

BODY REPAIR KIT

Model Nos. CS4BRK, CS10BRK & CS10SBRK

PART NOS: 7617000, 7617005 & 7617010

OPERATING & MAINTENANCE INSTRUCTIONS

GC0911

INTRODUCTION

Thank you for purchasing this CLARKE Body Repair Kit. This manual covers the compact 4 Tonne Kit and the larger 10 Tonne kits, the CS10SBRK featuring a faster (double-action) hydraulic pump causing the ram to move with both the up and down strikes of the arm.

Before attempting to use the product, please read this manual thoroughly and follow the instructions carefully. In doing so you will ensure the safety of yourself and that of others around you, and you can look forward to your purchase giving you long and satisfactory service.

GUARANTEE

This product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt which will be required as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for its intended purpose.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission. This guarantee does not effect your statutory rights.

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STRONG-ARN

GENERAL SAFETY PRECAUTIONS

WORK AREA

- 1. Keep the work area clean and well lit. Cluttered and dark areas invite accidents.
- 2. Keep children and bystanders away while working. Distractions can cause you to lose control and bystanders should be kept at a safe distance from the working area especially when work is in progress.

PERSONAL SAFETY

- 1. Stay alert, watch what you are doing and use common sense when using this equipment. Do not operate this equipment when you are tired, ill or under the influence of alcohol, drugs or medication.
- 2. Do not over-reach. Keep your proper footing and balance at all times. This enables better control of the equipment in unexpected situations.
- 3. Concentrate on the job in hand, no matter how trivial it may seem. Be aware that accidents are caused by carelessness due to familiarity.
- Dress properly. Do not wear loose clothing or jewellery which may get caught in moving parts. Wear protective hair covering to contain long hair. For best footing, wear rubber soled footwear. Keep floor clear of oil, scrap wood, etc.
- 5. Before working on a vehicle with this repair kit, ensure the vehicle is well supported and completely stable.
- 6. Remember that during body repair, there is always the possibility of a fixture slipping or a body part failing, which could cause the vehicle to jolt suddenly. If the vehicle is not adequately supported, it could fall with possibly serious consequences.
- 7. Never use an additional extension handle to operate the pump.
- 8. Never modify this equipment in any way.
- Check the equipment for damage before use. Any damaged part should be discarded and replaced. Check for alignment of parts, breakage of parts, and any other condition that may affect the operation. Any damage should be properly repaired or the part replaced. If in doubt, DO NOT use. Consult your local Clarke dealer.
- 10. Store out of the reach of children and do not allow persons unfamiliar with these instructions to use this product.

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SPECIFICATIONS

	CS4BRK	CS10BRK	CS10SBRK
Weight (complete in case)	17.6 kg	30	kg
Moulded case dims (L x W x H)	580 x 315 x 170 mm	720 x 390 :	x 160 mm
Length of handle	265 mm	465	mm
Pressure relief operating pressure	4 Ton	10 1	on
Pump unit dimensions (L x W x H)	330 x 130 x140 mm	510 x 140	x140 mm
Pump rated operating pressure	63 Mpa	62 N	1pa
Pump oil capacity	250 g	500) g
Hose dimensions (L x O/D)	1150 x 17 mm	1350 x	17 mm
Hose max operating pressure		140 psi	
Ram unit length (ret/ext)	270 x 395 mm	370 x 5	12 mm
Ram rated operating force	4 Tonne	10 Tc	nne
Ram piston stroke	125 mm	142	mm
Hydraulic spreader dims (L x W x H)	230 x 50 x 60 mm	230 x 50 :	x 65 mm
Spreader max rated load	0.5 Tonne	0.5 Tc	onne
Spreader opening	16 - 90 mm	20 - 10	0 mm
Base rated load	4 Tonne	10 Tc	nne
Angled toe rated load	4 Tonne	4 To	nne
Circular head rated load	4 Tonne	10 Tc	nne
Square V-head	4 Tonne	10 Tc	nne
Rubber head	4 Tonne	10 Tc	nne
Plate head	4 Tonne	10 Tc	nne
Removable connector	4 Tonne	10 Tc	nne
Extension tubes	2 Tonne	5 Toi	nne

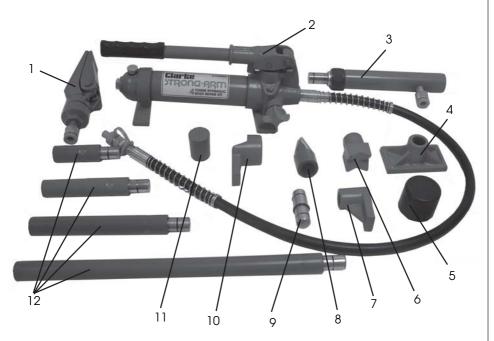
Please note that the details and specifications contained herein, are correct at the time of going to print. However, CLARKE International reserve the right to change specifications at any time without prior notice.

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UNPACKING

This complete kit contains the heavy duty hydraulic equipment needed for lifting, pushing, pulling, straightening and spreading.

When unpacking, check for damage or shortages etc. Any found should be reported to your CLARKE dealer where the product was originally purchased. This Body Repair Kit is supplied with the following components:



No	Item	No	Item
1	Hydraulic Spreader Wedge	7	Plate Head
2	Pump Assembly with Hose	8	Wedge Head
3	Hydraulic Ram	9	Male Connector
4	Flat Base	10	Angled Toe
5	Rubber Head	11	Serrated Cap
6	Square V-Head	12	4 x Extension Tubes

STRONG-ARM

OVERVIEW

This body repair kit is designed for bending chassis frames and repairing dents in vehicle body panels. In most cases, the kit will only return the vehicle body parts to approximately their original position. Additional work will be required to complete the repair.

There are two attachments which can be connected to the Pump unit.

- The Hydraulic Ram is for use in larger spaces where greater force is needed and where there is sufficient room. It requires a solid immovable base, directly in line with the damaged area.
- The Spreader Wedge is used in tighter spaces where the Ram and other accessories will not fit.

THE ATTACHMENTS

Several different attachments are provided that may be used in conjunction with the Hydraulic Ram dependant upon the nature of the damage.

- The **Flat Base** is used to spread the load of the Hydraulic Ram. It should be connected to the static end of the Hydraulic Ram using the Male Connector.
- The Rubber Head is typically used for popping dents out of sheet metal such as doors and body panels when plugged into the moving end of the Hydraulic Ram or the Extension Tubes.
- The **Square V-Head** is used to align the force of the Hydraulic Ram when bearing against an angled frame, and may be attached to the Hydraulic Ram or the Extension Tubes.
- The **Wedge Head** is used to repair small dents and areas located in angles and tight spaces and attaches to the Hydraulic Ram or Extension Tubes.
- The Male Connector plugs into the female end of the Hydraulic Ram.
- The **Angled Toe** and **Plate Head** are normally attached to the extension tubes but could be used as a substitute for the flat base if space is limited.
- The **Serrated Cap** is typically used for pushing during frame repair. It may be plugged into either end of the Hydraulic Ram or the Extension Tubes.
- The **Extension Tubes** plug together in different combinations to reach the desired length.
- The **Hydraulic Spreader Wedge** is used in restricted spaces when the Hydraulic Ram cannot be used. Connect the wedge directly to the hose of the pump unit.

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ASSEMBLY

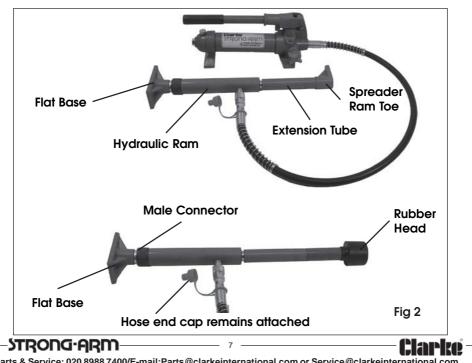
When assembling the Hydraulic Ram, Pump unit and attachments, unscrew and retain the plastic end plugs on the connections of the Ram and Hydraulic Spreader Wedge for future use. Ensure the hydraulic hose is tightly screwed to the connection.

- 1. Screw the Pump Handle into the socket in the pump unit.
- 2. If the Hydraulic Spreader Wedge is to be used, connect the screw-in connector of the pump hose to the spreader wedge as shown in Fig 1.
- Pump Handle 3. If the Ram is to be used, fit the Flat Base



to the static end of the Ram using the male connector. Connect other attachments to the moving end as required.

Various combinations of extension tubes and attachments can be assembled as shown in Fig 2, according to the distance between the work surface and the supporting frame.



OPERATION

Assemble the components including the flat base and as many extension tubes as required.



NOTE THAT WHEN ADDING FURTHER EXTENSION TUBES, THE MAXIMUM RATED LOAD IS REDUCED. (SEE WARNING LABEL)

- 1. Connect the Hydraulic Ram or Hydraulic Spreader to the connecting hose using the screw-on hose connector. Use the male connector to join the ram to your selected attachment or any extension tube.
- 2. To operate the Hydraulic Pump, position it on a stable, level surface close to the damaged area. Close the Release Valve by turning it clockwise and pump the handle to create pressure.
- 3. Turn the Release Valve counter-clockwise to release the pressure.
- The pump may be positioned horizontally or vertically. When using the Hydraulic Ram in a vertical position, always keep the hose end facing downward.



NEVER OVERLOAD THE RAM BEYOND ITS CAPACITY. ENSURE THE BEARING POINT IS STABLE AND PROPERLY CENTRED ABOVE THE RAM. NEVER OVERLOAD THE ATTACHED COMPONENTS BEYOND THEIR RATED CAPACITIES AS STATED IN THE SPECIFICATION.

Always apply the load slowly to be sure that everything is secure. Take care that the load is always in line with the ram.

USING THE RAM

- 1. Determine in which direction the target area needs to be pushed.
- 2. Remove any obstructions that are in the way and could be damaged.
- 3. Connect the Flat Base to the stationary side of the Hydraulic Ram and connect the appropriate attachment to the working end of the Ram.

Note: When repairing larger body panel dents such as a dented door, wing or quarter panel, the correct pushing attachment will be the Rubber Head.

- 4. Position the Hydraulic Ram so that the flat base is resting against a frame member opposite the damaged area. It must be in line with the direction in which the damaged area needs to be pushed and have enough support that only the damaged area will be displaced by the ram pressure.
- Use soft pads or wooden supports where necessary to protect the body.



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STRONG ARM

- 5. Aim the pushing end towards the damaged area and slowly apply pressure with the pump.
- 6. Once contact is established at each end, keep as well clear as practical and slowly apply pressure to the damaged area until the desired correction has been made.



CAUTION: KEEP HANDS AWAY FROM CONTACT AREAS AND TIGHT SPACES IN CASE THE COMPONENTS SHOULD SLIP AND CAUSE INJURY.

7. When the damaged area has been bent to the desired position, slowly turn the release valve on the pump unit in a counterclockwise direction to release hydraulic pressure before removing the Ram.

USING THE SPREADER WEDGE

- 1. Determine in which direction the metal needs to be spread.
- 2. Remove any obstructions that are in the way and could be damaged.
- 3. Place the Spreader Wedge so that the hinged arm is resting against the part to be moved and the stationary base is bearing against a rigid support. Hold the Spreader Ram in position and apply the pump pressure.
- 4. Once contact is established at each end, keep as well clear as practical and slowly apply pressure to the damaged area until the desired correction has been made.



CAUTION: KEEP HANDS AWAY FROM CONTACT AREAS AND TIGHT SPACES IN CASE THE COMPONENTS SHOULD SLIP AND CAUSE INJURY.

5. When the damaged area has been bent to the desired position, slowly turn the release valve on the pump in a counterclockwise direction to release hydraulic pressure before removing the wedge.



MAINTENANCE

If the pump has been stored for long periods, check the oil level before use. Stand the pump on a level surface and remove the breather valve on the oil reservoir. If necessary, top up via the breather valve which is then screwed on finger tight.

Note: Only unscrew this when the system is not under pressure.

The oil level should be near the bottom of the opening. If required, oil

can be topped top using Clarke Hydraulic Oil. (part no. 3050830 for 1 litre).

After extensive use, the hydraulic oil should be replaced to ensure longer equipment life. Do not overfill, or the piston rod will be unable to move freely. Replace the breather valve after re-filling. The required oil volumes are as follows.

CS4BRK - 250 ml ± 5ml

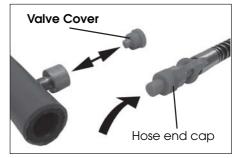
CS10BRK/CS10SBRK - 500 ml ± 5ml

STORAGE

After use, screw the valve cover on to the pump to keep the connection clear of dust and dirt and cover the hydraulic hose end with the plastic cap.

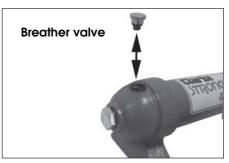
When not in use, the pump should be stored with the release valve open. Store all the equipment in its moulded case in a clean, dry environment protected from the weather.

ENVIRONMENTAL PROTECTION



If disposing of old oil or any damaged components, do not dispose of them with general waste. Any escaping oil should be captured with some absorbent material which should then be disposed of appropriately. This product and its packaging contain valuable raw materials and should be taken to your local civic amenity site for recycling.





SPARE PARTS

In the event of lost or damaged components, replacements are available from Clarke Parts & Service. Please refer to the following parts list and diagrams, quoting the Clarke part numbers:

HT-CS4BRK-01 to 69,

HT-CS10BRK-01 to 69 or

HT-CS10SBRK-01 to 69.

FAULT FINDING

Problem	Possible Cause	Remedy
Ram does not operate when handle is pumped.	Release valve not tightly closed. Air trapped in system.	Firmly close the release valve. Purge air from system by pumping operating handle.
Ram will not hold load.	Release valve not tightly closed. Malfunction in pump such as dirt inside valve mechanism.	Firmly close the release valve. Return pump to dealer for overhaul.
Ram reluctant to lower when load removed.	Oil reservoir overfilled. Piston binding.	Drain oil to correct level. Clean and lubricate moving parts.
Ram will not extend to full range of stroke	Low oil level.	Add hydraulic oil to the reservoir.
Ram tries to tilt to one side.	Poor positioning of the footing.	Stop work and re-position ram and base, ensuring it is well supported and as close to perpendicular to the repair as possible.

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COMPONENT PARTS LIST

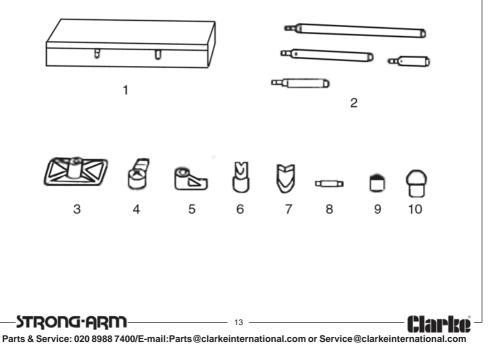
No	Description	No	Description
1	Plastic Case	26	Hand Release Valve
2	Tube Set (4 pieces)	27	Sealing Ball
3	Flat Base	28	Spring
4	Angled Toe	29	Screw
5	Plate Head	30	Steel Ball
6	Wedge Head	31	Ball Cup
7	Square V-Head	32	Spring
8	Male Connectior	33	Screw
9	Serrated Cap	34	Screw Protector
10	Rubber Head	35	O-ring
11	Valve Body	36	Nylon Sealing Ring
12	Oil Filter	37	Screw
13	O-ring	38	O-ring Seal
14	Oil Reservoir	39	Piston
15	Seal Ring	40	Hinge Pin
16	Thumb Nut	41	Circlip
17	Sealing Ring	42	Pivot Pin
18	Tie Rod	43	Handle Socket
19	O-ring	44	Operating Handle
20	Pump Foot	45	Handle Grip
21	Hydraulic Hose	46	Ram Cylinder
22	Coupling	47	Ram Cylinder
23	Dust Seal	48	Screw Cover
24	Steel Ball	49	Screw M6
25	O-ring	50	Connecting Nut
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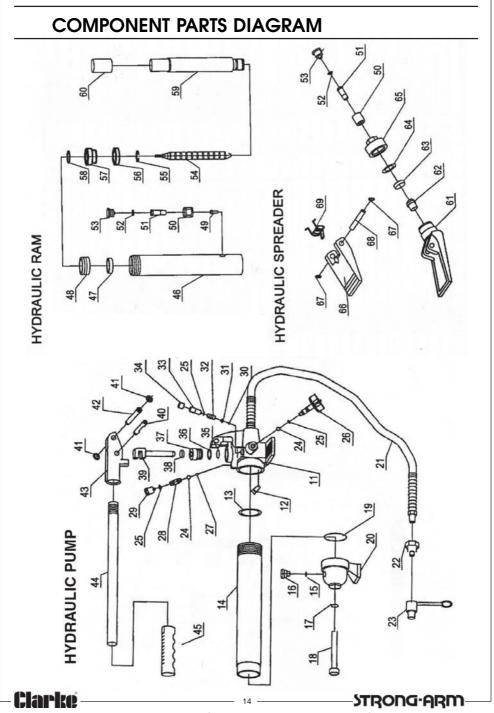
No	Description
26	Hand Release Valve
27	Sealing Ball
28	Spring
29	Screw
30	Steel Ball
31	Ball Cup
32	Spring
33	Screw
34	Screw Protector
35	O-ring
36	Nylon Sealing Ring
37	Screw
38	O-ring Seal
39	Piston
40	Hinge Pin
41	Circlip
42	Pivot Pin
43	Handle Socket
44	Operating Handle
45	Handle Grip
46	Ram Cylinder
47	Ram Cylinder
48	Screw Cover
49	Screw M6
50	Connecting Nut

COMPONENT PARTS LIST

No	Description	No	Description
51	Cylinder Screw	61	Fixed Jaw
52	O-ring	62	Small Piston
53	Dust Cover	63	Piston Ring
54	Tension Spring	64	O-ring
55	Circlip	65	Screw Cover
56	Nylon Sealing Ring	66	Moving Jaw
57	Bushing	67	Circlip
58	O-ring	68	Hinge Pin
59	Piston Rod	69	Spring
60	Piston End Cover		

ACCESSORIES





CE	Bernall Street, Epping, Essex CM16 4LG	
	DECLARATION OF CONFORMITY	
This i	s an important document and should be retained.	
We hereby declare that th	is product(s) complies with the following directive(s):	
2006/42/EC Mach	ninery Directive.	
•	nave been applied to the product(s):	
The technical documentation	7, EN 1494:2000+A1:2008 on required to demonstrate that the product(s) meet(s) the requirement(s) has been compiled and is available for inspection by the relevant enforce	
	The CE mark was first applied in: 2010	
Product Description:	4 Ton Body repair kit 10 Ton Body repair kit	
	10 Ton Body repair kit / Quick action.	
Model number(s):	CS4BRK CS10BRK CS10SBRK	
Serial / batch Number:	N/A	
Date of Issue:	17/06/2011	
Signed:	J.A. Clarke	
	Director	



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