Clarke®

STRONG-ARM

WARNING: Read these instructions before using the press

20 TONNE HYDRAULIC PRESS

MODEL NO: CSA20F

PART NO: 7614055

OPERATION & MAINTENANCE INSTRUCTIONS

UK CA | CE

ORIGINAL INSTRUCTIONS

DL0123 - REV 6

INTRODUCTION

Thank you for purchasing this CLARKE 20 Tonne Hydraulic Press.

Before attempting to operate the machine, it is essential that you read this manual thoroughly and carefully follow all instructions given. In doing so you will ensure the safety of yourself and that of others around you, and you can also look forward to the press giving you long and satisfactory service.

GUARANTEE

This CLARKE product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt 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 the purpose for which it was intended.

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.

SAFETY PRECAUTIONS

- Due to the weight of the press, the help of an assistant will be beneficial during assembly or when moving the press around.
- Always operate the press on a suitably strong bench with adequate light.
- Before starting work, check for signs of cracked welds, loose or missing bolts, or any other structural damage. Do not operate if any of these conditions exist. Have repairs made only by authorised service centre.
- Before work, always ensure that hydraulic hoses and couplings are completely sound.
- Never tamper with the press components. The safety valve is calibrated and sealed at the factory; do not attempt to change the setting.
- Use only the recommended hydraulic oil.
- The components of this press are designed to withstand the rated capacity. Do not substitute any other components or exceed the rated capacity of the press.
- Before applying pressure, always ensure the workpiece is firmly secure and stable.
- Always clean up spills of hydraulic oil immediately as this can be dangerous in a workshop environment.
- Do not allow any person who is unfamiliar with hydraulic presses, to use the press unless they are under direct supervision.
- Do not stand directly in front of the press when it is in use.
- Always apply the load under the centre of the ram. Offset loads can damage the ram and may cause the work piece to be ejected.
- Always ensure the work piece is properly supported by the press bed.
- When using accessories such as pressing plates, be certain they are centered below the ram and are in full contact with the bed.
- Parts being pressed may shatter or be ejected from the press. In the case of varied applications, it is your responsibility to always use adequate guards, and wear eye protection and protective clothing when using this press.
- Keep hands and fingers away from parts that may pinch or shift.
- Never use extension tubes to increase the length of the pump handle. Excessive effort can cause damage and/or accidents.
- Failure to heed these warnings may result in damage to the equipment, or serious personal injury.

UNPACKING

Ensure the press and its components suffered no damage during transit and that all components are present. Should any loss or damage become apparent, please contact your CLARKE dealer immediately

INVENTORY

- 1 x Frame
- 2 x Base Supports
- 4 x Stay Bars
- 1 x Ram
- 1 x Ram Baseplate
- 1 x Pump
- 1 x Pump Handle
- 1 x Hose Assembly (attached to frame)
- 1 x Pressure Gauge
- 1 x Press Bed (Frame)
- 2 x Bed Support Pins with 4 x retaining spring clips
- 2 x Bed blocks (V-blocks)
- 1 x Instruction Manual
- 1 x Fixing Kit (containing bolts, flat washer, spring washers & nuts, compression springs & hydraulic fittings).

TOOLS REQUIRED

- Open spanners (10, 12, 17, 19, 22, 27 & 29 mm) or an adjustable wrench
- PTFE tape

ACCESSORIES

- A mandrel set (including storage bracket and pressure plate) is not supplied with the press but is available from your dealer as Clarke part no 7615062.

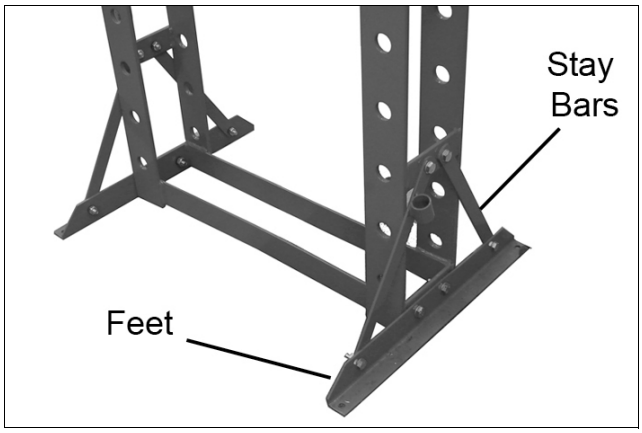
ASSEMBLY

IMPORTANT: Due to the weight of the press components, we recommend that you get assistance during assembly.

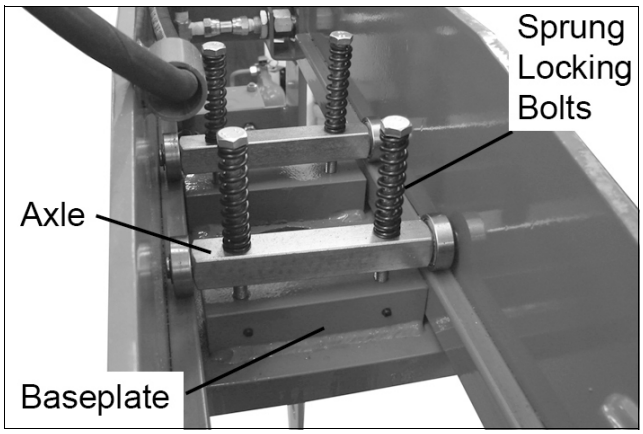
IMPORTANT: We strongly recommend that the press be firmly secured to a firm and level floor using expansion bolts (not supplied). Holes are provided in the base supports for this purpose.

IMPORTANT: Do not locate your press where it will be open to the elements, as severe weather conditions will damage the hydraulic parts.

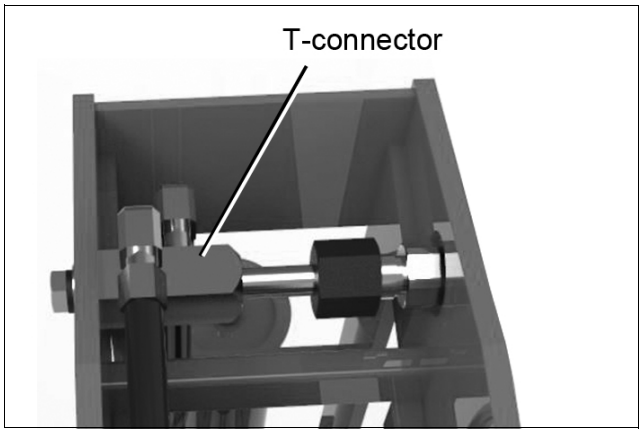
1. With the help of an assistant, attach the feet to the frame using the nuts, bolts and washers.
2. Add the stay bars to each side and bolt into place.
3. Lift the frame assembly upright and manoeuvre it to its intended location in the workshop.



4. With the help of an assistant, install the ram support carriage into the upper frame section by assembling the baseplate, the two axles and the four sprung locking bolts/springs as shown in Fig 2.
5. Tighten the locking bolts loosely so that the carriage can still move to and fro along the frame.



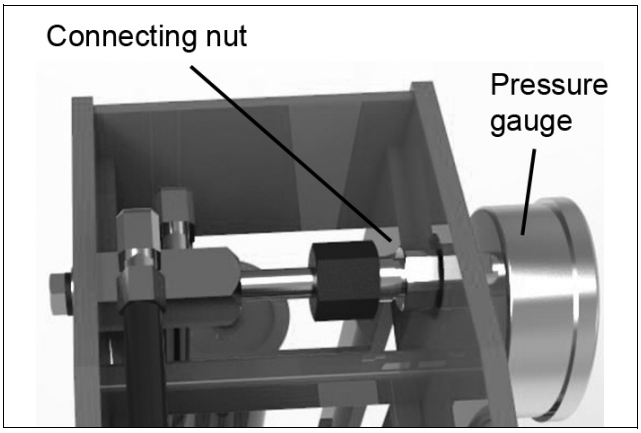
6. The hydraulic hoses must be correctly installed within the frame. Check that both the hoses pass through any supporting rings and that the T-connector sits upright when the connecting parts are fitted to the frame.



IMPORTANT: At the hose connection to the pump, and at the T-connector connection to the pressure gauge, additional large 'O' rings are supplied, purely for transit purposes and require removing by the end user

prior to making the connections, ensuring the joint has only the smaller 'O' ring seated in the recess of the male component.

7. Fit the pressure gauge to the connecting nut. Check the gauge is upright before tightening the nut with a spanner.

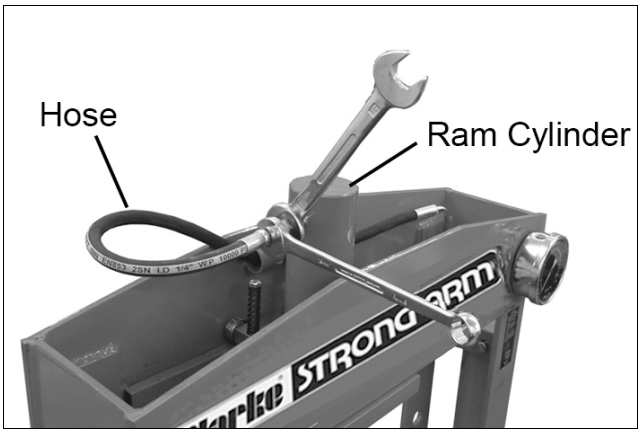


8. Make a small hole in the pressure gauge safety bung with a short pin or nail before use.

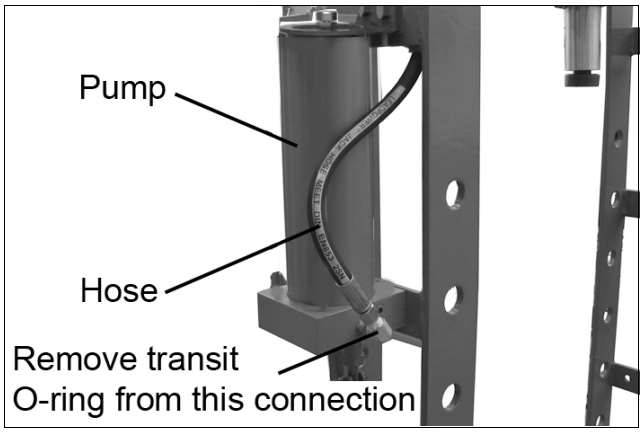
- Do not use a long nail as you may damage the internal components of the gauge.

9. Lower the ram through the hole in the moving carriage and secure in position using the locking collar.

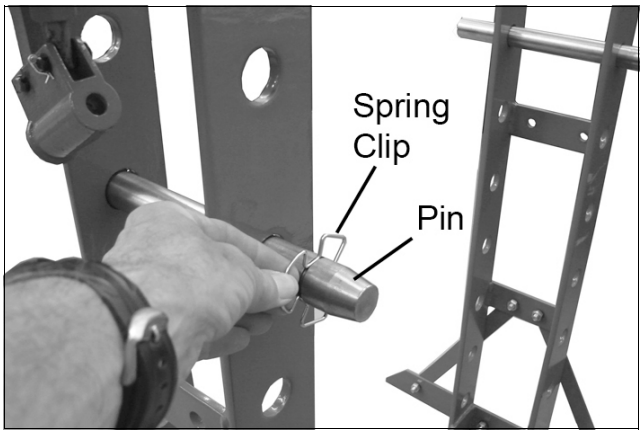
10. Connect the hydraulic hose to the ram cylinder, sealing the joint with PTFE tape if required, and tighten using two open spanners.



11. Bolt the hydraulic pump into position on the side of the frame using the fixing bolts, nuts and washers.
12. Ensuring that the hydraulic hose passes through the retaining loop on the frame, unfasten the protective hose cap and screw the hose onto the threaded connection of the hydraulic pump.

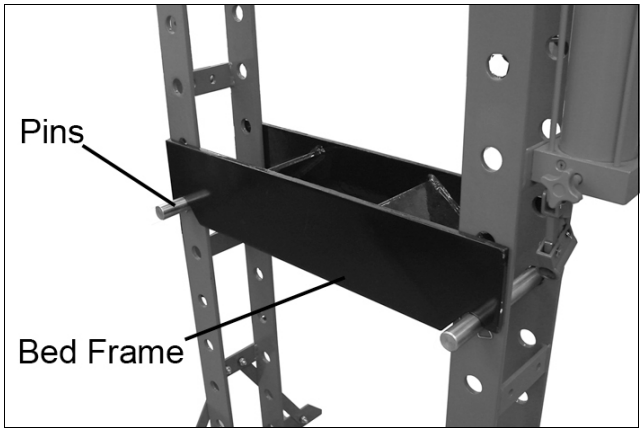


13. We recommend sealing the thread with PTFE tape. Take care not to let any oil escape while connecting the hose.
14. Insert the bed support pins into the holes in the frame side supports at a height of your choosing. Secure them in position using the spring clips.



15. Lift the bed frame into position on the pins.

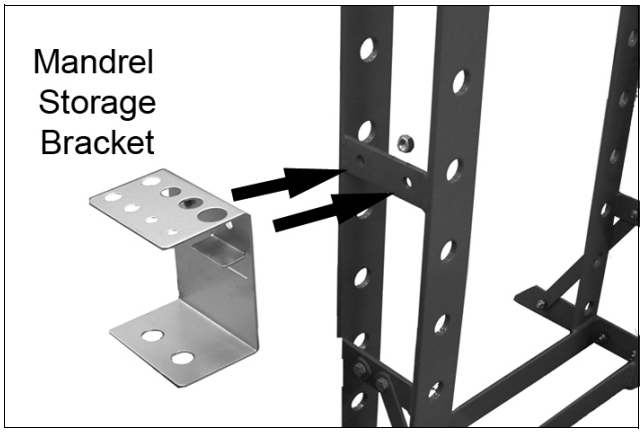
IMPORTANT: Due to the weight of the bed, we recommend that you get assistance from another person.



ADDING A MANDREL SET

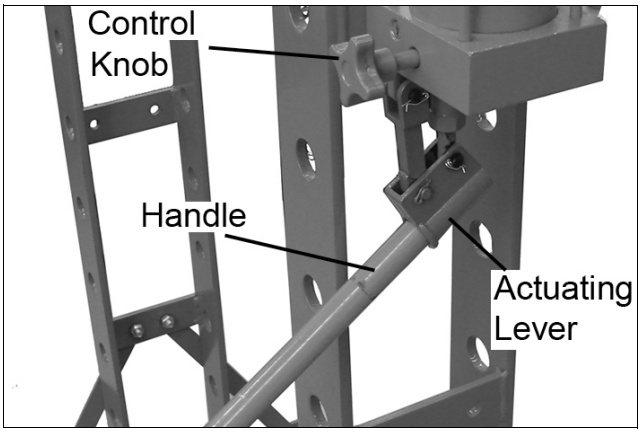
A mandrel set (including storage bracket and pressure plate) is not supplied with the press but is available as Clarke part no 7615062.

1. Bolt the mandrel storage bracket to the side of the frame using the bolts supplied.
2. Store the mandrels (including the adaptor) in their positions on the storage bracket.



PREPARATION FOR USE

1. Insert the pump handle into the pump actuating lever.
2. Purge any air from the system by opening the release valve (turning the control knob anti-clockwise) and pumping several full strokes to eliminate any air bubbles. Close the valve using the control knob.



POSITIONING THE BED

IMPORTANT: Due to the weight of the bed, we recommend that you get assistance from another person when adjusting the bed height.

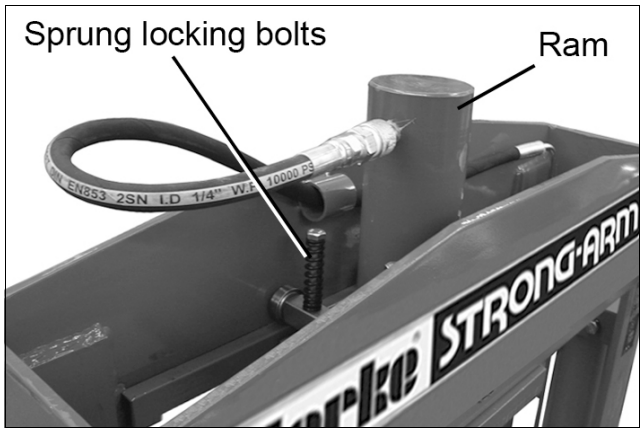
1. Position the bed at the desired height, so that it will be as close as possible to the ram when the workpiece is mounted on it.
2. Raise one side of the bed and insert a supporting pin into the next locating hole.
3. Repeat at the other end to level the bed.
4. Repeat until the bed is at the desired height, with the supporting pins held by the spring clips.

CAUTION: THE BED HEIGHT SHOULD ONLY BE RAISED OR LOWERED ONE HOLE AT A TIME, WORKING ALTERNATELY FROM ONE SIDE AND THEN THE OTHER, FAILURE TO WORK IN THIS WAY MAY CAUSE THE BED TO FALL AND CAUSE INJURY TO THE OPERATOR.

POSITIONING THE RAM

1. Position the ram as required by sliding the carriage along the cross-beam. Lock it in a static position with the four sprung locking bolts.

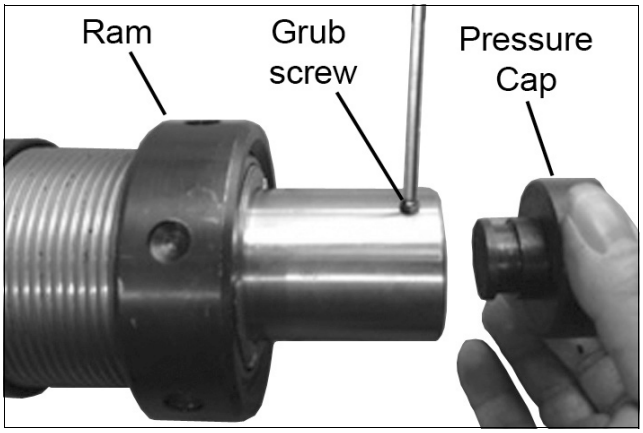
- Always position the ram directly above the workpiece.



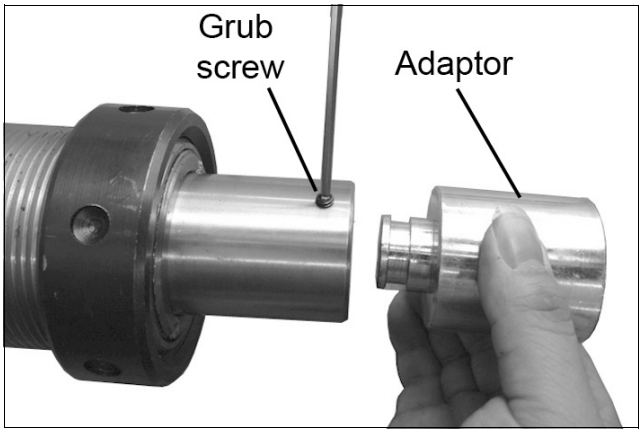
FITTING THE MANDRELS (SUPPLIED SEPARATELY)

Any of the mandrels may be connected to the end of the ram using the adaptor supplied.

Alternatively, the basic pressure cap can be fitted as shown. Secure the pressure cap by tightening the grub screw with a suitable hexagonal key.



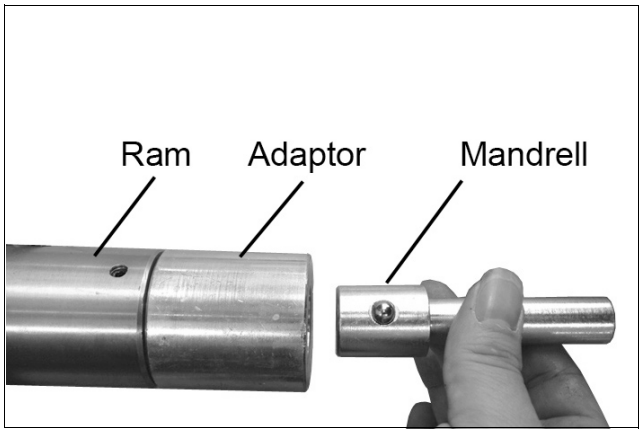
To install a mandrel, the adaptor must be fitted instead of the pressure cap. Secure the adaptor by tightening the grub screw with a suitable hexagonal key as previous.



Select your mandrel depending upon the size of the workpiece bearing surface.

The mandrel can then be pushed into the adaptor where the built-in spring clip will hold it in place.

Store the mandrels in their positions on the storage bracket when not in use.

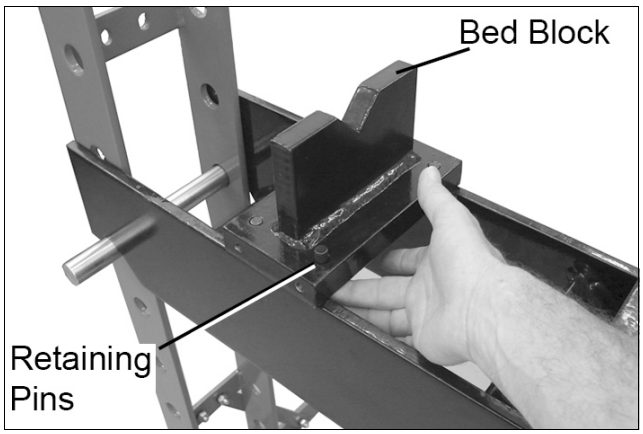


POSITIONING THE BED BLOCKS

The bed blocks can be placed on the bed with either the flat face or the V-supports facing upwards.

They are prevented from slipping out of position by the retaining pins which drop down within the confines of the bed side members.

Check all parts are secure and correctly aligned before using the press.



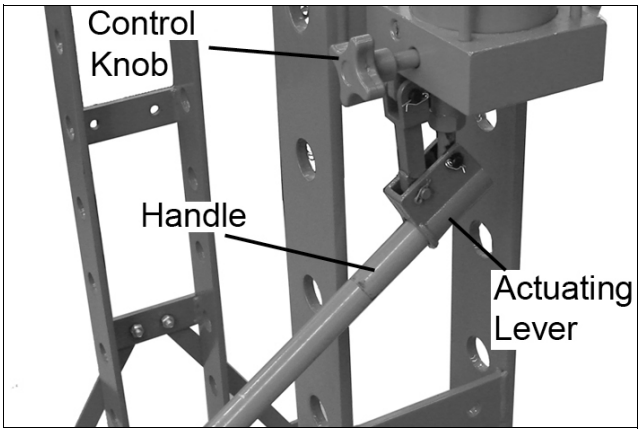
OPERATION

1. Place the workpiece on the bed. It must be completely stable and supported by packing or shims where required. Steel pressing plates are supplied, which locate on the bed. Place the workpiece on a combination of these to give it stability.

CAUTION: DO NOT POINT LOAD THESE ACCESSORIES AS THEY ARE NOT DESIGNED TO TAKE THE FULL FORCE OF THE RAM IN ONE SPOT. ENSURE THEY ARE ADEQUATELY SUPPORTED.

NOTE: *Any packing pieces or shims used MUST be capable of withstanding the pressure that will be brought to bear, and MUST be of sufficient size with sufficient surface area, so as to avoid the possibility of slipping or springing out. Mating surfaces MUST be horizontal so that the force being exerted will NOT be at an angle.*

2. Close the release valve by turning it clockwise until tightly closed.
3. Pump the handle to bring the ram very lightly into contact with the workpiece.
4. Manoeuvre the workpiece or slide the ram to one side so that the desired point of contact is directly beneath the centre of the ram.



5. When satisfied that the workpiece is correctly aligned and is completely stable in that position, slowly pump the handle so that the ram begins to exert pressure on the workpiece. Continue to pump the handle whilst standing to the side. Do NOT stand directly in front of the work, and constantly monitor the process, ensuring the ram and work remain completely in line and there is no risk of slipping.
6. When the process is complete, turn the release valve anticlockwise in small increments to release ram pressure and allow removal of the workpiece.

WARNING: NEVER USE EXTENSIONS TO THE RAM PUMPING HANDLE

MAINTENANCE

- A visual inspection must be made before each use of the press, checking for leaking hydraulic fluid and damaged, loose, or missing parts.
- Owners and/or users should be aware that repair of this equipment requires specialised knowledge and facilities. It is recommended that a thorough annual inspection of the press be made and that any defective parts be replaced with genuine Clarke parts.
- Any press which appears to be damaged in any way, is found to be badly worn, or operates abnormally SHOULD BE REMOVED FROM SERVICE until the necessary repairs are made.
- If the press is not to be used for any length of time, store it with the ram piston withdrawn and the operating handle in the lowered position to protect the moving parts.

PERIODICALLY

- Check the press frame to make sure all bolts are tight and inspect for cracked welds, bent, loose or missing parts.
- Check the hydraulic connections for leaks. Replace or properly repair any damaged or leaking hydraulic components before using. In the event of leaking seals, oil can be topped up via the plug on the end of the pump. Oil should be level with the bottom of the hole. If necessary top up with CLARKE hydraulic oil, Part No. 3050830. **This task is carried out with the ram fully retracted.**
- If any rust is apparent it must be removed completely and the paint restored.

DE-COMMISSIONING THE PRODUCT

Should the product become completely unserviceable and require disposal, draw off the oil into an approved container and dispose of the product and the oil according to local regulations.

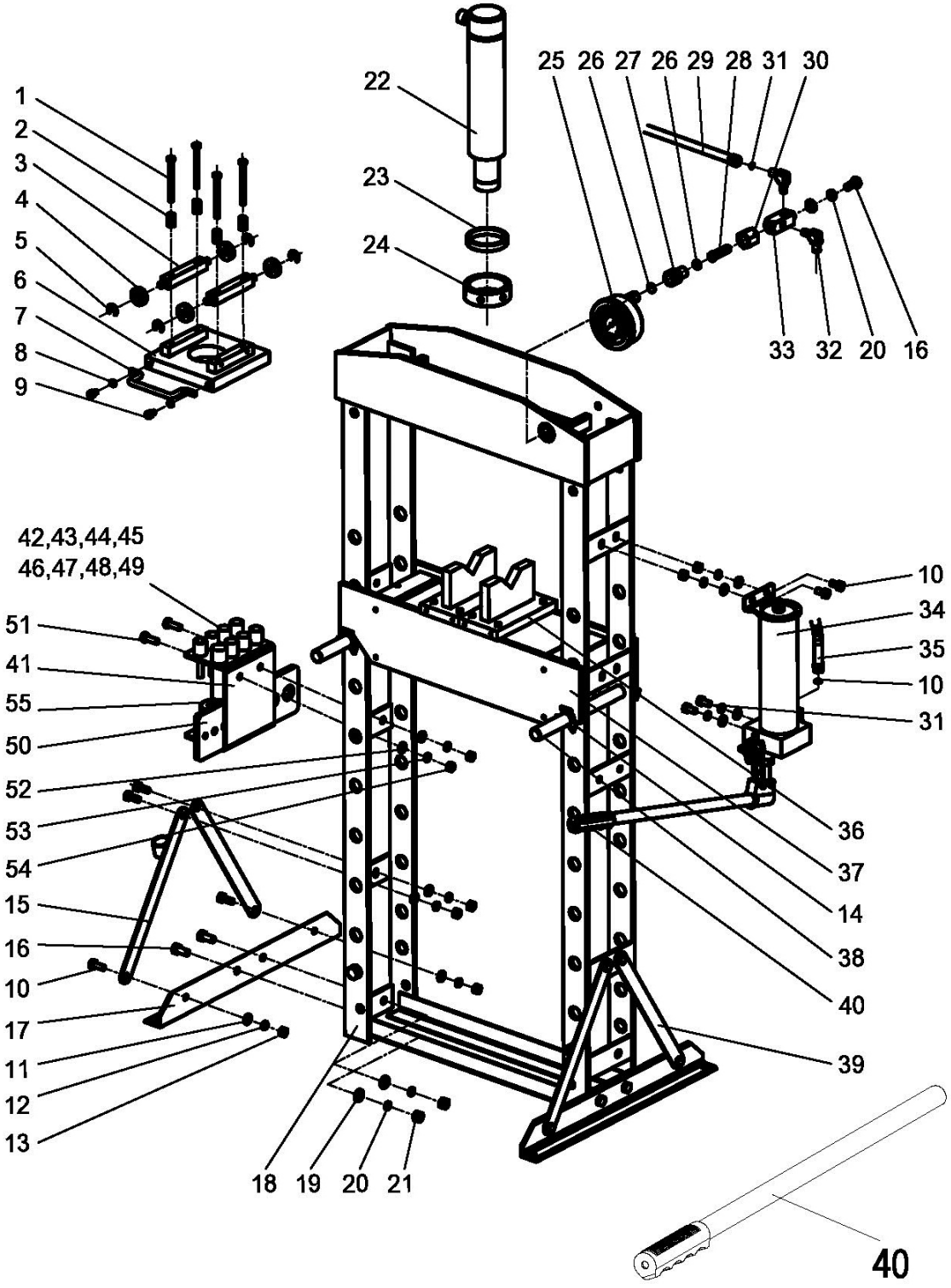
TROUBLESHOOTING

Problem	Probable Cause	Remedy
Pump unit will not work	Dirt on valve seat/warn seals	Bleed pump unit or have unit overhauled with new seals
Pump will not produce pressure Pump feels hesitant under load Pump will not lower completely	Air-lock	Open the release valve and remove the oil filler plug. Pump the handle a couple of full strokes and close the release valve. Replace the filler plug.
Pump will not deliver pressure	Reservoir could be over-filled or have low oil level.	Check oil level by removing the filler plug and topping up to the correct level.
Pump feels hesitant under load	Pump cup seal could be worn out.	Have the cup seal replaced.
Pump will not lower completely	Air-lock	Release air by removing the filler plug

TECHNICAL SPECIFICATIONS

Capacity	20 Tonne
Operating Pressure	69 Mpa
Bursting Pressure	138 Mpa
Ram Travel	189 mm
Ram Shaft Diameter	76 mm
Net Weight	138 kg
Dimensions D x W x H	560 x 800 (exc pump) x 1610
Throat Width	550 mm
Throat Depth (Ram to pressing plate)	Platform at highest;- 30 mm Platform at middle;- 470 mm Platform at lowest;- 1025 mm
Ram travel per stroke	1.1 mm
No of strokes to full extension	170
Pressure Gauge type	Accuracy class 2.5
Length of Handle	620 mm

FRAME ASSEMBLY PARTS DIAGRAM



FRAME ASSEMBLY PARTS LIST

PART NO	DESCRIPTION
1	Bolt M10 x 110
2	Spring
3	Roller shaft
4	Bearing
5	Ring
6	Cylinder fixing plate
7	Cylinder moving handle
8	Spring washer 8mm
9	Bolt M8 x 10
10	Bolt M10 x 25
11	Washer 10mm
12	Spring washer 10mm
13	Nut M10
14	Butterfly washer
15	Stay Bar
16	Bolt M12 x 25
17	Base section
18	Frame
19	Washer 12mm
20	Spring washer 12mm

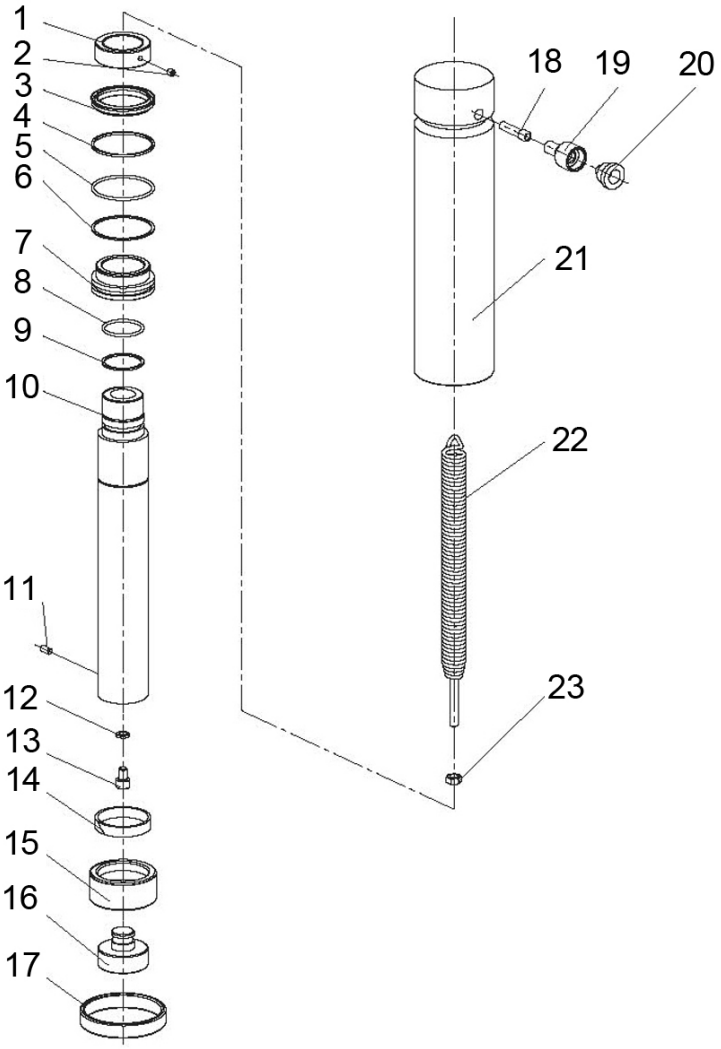
PART NO	DESCRIPTION
21	Nut M12
22	Cylinder assembly
23	Spacer ring
24	Locking collar
25	Pressure gauge
26	Square section seal
27	Connector
28	Joint
29	Hydraulic hose
30	Gauge connecting nut
31	O-ring
32	Straight connector
33	T-connector
34	Pump assembly
35	Hydraulic hose
36	Pressing block
37	Bed frame
38	Bed frame pin
39	Stay bar
40	Handle

MANDREL SET (CLARKE PART NO 7615062)

PART NO	DESCRIPTION
41	Mandrel/Adaptor Bracket
42	10mm Mandrel
43	12mm Mandrel
44	16mm Mandrel
45	18mm Mandrel
46	20mm Mandrel
47	22mm Mandrel

PART NO	DESCRIPTION
48	25mm Mandrel
49	30mm Mandrel
50	Pressing Plate
51	Bolt M12 x 30
52	Flat Washer M12
53	Spring Washer M12
54	M12 Nut
55	Plain Adaptor

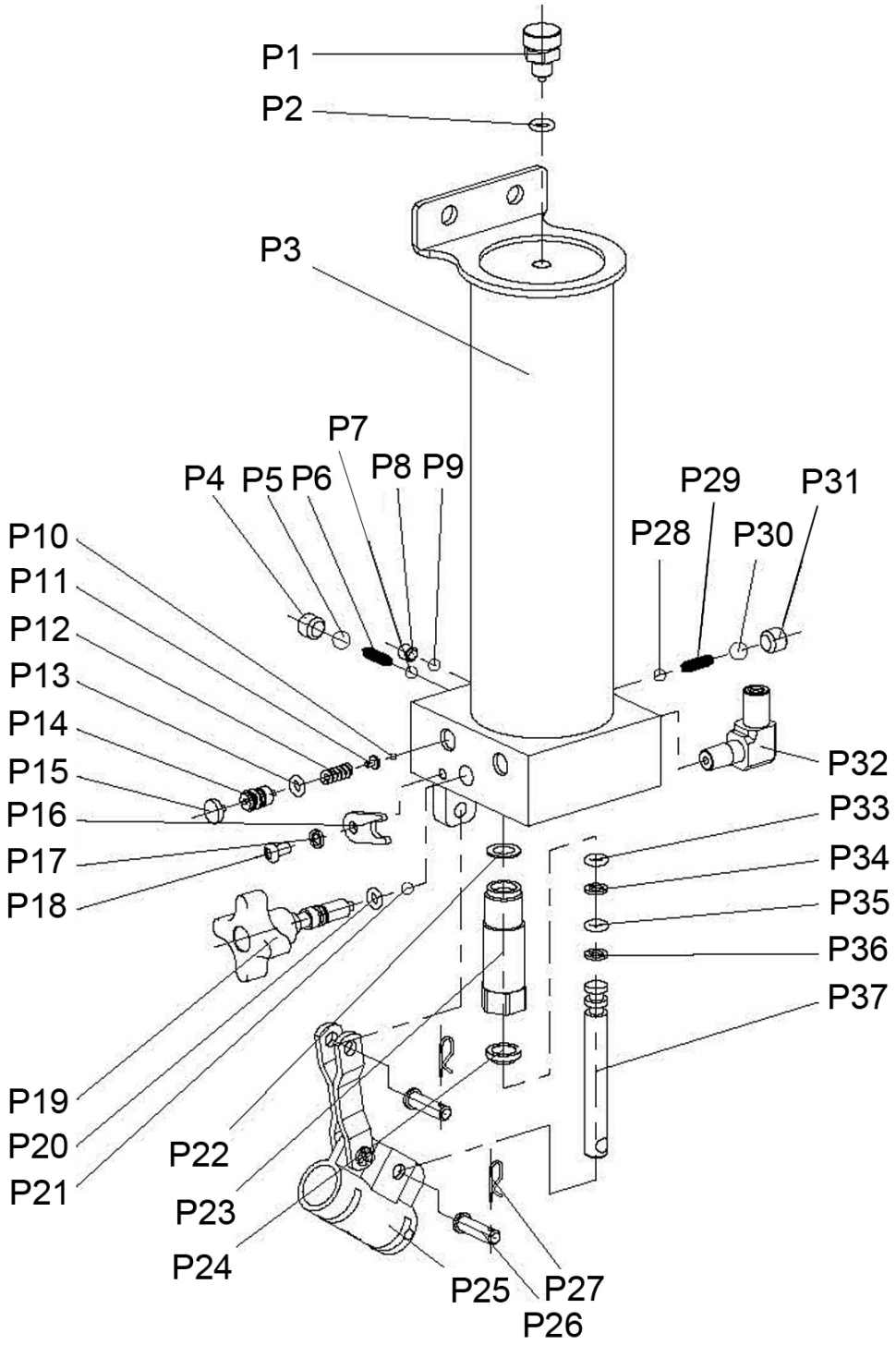
RAM PARTS DIAGRAM



PART NO	DESCRIPTION
R1	Spacing ring
R2	Screw M6x6
R3	Y-ring
R4	Back ring
R5	O-ring
R6	Nylon ring
R7	Piston ring
R8	O-ring
R9	Ring
R10	Piston
R11	Screw M6x10
R12	Sealing washer

PART NO	DESCRIPTION
R13	Bolt M8x10
R14	Guide ring
R15	Upper collar
R16	Toe
R17	Lower securing collar
R18	Bolt
R19	Coupler
R20	Dust cap
R21	Cylinder
R22	Spring
R23	Nut M8

PUMP PARTS DIAGRAM



PUMP PARTS LIST

PART NO	DESCRIPTION
P1	Air bleed screw
P2	O-ring
P3	Hydraulic pump body
P4	Screw M12 x 1.25 x 10
P5	Ball 9
P6	Steel spring
P7	Ball 6
P8	Screw M8x8
P9	Ball 6
P10	Ball 3
P11	Spring plate
P12	Safety valve spring
P13	O-ring
P14	Pressure adjusting screw
P15	Safety valve cap
P16	Limit block
P17	Spring washer 6
P18	Bolt M6 x 10
P19	Release valve knob

PART NO	DESCRIPTION
P20	O-ring
P21	Ball
P22	Copper washer
P23	Piston body
P24	End cap
P25	Yoke assembly
P26	Hinge pin
P27	R-clip
P28	Ball
P29	Spring
P30	Ball
P31	Screw M12 x 1.25 x 10
P32	Angle coupling
P33	O-ring
P34	Ring
P35	O-ring
P36	Ring
P37	Piston rod

DECLARATION OF CONFORMITY

UK CA

Clarke® INTERNATIONAL

Hermall Street, Epping, Essex CM16 4LG

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following statuary requirement(s):

Supply of Machinery (Safety) Regulations 2008

The following standards have been applied to the product(s):

EN ISO 12100:2010, EN 1494:2000+A1:2008.

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

The UKCA mark was first applied in: 2023

Product Description: 20 Tonne Hydraulic Floor Press

Model number(s): CSA20F

Serial / batch Number: N/A

Date of Issue: 18/01/2023

Signed:

J.A. Clarke
Director

CE

Clarke® INTERNATIONAL

Fitzwilliam Hall, Fitzwilliam Place, Dublin 2

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following directive(s):

2006/42/EC Machinery Directive

The following standards have been applied to the product(s):

EN ISO 12100:2010, EN 1494:2000+A1:2008.

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned directive(s) has been compiled and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2009

Product Description: 20 Tonne Hydraulic Floor Press

Model number(s): CSA20F

Serial / batch Number: N/A

Date of Issue: 18/01/2023

Signed:

J.A. Clarke
Director

A SELECTION FROM THE VAST RANGE OF

Clarke®

QUALITY PRODUCTS

AIR COMPRESSORS
From DIY to industrial, Plus air tools, spray guns and accessories.

GENERATORS
Prime duty or emergency standby for business, home and leisure.

POWER WASHERS
Hot and cold, electric and engine driven - we have what you need

WELDERS
Mig, Arc, Tig and Spot.
From DIY to auto/industrial.

METALWORKING
Drills, grinders and saws for DIY and professional use.

WOODWORKING
Saws, sanders, lathes, mortisers and dust extraction.

HYDRAULICS
Cranes, body repair kits, transmission jacks for all types of workshop use.

WATER PUMPS
Submersible, electric and engine driven for DIY, agriculture and industry.

POWER TOOLS
Angle grinders, cordless drill sets, saws and sanders.

STARTERS/CHARGERS
All sizes for car and commercial use.

PARTS & SERVICE:
0208 988 7400

Parts Enquiries
Parts@clarkeinternational.com

Servicing & Technical Enquiries
Service@clarkeinternational.com

SALES: UK 01992 565333 or Export 00 44 (0)1992 565335

Clarke® INTERNATIONAL Hemnall Street, Epping, Essex CM16 4LG
www.clarkeinternational.com