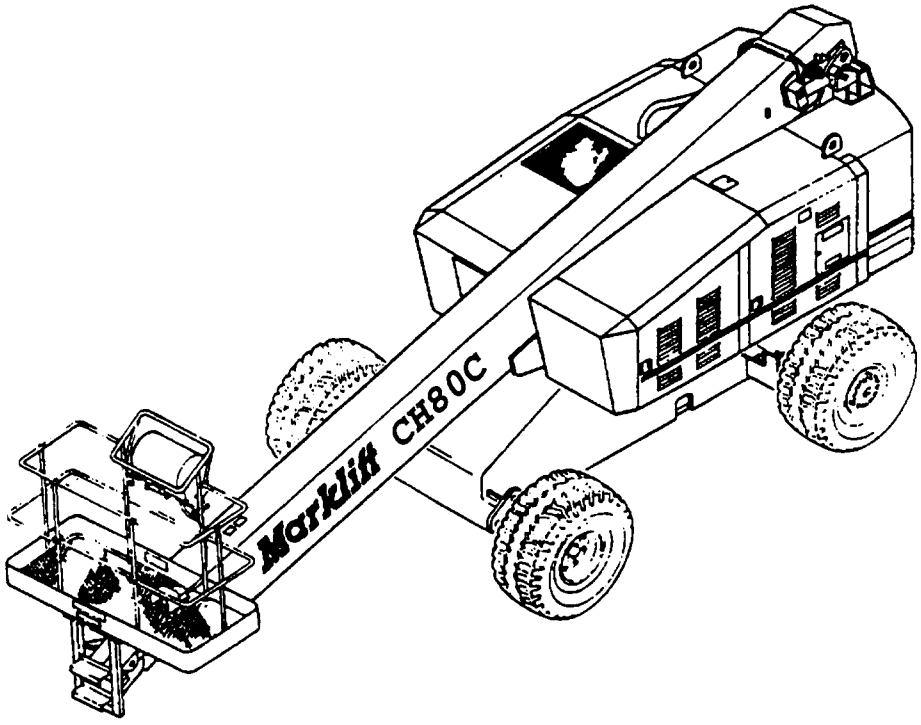
Mark Industries

SELF-PROPELLED BOOM
MODEL CH80C



PARTS MANUAL

MARK INDUSTRIES
106 12th Street S.E.
Waverly, Iowa 50677
(319) 352-3920
(319) 352-5727 FAX

Issued: JAN 96
P/N 17138

SECTION 1 CONTAINS:

PAGE	TITLE
1.1	NOTICE TO USERS
1.2	TABLE OF CONTENTS
1.6	HOW TO USE THE PARTS MANUAL
1.8	HOW TO ORDER PARTS
1.10	ABBREVIATIONS AND SYMBOLS

DISCLAIMER

MARK INDUSTRIES strives to include in the Parts Manual, information and illustrations that are accurate, complete, and current. Due to on-going changes and revisions by our many suppliers, it is often impossible to show all variations of a given assembly. Therefore, this information is subject to change without notice.

NOTICE

The Parts Manual, though sometimes helpful in the process of assembly / disassembly, is NOT intended to be assembly / disassembly instructions.

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Mark Industries

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1.10	ABBREVIATIONS AND SYMBOLS

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4.36	ROTATION GEARBOX MOTOR
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4.40	GROUND CONTROL BOX
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4.48	MAIN PUMP CONTROL
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4.50	MAIN VALVE
4.52	FUNCTION VALVE
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SECTION 7 "OPTIONS" CONTAINS:

Note: Option pages not available with this printing.

SECTION 8 "ALPHABETICAL LIST"

NOTES

HOW TO USE THE PARTS MANUAL

Mark Industries

1

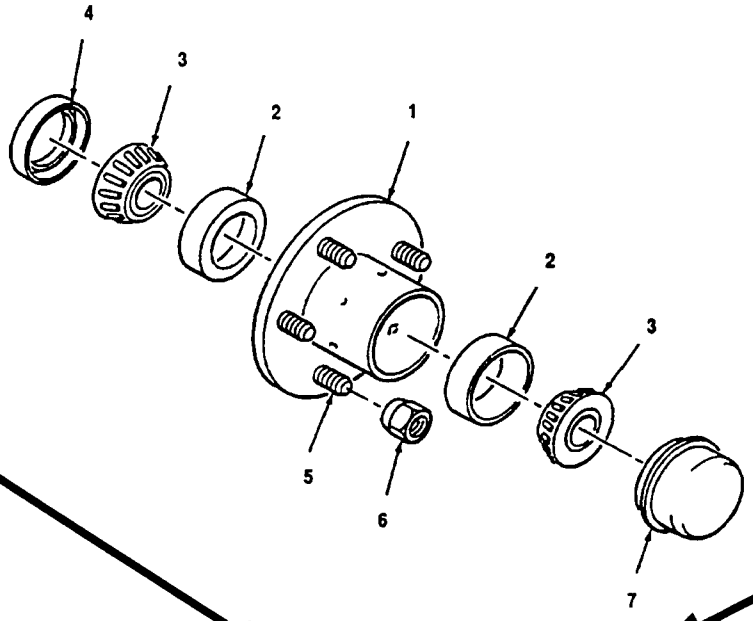
Mark Industries

HUB ASSEMBLY

Model CH80C
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Ref.	Part No.	Description	Qty	Remarks
-	134	Assembly, Hub (Studs in Assembly are not used)	Ref.	Incl. items 1 thru 7 To order complete assembly, order P/N 134 Hub & 5 each of 160681 Stud.
1	65684	Hub	1	
2	65686	Race, Bearing	2	
3	65059	Bearing	2	
4	66113	Seal, Grease	1	
5	65685	Studs, Wheel (Not used on machine - See Note)	5	Replace with item 8.
6	61316	Nut, Lug	5	
7	137	Dust Cap	1	
8	160681	Studs, Wheel (Used on machine)	5	(Qty 10 per machine)

WHEN ORDERING PARTS, SPECIFY MODEL NUMBER, SERIAL NUMBER AND DESCRIPTION OF PART REQUIRED

PARTS MANUAL FORMAT

1. **SECTION** refers to the major divisions of the Parts Manual.

2. **PAGE** indicates the page number of the illustration or parts list.

3. The **REF.** number shown in the first column of the parts list, corresponds to the callout in the illustration on the same page or facing page.

4. The Mark Industries **PART NUMBER** is shown in the second column for items that are serviceable.

5. **DESCRIPTION** of the part or assembly is shown in the third column.

6. **QUANTITY** indicates the quantity of items used in the assembly or sub-assembly directly above.

   A. Ref. indicates the item is not serviceable or is part of another assembly.

   B. AR indicates the item is used as required. Some quantities may be specified "For Machine".

7. Indented items are items that are included in the subassembly directly above. See the example below for the indenture system use in this manual.

   EXAMPLE:

Ref.	Part No.	Description	Qty
	123456	Assembly	Ref.
1	234567	Part of Assembly	1
2	345678	Subassembly	1
	456789	Part of Subassembly	2

8. Common abbreviations and symbols that are used throughout this manual are shown on page 1.10 for reference.

9. **REMARKS** are shown in the fifth or far right column. The Remark column will include page number references for more detailed breakdowns, keyed items included in Kits indicated by symbols * ^ , sizes and special information.

HOW TO ORDER PARTS

Mark Industries

1B

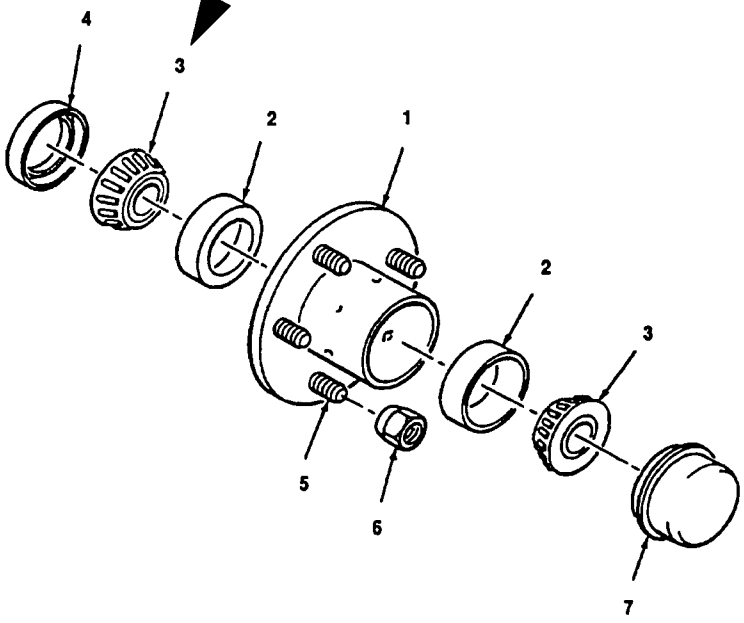
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Mark Industries

HUB ASSEMBLY

Model CH80C
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1D

1C

Ref.	Part No.	Description	Qty	Remarks
-	134	Assembly, Hub (Studs in Assembly are not used)	Ref.	Incl. items 1 thru 7 To order complete assembly, order P/N 134 Hub & 5 each of 160681 Stud.
1	65684	Hub	1	
2	65686	Race, Bearing	2	
3	65059	Bearing	2	
4	66113	Seal, Grease	1	
5	65685	Studs, Wheel (Not used on machine - See Note)	5	Replace with item 8.
6	61316	Nut, Lug	5	
7	137	Dust Cap	1	
8	160681	Studs, Wheel (Used on machine)	5	(Qty 10 per machine)

WHEN ORDERING PARTS, SPECIFY MODEL NUMBER, SERIAL NUMBER AND DESCRIPTION OF PART REQUIRED

1. **Find the Mark Industries Part Number.**

   A. Using the Table of Contents, find the Section and Page Number.

   B. Match the required part to the illustration and note the callout number.

   C. Find the corresponding Reference number in the parts list below the illustration or on the facing page.

   D. Use the Mark Industries Part Number listed next to the Ref. number when ordering.

   E. Always include the complete part number, as shown in the Parts Manual, along with the description of the part and specify the quantity of the part you wish to order.

   F. Anticipate your spare parts requirements.

   G. Place orders early in the day.

   H. Keep a supply of normal maintenance and recommended spare parts in stock.

   I. Obtain recommended parts stocking requirements from Mark Industries or your Mark Industries Distributor.

2. **Customer Ordering:**

   Genuine Mark Industries parts are available worldwide and must be ordered through your local Mark Industries Distributor. For your nearest Mark Industries Distributor, contact the Parts Sales Center at the numbers listed below.

3. **Distributor Ordering: Listed below in the respective order of preference, are the methods of ordering parts.**

   A. ON-LINE (Preferred)

   B. FAX: (601) 393-1751

   C. PHONE: (601) 393-1351

   D. MAIL: Terex – Southaven
   8800 Rostin Road
   P.O. Box 923
   Southaven, MS 38671–0923

   NOTE: If your Parts Department is not ON-LINE, contact the PARTS SALES CENTER for information on using this system.

4. Any errors, comments, or suggestions should be fowarded to the Director of Product Support at the following address:

   Mark Industries
   106 12th Street S.E.
   Waverly, IA 50677–4207

ABBREVIATONS AND SYMBOLS

Mark Industries

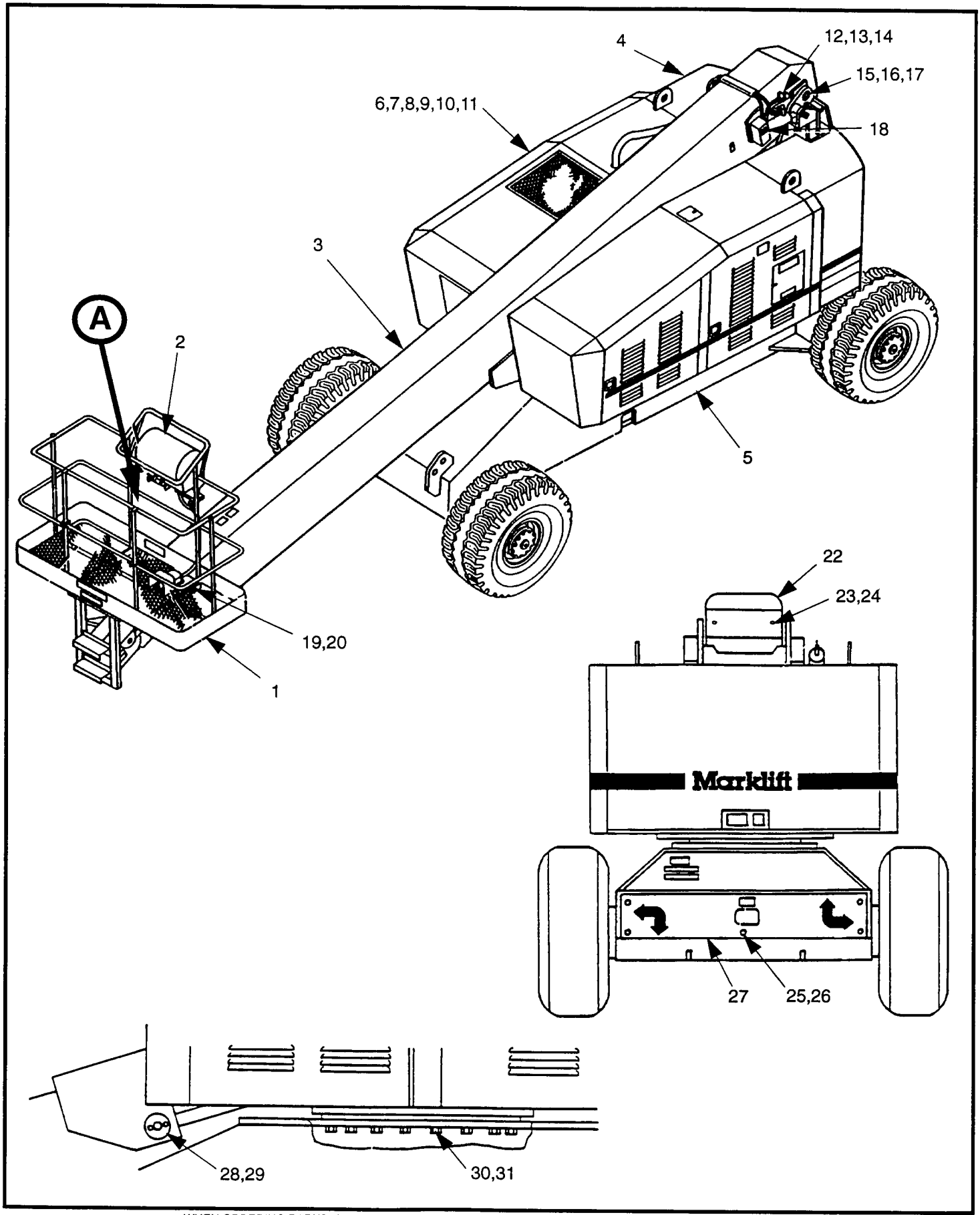
AC	ALTERNATING CURRENT	"	INCHES
ADPTR	ADAPTER	INT	INTERNAL
AMP	AMPERE	INV	INVERTED
APPROX	APPROXIMATELY	LG	LENGTH
AR	AS REQUIRED	LH	LEFT HAND
ASSY	ASSEMBLY	MAX	MAXIMUM
AVAIL	AVAILABLE	MIN	MINIMUM
BRG	BEARING	MM	MILLIMETER
BRKT	BRACKET	MTG	MOUNTING
CCW	COUNTER CLOCKWISE	P/N	PART NUMBER
CFM	CUBIC FEET PER MINUTE	NO	NUMBER
CHRG	CHARGING	NSS	NOT SOLD SEPARATELY
CTSK	COUNTERSUNK	OD	OUTSIDE DIAMETER
CVR	COVER	PTO	POWER TAKE-OFF
CW	CLOCKWISE	#	POUND
CYL	CYLINDER	QTY	QUANTITY
°	DEGREE	RD	ROUND
DC	DIRECT CURRENT	REF	REFERENCE
DIA	DIAMETER	RH	RIGHT HAND
DRV	DRIVE	ROT	ROTATION
ENG	ENGINE	RPM	REVOLUTIONS PER MINUTE
EXH	EXHAUST	SL	SLOTTED
EXT	EXTERNAL	SM	SMALL
FT	FEET	SPD	SPEED
GAL	GALLON	SS	STAINLESS STEEL
GR	GRADE	STD	STANDARD
GSK	GASKET	T	TOOTH
HD	HEAD	THK	THICK
HEX	HEXAGON	THRU	THROUGH
HP	HORSEPOWER	TEMP	TEMPERATURE
HSG	HOUSING	V	VOLT
HT	HEAT TREATED	VAC	VOLTS ALTERNATING CURRENT
HYD	HYDRAULIC	VARI	VARIABLE
HZ	HERTZ	VS	VARIABLE SPEED
ID	INSIDE DIAMETER	W/	WITH
INCL	INCLUDES	W/0	WITHOUT

SECTION 2 "FINAL ASSEMBLY" CONTAINS:

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2.4	MANUAL BOX
2.6	DECALS & PAINT
2.8	SHEET METAL

FINAL ASSEMBLY (CH80C)

Mark Industries

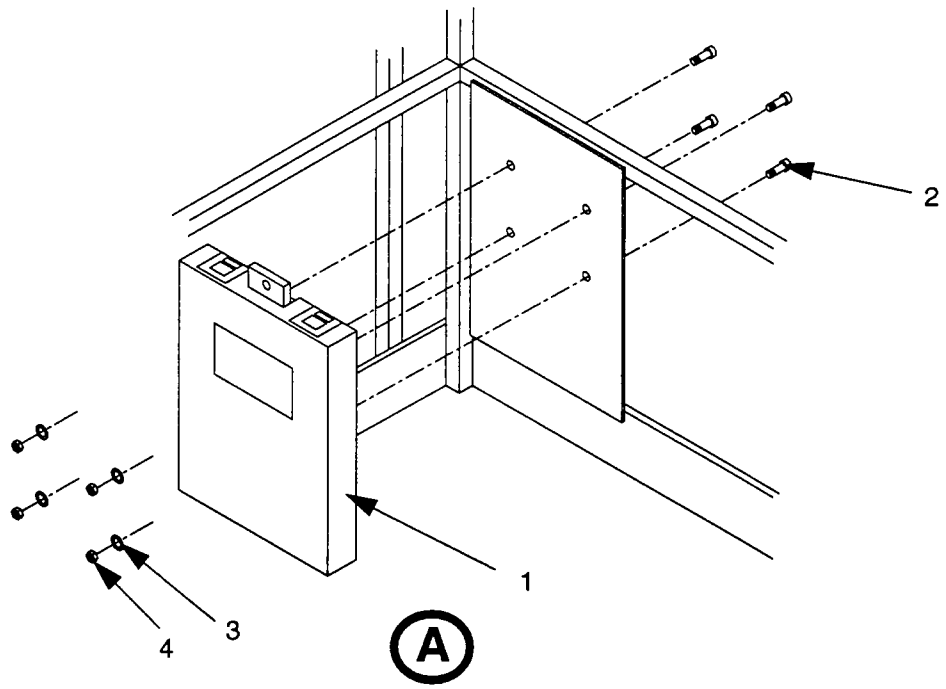


FINAL ASSEMBLY (CH80C)

Ref.	Part No.	Description	Qty	Remarks
	212396	Assembly, Final (CH80C)	Ref.	
1	211811	Assembly, Platform	1	See Page 6.2 for Details
2	212007	Assembly, Aerial Control Box	1	See Page 6.8 for Details
3	24136	Assembly, Boom	1	See Page 5.2 for Details
4	See Page 4.2	Assembly, Turret	1	See Page 4.2 for Details
5	212406	Assembly, Base	1	See Page. 3.1 for Details
6	212464	Kit, Sheet Metal	1	See Page 2.8 for Details
7	61902	Capscrew	60	
8	63401	Flatwasher	38	
9	60711	Nut, With Nylon Insert	26	
10	62401	Capscrew, Flat Head Sltd	2	
11	63403	Washer, Plane	24	
12	2594	Elbow, Swivel	4	
13	2617	Hydraulic Hose		2 FT
14	2562	Fitting, Straight Swivel	2	
15	22053	Pin, Boom Pivot	1	
16	25360	Tube, Round	1	
17	60607	Capscrew	2	
18	21334	Pin, Leveling Cylinder To Boom	2	
19	60515	Capscrew	4	
20	61302	Hex Nut	4	
22	24382	Cover, Boom	1	
23	60607	Capscrew	4	
24	63319	Lock Washer	4	
25	60325	Capscrew	4	
26	63319	Lock Washer	4	
27	24921	Cover, Rear	1	
28	22047	Pin, Lift Cylinder To Boom	1	
29	61813	Capscrew	2	
30	60609	Capscrew	36	
31	63501	Washer, Plane	36	
32	65114	Gasoline		5 GAL.
33	65116	Oil, Hydraulic		60 GAL.

MANUAL BOX

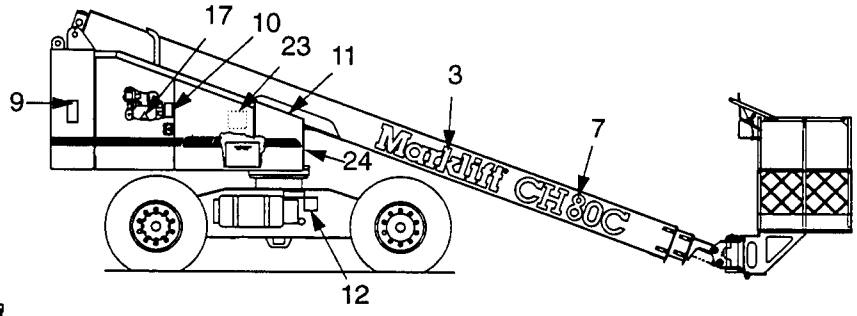
Mark Industries

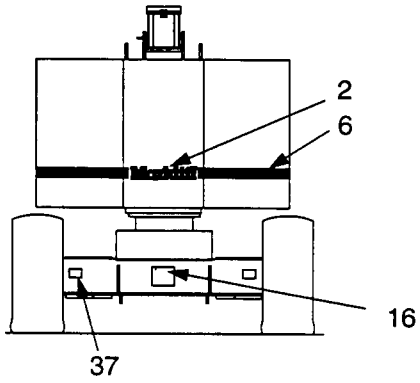


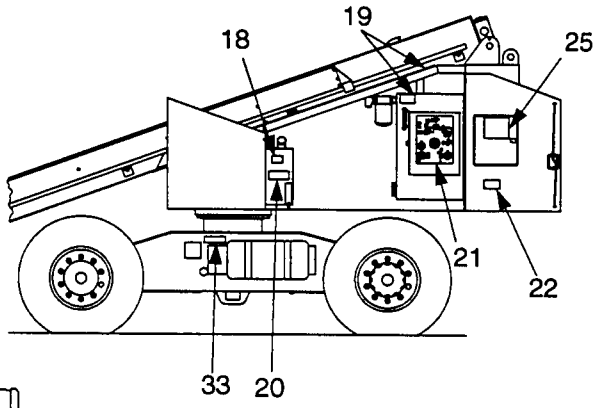
Ref.	Part No.	Description	Qty	Remarks
1	135322	Manual Box	1	
2	1200-1	Capscrew, 1/4C x 3/4	4	
3	1209-2	Washer	8	
4	1205-13	Nut	4	

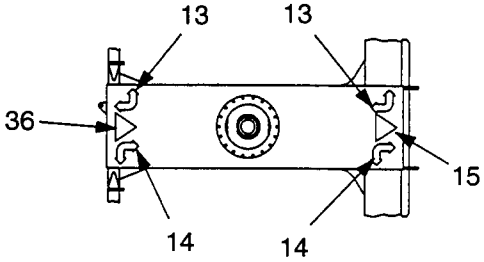
DECALS & PAINT

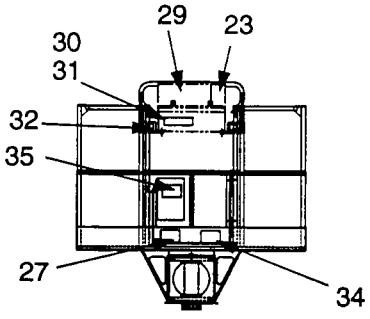
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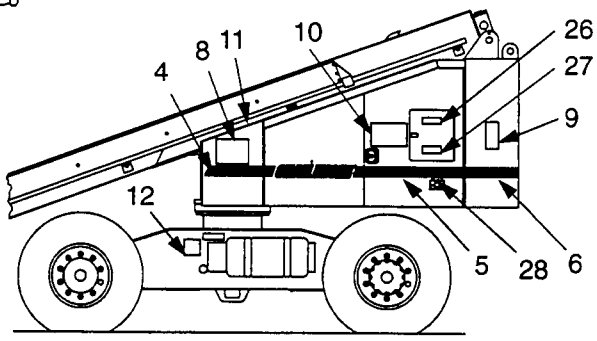








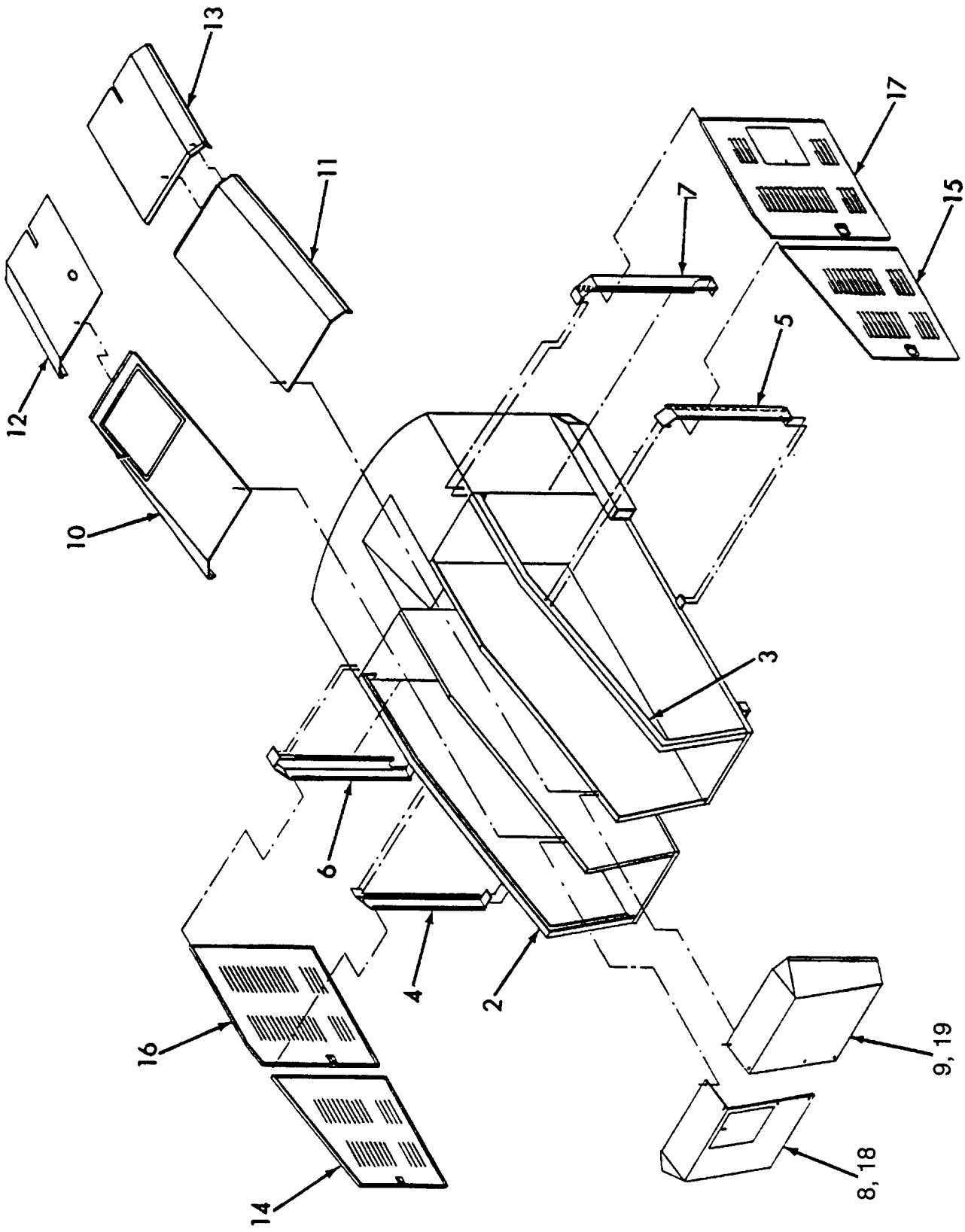




Ref.	Part No.	Description	Qty	Remarks
1	212397	Decal Set	Ref.	
2	181927-1	Decal, Marklift	1	
3	131927-2	Decal, Marklift	2	
4	181928	Decal, Round Stripe	1	
5	181929-1	Decal, Stripe	1	
6	181929-2	Decal, Stripe	6	
7	181969	Decal, CH80C	2	
8	12400-571	Decal, Pride/Flag	2	
9	12400-223	Decal, Danger	2	
10	182122	Decal, Danger - Keep Clear	2	
11	12400-243	Decal, Caution No Step	2	
12	20508	Decal, Transportation	2	
13	182710	Decal, Direction Arrow	2	
14	182709	Decal, Direction Arrow	2	
15	20462	Decal, Forward Arrow AFT	1	
16	181938	Decal, NamePlate Std.	1	
	181937	Decal, NamePlate Opt.	1	
17	12260-701	Decal, Fan Warning	1	
18	181829	Decal, Gas/Petr.	1	
	181830	Decal, Diesel	1	
19	183402	Decal, Hydraulic Fluid	2	
20	181321	Decal, No Smoking	1	
21	182817	Decal, Circuit Panel, Lower	1	
22	185702	Decal, Circuit Breaker - 110 VAC	1	
23	12400-3	Decal, Booster Cable	1	
24	182121	Decal, Danger Crushing	1	
25	183405	Decal, General Check & Operation	1	
26	183404	Decal, Aux G. Contr.	1	
27	181322	Decal, Load Capacity	2	w/8 Foot Platform
	181320	Decal, Load Capacity	2	w/6 Foot Platform
28	185707	Decal, Power - 110 VAC	1	
29	182120	Decal, Operating Instructions	1	
30	182818	Decal, Control Panel	1	
31	182819	Decal, Control Panel	1	
32	181828	Decal, Safety Belt	2	
33	182821	Decal, Liquid Tank Only	2	
34	182307	Detail, Caution Safety Belt	1	
35	181113	Decal, Operation & Safety	1	
36	20461	Decal, Forward Arrow	1	
37	183101	Decal, Tire Replacement	4	
38	3900-146	Paint, White		8 GAL.
	3900-130	Paint, Blue		1 GAL.

SHEET METAL

Mark Industries



Ref.	Part No.	Description	Qty	Remarks
1	212464	Kit, Sheet Metal	Ref.	
2	69123	Rail, Frame (Left)	1	
3	69132	Rail, Frame (Right)	1	
4	69124	Support, MID (Left)	1	
5	69133	Support, Mid (Right)	1	
6	69125	Support, Front (Left)	1	
7	69134	Support, Front (Right)	1	
8	69126	Cover, Nose (Left)	1	
9	69135	Cover, Nose (Right)	1	
10	69127	Cover, Mid (Left)	1	
11	69136	Cover, Mid (Right)	1	
12	69128	Cover, Top (Left)	1	
13	69137	Cover, Top (Right)	1	
14	69129	Door, Rear (Left)	1	
15	69138	Door, Rear (Right)	1	
16	69130	Door, Front (Left)	1	
17	69139	Door, Front (Right)	1	
18	69131	Nose Mounting BRKT (Left)	1	
19	69140	Nose Mounting BRKT (Right)	1	

NOTES

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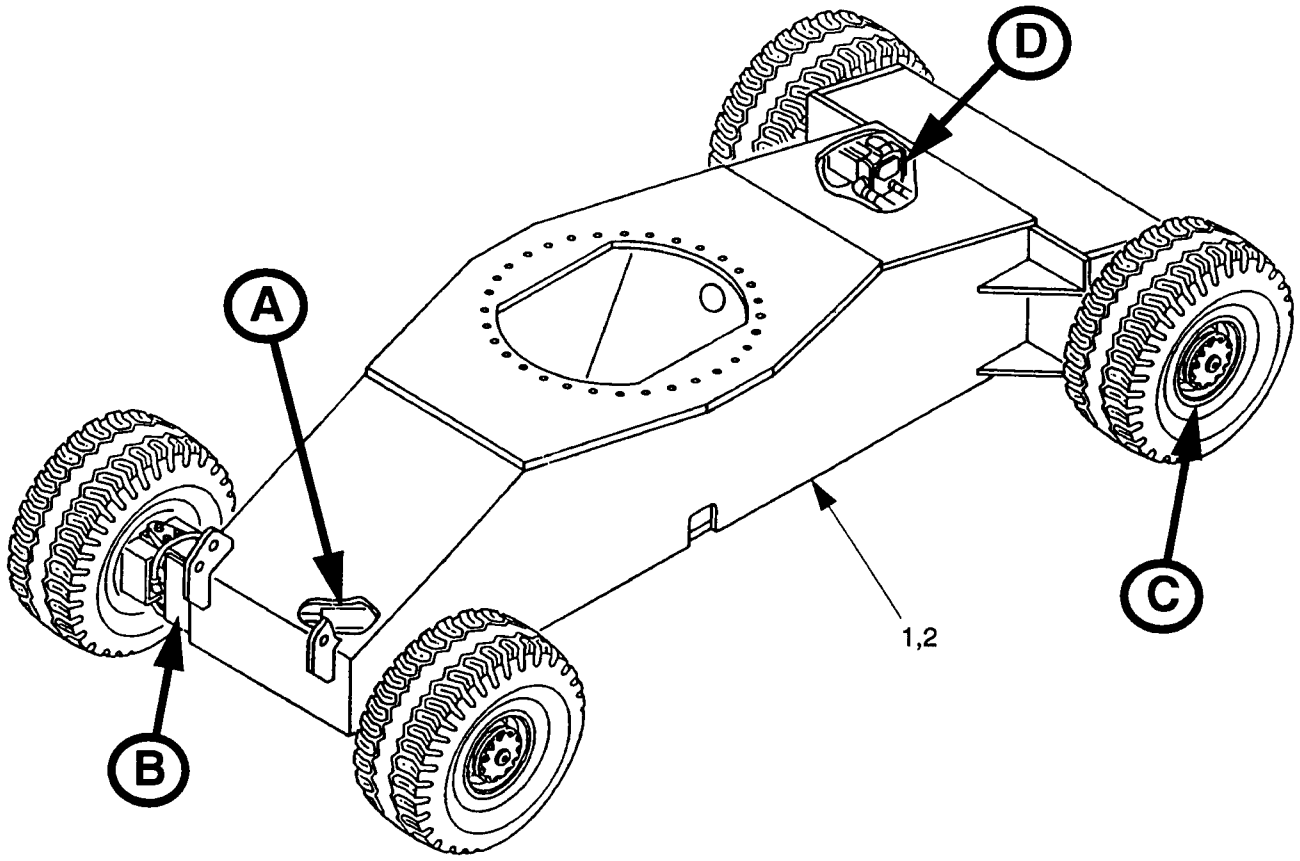
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3.14	DRIVE MOTOR (Hi-Torque)
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3.18	STEERING CYLINDER
3.20	TIRE & RIM ASSEMBLY
3.21	TIE ROD ASSEMBLY

BASE ASSEMBLY (CH80C)

Model CH80C

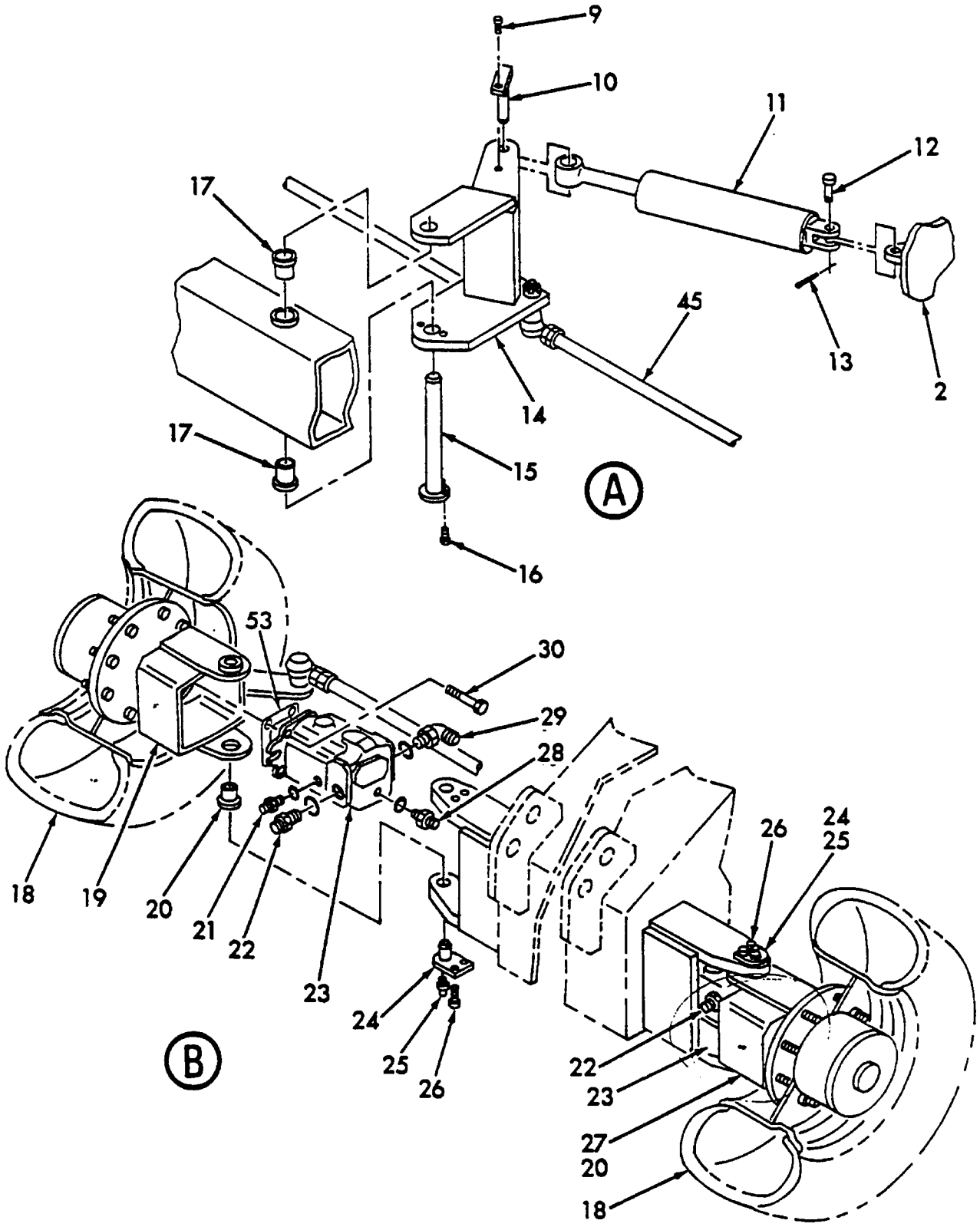
Issued 1-96



Ref.	Part No.	Description	Qty	Remarks
	212406	Assembly, Base	Ref.	
A	(Detail "A")	Steering Assembly	Ref.	See Page 3.2 for Details
B	(Detail "B")	Front Drive Motors & Hubs	Ref.	See Page 3.2 for Details
C	(Detail "C")	Rear Hubs	Ref.	See Page 3.4 for Details
D	(Detail "D")	Rear Drive Motors	Ref.	See Page 3.4 for Details
1	212393	Weldment, Base	1	
2	212347	Base Hydraulics	1	See Page 3.6 for Details

BASE ASSEMBLY

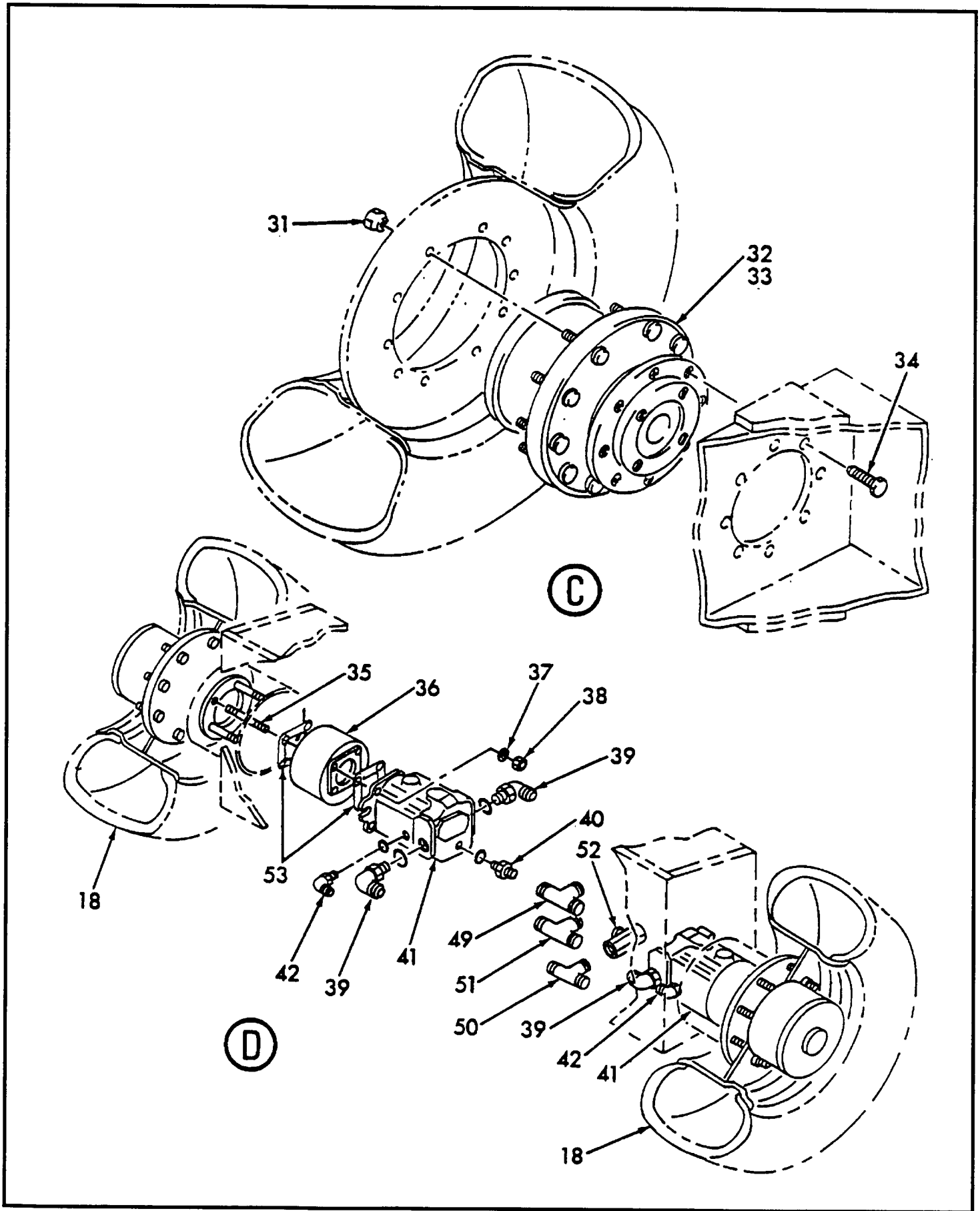
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Ref.	Part No.	Description	Qty	Remarks
9	60607	Capscrew	1	
10	22214	Pin, Steering Cylinder	1	
11	22212	Assembly, Steering Cylinder	1	See Page 3.18 for Details
12		Pin, Clevis	1	
13	64310	Pin, Cotter	1	
14	22043	Weldment, Steering Arm	1	
15	22045	Pin, Steering Arm	1	
16	65949	Capscrew	2	
17	64910	Bushing, Steering Arm Pin	2	
18	22094	Assembly, Tire & Rim	4	See Page 3.20 for Details
19	23982	Yoke, Left Hand Steering	1	
20	23983	Bushing, Flange	2	
21	80012-08	Elbow, Straight Thread	2	
22	1219-555	Connector, Straight Thread	2	
23	81394	Assembly, Drive Motor (Standard)	2	See Page 3.12 for Details
	81507	Assembly, Drive Motor (Hi-Torque)	2	See Page 3.14 for Details
24	23984	Pin, King	4	
25	65103	Fitting, Grease	4	
26	60622	Capscrew	8	
27	23981	Yoke, Right Hand Steering	2	
28	80012-03	Adapter	2	
29	80012-21	Elbow, Straight Thread	2	
30	60604	Capscrew	16	

BASE ASSEMBLY (CH80C)

Mark Industries

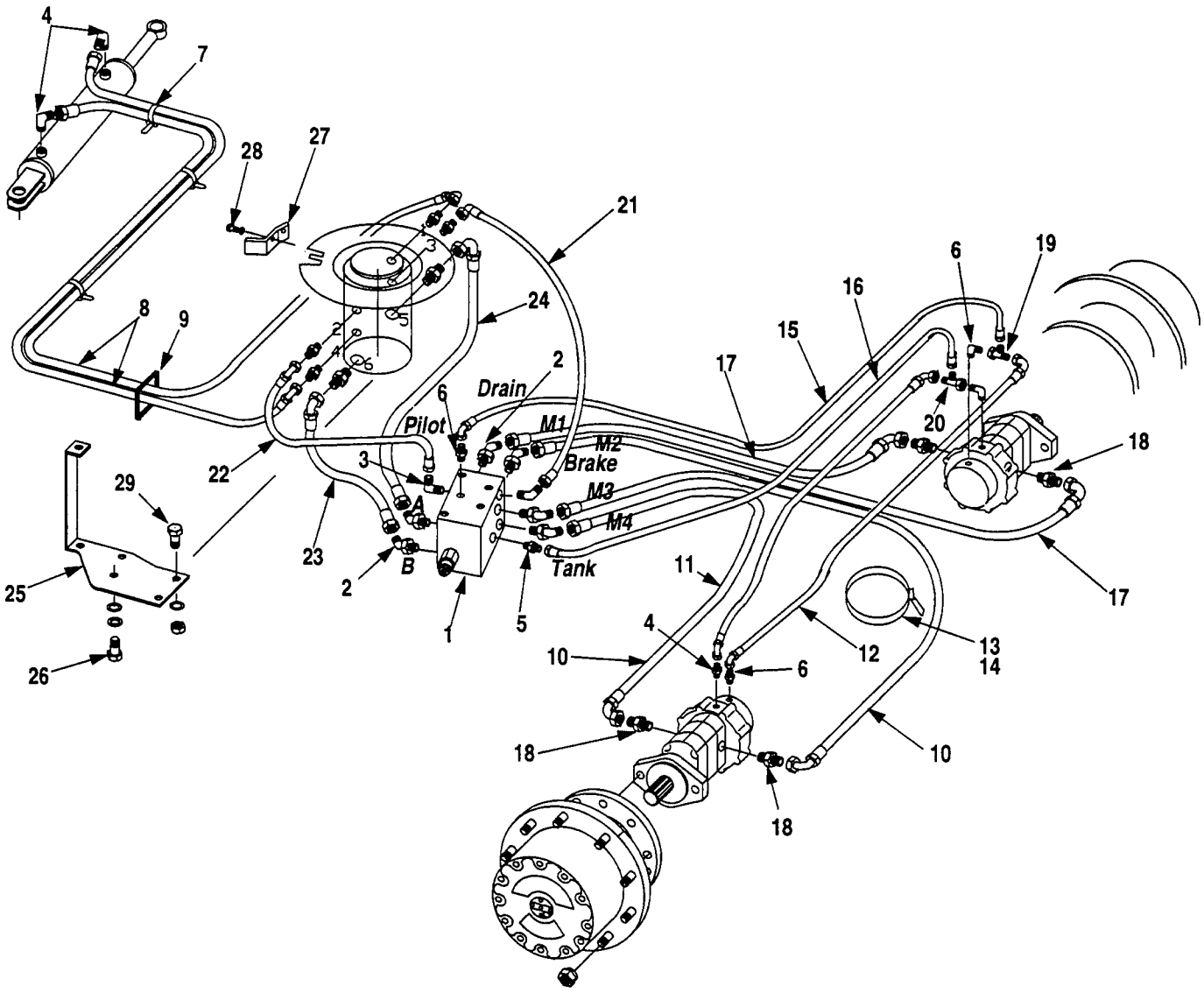


BASE ASSEMBLY (CH80C)

Ref.	Part No.	Description	Qty	Remarks
31	65117	Nut, Ball	20	
32	212509	Hub, Torque	4	See Page 3.8 for Details
33	65106	Oil, Gear		4 Pints.
34	60604	Capscrew	16	
35	63633	Stud	8	
36	69731	Assembly, Brake	2	See Page 3.16 for Details
37	1210-26	Lockwasher	8	
38	1205-58	Hex Nut	8	
39	12019-218	Elbow, Straight Thread	4	
40	80012-08	Elbow, Straight Thread	2	
41	81393	Assembly, Drive Motor W/Brake (Standard)	2	See Page 3.12 for Details
	81506	Assembly, Drive Motor W/Brake (Hi-Torque)	2	See Page 3.14 for Details
42	80012-03	Elbow, Straight Thread	2	
43	65117	Nut, Ball	20	
44	60604	Capscrew	16	
45	24157	Assembly, Tie Rod	2	See Page 3.21 for Details
46	1207-16	Pin, Cotter	4	
47	16101	Nut, Lock	4	
48	63432	Flat Washer	2	
49	80045-08	Tee, Bulkhead Union	4	
50	80045-03	Tee, Bulkhead Union	2	
51	80045-05	Tee, Bulkhead Union	2	
52	12019-7	Adapter	2	
53	66847	Gasket	4	

BASE HYDRAULICS

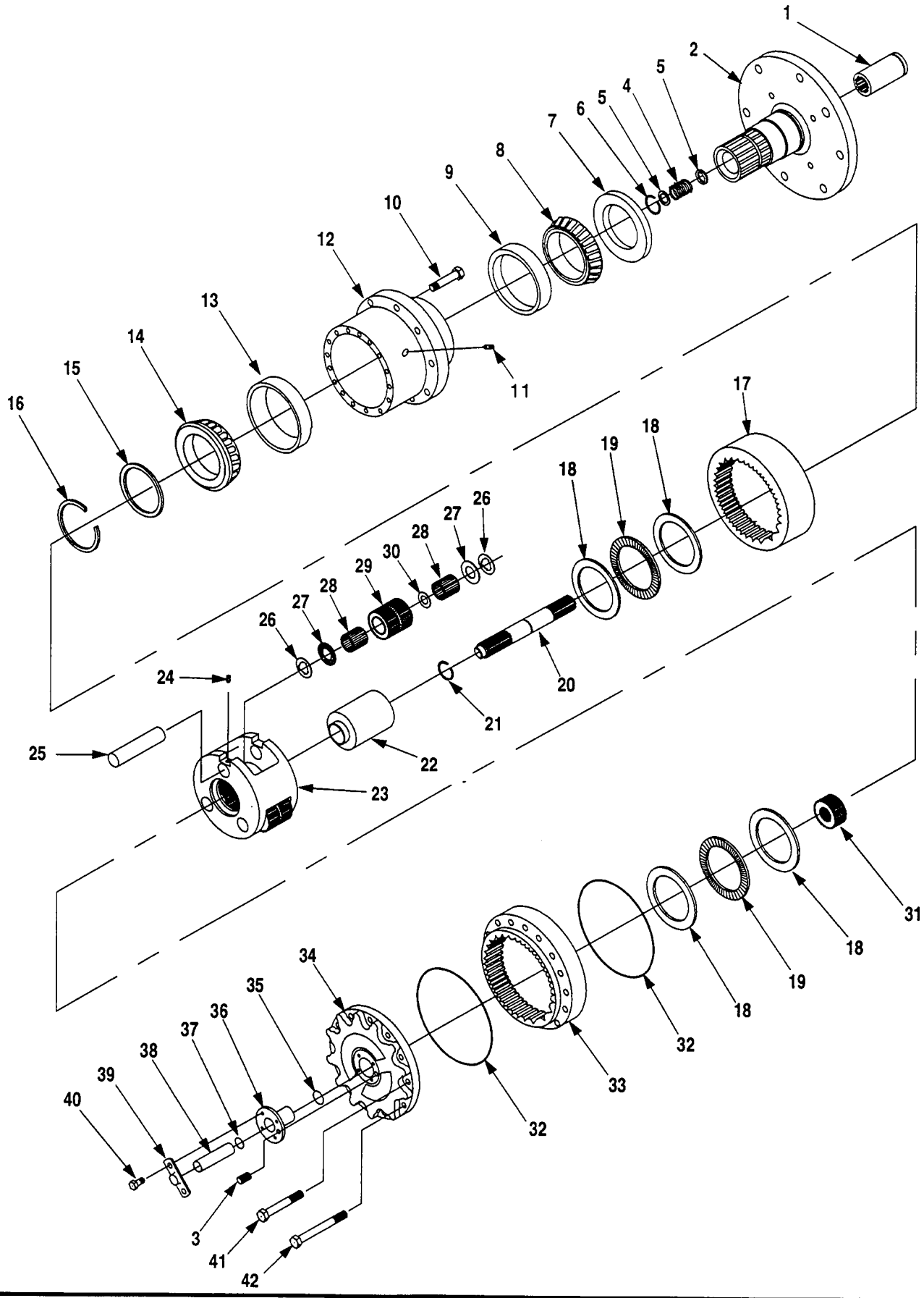
Mark Industries



Ref.	Part No.	Description	Qty	Remarks
	212483	Lower Hydraulic Assembly	1	Incl. Items 1 thru 29
1	81446	Valve, Ground Drive	1	See Section 4
2	1219-663	Adapter	6	
3	1219-982	Adapter	1	
4	12019-548	Adapter	5	
5	1219-959	Adapter	1	
6	1219-776	Adapter	3	
7	1222-184	Tie Wrap	4	
8	212059-96	Hose	2	
9	12182-15	Trimlock	4	
10	212062-65	Hose	2	
11	212059-54	Hose	1	
12	212061-52	Hose	1	
13	200B2007-28	Clamp	1	
14	1205-36	Nut	1	
	1209-4	Flatwasher	1	
15	212061-58	Hose	1	
16	212060-54	Hose	1	
17	212062-78	Hose	2	
18	1219-389	Adapter	4	
19	12019-112	Tee	1	
20	12019-453	Tee	1	
21	212059-36	Hose	1	
22	212061-22	Hose	1	
23	212062-22	Hose	1	
24	212062-28	Hose	1	
25	212009	Bracket, Ground Drive Valve	1	
26	1200-59	Capscrew, 3/8C x 1	3	
	1210-20	Lockwasher	3	
	1209-4	Flatwasher	3	
27	212008	Plate, Rotary Manifold	1	
28	1200-59	Capscrew, 3/8C x 1	2	
	1209-4	Flatwasher	2	
29	1200-61	Capscrew, 3/8C x 1-1/4	3	
	1210-20	Lockwasher	3	
	1209-4	Flatwasher	3	
	1205-36	Nut, 3/8C	3	

TORQUE HUB
(FAIRFIELD)

Mark Industries



TORQUE HUB
(FAIRFIELD)

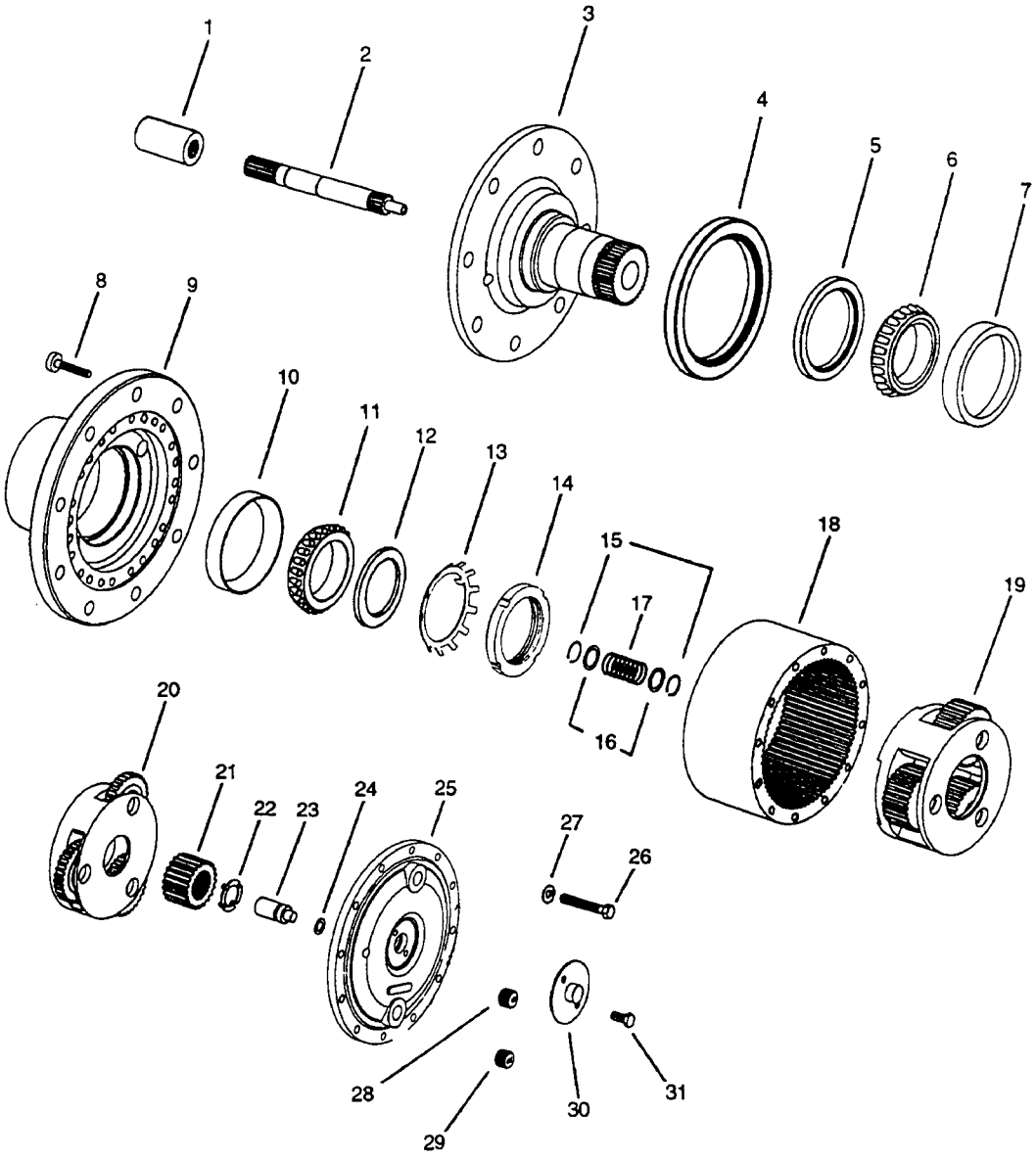
Model CH80C

Issued 1-96

Ref.	Part No.	Description	Qty	Remarks
	212509	Torque Hub (Fairfield)	1	Incl. Items 1 thru 43
	67870	Kit, Seal	1	Incl. Items w/Asterisk *
1	67881	Coupling	1	
2	600600	Spindle	1	
3	68287	Plug, Pipe, 1/8 NPTF	1	
4	68293	Spring	1	
5	67892	Washer, Thrust	2	
6	66524	Ring, Retaining	1	
7	66399	Seal	1	*
8	67920	Cone, Bearing	1	
9	67912	Cup, Bearing	1	
10	67884	Stud	10	
11	68286	Plug, Pipe, 3/8 NPTF	2	
12	68302	Hub	1	
13	67913	Cup, Bearing	1	
14	67921	Cone, Bearing	1	
15	67903	Washer, Thrust	1	
16	66516	Ring, Retaining	1	*
17	68290	Gear, Internal	1	
18	66436	Washer, Thrust	4	
19	66437	Bearing, Thrust	2	
20	68292	Shaft, Input	1	
21	67889	Ring, Retaining	1	
22	67905	Spacer, Input	1	
23	66429	Carrier	1	
24	66433	Pin, Roll	3	
25	66431	Shaft, Planet	3	
26	66430	Washer, Thrust	6	
27	66434	Washer, Thrust	6	
28	66423	Roller, Needle	84	
29	66432	Gear, Cluster	3	
30	67904	Spacer	3	
31	68289	Sun Gear, Input	1	
32	66397	O-Ring	2	*
33	68291	Gear, Ring	1	
34	66724	Cover	1	
35	66439	O-Ring	5	*
36	66341	Cap, Cover	1	
37	66438	O-Ring	5	*
38	66230	Rod, disconnect	1	
39	66115	Cap, Disconnect	1	
40	67928	Bolt, 1/4C x 3/4	4	
41	67929	Bolt	8	
42	67930	Bolt, Shoulder	4	
43	67905	Spacer, Thrust	1	

TORQUE HUB
(AUBURN GEAR)

Mark Industries



TORQUE HUB
(AUBURN GEAR)

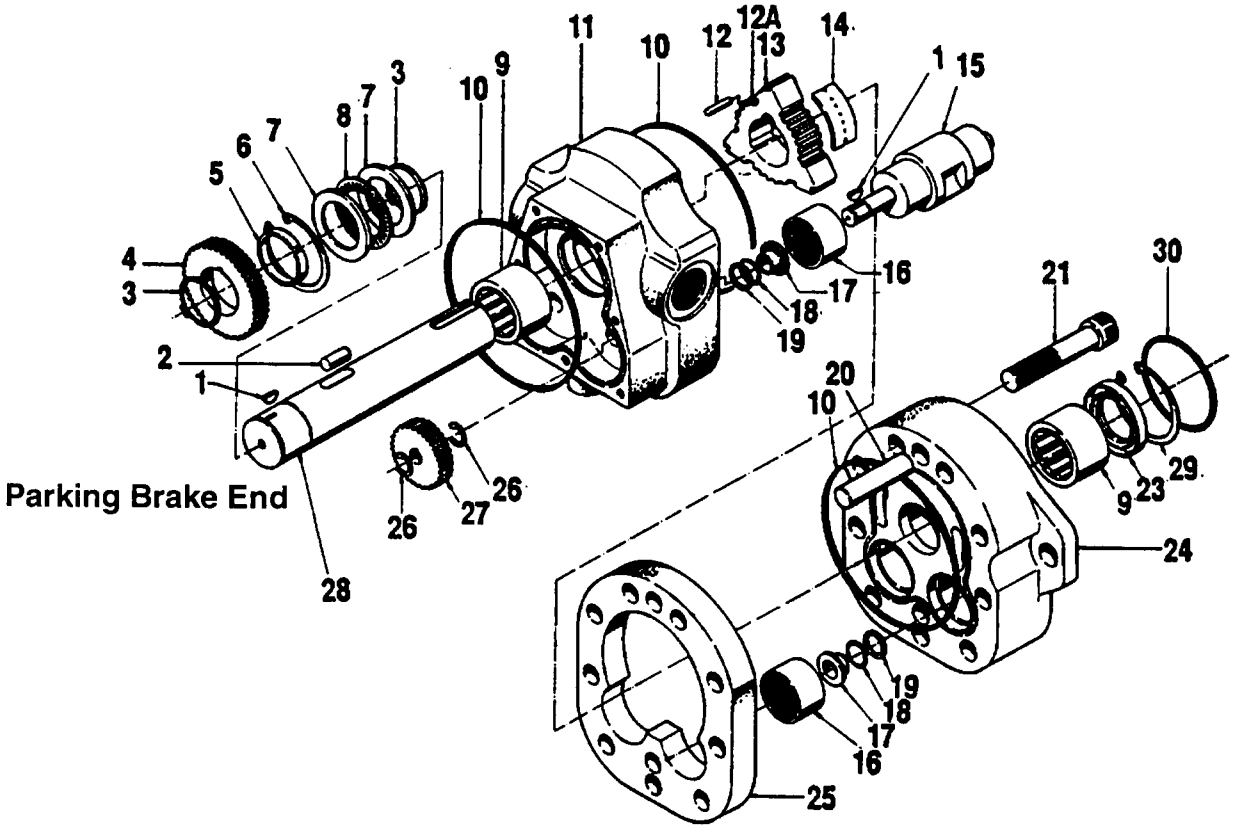
Model CH80C

Issued 1-96

Ref.	Part No.	Description	Qty	Remarks
	212509	Torque Hub (Auburn Gear)	REF.	Incl. Items 1 thru 31
1	600620	Coupling	1	
2	600607	Input Shaft	1	
3	600609	Spindle	1	
4	600619	Seal	1	
5	600618	Seal	1	
6	600617	Cone, Bearing	1	
7	600616	Cup, Bearing	1	
8	600629	Bolt, Wheel	10	
9	600611	Hub	1	
10	600614	Cup, Bearing	1	
11	600615	Cone, Bearing	1	
12	600632	Washer, Thrust	1	
13	600631	Lockwasher	1	
14	600630	Nut	1	
15	600605	Retaining Ring	2	
16	600603	Washer, Thrust	2	
17	600606	Spring	1	
18	600612	Ring Gear	1	
19	600628	Carrier Assembly (Secondary)	1	
20	600627	Carrier Assembly (Primary)	1	
21	600608	Sun Gear	1	
22	600622	Washer, Thrust	1	
23	600601	Plunger	1	
24	600604	O-Ring	1	
25	600610	Cover	1	
26	600623	Bolt, Hex Head	12	
27	600613	Flatwasher	12	
28	600624	Magnetic Plug	1	
29	600625	Plug	1	
30	600621	Cover, Disengage	1	
31	600602	Bolt, Hex Head	2	

DRIVE MOTOR
(STANDARD)

Mark Industries



DRIVE MOTOR (STANDARD)

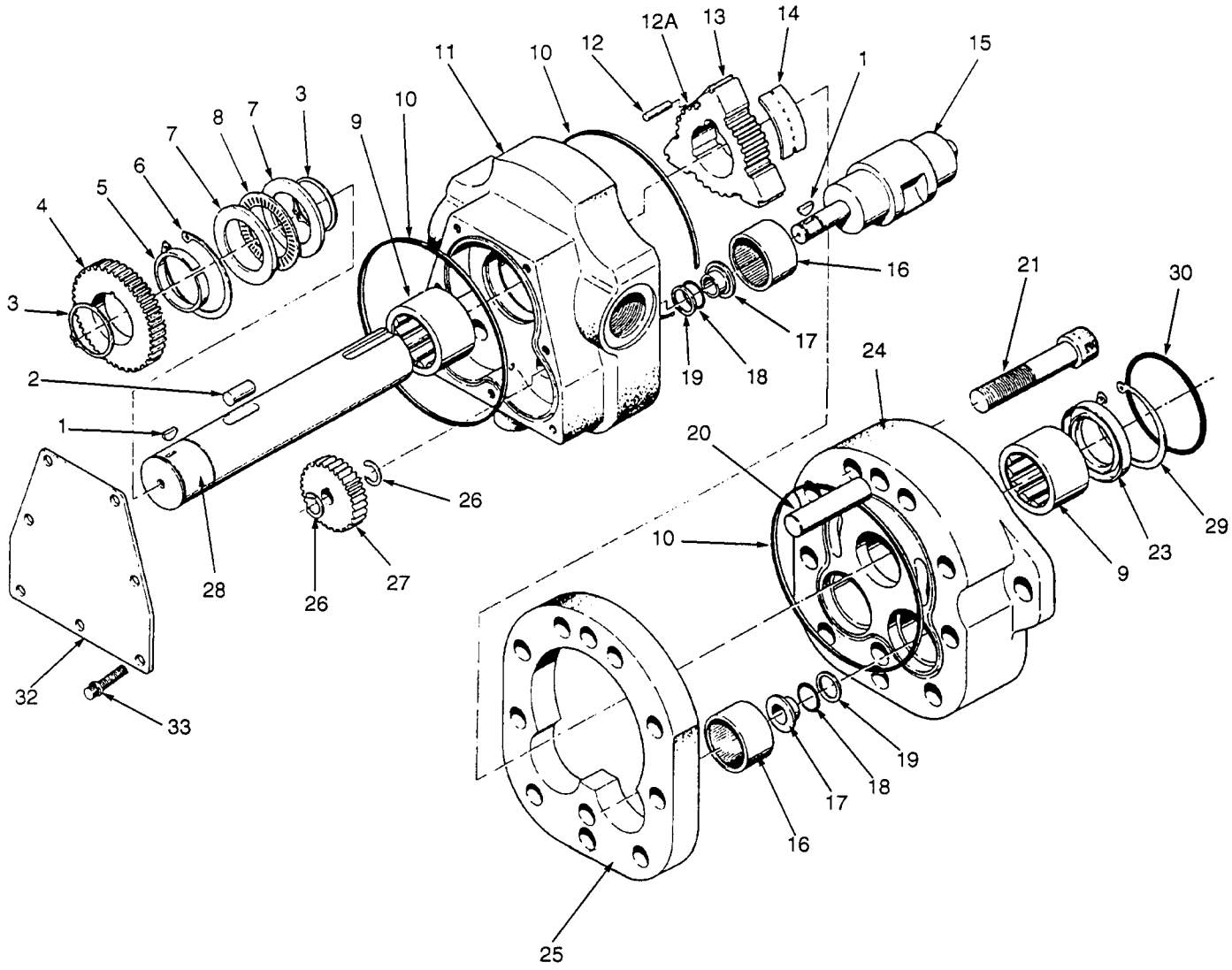
Model CH80C

Issued 1-96

Ref.	Part No.	Description	Qty	Remarks
	81393	Hydraulic Motor w/Brake	2	Incl. Items 1 thru 31 & Items 1 thru 15 Page 3.16
	81394	Hydraulic Motor wo/Brake	1	Incl. Items 1 thru 31
	68132	Kit, Seal	1	Incl. Items w/Asterisk *
1	69685	Key, Woodruff	3	
2	69686	Pin, Drive	1	
3	69687	Ring, Retaining	2	
4	69688	Gear, Drive	1	
5	69689	Washer, Spacer	1	
6	69690	Ring, Retaining	1	
7	69691	Race, Bearing	2	
8	69692	Bearing, Thrust	1	
9	69693	Bearing, Needle	2	
10	69694	Oil Seal	3	*
11	69695	Cap, Rear End	1	
12	69696	Roller, Tip Seal	3	
12A	69697	Roller, Body Seal	18	
13	69698	Rotor	1	
14	69699	Plate, Seal	3	
15	69700	Valve, Abutment	2	
16	69701	Bearing, Needle	4	
17	69702	Bearing, Step	4	
18	69703	O-Ring	4	*
19	69704	Ring, Back-Up	4	*
20	69705	Pin, Dowel	2	
21	69706	Capscrew	9	
23	69707	Seal, Shaft	1	*
24	69708	Cap, Front End	1	
25	69709	Housing, Displacement	1	
26	69710	Ring, Retaining	4	
27	69711	Pinion, Gear	2	
28	69712	Shaft, Splined (13T)	1	
29	69713	Ring, Retaining	1	*
30	69714	O-Ring	1	
31	69715	Cap, Front Sealing	1	Not Shown

DRIVE MOTOR
(HI-TORQUE)

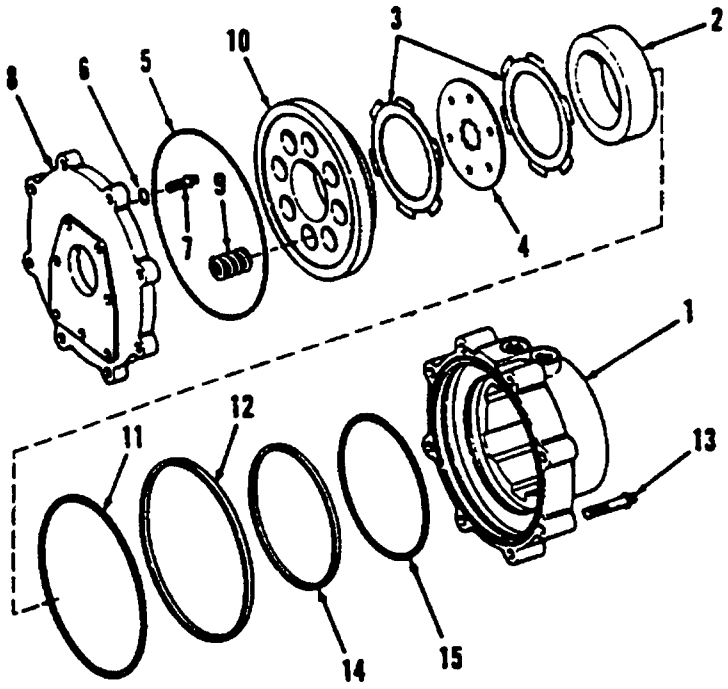
Mark Industries



Ref.	Part No.	Description	Qty	Remarks
	81506	Hydraulic Motor w/Brake	2	Incl. Items 1 thru 31 & Items 1 thru 15 Page 3.16
	81507	Hydraulic Motor wo/Brake	2	Incl. Items 1 thru 31
	68132	Kit, Seal	1	Incl. Items w/Asterisk *
1	69685	Key, Woodruff	3	
2	69686	Pin, Drive	1	
3	69687	Ring, Retaining	2	
4	69688	Gear, Drive	1	
5	69689	Washer, Spacer	1	
6	69690	Ring, Retaining	1	
7	69691	Race, Bearing	2	
8	69692	Bearing, Thrust	1	
9	69693	Bearing, Needle	2	
10	69694	Oil Seal	3	*
11	69695	Cap, Rear End	1	
12	600638	Roller, Tip Seal (.65)	3	
	600650	Roller, Tip Seal (.98)	3	
12A	600639	Roller, Body Seal (.65)	18	
	600651	Roller, Body Seal (.98)	18	
13	600640	Rotor (.65)	1	
	600652	Rotor (.98)	1	
14	600641	Plate, Seal (.65)	3	
	600653	Plate, Seal (.98)	3	
15	600642	Valve, Abutment	2	
16	69701	Bearing, Needle	4	
17	69702	Bearing, Step	4	
18	69703	O-Ring	4	*
19	69704	Ring, Back-Up	4	*
20	69705	Pin, Dowel	2	
21	69706	Capscrew	9	
23	69707	Seal, Shaft	1	*
24	69708	Cap, Front End	1	
25	600643	Housing, Displacement	1	
26	69710	Ring, Retaining	4	
27	69711	Pinion, Gear	2	
28	600644	Shaft, Splined (13T) (W/81507)	1	
	600645	Shaft, Splined (13T) (W/81506)	1	
29	69713	Ring, Retaining	1	*
30	69714	O-Ring	1	
31	69715	Cap, Front Sealing	1	Not Shown
32	600646	Gear Cover (w/81507 only)	1	
33	600647	Screw (w/81507 only)	7	

PARKING BRAKE

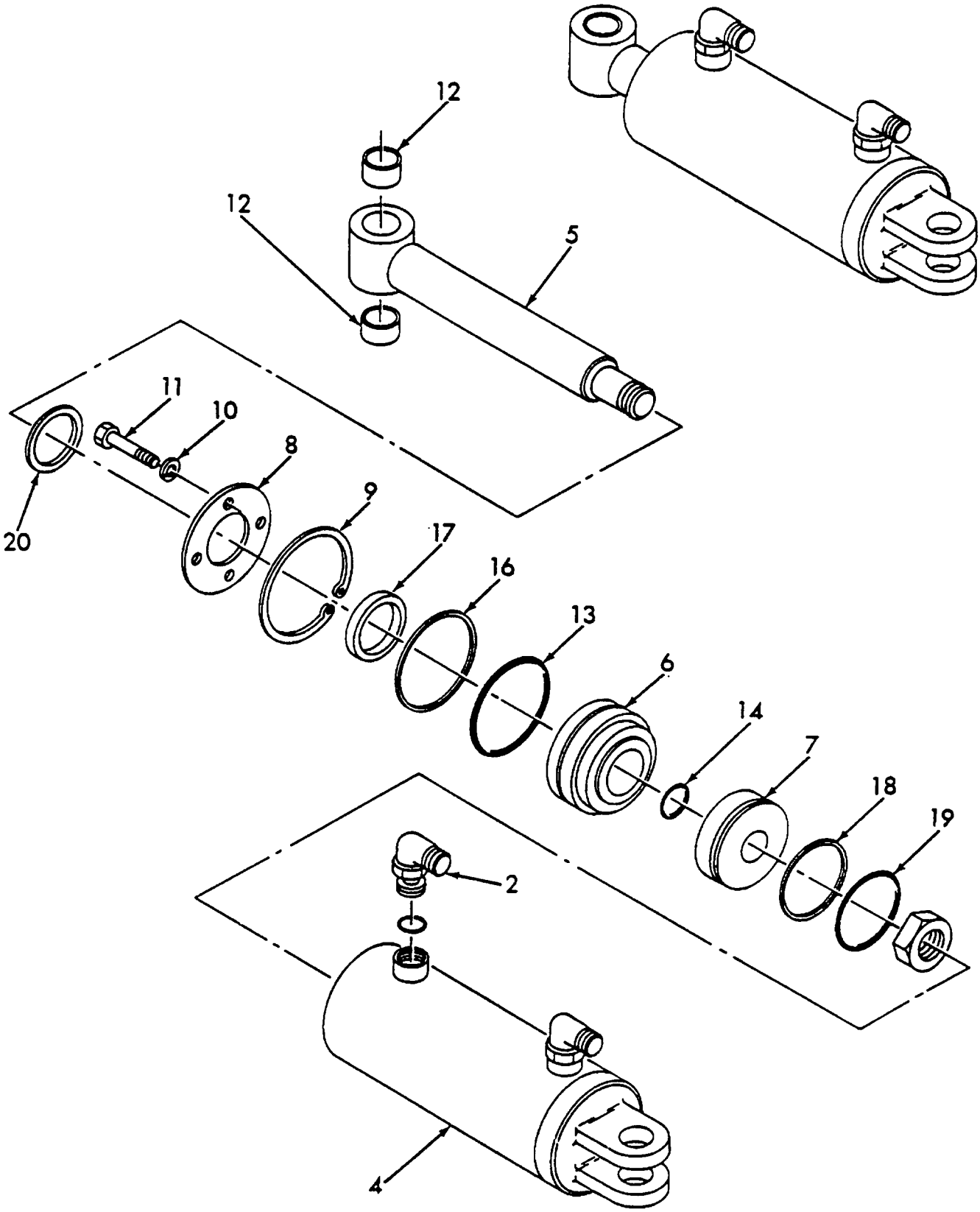
Mark Industries



Ref.	Part No.	Description	Qty	Remarks
	69731	Brake, Parking	2	Incl. Items 1 thru 15
	68134	Kit, Seal	1	
1	69716	Housing	1	
2	69717	Ring, Spacer	1	
3	69718	Disc, Friction	5	
4	69719	Driver, Plate	4	
5	69720	O-Ring	1	
6	69721	Washer, Brass	7	
7	69722	Capscrew, Socket Head	7	
8	69723	Plate, Adapter	1	
9	69724	Spring, Die	8	
10	69725	Plate, Pressure	1	
11	69726	Ring, Back-Up	1	
12	69727	O-Ring	1	
13	69728	Capscrew, Socket Head	8	
14	69729	O-Ring	1	
15	69730	Ring, Back-Up	1	

STEERING CYLINDER

Mark Industries



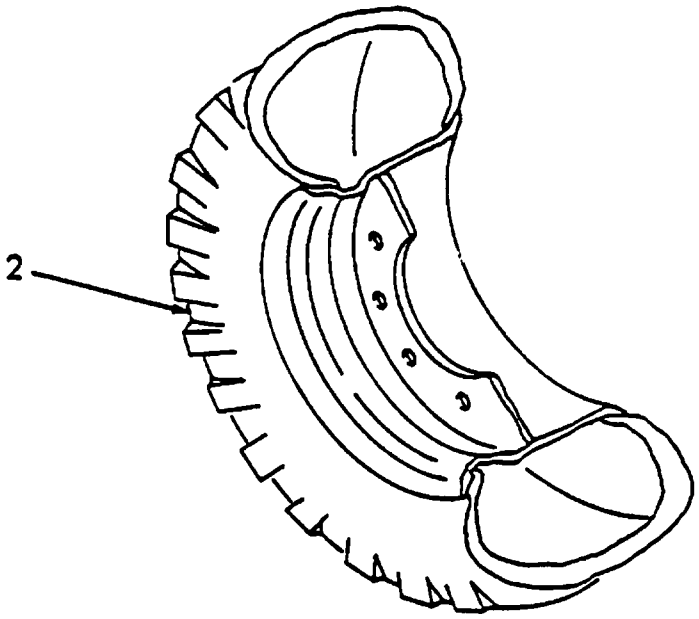
STEERING CYLINDER

Model CH80C
Issued 1-96

Ref.	Part No.	Description	Qty	Remarks
1	22212	Assembly, Steering Cylinder	Ref.	
2	12019-548	Elbow, Straight Thread	2	
3	22119	Cylinder, Steering	1	
4		Barrel	1	
5		Rod	1	
6		Head	1	
7		Piston	1	
8		Plate, Head	1	
9		Ring, Snap	1	
10		Lockwasher	4	
11		Capscrew	4	
12		Bushing	2	
13	66361	Kit, Seal	1	
14		O-Ring, Static	1	
15		O-Ring, Head	1	
16		B/U Ring, Head	1	
17		Seal, Rod (Polypak)	1	
18		Ring, Servon	1	
19		O-Ring	1	
20		Wiper, Rod	1	

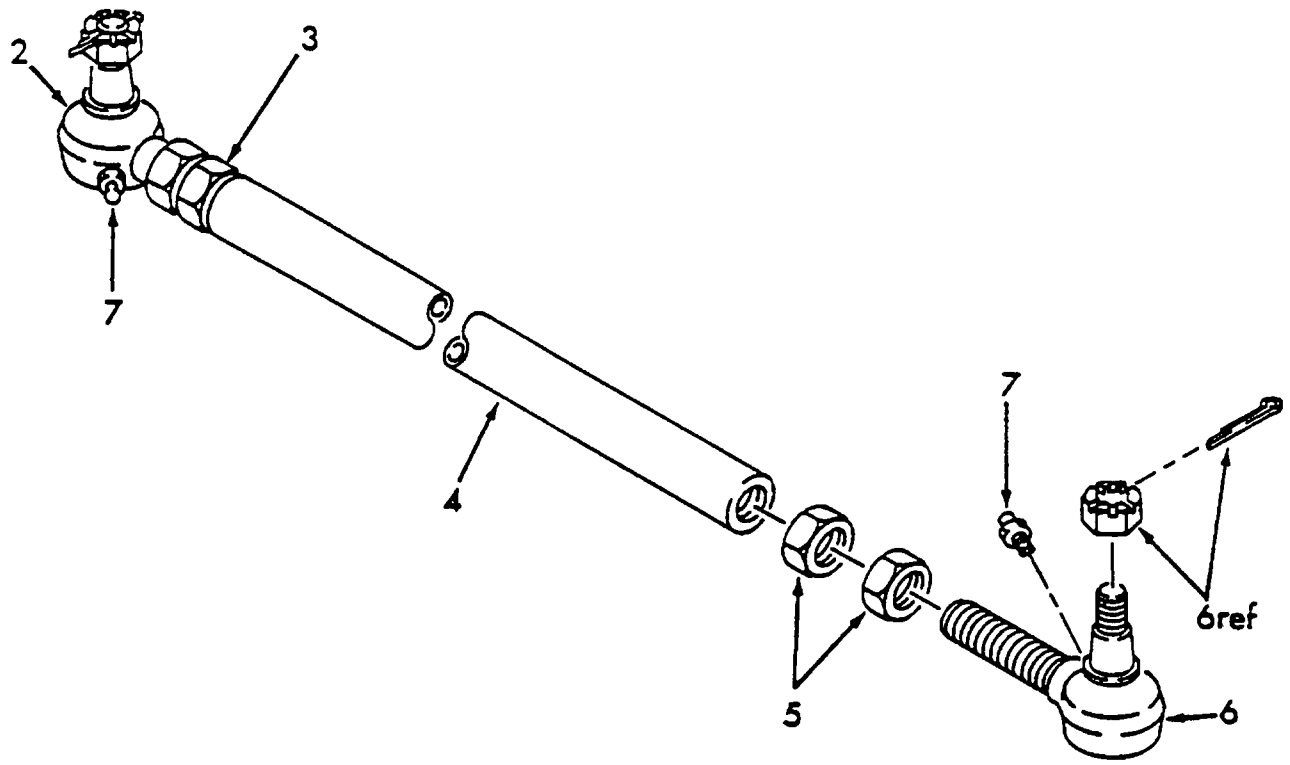
TIRE & RIM ASSEMBLY

Mark Industries



Ref.	Part No.	Description	Qty	Remarks
1	212504-1	Tire & Rim Assembly (Monofill) Right Side	2	
2	212504-2	Tire & Rim Assembly (Monofill) Left Side	2	

TIE ROD ASSEMBLY



Ref.	Part No.	Description	Qty	Remarks
1	24157	Assembly, Tie Rod	Ref.	
2	20569	End, Tie Rod	1	
3	20567	Nut, Hex Jam (Left Hand Thread)	2	
4	27410	Tube, Round	1	
5	20566	Nut, Hex Jam (Right Hand Thread)	2	
6	20568	End, Tie Rod	1	
7	65103	Fitting, Grease	2	

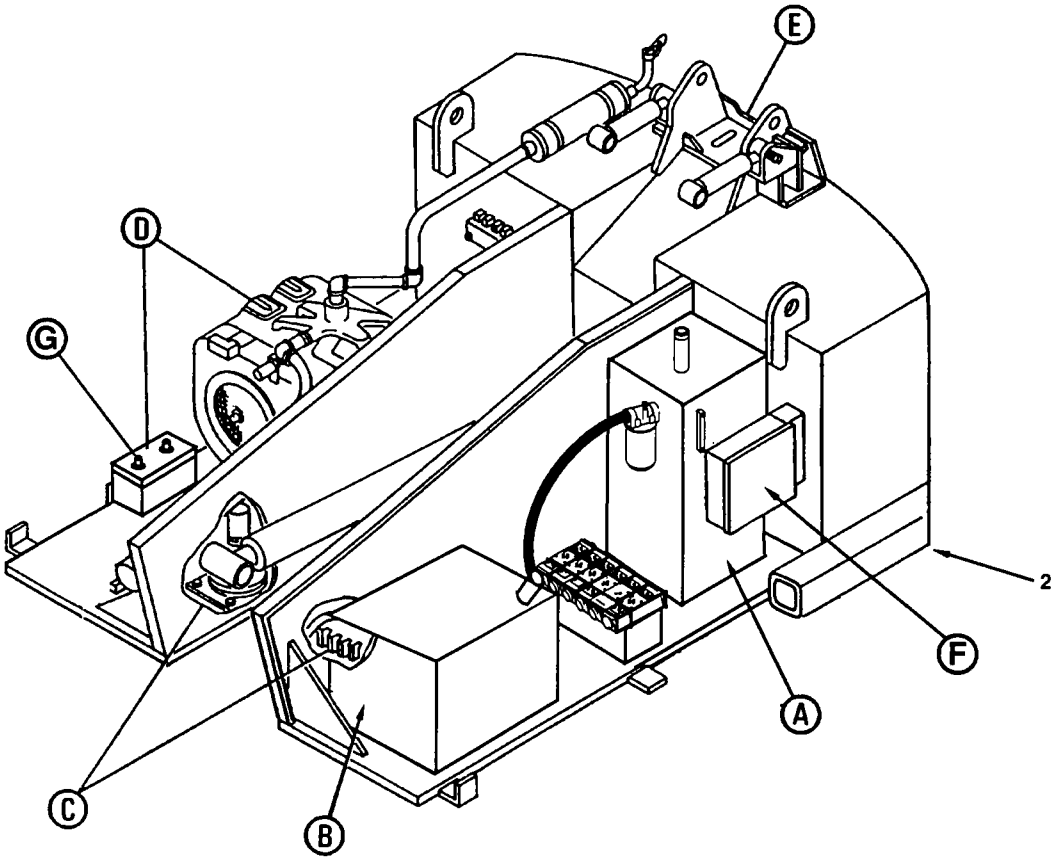
NOTES

SECTION 4 "TURRET ASSEMBLY" CONTAINS:

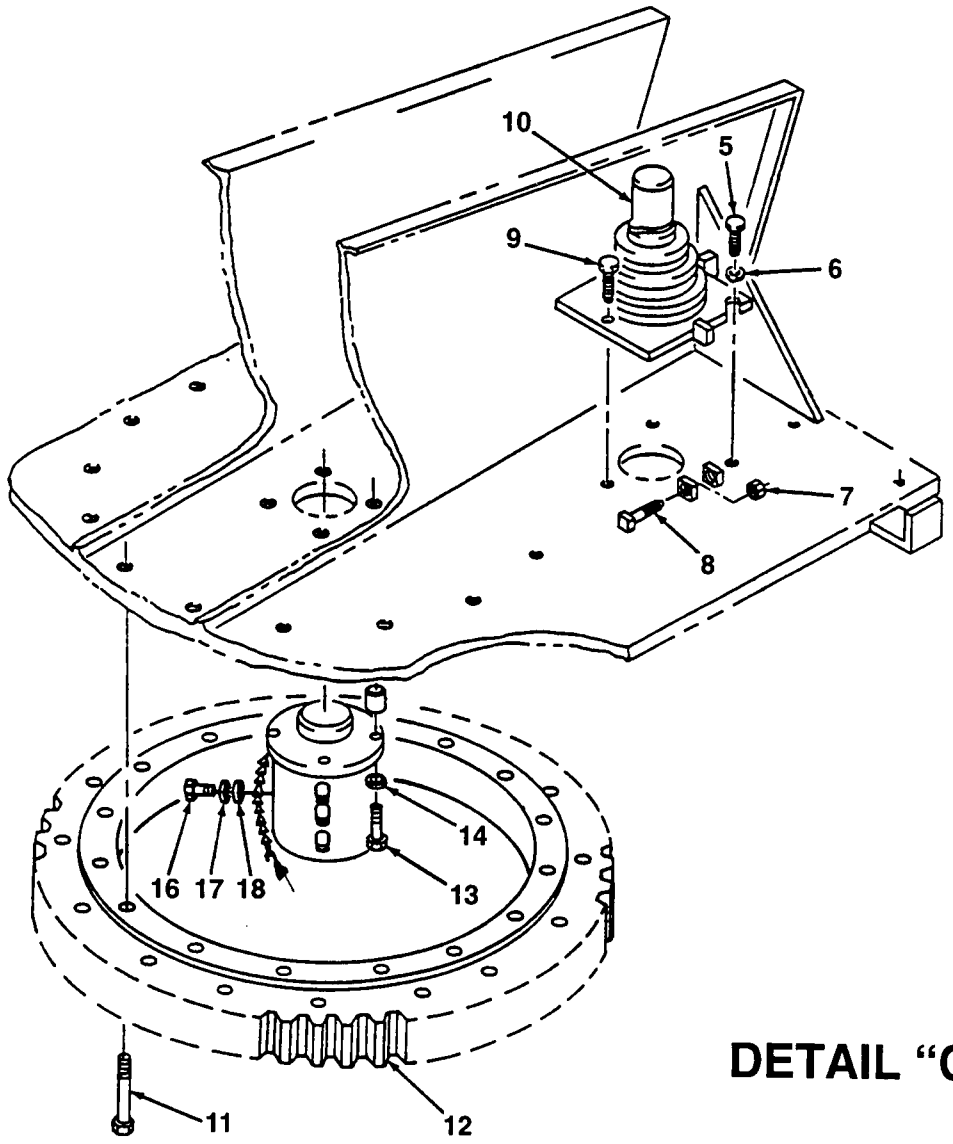
PAGE	TITLE
4.2	TURRET ASSEMBLY
4.7	ENGINE, GAS (FORD)
4.10	AIR CLEANER (FORD)
4.11	FUEL TANK (FORD)
4.12	ENGINE, LP/GAS (FORD)
4.14	LP FUEL SYSTEM (FORD)
4.16	BATTERY ASSEMBLY (FORD & CUMMINS)
4.17	ENGINE CONTROL PANEL (FORD)
4.18	ENGINE, DIESEL (CUMMINS)
4.23	ENGINE, DIESEL (DEUTZ)
4.28	FUEL TANK (DEUTZ & CUMMINS)
4.29	BATTERY ASSEMBLY (DEUTZ)
4.30	ENGINE CONTROL PANEL (DEUTZ & CUMMINS)
4.32	TURRET ROTATION GEARBOX
4.34	ROTATION GEARBOX BRAKE
4.36	ROTATION GEARBOX MOTOR
4.38	TURRET WIRING
4.40	GROUND CONTROL BOX
4.42	TURRET HYDRAULICS
4.46	MAIN PUMP
4.48	MAIN PUMP CONTROL
4.49	EMERGENCY PUMP/MOTOR
4.50	MAIN VALVE
4.52	FUNCTION VALVE
4.54	HYDRAULIC RESERVOIR & FILTER
4.56	ROTARY MANIFOLD
4.58	MASTER LEVELING CYLINDER
4.60	TORQUE HUB

TURRET

Mark Industries



Ref.	Part No.	Description	Qty	Remarks
1	212394	Assembly, Turret (Ford Dual Fuel)	Ref.	
	212395	Assembly, Turret (Ford Gas)	Ref.	
	212398	Assembly, Turret (Deutz Diesel)	Ref.	
	212495	Assembly, Turret (Cummins Diesel)	Ref.	
A	Detail "A"	Turret Hydraulics	Ref.	See Page 4.42 for Details
B	Detail "B"	Fuel Tank, (Ford Gas & Dual Fuel)	Ref.	See Page 4.11 for Details
		Fuel Tank, (Deutz & Cummins)	Ref.	See Page 4.28 for Details
C	Detail "C"	Swing Components	Ref.	See Page 4.3 for Details
D	Detail "D"	Engine, (Ford Gas & Dual Fuel)	Ref.	See Page 4.7 for Details
		Engine, (Deutz)	Ref.	See Page 4.23 for Details
		Engine, (Cummins)	Ref.	See Page 4.18 for Details
E	Detail "E"	Lift & Leveling Cylinders	Ref.	See Page 4.4 for Details
F	Detail "F"	Ground Control Box	Ref.	See Page 4.40 for Details
G	Detail "G"	Battery Assembly (Ford & Cummins)	Ref.	See Page 4.16 for Details
		Battery Assembly (Deutz)	Ref.	See Page 4.29 for Details
2	212408	Turret Weldment	1	

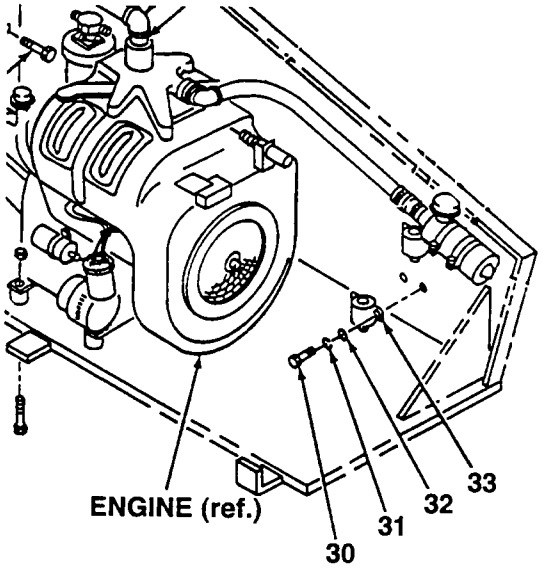


DETAIL "C"

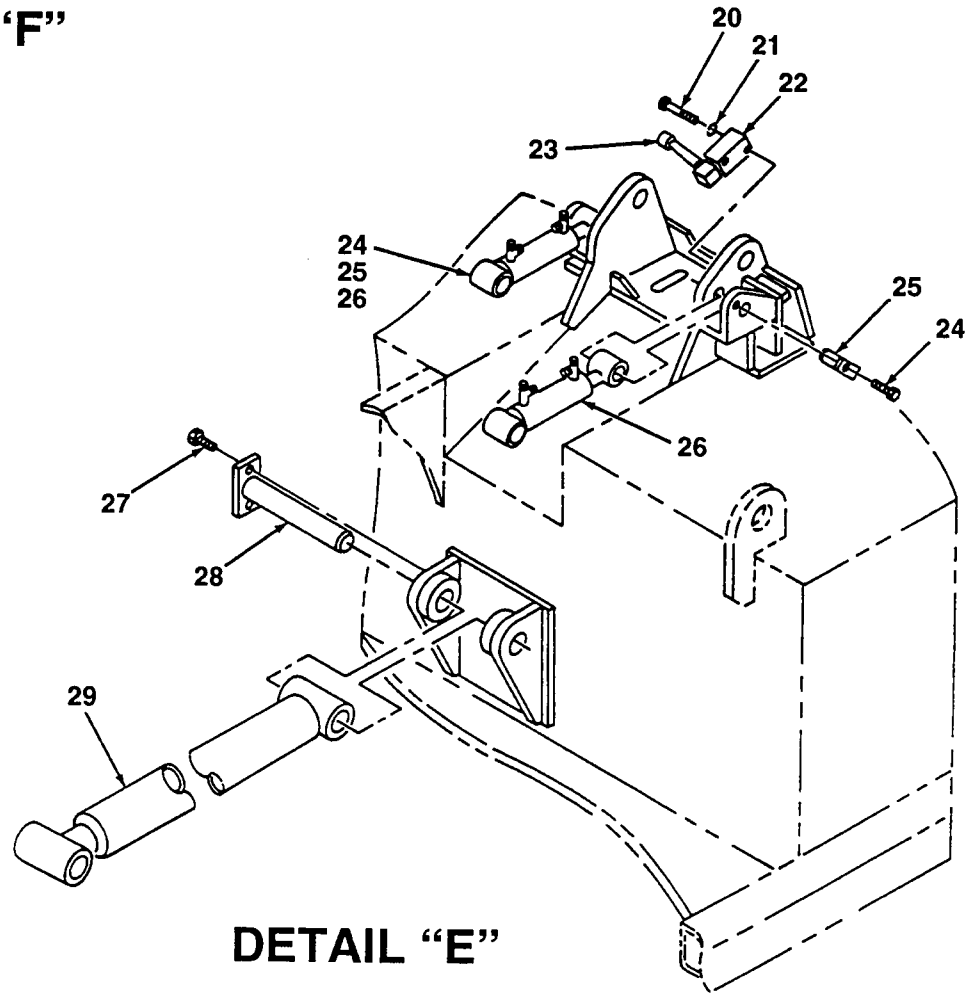
Ref.	Part No.	Description	Qty	Remarks
5	60637	Capscrew	2	
6	22169	Washer, Gearbox	2	
7	1205-96	Jam Nut	2	
8	62222	Screw, Set Cup Point	2	
9	60601	Capscrew	1	
10	22789	Assembly, Rotation Gearbox	1	See Page 4.32 for Details
11	310 3110	Capscrew	16	
12	22021	Ring, Slewing	1	
13	60511	Capscrew	4	
14	1210-17	Lockwasher	4	
16	60612	Capscrew	2	
17	1210-20	Lockwasher	2	
18	63403	Flat Washer	2	

TURRET ASSEMBLY

Mark Industries



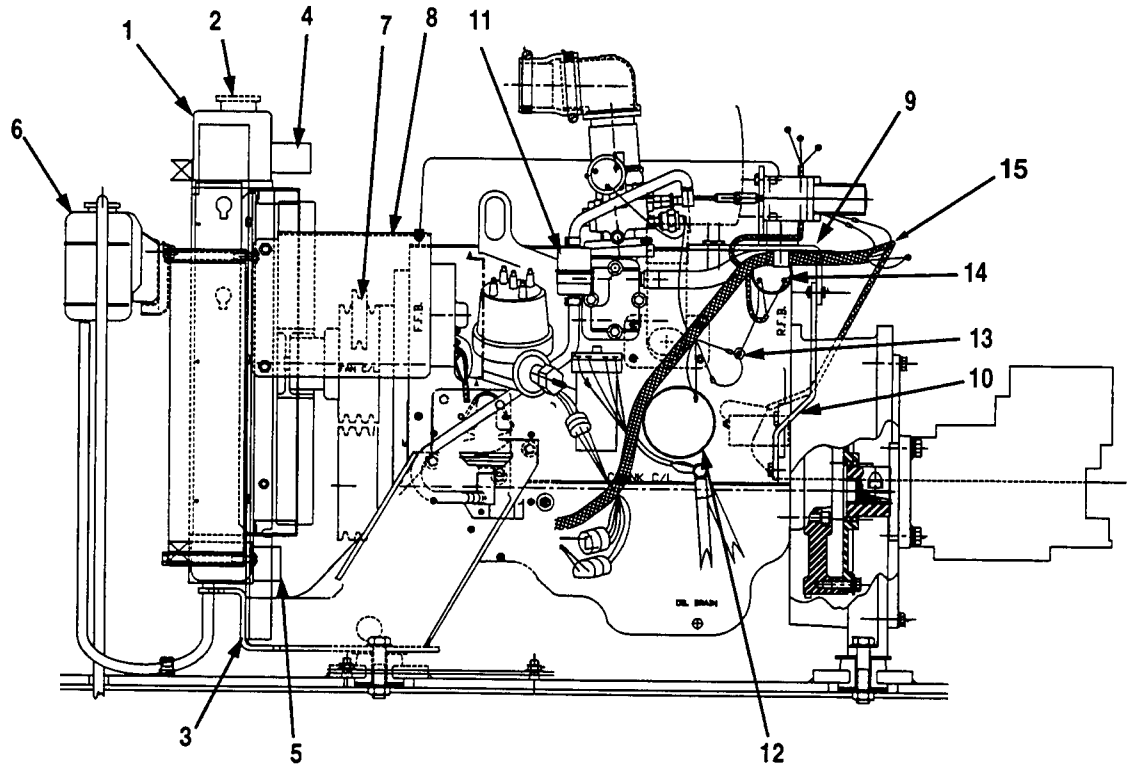
DETAIL "F"



DETAIL "E"

Ref.	Part No.	Description	Qty	Remarks
20	62704	Screw, Machine	2	
21	63313	Lockwasher	2	
22	70107	Limit Switch	1	
23	70031	Arm, Lever	1	
24	60607	Capscrew	2	
25	21337	Pin, Master Leveling Cylinder	2	
26	21084	Assembly, Master Leveling Cylinder	2	See Page 4.58 for Details
27	60618	Capscrew	2	
28	22046	Pin, Lift Cylinder	1	
29	24056	Assembly, Lift Cylinder	1	See Page 5.14 for Details
30	60318	Capscrew	4	
31	1210-14	Lockwasher	4	
32	1209-44	Flat Washer	4	
33	70209	Relay, Solenoid	2	

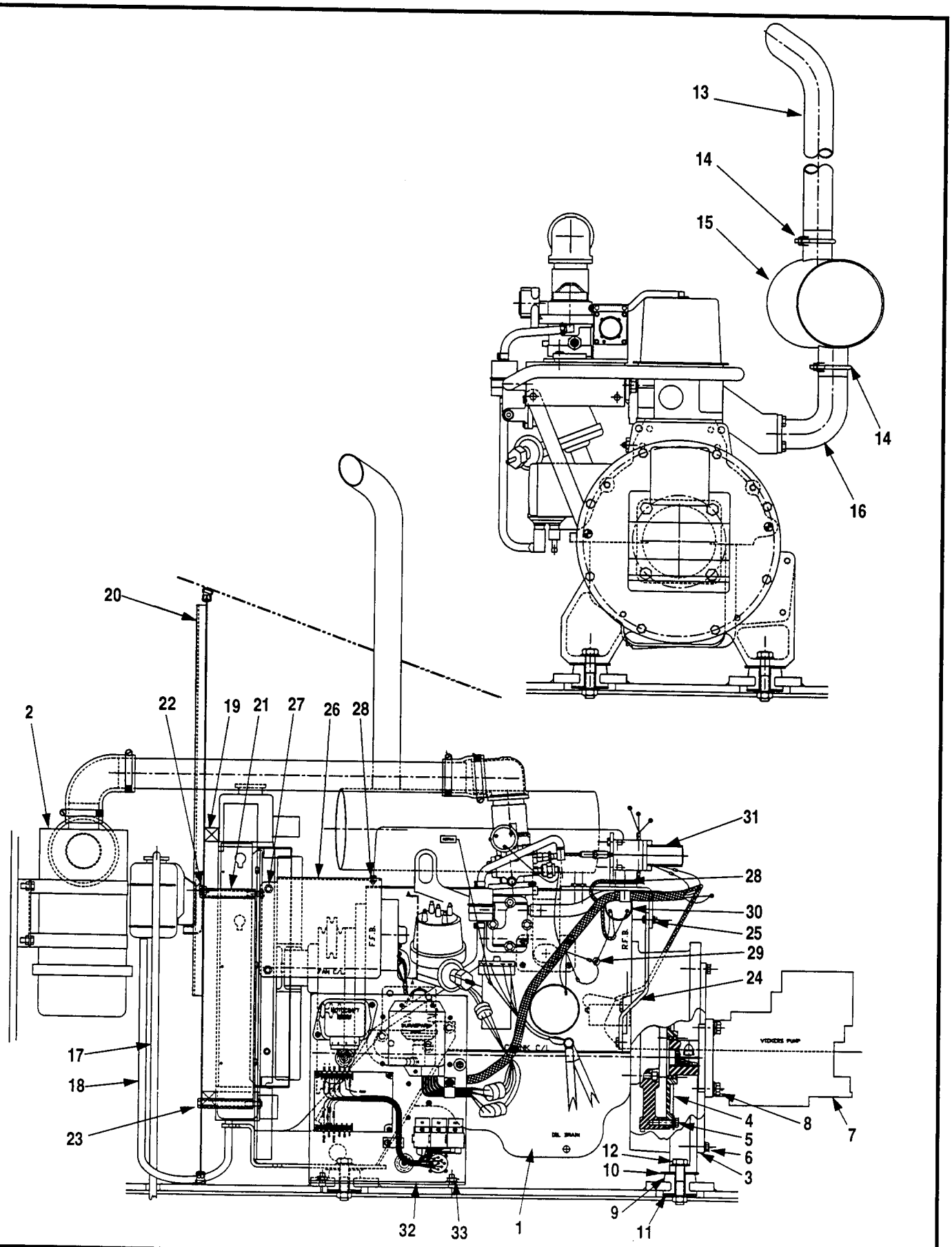
NOTES



Ref.	Part No.	Description	Qty	Remarks
1	69776	Radiator	1	
2	69777	Cap, Radiator	1	
3	212083	Bracket, Radiator Support	1	
4	69778	Hose, Upper	1	
5	69779	Hose, Lower	1	
6	69780	Tank, Recovery	1	
7	69783	Belt, Fan	1	
8	212039	Cover, Alternator	1	
9	212072	Bracket, Governor Mounting	1	
10	212052	Support, Governor Bracket	1	
11	69781	Filter, Fuel (Gasoline)	1	
12	69782	Filter, Oil	1	
13	160676	Temperature Switch	1	
	1219-214	Bushing	1	
14	U441 6822	Switch, Oil Pressure	1	
15	212076	Wire Harness	1	

ENGINE (FORD)

Mark Industries



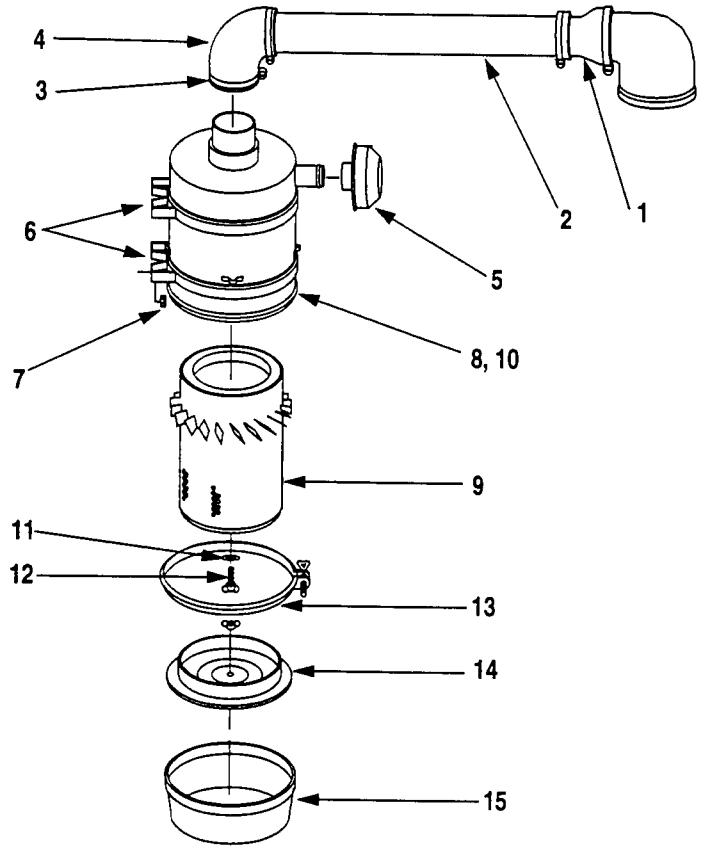
Ref.	Part No.	Description	Qty	Remarks
	212082	Engine Assembly	Ref.	Incl. Items 1 thru 33
1	212546	Engine (Gas)	Ref.	See Ford for Parts & Service
2		Air Cleaner	Ref.	See Page 4.10
3	212069	Cover, Flywheel	1	
4	211989	Flywheel Coupling	1	
5	1200-61	Capscrew, 3/8C x 1-1/4	8	
	1210-20	Lockwasher	8	
	1209-4	Flatwasher	8	
6	1200-61	Capscrew, 3/8C x 1-1/4	8	
	1210-20	Lockwasher	8	
7	81442	Pump	1	See Page 4.46
8	1200-98	Capscrew, 1/2C x 1-1/4	4	
	1210-27	Lockwasher	4	
	1209-6	Flatwasher	4	
9	160672	Bushing, Motor Mount	4	
10	160673	Washer	4	
11	160674	Washer	4	
12	1200-156	Capscrew, 5/8C x 3	4	
	1209-8	Flatwasher	8	
	1205-90	Locknut, 5/8C	4	
13	212071	Pipe, Exhaust Stack	1	
14	16230	Clamp, 2"	2	
15	160668	Muffler	1	
16	160669	Tube, Exhaust	1	
17	180091-5.41	Hose, Washer	1	(65")
18	180091-2.08	Hose, Washer	1	(25")
19	12148-20	Gasket, Foam	4	1"x1"
20	212037	Baffle Plate Ass'y	1	
21	212058	Baffle Spacer	2	
22	1200-29	Capscrew, 5/16C x 3/4	2	
	1205-34	Locknut, 5/16C	2	
23	1200-45	Capscrew, 3/8C x 4-1/2	4	
	1205-45	Locknut, 3/8C	4	
24	212052	Bracket, Support	1	
25	1200-7	Capscrew, 1/4C x 1-1/2	2	
	1205-21	Locknut, 1/4C	2	
26	212039	Cover, Alternator	1	
27	1200-59	Capscrew, 3/8C x 1	2	
	1205-45	Locknut, 3/8C	2	
28	1200-1	Capscrew, 1/4C x 3/4	3	
	1205-21	Locknut, 1/4C	3	
29		Switch, Water Temperature	1	See Page 4.7
30		Switch, Oil Pressure	1	See Page 4.7
31	70855	Solenoid, Governor	1	
	70856	Kit, Bracket	1	
32	212099	Control Panel	1	See Page 4.17
33	1205-45	Locknut, 3/8C	2	
	1209-4	Flatwasher	2	

Model CH80C

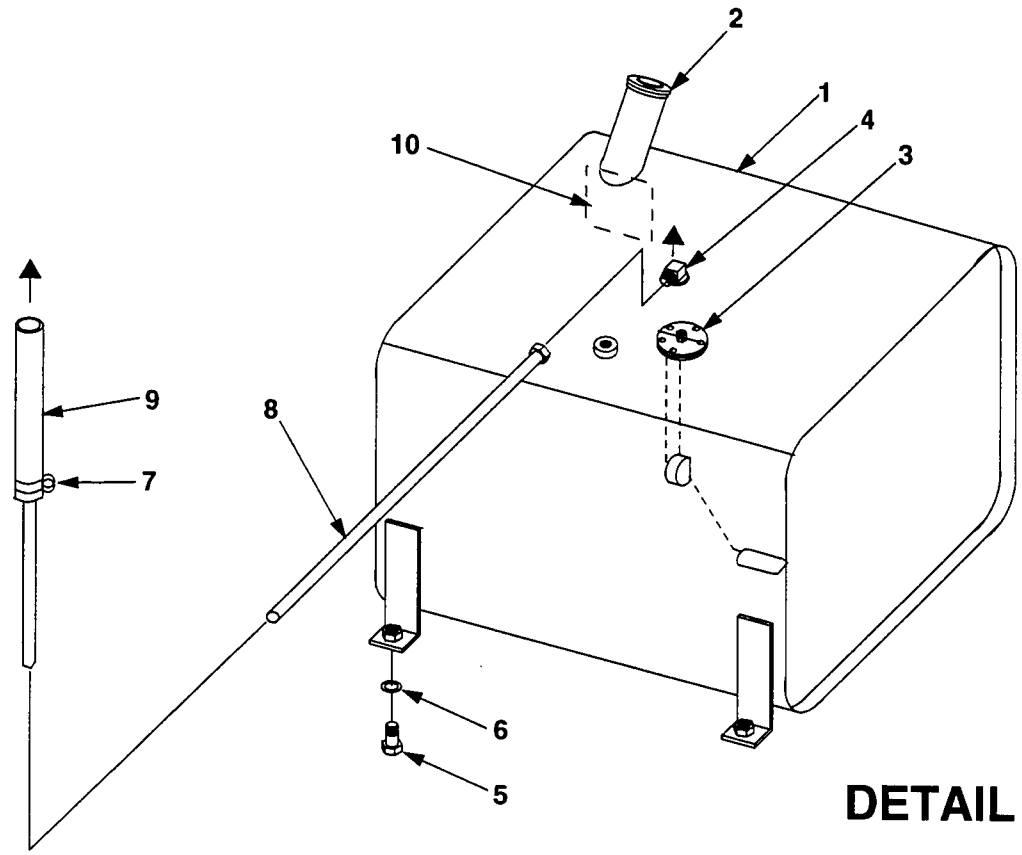
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AIR CLEANER
(FORD ENGINE)

Mark Industries



Ref.	Part No.	Description	Qty	Remarks
1		Hose	Ref.	Part of Engine
2	212010	Tube	1	
3	1240-120	Clamp	2	
4	1243-68	Elbow	1	
5	160083	Hood, Air Cleaner	1	
6	65412	Band, Mounting	2	
7	1205-45	Locknut, 3/8C	4	
8	160082	Air Cleaner	1	Incl. Items 9 thru 15
9	1243-75	Element	1	
10	29347	Decal	1	
11	29348	Gasket, Washer	1	
12	29349	Screw, Thumb	1	
13	29350	Clamp Ass'y	1	
14	29351	Baffle Ass'y	1	
15	29352	Cup Ass'y	1	

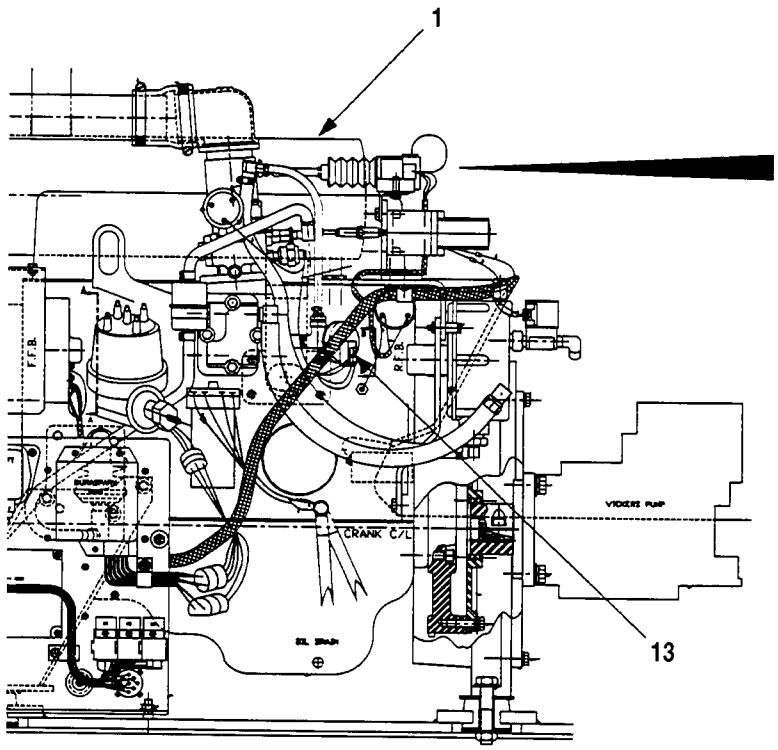


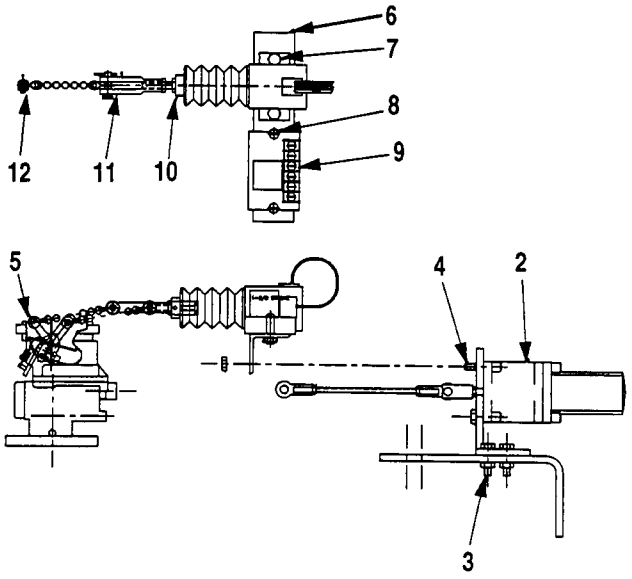
DETAIL "B"

Ref.	Part No.	Description	Qty	Remarks
	212089	Fuel Tank Assembly (Ford Gas & Dual Fuel)	1	Incl. Items 1 thru 10
1	211929	Tank, Fuel	1	40 Gal.
2	69763	Cap	1	
3	69764	Sender, Fuel	1	
4	69765	Tube	1	
5	1200-61	Capscrew, 3/8C x 1-1/4	4	
6	1209-89	Flatwasher	4	
7	1240-100	Clamp	2	
8	212090	Tube	1	
	200B2007-2	Clamp	4	
	1205-45	Locknut, 3/8	4	
	1209-4	Flatwasher, 3/8	4	
9	160091- 63	Hose	1	
10	181829	Decal, Gas Fuel	1	

ENGINE - LP/GAS
(FORD ENGINE)

Mark Industries



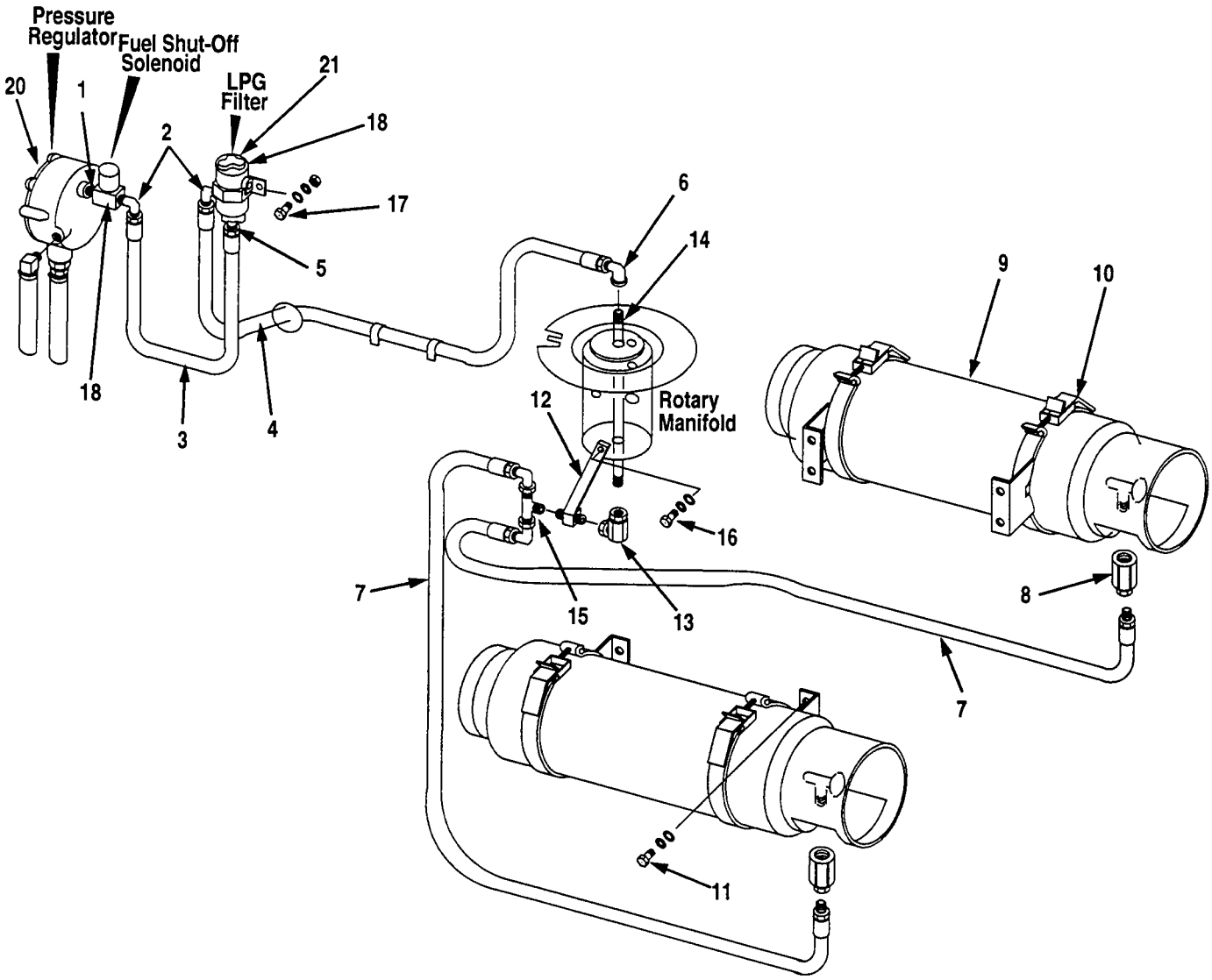


The parts listed below are applicable to the LP/Gas engine only. Refer to the Gas engine for all other parts.

Ref.	Part No.	Description	Qty	Remarks
	212081	Engine Assembly	Ref.	Incl. Items 1 thru 13 and 1thru 33 Page 4.9
1	212545	Engine, LP/Gas	1	See Ford for Parts & Service
2	70855	Governor, Solenoid	1	
	70856	Kit, Bracket	1	
3	1200-3	Capscrew, 1/4C x 1	2	
	1205-21	Locknut, 1/4C	2	
4	62014	Capscrew, 1/4C x 1	2	
5	160671	Lever, Spring Loaded	1	
6	212053	Bracket, Choke Mounting	1	
7	1200-1	Capscrew, 1/4C x 3/4	2	
	1205-21	Locknut, 1/4C	2	
8	1233-2	Screw, #10 x 1-1/4 Round Head	2	
	1210-7	Lockwasher	2	
	1205-6	Nut, #10	2	
9	70505	Module, Relay	1	
10	70504	Solenoid, Choke	1	
11	160675	Chain w/Clevis	1	
12	61913	Capscrew, #10 x 3/8 Socket Head	1	
	61243	Locknut, #10	1	
13	69784	Vacuum Switch, 3 Terminal	1	

LP FUEL SYSTEM

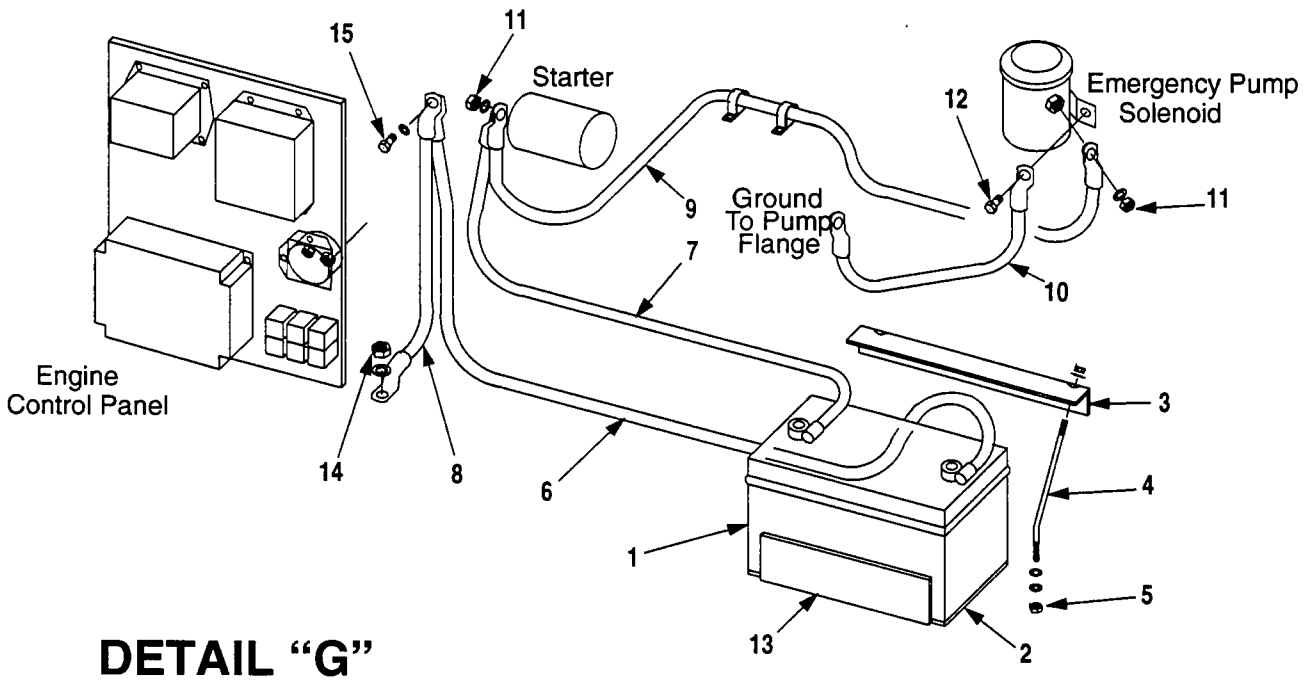
Mark Industries



Ref.	Part No.	Description	Qty	Remarks
	212599	LP Fuel System	1	Incl. Items 1 thru 17
1	1219-512	Nipple, 1/4 NPT	1	
2	1219-351	Elbow	2	
3	212417-32	Hose	1	
4	212417-72	Hose	1	
5	1219-559	Adapter	1	
6	16506	Elbow, Female	1	
7	212418-44	Hose	2	
8	65142	Socket, Female	2	
9	65937	Tank, Propane	2	
10	486-B	Bracket, Mounting (2 piece)	2	
11	1200-57	Capscrew, 1/2C x 1	8	
	1210-20	Lockwasher	8	
	1209-4	Flatwasher	8	
12	21896	Bracket, LPG Swivel	1	
13	20815	Swivel, LPG	1	
14	65391	Nipple	1	
15	80029-07	Tee	1	
16	1200-335	Capscrew, 3/8C x 1/2	2	
	1210-20	Lockwasher	2	
	1209-4	Flatwasher	2	
17	1200-3	Capscrew, 1/4C x 3/4	2	
	1209-2	Flatwasher	2	
	1210-14	Lockwasher	2	
	1205-13	Nut, 1/4C	2	
18	69771	Filter, Fuel	1	
	69772	Element, Filter	1	
19	69773	Solenoid Valve, Fuel Shut-Off	1	
20	69774	Pressure Regulator	1	
	69775	Kit, Repair	1	
21	1219-120	Plug	1	

BATTERY ASSEMBLY
(FORD & CUMMINS ENGINE)

Mark Industries



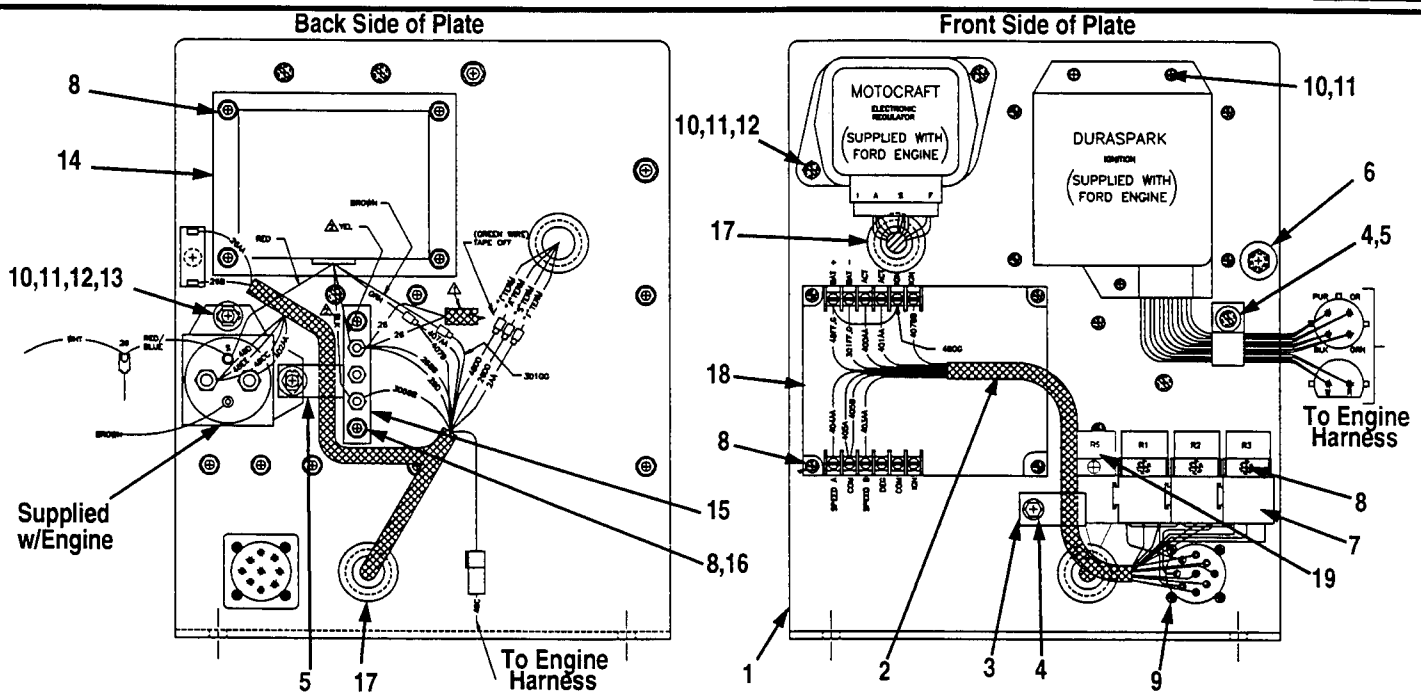
DETAIL "G"

Ref.	Part No.	Description	Qty	Remarks
	212066	Battery Installation (Ford & Cummins)	1	Incl. Items 1 thru 15
1	1223-824	Battery	1	
2	706 8846	Plate, Masonite, Battery Isolation	1	
3	212541	Hold Down, Battery	1	
4	707 4375	Rod, Battery Hold-Down	2	
5	1205-34	Locknut, 5/16C	4	
	1209-3	Flatwasher	4	
6	70798	Cable, Battery (+)	1	
7	70797	Cable, Battery (-)	1	
8	70799	Cable, Engine Ground	1	
9	70800	Cable, Starter	1	
10	70851	Cable, Emergency Pump	1	
11	1205-199	Nut, 5/16C Brass	2	
	1210-17	Lockwasher	2	
12	1200-309	Capscrew, 1/4C x 1/2	1	
13	212210	Plate, Masonite	1	
14	1205-170	Nut, 3/8C Brass	1	
	1210-77	Washer, 7/16 Ext. Tooth	1	
	1210-20	Lockwasher, 3/8	1	
15	1200-57	Capscrew, 3/8C x 3/4	1	
	1210-20	Lockwasher	1	

ENGINE CONTROL PANEL (FORD ENGINE)

Model CH80C

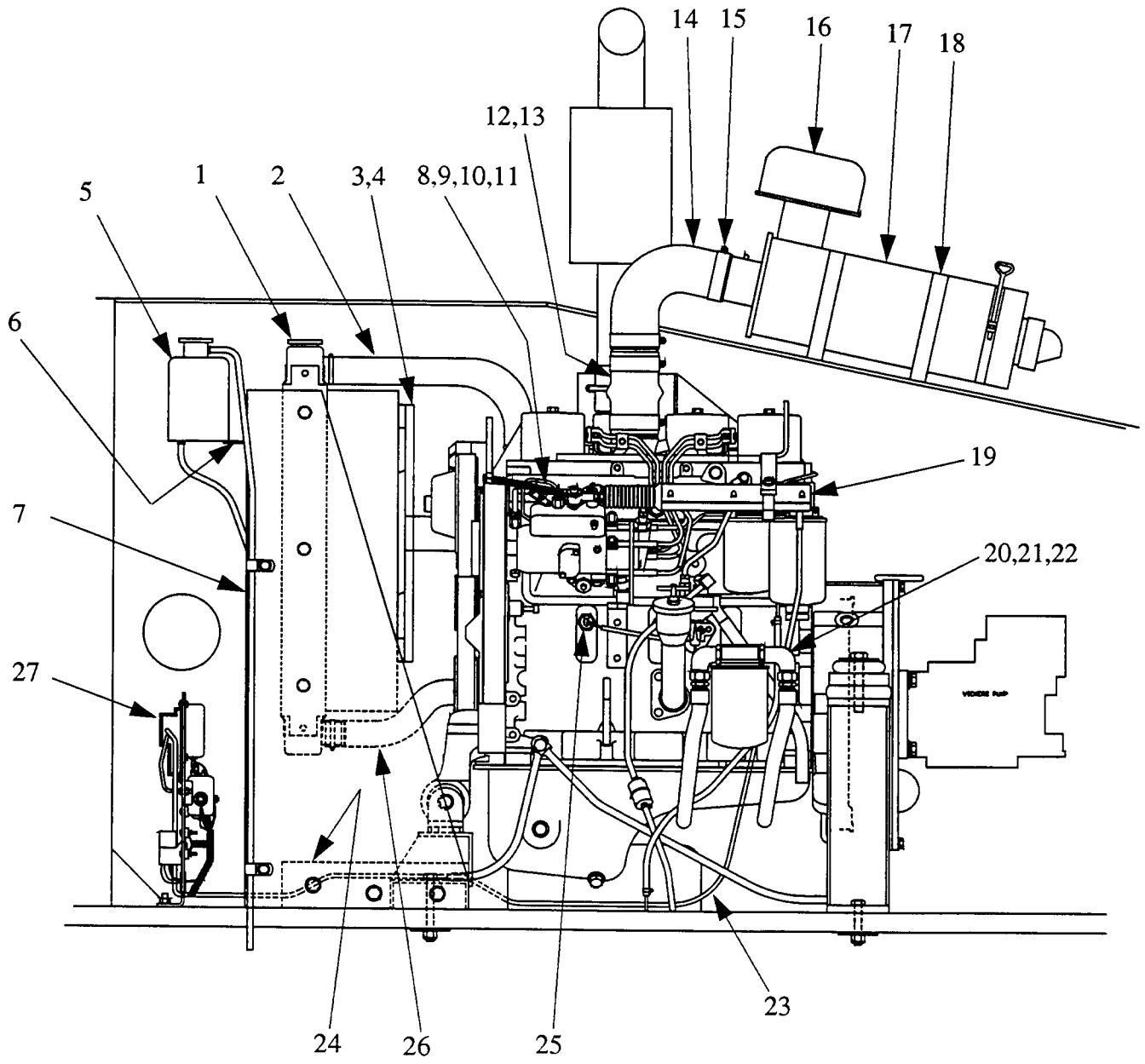
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Ref.	Part No.	Description	Qty	Remarks
	212099	Engine Control Panel Ass'y	1	Incl. Items 1 thru 19
1	212028	Plate	1	
2	212106	Harness, Control Panel	1	
3	200B2007-4	Clamp, 1/2"	1	
4	1200-57	Capscrew, 3/8C x 3/4	1	
	1209-4	Flatwasher, 3/8	1	
	1210-20	Lockwasher, 3/8	1	
	1205-36	Nut, 3/8C	1	
5	200B2007-3	Clamp, 3/8"	2	
6	441 4026	Circuit Breaker (20A)	1	
	442 2399	Boot	1	
7	441 6828	Relay	3	
8	1202-6	Machine Screw, #10-24 x 3/4	13	
	1210-7	Lockwasher, #10	13	
	1205-5	Nut, #10-24	13	
9	1233-22	Machine Screw, #5-40 x 1/2	4	
	1230-11	Keps, #5-40	4	
10	1200-1	Machine Screw, 1/4C x 3/4	7	
11	1210-14	Lockwasher, 1/4	7	
12	1205-13	Nut, 1/4C	4	
13	1209-2	Flatwasher, 1/4	3	
14	70793	Starter Lockout	1	
15	7099	Block, Terminal	1	
16	1223-428	Eyelet, #10	2	
17	1221-13	Grommet	2	
18	70854	Controller	1	
19	212311	Starter Relay Boost	1	

ENGINE (CUMMINS)

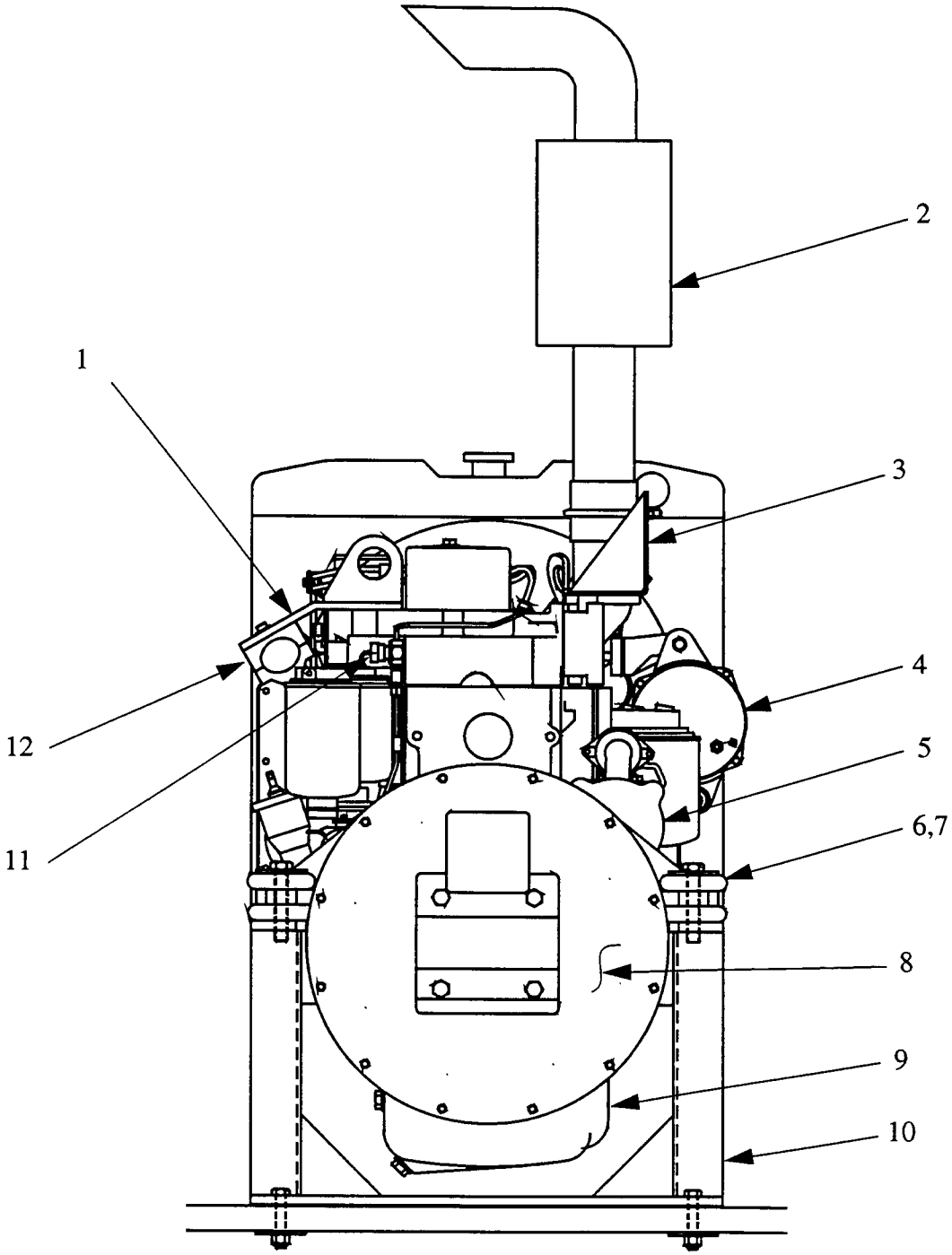
Mark Industries



Ref.	Part No.	Description	Qty	Remarks
1	69290	Radiator	1	
2	69310	Upper Radiator Hose	1	
3	69299	Fan Guard	1	
4	69300	Fan	1	
	69312	Capscrew	4	
5	69780	Recovery Tank	1	
6	69291	Recovery Tank Bracket	1	
7	69298	Radiator Bracket	2	
8	69301	Rod End	1	
9	69302	Boot Kit	1	
10	6422	Spring	1	
11	8903	Spring Hook	1	
12	709 1310	Tube	1	
13	1243-125	Hump Hose	1	
14	1243-67	Elbow	1	
15	1240-216	Clamp	4	
16	1243-27	Stack Cap	1	
17	709 1304	Air Cleaner	1	
	207537	Filter	1	
	207541	Valve	1	
18	1243-32	Mounting Band	2	
19	70829	Actuator	1	
20	69293	Filter	1	
21	69294	Filter Kit	1	
22	69295	Bracket	1	
23	70922	Switch Harness	2	
24	69296	Front Mount	1	
25	70920	Oil Pressure Switch	1	
26	69311	Lower Radiator Hose	1	
27	70830	Controller	1	
28	69098	Manual, Cummins (Not Shown)	1	
29	69292	Engine Oil Cooler (Not Shown)	1	

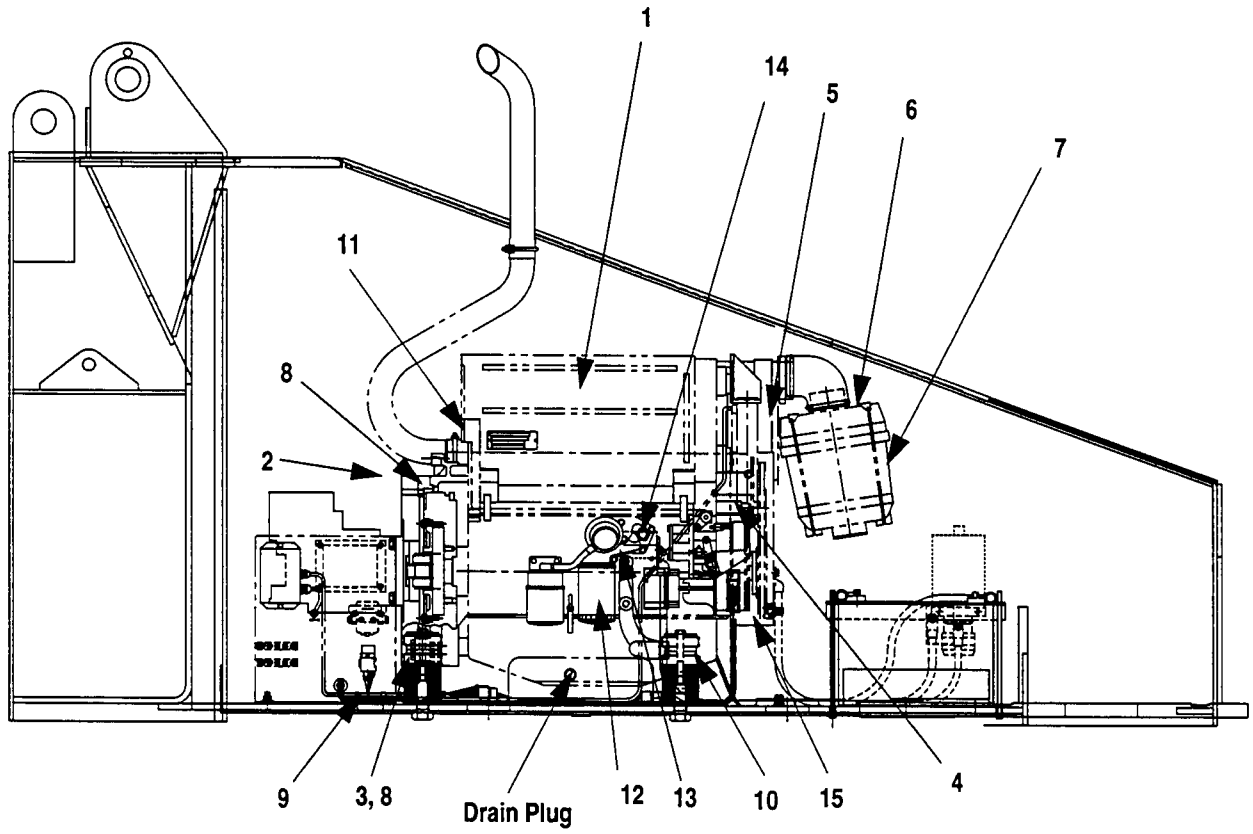
ENGINE (CUMMINS)

Mark Industries



Ref.	Part No.	Description	Qty	Remarks
1	69309	Throttle Bracket	1	
2	69304	Spark Arrestor Assembly	1	
3	69305	Exhaust Bracket	1	
4	69289	Alternator	1	
5	69288	Starter	1	
6	69308	Variation Mount	2	
7	69313	Washer	2	
8	69099	Pump Drive	1	
9	69307	Engine	1	See Cummins for Parts
10	60297	Rear Mount	1	
11	70921	Water Temp. Switch	1	
12	69303	Clamp Kit	1	

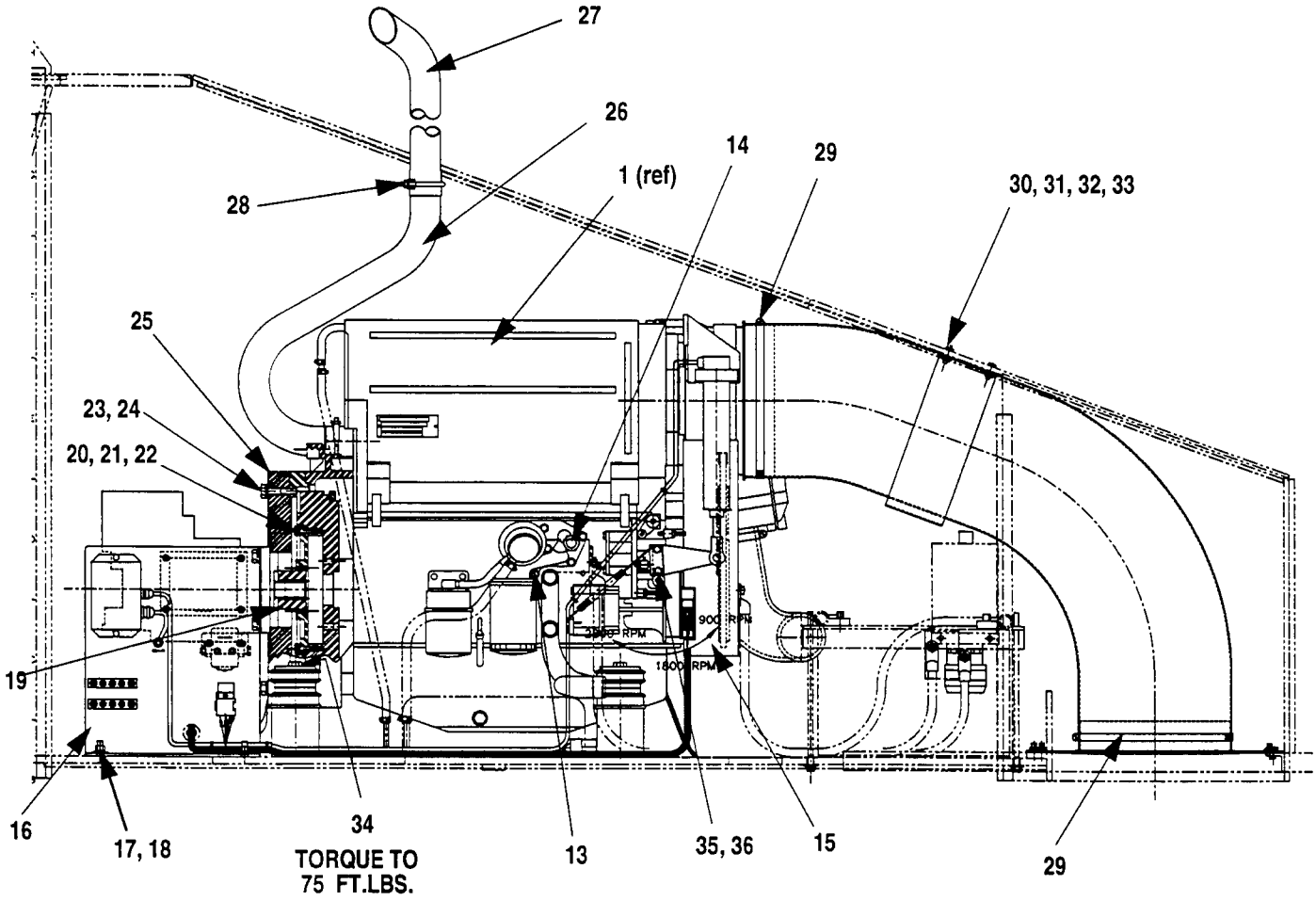
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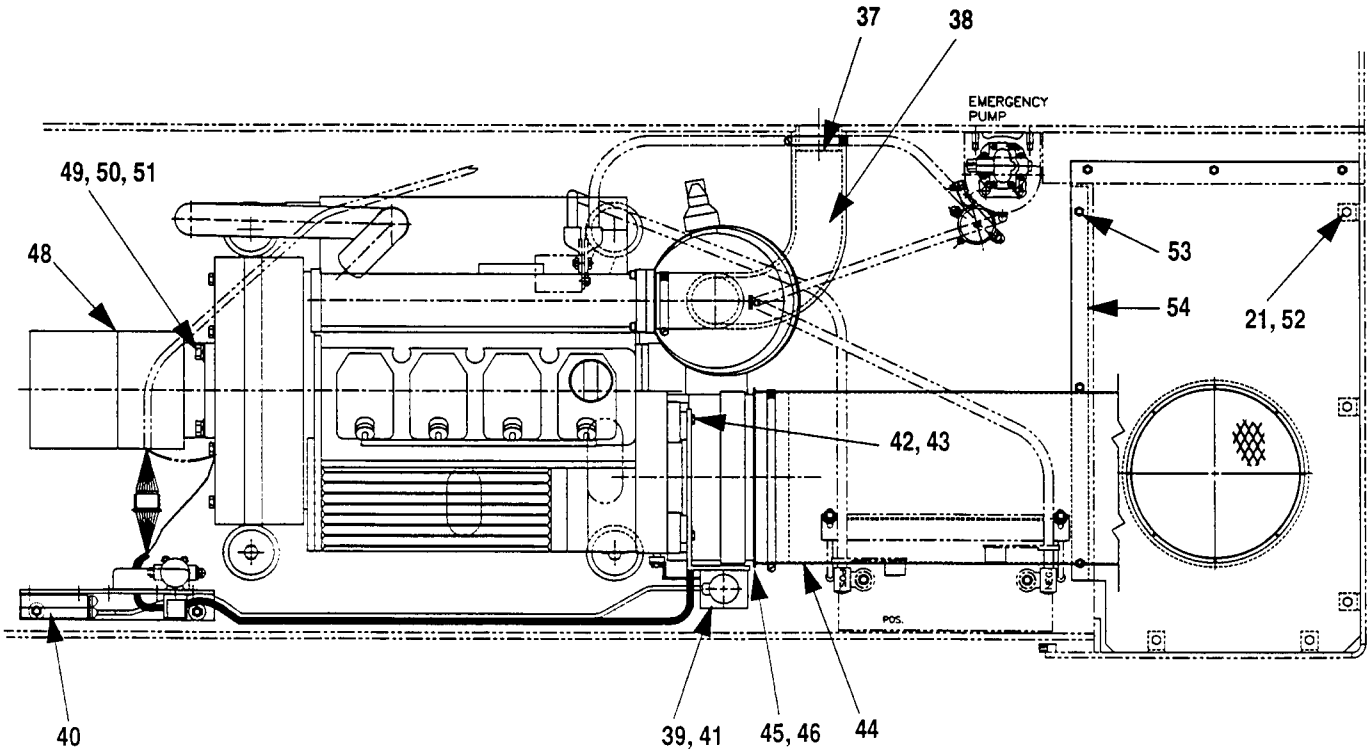


Ref.	Part No.	Description	Qty	Remarks
	212436	Engine Assembly, Deutz	Ref.	Incl. items 1 thru 54
1	212298	Engine, Deutz	1	See Deutz for Parts & Service
2	68785	Starter, 12 Volt	Ref.	
3	68786	Flywheel	Ref.	
4	68787	Solenoid, Shutdown	Ref.	
5	68788	Ring, Air Guide	Ref.	
6	68789	Service Indicator	Ref.	
7	709 1304	Assembly, Air Cleaner (dry type)	1	
	207537	Element, Replacement	1	
	207541	Valve	1	
8	68790	Housing, Adapter	Ref.	
9	68791	Harness, Wiring	Ref.	
10	68792	Mount, Engine	Ref.	
11	68793	Muffler, Manifold	Ref.	
12	68794	Filter, Oil	Ref.	
13	68795	Switch, Oil Temp.	Ref.	

ENGINE, DIESEL (DEUTZ)

Mark Industries





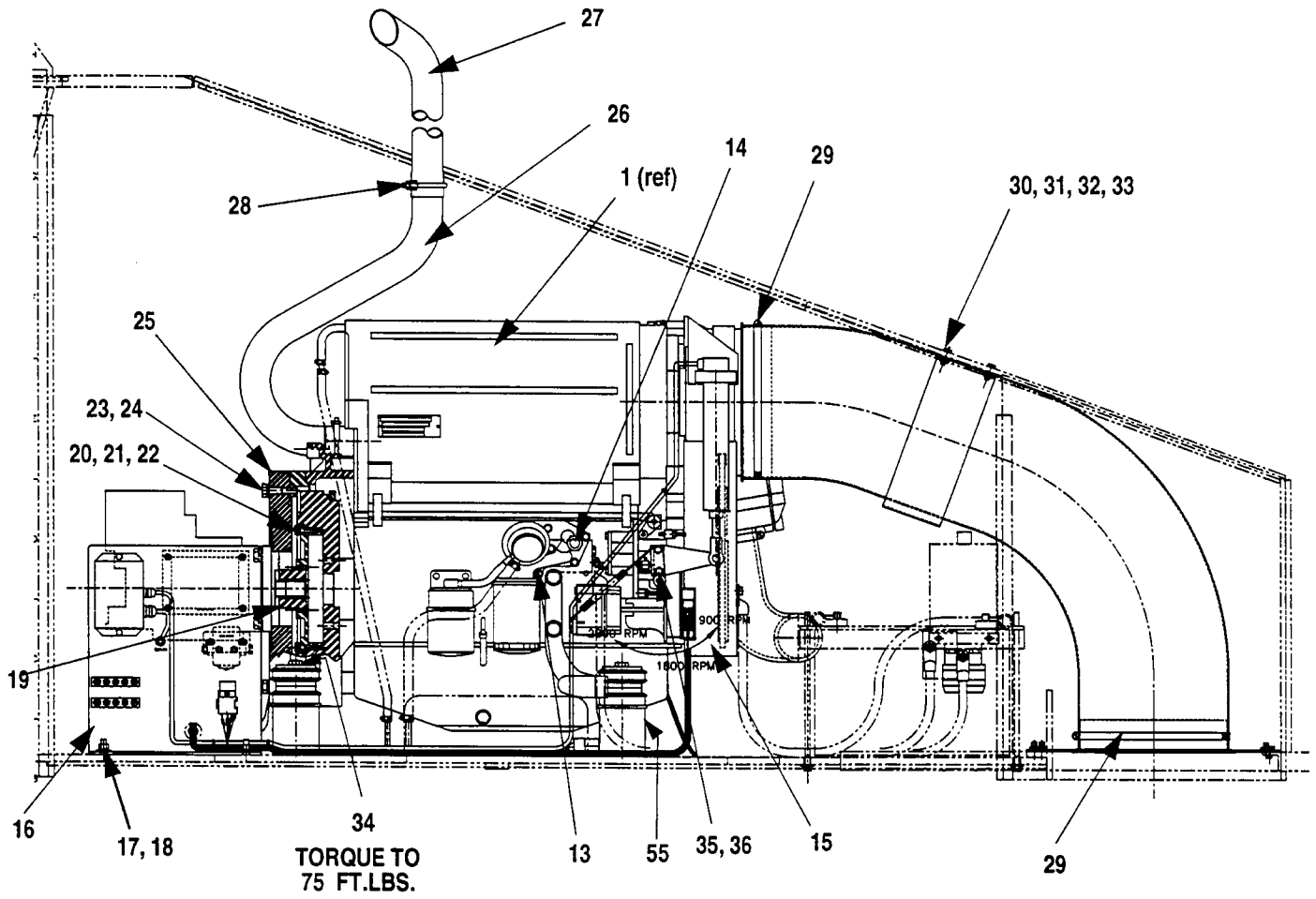
Mark Industries

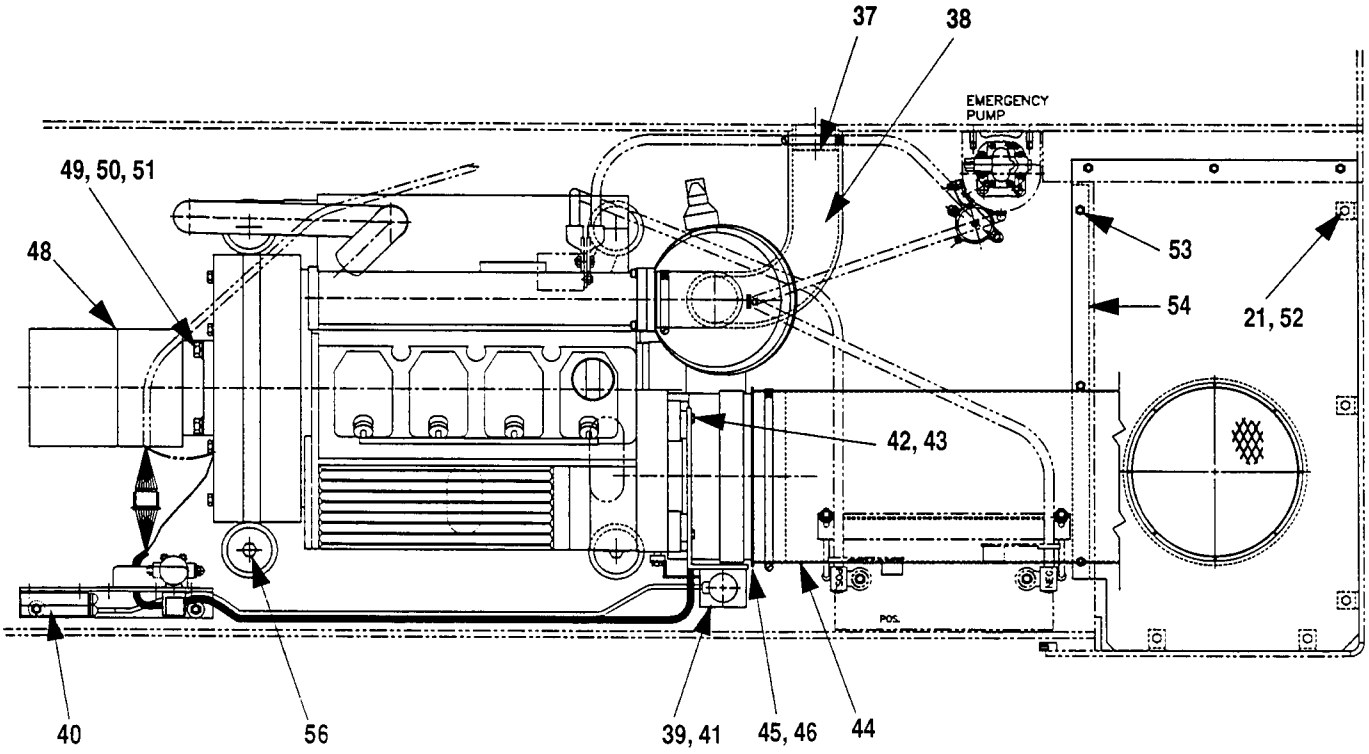
Ref.	Part No.	
14	600370	Switch,
13	68795	Switch,
15	160588	Guard,
16	212146	Control
17	1205-45	Locknut
18	1209-4	Flatwas
19	212107	Flywhee
20	071 408 40	Capscre
21	1210-17	Lockwa
22	1209-3	Flatwas
23	071 310 20	Capscre
24	085 310 18	Lockwa
25	212103	Plate, P
26	212117	Tube, E
27	212116	Tube, E
28	16230	Clamp,
29	160682	Clamp,
30	1209-2	Flatwas
31	1205-23	Locknut
32	1200-3	Capscre
33	212171	Hanger
34	1200-116	Capscre
35	071 406 16	Capscre
36	065 306 12	Lockwa
37	16318	Clamp,
38	160255-13	Hose
39	70829	Actuato
40	70830	Controll
41	70831	Hardwa
42	071 408 16	Capscre
43	085 308 16	Lockwa
44	160543	Duct, Ai
45	210792	Duct, Er
46	1211-24	Screw, #
47	212168	Baffle A
48	81442	Pump
49	1200-98	Capscre
50	1209-6	Flatwas

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ENGINE, DIESEL (DEUTZ)

Mark Industries

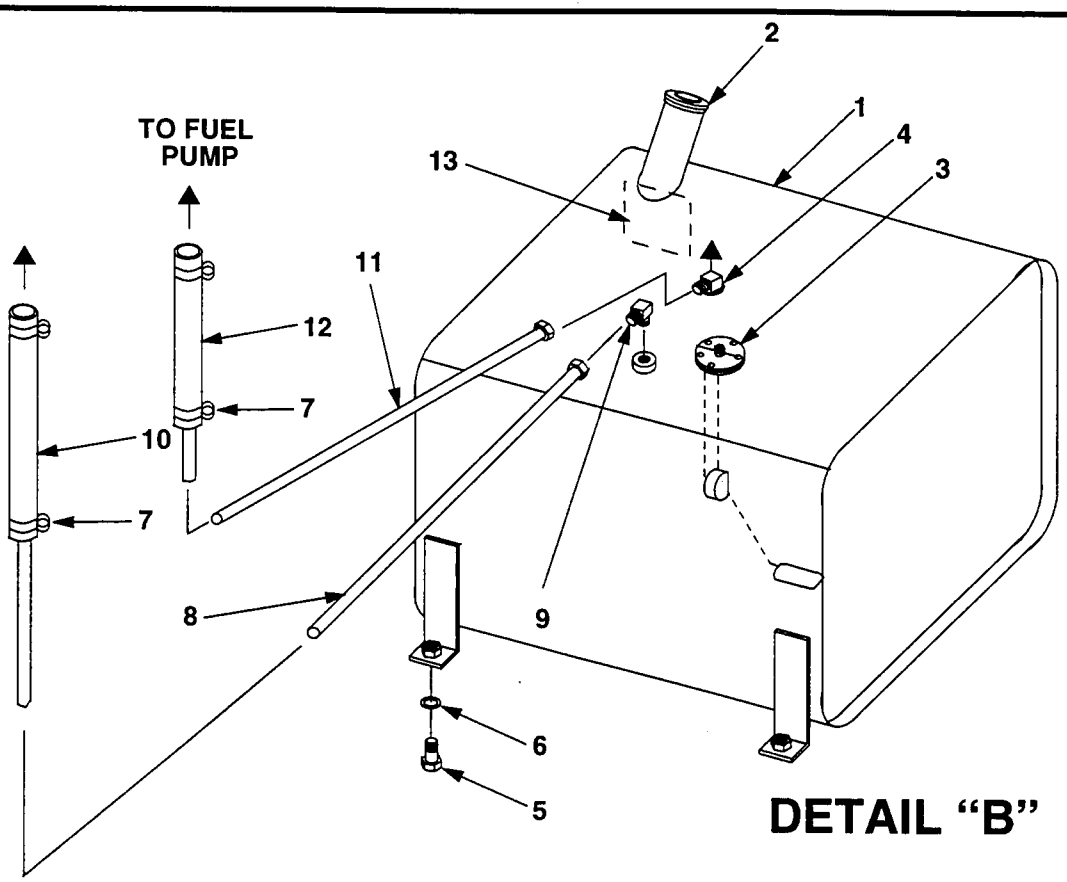




Ref.	Part No.	Description	Qty	Remarks
51	1210-27	Lockwasher, 1/2	4	
52	1200-319	Capscrew, 5/16C x 1/2	5	
53	1205-34	Locknut, 5/16C	6	
54	212166	Spacer	1	
55	212502	Spacer	4	
56	1200-136	Capscrew	4	

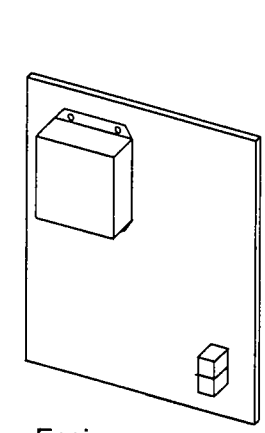
FUEL TANK, DIESEL
(Deutz & Cummins Engine)

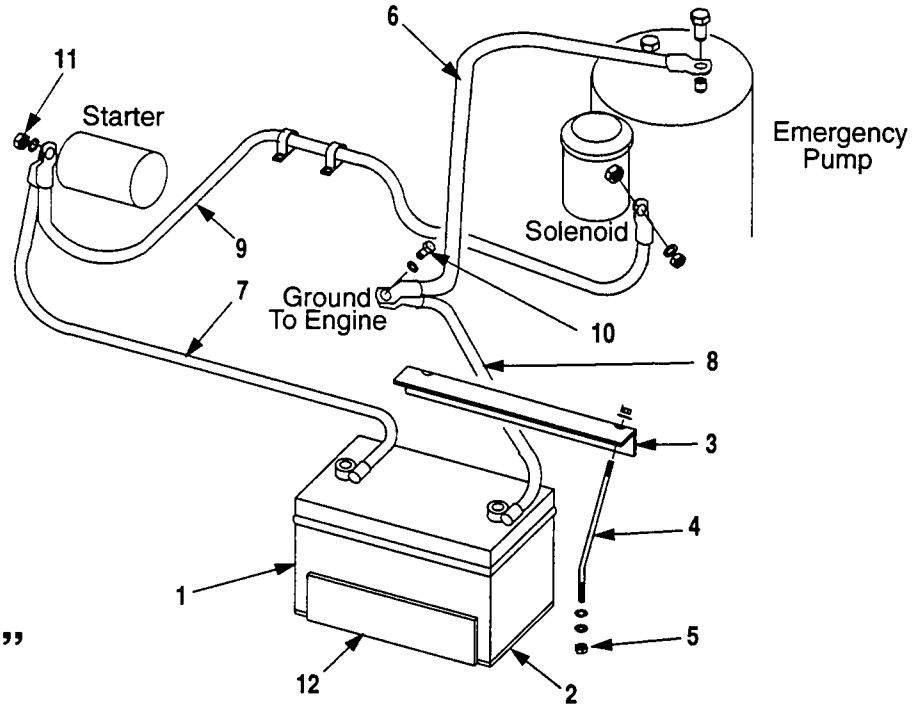
Mark Industries



DETAIL "B"

Ref.	Part No.	Description	Qty	Remarks
	212181	Fuel Tank Assembly (Deutz & Cummins Engine)	1	Incl. Items 1 thru 13
1	211929	Tank, Fuel	1	40 Gal.
2	69763	Cap	1	
3	69764	Sender, Fuel	1	
4	69765	Tube	1	
5	1200-61	Capscrew, 3/8C x 1-1/4	4	
6	1209-89	Flatwasher	4	
7	1240-100	Clamp	4	
8	212164	Tube, .31 OD (return line)	1	
	200B2007-2	Clamp	4	
	1205-45	Locknut, 3/8	2	
	1209-4	Flatwasher, 3/8	2	
9	1219-904	Adapter, 90°	1	
10	160091-2.0	Hose, .31 ID x 24" (return)	1	
11	212090	Tube, .375 OD (supply line)	1	
	1219-559	Adapter	1	
	200B2007-2	Clamp	4	
	1205-45	Locknut, 3/8	2	
	1209-4	Flatwasher, 3/8	2	
12	12301-20	Hose, .38 ID x 20" (supply)	1	
13	181830	Decal, Diesel Fuel	1	



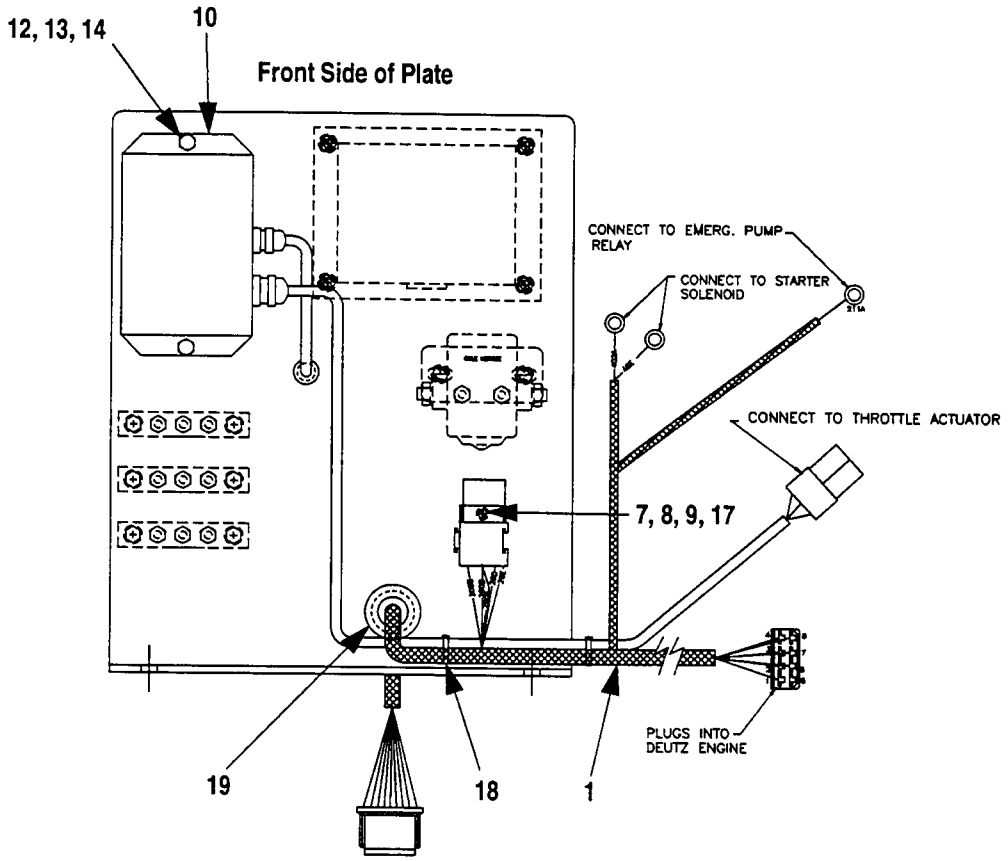


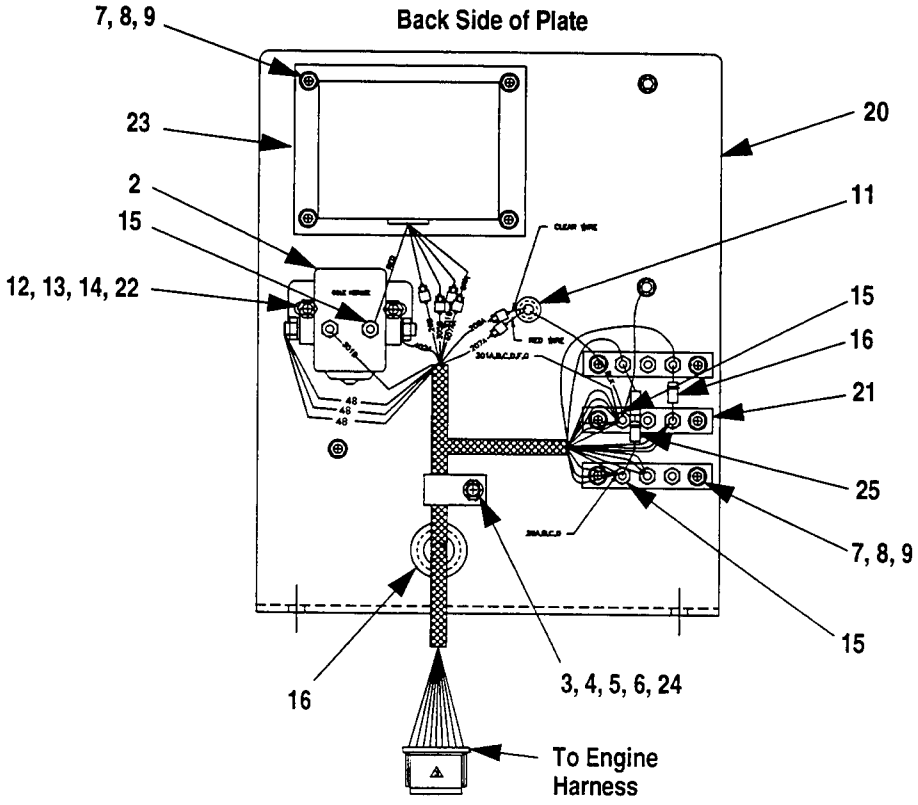
DETAIL "G"

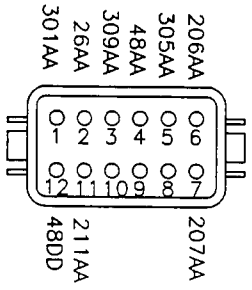
Ref.	Part No.	Description	Qty	Remarks
	212174	Battery Installation (Deutz Engine)	1	Incl. Items 1 thru 12
1	1223-824	Battery	1	
2	706 8846	Plate, Masonite, Battery Isolation	1	
3	212541	Hold Down, Battery	1	
4	707 4375	Rod, Battery Hold-Down	2	
5	1205-32	Locknut, 5/16C	4	
	1209-3	Flatwasher	4	
6	70835	Cable, Battery, Emergency Pump	1	
7	70836	Cable, Battery (+)	1	
8	70833	Cable, Engine Ground	1	
9	70834	Cable, Starter	1	
10	1200-366	Capscrew, M10 x 30	1	
	085 310 18	Lockwasher, M10	1	
11	1205-170	Nut, 3/8C Brass	1	
	1210-20	Lockwasher, 3/8	1	
12	212210	Plate, Masonite	1	

ENGINE CONTROL PANEL
(Deutz & Cummins Engine)

Mark Industries







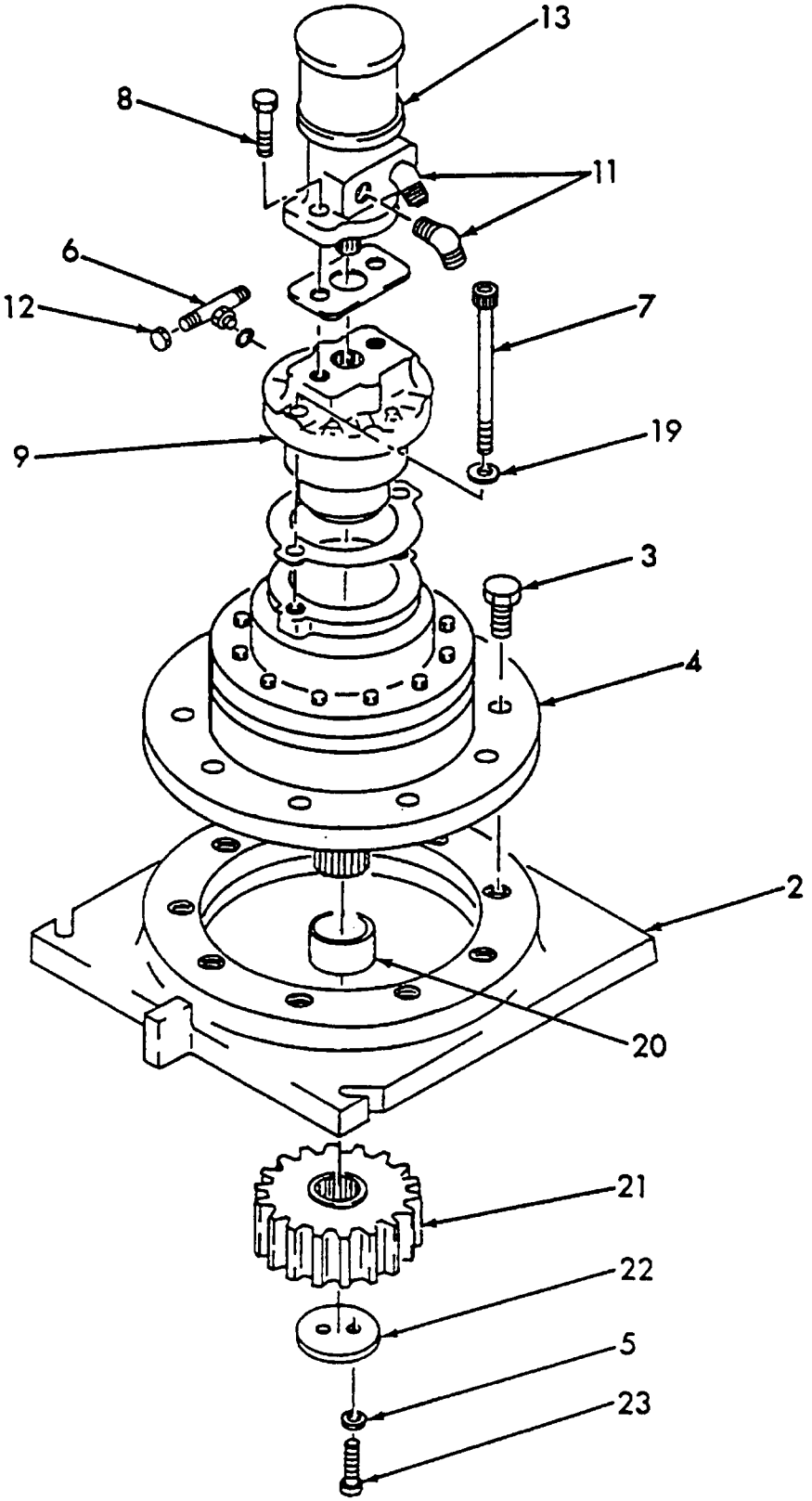
ENGINE CONTROL PANEL
(Deutz & Cummins Engine)

Model CH80C
Issued 1-96

Ref.	Part No.	Description	Qty	Remarks
	212146	Engine Control Panel Ass'y (Deutz Engine)	1	Incl. Items 1 thru 25
1	212159	Harness, Control Panel	1	
2	70209	Relay	1	
3	1200-57	Capscrew, 3/8C x 3/4	1	
4	1209-4	Flatwasher, 3/8	1	
5	1210-20	Lockwasher, 3/8	1	
6	1205-36	Nut, 3/8C	1	
7	1202-6	Machine Screw, #10-24 x 3/4	8	
8	1210-7	Lockwasher, #10	8	
9	1205-5	Nut, #10-24	8	
10	70830	Governor	Ref.	Part of Engine
11	1221-78	Grommet	1	
12	1202-15	Machine Screw, 1/4C x 3/4	4	
13	1210-14	Lockwasher, 1/4	4	
14	1205-13	Nut, 1/4C	4	
15	1223-428	Eyelet, #10	3	
16	70842	Diode Assembly	1	
17	441 6828	Relay	1	
18	1222-184	Tie, Cable	4	
19	1221-61	Grommet	1	
20	212161	Plate	1	
21	7099	Block, Terminal	3	
22	1209-2	Flatwasher, 1/4	3	
23	70793	Starter Lockout	1	
24	200B2007-4	Clamp, 1/2"	1	
25	70843	Diode/Resistor Assembly	1	

TURRET ROTATION GEARBOX

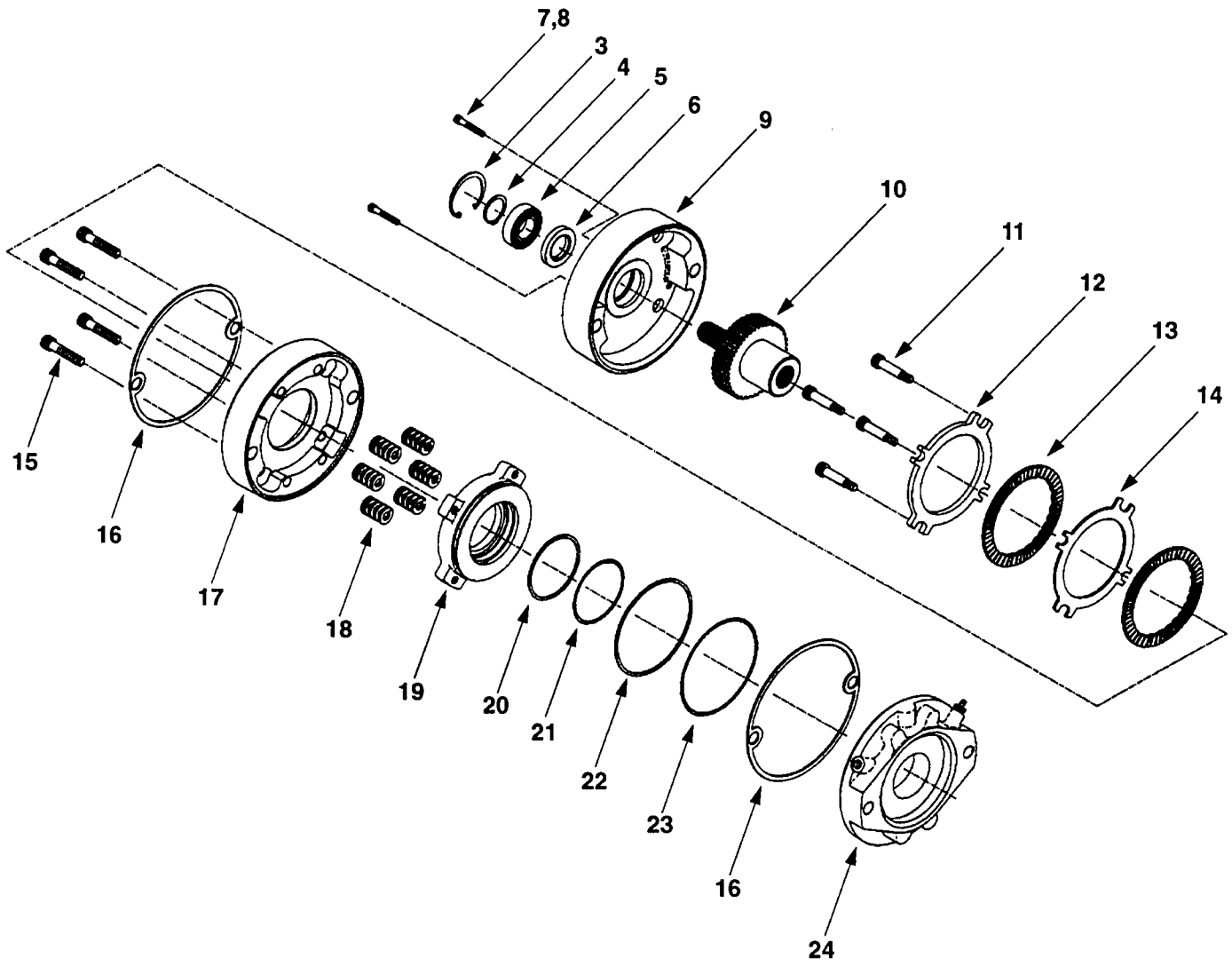
Mark Industries



Ref.	Part No.	Description	Qty	Remarks
1	22789	Assembly, Rotation Gearbox	Ref.	
2	22998	Weldment, Mounting Plate	1	
3	60602	Capscrew	9	
4	22830	Hub, Torque	1	See Page 4.60 for Details
5	1210-20	Lockwasher	2	
6	362 3233	Tee, Straight Thread Branch	1	
7	61940	Capscrew	2	
8	60622	Capscrew	2	
9	81424	Brake	1	See Page 4.34 for Details
11	80018-13	Elbow, 45 Degree Straight Thread	2	
12	80059-03	Cap	1	
13	81275	Motor, Hydraulic	1	See Page 4.36 for Details
19	1210-26	Lockwasher	2	
20	22099	Spacer, Pinion	1	
21	22828	Pinion	1	
22	22829	Retainer, Pinion	1	
23	61919	Capscrew	2	

TURRET ROTATION GEARBOX BRAKE

Mark Industries



TURRET ROTATION GEARBOX BRAKE

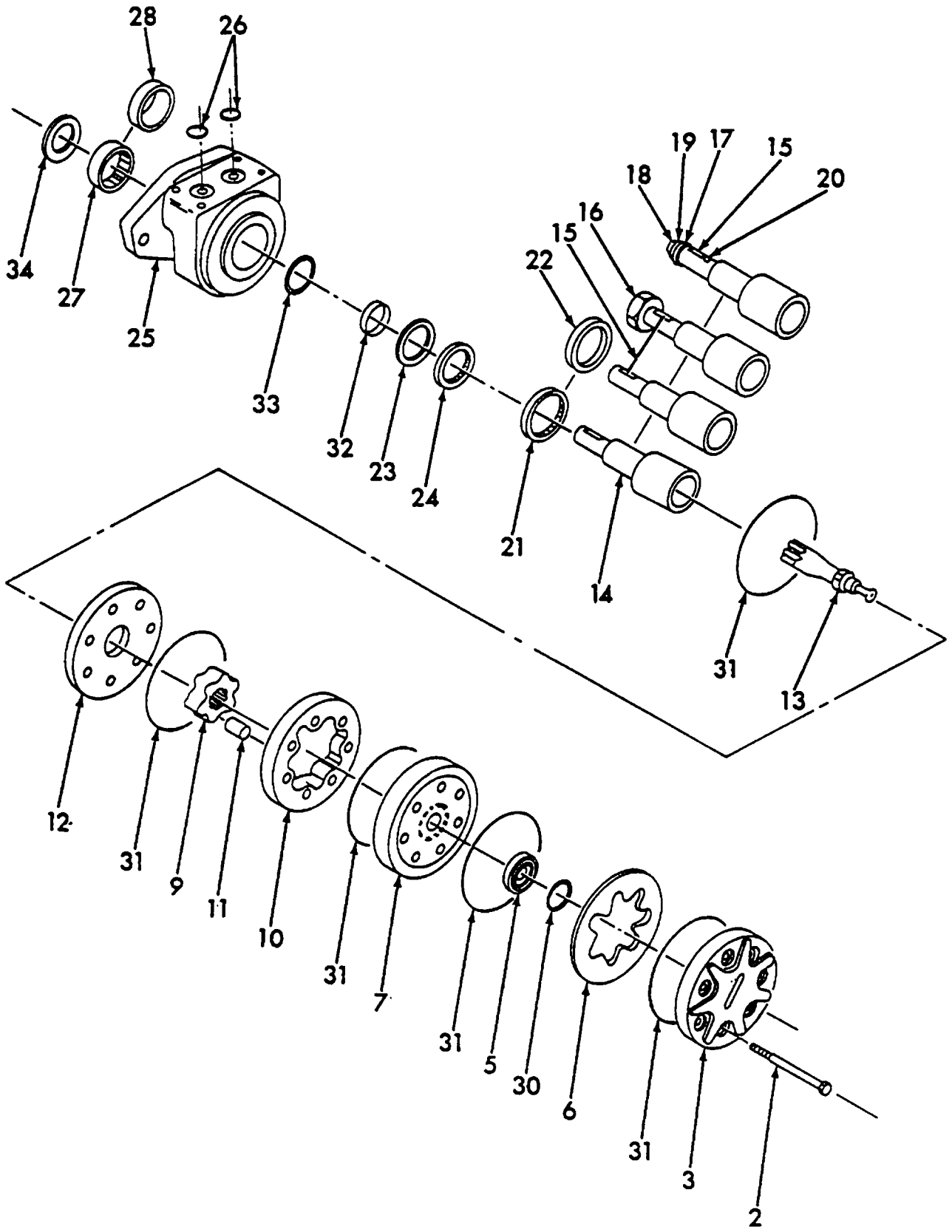
Model CH80C

Issued 1-96

Ref.	Part No.	Description	Qty	Remarks
	81424	Brake Assembly	Ref.	
	67657	Kit, Bearing	Ref.	Includes 1,2,5,6,8,16 & 25
	67644	Kit, Lining	Ref.	Includes 1,2,8,13,14,16 & 25
	67650	Kit, Spring	Ref.	Includes 1,2,8,16,18 & 25
	67150	Kit, Seal	Ref.	Includes 1,2,8,16,20-23 & 25
1	68714	Gasket	1	Not Shown
2	68715	O-Ring	1	Not Shown
3	68249	Retaining Ring	1	
4	68248	Retaining Ring	1	
5	68427	Bearing	1	
6	68422	Oil Seal	1	
7	68414	Capscrew	2	
8	68474	O-Ring	2	
9	68398	Cover Plate	1	
10	68404	Shaft	1	
	68251	Retaining Ring	1	
	68250	Outer Spline	1	
11	68253	Shoulder Screw	4	
12	68424	Primary	1	
13	68425	Rotor	3	
14	68423	Stator	2	
15	68252	Capscrew	2	
16	68421	Seal	2	
17	68401	Spring Plate	1	
18	68449	Spring	6	
19	67660	Piston	1	
20	68430	Backup Ring	1	
21	68431	O-Ring	1	
22	68428	Backup Ring	1	
23	68429	O-Ring	1	
24	68405	Pressure Plate	1	
25	66395	Bleed Screw	1	
26	600459	Gasket	1	Not Shown

TURRET ROTATION GEARBOX MOTOR

Mark Industries



TURRET ROTATION GEARBOX MOTOR

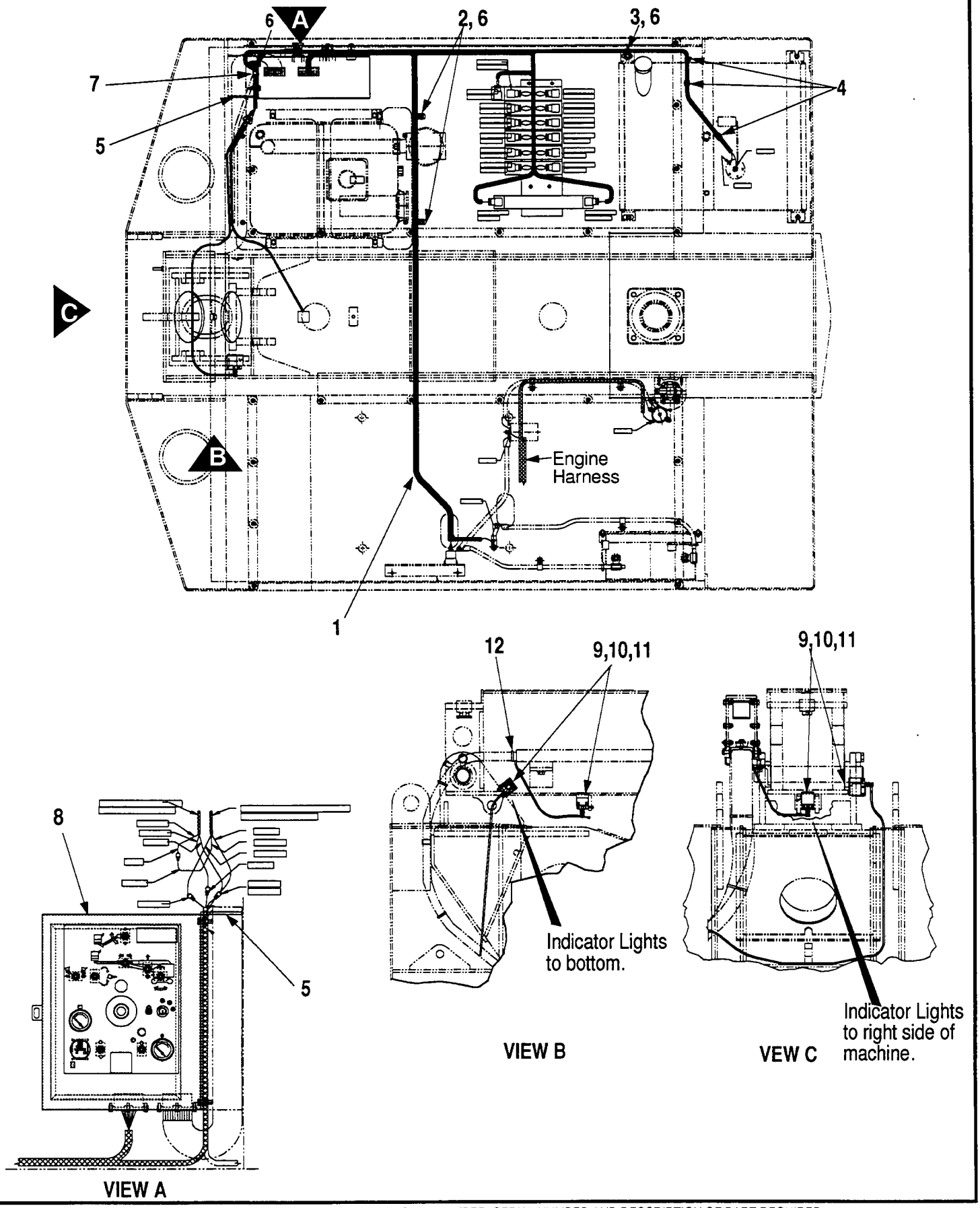
Model CH80C

Issued 1-96

Ref.	Part No.	Description	Qty	Remarks
1	81275	Motor, Rotation Gearbox Hydraulic	Ref.	
2		Bolt, Special	5	
3		Cover, End	1	
4		Assembly, Commutator & Ring (Matched Set)	1	
5		Commutator	1	
6		Ring, Commutator	1	
7		Manifold	1	
8		Set, Rotor (Matched Set)	1	
9		Rotor	1	
10		Stator		
11		Vane	7	
12		Plate, Wear	1	
13	67691	Link, Drive	1	
14	67699	Shaft, Coupling	1	
15		Key	1	
16		Nut	1	
17		Washer	1	
18		Bolt	1	
19		Lockwasher	1	
20		Ring, Retainer	1	
21		Bearing, Inner	1	
22		Bushing, Inner	1	
23		Thrust Washer		
24		Thrust Bearing	1	
25		Housing	1	
26		O-Ring	2	
27		Bearing, Outer	1	
28		Bushing, Outer	1	
29	67688	Kit, Seal	1	
30		Ring, Commutator Seal	1	
31		Ring, Seal	5	
32		Seal	1	
33		Ring, Back-Up	1	
34		Seal, Dirt & Water	1	

TURRET WIRING

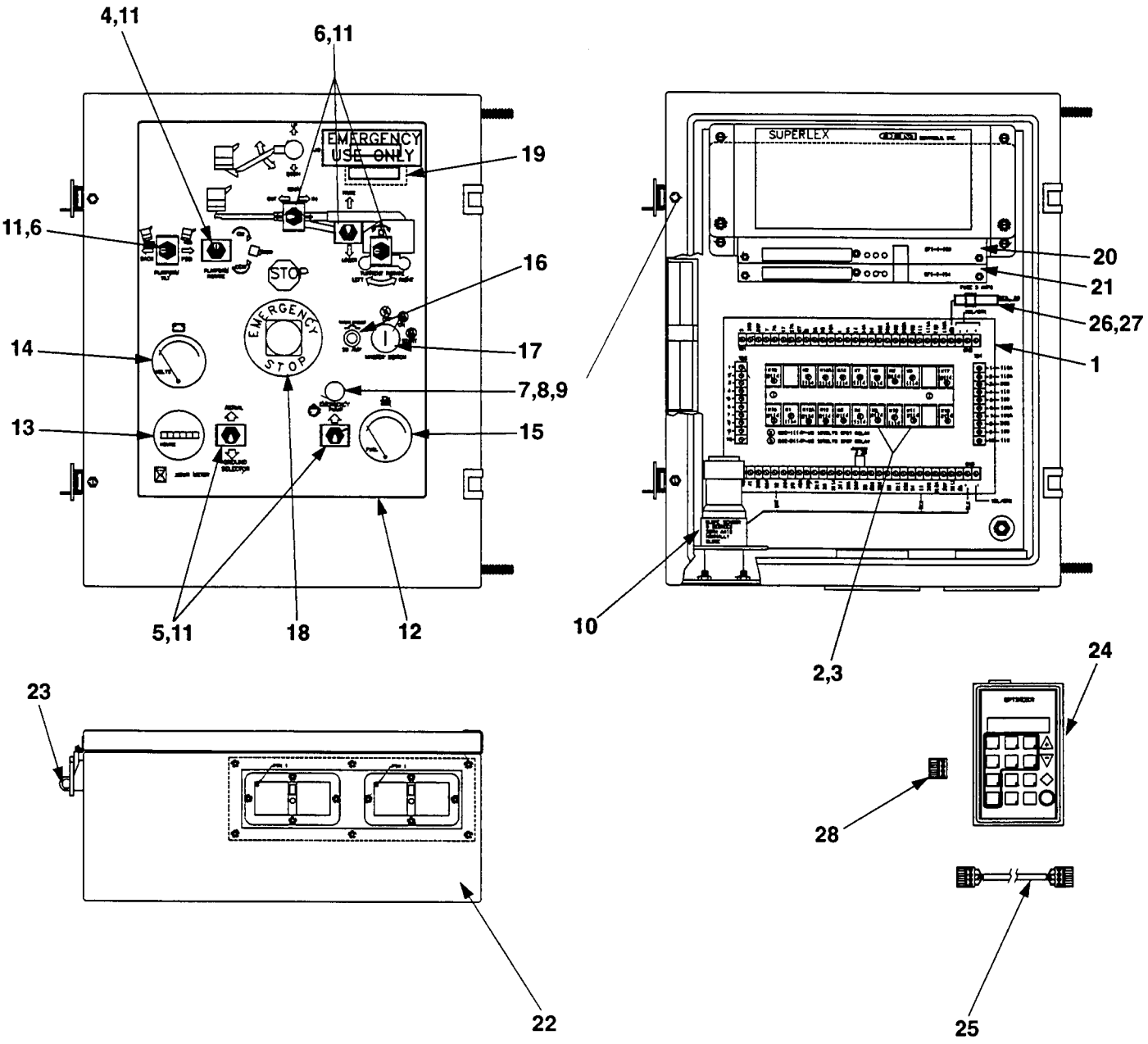
Mark Industries



Ref.	Part No.	Description	Qty	Remarks
	212131	Turret Wiring Assembly	1	Incl. Items 1 thru 12
1	212539	Wire Harness, Turret	1	
2	200B2007-6	Clamp, 3/4"	2	
3	200B2007-4	Clamp, 1/2"	1	
4	16214	Pad, Tie	3	
	256	Tie, Cable	3	
5	12177-4	Trim, Flexible	1	
6	1205-36	Nut, 3/8C	7	
	1210-20	Lockwasher, 3/8	7	
	1209-4	Flatwasher, 3/8	7	
7	200B2007-56	Clamp, Double, 1/2"	2	
8	211983	Ground Control Box Ass'y	1	See Page 4.40
9	441 6834	Switch, Proximity	2	
10	441 6835	Cable w/Connector	2	
11	310 1507	Capscrew, #10-24C x 2 Socket Head	4	
	331 1000	Flatwasher, #10	4	
	340 1504	Locknut, #10-24C	4	
12	1222-202	Tie, Plastic	3	

GROUND CONTROL BOX

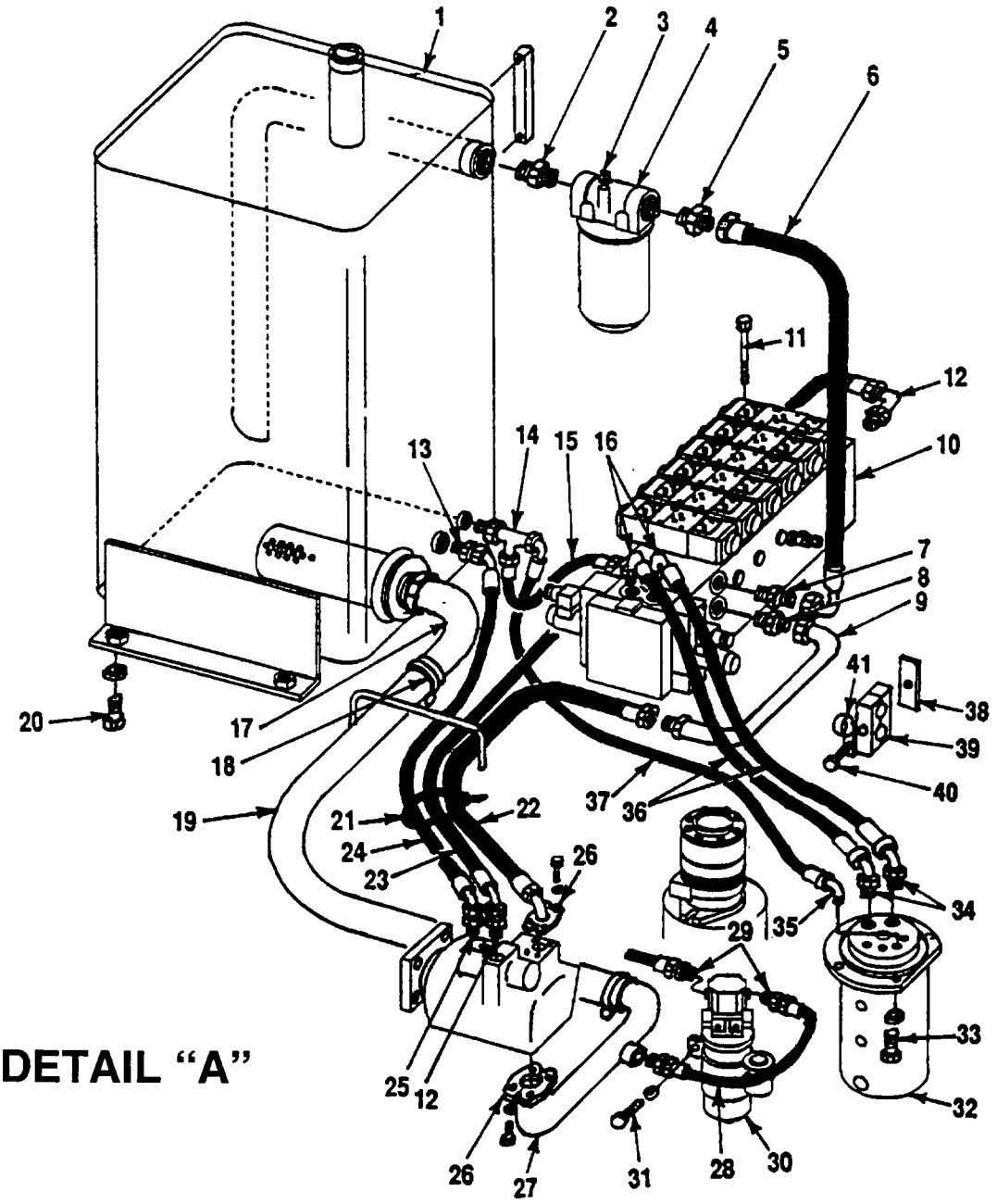
Mark Industries



Ref.	Part No.	Description	Qty	Remarks
	211983	Ground Control Box Ass'y (OEM)	Ref.	Incl. Items 1 thru 28
1	69156	Relay Card w/Relays	1	
2	69256	Relay (K3,K5,K9,K11,K12,K12A, K15,K16,K17,K18)	10	
3	69257	Relay (K1,K2,K4,K6,K7,K8,K10,K13,K13A)	9	
4	69164	Switch	1	
5	69163	Switch	2	
6	69232	Switch	4	
7	69144	Lamp Base	1	
8	69254	Bulb	1	
9	69143	Lens	1	
10	441 6836	Slope Sensor	1	
11	70783	Switch Guard	7	
12	182817	Decal	1	
13	20571	Hour Meter	1	
14	69258	Volt Meter	1	
15	69259	Fuel Gauge	1	
16	69172	Circuit Breaker	1	
17	2717	Ignition Key Switch	1	
18	69166	Emergency Stop Switch	1	
19	69260	Resistor	1	
20	70827	Controller Board	1	
21	70826	Controller Board	1	
22	69261	Enclosure	1	
23	69262	Latch	1	
24	69263	Optimizer	1	
25	70841	Optimizer Cable	1	
26	69264	Fuse Holder	1	
27	69265	Fuse (3 Amp)	1	
28	69266	Connector	1	

TURRET HYDRAULICS

Mark Industries



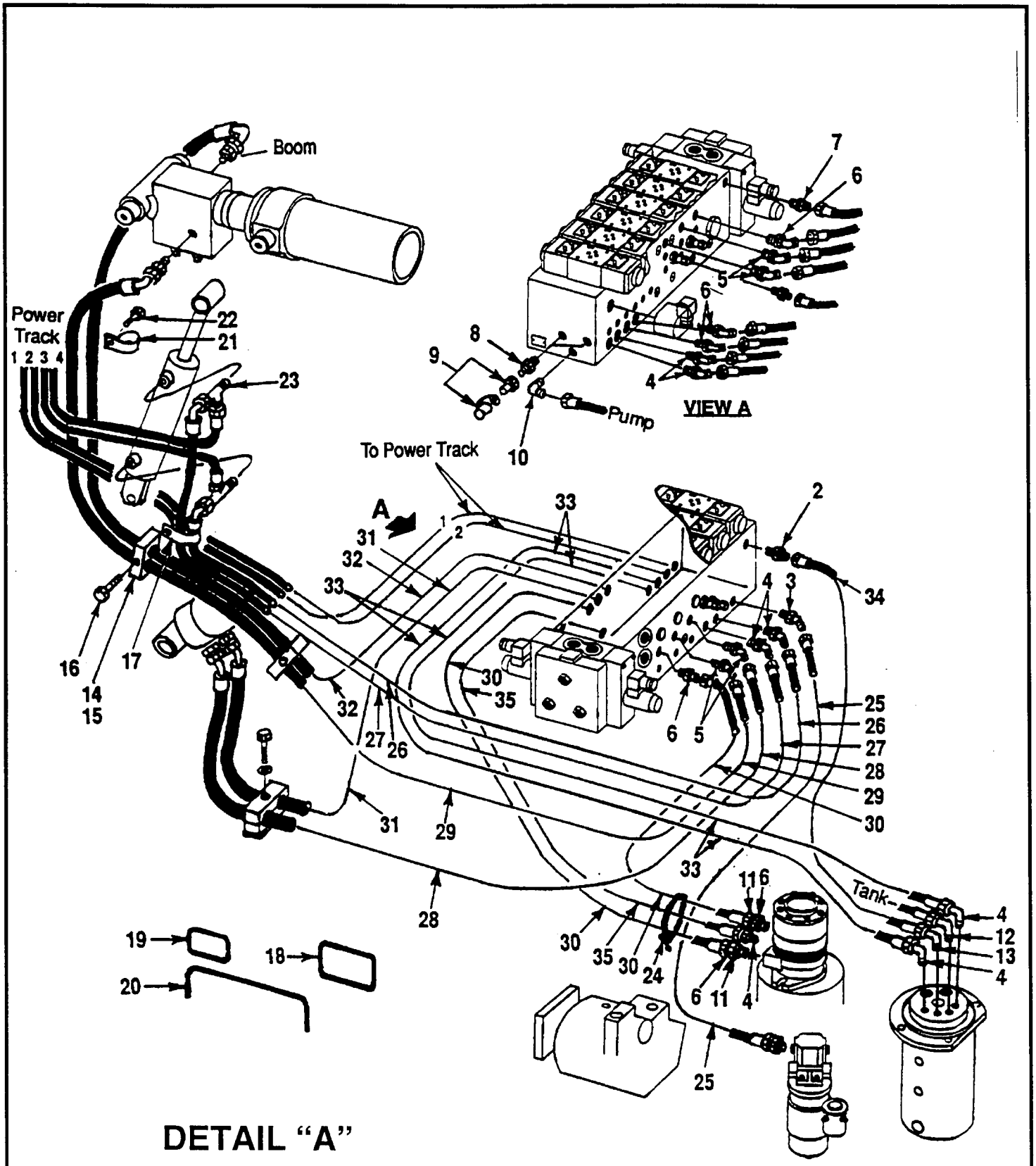
DETAIL "A"

Ref.	Part No.	Description	Qty	Remarks
	212043	Turret Hydraulic Ass'y (Cummins)	1	Incl. Items Pages 4.42-4.45
	212482	Turret Hydraulic Ass'y (Ford Gas & Dual Fuel)	1	Incl. Items Pages 4.42-4.45
	212437	Turret Hydraulic Ass'y (Duetz)	1	Incl. Items Pages 4.42-4.45
1	212012	Hydraulic Tank	Ref.	See Page 4.54 for Details
2	362 4006	Adapter	1	
3	81448	Filter	1	See Page 4.54 for Details
4	430 3022	Drain Cock	1	
5	12019-153	Adapter	1	

Ref.	Part No.	Description	Qty	Remarks
6	709 5097-39	Hose	1	
7	1219-386	Adapter	1	
8	1219-282	Adapter	1	
9	707 4525	Tube	1	
10	81443	Valve	1	See Page 4.50
11	316 2346	Capscrew, 3/8C x	4	
	1209-89	Flatwasher	4	
	1205-194	Locknut, 3/8C	4	
12	1219-776	Adapter	2	
13	12019-447	Adapter	7	
14	1219-693	Tee	1	
15	212097-15	Hose	1	
16	1219-389	Adapter	2	
17	363 0411	Beaded Insert	1	
18	378 0301	Clamp	2	
19	12368-51	Hose	1	
20	1200-100	Capscrew	4	
	1209-6	Flatwasher	4	
21	1222-202	Tie, Plastic	7	
22	212094-75	Hose	1	
23	212091-95	Hose	1	
24	212095-64	Hose	1	
25	1219-441	Adapter	1	
26	1219-665	Split Flange Clamp Half	2	
	460 4112	O-Ring	2	
	1200-61	Capscrew	4	
	1210-20	Lockwasher	4	
27	212065	Tube (Ford Gas & Dual Fuel & Cummins)	1	
	212140	Tube (Deutz)	1	
	460 4115	Seal	1	
	1200-100	Capscrew	4	
	1210-26	Lockwasher	4	
28	212096-16	Hose	1	
29	1219-795	Adapter	2	
30	81505	Pump, Emergency	1	See Page 4.49
31	1200-59	Capscrew	2	
	1209-46	Flatwasher	2	
	1209-89	Flatwasher, 3/8"	2	
32	81495	Rotary Manifold	1	See Page 4.56
33	1200-33	Capscrew	4	
	1209-46	Flatwasher	4	
34	1219-663	Adapter	2	
35	12019-248	Adapter	1	
36	212062-42	Hose	2	
37	212097-59	Hose	1	
38	1240-155	Plate, Cover	1	
39	365 0215	Clamp Half	2	
40	200B2007-11	Clamp	1	
41	1200-51	Capscrew	1	
	1209-24	Flatwasher	1	
	340 2113	Locknut	1	

TURRET HYDRAULICS

Mark Industries

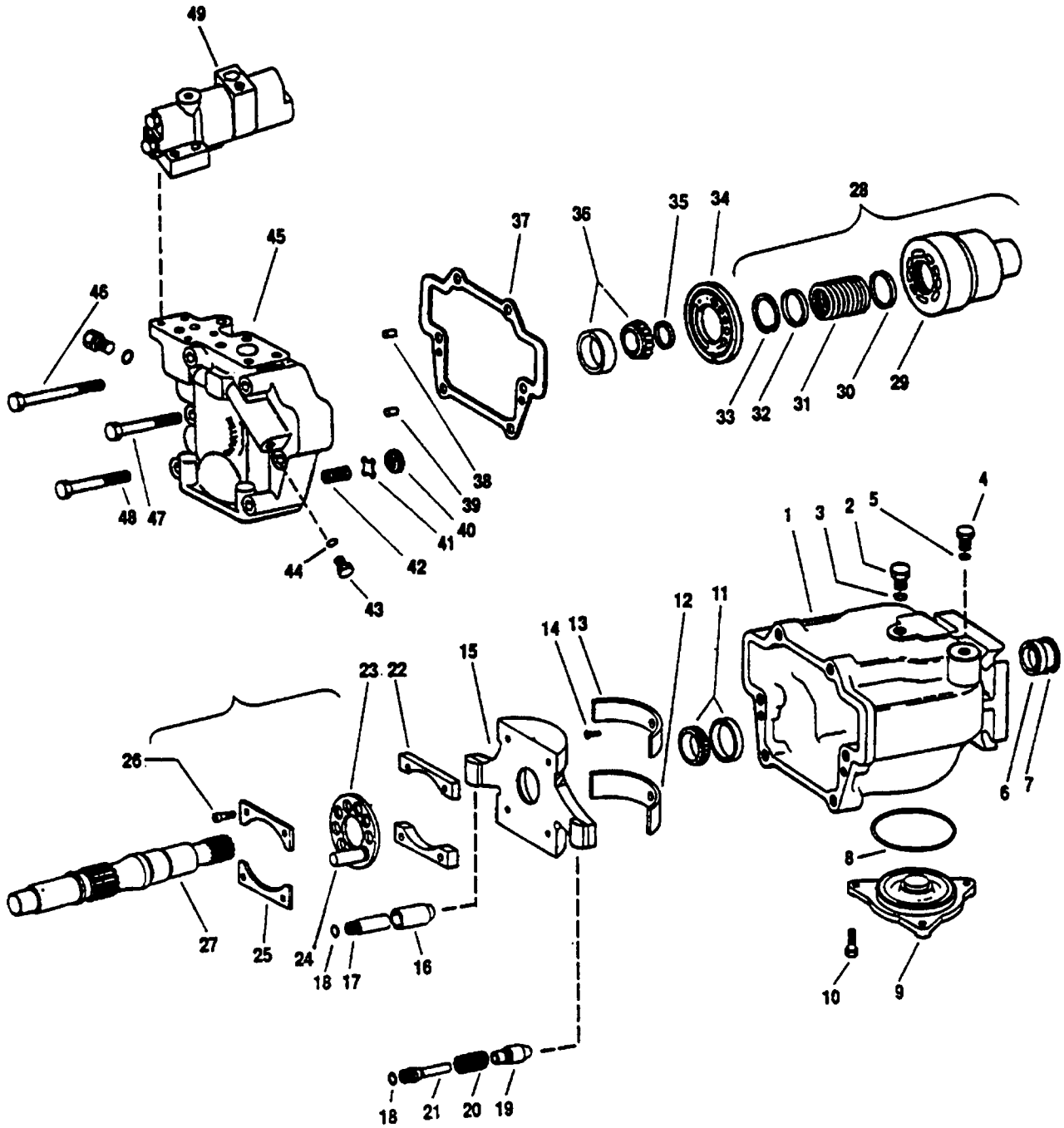


DETAIL "A"

Ref.	Part No.	Description	Qty	Remarks
2	1219-959	Adapter	2	
3	1219-982	Adapter	1	
4	80018-03	Adapter	7	
5	12019-447	Adapter	7	
6	12019-205	Adapter	6	
7	1219-605	Adapter	1	
8	375 5201	Adapter	2	
9	12019-557	Coupling	2	
	12019-558	Cap, Dust	2	
10	1219-776	Adapter	2	
11	375 0701	Adapter	2	
12	12019-248	Adapter	1	
13	362 1255	Adapter	1	
14	1240-213	Clamp, Half	6	
15	1240-154	Plate, Cover	3	
16	1200-39	Capscrew	3	
17	200B2007-9	Clamp	2	
18	12169-25	Trimloc, 3/8 x 25"	1	
19	12169-17	Trimloc, 3/8" x 17"	1	
20	12182-20	Trimloc, 1/4" x 20"	2	
21	200B2007-15	Clamp	1	
22	1205-194	Locknut, 3/8C	1	
	1209-4	Flatwasher, 3/8	1	
23	12019-427	Tee	2	
24	1222-184	Tie, Plastic	3	
25	212091-92	Hose	1	
26	212059-87	Hose	1	
27	212059-104	Hose	1	
28	212092-76	Hose	1	
29	212093-112	Hose	1	
30	212059-36	Hose	2	
31	212092-59	Hose	1	
32	212093-93	Hose	1	
33	212060-66	Hose	2	
34	212059-57	Hose	1	
35	212059-38	Hose	1	

MAIN PUMP

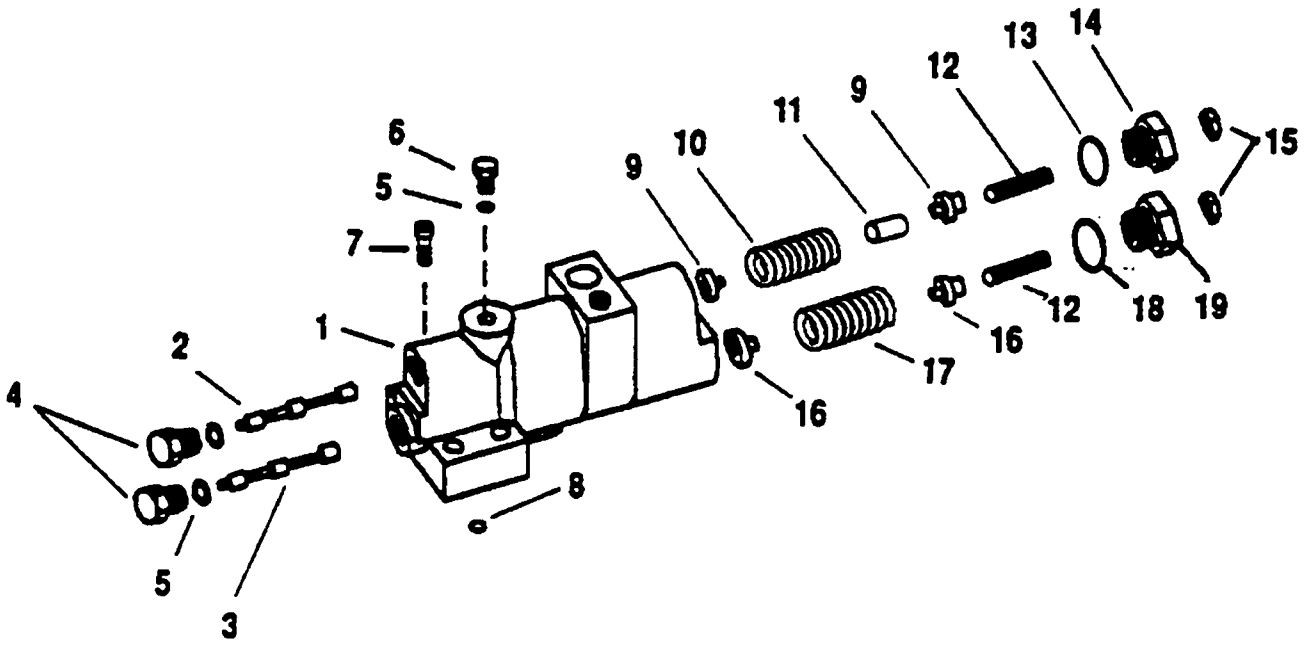
Mark Industries



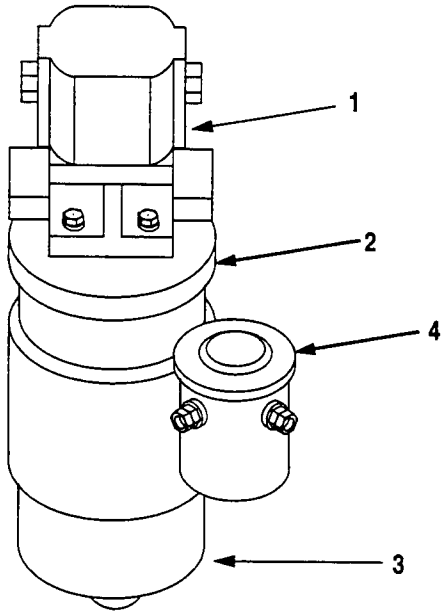
Ref.	Part No.	Description	Qty	Remarks
	81442	Pump, Complete	1	Incl. Items 1 thru 49
	69501	Kit, Seal	1	Incl. Items marked *
	69502	Kit, Bearing	1	Incl. Items marked ^
	69521	Kit, Rotating Group	1	Incl. Items marked +
1	NSS	Housing	1	
2	69503	Plug	1	
3	69504	O-Ring	1	*
4	69505	Plug	1	
5	69506	O-Ring	1	*
6	69507	Shaft Seal	2	
7	69508	Retaining Ring	2	
8	69509	O-Ring	1	*
9	69510	Cover	1	
10	69511	Screw	3	
11		Bearing	1	^
12		Saddle Bearing	1	^
13		Saddle Bearing	1	^
14		Screw	1	^
15	69512	Yoke	1	
16	69513	Control Piston	1	
17	69514	Control Rod	1	
18	69515	O-Ring	2	*
19	69516	Bias Piston	1	
20	69517	Spring	1	
21	69518	Bias Rod	1	
22	69519	Spacer	2	
23		Shoe Cage	1	+
24		Piston Kit	1	+
25		Limiter	2	+
26		Screw	4	+
27	69520	Shaft	1	
28		Rotating Group	1	+ See Kit Above
29		Cylinder Block	1	+
30		Spring Guide	1	+
31		Spring	1	+
32		Spring Guide	1	+
33		Retaining Ring	1	+
34	69522	Valve Plate	1	
35	69523	Shaft Spacer Kit	1	
36		Bearing	1	^
37	69524	Gasket	1	*
38	69525	Pin	2	
39	69526	Pin	1	
40	69527	Seat	1	
41	69528	Poppet	1	
42	69529	Spring	1	
43	69530	Plug	2	
44	69531	O-Ring	2	*
45	69532	Valve Block	1	
46	69533	Capscrew	1	
47	69534	Capscrew	1	
48	69535	Capscrew	4	
49	69536	Load Sensing & Pressure Compensator Control	1	See Page 4.48

MAIN PUMP CONTROL

Mark Industries



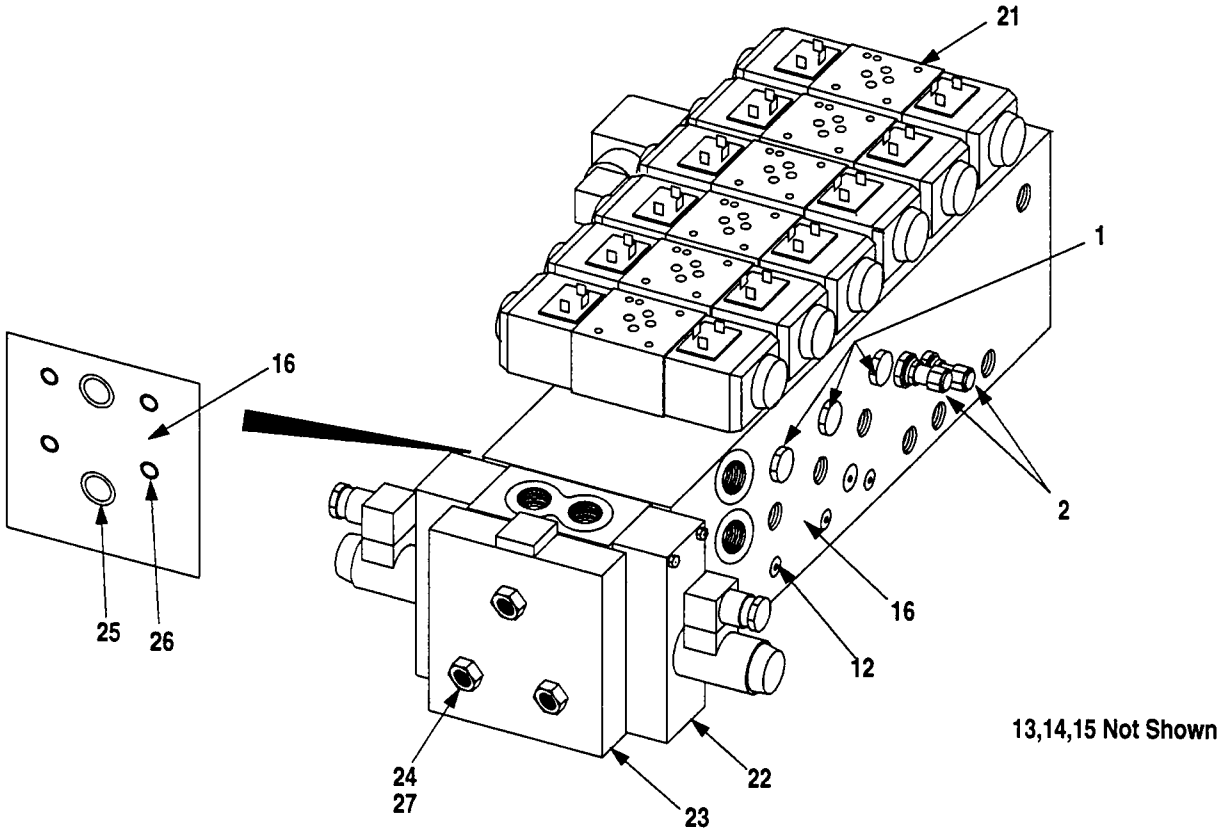
Ref.	Part No.	Description	Qty	Remarks
	69536	Load Sense & Pressure Compensator Control	1	Incl. Items 1 thru 19
				Items w/Asterisk * Included
1	NSS	Body	1	in Seal Kit on Page 4.47
2	69538	Load Sense Spool	1	
3	69539	Pressure Limiter Spool	1	
4	69540	Plug	2	
5	69541	O-Ring	3	*
6	69542	Plug	1	
7	69543	Capscrew	4	
8	69544	O-Ring	3	*
9	69545	Spring Guide	2	
10	69546	Spring	1	
11	69547	Pin Spring Stop	1	
12	69548	Adjusting Screw	2	
13	69549	O-Ring	1	*
14	69550	Plug	1	
15	69551	Nut	2	
16	69552	Spring Guide	2	
17	69553	Control Spring	1	
18	69554	O-Ring	1	*
19	69555	Plug	1	



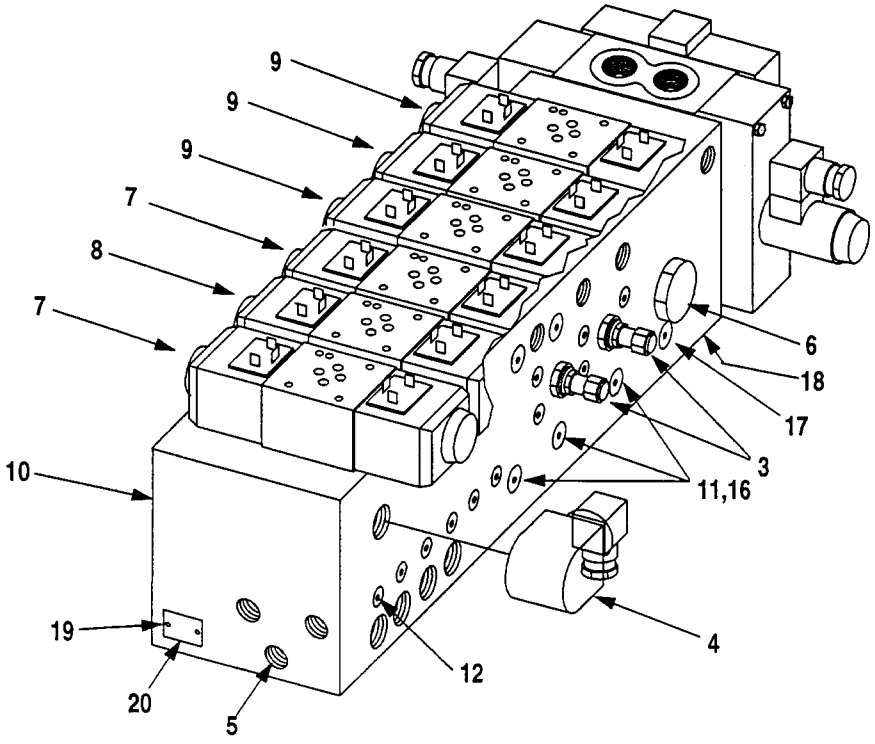
Ref.	Part No.	Description	Qty	Remarks
	81505	Emergency Pump / Motor Complete	1	Incl. Items 1 Thru 3
1	69045	Pump	1	
2	68129	Plate, Adapter	1	
3	66780	Motor	1	
4	68510	Relay	1	

MAIN VALVE

Mark Industries



13,14,15 Not Shown

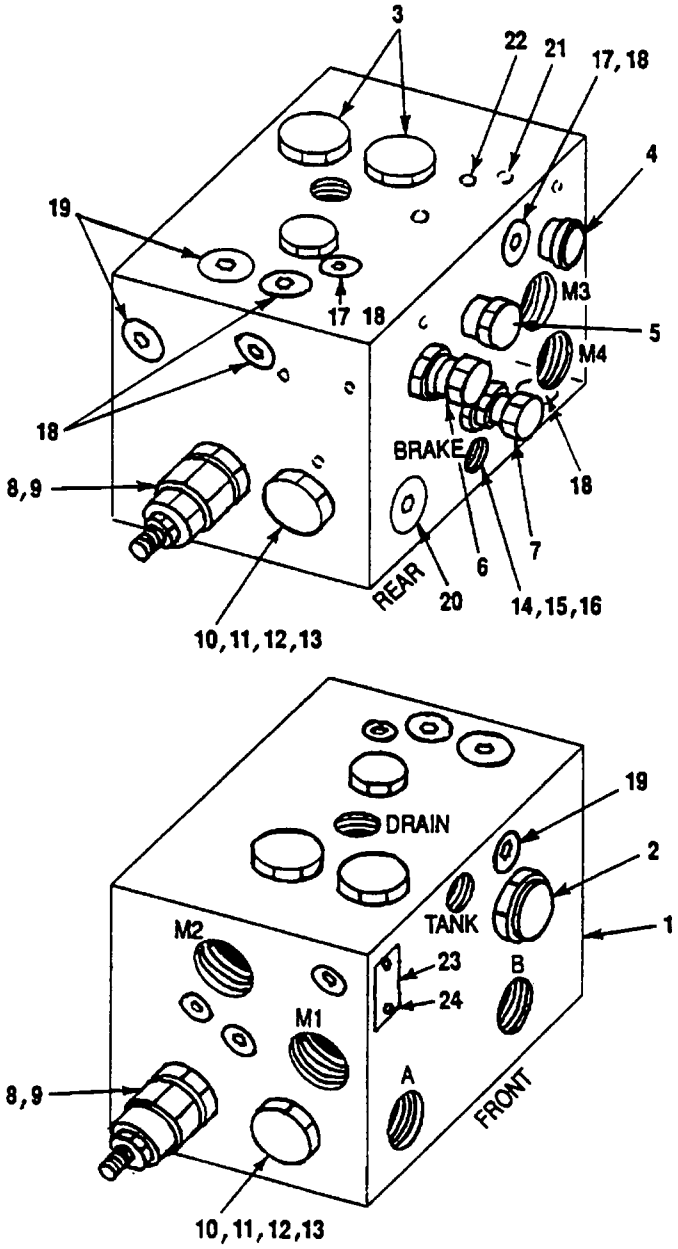


MAIN VALVE

Ref.	Part No.	Description	Qty	Remarks
	81443	Main Valve, Complete	1	Incl. Items 1 thru 27
1	69556	Valve, Differential Pressure Sensing	3	
2	69557	Valve, Counterbalance	2	
3	69558	Valve, Relief	2	
4	69559	Valve, Solenoid	1	
5	69560	Plug, Orifice, .020	1	
6	69561	Valve, Check	1	
7	69562	Valve, Solenoid	2	
8	69563	Valve, Solenoid	1	
9	69564	Valve, Solenoid	3	
	69565	Coil only - For Items 7,8,9	AR	
10	69566	Manifold	1	
11	69567	Plug, Orifice, .031	3	
12	69568	Check, Sensing	15	
13	69569	Plug, Expander	3	
14	69570	Plug, Expander	52	
15	69571	Plug, Expander	1	
16	NSS	Plug	11	SAE -6
17	NSS	Plug	10	SAE -8
18	NSS	Plug	1	SAE -10
19	NSS	Rivet	2	
20	NSS	Nameplate	1	
21	69572	Kit, Bolt	6	
22	69573	Valve, Solenoid	1	
	69834	Coil only	2	
23	69574	Cover	1	
24	69575	Rod, Tie	3	
25	69576	O-Ring	2	
26	69577	O-Ring	5	
27	69578	Nut	3	

FUNCTION VALVE

Mark Industries

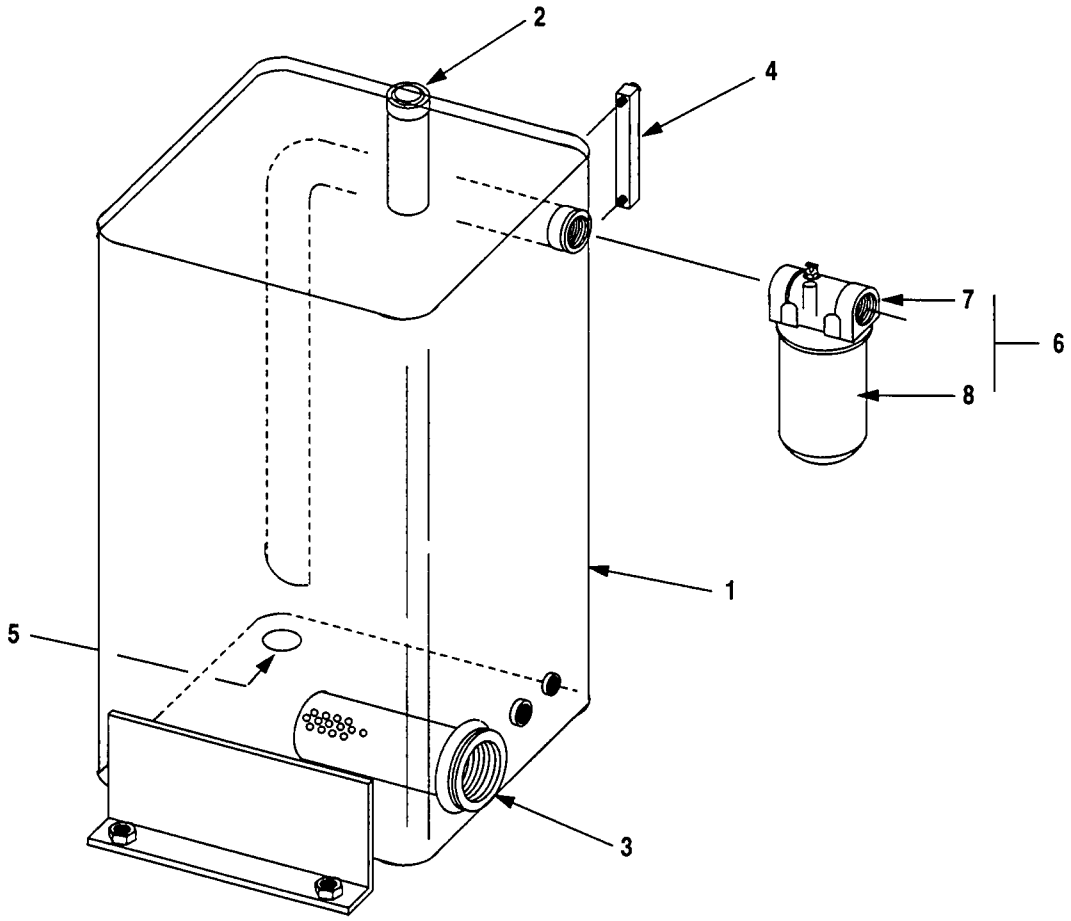


FUNCTION VALVE

Ref.	Part No.	Description	Qty	Remarks
	81446	Propel Valve, Complete	1	Incl. Items 1 thru 24
1	600635	Manifold	1	
2	600633	Flow Divider/Combiner Valve	2	
3	69580	Differential Pressure Sensing Valve	4	
4	69581	Differential Pressure Sensing Valve	7	
5	69587	Pilot Operated Directional Valve	1	
6	69582	Relief Valve	1	
8	69582	Relief Valve	2	
9	600636	Pilot Piston	1	
10	69561	Check Valve	2	
11	69588	Ball	1	
12	69589	Seat	1	
13	69590	O-Ring	1	
14	69591	Orifice Disc	1	
15	69592	Spring	1	
16	69593	Setscrew	1	
18	NSS	Plug, SAE-6	8	
19	NSS	Plug, SAE-8	18	
20	NSS	Plug, SAE-10	1	
22	69570	Plug, Expander	36	
23	NSS	Nameplate	1	
24	NSS	Rivet	2	
25	600634	Flow Divider/ Combiner Valve	1	

HYDRAULIC RESERVOIR & FILTER

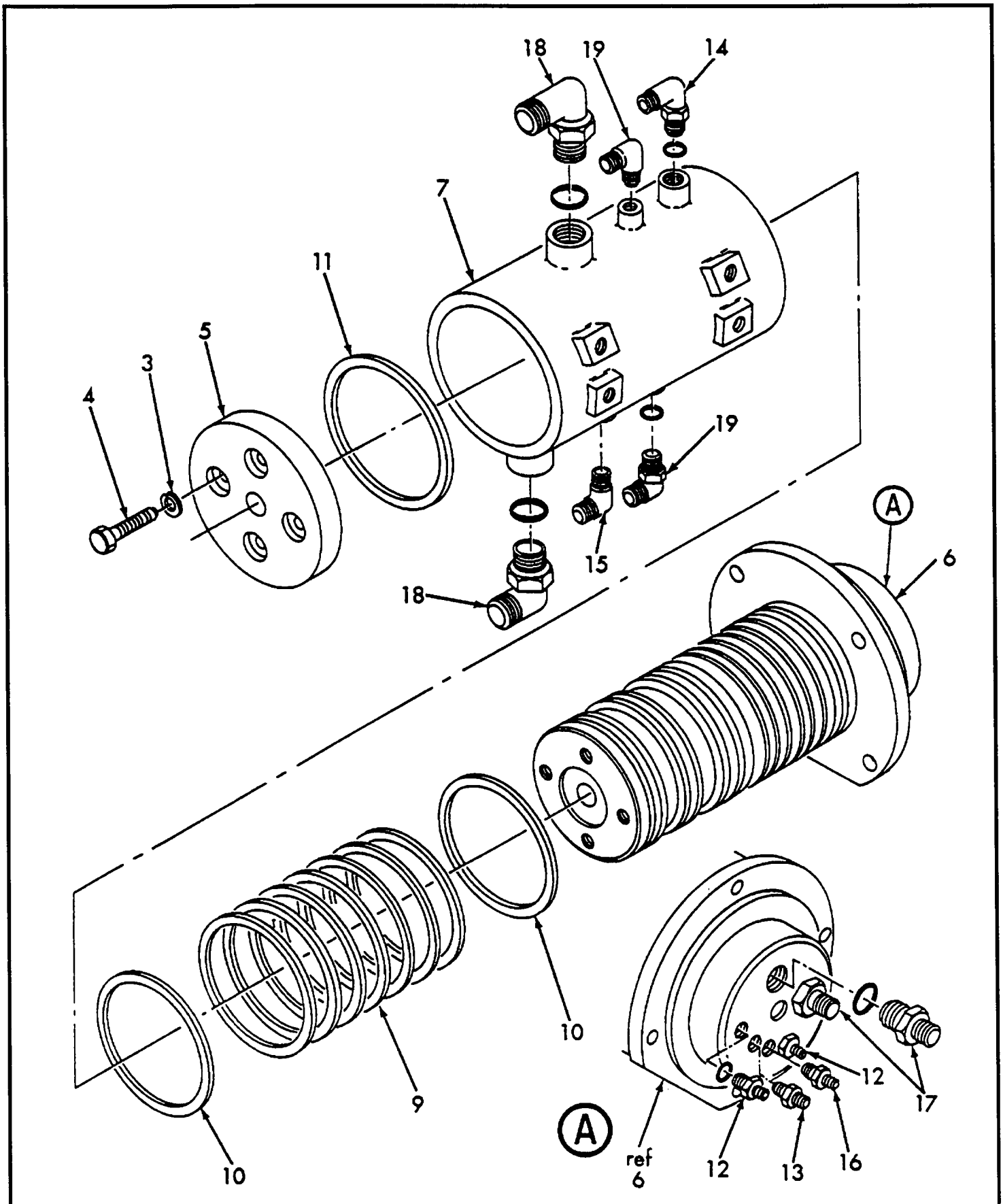
Mark Industries



Ref.	Part No.	Description	Qty	Remarks
1	212012	Hydraulic Tank, Complete	1	Incl. Items 2 thru 5
2	69766	Cap, Fill/Breather	1	
3	69767	Strainer, Suction	1	
4	69768	Gauge, Sight	1	
5	69769	Magnetic Plug w/O-Ring	1	
	69770	O-Ring	1	
6	81448	Filter, Complete	1	Incl. Items 7 & 8
7	69620	Head	1	
8	69621	Cartridge, Spin-On	1	

ROTARY MANIFOLD

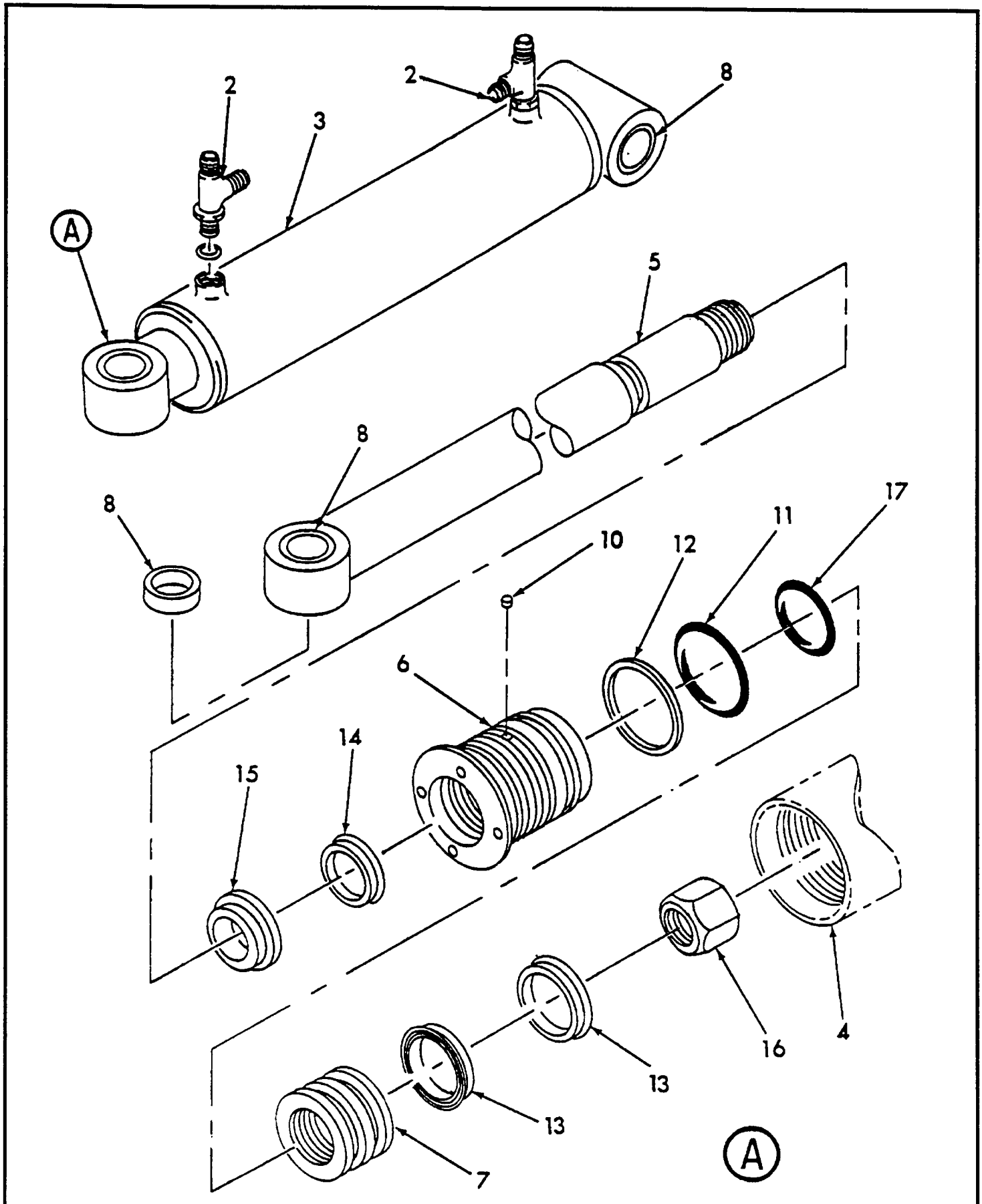
Mark Industries



Ref.	Part No.	Description	Qty	Remarks
2	81495	Manifold, Rotary (Hydra-Tool)	1	
3		Lockwasher	4	
4		Capscrew	4	
5		Retainer, Spool	1	
6		Assembly, Swivel Spool	1	
7		Housing	1	
8	67817	Kit, Seal	1	
9		Ring, Glyd	7	
10		Ring, D.C. Glyd	2	
11		Ring, Wear	1	
12	80004-03	Connector, Male	2	
13	80001-03	Connector, Male	1	
14	80008-08	Elbow, Male	1	
15	80008-03	Elbow, Male	1	
16	80001-08	Connector, Male	1	
17	80004-18	Connector, Male	2	
18	80012-18	Elbow, Male	2	
19	80012-03	Elbow, Male	2	

MASTER LEVELING CYLINDER

Mark Industries



MASTER LEVELING CYLINDER

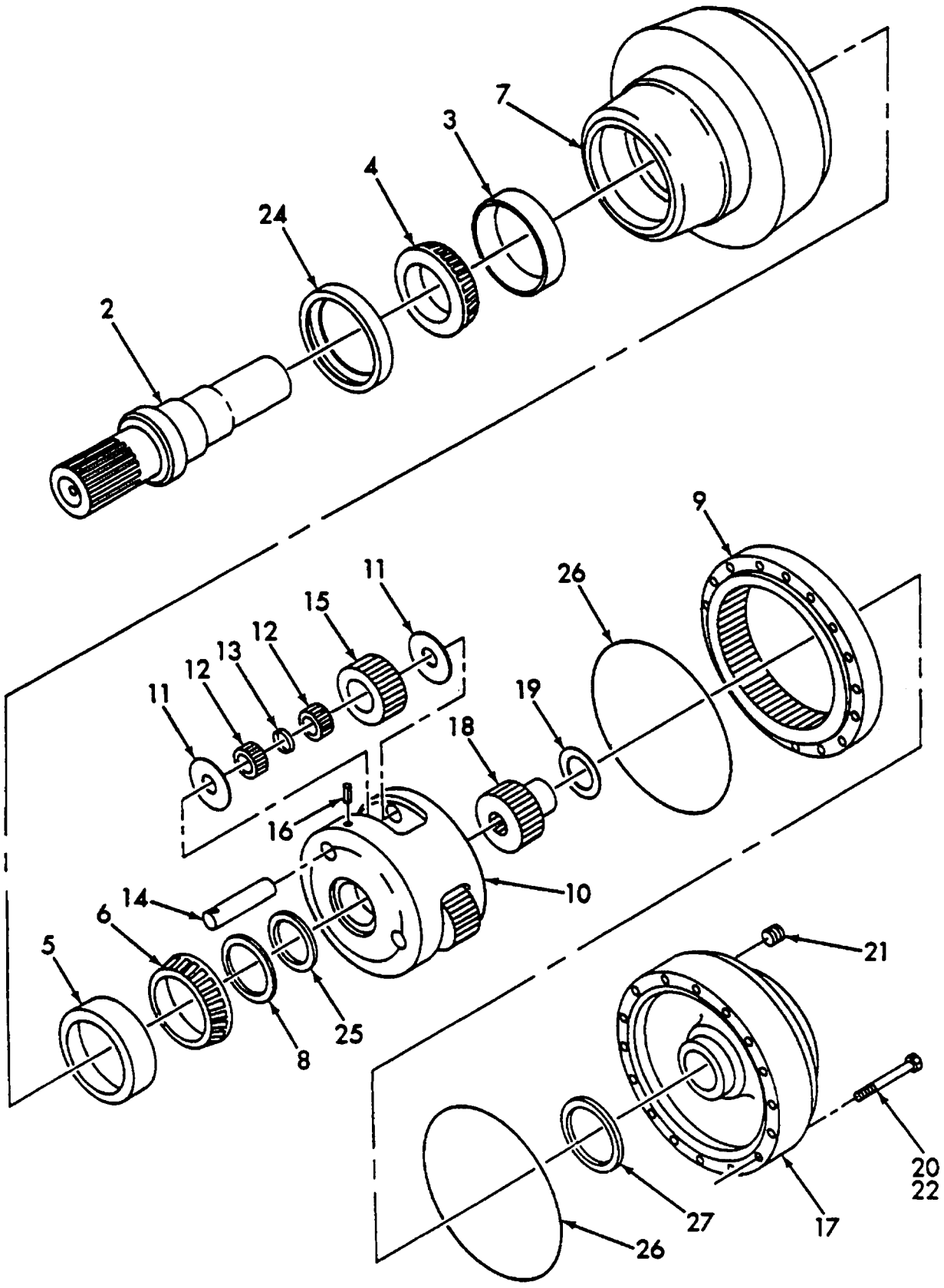
Model CH80C

Issued 1-96

Ref.	Part No.	Description	Qty	Remarks
1	21084	Assembly, Master Leveling Cylinder	Ref.	
2	12019-427	Tee, Straight Thread Run	2	
3	21111	Cylinder, Master Leveling	1	
4		Barrel	1	
5	68631	Rod Assembly (Sierra)	1	
6		Nut, Gland	1	
7		Piston	1	
8	67671	Bushing (Sierra)	4	
9	66044	Kit, Seal (Sierra)	1	
	600081	Kit, Seal (Great Bend)	1	
	600326	Kit, Seal (Texas Hyd)	1	
10		Pellet, Lock	1	
11		O-Ring, Gland Nut	1	
12		B/U Ring, Gland Nut	1	
13		Seal, Piston (Polypak)	1	
14		Seal, Rod (Polypak)	1	
15		Wiper, Rod	1	
16		Nut, Rod	1	
17		O-Ring, Static	1	

TORQUE HUB

Mark Industries



Ref.	Part No.	Description	Qty	Remarks
1	22830	Hub, Torque	Ref.	
2	67877	Shaft, Output	1	
3	67917	Cup, Bearing	1	
4	67924	Cone, Bearing	1	
5	67915	Cup, Bearing	1	
6	67923	Cone, Bearing	1	
7		Hub	1	
8	67911	Spacer	1	
9		Gear, Ring	1	
10		Carrier	1	
11	67898	Thrust Washer	6	
12	67918	Roller, Needle	96	
13	67907	Spacer	3	
14		Shaft, Planet	3	
15		Gear, Planet	3	
16		Pin, Roll	3	
17		Cover	1	
18		Gear, Input	1	
19	67899	Thrust Washer	1	
20	67931	Bolt	8	
21		Plug, Pipe	1	
22	67932	Bolt, Shoulder	4	
23	67871	Kit, Seal	1	
24	66508	Seal, Shaft	1	
25		Ring, Retaining	1	
26		O-Ring	2	
27		Thrust Washer	1	

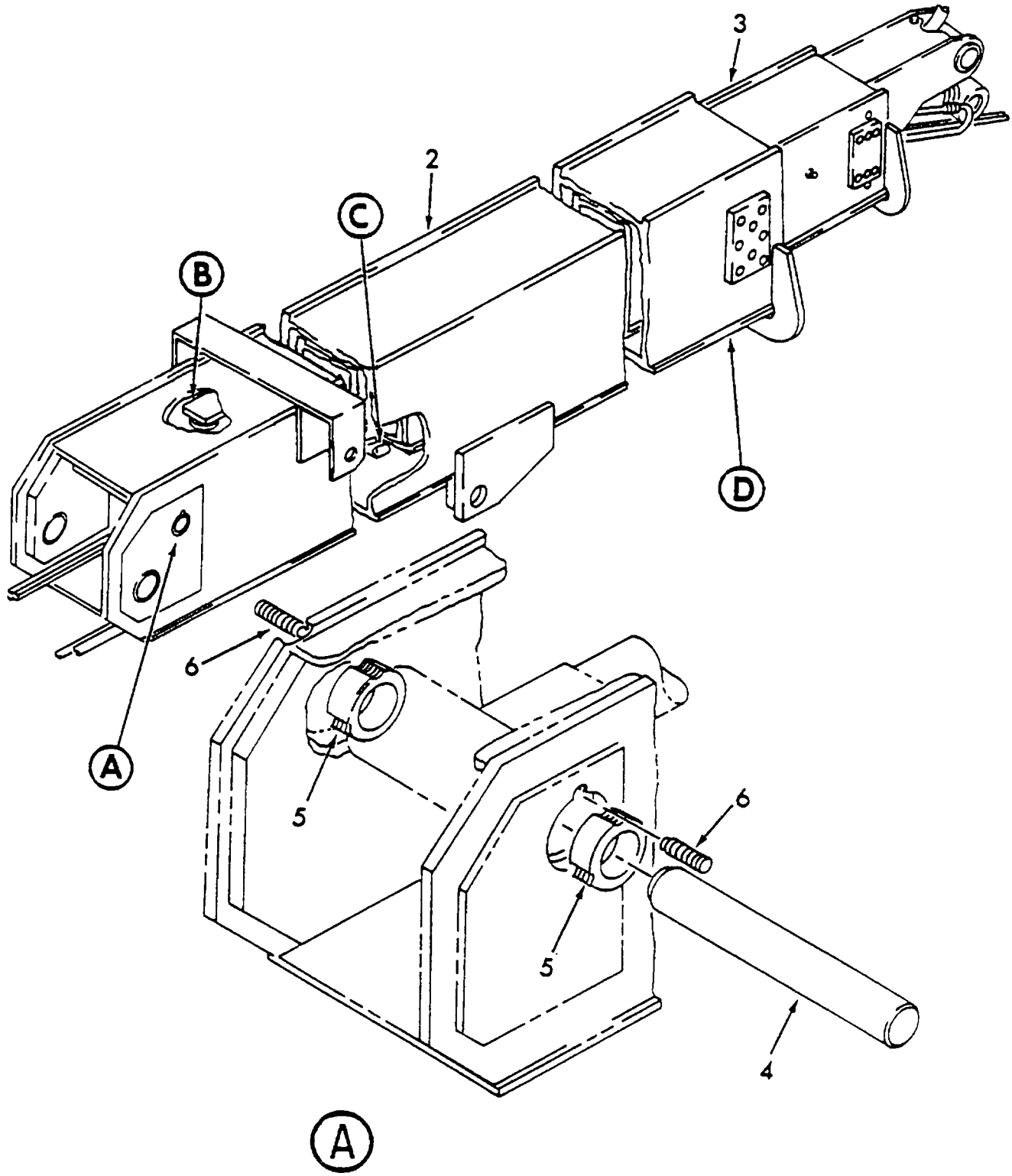
NOTES

SECTION 5 "BOOM ASSEMBLY" CONTAINS:

PAGE	TITLE
5.2	BOOM ASSEMBLY
5.6	INTERMEDIATE BOOM ASSEMBLY
5.10	INNER BOOM ASSEMBLY
5.14	BOOM LIFT CYLINDER
5.16	BOOM EXTEND CYLINDER
5.19	SLAVE LEVELING CYLINDER
5.22	CABLE SHEAVE ASSEMBLY
5.23	POWER TRACK SUPPORT ROLLER

BOOM ASSEMBLY (CH80C)

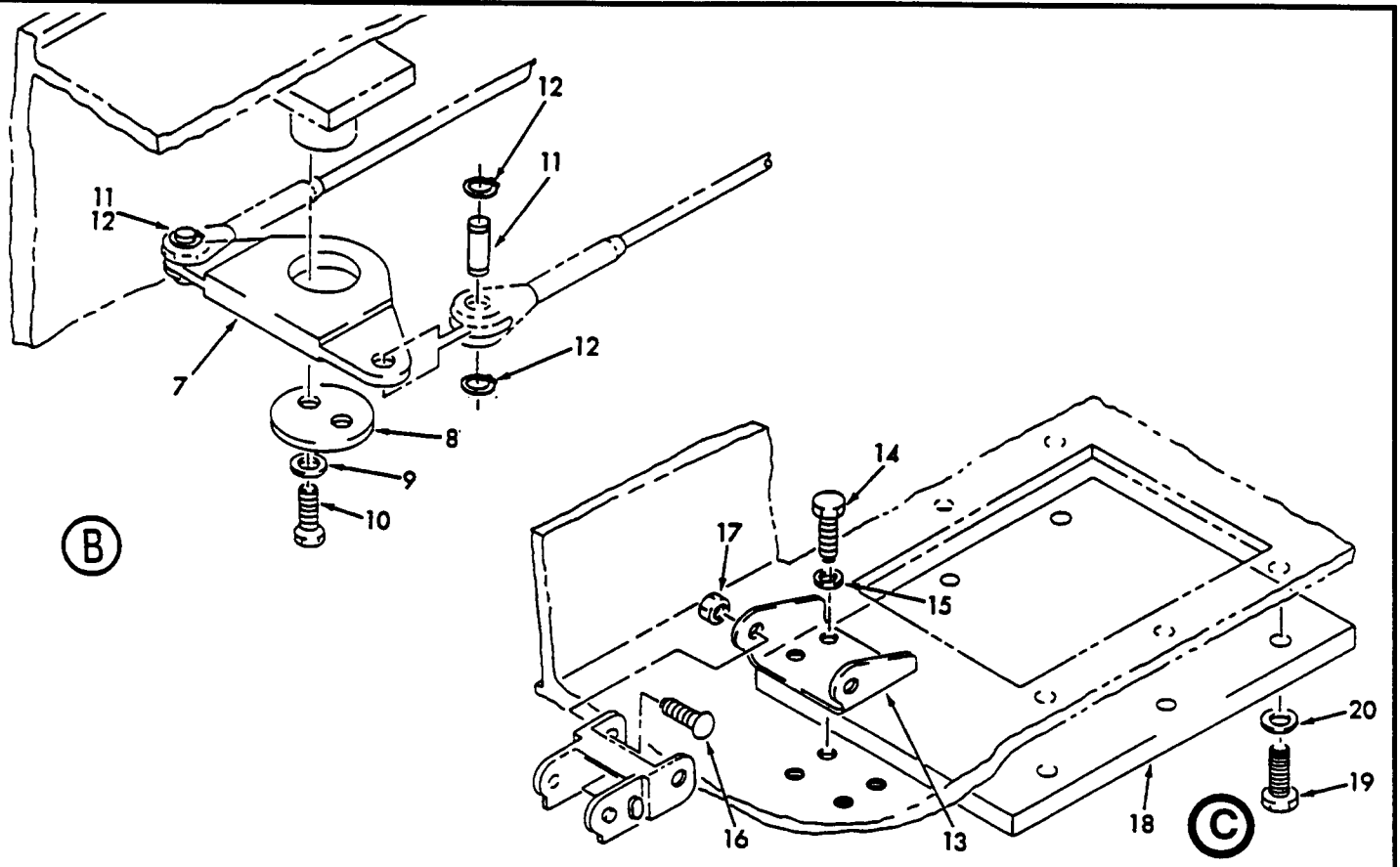
Mark Industries



BOOM ASSEMBLY (CH80C)

Model CH80C

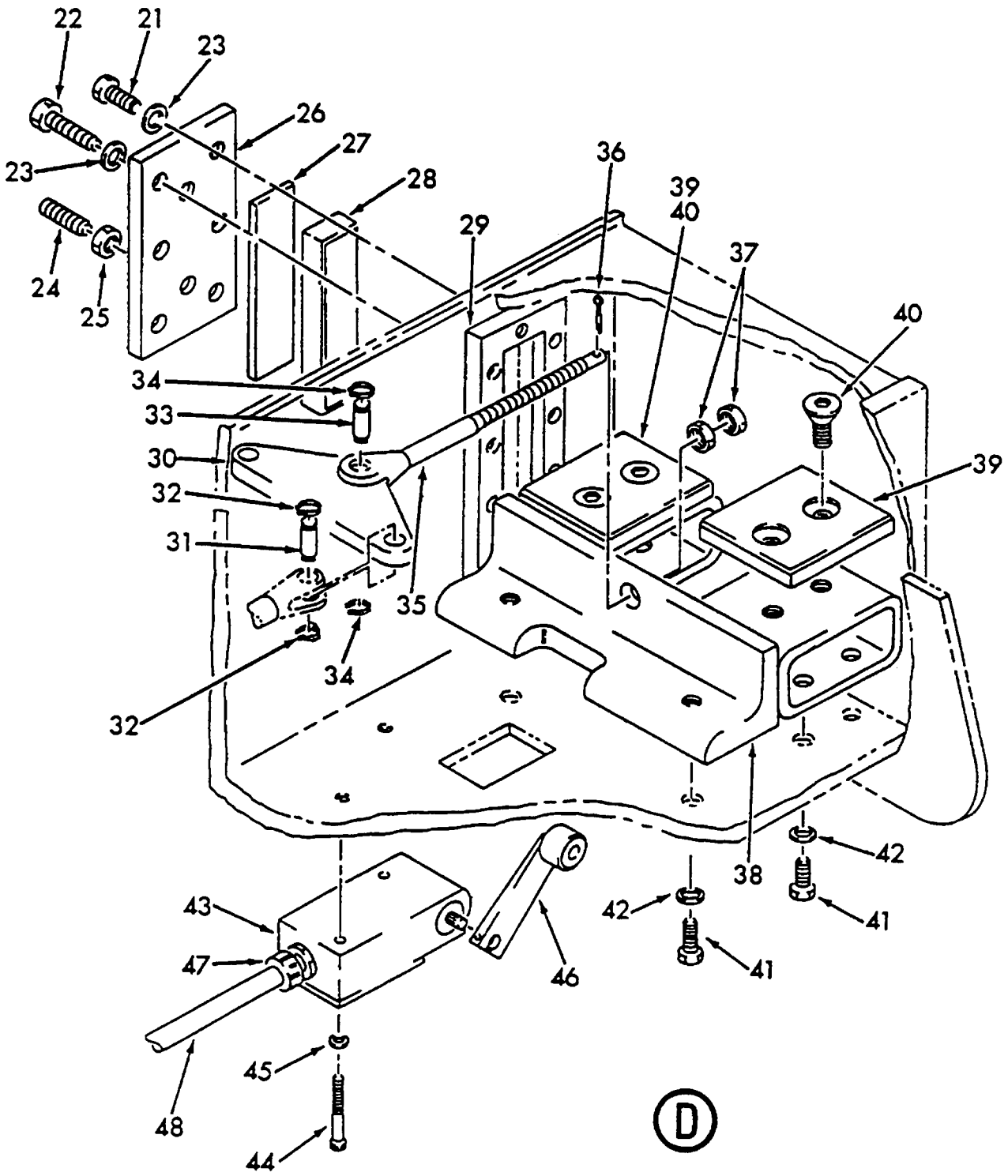
Issued 1-96



Ref.	Part No.	Description	Qty	Remarks
1	24136	Assembly, Final Boom	Ref.	
2	23640	Machining, Outer Boom	1	
3	24135	Assembly, Intermediate Boom	1	See Page 5.6 for Details
4	23966	Pin, Boom Extension Cylinder	1	
5	21353	Bushing, Eccentric	2	
6	62229	Set Screw	4	
7	23964	Lever, Extension Cable	1	
8	22593	Retainer	1	
9	1210-17	Lockwasher	2	
10	1242-137	Capscrew	1	
11	22703	Pin, Cable	2	
12	65082	Ring, Snap	4	
13	23894	Bracket, Stationary (Plastitrak)	1	
14	60501	Capscrew	4	
15	1210-14	Lockwasher	4	
16	1200-314	Capscrew	2	
17	61322	Lock Nut	2	
18	22121	Plate, Access Cover	1	
19	1200-314	Capscrew	6	
20	1210-17	Lockwasher	6	

BOOM ASSEMBLY (CH80C)

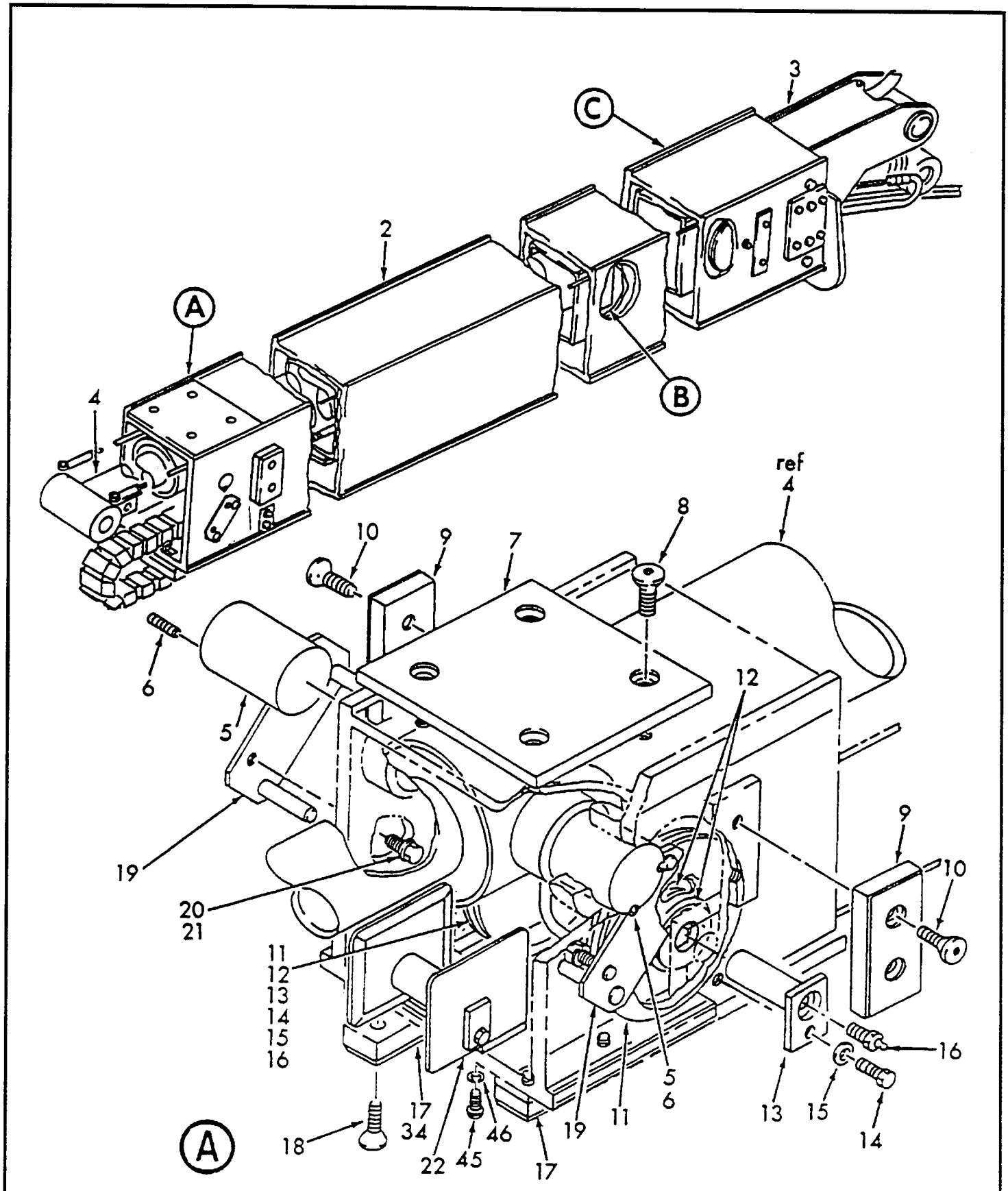
Mark Industries



Ref.	Part No.	Description	Qty	Remarks
21	1200-315	Capscrew	4	
22	1200-59	Capscrew	12	
23	1210-20	Lockwasher	12	
24	62204	Set Screw	4	
25	1205-61	Nut, Jam	4	
26	21321	Plate, Wear Pad Cover	2	
27	20453	Plate, Pressure Pad	2	
28	24016	Pad, Wear	2	
29	21358	Retainer, Wear Pad	2	
30	23965	Lever, Retraction Cable	1	
31	22703	Pin, Cable	2	
32	65082	Ring, Snap	4	
33	22708	Pin, Cable	1	
34	65076	Ring, Snap	2	
35	22710	Clevis	1	
36	64301	Pin, Cotter	1	
37	60910	Jam Nut	2	
38	23842	Bracket, Boom End	1	
39	23958	Pad, Wear	2	
40	61806	Capscrew	4	
41	1242-134	Capscrew	4	
42	1210-20	Lockwasher	4	
43	70107	Limit Switch	1	
44	62615	Machine Screw	2	
45	1210-7	Lockwasher	2	
46	70148	Lever, Arm	1	
47	2806	Relief, Strain	1	
48	70036	Cable, Electrical (400 In.)	1	

INTERMEDIATE BOOM ASSEMBLY

Mark Industries



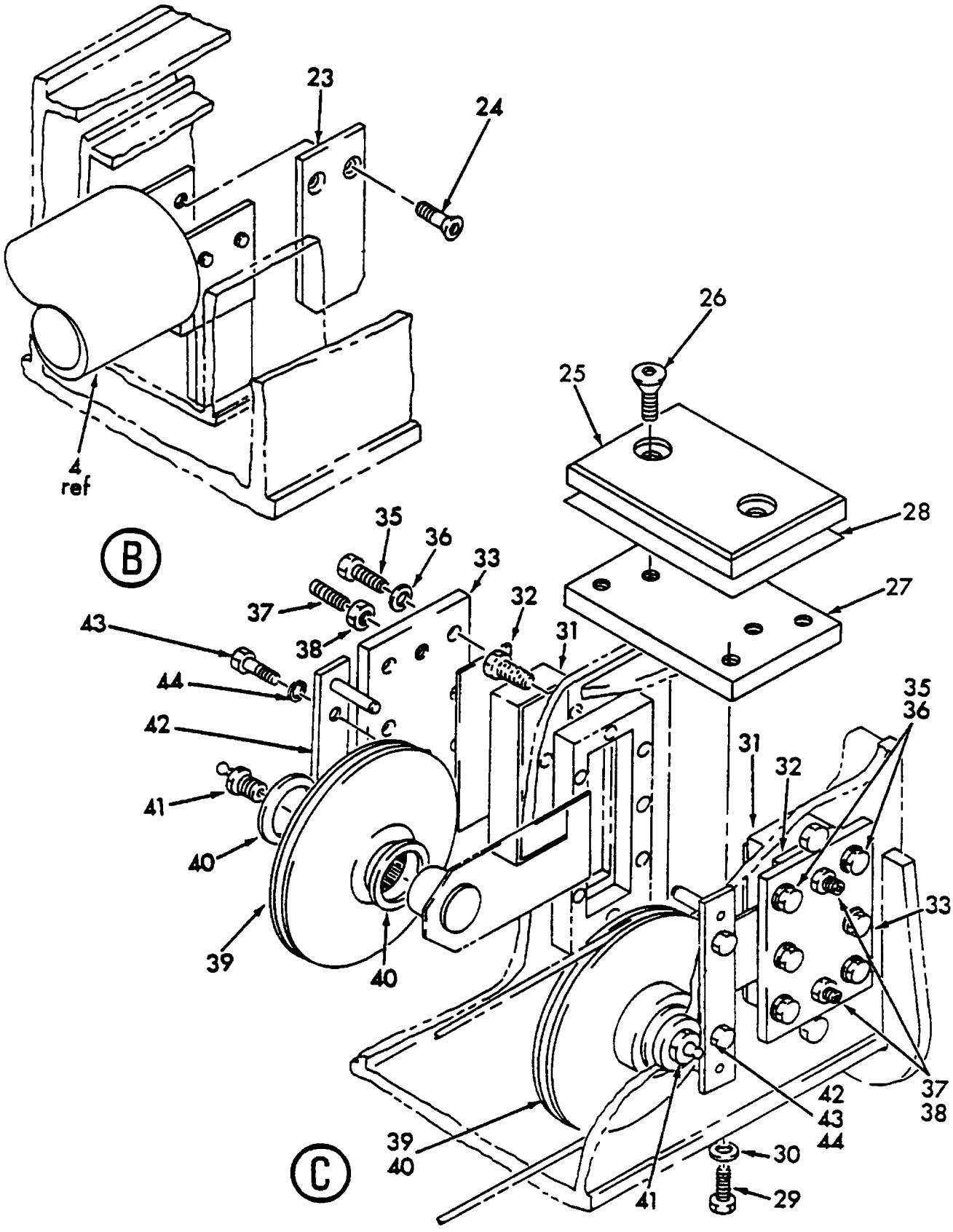
INTERMEDIATE BOOM ASSEMBLY

Models CH80C
Issued 1-96

Ref.	Part No.	Description	Qty	Remarks
1	24135	Assembly, Intermediate Boom	Ref.	
2	23638	Machining, Intermediate Boom	1	
3	24134	Assembly, Inner Boom	1	See Page 5.10 for Details
4	23836	Assembly, Boom Extension Cylinder	1	See Page 5.16 for Details
5	24017	Pin, Trunnion	2	
6	62229	Set Screw	3	
7	23954	Wear Pad	1	
8	61826	Capscrew	4	
9	23955	Wear Pad	2	
10	61801	Capscrew	4	
11	22705	Assembly, Cable Sheave	2	See Page 5.22 for Details
12	65534	Thrust Washer	4	
13	23845	Pin, Cable Sheave	2	
14	1242-137	Capscrew	2	
15	1210-17	Lockwasher	2	
16	65103	Fitting, Grease	2	
17	23957	Wear Pad	2	
18	61806	Capscrew	4	
19	23749	Weldment, Cable Keeper	2	
20	1242-3	Capscrew	4	
21	1210-17	Lockwasher	4	
22	24510	Assembly, Power Track Support Roller	1	See Page 5.23 for Details
23	23956	Wear Pad	2	
24	61805	Capscrew	6	
25	23953	Wear Pad	1	
26	61801	Capscrew	2	
27	23844	Support, Wear Pad	1	
28	23962	Shim	1	
29	1200-57	Capscrew	4	
30	1210-20	Lockwasher	4	
31	23952	Wear Pad	2	
32	20453	Plate, Pressure Pad	2	
33	21321	Cover, Pressure Pad	2	
34	23963	Shim	2	
35	1242-49	Capscrew	12	

INTERMEDIATE BOOM ASSEMBLY

Mark Industries



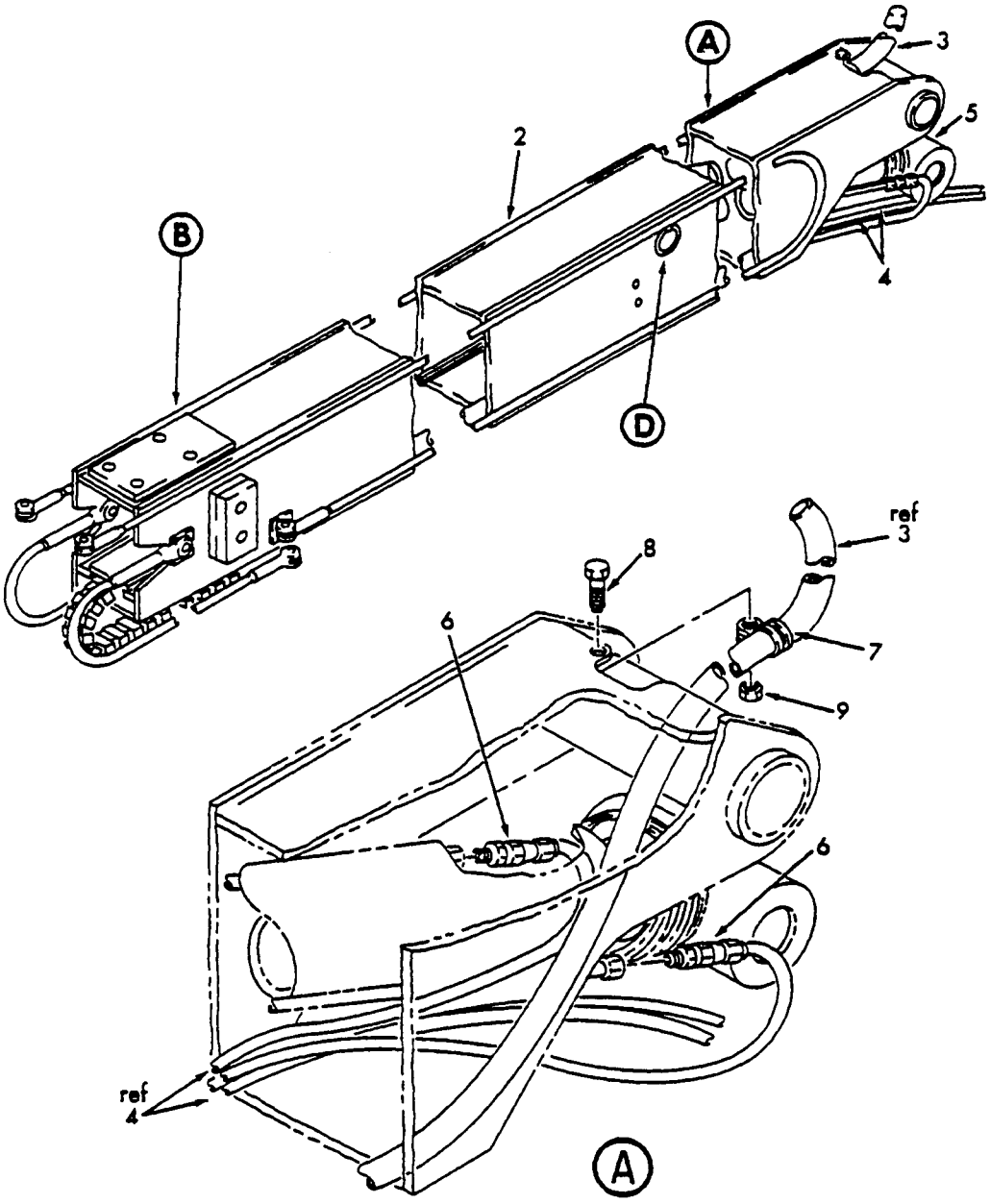
Ref.	Part No.	Description	Qty	Remarks
36	1210-20	Lockwasher	12	
37	62204	Set Screw	4	
38	61101	Jam Nut	4	
39	22705	Assembly, Cable Sheave	2	
40	65534	Thrust Washer	4	
41	65103	Fitting, Grease	2	
42	21287	Weldment, Cable Keeper	2	
43	1242-3	Capscrew	4	
44	1210-17	Lockwasher	4	
45	1200-314	Capscrew	4	
46	1210-17	Lockwasher	4	

Model CH80C

Issued 1-96

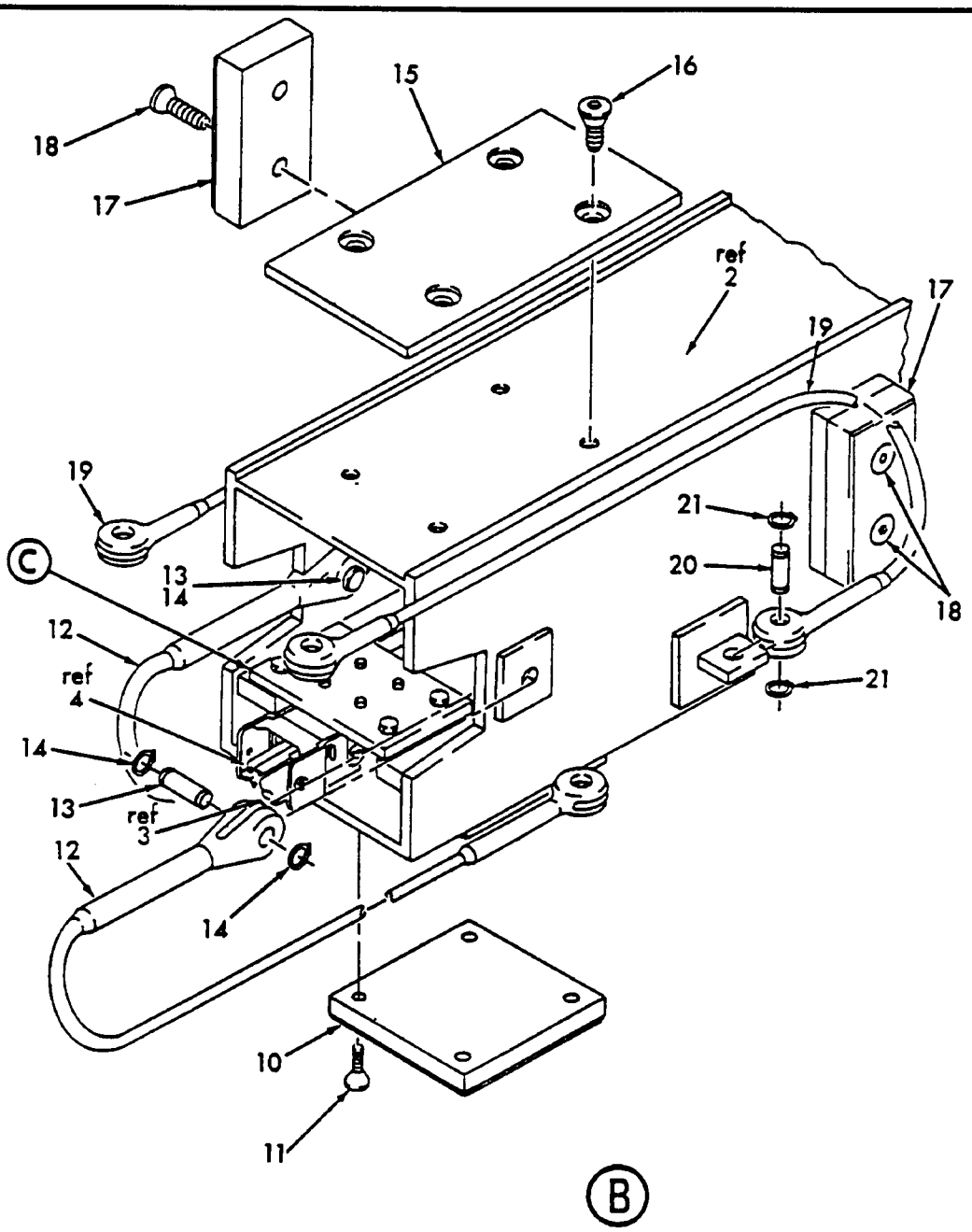
INNER BOOM ASSEMBLY

Mark Industries



Ref.	Part No.	Description	Qty	Remarks
1	24134	Assembly, Inner Boom	Ref.	
2	23635	Machining, Inner Boom	1	
3	69326	Cable, Electric	1	
4	2568-1440	Hose, Hydraulic (1440 IN.)	4	
5	21094	Assembly, Slave Leveling Cylinder	1	See Page 5.19 for Details
6	2562	Fitting, Straight Swivel	2	
7	16268	Clamp, Hose	1	
8	1200-1	Capscrew	1	
9	60711	Hex Nut	1	
10	23949	Wear, Pad	1	
11	61805	Capscrew	4	

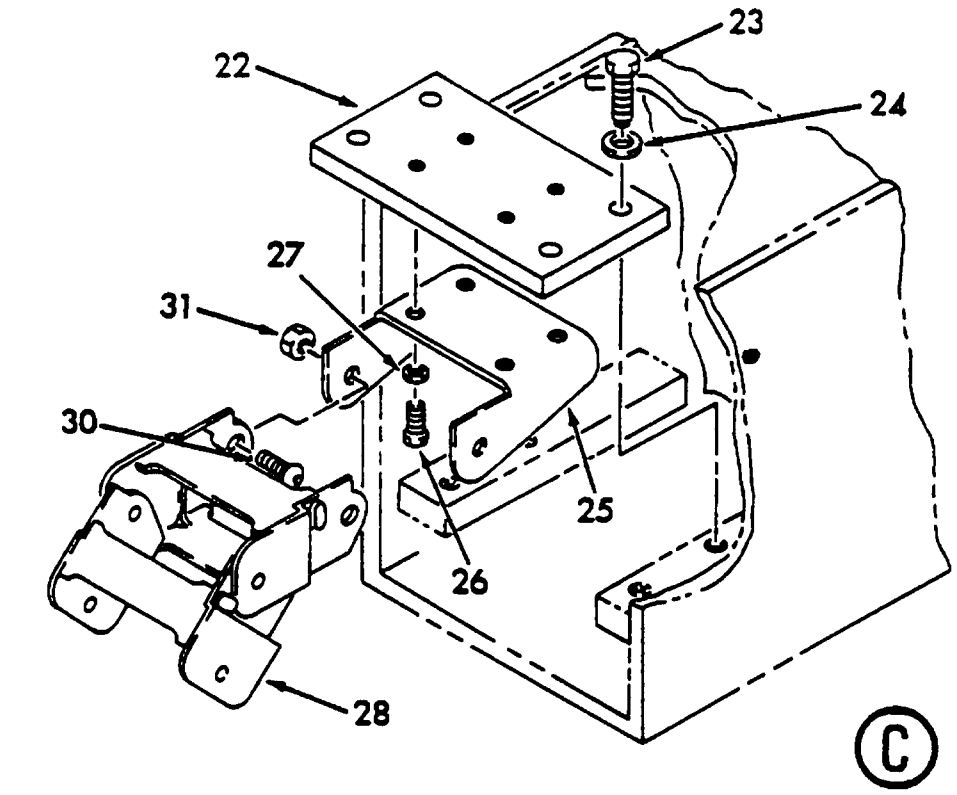
600660-100 Optimizer cable

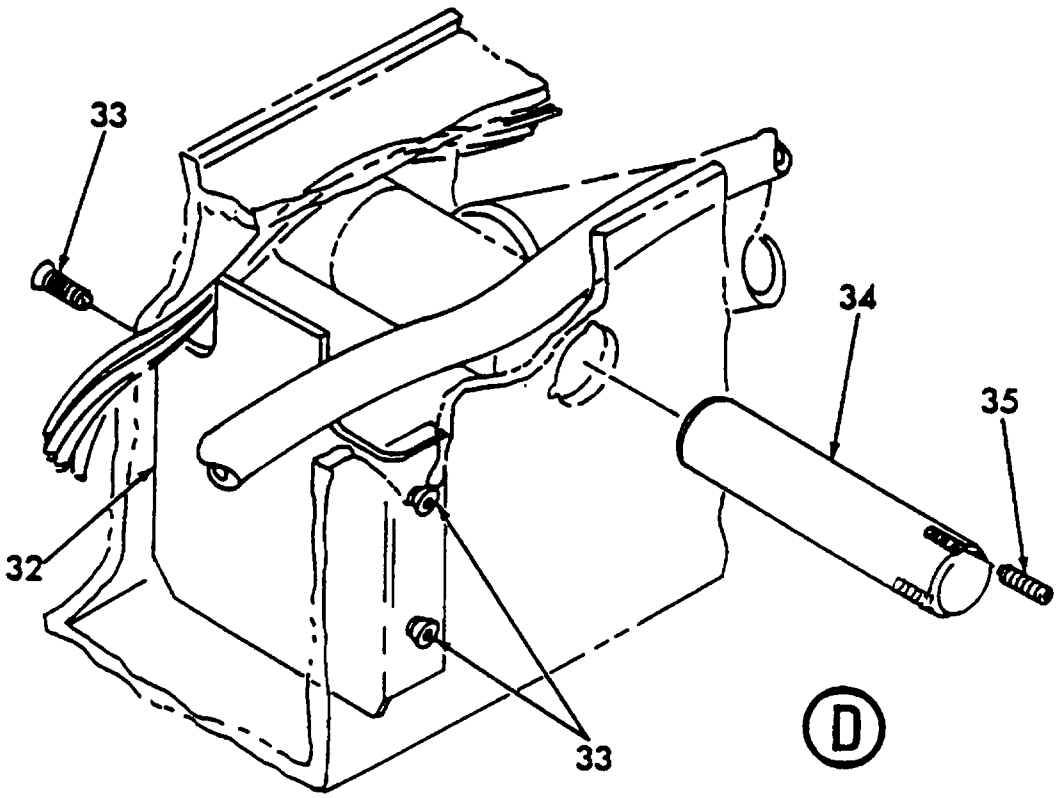


Ref.	Part No.	Description	Qty	Remarks
12	23960	Cable, Retraction	2	
13	22703	Pin, Cable	2	
14	65082	Ring, Snap	4	
15	23950	Wear Pad	1	
16	61833	Capscrew	4	
17	23951	Wear Pad	2	
18	61806	Capscrew	4	
19	23959	Cable, Extension	2	
20	22703	Pin, Cable	2	
21	65082	Ring, Snap	4	

INNER BOOM ASSEMBLY

Mark Industries

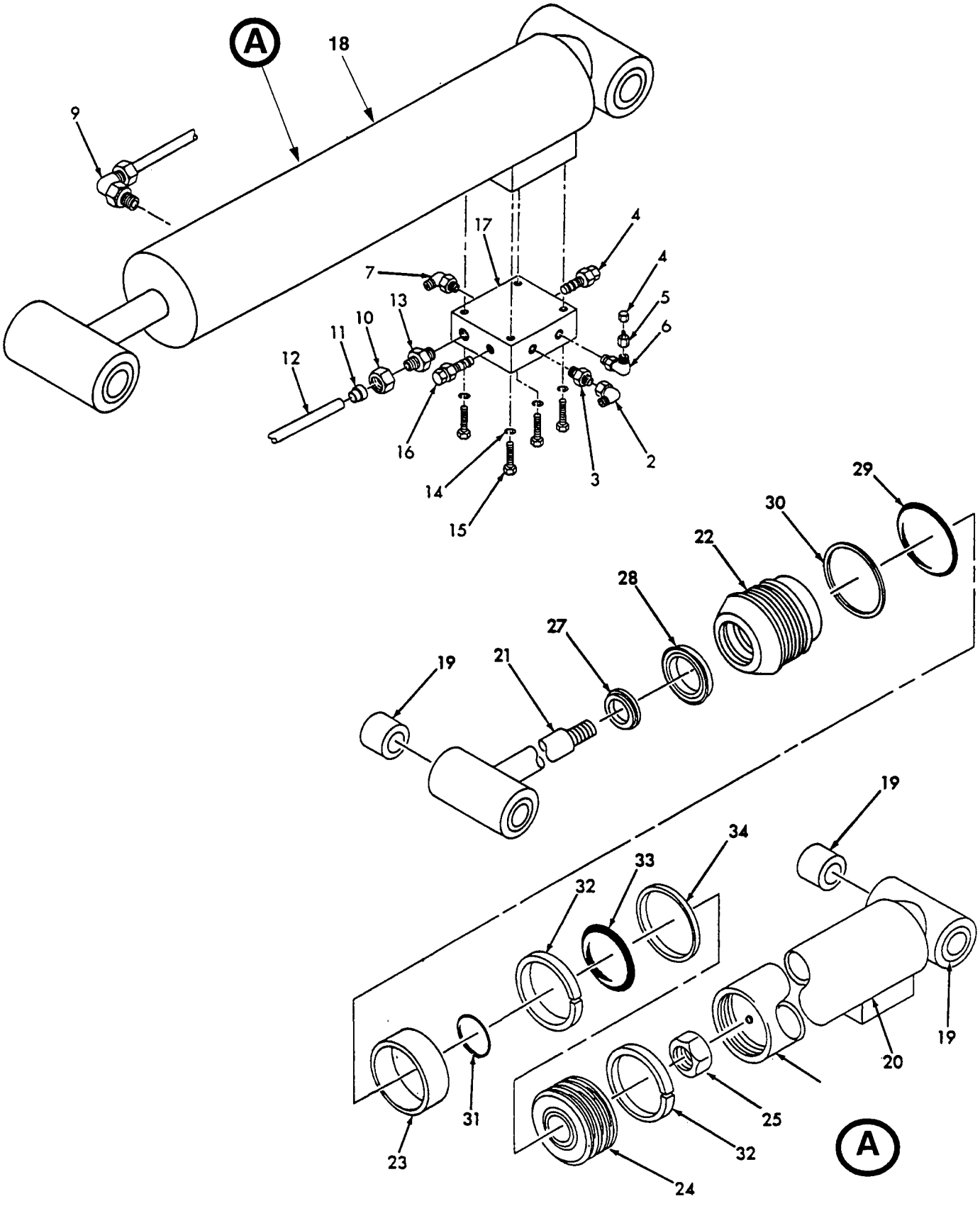




Ref.	Part No.	Description	Qty	Remarks
22	24133	Plate, Mounting Power Track	1	
23	1200-29	Capscrew		
24	1210-17	Lockwasher	4	
25	23895	Bracket, Movable Power Track	1	
26	60543	Capscrew	4	
27	1210-14	Lockwasher	4	
28	23824	Track, Power		165 PCS.
29		Not Used		
30	1200-314	Capscrew	2	
31	61322	Lock Nut	2	
32	24014	Plate, Bulkhead	1	
33	61833	Capscrew	4	
34	23961	Pin, Slave Leveling Cylinder	1	
35	62229	Set Screw	2	

BOOM LIFT CYLINDER

Mark Industries

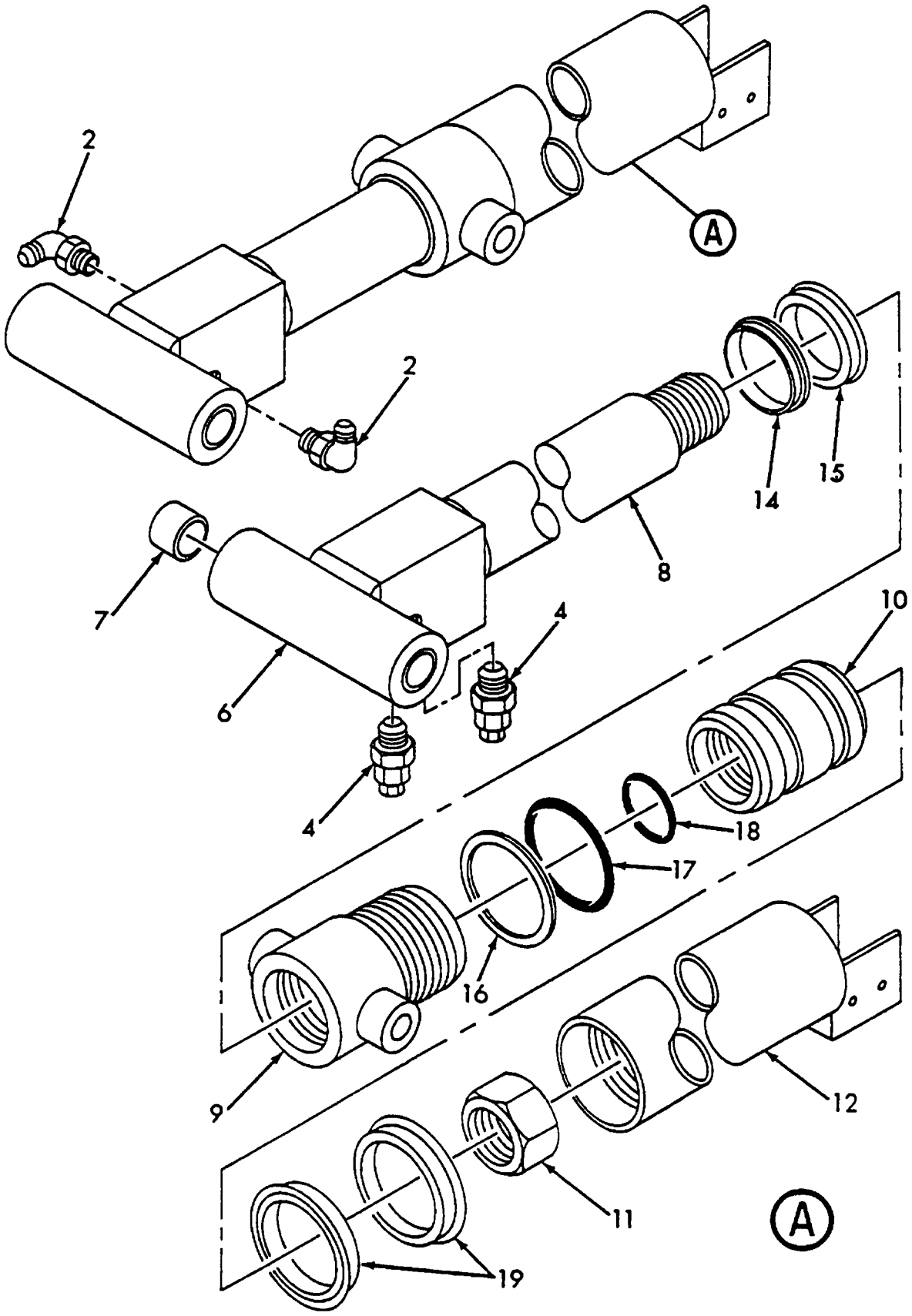


BOOM LIFT CYLINDER

Ref.	Part No.	Description	Qty	Remarks
1	24056	Assembly, Lift Cylinder	REF.	
2	1219-570	Elbow, Swivel Nut	1	
3	1219-441	Connector, Straight Thread	1	
4	20348	Orifice, Bleed Down	1	
5	80060-05	Nut	1	
6	50900	Elbow, Straight Thread	1	
7	1219-470	Elbow, Straight Thread	1	
8	24094	Sub-Assembly, Lift Cylinder	1	
9	1219-802	Elbow, Straight Thread	1	
10	80060-08	Nut	2	
11	80062-08	Sleeve	2	
12	26379	Tubing, Hydraulic	1	
13	1219-984	Connector, Straight Thread	1	
14	1210-17	Lockwasher	4	
15	61943	Screw, Round Socket Head	4	
16	81006	Cartridge, Overcenter	2	
17	21445	Block, Boom Cylinder Valve	1	
18	24043	Cylinder, Lift	1	
19	66784	Bushing (Sierra) or (Great Bend)	4	
20		Barrel	1	
21		Rod	1	
22		Nut, Gland	1	
23		Tube, Stop	1	
24		Piston	1	
25		Nut, Rod	1	
26	67776	Kit, Seal (Sierra)	1	
	600169	Kit, Seal (Great Bend)	1	
27		Wiper, Rod	1	
28		Seal, Rod	1	
29		O-Ring, Head	1	
30		B/U Ring, Head	1	
31		O-Ring, Static	1	
32		Ring, Wear	2	
33		O-Ring, Piston	1	
34		Ring, Glyd	1	

BOOM EXTEND CYLINDER

Mark Industries



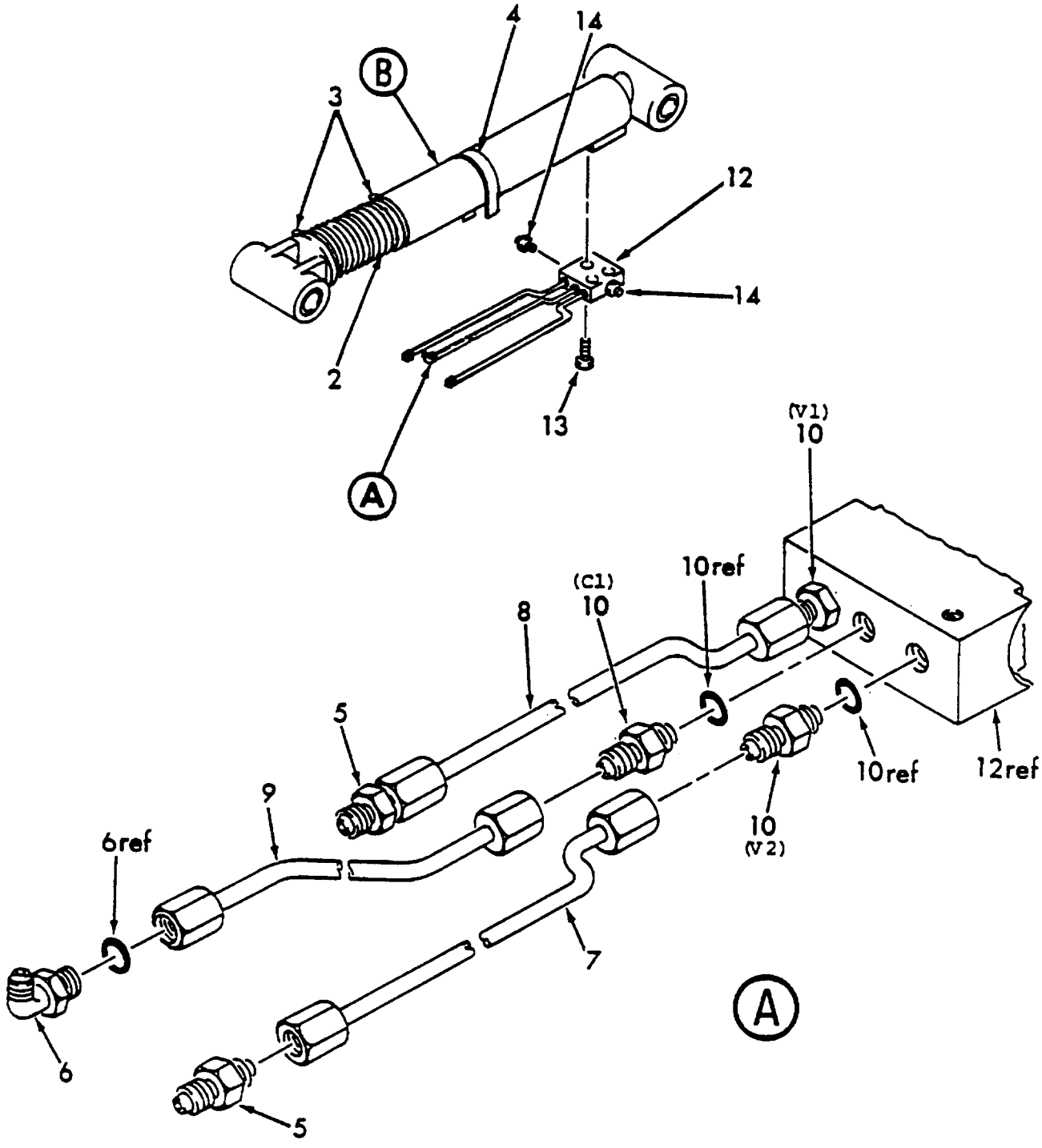
BOOM EXTEND CYLINDER

Model CH80C

Issued 1-96

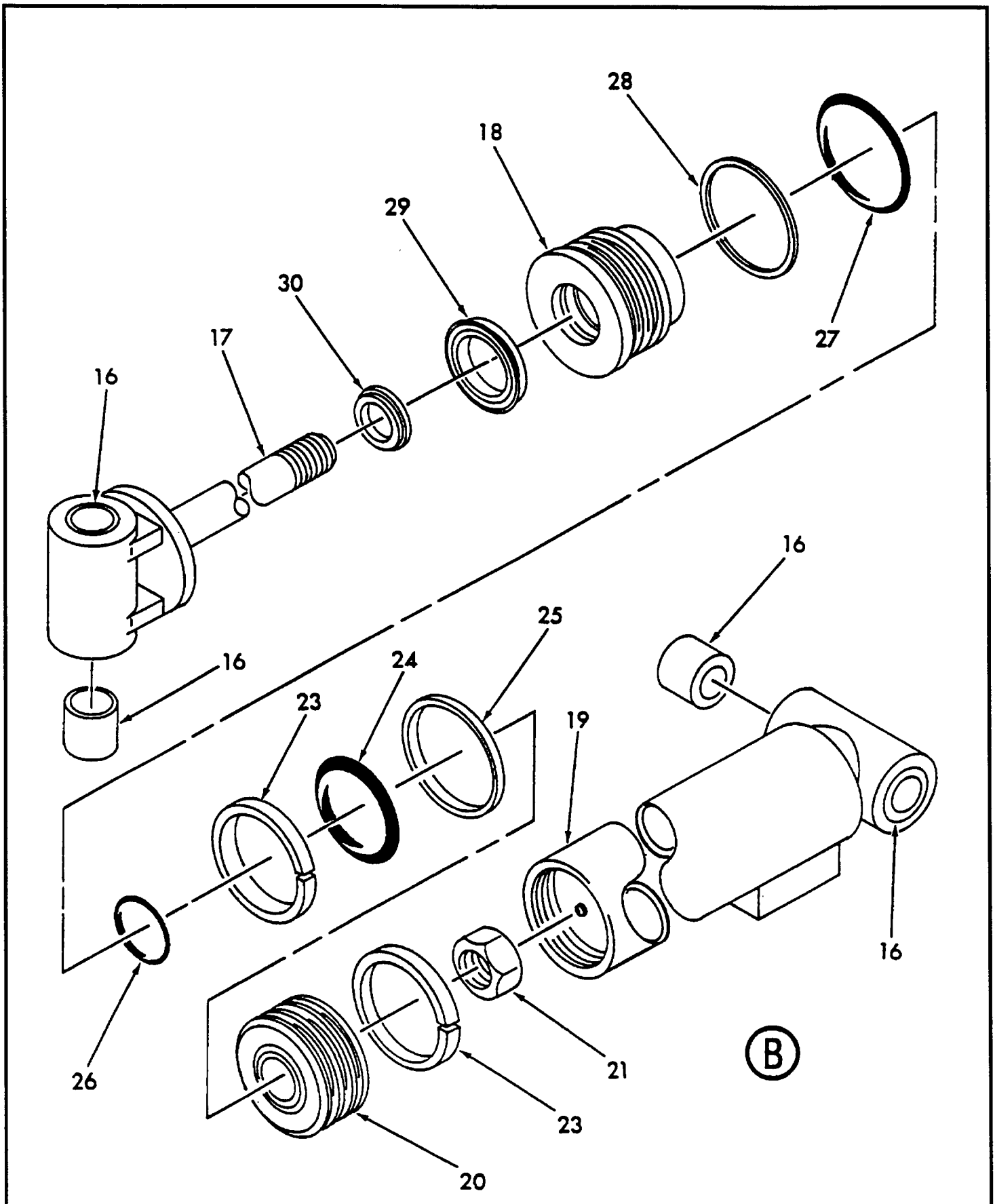
Ref.	Part No.	Description	Qty	Remarks
1	23836	Assembly, Boom Extend Cylinder	Ref.	
2	80012-11	Elbow, Straight Thread	2	
3	23835	Sub-Assembly, Boom Extend Cylinder	1	
4	81006	Cartridge, Over Center	2	
5	23825	Cylinder, Boom Extend	1	
6		End, Rod	1	
7	67948	Bushing, D.U.	2	
8		Rod	1	
9		Nut, Gland	1	
10		Piston	1	
11		Nut, Lock	1	
12		Barrel	1	
13	600088	Kit Seal, GB (Great Bend)	1	Inspect Cyl. for Vendor
	600432	Kit Seal, SI (Sierra)	1	Inspect Cyl. for Vendor
14		Wiper, Rod	1	
15		Seal, Poly-Pak	1	
16		Back-Up Ring	1	
17		O-Ring	1	
18		O-Ring	1	
19		Seal, Poly-Pak	2	

NOTES


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(C1)
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(V2)
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SLAVE LEVELING CYLINDER

Mark Industries

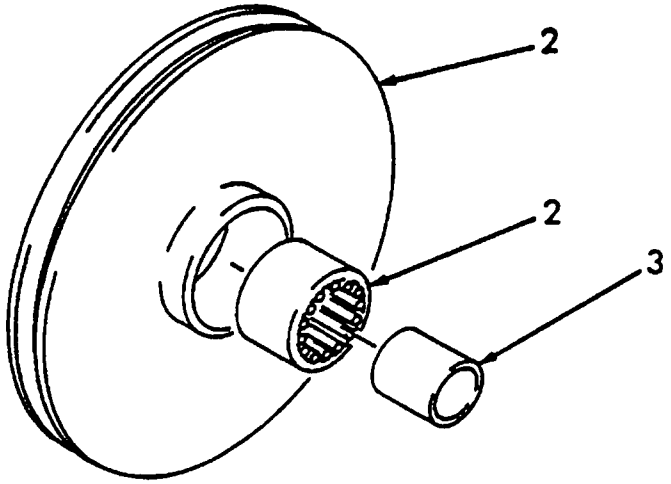


SLAVE LEVELING CYLINDER

Ref.	Part No.	Description	Qty	Remarks
1	21094	Assembly, Slave Leveling Cylinder	Ref	
2	21388	Tubing, Convoluted	1	
3	16318	Clamp	2	
4	16206	Strap	1	
5	80042-03	Connector, Union	2	
6	80012-03	Elbow, Straight Thread	1	
7	21094-8	Assembly, Tube	1	
8	21094-9	Assembly, Tube	1	
9	21094-10	Assembly, Tube	1	
10	80004-03	Connector, Straight Thread (V1, V2, C1)	3	
11	21263	Sub-Assembly, Slave Leveling Cylinder	1	
12	21447	Block, Manifold	1	
13	61903	Capscrew	3	
14	21267	Cartridge, Overcenter	2	
15	21197	Cylinder, Slave Leveling	1	
16	66468	Bushing (Great Bend & Sierra)	4	
	600375	Bushing (Texas HYD'S)		
17		Rod	1	
18		Nut, Gland	1	
19		Barrel	1	
20		Piston	1	
21		Nut	1	
22	67040	Kit, Seal (Sierra)	Ref.	
	600074	Kit, Seal (Great Bend)		
	600374	Kit, Seal (Texas HYD'S)		
23		Ring, SLYD	2	
24		O-Ring, B/U	1	
25		Ring, GLYD	1	
26		O-Ring, Static	1	
27		O-Ring, Gland Nut	1	
28		B/U Ring, Gland Nut	1	
29		Seal, Rod (Polypak)	1	
30		Wiper, Rod	1	

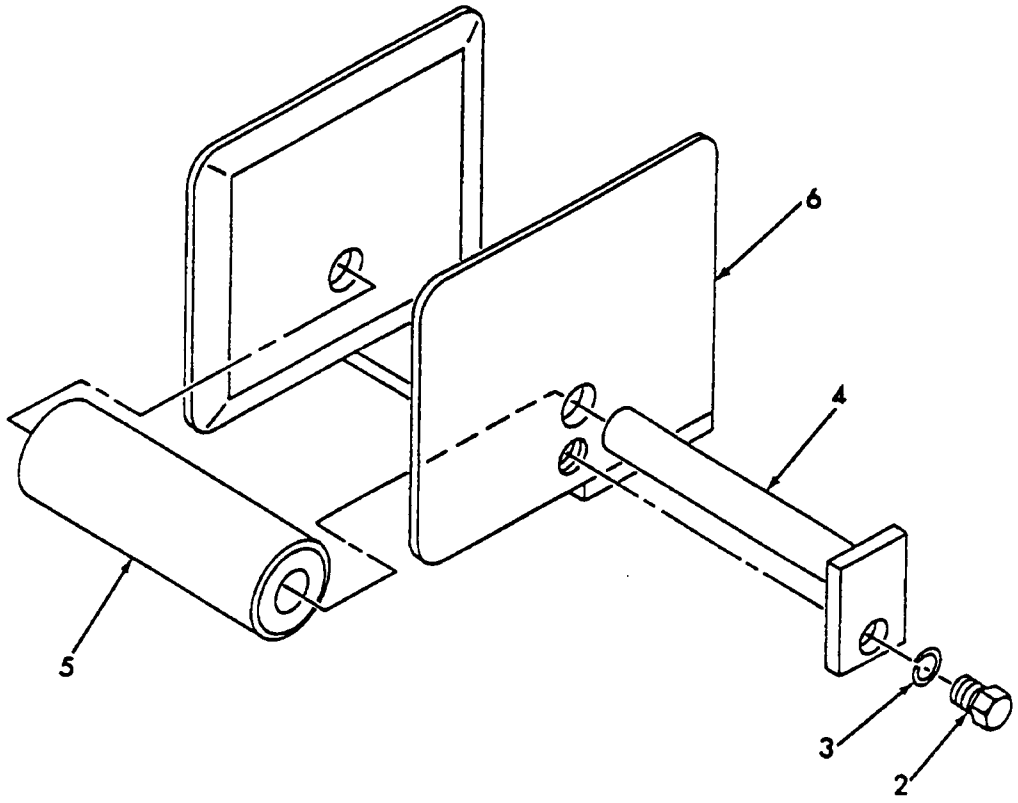
CABLE SHEAVE ASSEMBLY

Mark Industries



Ref.	Part No.	Description	Qty	Remarks
1	22705	Assembly, Cable Sheave	Ref.	
2	65064	Assembly, Outer Ring & Roller	1	
3	65063	Ring, Inner	1	

POWER TRACK SUPPORT ROLLER ASSEMBLY



Ref.	Part No.	Description	Qty	Remarks
1	24510	Assembly, Power Track Support Roller	Ref.	
2	1200-319	Capscrew	1	
3	1210-17	Lockwasher	1	
4	22716	Pin, Power Track Roller	1	
5	24508	Roller, Power Track	1	
6	24509	Weldment, Roller Bracket	1	

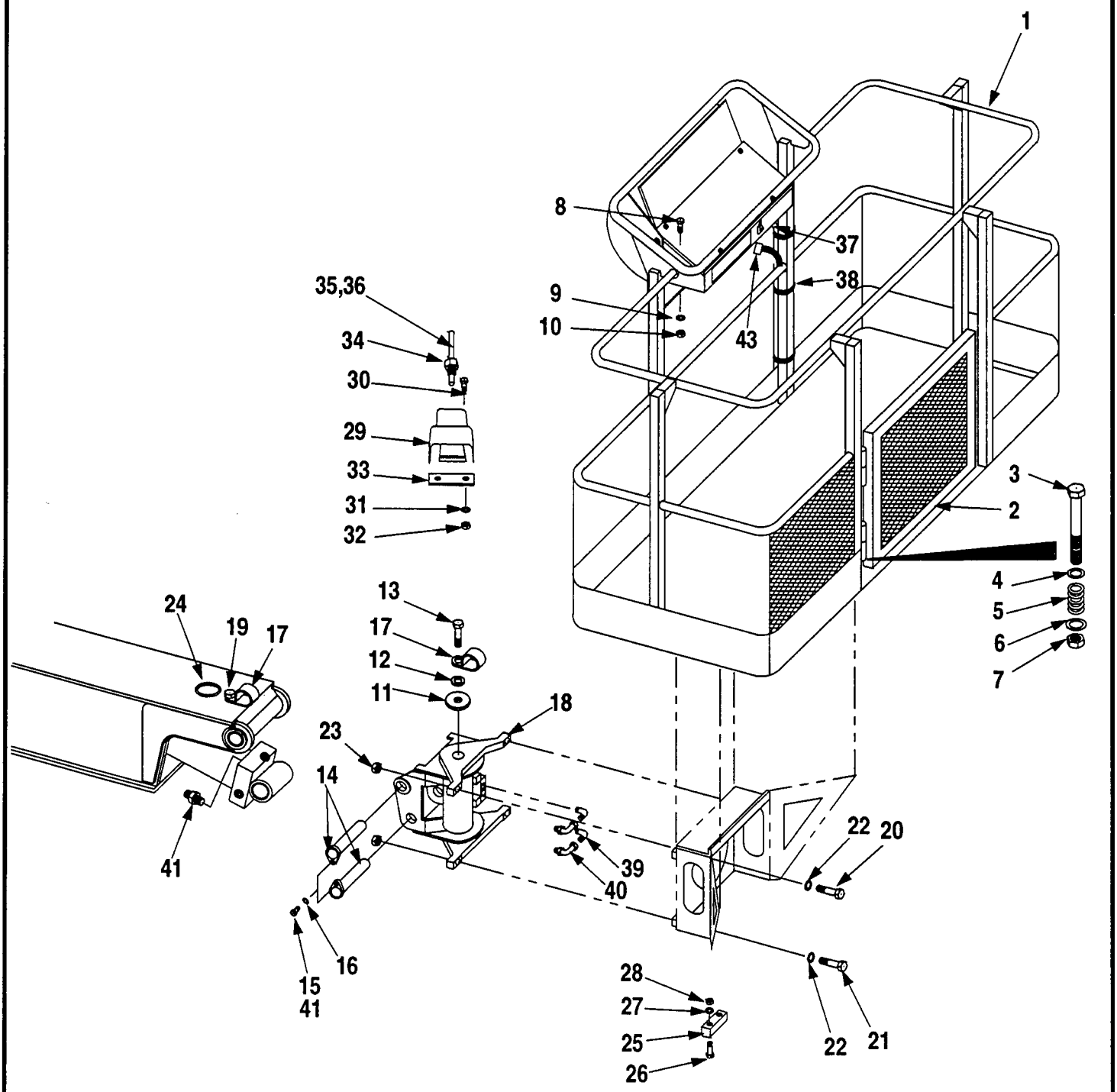
NOTES

SECTION 6 "PLATFORM" CONTAINS:

PAGE	TITLE
6.2	PLATFORM ASSEMBLY
6.4	PLATFORM ASSEMBLY - TOP MOUNT
6.6	PLATFORM ASSEMBLY - FLAT MOUNT
6.8	AERIAL CONTROL BOX
6.10	PLATFORM ROTATOR ASSEMBLY
6.11	FOOT SWITCH
6.12	PLATFORM WIRING

PLATFORM

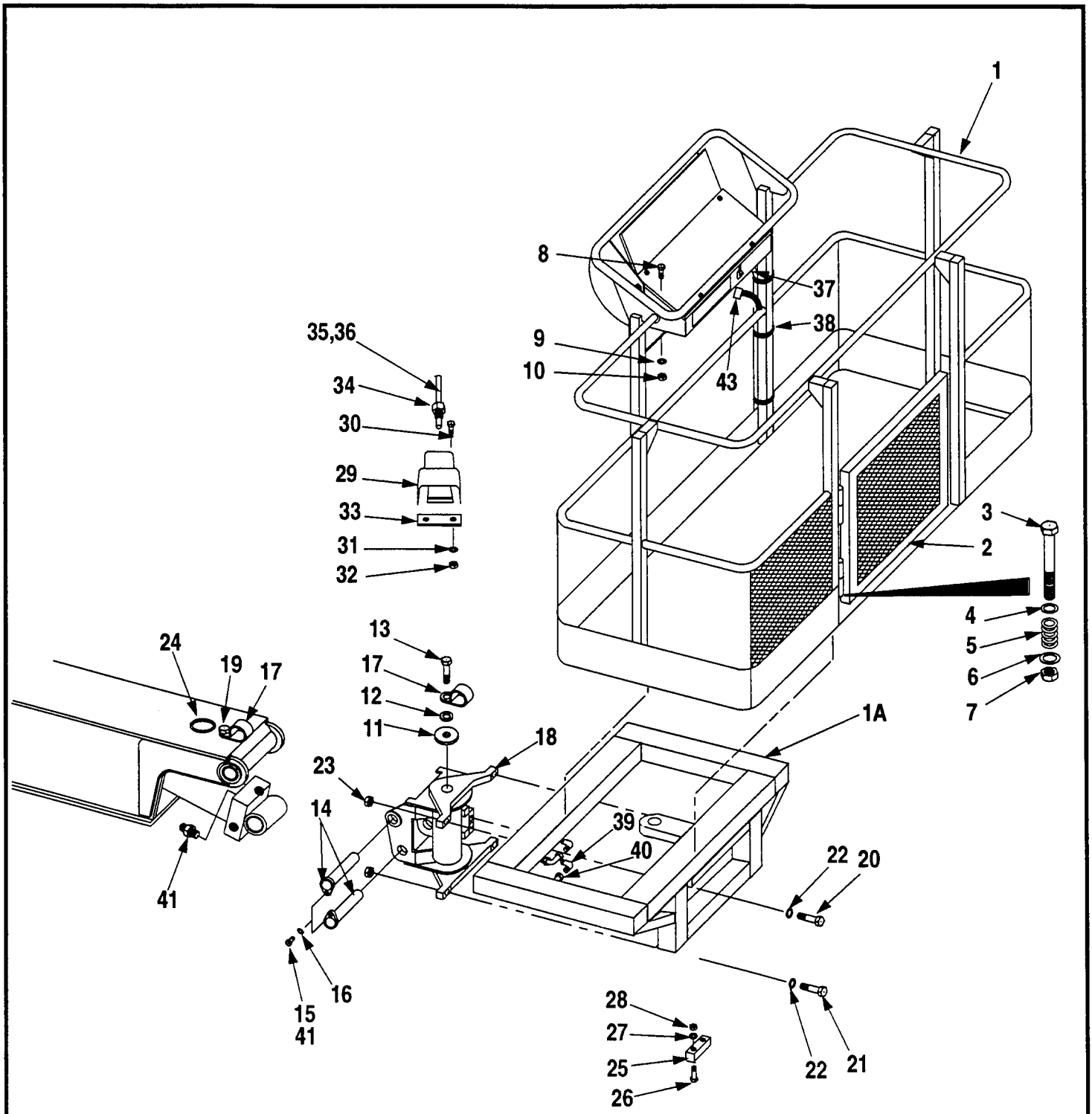
Mark Industries



Ref.	Part No.	Description	Qty	Remarks
	211811-7	Platform Ass'y, 6' (w/o Mesh)	1	]-Incl. Items 1 thru 43
	211811-8	Platform Ass'y, 8' (w/o Mesh)	1	
1	212325	Platform, 6' (w/o Mesh)	1	
	212326	Platform, 8' (w/o Mesh)	1	
2	212324	Door	1	
3	1200-130	Capscrew, 1/2C x 6	2	
4	085 113 24	Flatwasher	4	
5	211816	Spring	2	
6	384 2200	Washer, Thrust	2	
7	1205-67	Locknut, 1/2C	2	
8	1200-61	Capscrew, 3/8C x 1-1/4	4	
9	1209-63	Flatwasher, 3/8 HT	8	
10	1205-45	Locknut, 3/8C	4	
11	212209	Washer, Special	1	
12	1210-26	Lockwasher, 1/2 Gr. 8	1	
13	1242-29	Capscrew, 1/2C x 1 Gr. 8	1	
14	211710	Pin, Boom	2	
15	1242-100	Capscrew, 3/8C x 3/4 Gr. 8	2	
16	1209-63	Flatwasher, 3/8 HT	2	
17	200B2007-52	Clamp	2	
18	81372	Rotator Assembly	1	See Page 6.10
19	1200-61	Capscrew 3/8C x 1-1/4	1	
	1209-4	Flatwasher	1	
	1205-45	Locknut, 3/8C	1	
20	1242-127	Capscrew, 1/2C x 3 Gr. 8	2	Top
21	1242-118	Capscrew, 1/2C x 2-1/2 Gr. 8	2	Bottom
22	1209-29	Flatwasher, 1/2 Gr. 8	4	
23	1205-67	Locknut, 1/2C	4	
24	1221-100	Grommet	1	
25	212064	Bumper	1	
26	1200-65	Capscrew, 3/8C x 1-3/4	2	
27	1209-63	Flatwasher, 3/8 HT	2	
28	1205-45	Locknut, 3/8C	2	
29	70212	Footswitch Ass'y	1	See Page 6.11
30	1200-5	Capscrew, 1/4C x 1/4	2	
31	1209-2	Flatwasher, 1/4	4	
32	1205-23	Locknut, 1/4C	2	
33	22742	Plate	1	
34	2531	Strain Relief	1	
35	2912	Cable, SJO 18/4 Oil Res.	1	
36	70149	Terminal, Pink Ring	4	
37	70807	Socket	4	
	69835	Tool, Crimp	Opt.	For Socket Installation
38	1222-202	Tie, Plastic	3	
39	12019-264	Elbow, 90°	2	
40	2594	Fitting, 90°	2	
41	2562	Fitting, Straight	2	
42	511 2057	Loctite #242	AR	
43	70862	Phoenix Connector	1	

PLATFORM TOP MOUNT

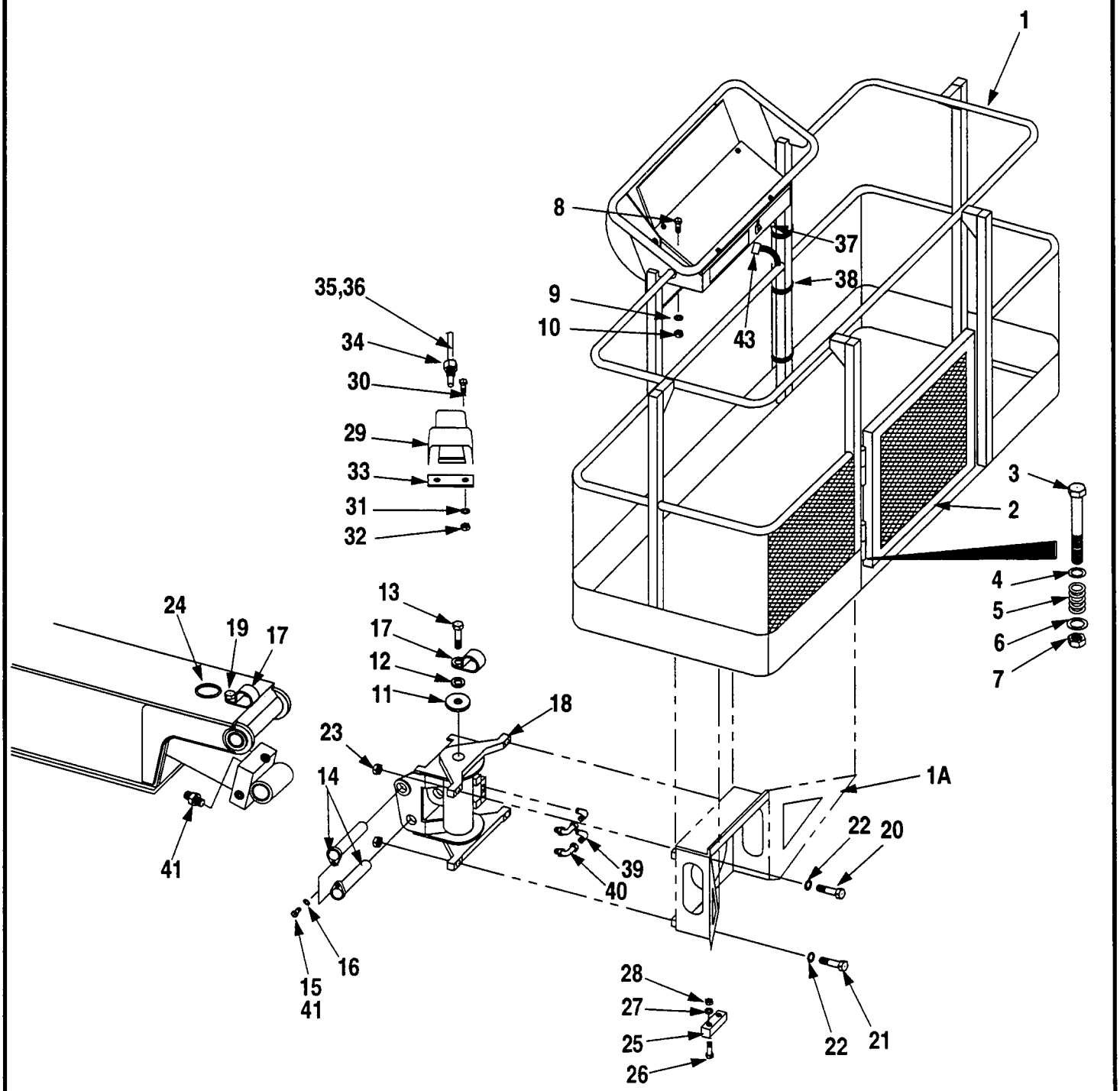
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Ref.	Part No.	Description	Qty	Remarks
	212478	Platform Ass'y, 6'	1	]-Incl. Items 1 thru 43
	212479	Platform Ass'y, 8'	1	
1	212388	Platform, 6'	1	
	212473	Platform, 8'	1	
1A	24171	Bracket	1	
2	212324	Door	1	
3	1200-130	Capscrew, 1/2C x 6	2	
4	085 113 24	Flatwasher	4	
5	211816	Spring	2	
6	384 2200	Washer, Thrust	2	
7	1205-67	Locknut, 1/2C	2	
8	1200-61	Capscrew, 3/8C x 1-1/4	4	
9	1209-63	Flatwasher, 3/8 HT	8	
10	1205-45	Locknut, 3/8C	4	
11	212209	Washer, Special	1	
12	1210-26	Lockwasher, 1/2 Gr. 8	1	
13	1242-29	Capscrew, 1/2C x 1 Gr. 8	1	
14	211710	Pin, Boom	2	
15	1242-100	Capscrew, 3/8C x 3/4 Gr. 8	2	
16	1209-63	Flatwasher, 3/8 HT	2	
17	200B2007-52	Clamp	2	
18	81372	Rotator Assembly	1	See Page 6.10
19	1200-61	Capscrew 3/8C x 1-1/4	1	
	1209-4	Flatwasher	1	
	1205-45	Locknut, 3/8C	1	
20	1242-83	Capscrew, 1/2C x 5 Gr. 8	2	Top
21	1242-118	Capscrew, 1/2C x 2-1/2 Gr. 8	2	Bottom
22	1209-29	Flatwasher, 1/2 Gr. 8	4	
23	1205-67	Locknut, 1/2C	4	
24	1221-100	Grommet	1	
25	212064	Bumper	1	
26	1200-65	Capscrew, 3/8C x 1-3/4	2	
27	1209-63	Flatwasher, 3/8 HT	2	
28	1205-45	Locknut, 3/8C	2	
29	70212	Footswitch Ass'y	1	See Page 6.11
30	1200-5	Capscrew, 1/4C x 1/4	2	
31	1209-2	Flatwasher, 1/4	4	
32	1205-23	Locknut, 1/4C	2	
33	22742	Plate	1	
34	2531	Strain Relief	1	
35	2912	Cable, SJO 18/4 Oil Res.	1	
36	70149	Terminal, Pink Ring	4	
37	70807	Socket	4	
	69835	Tool, Crimp	Opt.	For Socket Installation
38	1222-202	Tie, Plastic	3	
39	12019-264	Elbow, 90°	2	
40	2594	Fitting, 90°	2	
41	2562	Fitting, Straight	2	
42	511 2057	Loctite #242	AR	
43	70862	Phoenix Connector	1	

PLATFORM
FLAT MOUNT

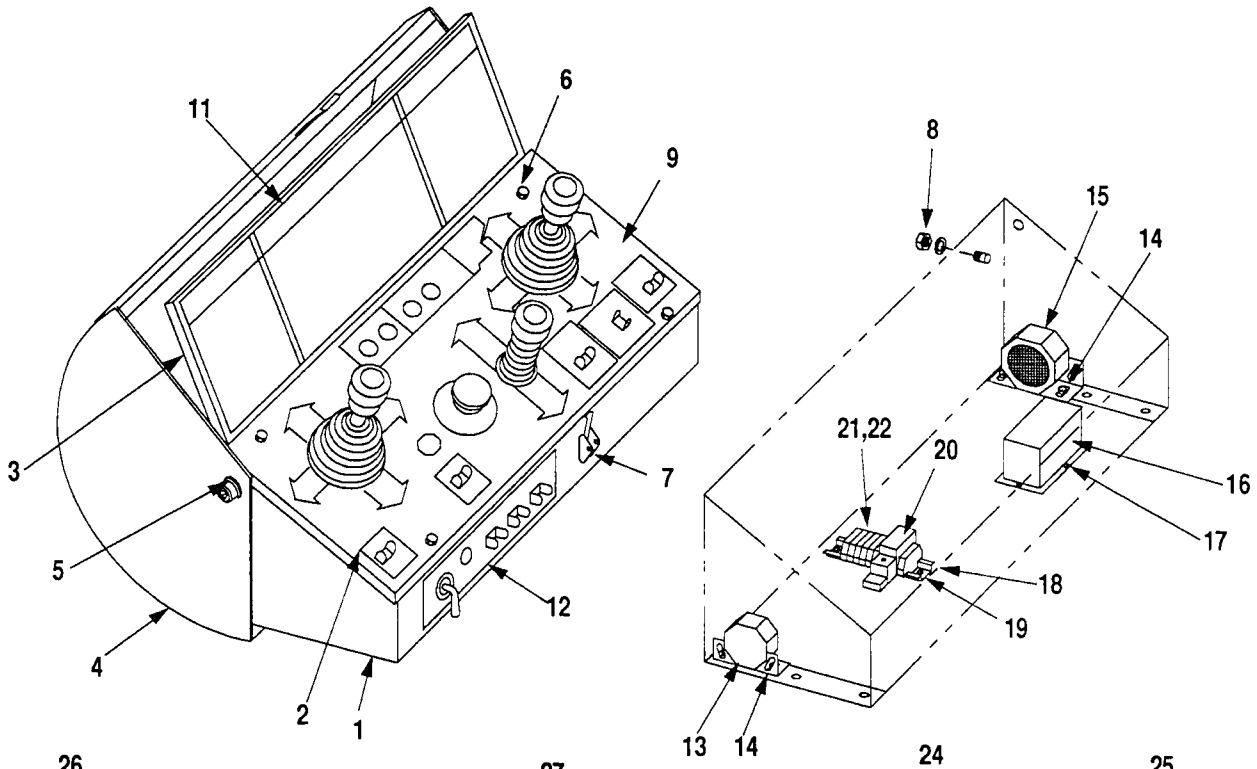
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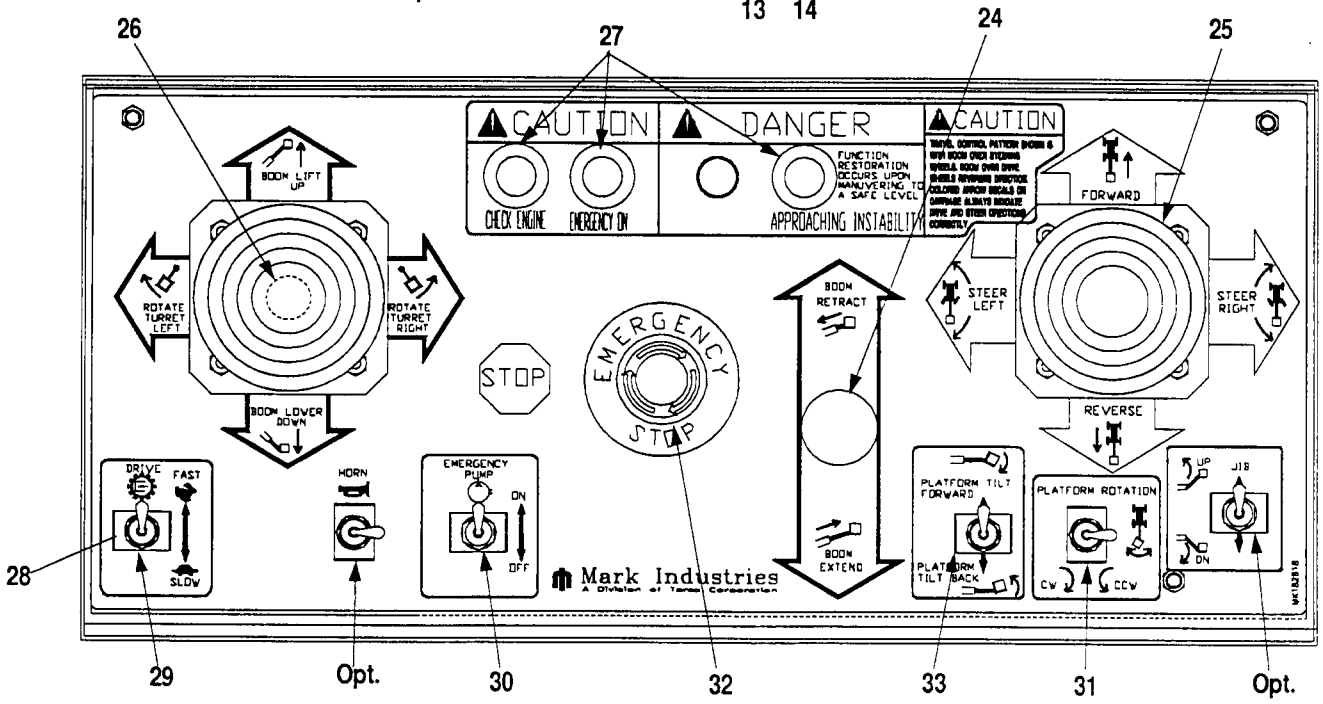


Ref.	Part No.	Description	Qty	Remarks
	212480	Platform Ass'y, 6'	1	]-Incl. Items 1 thru 43
	212481	Platform Ass'y, 8'	1	
1	212388	Platform, 6'	1	
	212473	Platform, 8' (Optional)	1	
1A	23564	Bracket	1	
2	212324	Door	1	
3	1200-130	Capscrew, 1/2C x 6	2	
4	085 113 24	Flatwasher	4	
5	211816	Spring	2	
6	384 2200	Washer, Thrust	2	
7	1205-67	Locknut, 1/2C	2	
8	1200-61	Capscrew, 3/8C x 1-1/4	4	
9	1209-63	Flatwasher, 3/8 HT	8	
10	1205-45	Locknut, 3/8C	4	
11	212209	Washer, Special	1	
12	1210-26	Lockwasher, 1/2 Gr. 8	1	
13	1242-29	Capscrew, 1/2C x 1 Gr. 8	1	
14	211710	Pin, Boom	2	
15	1242-100	Capscrew, 3/8C x 3/4 Gr. 8	2	
16	1209-63	Flatwasher, 3/8 HT	2	
17	200B2007-52	Clamp	2	
18	81372	Rotator Assembly	1	See Page 6.10
19	1200-61	Capscrew 3/8C x 1-1/4	1	
	1209-4	Flatwasher	1	
	1205-45	Locknut, 3/8C	1	
20	1242-83	Capscrew, 1/2C x 5 Gr. 8	2	Top
21	1242-118	Capscrew, 1/2C x 2-1/2 Gr. 8	2	Bottom
22	1209-29	Flatwasher, 1/2 Gr. 8	4	
23	1205-67	Locknut, 1/2C	4	
24	1221-100	Grommet	1	
25	212064	Bumper	1	
26	1200-65	Capscrew, 3/8C x 1-3/4	2	
27	1209-63	Flatwasher, 3/8 HT	2	
28	1205-45	Locknut, 3/8C	2	
29	70212	Footswitch Ass'y	1	See Page 6.11
30	1200-5	Capscrew, 1/4C x 1/4	2	
31	1209-2	Flatwasher, 1/4	4	
32	1205-23	Locknut, 1/4C	2	
33	22742	Plate	1	
34	2531	Strain Relief	1	
35	2912	Cable, SJO 18/4 Oil Res.	1	
36	70149	Terminal, Pink Ring	4	
37	70807	Socket	4	
	69835	Tool, Crimp	Opt.	For Socket Installation
38	1222-202	Tie, Plastic	3	
39	12019-264	Elbow, 90°	2	
40	2594	Fitting, 90°	2	
41	2562	Fitting, Straight	2	
42	511 2057	Loctite #242	AR	
43	70862	Phoenix Connector	1	

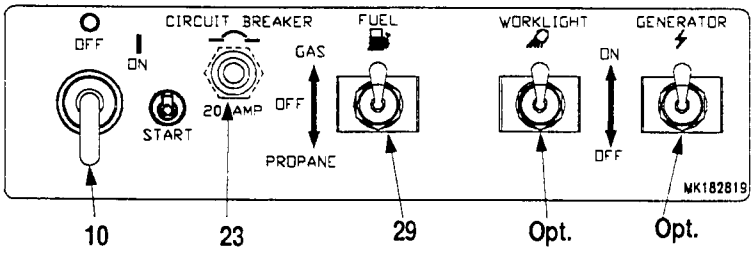
AERIAL CONTROL BOX

Mark Industries, Inc.





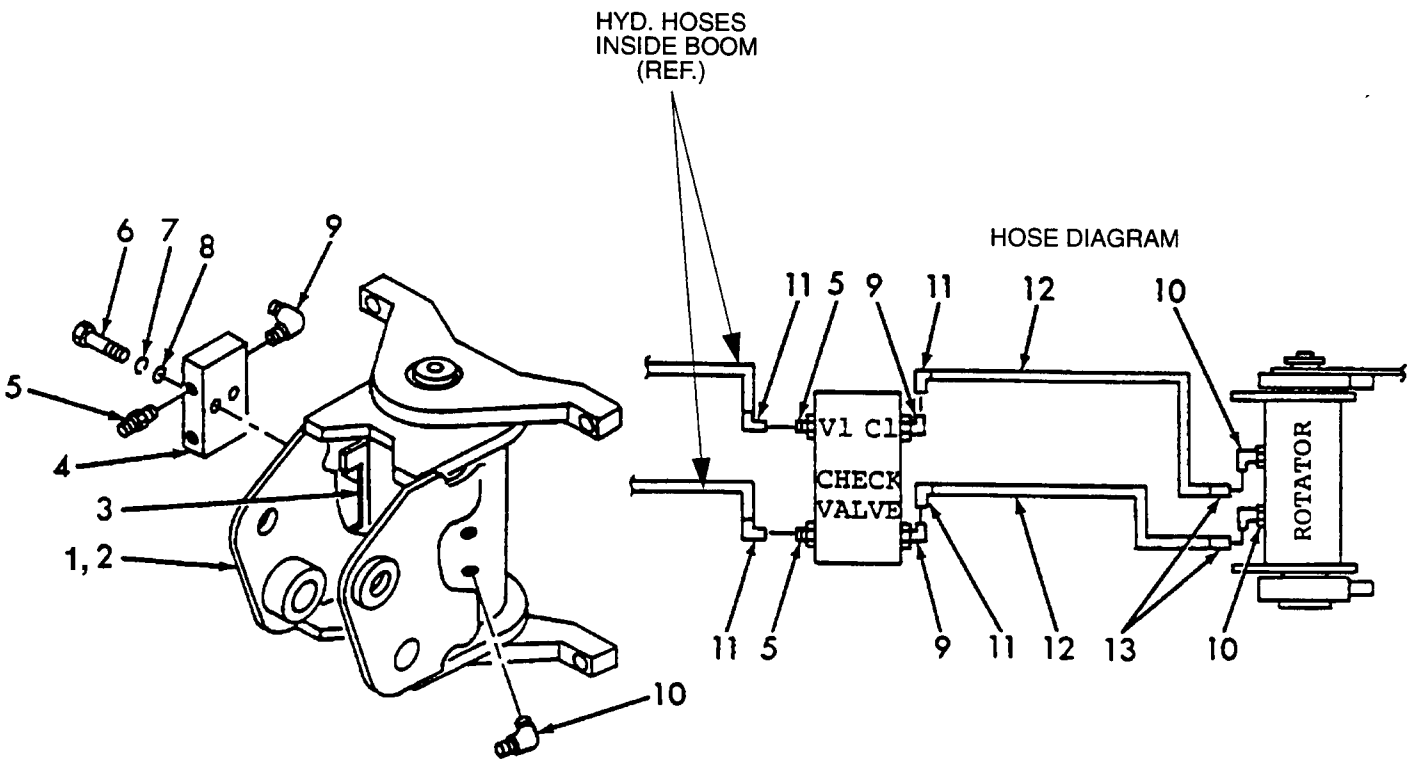
May Not be Available on all Models.



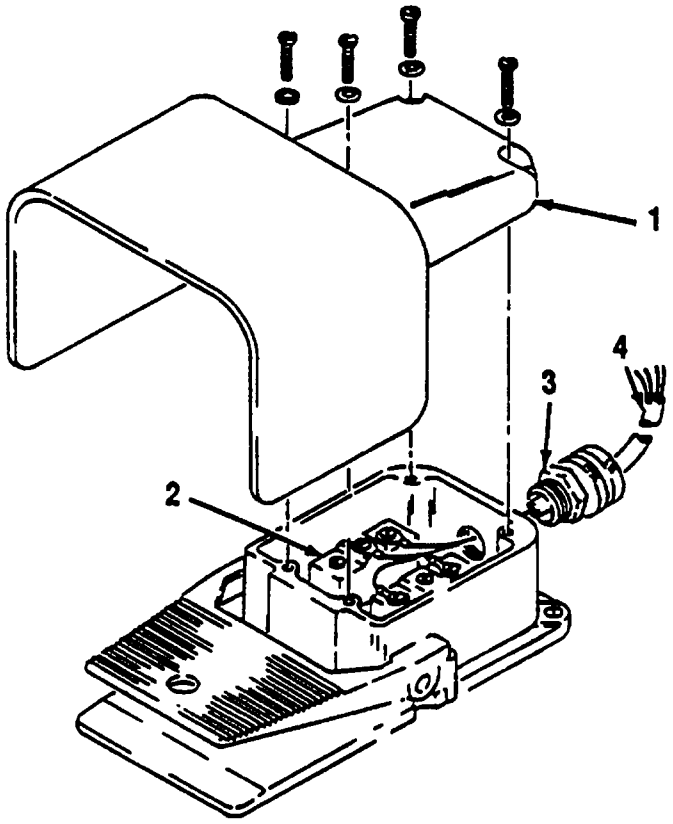
Ref.	Part No.	Description	Qty	Remarks
	212007	Aerial Control Box Ass'y (OEM)	Ref.	Incl. Items 1 thru 33
1	212005	Box	1	
2	212100	Lid, Box	1	
3	212088	Plate, Back	1	
4	212410	Cover	1	
5	1203-201	Shoulder Screw, 3/8 x 1/2 - 5/16C x 1/2	2	
	511 2057	Loctite	AR	
6	311 1956	Machine Screw, 1/4C x 1/2	4	
	A126739	Cage Nut, 1/4 J-Type	4	
	69117	Latch	1	
8	1205-13	Nut, 1/4C	3	
	1210-14	Lockwasher	3	
9	182818	Decal, Box (Top)	1	
10	69119	Switch, Ignition	1	
11	182120	Decal, Operation Instructions	1	
12	182819	Decal, Box (Front)	1	
13	441 6837	Alarm, Engine	1	
14	1205-13	Nut, 1/4C	4	
15	441 6838	Alarm, Stability	1	
16	70803	Connector, Receptacle	1	
17	1233-10	Machine Screw, #8-32 x 3/4	4	
	1205-3	Nut, #8-32	4	
	1210-5	Lockwasher, #8	4	
18	70580	Rail, Low Profile	1	
19	1233-5	Machine Screw, 1/4C x 1/2	2	
	1205-23	Locknut, 1/4C	2	
20	70459	Relay	1	
	70460	Base	1	
	70462	Clip, Relay Hold-Down	2	
21	441 6839	Terminal Block, Brown	4	
22	441 6840	Terminal Block, Y/G	2	
23	69172	Circuit Breaker	1	
24	70823	Joystick, Boom Extend	1	
25	70824	Joystick, Drive/Steer	1	
26	70825	Joystick, Lift/Rotate	1	
27	69144	Lamp Base	3	
	69254	Bulb	3	
	69143	Lens	3	
28	70783	Guard, Switch	5	
29	69162	Switch, Toggle	1	
30	69255	Switch, Toggle	1	
31	69164	Switch, Toggle	1	
32	69166	Emergency Stop Button	1	
33	69232	Switch, Toggle	1	

PLATFORM ROTATOR

Mark Industries



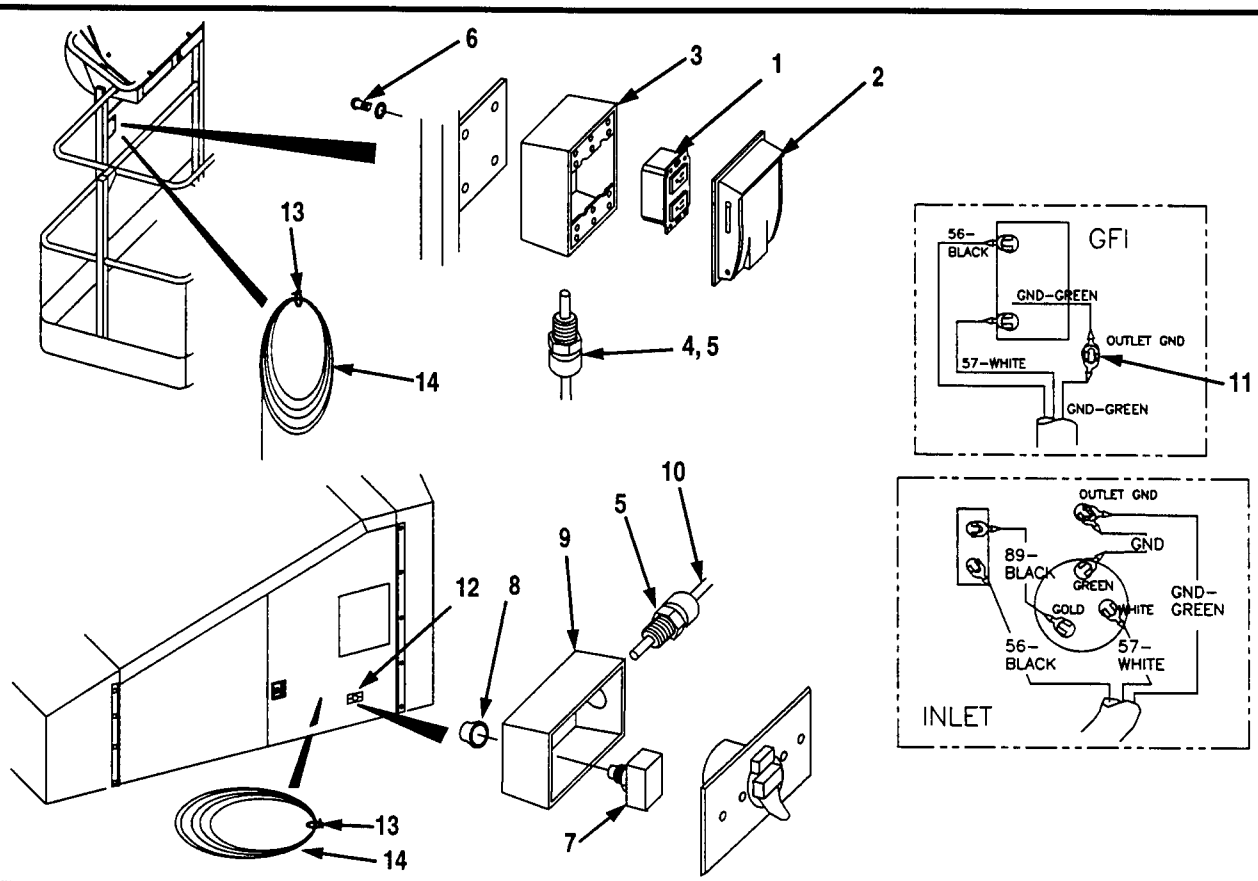
Ref.	Part No.	Description	Qty	Remarks
	81372	Platform Rotator Assy	1	Incl. Items 1 thru 13
1	67770	Kit, Seal	1	
2	67771	Kit, Bearing	1	
3	23197	Bracket, Check Valve	1	
4	20351	Check Valve	1	
5	80004-05	Connector, Straight Thread	2	
6	60360	Capscrew	2	
7	63302	Lockwasher	2	
8	63402	Flat Washer	2	
9	80012-05	Elbow, Straight Thread	2	
10	80012-03	Elbow, Straight Thread	2	
11	2594	Elbow, Swivel	4	
12	2568-0144	Hose, Hydraulic	2	
13	2562	Fitting, Straight Swivel Hose	2	



Ref.	Part No.	Description	Qty	Remarks
1	70212	Footswitch	1	Incl. Item 2
2	66336	Microswitch	2	
3	2531	Relief, Strain	1	
4	2912	Cable, SJO 18/4		6 FT.

PLATFORM WIRING

Mark Industries



Ref.	Part No.	Description	Qty	Remarks
	212162-1	Platform Wiring - 110 Volt	Opt.	Incl. Items 1 thru 11
	212162-2	Platform Wiring - 220 Volt	Opt.	Incl. Items 12 thru 14
1	70391	Receptacle, GFI	1	
2	70392	Cover, Receptacle	1	
3	70262	Box	1	
4	70119	Inlet w/Gasket	1	
5	2806	Strain Relief	2	
6	61720	Screw, #10-24 x 5/8 Self-Tapping	4	
7	441 4026	Circuit Breaker, 20A	1	
8	442 2399	Boot	1	
9	212133	Outlet Box	1	
10	70769	Cable, 12/3	Ref.	
11	117C	Terminal	11	
12	902	Cover, Door	1	
13	1222-202	Tie, Plastic	2	
14	70423	Cable, TUV 12/3	Ref.	

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Mark Industries

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