



Model: 715J1000EX
Bead Breaker



S/N 80981-1 & after
12/2017 – Rev. 01

REVISION
01

DATE
12/2017

TEXT AFFECTED
Original release

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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 explosion proof hydraulic power unit. The power unit consists of a hydraulic pump, control valve assemblies and a hydraulic fluid reservoir. The pump is driven by an electric motor that is turned on by a dead-man type (spring loaded) foot operated switch for operator safety. The control box contains a universal transformer that allows the connection of all major AC voltages.

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 (27.94 – 81.28 cm)

Maximum Width 23 in (58.42 cm)

Distance Between Ring Segments

Max Cylinder Retracted..... 30.5 in (77.47 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)

Electrical Requirements (2 HP Motor) ... 230/460 VAC, 3 Ph, 60 Hz

Over-All Dimensions

Length 69 in (175 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 0.5 in (1.27 cm) 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 Hydraulic Fluid for proper fluid specifications) to fill reservoir to required level.
2. Ensure that the hydraulic power supply has been permanently connected to the correct electrical input power. Bead breaker is delivered set up for 460 VAC, 3 phase, 60 Hz. If input power is 230 VAC, 3 phase, 60 Hz the transformer will need to be re-tapped for 230 VAC, motor wired for low voltage and overload replaced with supplied overload set to max motor current (5A).
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.

NOTE: If velocity fuse trips, the ram will not move and prevent further lowering of the load. User must reset fuse by raising the frame 1 in (2.5 cm) then lowering.



CAUTION!

Velocity fuse is utilized in each frame positioning ram. This protects user and equipment in case of hydraulic hose failure. Lowering frame should be in slow, steady motion.



CAUTION!

Do not dead head ram. If ram is in a dead head position and velocity fuse tripped, ram may not lower until load is completely removed and taken to maintenance location for partial disassembly.

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!

Electrical power 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 from 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.

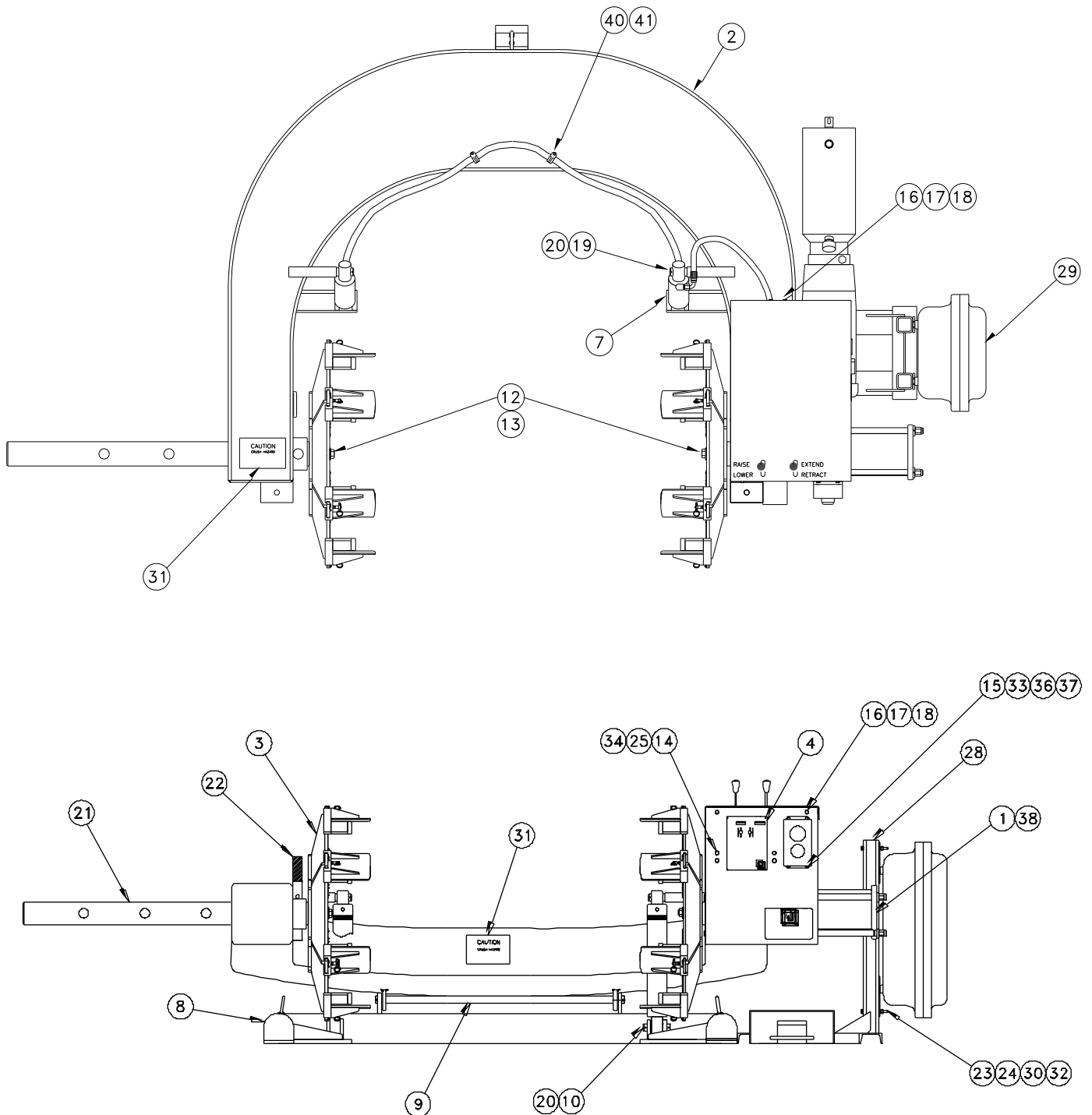
Any unauthorized modification of the ColumbusJACK products or use of the ColumbusJACK products in violations of cautions and warnings in any manual (including updates) or safety bulletins published or delivered by ColumbusJACK will immediately void any warranty, express or implied and ColumbusJACK disclaims 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

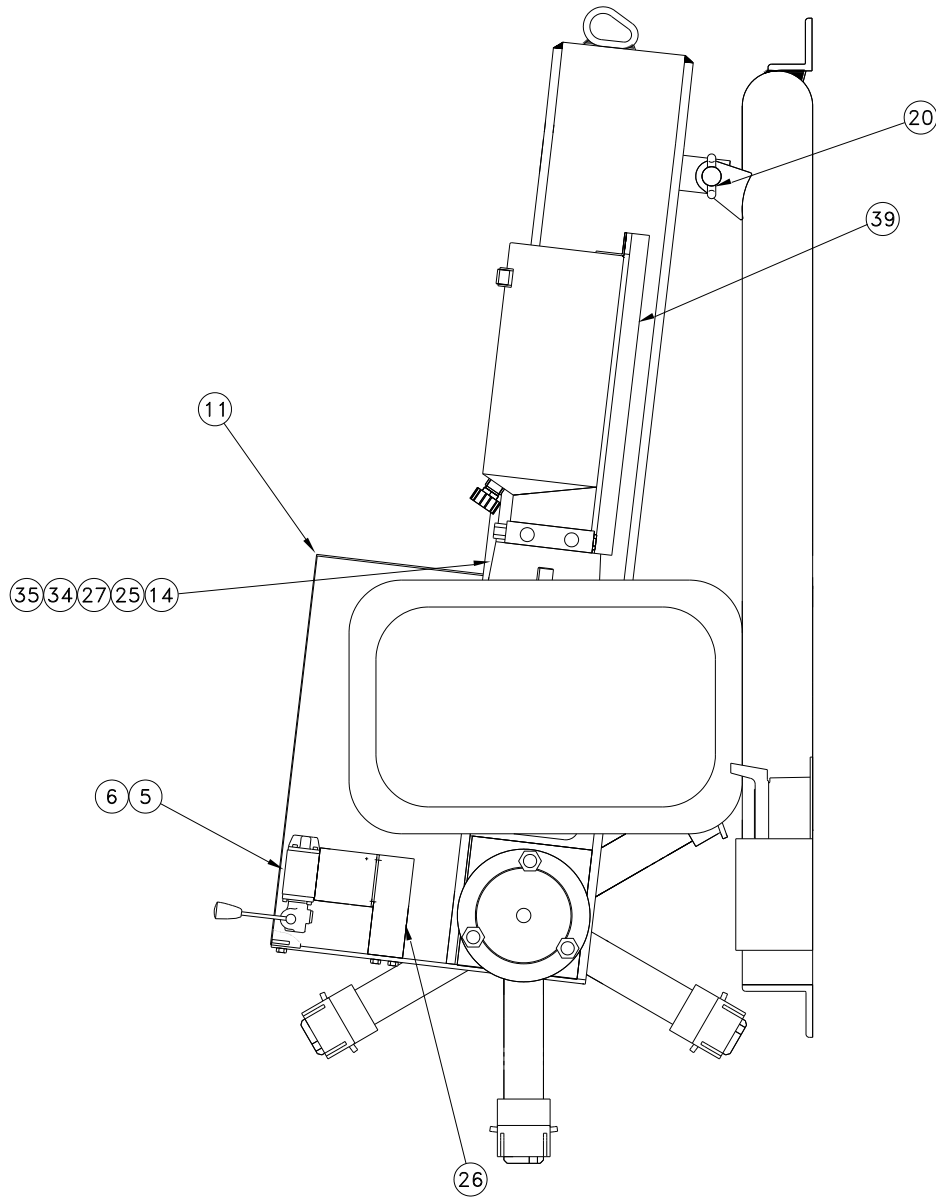
When ordering replacement parts/kits, please specify model, serial number and color of your unit.



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Parts List

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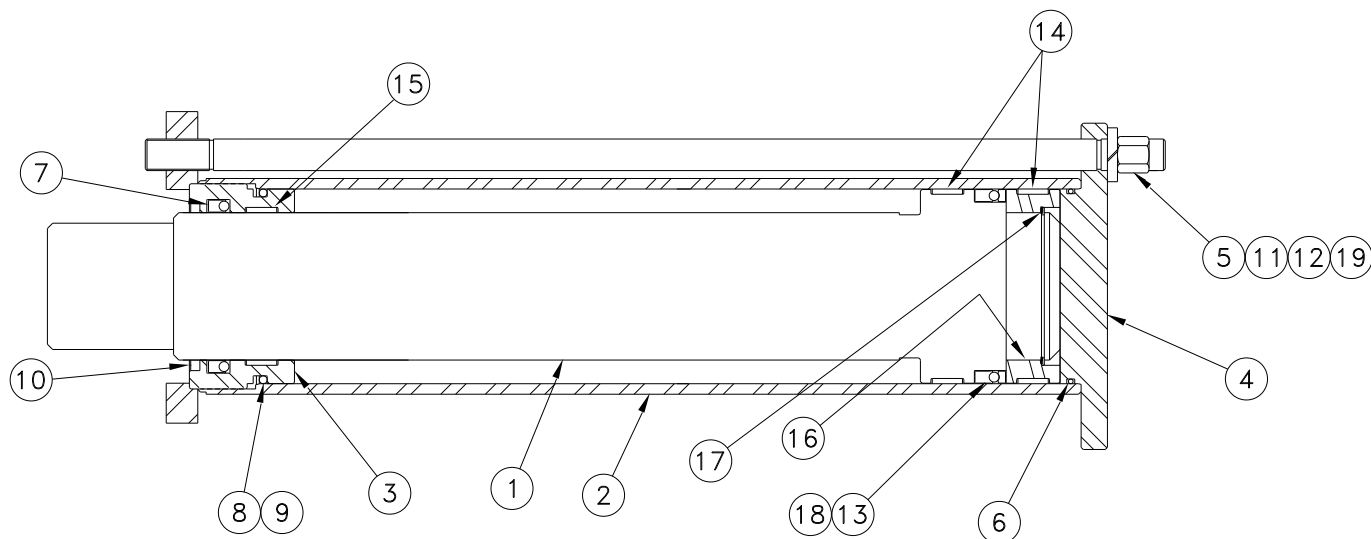
Parts List

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

Item	Part Number	Description	Qty
	715J1000EX	Bead Breaker	Ref
1	667C1200-1	Cylinder Assembly	1
2	715D1500	Frame Weldment	1
3	715-1811D	Universal Spider Adapter	2
4	667B1700-2	Panel Layout Assembly - Electric	1
5	715D3100	Control Schematic	1
6	667C3013	Manifold Assembly	1
7	515-2100	Cylinder Assembly	2
8	715D2601	Base Weldment	1
9	138B2625	Rod, Hinge	1
10	138B2626	Pin	2
11	667B3003	Shroud Weldment	1
12	372-26100	Hex Head Cap Screw	2
13	345-11048	Flat Washer	2
14	346-10020	Lockwasher	8
15	G-1100-105010	Bolt, 1/4-20, HEX	2
16	374-12060	Hex Head Cap Screw	4
17	346-10016	Lockwasher	4
18	333-41200	Hex Nut	4
19	AN960-1616	Flat Washer	2
20	322-04480	Cotter Pin	8
21	715C1415	Shaft, Spider	1
22	667A1416	Pin Assembly, Spider	1
23	371-20260	Hex Head Cap Screw	4
24	345-11032	Flat Washer	4
25	371-14080	Hex Head Cap Screw	8
26	667B3001	Bracket, Manifold Mounting	2
27	450B5374	Pump and Explosion Proof Motor Assy.	1
28	715D4150	Electric Box Mount, Explosion Proof	1
29	715D1950	Electrical Circuit, Explosion Proof	1
30	346-10032	Lockwasher	4
31	138A3000	Decal – Caution Crush Hazard	2
32	331-42000	Elastic Stop Nut	4
33	G-1251-1050N	Washer, Flat	4
34	345-11020	Flat Washer	8
35	331-41400	Elastic Stop Nut	4
36	G-1251-1050R	Lockwasher	2
37	G-1200-1050	Nut, Hex	2
38	333-32610	Hex Jam Locknut	3
39	715-4506	Reservoir Support Assembly	1
40	450A5601	Clamp Loop	2
41	371-10080	Hex Head Cap Screw	2

Parts List

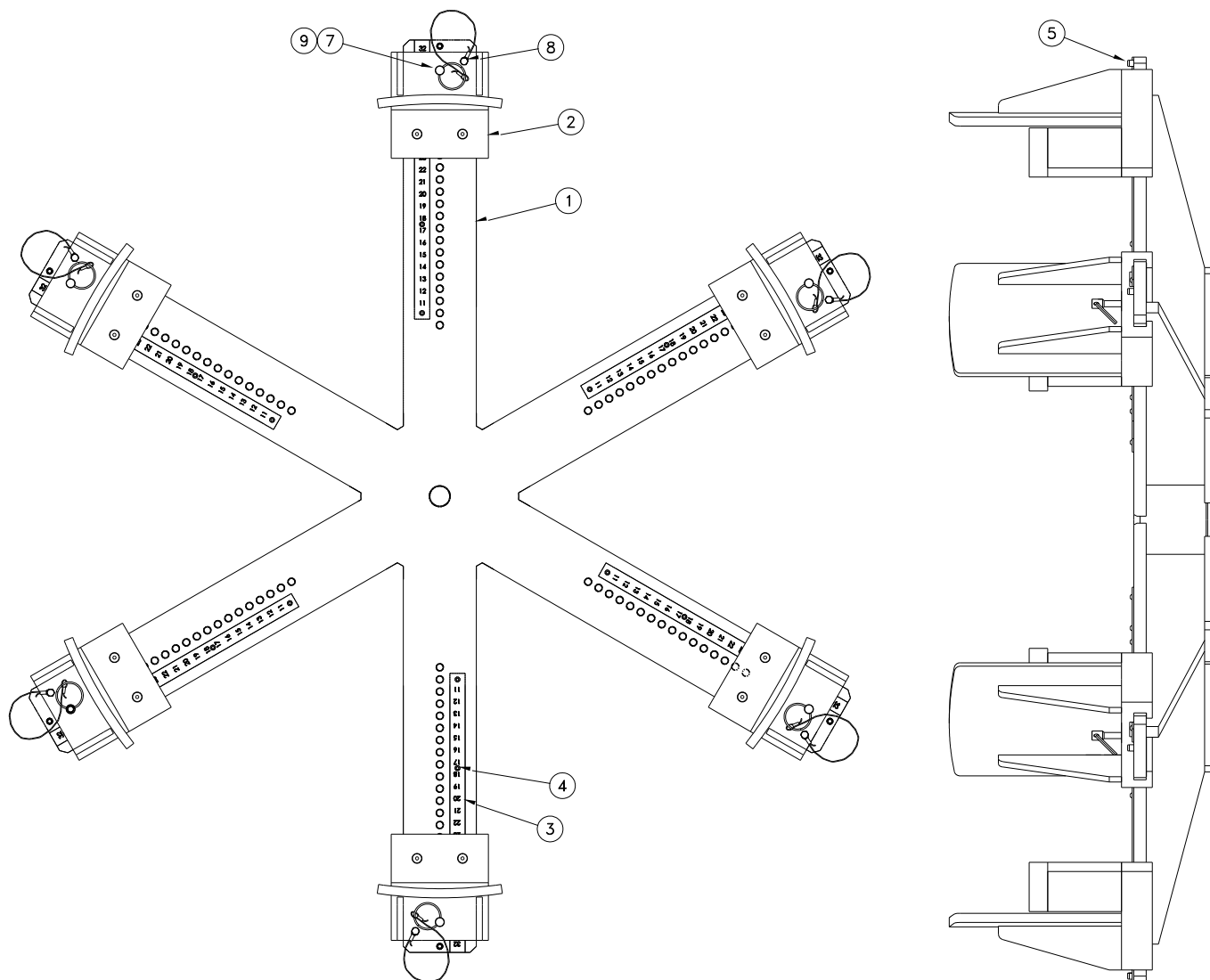
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Item	Part Number	Description	Qty
	667C1200-1	Cylinder Assembly	Ref
1	667C1201-1	Ram	1
2	138B2629	Cylinder	1
3	667C1202-1	Bearing	1
4	138C2634	Diaphragm	1
5	138A2635	Tie Rod	3
6	611-24524	O-Ring	1
7	667A1201-1	Rod Seal	1
8	450A3492	O-Ring	1
9	618-10501	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

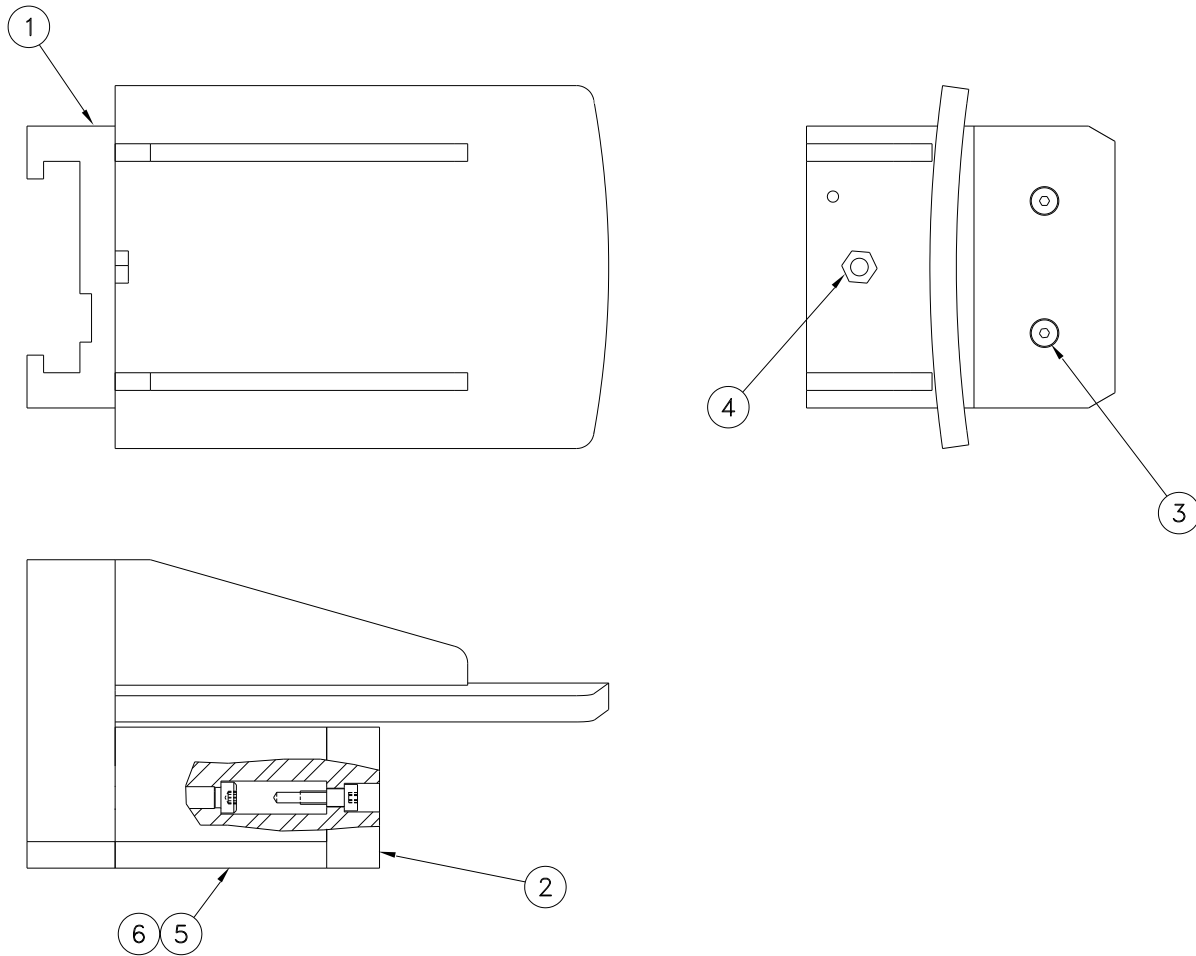
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Item	Part Number	Description	Qty
	715-1811D	Universal Spider Adapter	
1	715-1809D	Spider Weldment	1
2	715-1810C	Breaking Slider Assembly	6
3	715-1812B	Scale	6
4	450A6983	Drive Screw	24
5	325-12060	Spring Pin	6
7	450A7291	Detent Pin	6
8	372-10030	Hex Head Cap Screw	6
9	450A5739	Cable Assembly	6

Parts List

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



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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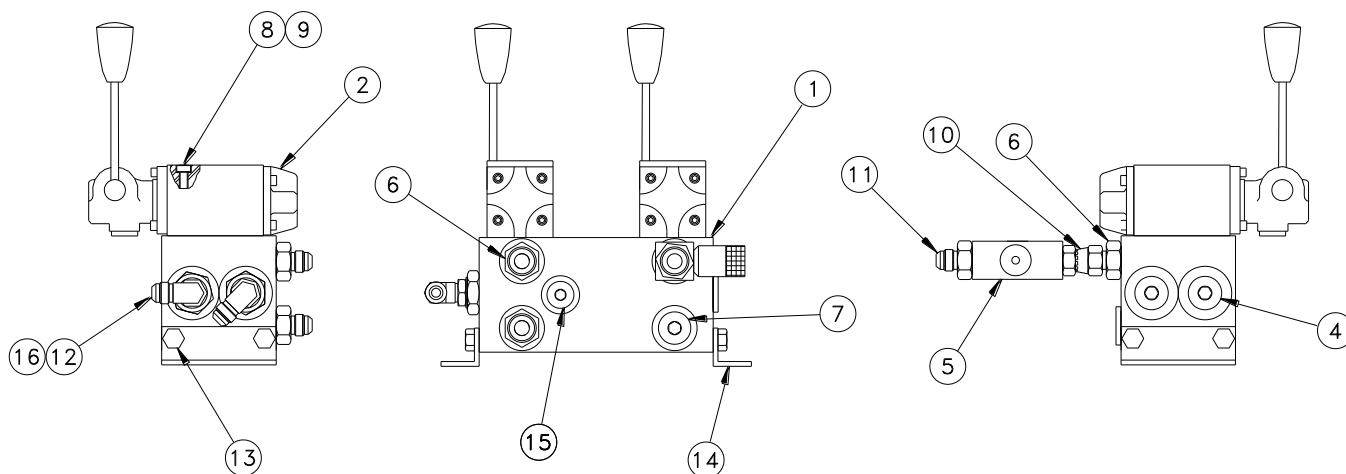
Parts List

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

Item	Part Number	Description	Qty
	715D3100	Control Schematic	Ref
5	450B5374	Pump & Explosion Proof Motor Assembly	1
19	486-50606	Hose End, Swivel	4
20	486-64006	Hose End	3
21	450A4300	Hose	12'
24	456-10606	Male Elbow	2
25	457-10604	Male Connector	3
35	667C3013	Manifold Assembly	Ref
37	501-99706	Pressure Gauge, 3000 PSI	1
38	485-40404	Male Run Tee	1
39	461-10604	Female Elbow	1
40	450A3085	Pipe Nipple	1
42	488-00004	Pipe Plug	2
43	371-10060	Hex Head Cap Screw	1
44	450A5601	Clamp Loop	1
45	450-20604	Adapter	1
46	HC-2435	Velocity Fuse	2
47	467-10606	Swivel Run T	1
48	TF-1037-35-80	Assembly, Hose	1
49	TF-1037-35-48	Assembly, Hose	1

Parts List

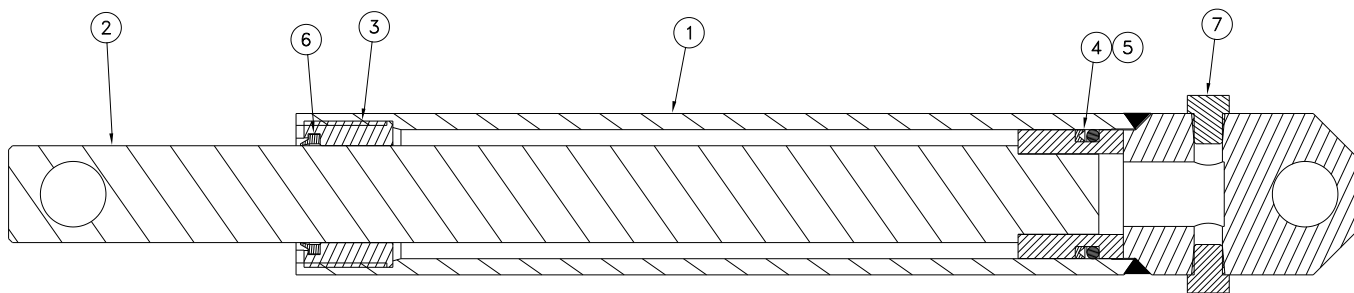
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Item	Part Number	Description	Qty
	667C3013	Manifold Assembly	Ref
1	450A3228	Manifold	1
2	450A3227	4-Way Valve	2
4	488-20010	Plug, Hollow Hex	2
5	450A3226	Needle Valve	1
6	452-10608	Connector	3
7	488-20008	Plug, Hollow Hex	1
8	377-10160	Socket Head 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

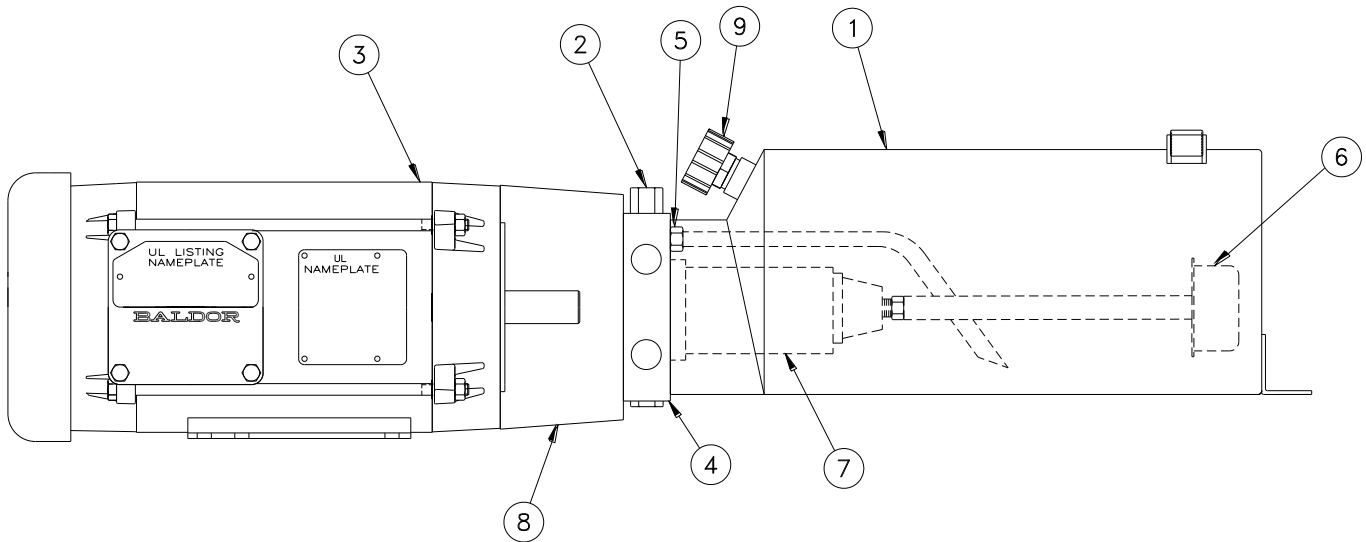
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Item	Part Number	Description	Qty
	515-2100	Cylinder Assembly	Ref
1	515-2200	Cylinder Weldment	1
2	515-2203	Ram Weldment	1
3	515-2206	Bushing	1
4	916-45-1.593	Backup Ring	1
5	611-32632	O-Ring	1
6	515-1500	Wiper	1
7	P28	Pipe Plug	2

Parts List

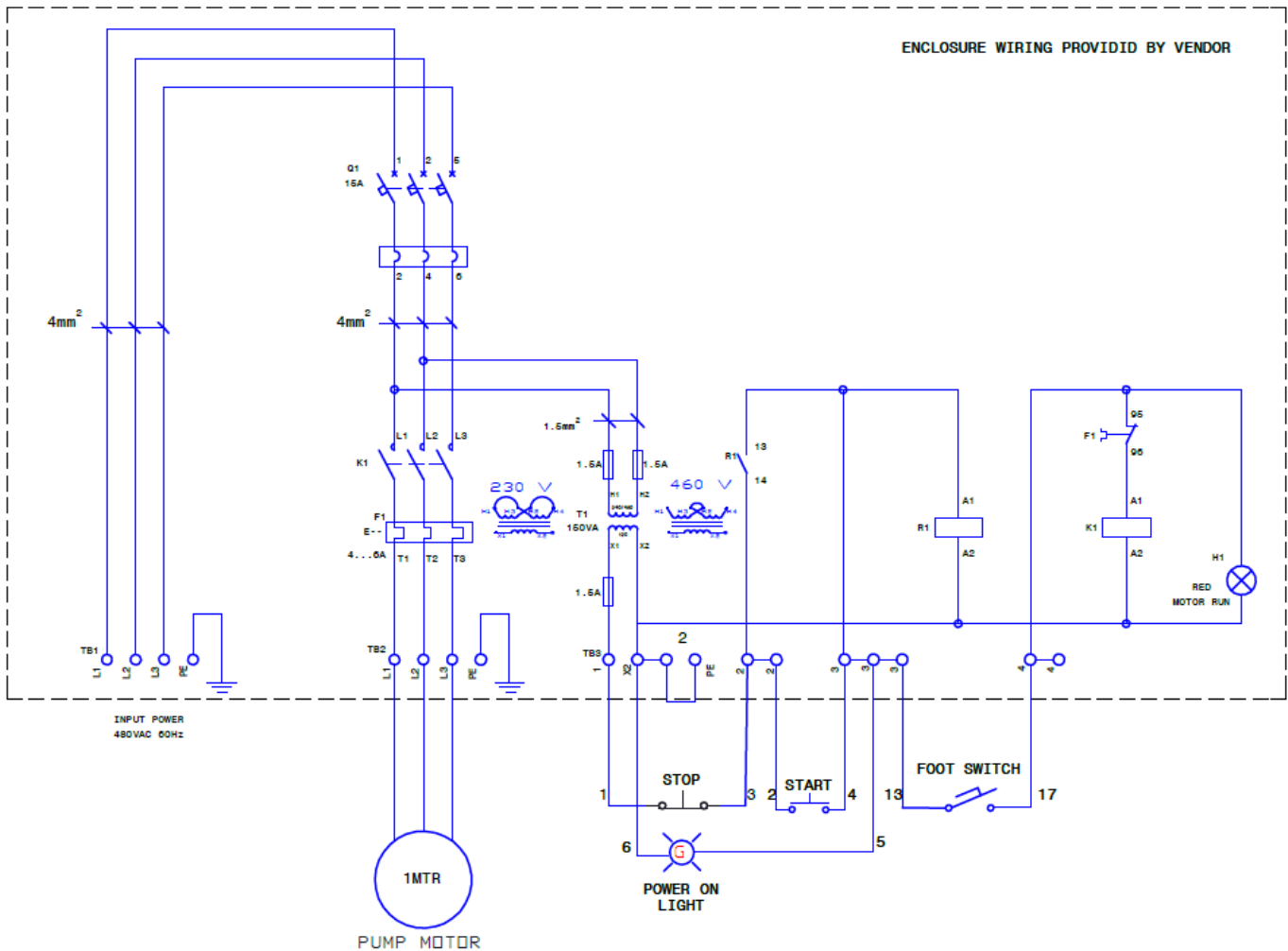
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Item	Part Number	Description	Qty
	450B5374	Pump and Explosion Proof Motor Assembly	Ref
1	450A3235	Reservoir	1
2	450A3229	Relief Valve	1
3	450B5377	Motor	1
4	450A3231	End Head	1
5	450A3236	Fitting	1
6	450A3223	Strainer	1
7	450A4553	Pump	1
8	450A3225	Adapter	1
9	450A7157	Air Vent	1

Parts List

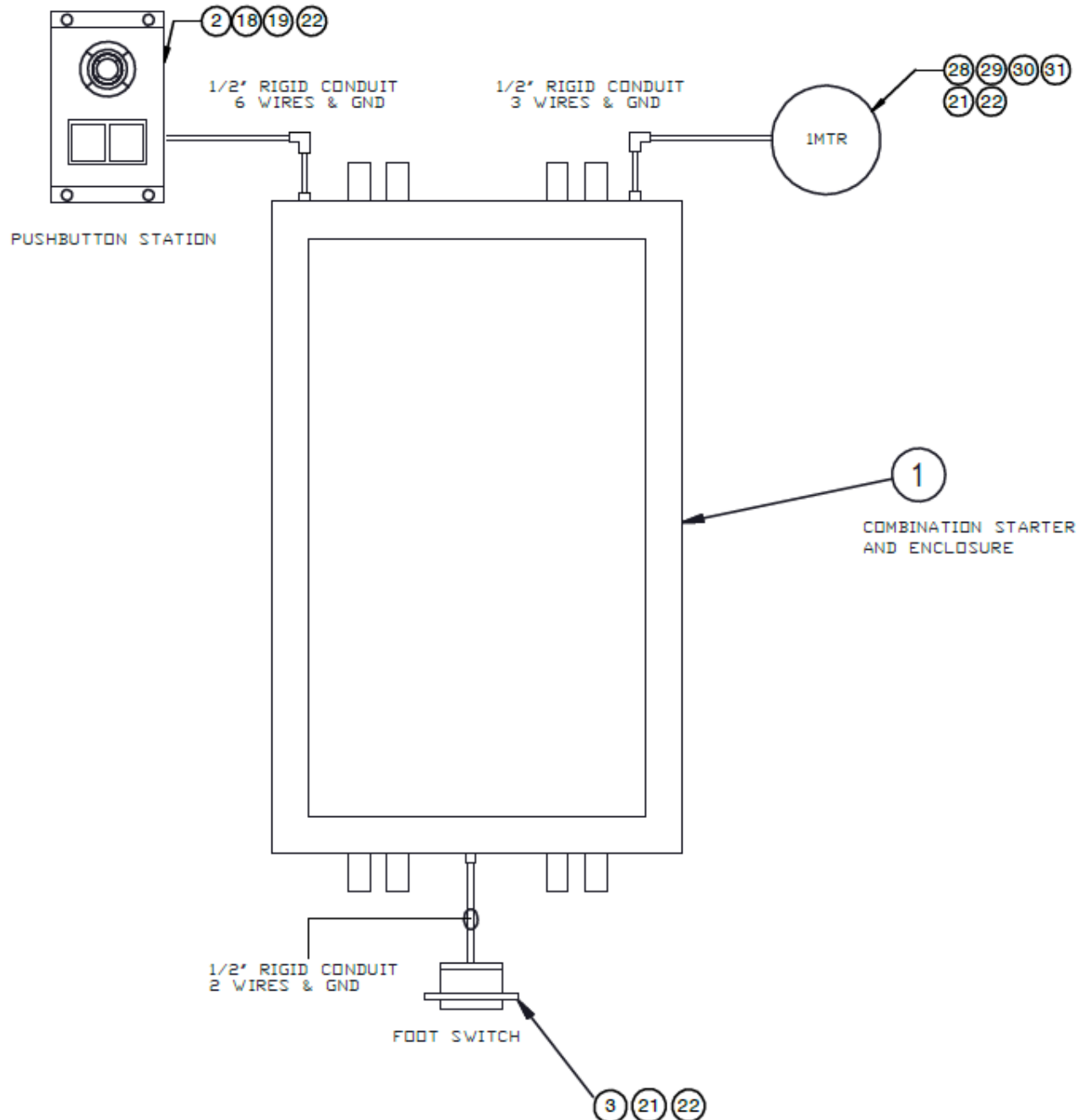
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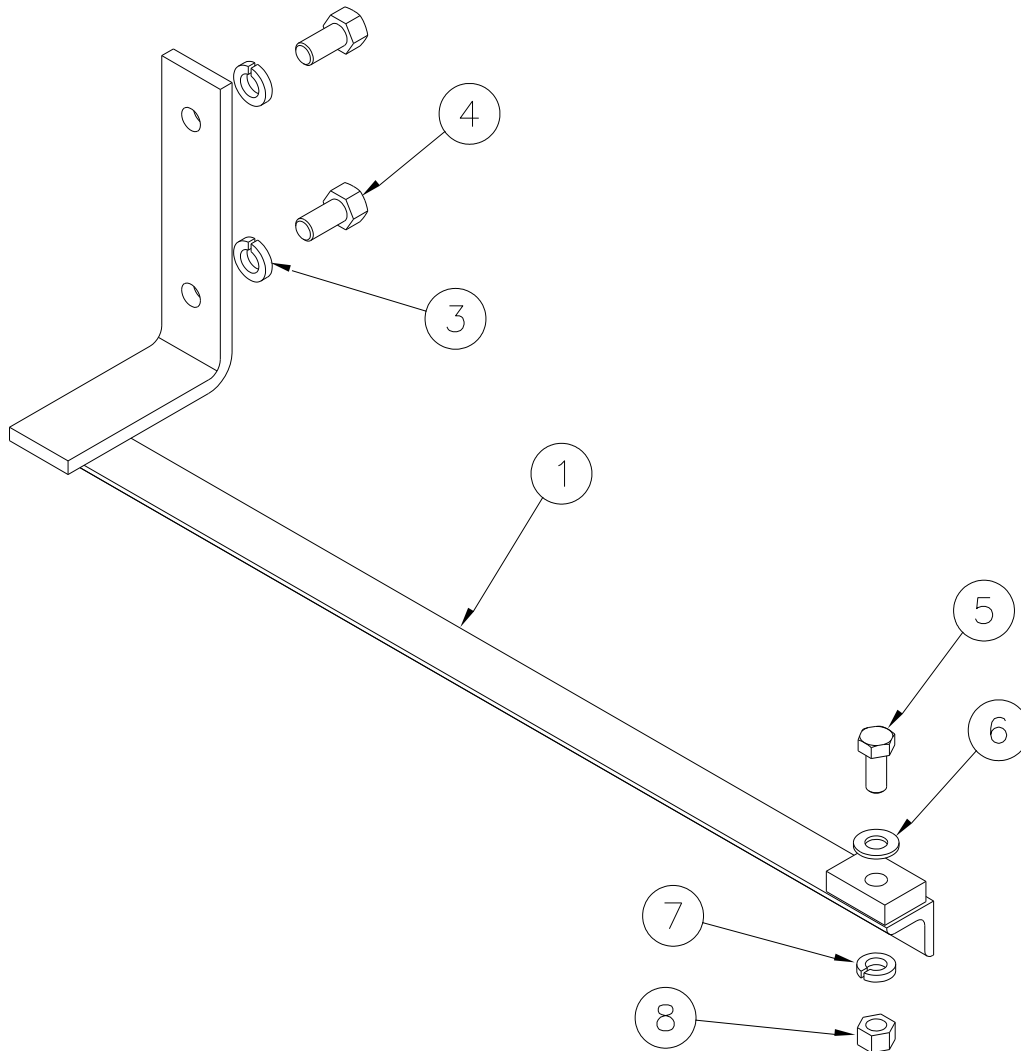
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Item	Part Number	Description	Qty
	715D1950	Electrical Circuit	
1	EC-3064	Motor Starter, Explosion Proof	
2	450A7575	Pushbutton Station	
3	114-20999	Foot Switch	
REF	119-40400	½" Flex Conduit	
REF	126-10416	#16 MTW Red	
REF	126-10616	#16 MTW White Wire	
REF	126-45046	#16 MTW Green W/ Yellow Wire	
REF	128-20008	Fitting ½"	
REF	128-30008	½" Conduit Elbow	
REF	128-90579	Capped Elbow ½"	
REF	128-90585	Fitting ½"	
REF	128-90587	Sealing Compound	
REF	128-90612	Packing Fiber	
REF	450A6808	Rigid Conduit Pipe Nipple ½"	
REF	450A6809	Rigid Conduit Pipe Nipple ½"X2"	
18	EC-1327-01	Disconnect, Male Red ¼	
19	EC-1326-01	Disconnect, Female Red ¼ F/I	
REF	310-08040	#8-32UNC X ½" LG.	
21	17108	Terminal, ¼ Blue Ring	
22	450A7393	Ring Terminal PV10-10R-L	
REF	J-6676	Plate-Adapter (NOT SHOWN)	
REF	G-1100-107020	Bolt, HEX Head Grade 5	
REF	G-1250-1070N	Washer-Flat	
REF	G-1251-1070R	Washer-Lock	
REF	G-1202-1070	Nut-Stop Elastic	
28	G-1251-1050R	LOCKWASHER, ¼ REGULAR	
29	G-1250-1050N	Flatwasher, ¼ Narrow	
30	G-1200-1050	Nut, ¼-20 HEX	
31	G-1100-105004	BOLT, ¼-20 HEX GR 5	
REF	EC-3102	Relay, Overload	

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
715J100EX

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