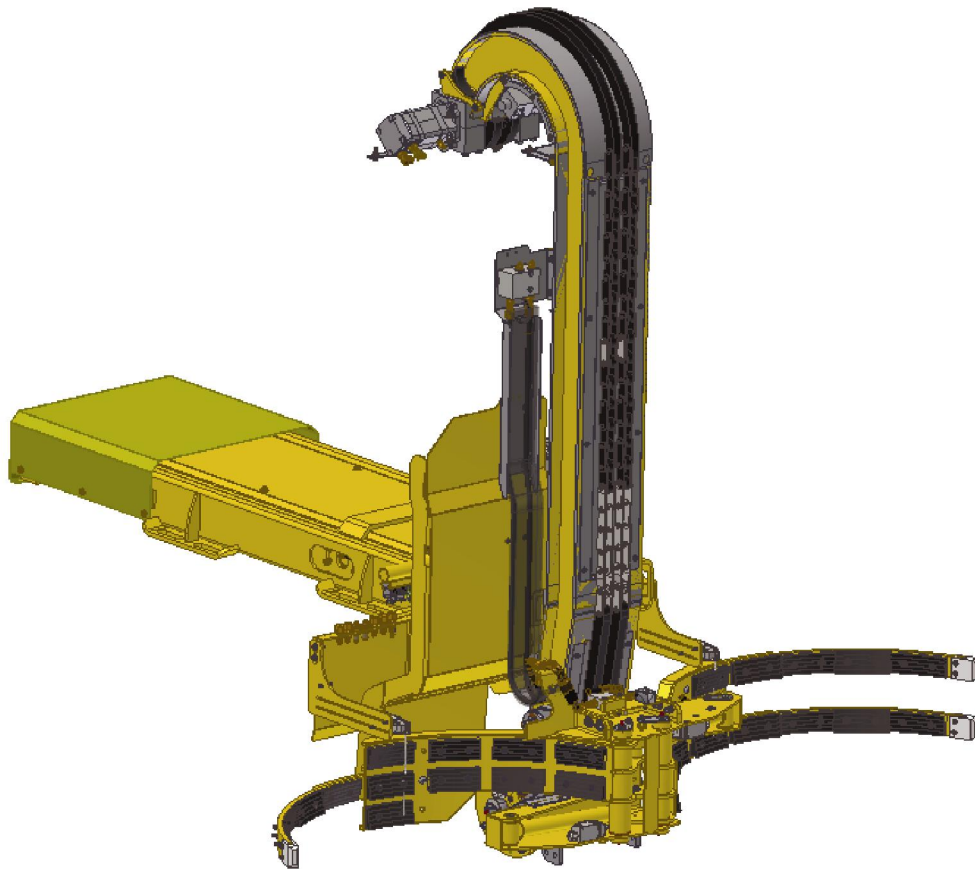


Parts Manual



Versa Hand Arm



equipment for the solid waste industry

labrieplus



Juggler

LEACH



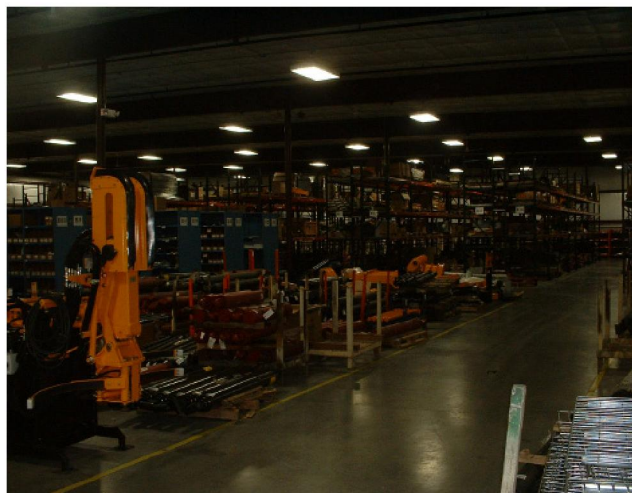
WITTKE

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TABLE OF CONTENTS

LABRIE PLUS	1
TABLE OF CONTENTS	2
CAPSCREW MARKING and TORQUE VALUES CHART	3

SECTION 1 Arm Assembly

Outer Frame.	5
Center Frame.	7
Inner Frame	9
Upright - Cane	11

SECTION 2 Grabber Assembly

Grabber Assembly - 96 Gallon.	13
Grabber Assembly - 300 Gallon.	15

SECTION 3 Hydraulics

Arm Hydraulics.	17
Motor Hydraulics - Dual	19
Motor Hydraulics - Single.	21
Grabber Hydraulics	22
Clamps and Accessories	23

SECTION 4 Valves

Arm Control Valve	25
300 Gallon Gripper Added Pressure Circuit.	27
HYV02674 Valve	28

SECTION 5 Electrical

Electrical	29
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SECTION 6 Cylinders

Extend/Retract Cylinder.	31
Grabber Cylinder - 96 Gallon.	32
Grabber Cylinder - 300 Gallon.	34

CAPSCREW MARKING AND TORQUE VALUES

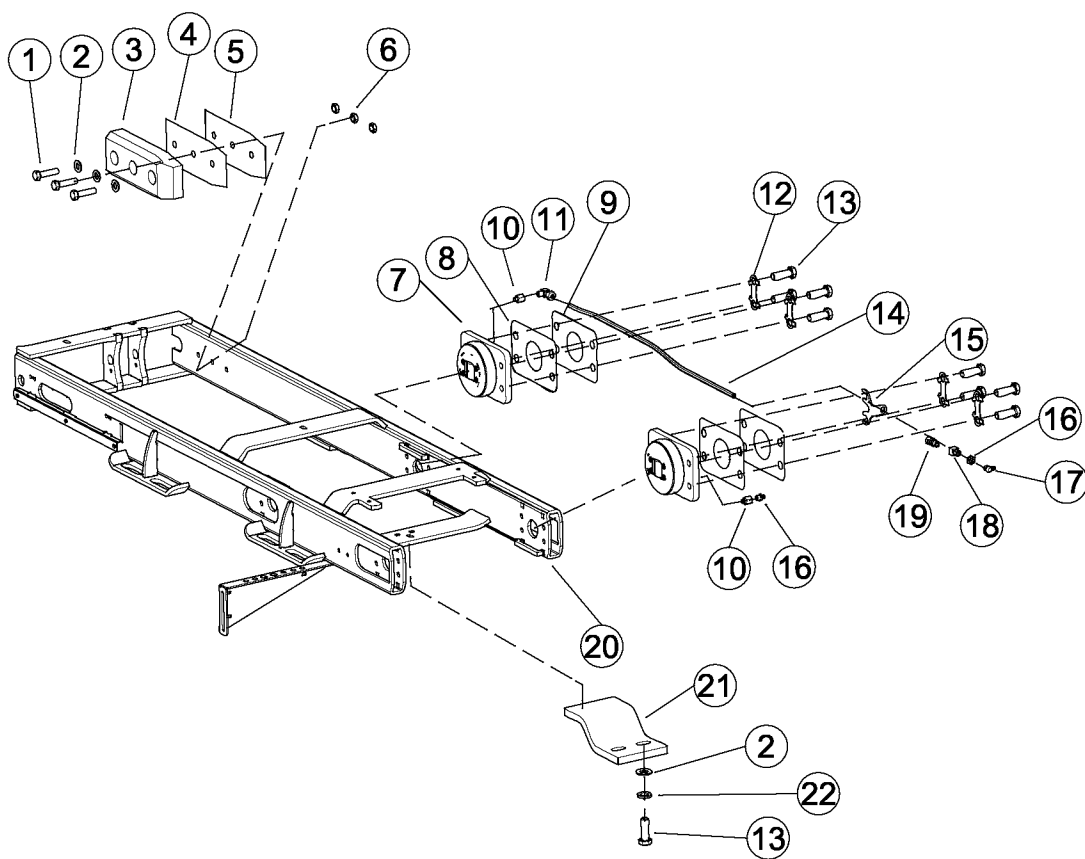
Usage	Much Used	Used at Times	Used at Times
Capscrew Diameter & Minimum Tensile Strength PSI	To 3/4 - 120,000 To 1 - 115,000	To 3/8 - 140,000 To 3/4 - 133,000	150,000
Quality of Material	Min. Commercial	Med. Commercial	Best Commercial
SAE Grade Number	5	6 or 7	8
CAPSCREW HEAD MARKINGS Manufacturers marks may vary. These are all SAE Grade 5 (3-line.) 		 	
Capscrew Body Size (Inches) - (Thread)	Torque Ft-Lb (kg m)	Torque Ft-Lb (kg m)	Torque Ft-Lb (kg m)
1/4 - 20	8 (1.11)	10 (1.38)	12 (1.66)
- 28	10 (1.38)		14 (1.94)
5/16 - 18	17 (2.35)	19 (2.63)	24 (3.32)
- 24	19 (2.63)		27 (3.73)
3/8 - 16	31 (4.29)	34 (4.70)	44 (6.09)
- 24	35 (4.84)		49 (6.78)
7/16 - 14	49 (6.78)	55 (7.61)	70 (9.68)
- 20	55 (7.61)		78 (10.79)
1/2 - 13	75 (10.37)	85 (11.76)	105 (14.52)
- 20	85 (11.76)		120 (16.60)
9/16 - 12	110 (15.21)	120 (16.60)	155 (21.44)
- 18	120 (16.60)		170 (23.51)
5/8 - 11	150 (20.75)	167 (23.10)	210 (29.04)
- 18	170 (23.51)		240 (33.19)
3/4 - 10	270 (37.34)	280 (38.72)	375 (51.86)
- 16	295 (40.80)		420 (58.09)
7/8 - 9	395 (54.63)	440 (60.85)	605 (83.67)
- 14	435 (60.16)		675 (93.35)
1 - 8	590 (81.60)	660 (91.28)	910 (125.85)
- 14	660 (91.28)		990 (136.92)

NOTES:

1. Always use the torque values listed above when specific torque values are not available.
2. The above is based on use of clean, dry threads.
3. Reduce torque by 10% when engine oil is used as a lubricant.
4. Reduce torque by 20% if new plated capscrews are used.
5. General Formula for calculating Torques is as follows: Torque in Inch Lbs. = .2 x Nominal Diameter of Screw x Loads in Lbs., where Load = 80% of Yield Strength, expressed in Lbs., not pounds per square inch.

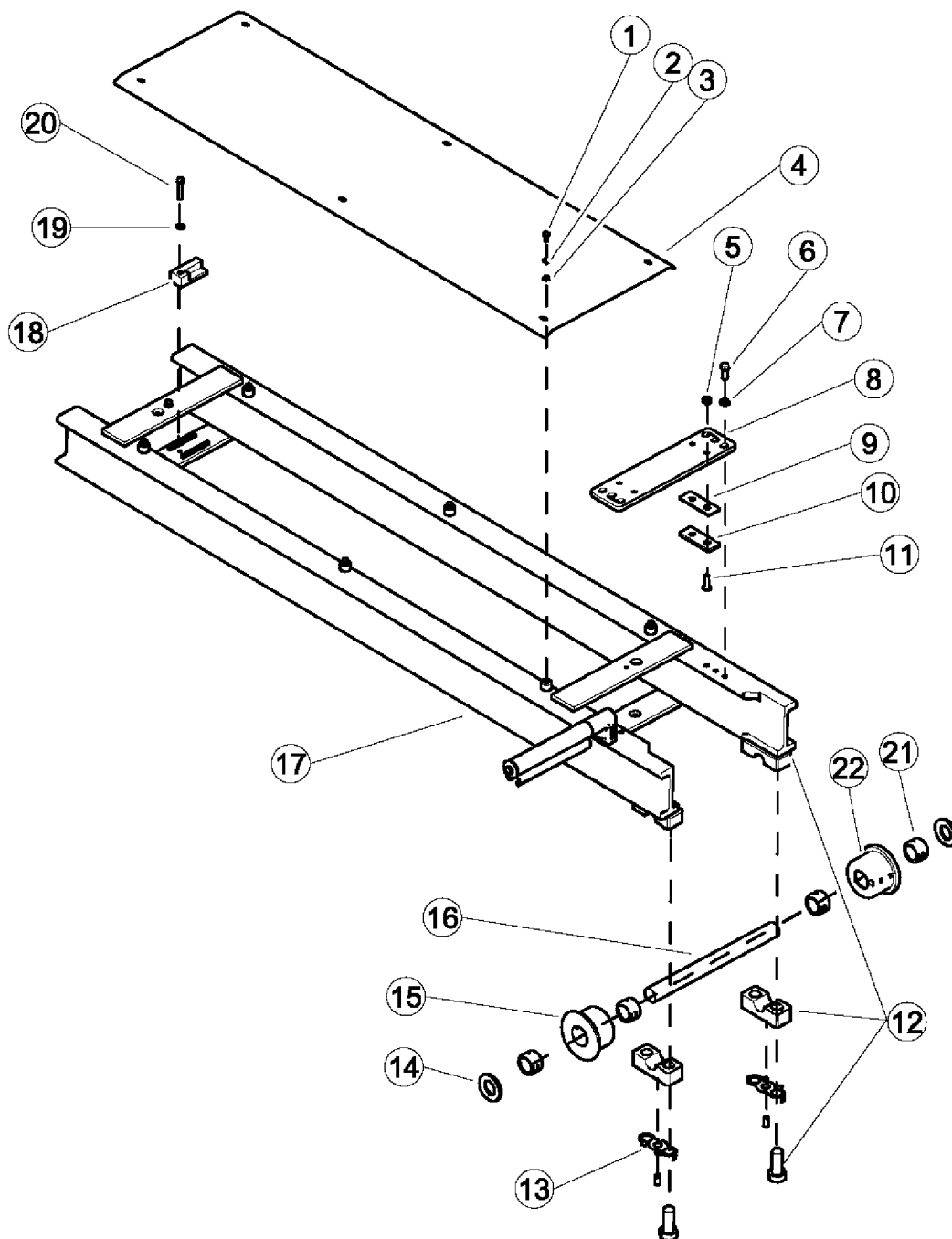
SECTION 1

OUTER FRAME



SECTION 1

CENTER FRAME -- ARMS BCB01100-03, -04 & -05 also BCB01115-03 & BCB01125-07



SECTION 1**CENTER FRAME** -- ARMS BCB01100-03, -04 & -05 also BCB01115-03 & BCB01125-07

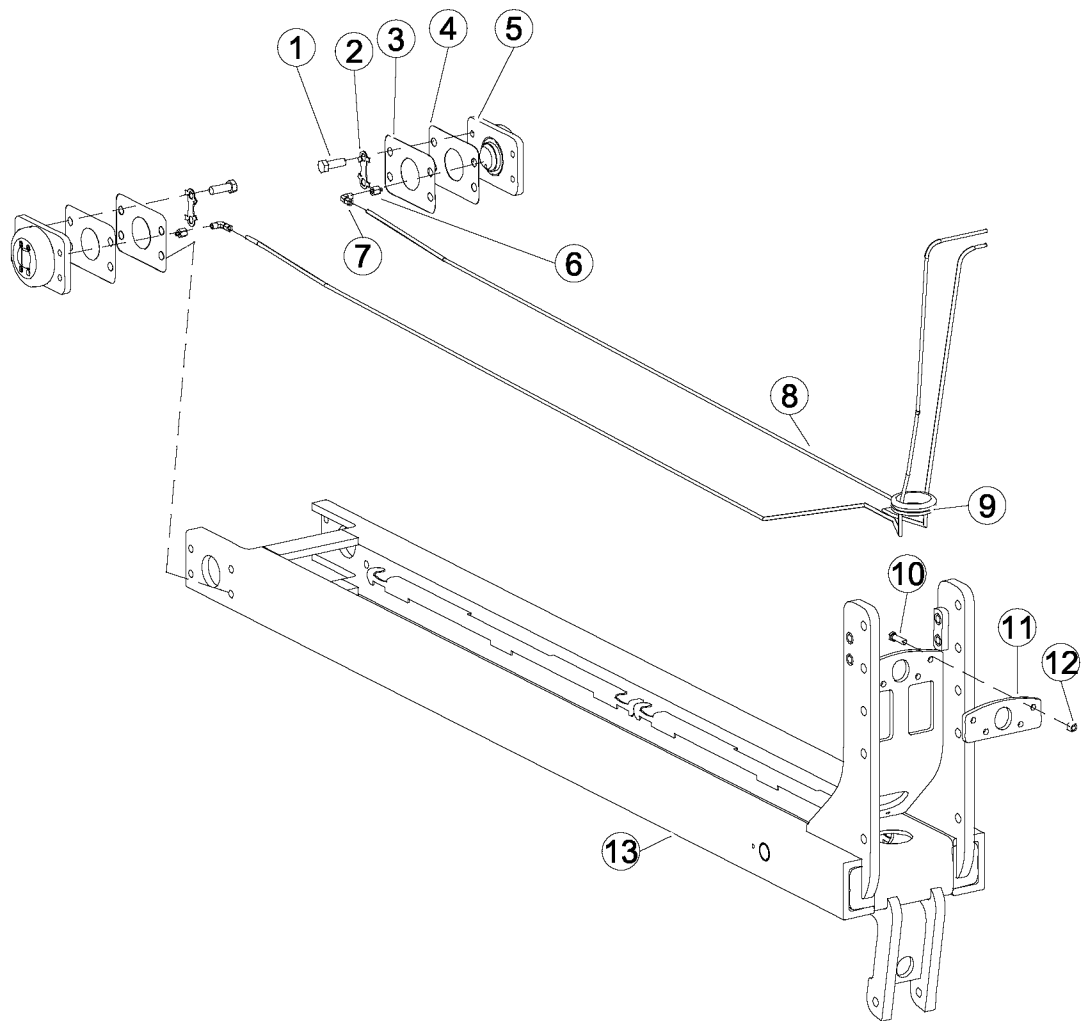
REF. NO.	PART NO.	DESCRIPTION	QTY.
1	QUB02601	CAPSCREW	6
2	QUR01270	WASHER, Lock	6
3	QUR01810	WASHER	6
4	HYV30188	COVER	1
5	QUE01500	NUT	4
6	QUB06240	CAPSCREW	6
7	QUR01922	WASHER	6
8	HYV30259	PLATE	1
9	HYV30260	SHIM	2
10	HYV30258	SHOE, Teflon	2
11	QUV07000	CAPSCREW	4
12	84772	ASSEMBLY, Pillow Block	2
13	HYV30261	RETAINER	2
14	HYV30249	SPACER, Plastic	2
15	HYV30182	ASSEMBLY, Roller (Includes Items 21 and 22)	2
16	143254	SHAFT	1
17	84829	WELDMENT, Center Frame	1
18	140556	BRACKET	1
19	QUR01590	WASHER	1
20	QUB03800	CAPSCREW	1
21	HYV30183	BEARING	4
22	143251	ROLLER 	2

SECTION 1
OUTER FRAME

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	QUB06250	BOLT	6
2	QUR01905	WASHER	8
3	HYV30242	GUIDE - Plastic	2
4	HYV30216	SHIM - 26 Ga. (.022")	2
5	HYV30215	SHIM - 22 Ga. (.034")	2
6	QUE00505	NUT	6
7	HYV30201	BEARING	4
8	HYV30203	SHIM - 22 Ga. (.034")	4
9	HYV30204	SHIM - 24 Ga. (.028")	4
10	BCB10028	ADAPTER	4
11	PNF04100	ELBOW	2
12	HYV30252	RETAINER, Bolt	4
13	QUB04502	BOLT	18
14	PNB00600	TUBING - Plastic	PER INCH
15	PNF02800	CONNECTOR	2
16	BCB01488	ADAPTER, Bulkhead	2
17	QUG00200	FITTING, Grease - straight	2
18	QUG00450	FITTING, Grease - 90°	2
19	145268	BRACKET	2
20	84797	FRAME, Outer	1
21	BCB10082	BRACKET	2
22	QUR01300	WASHER	2

SECTION 1

INNER FRAME

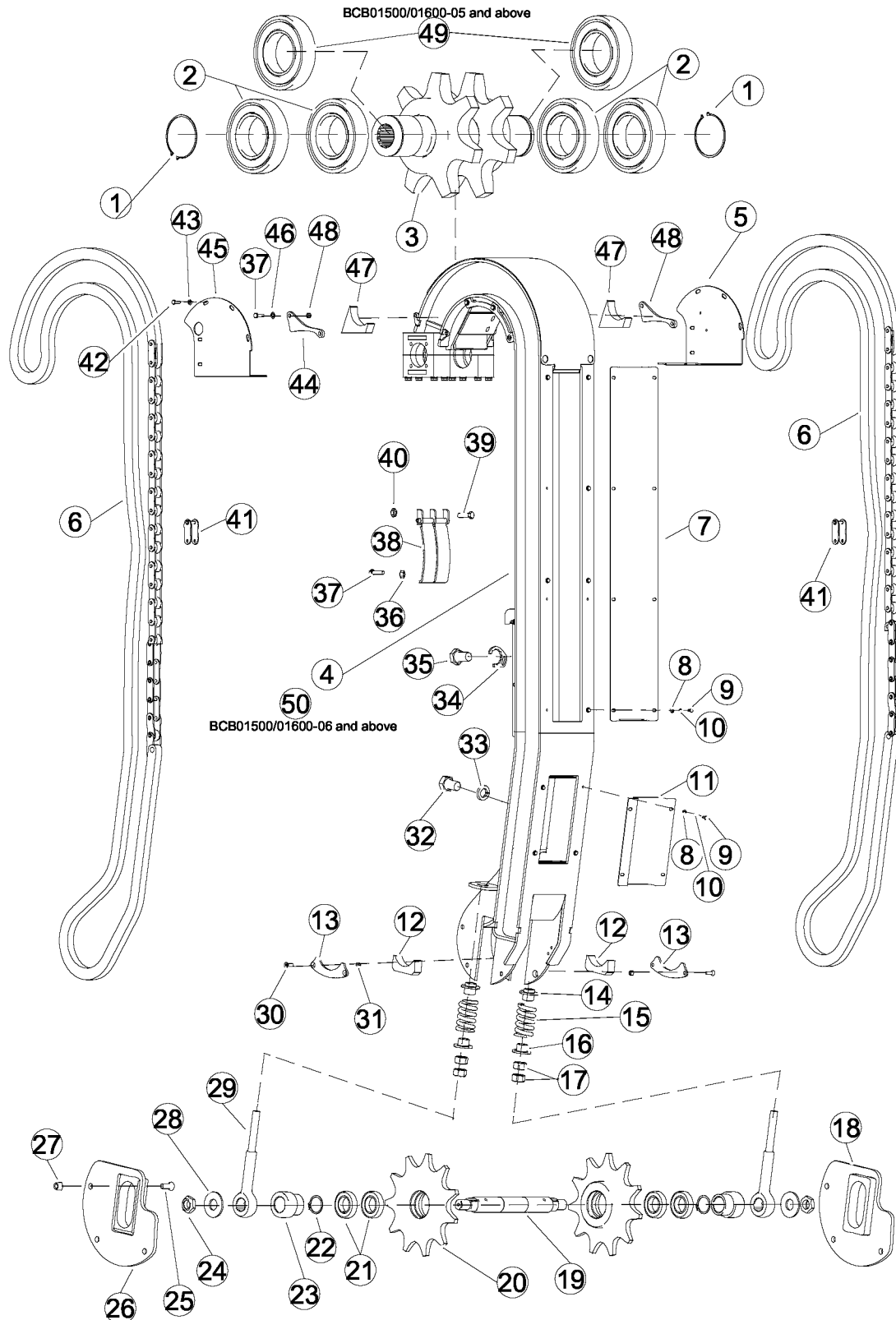


SECTION 1
INNER FRAME

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	QUB04502	BOLT	8
2	HYV30252	RETAINER	4
3	HYV30203	SHIM - 22 Ga. (.034")	2
4	HYV30204	SHIM - 24 Ga. (.028")	2
5	HYV30201	BEARING	2
6	BCB10028	ADAPTER	2
7	PNF04100	ELBOW	2
8	PNB00600	TUBING - Plastic	PER INCH 1
9	BCB100056	GROMMET	1
10	QUE01306	BOLT	4
11	141728	PLATE	1
12	QUB03501	NUT	4
13	141737	WELDMENT, Inner Frame	1

SECTION 1

UPRIGHT - CANE

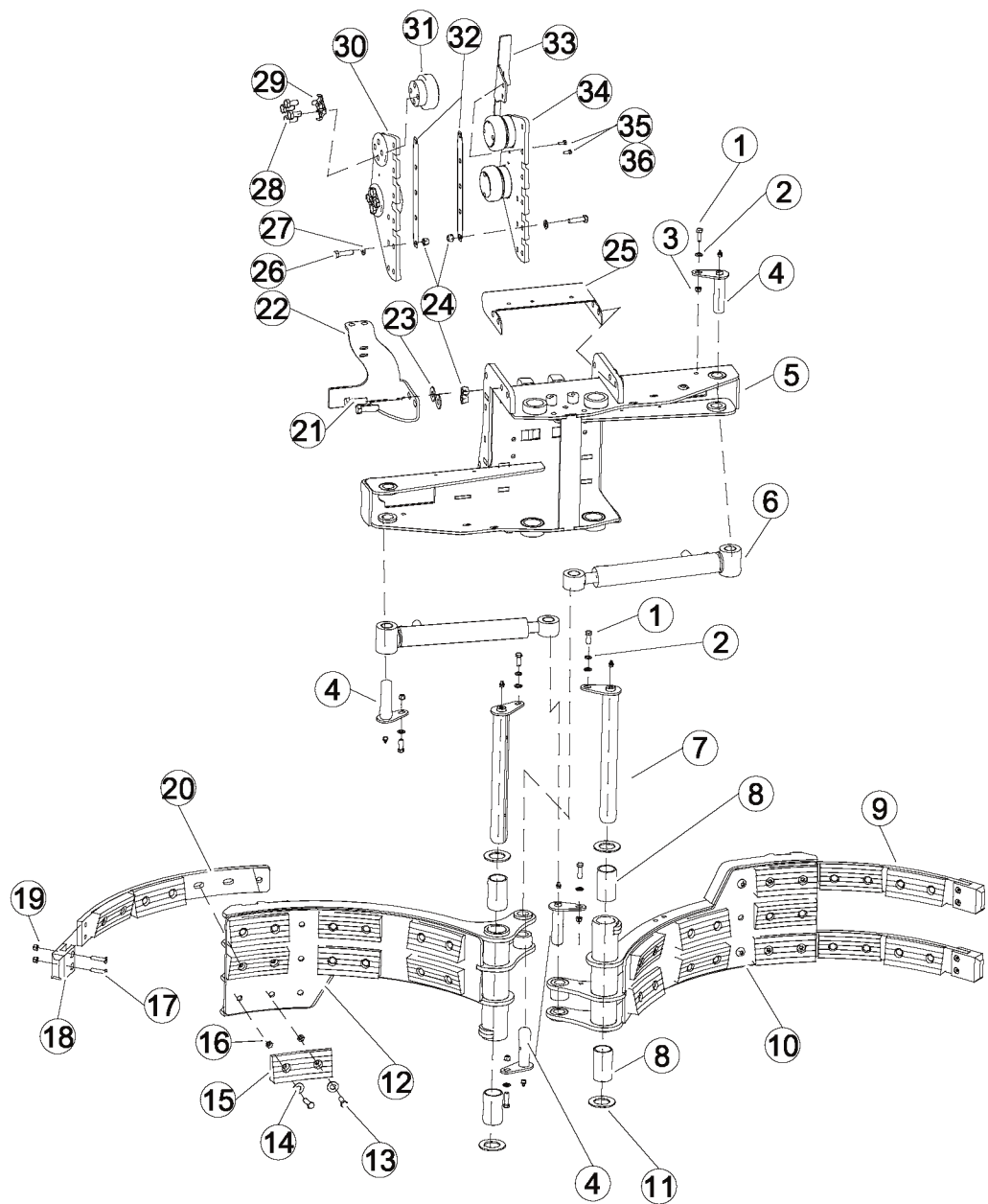


SECTION 1
UPRIGHT - CANE

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	BCB10045	SNAP RING	2
2	HYV30062	BEARING (BCB01500/01600-05 and Before)	4
3	BCB01473	SPROCKET ASSEMBLY - Upper	1
4	141652	WELDMENT, Upright (BCB01500/01600 - 05 and Before)	1
5	145207	COVER, Upper - Right Side	1
6	BCB01422	CHAIN ASSEMBLY	2
7	144838	COVER, Upper	1
8	QR38L9	NUT	12
9	QUB01899	BOLT	12
10	QUR01261	LOCKWASHER	12
11	BCB01445	COVER, Lower	1
12	141649	BUMPER, Lower	2
13	141660	PLATE, Compression	2
14	141708	BUSHING, Spring - Upper	2
15	QUR01020	SPRING	2
16	141711	BUSHING, Spring - Lower	2
17	QUE02476	NUT	4
18	BCB01466	PLATE, Left	1
19	141713	SHAFT	1
20	141280	SPROCKET, Lower	2
21	Q-0360	BEARING	4
22	Q-0357	SNAP RING	2
23	141714	SPACER	2
24	QEDEN1CBY	NUT	2
25	QV12CP114Y	BOLT	6
26	BCB01467	PLATE, Right	1
27	QUE01500	NUT	6
28	QUR02101	WASHER	2
29	BCB01468	BOLT, Tension	2
30	QUV02622	BOLT	6
31	QUE01302	NUT	6
32	144848	BOLT	1
33	QRS114Y	WASHER	1
34	144782	RETAINER	1
35	144783	BOLT	1
36	QUE00550	NUT	2
37	QUB06250	BOLT	2
38	BA-0474	TENSIONER, Chain	1
39	QUB03501	BOLT	2
40	QUE00800	NUT	2
41	BCB01482	CHAIN, Link	2
42	QUB02803	BOLT	8
43	QUR01810	NUT	2
44	141662	PLATE, Compression (was wrong with 141622)	2
45	145207-1	COVER, Upper - Left Side	1
46	QUR01590	WASHER	8
47	141650	BUMPER, Upper	2
48	QUE01300	NUT	4
49	QUR00613	BEARING (BCB01500/01600-06 and After)	2
50	155642	WELDMENT, Upright (BCB01500/01600 - 06 and After)	1

SECTION 2

GRABBER ASSEMBLY - 96 Gallon

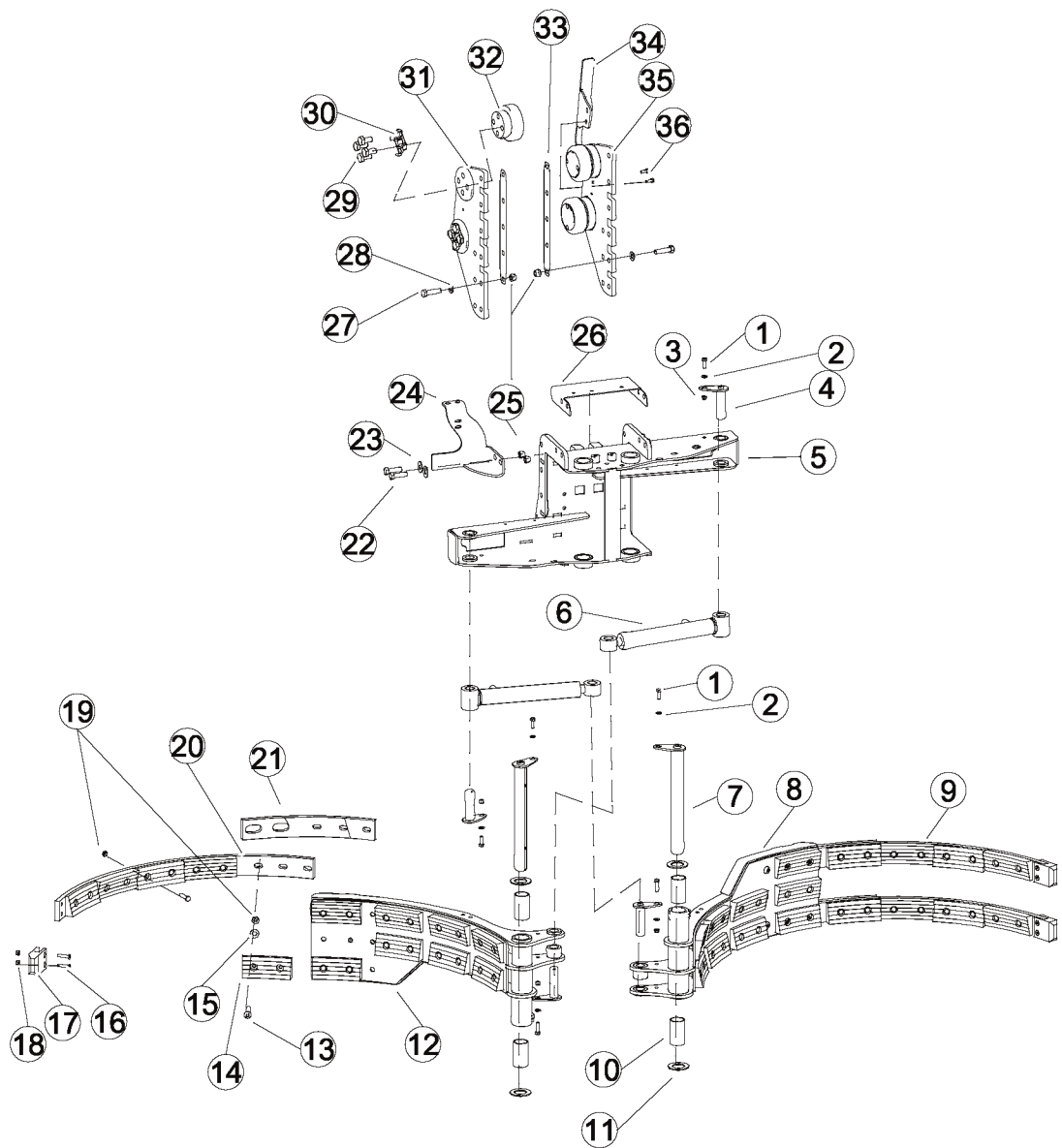


SECTION 2**GRABBER ASSEMBLY - 96 Gallon**

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	QUB02803	BOLT	6
2	QUR01270	WASHER	6
3	QUE01200	NUT	6
4	141782	PIN	4
5	141677	WELDMENT, Grabber Head	1
6	145120	CYLINDER	2
7	141696	PIN	2
8	QUB00482	BUSHING	4
9	143276	ASSEMBLY, Grabber (Includes Items, 15, 17, 18, 19, 20)	3
10	143314	PIVOT, Grabber - Dual	1
11	QUB00459	WASHER	4
12	143313	PIVOT, Grabber - Single	1
13	QUB06200	BOLT	A/R
14	QUR01590	WASHER	A/R
15	BCB01485	BUMPER	20
16	97073	NUT	A/R
17	97074	BOLT	6
18	97076	GUARD, End	3
19	97075	NUT	6
20	143275	GRABBER	3
21	QUB04601	BOLT	2
22	BCB19020	BRACKET	1
23	BCB10093	WASHER	2
24	QUE01500	NUT	16
25	141701	COVER	1
26	QUB06250	BOLT	14
27	QUR01300	WASHER	14
28	QB14M30Y	BOLT, Bearing	16
29	141967	RETAINER	4
30	145054	ASSEMBLY, Bearing Plate (Includes Items 28, 29 & 31)	1
	141963	PLATE, Bearing W/ Bearing Mounts	1
31	144846	BEARING	4
32	BA-FM22J-112-1278	SHIM - 22 Gauge	2
33	BCB19009	BRACKET, Switch Activate	1
34	145055	ASSEMBLY, Bearing Plate (Includes Items 28, 29 & 31)	1
35	QUB02000	BOLT	2
36	QUR01260	LOCKWASHER	2

SECTION 2

GRABBER ASSEMBLY - 300 Gallon

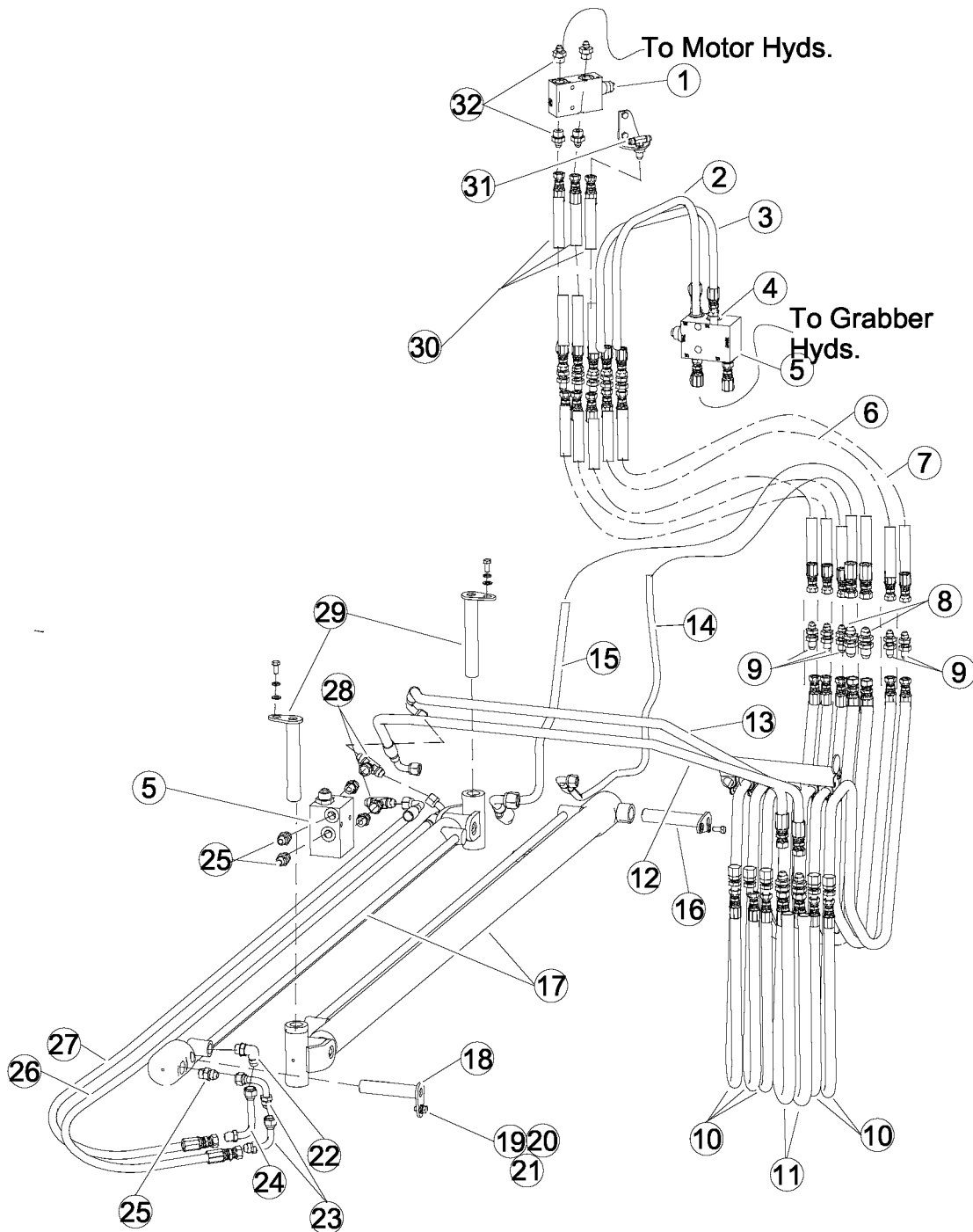


SECTION 2**GRABBER ASSEMBLY - 300 Gallon**

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	QUB02803	BOLT	6
2	QUR01270	WASHER	6
3	QUE01200	NUT	6
4	141782	PIN	4
5	141677	WELDMENT, Grabber Head	1
6	145109	CYLINDER	2
7	141696	PIN	2
8	141634	PIVOT, Grabber - Dual	1
9	143121	ASSEMBLY, Grabber (Includes Items 14, 17, 18, 19,21)	3
10	QUB00482	BUSHING	4
11	QUB00459	WASHER	4
12	144806	PIVOT, Grabber - Single	1
13	QUV06200	BOLT	A/R
14	BCB01485	BUMPER	30
15	QUR01950	WASHER	A/R
16	97074	BOLT	6
17	97076	GUARD, End	3
18	97075	NUT	6
19	97073	NUT	A/R
20	143032	GRABBER	3
21	143033	SPRING, Backing	3
22	QUB04601	BOLT	2
23	BCB10093	WASHER	2
24	BA19020	BRACKET	1
25	QUE01500	NUT	16
26	141701	COVER	1
27	QUB06250	BOLT	14
28	QUR01300	WASHER	14
29	QB14M30Y	BOLT, Bearing	4
30	141967	RETAINER	4
31	145054	ASSEMBLY, Bearing Plate (Includes Items 29, 30 & 32)	1
	141963	PLATE, Bearing W/Bearing Mounts	1
32	144846	BEARING	4
33	BA-FM22J- 112-1278	SHIM - 22 Gauge	2
34	BCB19009	BRACKET, Switch Activate	1
35	QUB02000	BOLT	2
36	QUR01260	LOCKWASHER	2

SECTION 3

ARM HYDRAULICS

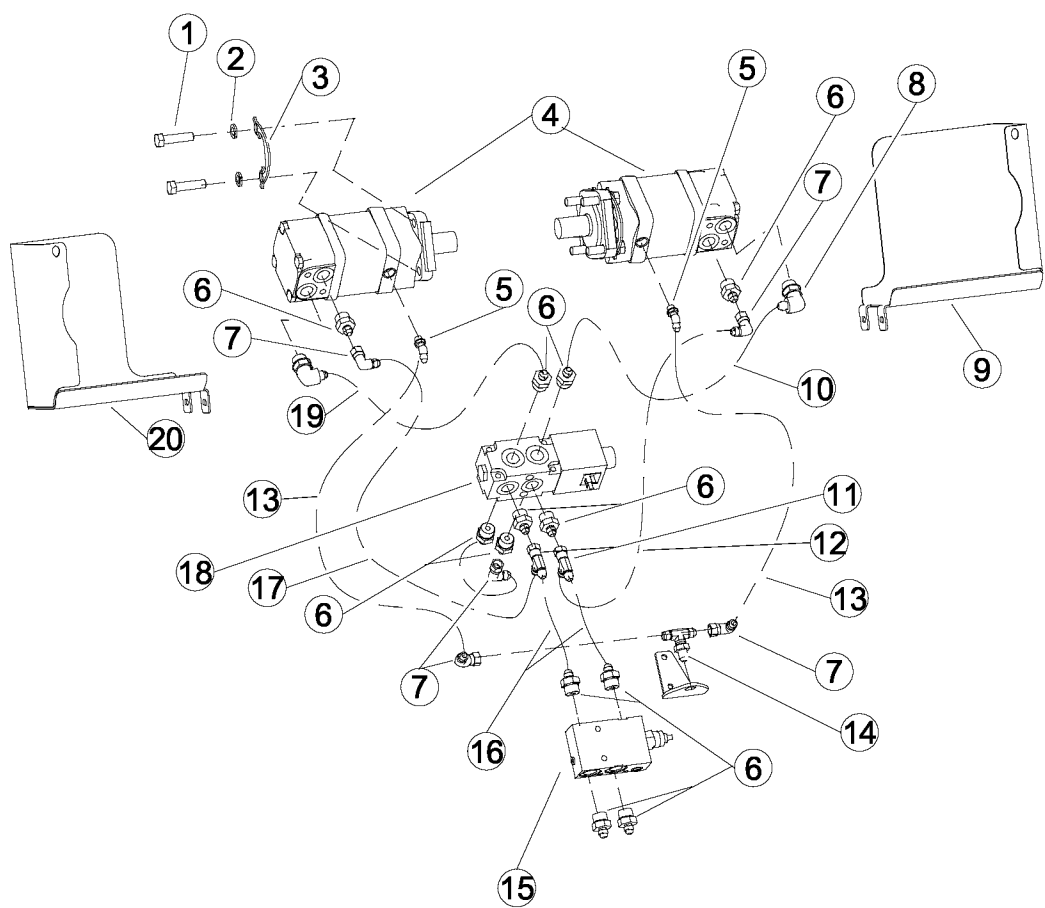


SECTION 3
ARM HYDRAULICS

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	HYV30125	VALVE, Overcenter	1
2	146135	HOSE	1
3	146136	HOSE	1
4	HYF04875	ADAPTER	4
5	HYV02674	VALVE, Holding	2
6	146136	HOSE	1
7	146135	HOSE	1
8	HYF06500	ADAPTER, Bulkhead	4
9	HYF06490	ADAPTER, Bulkhead	10
10	HYV30136	HOSE	5
11	H-0099	HOSE	2
12	91755	HOSE	1
13	91756	HOSE	1
14	146147	HOSE	1
15	146146	HOSE	1
16	BCB10053	PIN	1
17	HYC00179-01	CYLINDER REPLACED BY HYC00231 ON 2012-01-13	2
18	BCB10055	PIN	1
19	QUB02700	BOLT	4
20	QUR01800	WASHER	4
21	QUR01270	LOCKWASHER	4
22	HYF05125	ELBOW	1
23	HYF08050	ELBOW	2
24	HYF08052	ELBOW, Long	1
25	HYF05110	ADAPTER	6
26	91757	HOSE	1
27	91758	HOSE	1
28	HYF05830	TEE	2
29	BCB10054	PIN	2
30	146148	HOSE	3
31	HYF06090	TEE, Bulkhead	1
32	HYV04895	ADAPTER	4

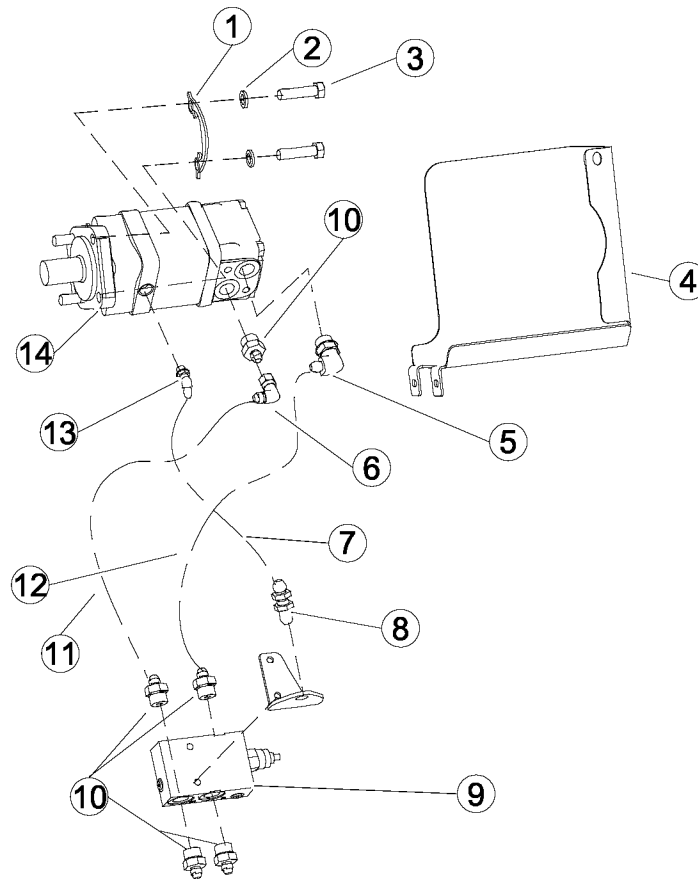
SECTION 3

MOTOR HYDRAULICS - Dual



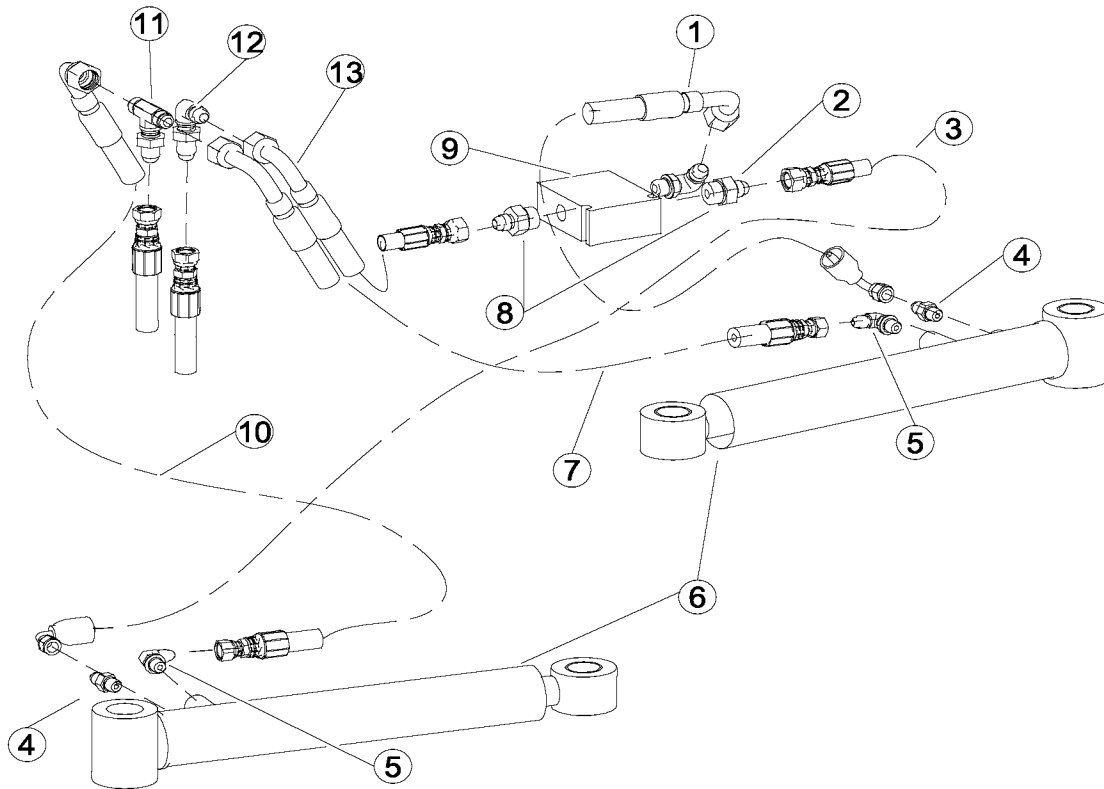
MOTOR HYDRAULICS - Dual

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	QUB06250	BOLT	8
2	QUR01300	WASHER	8
3	83765	RETAINER	4
4	HYM00135	MOTOR	2
5	H-A-6802-04-04	ELBOW	2
6	HYV04895	ADAPTER	12
7	HYF07950	ELBOW	5
8	H-A-6801-06-10	ELBOW	2
9	155648	COVER	1
10	146148	HOSE	1
11	HYF05824	TEE	2
12	146140	HOSE	1
13	146139	HOSE	2
14	HYF06090	TEE - Bulkhead	1
15	97146	VALVE - Holding	1
16	146145	HOSE	2
17	146143	HOSE	1
18	97147	VALVE - Flow Control	1
19	146144	HOSE	1
20	144869	COVER	1

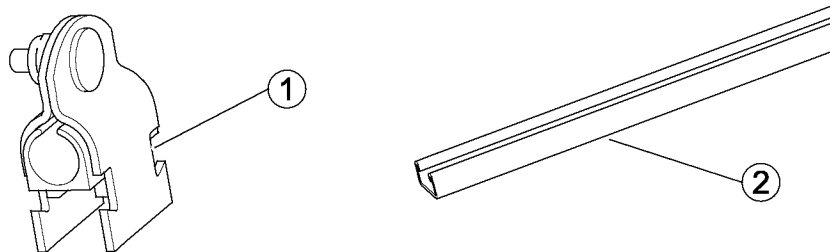
SECTION 3**MOTOR HYDRAULICS - Single**

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	83765	RETAINER	2
2	QUR01300	WASHER	4
3	QUB06250	BOLT	4
4	155648	COVER	1
5	H-A-6801-06-10	ELBOW	1
6	HYF07950	ELBOW	1
7	146139	HOSE	1
8	HYF06490	CONNECTOR, Bulkhead	1
9	97146	VALVE, Holding	1
10	HYV04895	ADAPTER	5
11	146470	HOSE	1
12	146469	HOSE	1
13	H-A-6802-04-04	ELBOW	1
14	HYM00135	MOTOR	1

GRABBER HYDRAULICS



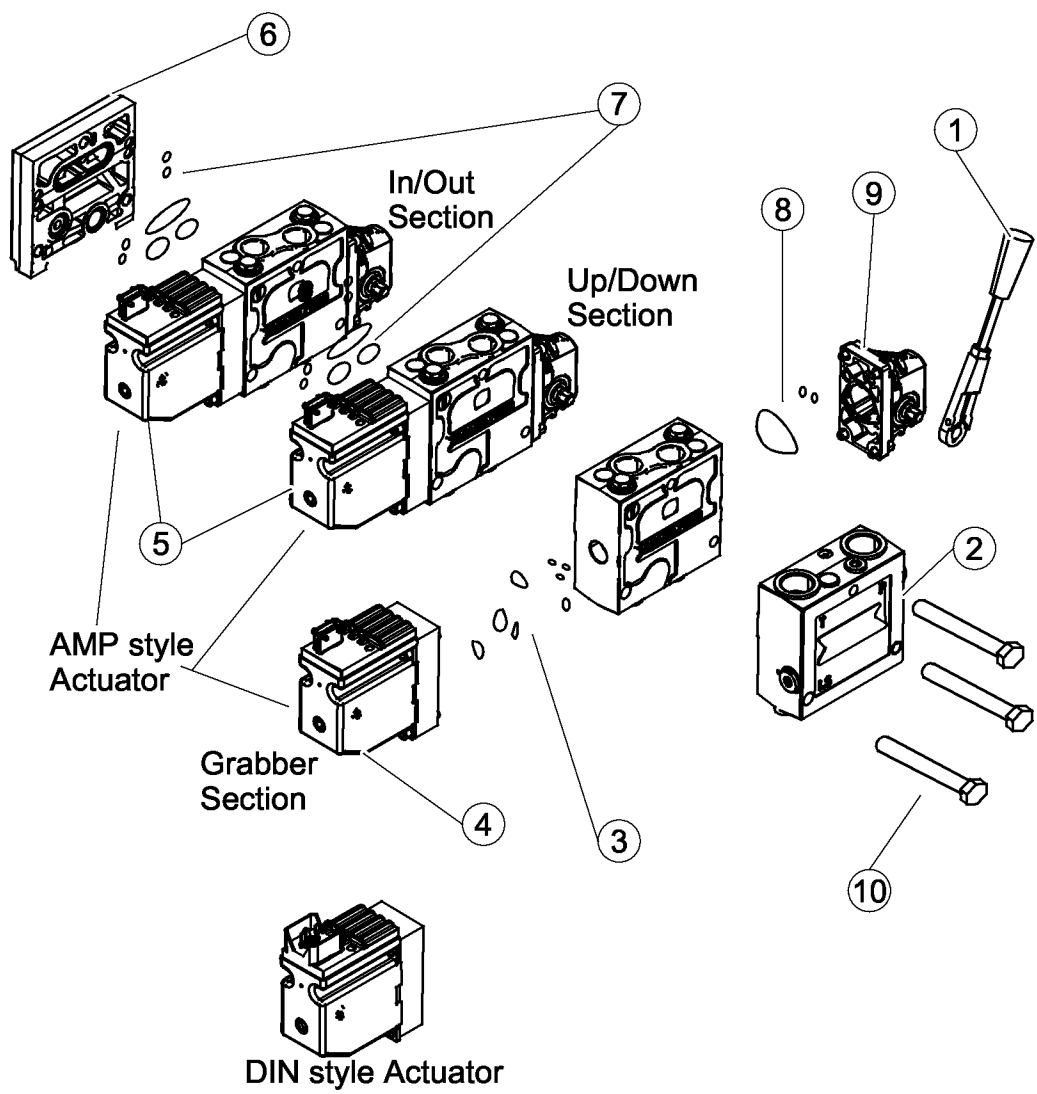
REF. NO.	PART NO.	DESCRIPTION	QTY.
1	146467	HOSE	1
2	HYF07400	ELBOW	1
3	146468	HOSE	1
4	HYF04845	ADAPTER	2
5	H-A-6801-04-04	ELBOW	2
6	145120	CYLINDER - 96 Gallon	2
	145109	CYLINDER - 300 Gallon	2
7	146465	HOSE	1
8	HYF04800	ADAPTER	2
9	FDC1-10-6T-33	VALVE, Flow Divider	1
10	146466	HOSE	1
11	HYV06090	TEE, Bulkhead	1
12	HYF06790	ELBOW, Bulkhead	1
13	BCB19026	HOSE	1

SECTION 3**CLAMPS AND ACCESSORIES**

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	HYS00150	TUBE or HOSE O.D. = .38"	A/R
	HYS00200	TUBE or HOSE O.D. = .50"	A/R
	HYS00250	TUBE or HOSE O.D. = .62"	A/R
	HYS00300	TUBE or HOSE O.D. = .75"	A/R
	HYS00305	TUBE or HOSE O.D. = 1.05"	A/R
	HYS00400	TUBE or HOSE O.D. = 1.00"	A/R
	HYS00425	TUBE or HOSE O.D. = 1.12"	A/R
	HYS00450	TUBE or HOSE O.D. = 1.25"	A/R
	HYS00453	TUBE or HOSE O.D. = 1.38"	A/R
	HYS00455	TUBE or HOSE O.D. = 1.50"	A/R
	HYS00460	TUBE or HOSE O.D. = .84"	A/R
	HYS00490	TUBE or HOSE O.D. = 1.62"	A/R
	HYS00500	TUBE or HOSE O.D. = 1.75"	A/R
	HYS00550	TUBE or HOSE O.D. = 2.00"	A/R
	HYS00560	TUBE or HOSE O.D. = 2.50"	A/R
	HYS00565	TUBE or HOSE O.D. = 3.12"	A/R
	HYS00566	TUBE or HOSE O.D. = 3.62"	A/R
2	HYS00570	CLAMP RAIL - 10 Foot	A/R
		NOTE: MEASURE OUTSIDE DIAMETER OF TUBE OR HOSE TO DETERMINE CLAMP REQUIRED	

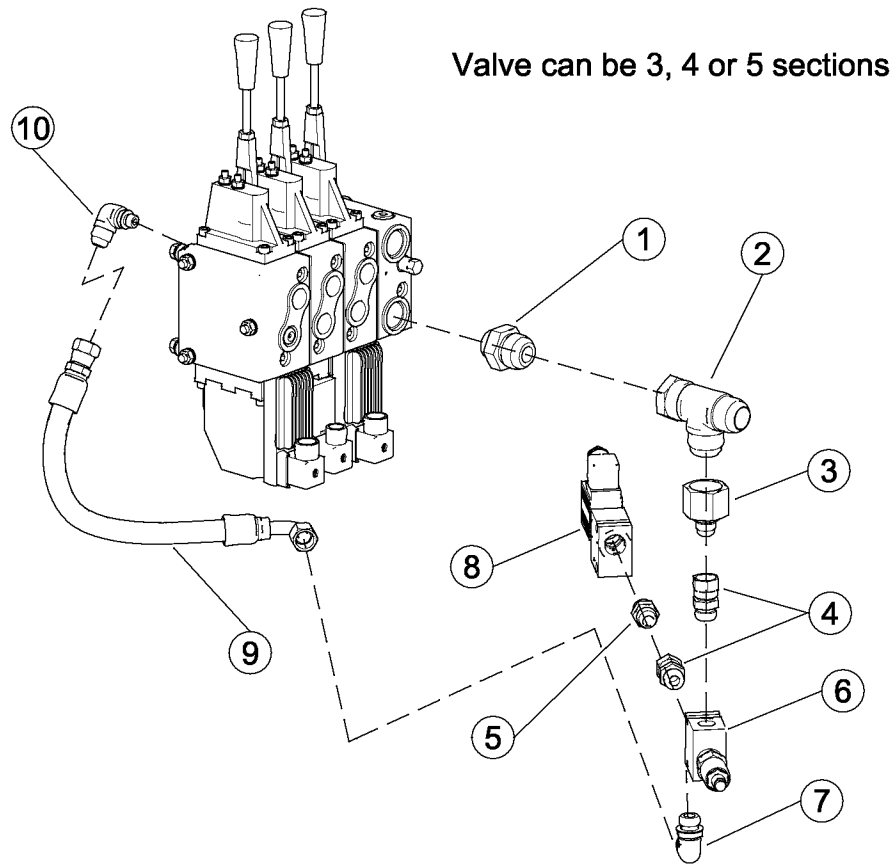
SECTION 4

ARM CONTROL VALVE



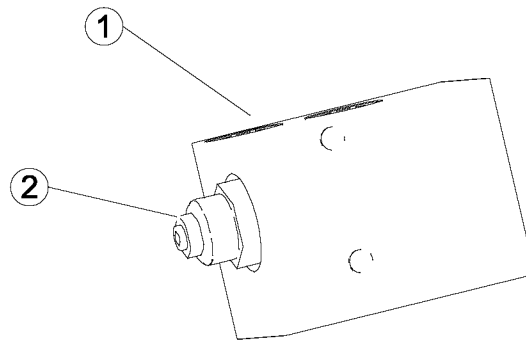
ARM CONTROL VALVE

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	HYV04316	HANDLE	A/R
2	HYV04433	SECTION, Inlet	1
3	HYV04322	KIT, Seal - Electric Actuator	A/R
4	HYV04328	ACTUATOR, AMP Style, On/Off - Gripper, Crusher or Tipper Section	A/R
	HYV04320	ACTUATOR, DIN Style, On/Off - Gripper, Crusher or Tipper Section	A/R
	79280	HARNESS, Adapter, AMP to DIN	A/R
5	HYV04327	ACTUATOR, AMP Style, Proportional - In/Out or Motor Section	A/R
	HYV04321-01	ACTUATOR, DIN Style, Proportional - In/Out or Motor Section	A/R
	79461	HARNESS, Adapter, AMP to DIN - In/Out Section	A/R
	79462	HARNESS, Adapter, AMP to DIN - Up/Down Section	A/R
6	HYV04377	SECTION, End	1
7	HYV04429	KIT, Seal, Between Sections	A/R
8	HYV04330	KIT, Seal, Handle End	A/R
9	HYV04315	ASSEMBLY, Actuator - Handle End (Includes Items 1 & 8)	A/R
10	HYV04325	KIT, Stud (3 Section)	A/R
	HYV04329	KIT, Stud (4 Section)	A/R
	HYV04410	ASSEMBLY, Section, On/Off - Grabber or Crusher.	A/R
	HYV04383	ASSEMBLY, Section, Proportional - Motor	A/R
	HYV04420	ASSEMBLY, Section, Proportional - In/Out	A/R
	HYV04400-01	ASSEMBLY, Valve - Complete (3 Section)	
	HYV04401-01	ASSEMBLY, Valve - Complete (4 Section)	

SECTION 4**300 GALLON GRIPPER ADDED PRESSURE CIRCUIT**

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	HYF05113	ADAPTER	1
2	HYF28030	TEE	1
3	HYF10020	ADAPTER	1
4	HYF05170	ADAPTER	2
5	HYF05110	ADAPTER	1
6	HYV06150	RELIEF VALVE	1
7	HYF05125	ELBOW	1
8	HYV00866	SOLENOID VALVE	1
9	10755	HOSE	1
10	HYF07190	ELBOW	1

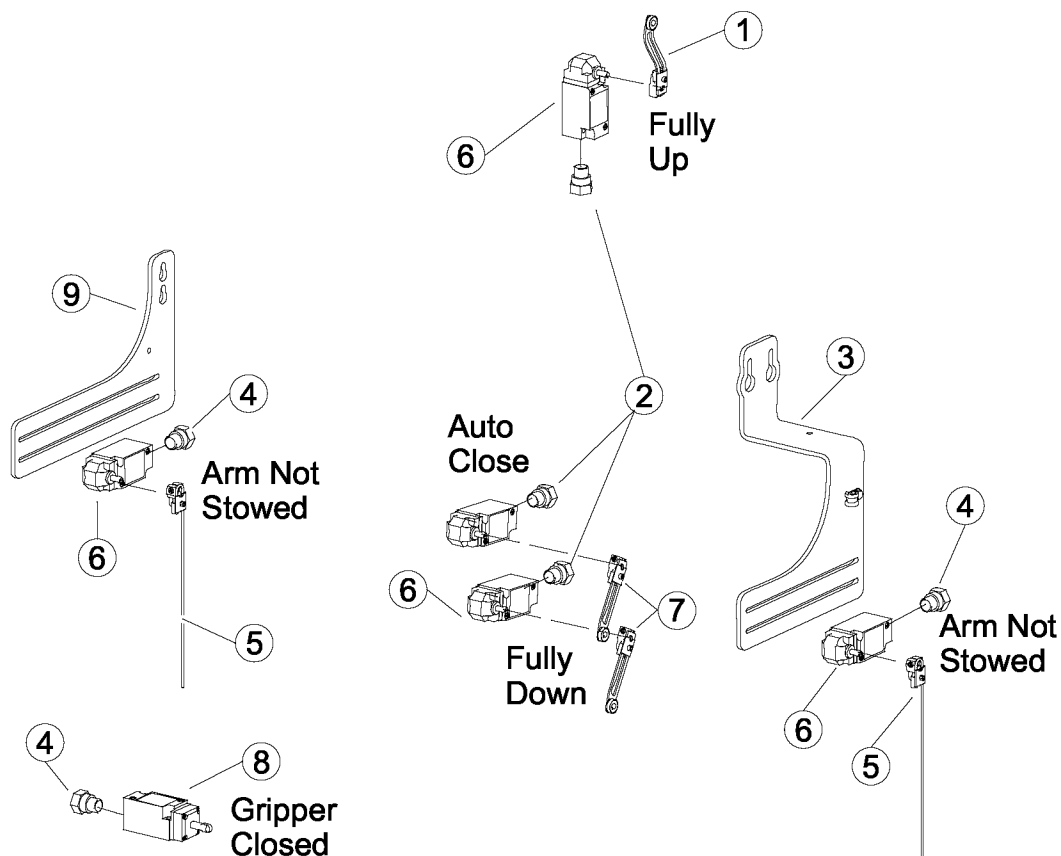
HYV02674 VALVE



REF. NO.	PART NO.	DESCRIPTION	QTY.
1	HYV02674	ASSEMBLY, Valve - Complete	1
2	HYV02669	CARTRIDGE	1

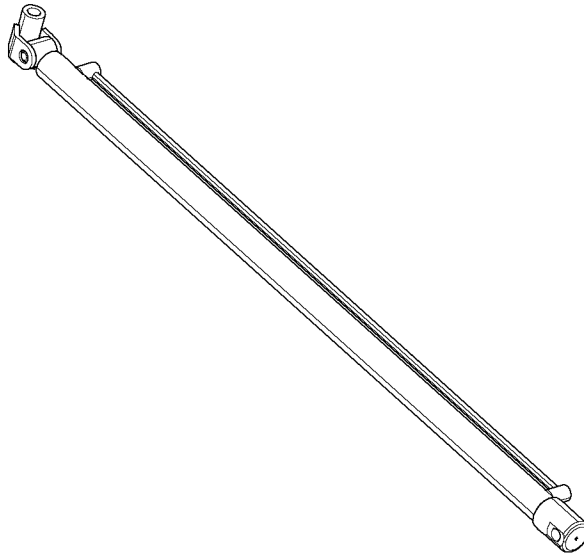
SECTION 5

ELECTRICAL



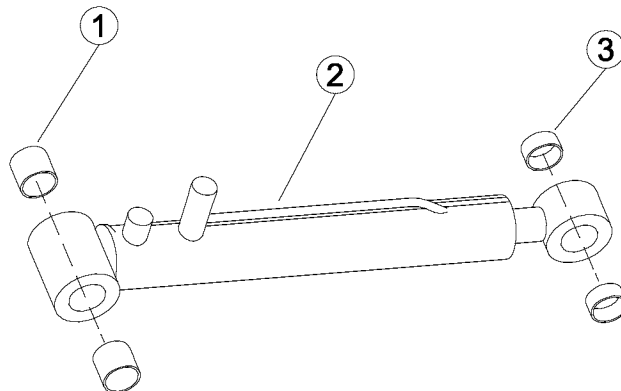
REF. NO.	PART NO.	DESCRIPTION	QTY.
1	141732	ACTUATOR ARM, Roller - Bent	1
2	ELC00200	CONNECTOR	3
3	BA-FM14-5-2412	BRACKET	1
4	ELC00140	CONNECTOR	2
5	ELI00850	ACTUATOR ARM, Rod Type	2
6	ELI00550-01	SWITCH	5
7	ELI00852	ACTUATOR ARM, Roller - Longer	2
8	ELI00530	SWITCH	1
9	141040	BRACKET	

EXTEND/RETRACT CYLINDER



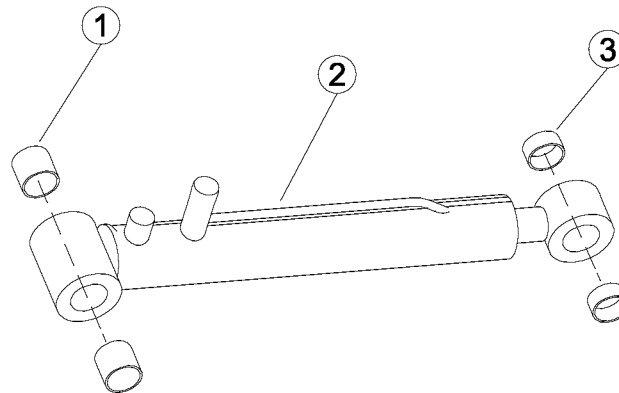
REF. NO.	PART NO.	DESCRIPTION	QTY.
1	HYC00179-01	CYLINDER	2
	HYJ00179-01	KIT, Seal	2

GRABBER CYLINDER - 96 Gallon



REF. NO.	PART NO.	DESCRIPTION	QTY.
1	HYC08007	BUSHING	2
2	HYC00229	CYLINDER, Assembly	2
	HYJ00229	KIT, Seal - Use for HYC00229	1
3	HYC08006	BUSHING	2

GRABBER CYLINDER - 300 Gallon



REF. NO.	PART NO.	DESCRIPTION	QTY.
1	HYC08005	BUSHING	2
2	HYC00217	CYLINDER, Assembly	2
	HYJ00217	KIT, Seal - Use for HYC00217	1
3	HYC08004	BUSHING	2

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