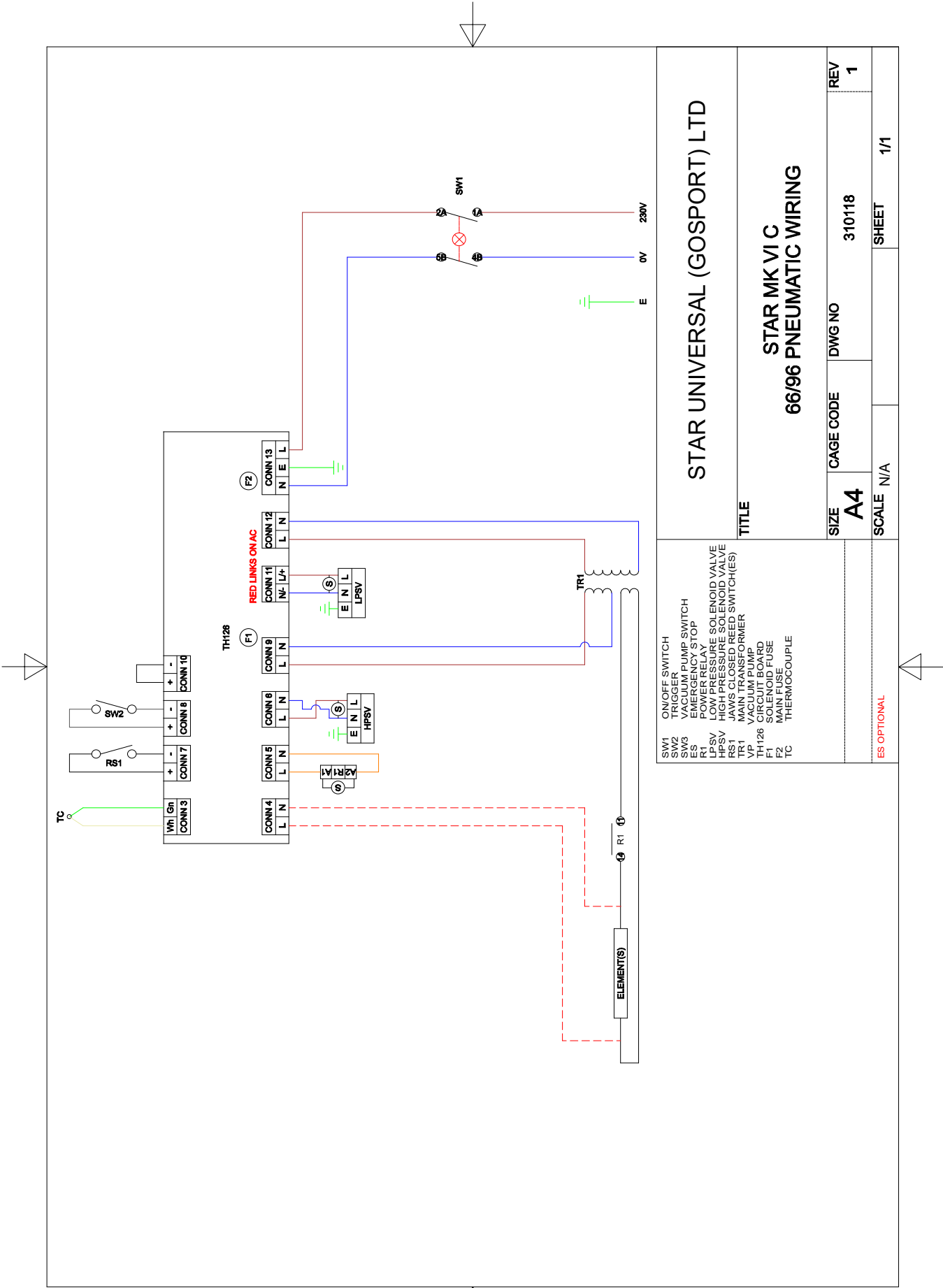
TRIPOD STAND



11 WIRING DIAGRAMS

STAR 66/66C/96/96C Pneumatic







8BV RFR HPG R LPG LPV SV HPS/ C1L1	BALL VALVE FILTER REGULATOR HIGH PRESSURE GUAGE REGULATOR LOW PRESSURE GUAGE LOW PRESSURE VALVE SHUTTLE VALVE SV HIGH PRESSURE VALVE JAW CYLINDER(S)		
STAR UNIVERSAL (GOSPORT) LIMITED			
TITLE			
PNEUMATIC DIAGRAM STAR 61, 91 AND ARTICS			
SIZE A4	CAGE CODE	DWG NO 231007-D	REV 4
SCALE N/A	SHEET 1/1		

12 PARTS LIST

Diag No	Part No	Description
SW1	E010001	On/Off Switch
	E010036	On/Off Switch Cover (IP44/65 machines only)
TR	E001001	Transformer
R1	E003008	Weld Relay
	E003007	Solid State Weld Relay
S	E021003	Suppressor
LPSV/ HPSV	P109001	Solenoid
	P109004	Solenoid Plug Connector
D1	E022002	Solenoid Diode
RS1	P122013	Jaws Closed Reed Switch
TR1	E010005	Foot Switch
	E010006	Heavy Duty Shrouded Foot Switch (stainless steel machines only)
TH126	E005001	MkVI Circuit Board
	E005028	MkVI C Circuit Board
F1	E017008	Solenoid Fuse
F2	E017005	Main Board Fuse
TC	E019005	Welded Tip Thermocouple
	E019006	Disc Thermocouple
NA	E013016	Mains Lead and Plug UK
	E013020	Mains Lead and Plug EU
	E013038	Mains Lead and Plug US
NA	E009004	Cable Gland
	E009015	Grommett
	B013001	P Clip
NA	E014001	Terminal Block (Strip of 12)
NA	M002004	Pneumatic Link Star 66
	M003004	Pneumatic 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
BV	P115001	Ball Valve
FR	P111001	Filter Regulator
HPG	P113002	High Pressure Gauge
R	P112001	Regulator
LPG	P113001	Low Pressure Gauge
LPSV	P106001	Low Pressure 5/2 Valve
SV	P107001	Shuttle Valve
HPSV	P105001	High Pressure 3/2 Valve
CYL	P101013	Cylinder

13 TECHNICAL SPECIFICATION

STAR 66/66C

Seal Length	650mm	900mm	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	0.01kWh		
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	0.01kWh					
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	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

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.



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