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1984



Owners Manual

HYDRAULIC RAM ACCESSORY KIT

BORUM

INDUSTRIAL WORKSHOP EQUIPMENT

**INDUSTRIAL
QUALITY**



Rated Capacity	(A) 2,000kg	(B) 4,000kg	(C) 10,000kg	(D) 4,000kg	(E) 10,000kg	(F) 2,000kg	(G) 5,000kg
Ram Type	Mini Push	Mini Push	Mini Push	Push	Push	Pull	Pull
Compressed Length	126mm	40mm	118mm	270mm	358mm	365mm	455mm
Stroke	73mm	18mm	58mm	125mm	135mm	125mm	150mm
Operating Pressure	5700psi	5700psi	8000psi	8800psi	8800psi	7800psi	8800psi

About the Borum brand

Our **“heavy duty commercial”** range of **Borum Industrial** equipment has been manufactured to exacting standards for the past **34 years**. We specify industrial quality components and design to ensure a long and durable working life in **commercial transport, mining, earthmoving and railway** environments. Our **Borum Industrial** range of equipment is focused on achieving superior professional standards, reliability, quality, and are covered by a **12 month trade use warranty**.

WARNING INFORMATION



IMPORTANT: READ ALL INSTRUCTIONS BEFORE USE

⚠ WARNING

The instructions and warnings contained in this manual should be read and understood before using or operating this equipment. Do not allow anyone to use or operate this equipment until they have read this manual and have developed a thorough understanding of how this equipment works. Failure to observe any of the instructions contained in the manual could result in severe personal injury to the user or bystanders, or cause damage to the equipment and property. Keep this manual in a convenient and safe place for future reference.

The warnings, cautions and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Whilst every effort has been made to ensure accuracy of information contained in this manual, the Borum policy of continuous improvement determines the right to make modifications without prior warning.

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Intended Use

For industrial medium-heavy duty applications where the convenience of hydraulic power can be utilized for spreading, clamping, pushing and lifting.

STANDARD OPERATING PROCEDURE

OPERATIONAL SAFETY INFORMATION

- Safety related decals must be maintained and replaced if they become hard to read.
- Wear eye protection that meets approved standards
- This equipment is designed for vehicle body/frame applications. Using this equipment in an application for which it is not designed could result in overloading, reduced load capacity, reduced stability and/or system failure.
- Stay clear of Rams during operation. Position body as far away as practical when Ram is under load. Ram can slip suddenly, causing injury.
- Avoid off-centre loads. If the Hydraulic Pump (not included) unit seems unusually hard to pump, immediately stop the operation. Adjust the Hydraulic Ram unit to eliminate or diminish an off-centre load.
- When extension tubes are used, the rated capacity is always reduced by 50% for each tube that is connected.
- Attachments and extension tubes must be aligned and fully engaged so ram force is straight, avoiding an off-centre load condition.
- When servicing, use only Borum identical replacement parts. Use of any other parts will void the warranty.

Ram Safety Instructions:

- Do not exceed the maximum capacity of the ram. Creating pressure beyond the rated capacity can result in personal injury.
- Do not allow the piston rod of the ram to extend so far as to exceed the maximum ram stroke.
- When coupler valves are disconnected, always cover with the dust cap to keep the hydraulic system clean.
- Completely retract the ram before opening the filler screw on the pump to add hydraulic fluid. An overfill can cause personal injury due to excess reservoir pressure created when rams are retracted.
- Do not set poorly balanced or off-centre loads on a ram.

Hose Safety Instructions:

- Before operating the pump, tighten all hose connections. Do not over tighten; connections need only be secure and leak free. Over tightening may cause premature thread failure or high-pressure fittings to fail at pressures lower than rated capacity.
- Do not drop heavy objects on to the hose. Do not twist or stretch the hose. Always keep the hose clean to avoid damage to the hose or connectors.
- Should a hydraulic hose ever rupture, burst, or need to be disconnected, immediately shut the pump OFF, and open the control valve to release all pressure. Never grasp a leaking, pressurised hose with your hands; the force of escaping hydraulic fluid could cause serious injury.
- Do not subject the hose to any potential hazard such as fire, extreme cold or heat, sharp surfaces, or heavy impact. Do not allow the hose to kink, twist, curl, or bend so tightly that the fluid flow within the hose is blocked or reduced. Do not use the hose to move attached equipment. Periodically inspect the hose for wear, because any of these conditions can damage the hose and result in personal injury.
- Hose material and coupler seals must be compatible with the hydraulic fluid used. Hoses must not come in contact with corrosive materials.



ASSEMBLY, OPERATION, PREVENTITIVE MAINTENANCE

1. FEATURES

This **Borum Industrial** Hydraulic Ram Accessory Kit includes 2 puller rams and 5 pusher rams for lifting, pushing, pulling, bending, and straightening. Ram and cylinder bearings are designed for protection against off-centre load stresses. High flow quick-connect couplers with dust caps.

Borum Industrial quality multi-purpose hydraulic rams are used for automotive, truck, farm and heavy equipment repair. Quality steel design with high gloss enamel coating for durability and longevity.

*** Requires hydraulic pump, hoses and fittings, sold separately.**

2. ASSEMBLY

Unpacking: after removing the packing material, make sure the product is in perfect condition and that there are no visible damaged parts. The packaging materials (Polyethylene bags, polystyrene etc.), must be disposed of in an appropriate refuse collection container. These materials must not be left within the reach of children as they are potential sources of danger.

This Hydraulic Ram Accessory Kit requires an air or hydraulic hand operated pump with the hydraulic hose connected to the pump at one end and a male quick connect fitting at the other end of the hose. Hose and ram connections are made by inserting the male quick connect fitting at the end of the hose into the female quick connect fitting on the ram. Push the quick connect fittings all the way together and screw the threaded collar of the female connect fitting all the way onto the externally threaded portion of the male connect fitting. Tighten by hand only. It is not necessary to use pliers to tighten the threaded collar.

3. BEFORE USE

Conduct a thorough visual inspection checking for leaks and any abnormal conditions, such as cracked welds, leaks, and damaged, loose, or missing parts.

The pump may be operated in a horizontal position, or in a vertical position with the head pointing down as shown.

1. Determine the appropriate ram for your application.
2. Connect the hose between the pump (sold separately) and hydraulic ram, ensure that the coupling is securely fastened.
3. Work the pump handle up and down to send hydraulic oil pressure through the hose to the ram, causing the piston to extend to the workpiece. (As per pump manufacturer instructions)

IMPORTANT

- Repeated changing of hoses may cause loss of oil and air to enter the hydraulic ram. This will cause the ram to perform poorly; seals will not be under sufficient pressure to operate effectively and additional oil may leak from the ram. In this circumstance see "Bleeding Air from System" and "Adding Oil" to restore normal operation.
- The use of extension tubes or off-centre attachments greatly reduces the capacity of the hydraulic system. When using extension tubes, put the shortest tubes on the ends of the setup; never put the shortest tubes in the middle of the setup.
- Some components in this kit may not match the maximum pressure rating of the pump. SO INSTALL A PRESSURE GAUGE IN THE SYSTEM TO MONITOR HYDRAULIC PRESSURE.
- When extension tubes are used, the rated capacity is always reduced by 50% for each tube that is connected.

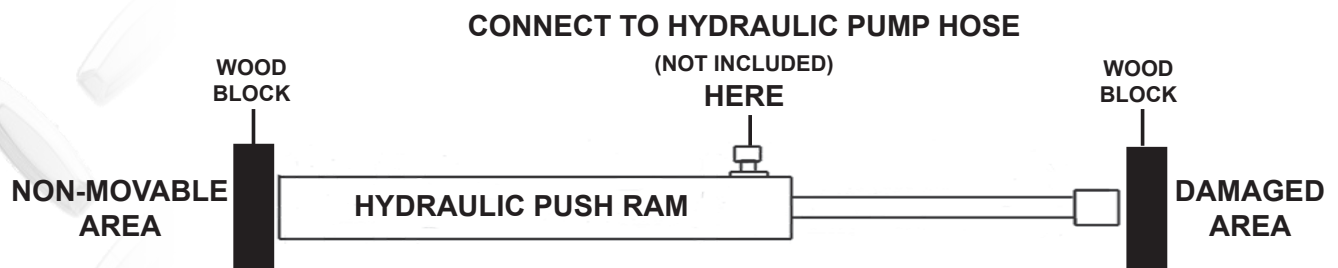
4. OPERATION

Prior to each use always conduct a visual inspection checking for and any abnormal conditions, such as cracked welds, and damaged, loose, or missing parts.

Pushing

1. Use the larger Push Rams where greater force is required and where there is sufficient room to operate.
2. Use the smaller Push Rams where less force is required.
3. When positioning the Push Ram, place a block of wood or similar material behind the base of the Push Ram and on the side that is to be bent for protection and to spread the Push Ram pressure load over a greater area.

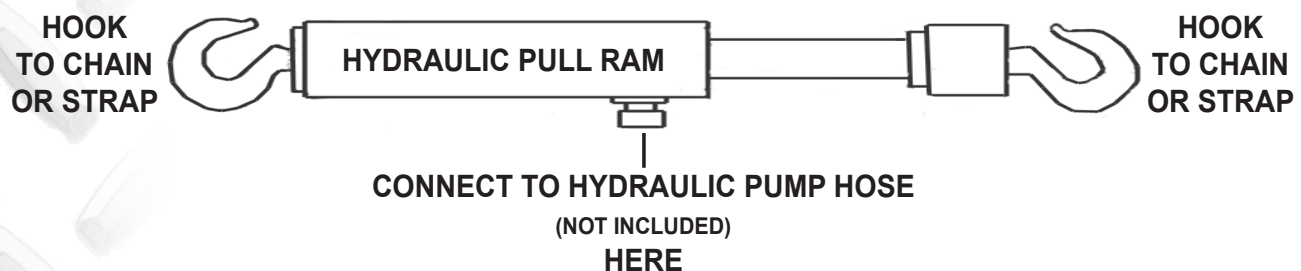
NOTE: The Push Rams require a solid, non-movable base directly across from the damaged area and in line with the direction the damaged area needs to be bent.

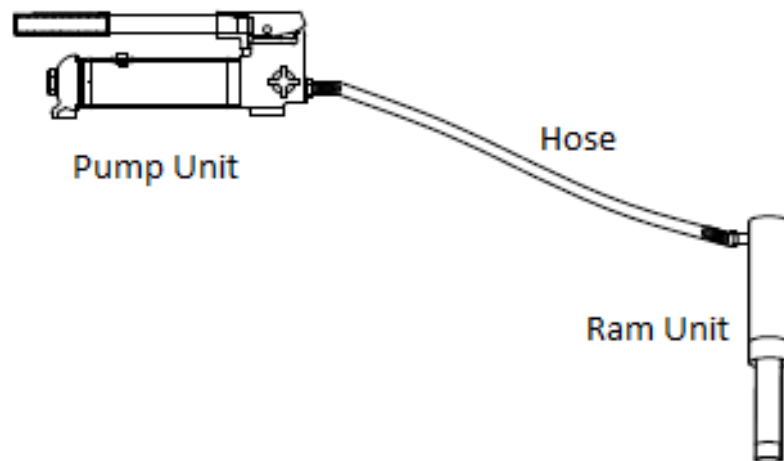


Pulling

1. Use the larger Pull Ram where greater force is required and where there is sufficient room to operate.
2. Use the smaller Pull Ram where less force is required.
3. Hook one end of the Pull Ram to the object to be moved and the other end of the Pull Ram to a stable, unmovable base.
4. A chain or strap may be used on either end to provide a hooking surface. **Make sure the chain or strap is rated to support the pulling weight.**

NOTE: The Hydraulic Pull Rams may be used in either horizontal or vertical positions. The Hooks will turn to accept hooking from different angles.





IMPORTANT
Ensure Ram Unit is lower than the Pump Unit when Bleeding Air from the Hydraulic System

Bleeding Air from the Hydraulic System

Air can accumulate in the hydraulic system during the initial setup or after prolonged use, causing the ram to respond slowly or in an unstable manner. To purge the air;

1. Place the ram at a lower level than the pump, with the piston end pointing down.
2. Pump handle to extend and retract the ram several times without putting a load on the system. Air will be released into the pump reservoir.
3. With the ram fully retracted, the pump sitting level, and no pressure in the hydraulic system, remove the pump's filler screw to release air from the hydraulic system. If necessary top up the reservoir with good quality hydraulic jack oil until the fluid level is within 13mm of the pump filler screw hole.

Important: Repeated changing of hoses may cause loss of oil and air to enter the hydraulic ram. This will cause the ram to perform poorly; seals will not be under sufficient pressure to operate effectively and additional oil may leak from the ram. In this circumstance see "Bleeding Air from System" and "Adding Oil" to restore normal operation.

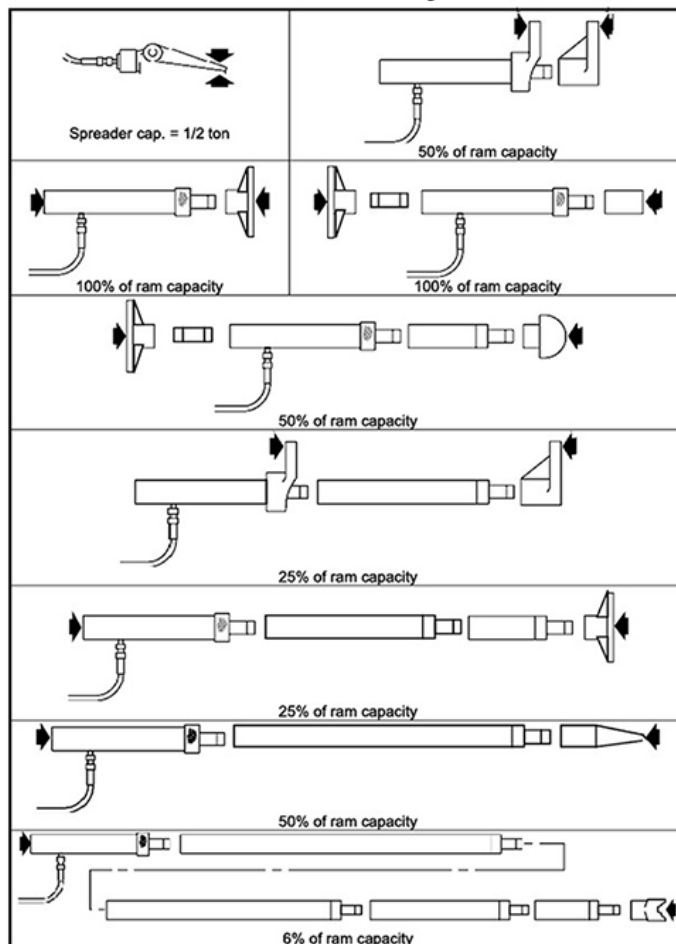
Using Attachments and Extension Tubes

When offset attachments are used, the rated capacity of the hydraulic system is reduced 50%. For each extension tube used in the setup, the rated capacity is reduced another 50%. When using two or more extension tubes together, always position the shortest tube farthest away from the ram.

Some components in this set do not match the maximum pressure rating of the pump and ram. By using a load cell and indicator or monitor pressure developed in the ram by using an inline pressure gauge, you can then calculate the applied force using the formula, $P = \text{pressure in psi}$, and $A = \text{effective ram area in in}^2$. Ram Area is: 2.411 in^2

If bowing or bending of ram or any attachment occurs during use, "STOP", release pressure immediately and reconsider application. Application may not be compatible with product, a ram kit with a higher capacity may be needed.

Porta Power Accessory Load Chart



Important: Repeated changing of hoses may cause loss of oil and air to enter the hydraulic ram. This will cause the ram to perform poorly; seals will not be under sufficient pressure to operate effectively and additional oil may leak from the ram. In this circumstance see "Bleeding Air from System" and "Adding Oil" to restore normal operation.

5. STORAGE

When not in use, always store this kit with the rams fully retracted to protect from dirt, dust and corrosion. If this hydraulic ram accessory kit is not regularly cleaned and maintained correctly the components will become clogged, corroded and will not perform at its best. Always disconnect the pump hose from the ram, then wipe the external surfaces with a clean, dry cloth. Store in a secure dry location using the storage cases provided.

6. MAINTENANCE

Inspection:

Inspect the pump, hoses and ram for damage, wear, broken or missing parts and that all components function before each use.

- Tighten connections as needed. Use pipe thread sealing compound when servicing connections.
- Only use a good grade hydraulic oil. Do not mix different liquids and NEVER USE brake fluid, turbine oil, transmission fluid, motor oil or glycerine. Improper fluid can cause premature failure of the ram and the potential for sudden and immediate loss of load.
- Check the oil level by placing the pump in an upright position.

Cleaning:

Periodically check the pump piston and ram for signs of rust or corrosion. Clean as needed and wipe with an oily cloth. Never use sandpaper or abrasive material on these surfaces.

Lubrication:

Application of a coating of light lubricating oil to pivot points and hinges will help to prevent rust and assure that pump assemblies move freely.

Adding Oil:

1. With ram fully lowered, set pump unit in its normal, level position. Locate and remove oil filler screw.
2. Fill until oil is within 13mm of the oil filler screw hole opening, re-install oil filler screw.

Changing Oil:

For best performance and increased system life, replace the complete fluid supply at least once per year.

1. With ram fully lowered, remove oil filler screw from the pump reservoir as above.
2. Lay the pump on its side and drain the fluid into a suitable container.
3. Set pump in its level upright position.
4. Fill with good quality jack oil to within 13mm of the oil filler screw hole opening.
5. Re-install oil filler screw.

7. SERVICE & REPAIR

Any Hydraulic Porta Power Equipment found damaged in any way, or found to be worn or operates abnormally should be removed from service until repaired by an authorised service agent. Owners and / or operators should be aware that repair of this product may require specialised equipment and knowledge. Only authorised parts, labels, decals shall be used on this equipment. Annual inspection of the Hydraulic Porta Power Kit is recommended and can be made by an authorised repair facility to ensure that your equipment is in optimum condition and that the equipment has the correct decals and safety labels specified by the manufacturer.

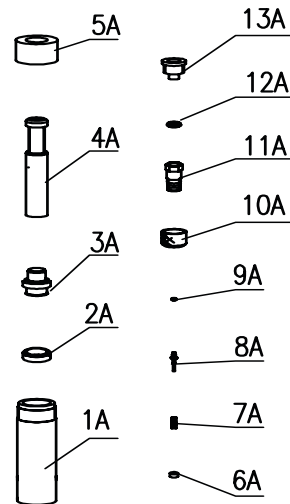
TROUBLESHOOTING TIPS

Problem	Cause	Solution
Hydraulic Ram will not push or pull the load.	<ul style="list-style-type: none"> • Release Valve on Hydraulic Pump (not included) not tightly closed. • Overload condition. • Air trapped in Hydraulic Pump system. • Hydraulic Pump oil level low. • Loose connection from Hydraulic Pump to Hydraulic Ram. 	<ul style="list-style-type: none"> • Close Release Valve tightly. • Do not exceed maximum PSI or range of travel for Hydraulic Ram. • Purge air from Hydraulic Pump system. • Add oil to proper level. • Make sure connection from Hydraulic Pump to Hydraulic Ram is secure.
Hydraulic Ram will push or pull, but will not maintain pressure.	<ul style="list-style-type: none"> • Release Valve on Hydraulic Pump (not included) not tightly closed. • Overload condition. • Hydraulic Pump or Hydraulic Ram malfunction. 	<ul style="list-style-type: none"> • Close Release Valve tightly. • Do not exceed maximum PSI or range of travel for Hydraulic Ram. • Have a qualified service technician check out the Hydraulic Pump and/or Hydraulic Ram.
Hydraulic Ram does not hold pressure	<ul style="list-style-type: none"> • Leaky connection • Ram seals leaking • Pump or valve not working correctly 	<ul style="list-style-type: none"> • Clean, reseal with thread sealant, and tighten connection • Replace worn seals. Look for excessive contamination or wear • Replace contaminated fluid • Repair or replace as necessary
Hydraulic Ram leaks hydraulic fluid	<ul style="list-style-type: none"> • Worn or damaged seals • Loose connection 	<ul style="list-style-type: none"> • Replace worn seals. Look for excessive contamination or wear. Replace contaminated fluid. • Clean, reseal with thread sealant, and tighten connection.
Hydraulic Ram will not retract or retracts slower than normal	<ul style="list-style-type: none"> • Pump release valve closed • Loose couplers • Blocked hydraulic lines • Weak or broken retraction springs • Ram damaged internally • Pump reservoir too full 	<ul style="list-style-type: none"> • Open pump release valve • Tighten couplers • Clean and flush lines • Send to service centre • • Send to service centre • Drain fluid to correct level

PARTS LIST & DIAGRAM

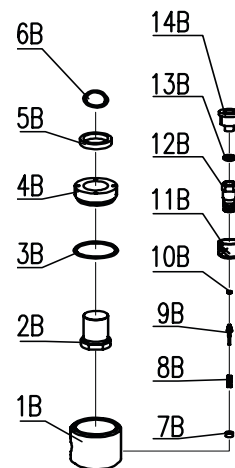
Parts List and Diagram A – 2,000kg Mini Push Ram with Saddle

Part	Description	QTY
1A	Cylinder	1
2A	Seal Ring	1
3A	Piston Ring	1
4A	Piston	1
5A	Saddle	1
6A	Nut	1
7A	Spring	1
8A	Valve Pin	1
9A	O Ring	1
10A	Connection Nut	1
11A	Screw	1
12A	O Ring	1
13A	Dust Cover	1



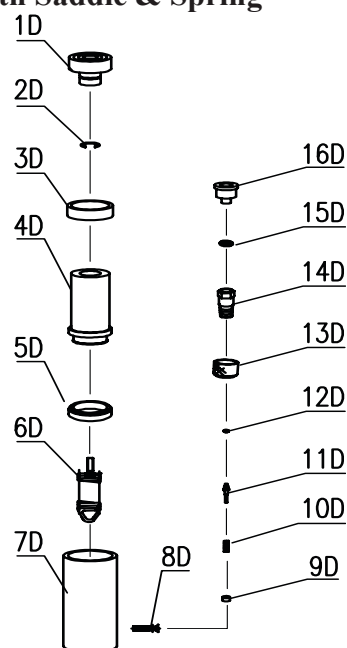
Parts List and Diagram B – 4,000kg Mini Push Ram

Part	Description	QTY
1B	Cylinder	1
2B	Piston	1
3B	O Ring	1
4B	Nut	1
5B	Seal Ring	1
6B	O Ring	1
7B	Nut	1
8B	Spring	1
9B	Valve Pin	1
10B	O Ring	1
11B	Connection Nut	1
12B	Screw	1
13B	O Ring	1
14B	Dust Cover	1



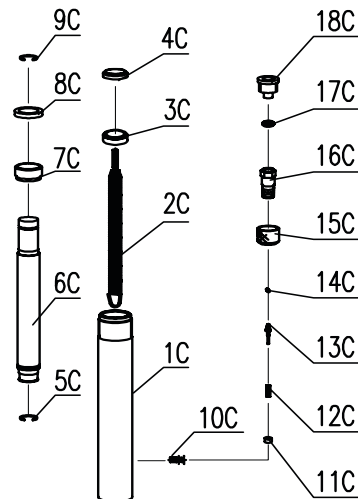
Parts List and Diagram C – 10,000kg Mini Push Ram with Saddle & Spring

Part	Description	QTY
1D	Saddle	1
2D	Retaining Ring	1
3D	Nut	1
4D	Piston	1
5D	Seal Ring	1
6D	Spring	1
7D	Cylinder	1
8D	Screw	1
9D	Nut	1
10D	Spring	1
11D	Valve Pin	1
12D	O Ring	1
13D	Connection Nut	1
14D	Screw	1
15D	O Ring	1
16D	Dust Cover	1



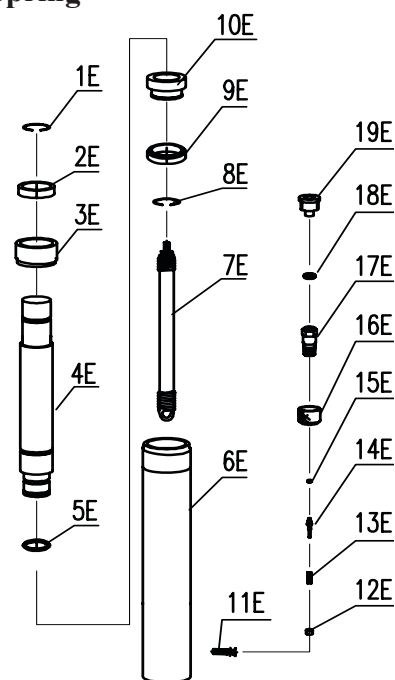
Parts List and Diagram D – 4,000kg Push Ram with Spring

Part	Description	QTY
1C	Cylinder	1
2C	Spring	1
3C	Seal Ring	1
4C	Piston Ring	1
5C	Retaining Ring	1
6C	Piston	1
7C	Nut	1
8C	Saddle	1
9C	Retaining Ring	1
10C	Screw	1
11C	Nut	1
12C	Spring	1
13C	Valve Pin	1
14C	O Ring	1
15C	Connection Nut	1
16C	Screw	1
17C	O Ring	1
18C	Dust Cover	1



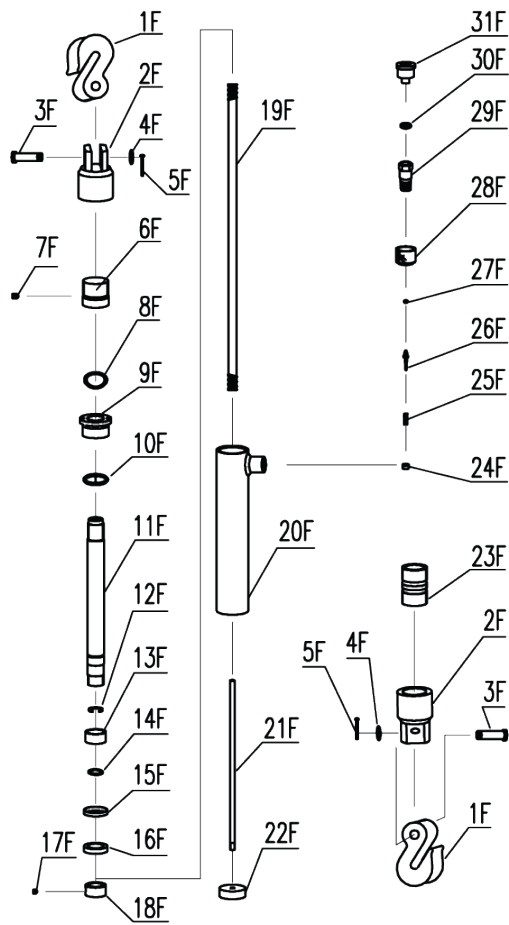
Parts List and Diagram E – 10,000kg Push Ram with Spring

Part	Description	QTY
1E	Retaining Ring	1
2E	Saddle	1
3E	Nut	1
4E	Piston	1
5E	O Ring	1
6E	Cylinder	1
7E	Spring	1
8E	Retaining Ring	1
9E	Seal Ring	1
10E	Piston Ring	1
11E	Screw	1
12E	Nut	1
13E	Spring	1
14E	Valve Pin	1
15E	O Ring	1
16E	Connection Nut	1
17E	Screw	1
18E	O Ring	1
19E	Dust Cover	1



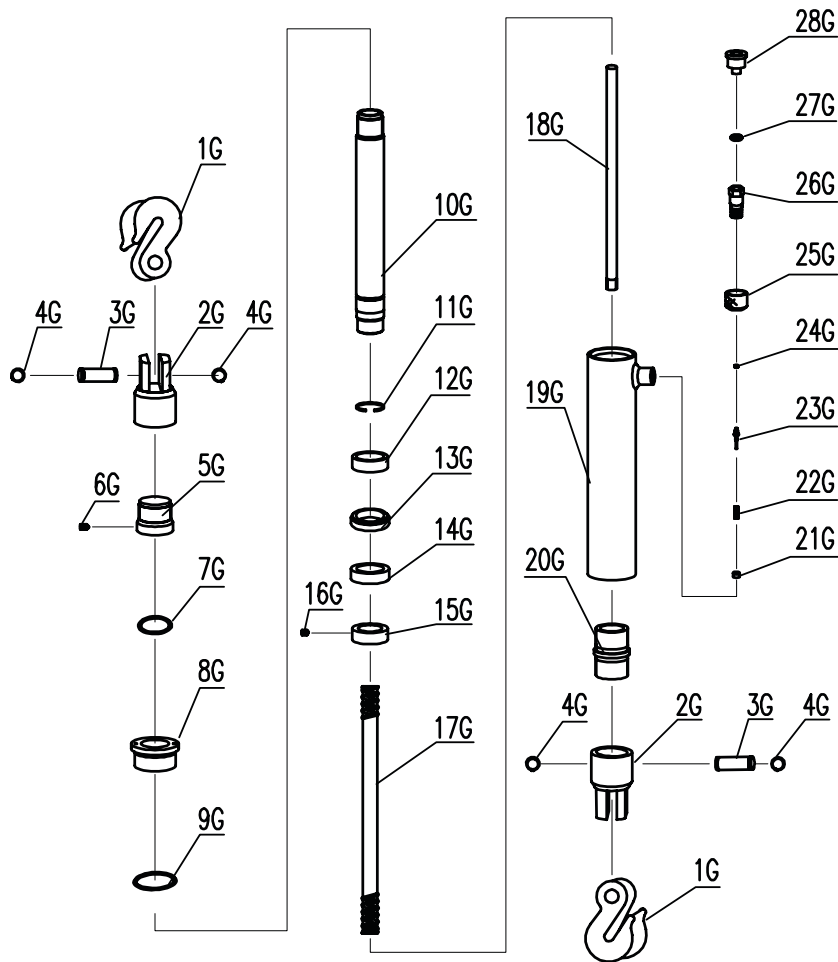
Parts List and Diagram F – 2,000kg Pull Ram with Spring

Part	Description	QTY
1F	Hook	2
2F	Hook Coupler	2
3F	Pin	2
4F	Carrier Ring	2
5F	Split Pin	2
6F	Nut	1
7F	Screw	1
8F	O Ring	1
9F	Nut	1
10F	O Ring	1
11F	Piston	1
12F	Retaining Ring	1
13F	Spacing Ring	1
14F	O Ring	1
15F	Carrier Ring	1
16F	Piston Ring	1
17F	Screw	1
18F	Nut	1
19F	Spring	1
20F	Cylinder	1
21F	Nut	1
22F	Cover	1
23F	Connector	1
24F	Nut	1
25F	Spring	1
26F	Valve Pin	1
27F	O Ring	1
28F	Connection Nut	1
29F	Screw	1
30F	O Ring	1
31F	Dust Cover	1



Parts List and Diagram G – 5,000kg Pull Ram with Spring

Part	Description	QTY	Part	Description	QTY
1G	Hook	2	15G	Piston Screw	1
2G	Hook Coupler	2	16G	Screw	1
3G	Pin	2	17G	Spring	1
4G	Retaining Ring	4	18G	Nut	1
5G	Nut	1	19G	Cylinder	1
6G	Screw	1	20G	Connector	1
7G	O Ring	1	21G	Nut	1
8G	Nut	1	22G	Spring	1
9G	O Ring	1	23G	Valve Pin	1
10G	Piston	1	24G	O Ring	1
11G	Retaining Ring	1	25G	Connection Nut	1
12G	Spacing Ring	1	26G	Screw	1
13G	Seal Ring	1	27G	O Ring	1
14G	Piston Ring	1	28G	Dust Cover	1



WARRANTY

BORUM Industrial products have been carefully tested and inspected before shipment and are guaranteed to be free from defective materials and workmanship for a period of 12 months from the date of purchase except where tools are hired out when the guarantee period is ninety days from the date of purchase. Should this piece of equipment develop any fault, please return the complete tool to your nearest authorised warranty repair agent or contact TQB Brands Pty Ltd Warranty team – warranty@tqbbrands.com.au.

If upon inspection it is found that the fault occurring is due to defective materials or workmanship, repairs will be carried out free of charge. This guarantee does not apply to normal wear and tear, nor does it cover any damage caused by misuse, careless or unsafe handling, alterations, accident, or repairs attempted or made by any personnel other than the authorised TQB Brands Pty Ltd repair agent. This guarantee applies in lieu of any other guarantee expressed or implied and variations of its terms are not authorised.

Your TQB Brands Pty Ltd guarantee is not effective unless you can produce upon request a dated receipt or invoice to verify your proof of purchase within the 12month period.

Consumer Guarantee

Our goods come with a guarantee that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.



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