

Model: 667R1100A
Bead Breaker
S/N 80774 and On



03/2021 – Rev. 02

REVISION

01
02

DATE

02/2018
03/2021

TEXT AFFECTED

Original release
Modified Parts List

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This product can not be modified without the written approval of Tronair, Inc. Any modifications done without written approval voids all warranties and releases Tronair, Inc., its suppliers, distributors, employees, or financial institutions from any liability from consequences that may occur. Only Tronair OEM replacement parts shall be used.

1.0 PRODUCT INFORMATION

1.1 DESCRIPTION

Pneumatic tire bead breaker

1.2 MODEL & SERIAL NUMBER

Reference nameplate on unit

1.3 MANUFACTURER

Columbus**Jack**/Regent
1 Air Cargo Pkwy East
Swanton, Ohio 43558 USA

Telephone: 614.443.7492
Fax: 614.444.9337
E-mail: sales@columbusjack.com
Website: www.columbusjack.com

1.4 FUNCTION

The bead breaker is used to "break", (separate) the bead of an aircraft pneumatic tire from the rim of the wheel in order to facilitate tire demounting.

1.5 FEATURES

The bead breaker consists of a welded steel "U" shaped frame which carries the functional components. The frame is hinged at its center and mounted on a tubular base. The tire which is to be demounted is placed vertically between the open ends of the "U" frame. A hydraulic cylinder assembly on the right side provides the means for clamping the tire and wheel in place and applying the bead breaking force to the tire. Adapter plates and adjustable breaking sliders are mounted to hold the wheel and tire.

Hydraulic power for the operation of the elevation and bead breaker cylinders is provided by the air powered unit. The power unit consists of a hydraulic pump, control valve assemblies and a hydraulic fluid reservoir. The pump is driven by an air motor that is turned on by a dead-man type (spring loaded) foot operated switch for operator safety.

Control valves are mounted on the frame for the elevating cylinders and for the breaking cylinder. Each are of the dead-man type (spring loaded) for operator safety.

1.6 SPECIFICATIONS

Rim Size Range

Diameter 11 – 32 in (27.9 – 81.3 cm)
Maximum Width 18 in (45.72 cm)

Distance Between Ring Segments

Max Cylinder Retracted..... 19.5 in (49.53 cm)
Min Cylinder Extended 0 in (0 cm)

Breaking Cylinder Force Max 25,200 lbs (11,430.5 kg)

Breaking Cylinder Stroke..... 14.75 in (37.5 cm)

Hydraulic Operating Pressure 1500 psi (103.4 bar)

Relief Valve Setting 1650 psi (113.8 bar)

Hydraulic Reservoir Capacity 3 gal (11.4 l)

Air Requirements

Flow 80-120 scfm
Pressure..... 100 psi (6.9 bar) min

Over-All Dimensions

Length 58 in (147 cm)
Depth 53 in (135 cm)
Max Height 35 in (89 cm)
Weight 1,575 lbs (714 kg)

2.0 SAFETY INFORMATION

2.1 USAGE AND SAFETY INFORMATION

To insure safe operations please read the following statements and understand their meaning. Also refer to your equipment manufacturer's manual for other important safety information. This manual contains safety precautions which are explained below. Please read carefully.



WARNING! — Warning is used to indicate the presence of a hazard that **can cause severe personal injury, death, or substantial property damage** if the warning notice is ignored.

CAUTION! — Caution is used to indicate the presence of a hazard that **will or can cause minor personal injury or property damage** if the caution notice is ignored.

3.0 PREPARATION PRIOR TO FIRST USE

Proceed as follows to prepare the Bead Breaker for service:

1. Inspect hydraulic reservoir fluid level at fill port. The fluid level should be within one half inch to the top of the reservoir with all cylinders in the retracted (collapsed) positions. If necessary, add sufficient hydraulic operating fluid (refer to Section 6.0 for proper hydraulic fluid specifications) to fill reservoir to required level.
2. Ensure that the hydraulic power supply has been permanently connected to an air supply.
3. Ensure that the hydraulic hoses are protected and free from physical damage.
4. Inspect for any visual signs of hydraulic leakage or physical damage to the bead breaker.
5. Clean the floor area of any substance, which could cause the operator to slip or fall when positioning a tire.
6. Fully extend and retract each cylinder to verify proper operation.
7. Every month, apply a thin film of lubricating oil to pivot pins and to the outer surface of each hydraulic cylinder ram.

4.0 TRAINING

4.1 TRAINING REQUIREMENTS

The employer of the operator is responsible for providing a training program sufficient for the safe operation of the unit.

4.2 TRAINING PROGRAM

The employer provided operator training program should cover safety procedures concerning use of the unit in and around the intended aircraft at the intended aircraft servicing location.

4.3 OPERATOR TRAINING

The operator training should provide the required training for safe operation of the unit.

NOTE: Maintenance and Trouble Shooting are to be performed by a skilled and trained technician.

To derive maximum service, it is recommended that personnel have an understanding of the equipment before attempting to operate the bead breaker. It is mandatory that the operating procedures herein be followed.

5.0 OPERATION

1. Prepare the bead breaker as outlined in 3.0 Preparation Prior To First Use.
2. Adjust each of the breaking sliders for the diameter of the wheel and tire to be broken. Maintain at least 0.5 in (1.27 cm) of clearance between the wheel and each breaking slider.
3. Deflate the tire and remove the valve core. Position the tire inside the frame between the ring segments.
4. Turn the power on by depressing the "START" pushbutton.
5. Raise or lower the frame by depressing the foot switch to turn the motor on and actuating the "UP-DOWN" control lever as required until the breaking sliders clear the wheel rim around the rim circumference.
6. Extend the left spider until the breaking sliders contact the tire, then pin in place at the closest hole location.



WARNING!

Personnel must keep clear of tire and wheel when breaking beads.

7. Depress the foot switch to turn the motor on and actuate the "IN-OUT" control lever to "IN" to extend the breaking cylinder until the tire bead is free of wheel rim. Retract bead breaker cylinder ram by actuating the control lever to "OUT".
8. Roll tire and wheel out from the bead breaker frame.

6.0 HYDRAULIC FLUID

The following hydraulic oils compatible with Buna-N O-Rings, are recommended for use in the bead breaker:

- Tellus 15 (Shell Oil Co.)
- MIL-PRF-5606 (Shell Oil Co., Aero Shell No. 4)
- MIL-PRF-6083A (Mobil Oil, MILVAC-6083)
- Calol Engine Oil (Union Oil Co.)
- Texaco Regal Oil AA (R&O) (Texas Co.)
- Opaline 10W Motor Oil (Sinclair Co.)
- MIL-PRF-83282 (Shell Oil Co.)

7.0 TROUBLE SHOOTING

1. If operational troubles are encountered, refer to table which lists the most commonly encountered troubles and give information which will facilitate location of trouble source and determination of remedial action.



WARNING!

Air Supply Must Be Off To The Hydraulic Power Supply Whenever Disassembly Of Any Part Of The Bead Breaker Is Necessary.

2. When removal of hydraulic system interior components is necessary, drain all hydraulic fluid from the bead breaker and proceed with the required disassembly.
3. All removed metallic parts shall be cleaned with solvent and thoroughly dried.

CAUTION!



Use solvent only in a well-ventilated area, removed from vicinity of open flame or elevated temperature. Avoid prolonged or repeated contact with the skin and inhalation of toxic solvent vapors, and do not smoke in presence of vapors. Toxic solvents present a danger to health.

4. All damaged or defective parts shall be replaced; detail rework of bead breaker parts is not considered reliable or safe.
5. After trouble shooting and corrective action, and prior to use of the bead breaker, prepare the bead breaker for operation as outlined in paragraph 3.0 Preparation Prior To First Use.

TROUBLE	PROBABLE CAUSE	REMEDY
External fluid leakage at extend/retract rams	Damaged backup rings, packings or ram sealing surface	Remove spider/ring. Remove ram assembly thru rear. Inspect and replace defective parts. Replace o-ring
Rams fail to travel	Obstructed fluid section passage	Remove suction lines and inspect for obstruction
	Obstructed suction strainer	Remove and replace strainer
	Low fluid level	Fill to correct fluid level
	Relief valve failing to hold pressure	Inspect for failing valve and replace
Rams will not travel full distance	Low fluid level	Fill to correct fluid level
Rams will not break bead after complete pump up	Internal leakage past ram and outer cylinder	Remove adapter assembly and end cap. Remove ram assembly thru rear. Inspect and replace defective parts
	Relief valve malfunction or low setting	Correct valve setting or replace
All rams inoperative	Improper electrical supply	Insure proper input electrical power is available at the power supply
	Relief valve malfunction	Correct valve setting or replace
Elevation cylinders will not remain in position	Leaking check valve	Remove valve and remove possible contamination under valve seat or replace valve
Pump-up satisfactory, but pump pressure fails to by-pass at maximum ram extension or with over load applied	Relief valve set too high	Adjust relief valve
	Inoperative relief valve	Remove and replace

8.0 PROVISION OF SPARES

8.1 SOURCE OF SPARE PARTS

Spare parts may be obtained from the manufacturer:

ColumbusJack/Regent

1 Air Cargo Pkwy East

Swanton, Ohio 43558 USA

Telephone: 614.443.7492

Fax: 614.444.9337

E-mail: sales@columbusjack.com

Website: www.columbusjack.com

8.2 RECOMMENDED SPARE PARTS LISTS

Reference the following page(s) for Replacement Parts and Kits available.

9.0 IN SERVICE SUPPORT

Contact Tronair, Inc. for technical services and information. See Section 1.3 – Manufacturer.

10.0 GUARANTEES/LIMITATION OF LIABILITY

1. ColumbusJACK Corporation, (Seller) warrants each new product of its manufacture to be free from defects in material or workmanship, under proper, reasonable and normal use and service, and for a period of twelve (12) months after date of shipment from Seller's Swanton, OH. USA facility.
2. Where Buyer claims an alleged defect in material or workmanship and so advises Seller in writing within ten (10) days after discovery thereof, then and in such event, Buyer shall return said equipment, transportation prepaid, to the Seller, provided such return is timely and within twelve (12) months form date of original shipment. This warranty and liability of the Seller is expressly limited solely to replacement of repair of defective parts or goods, and return at Buyer's expense to Seller after find by Seller the product was defective prior to original shipment or, at the option of Seller, to making refund to Buyer of the purchase price for said product.
3. It is further expressly understood and agreed that:
 - a. THERE IS NO WARRANTY, representation of condition OF ANY KIND, express or implied, (INCLUDING NO WARRANTY OF MERCHANT-ABILITY OR OF FITNESS) EXCEPT THAT THE MATERIAL SHALL BE OF THE QUALITY SPECIFIED HEREIN, and none shall be implied by law. Except as otherwise provided herein, quality shall be in accordance with seller's specifications. Final determination of the material for the use contemplated by Buyer is the sole responsibility of Buyer and Seller shall have no responsibility in connection with such suitability, and
 - b. The Buyer's sole and exclusive remedy shall be repair or replacement of defective parts by the Seller. Should the goods, in the judgment of Seller, preclude the remedying of the warranted defects by repair or replacement, the buyer's sole and exclusive remedy shall be the refund of the purchase price, and
 - c. Seller shall not be liable for prospective profits or special, indirect or consequential damages, nor shall any recovery of any kind against Seller be greater in amount than the purchase price of the specific material sold and causing the alleged loss, damage or injury. Buyer assumes all risk and liability for loss, damage or injury to persons or property of Buyer or others arising out of use or possession of any product or part sold hereunder, and
 - d. The Seller shall in no way be deemed or held to be obligated, liable or accountable upon or for any guarantees or warranties, express or implied, or created by statute or by operation of law or otherwise, in any manner of form beyond its express agreement above set forth, and
 - e. No warranty herein shall apply to any product which shall have been repaired or altered, unless such alteration or repair has been made by Seller or where, after return to and inspection by Seller, the product is found by Seller to have been subject to misuse, negligence or accident, and
 - f. No warranty of any nature is made by Seller as to any component forming a part of the product sold and Buyer shall receive only such warranties offered by such other manufacturer pertinent to such component, and
 - g. Seller does not assume nor does Seller authorize any other person to assume for it any other liability or make any warranty in connection with the sale of its products.

The obligations of ColumbusJACK expressly stated herein are in lieu of all other warranties or conditions expressed or implied.

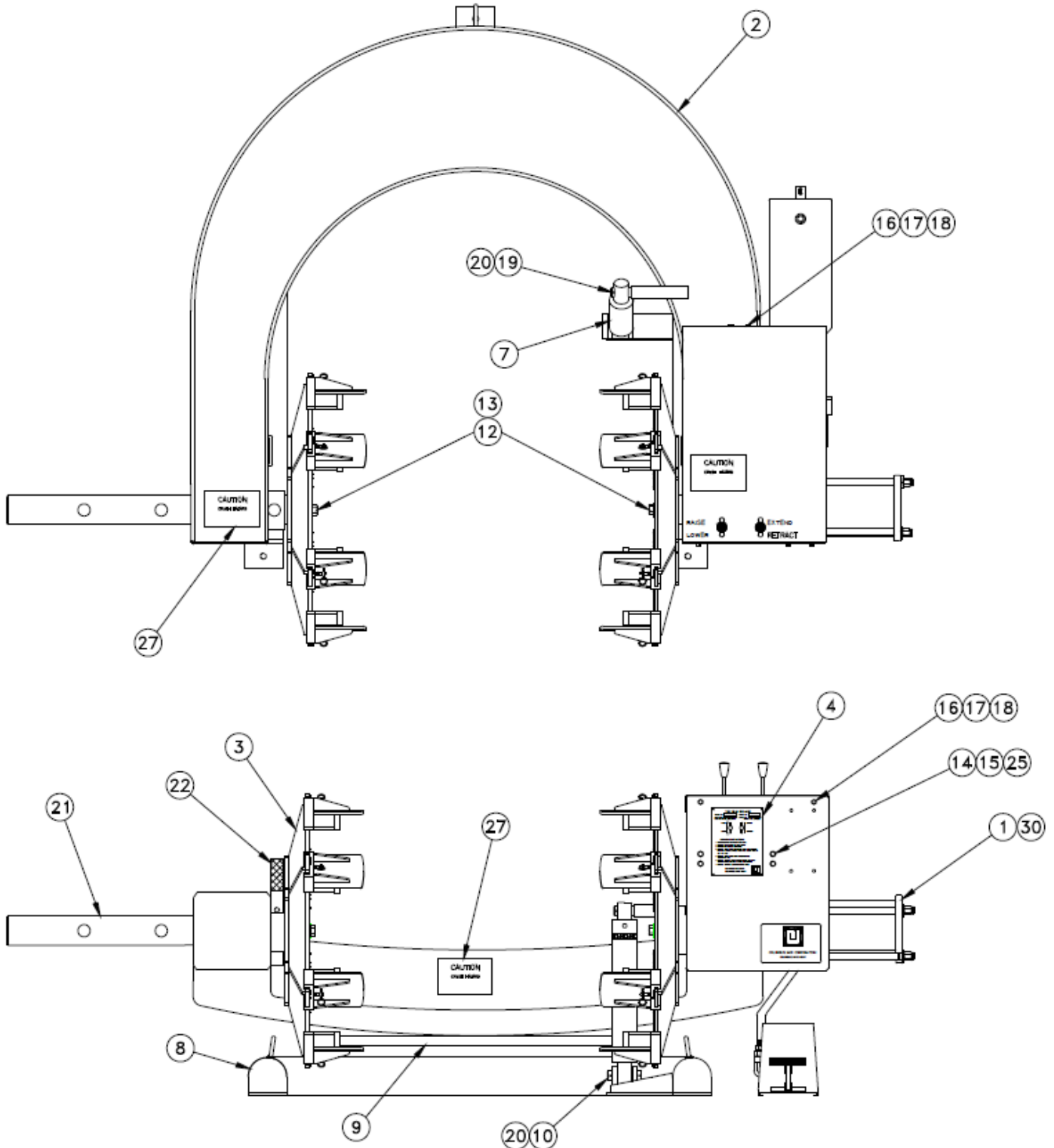
Any unauthorized modification of the ColumbusJACK products or use of the ColumbusJACK products in violations of cautions and warnings in any manual (including updates) or safety bulletins published or delivered by ColumbusJACK will immediately void any warranty, express or implied and ColumbusJACK disclaims any and all liability for injury (WITHOUT LIMITATION and including DEATH), loss or damage arising from or relating to such misuse.

11.0 APPENDICES

APPENDIX I Declaration of Conformity

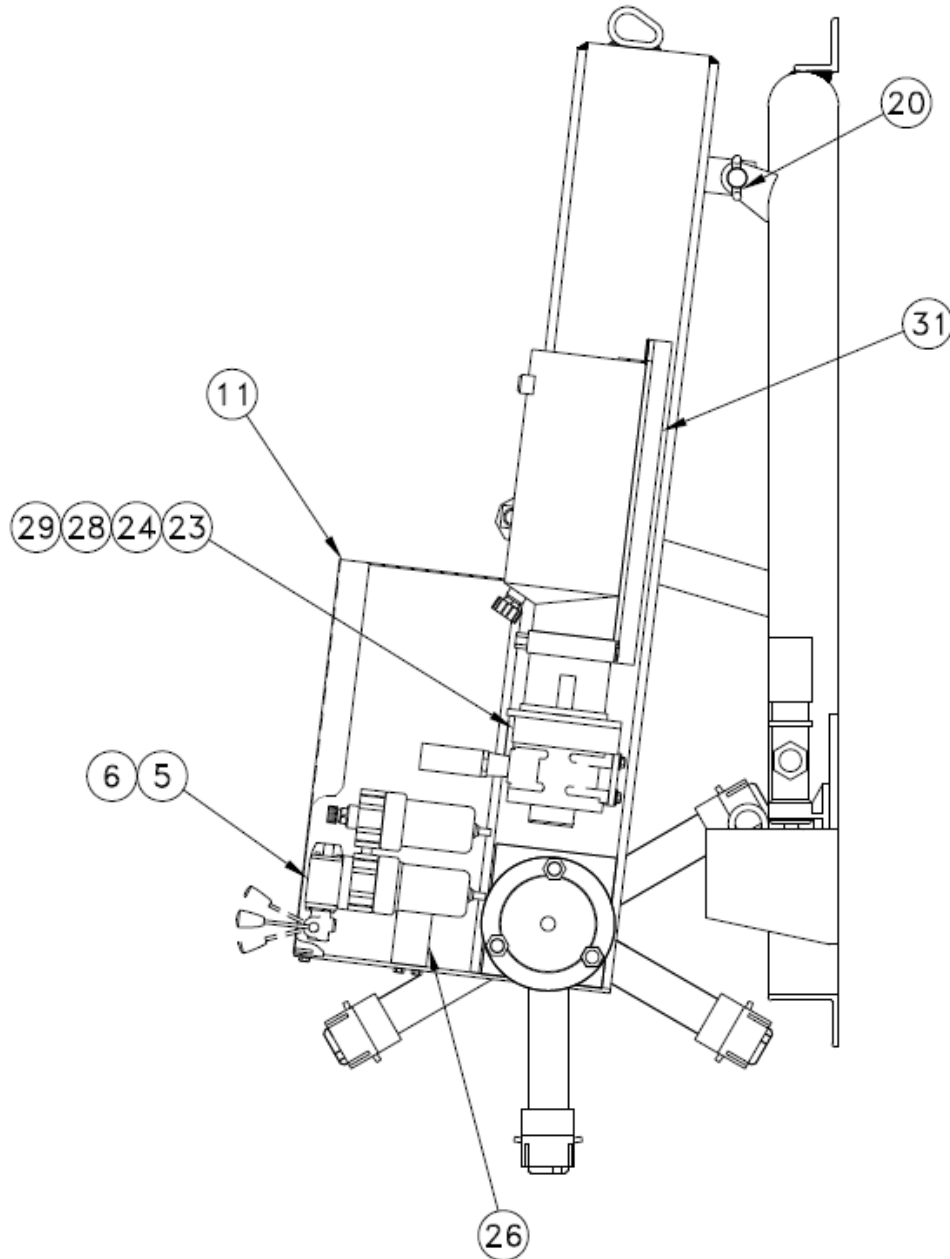
Parts List

When ordering replacement parts/kits, please specify model, serial number and color of your unit.



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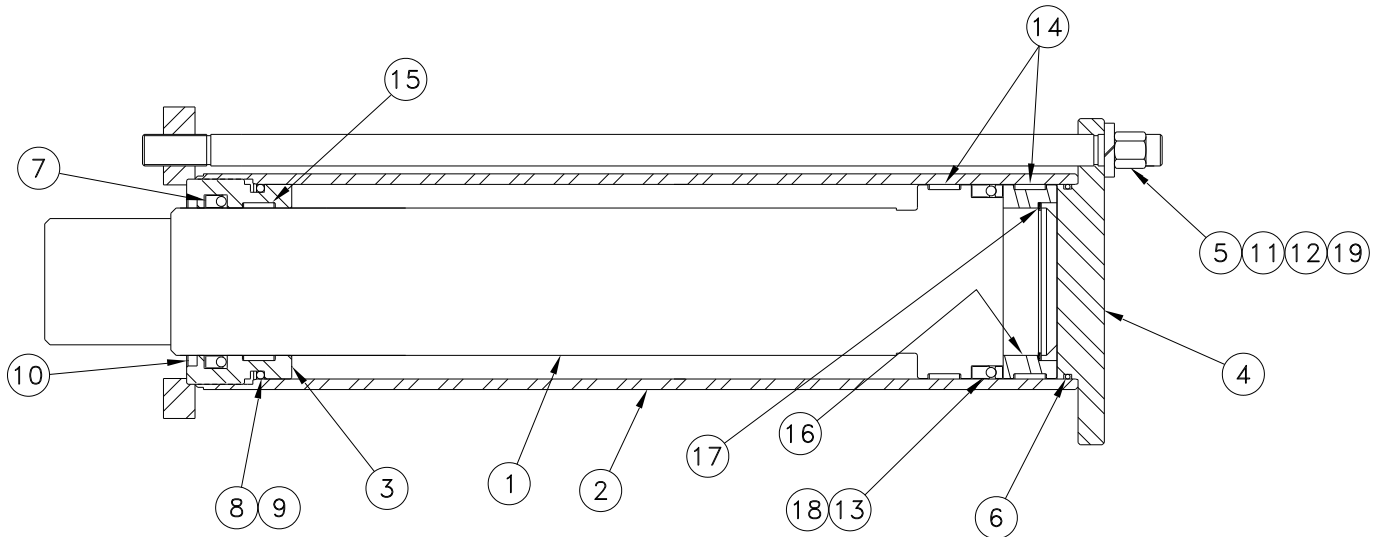
Parts List

When ordering replacement parts/kits, please specify model, serial number and color of your unit.

ITEM	PART NUMBER	DESCRIPTION	QTY
	667R1100A	BEAD BREAKER	REF
1	667C1200-1	CYLINDER ASSEMBLY	1
2	667D1400-1	FRAME WELDMENT	1
3	715-1811D	UNIVERSAL SPIDER ADAPTER	2
4	667B1700-1	PANEL LAYOUT ASSEMBLY	1
5	667D3009	Control Schematic	1
6	667C3013	Manifold Assembly	1
7	515-2100	Cylinder Assembly	1
8	138D2601	Base Weldment	1
9	138B2625	Rod, Hinge	1
10	138B2626	Pin	1
11	S-3998	Control Shroud	1
12	372-26100	Hex Head Cap Screw	2
13	345-11048	Flat Washer	2
14	346-10020	Lockwasher	4
15	345-11020	Flat Washer	4
16	374-12060	Hex Head Cap Screw	4
17	346-10016	Lockwasher	4
18	333-41200	Hex Nut	4
19	AN960-1616	Flat Washer	1
20	322-04480	Cotter Pin	5
21	667B1415	Shaft	1
22	667A1416	Pin Assembly, Spider	1
23	374-12080M	Hex Head Cap Screw	4
24	345-11016M	Flat Washer	4
25	371-14080	Hex Head Cap Screw	4
26	667B3001	Bracket, Manifold Mounting	2
27	138A3000	Crush Hazard Decal	2
28	450B5452	Pump and Air Motor Assembly	1
29	346-10016M	Lockwasher	4
30	333-32610	Hex Jam Locknut	3
31	715-4506	Reservoir Support Assembly	1

Parts List

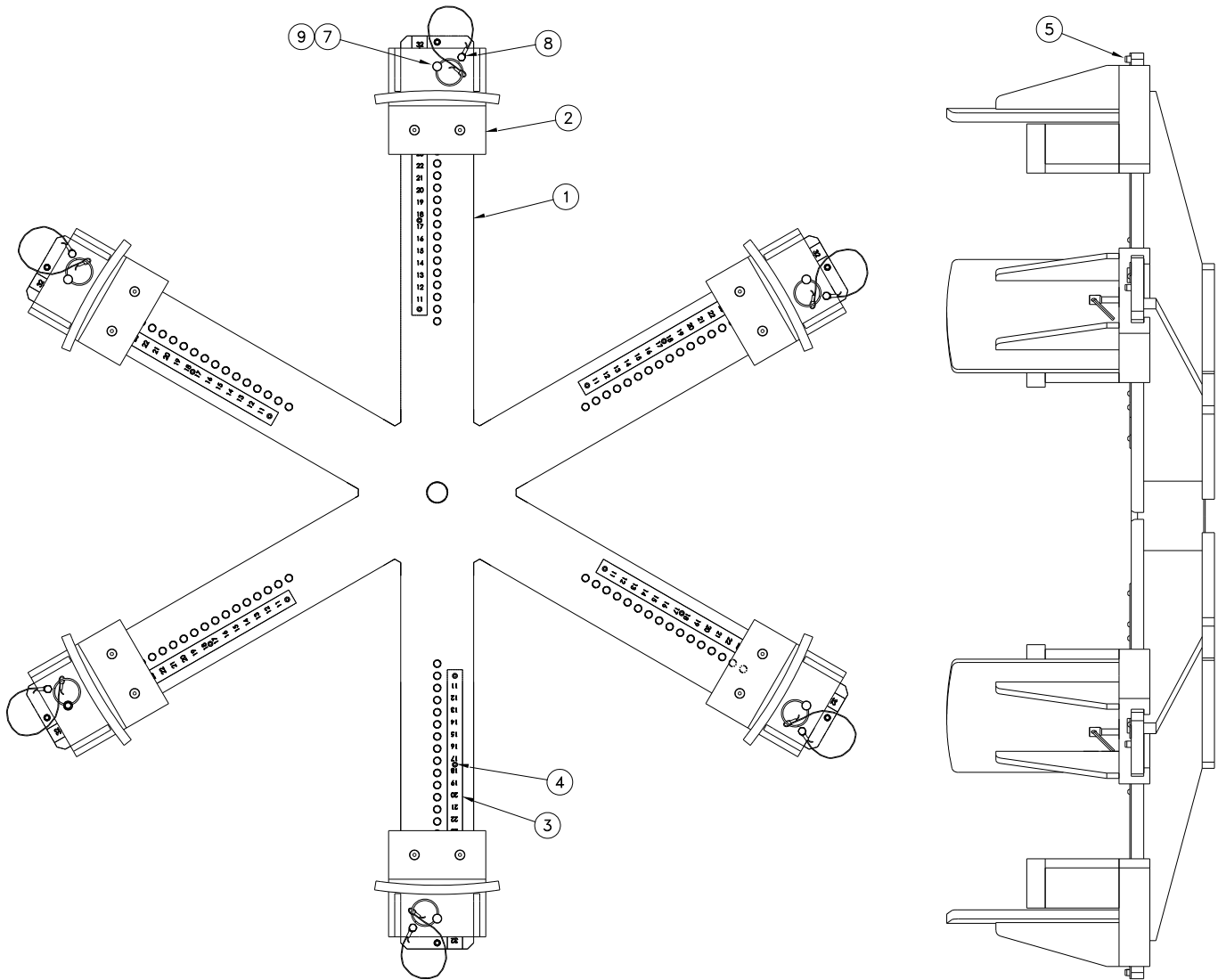
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ITEM	PART NUMBER	DESCRIPTION	QTY
	667C1200-1	CYLINDER ASSEMBLY	REF
1	667C1201-1	RAM	1
2	138B2629	CYLINDER	1
3	667C1202-1	BEARING	1
4	138C2634	DIAPHRAGM	1
5	138A2635	TIE ROD	3
6	611-24524	O-RING	1
7	667A1201-1	ROD SEAL	1
8	450A3492	O-RING	1
9	618-10501	BACKUP RING	1
10	71X7096	WIPER	1
11	346-10048	LOCKWASHER	3
12	333-52600	HEX NUT	3
13	667A1202-1	PISTON SEAL	1
14	667B1202-1	PISTON WEAR RING	2
15	667B1201-1	ROD WEAR RING	1
16	667B1203	RAM END	1
17	667A1204	RETAINING RING	1
18	667B3010	PIP RING MODIFICATION	1
19	345-11048	FLAT WASHER.	3

Parts List

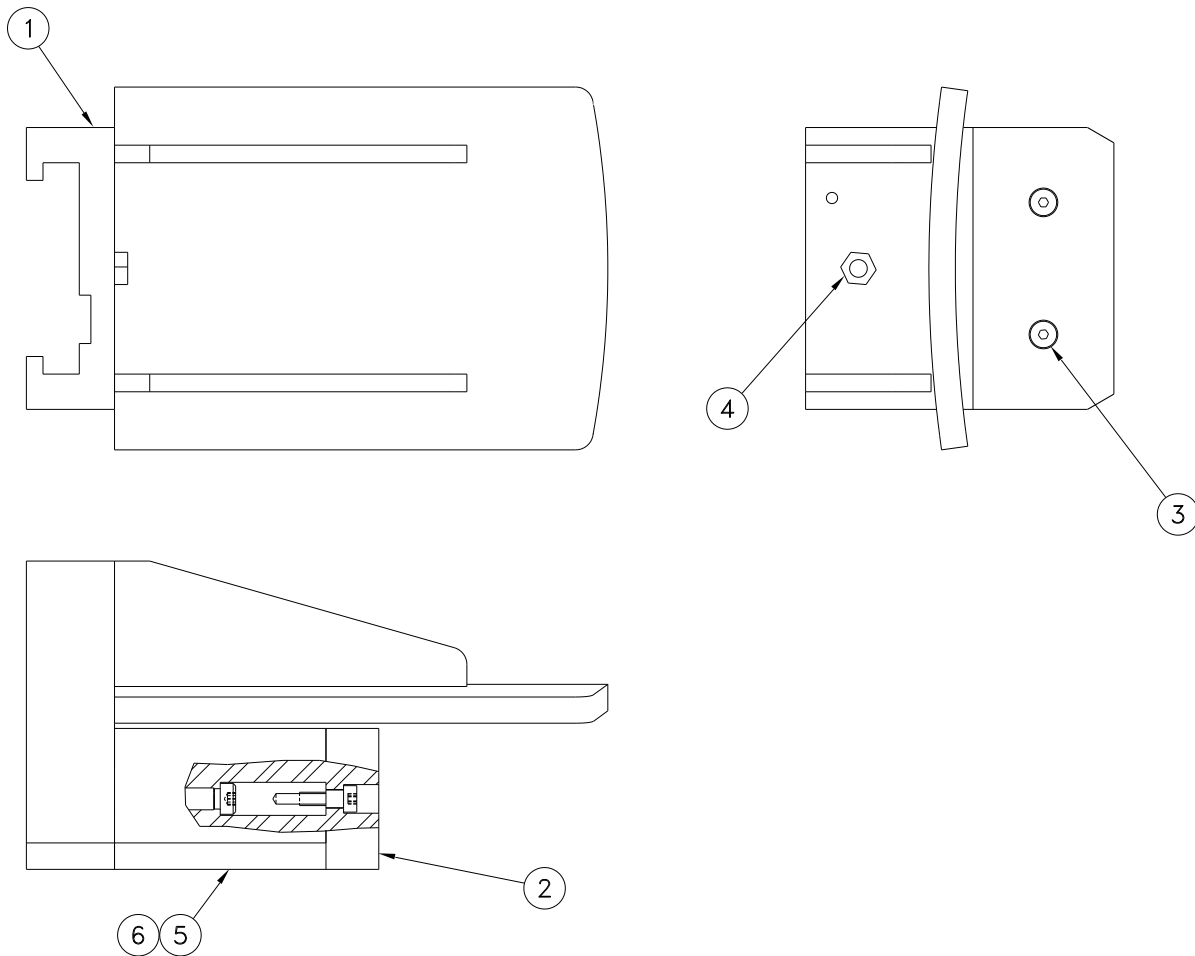
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ITEM	PART NUMBER	DESCRIPTION	QTY
	715-1811D	UNIVERSAL SPIDER ADAPTER	
1	715-1809D	SPIDER WELDMENT	1
2	715-1810C	BREAKING SLIDER ASSEMBLY	6
3	715-1812B	SCALE	6
4	450A6983	DRIVE SCREW	24
5	325-12060	SPRING PIN	6
7	450A7291	DETENT PIN	6
8	372-10030	HEX HEAD CAP SCREW	6
9	450A5739	CABLE ASSEMBLY	6

Parts List

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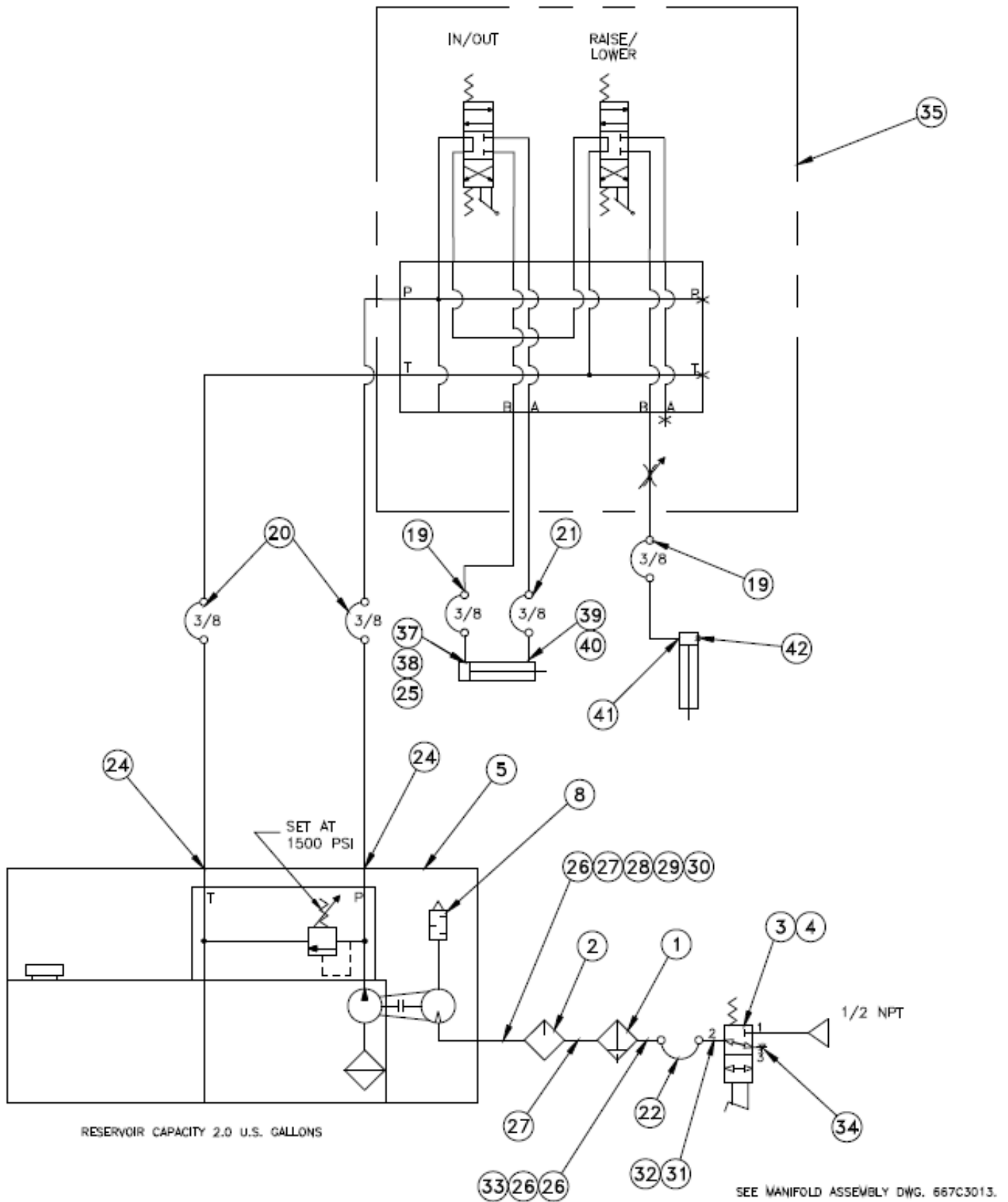


ITEM	PART NUMBER	DESCRIPTION	QTY
	715-1810C	BREAKING SLIDER ASSEMBLY	REF
1	715-1810P	BREAKING SLIDER WELDMENT	1
2	715-1807B	CUSHION	1
3	450A5398	SHOULDER BOLT	2
4	715-1818	PIN ADAPTER	1
5	715-1815B	CUSHION BLOCK EXTENSION	1
6	450A5421	SHOULDER BOLT	2

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Parts List

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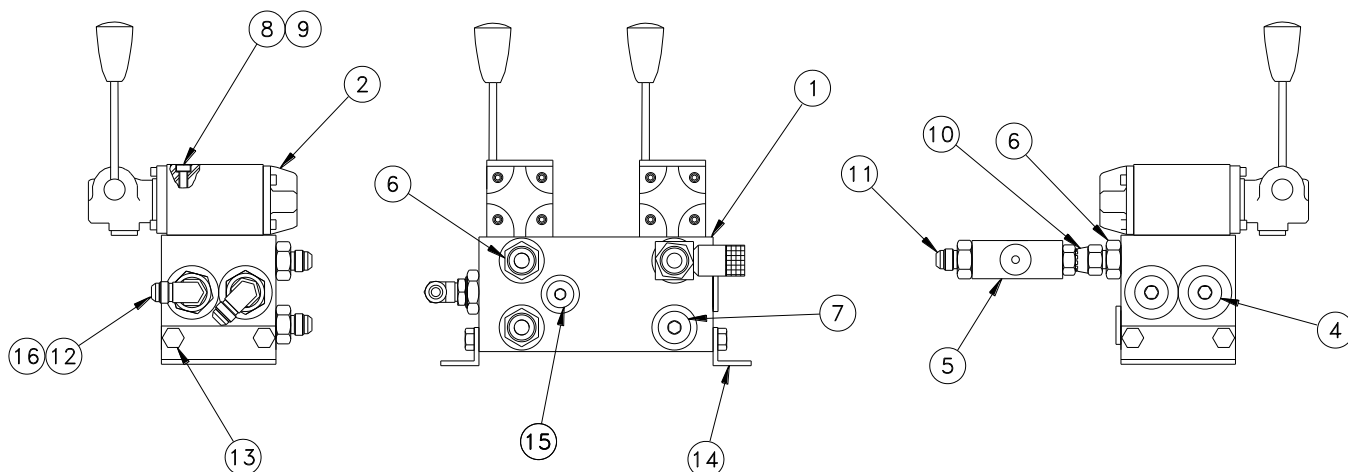
Parts List

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ITEM	PART NUMBER	DESCRIPTION	QTY
	667D3009	CONTROL SCHEMATIC	REF
1	450A3233	Air Filter	1
2	450A3232	Air Lubricator	1
3	450A3238	Foot Valve	1
4	450A3237	Pedal Guard Kit	1
5	450B5452	Pump and Air Motor Assembly	REF
8	450A3234	Silencer	REF
19	450A4138-32-01	Hose Assembly	2
20	450A4138-30	Hose Assembly	2
21	450A4138-32	Hose Assembly	1
22	450A4450-72	Hose Assembly	1
24	456-10606-A	Male Elbow	3
25	457-10604-A	Male Connector	1
26	450A3246	Street Elbow	2
27	483-10808	Pipe Nipple	2
28	450A3244	Union Fitting	1
29	450A3089	Pipe Nipple	1
30	485-51208	Reducer	1
31	485-00808	Street Elbow	1
32	457-11208	Male Connector	1
33	457-91208	Male Connector	1
34	488-00008	Pipe Plug	1
35	667C3013	Manifold Assembly	REF
37	488-00004	Pipe Plug	1
38	485-40404	Male Run Tee	1
39	461-10604	Female Elbow	1
40	483-40420	Pipe Nipple	1
41	456-10604	Male Elbow	1
42	488-00004	Pipe Plug	1

Parts List

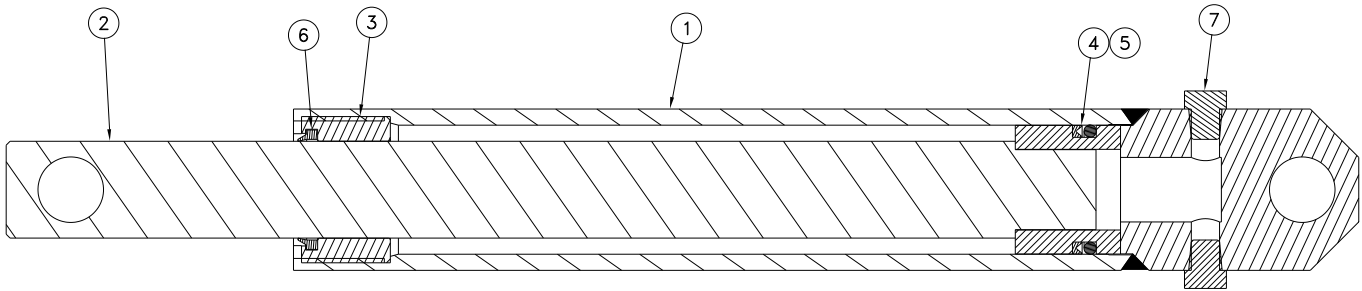
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ITEM	PART NUMBER	DESCRIPTION	QTY
	667C3013	MANIFOLD ASSEMBLY	REF
1	450A3228	MANIFOLD	1
2	450A3227	4-WAY VALVE	2
4	488-20010	PLUG, HOLLOW HEX	2
5	450A3226	NEEDLE VALVE	1
6	452-10608	CONNECTOR	3
7	488-20008	PLUG, HOLLOW HEX	1
8	377-10160	SOCKET HEAD CAP SCREW	8
9	351-10010	LOCKWASHER, HI COLLAR	8
10	475-30606	CONNECTOR	1
11	452-10606	CONNECTOR	1
12	466-10606	ELBOW	2
13	SUPPLIED WITH ITEM 1	HEX BOLT,	REF
14	SUPPLIED WITH ITEM 1	MOUNTING BRACKET	REF
15	SUPPLIED WITH ITEM 1	PLUG	REF
16	452-10610	CONNECTOR	2

Parts List

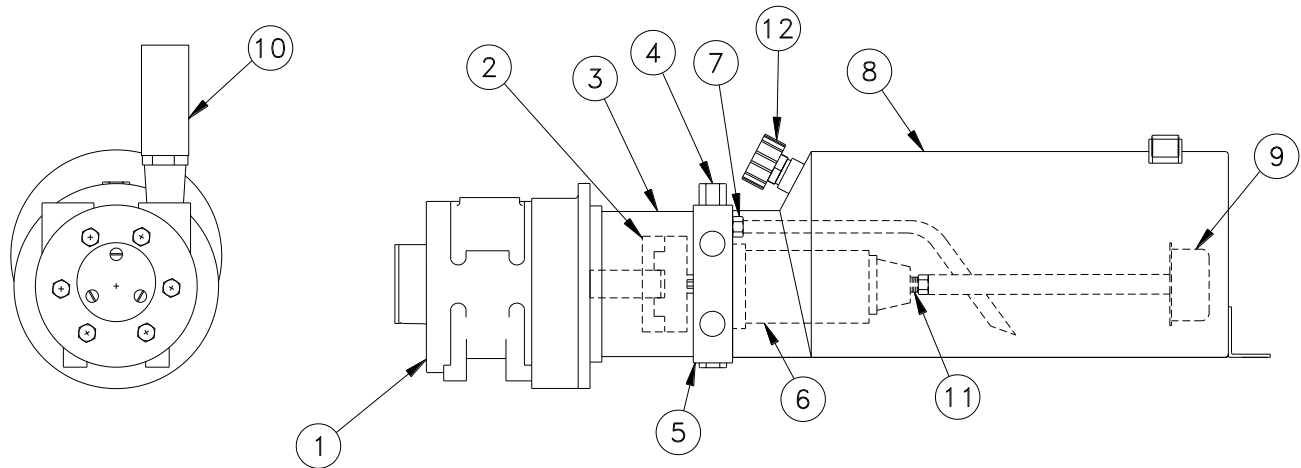
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ITEM	PART NUMBER	DESCRIPTION	QTY
	515-2100	CYLINDER ASSEMBLY	REF
1	515-2200	CYLINDER WELDMENT	1
2	515-2203	RAM WELDMENT	1
3	515-2206	BUSHING	1
4	916-45-1.593	BACKUP RING	1
5	611-32632	O-RING	1
6	515-1500	WIPER	1
7	P28	PIPE PLUG	2

Parts List

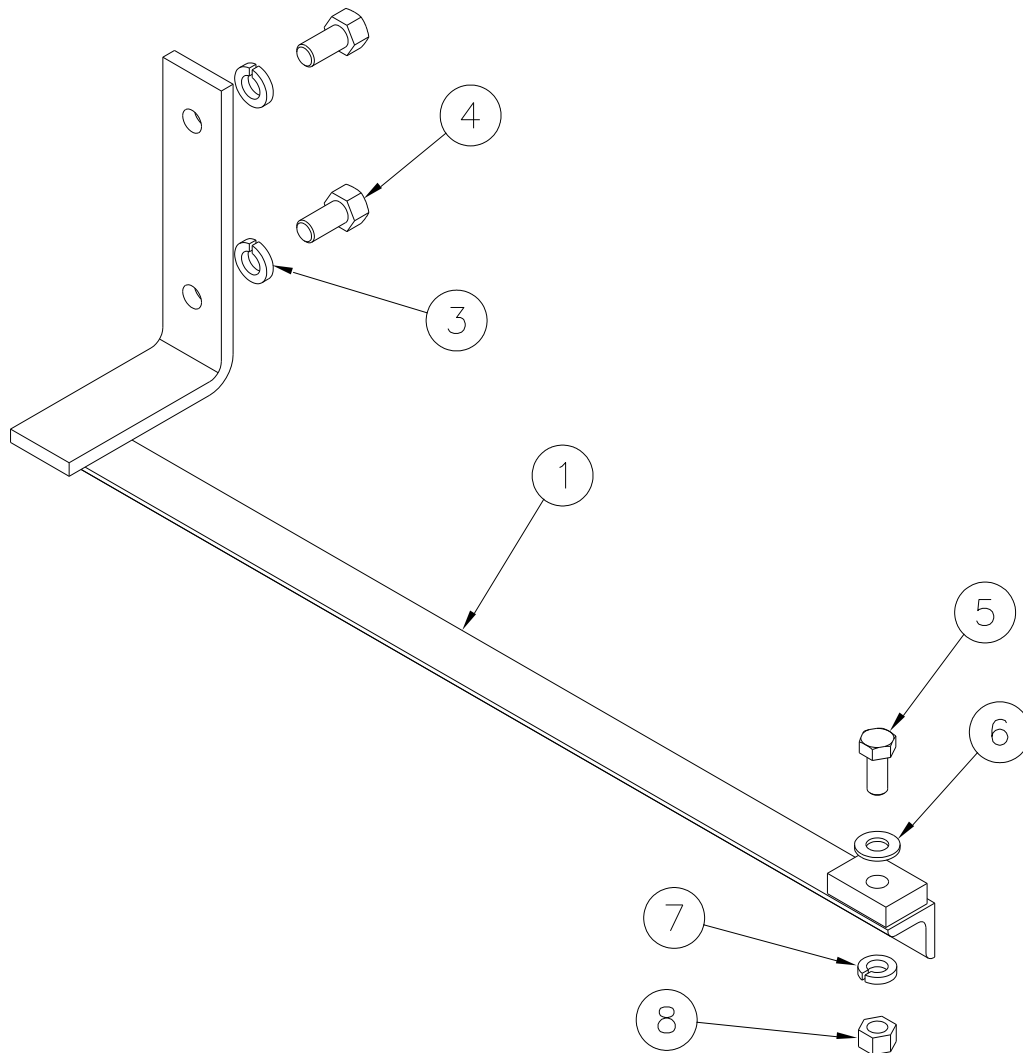
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ITEM	PART NUMBER	DESCRIPTION	QTY
	450B5452	PUMP AND AIR MOTOR ASSEMBLY	REF
1	450A3239	Air Motor	1
2	450A3224	Coupling	1
3	450A3225	Mounting Adapter	1
4	450A3229	Relief Valve	1
5	450A3231	End Head	1
6	450A3243	Pump	1
7	450A3236	Fitting	1
8	450A3235	Reservoir	1
9	450A3223	Strainer	1
10	450A3234	Silencer	1
11	450A3230	Plumbing Kit	1
12	450A7157	Air Vent	1

Parts List

When ordering replacement parts/kits, please specify model, serial number and color of your unit.



ITEM	PART NUMBER	DESCRIPTION	QTY
	715-4506	RESERVOIR SUPPORT ASSEMBLY	REF
1	715-4502	RESERVOIR SUPPORT	1
3	346-10024	LOCKWASHER	2
4	371-16060	HEX HEAD CAP SCREW	2
5	371-14080	HEX HEAD CAP SCREW	1
6	345-11020	WASHER, FLAT	1
7	346-10020	LOCKWASHER	1
8	333-41400	HEX NUT	1



APPENDIX I

Declaration of Conformity



Declaration of Conformity

The design, development and manufacture is in accordance with European Community guidelines

Bead Breaker
667R1100A

Relevant provisions complied with by the machinery:
2006/42/EC

Relevant standards complied with by the machinery:
EN ISO 12100-1

Identification of person empowered to sign on behalf of the Manufacturer:

Quality Assurance Representative