PARTS MANUAL

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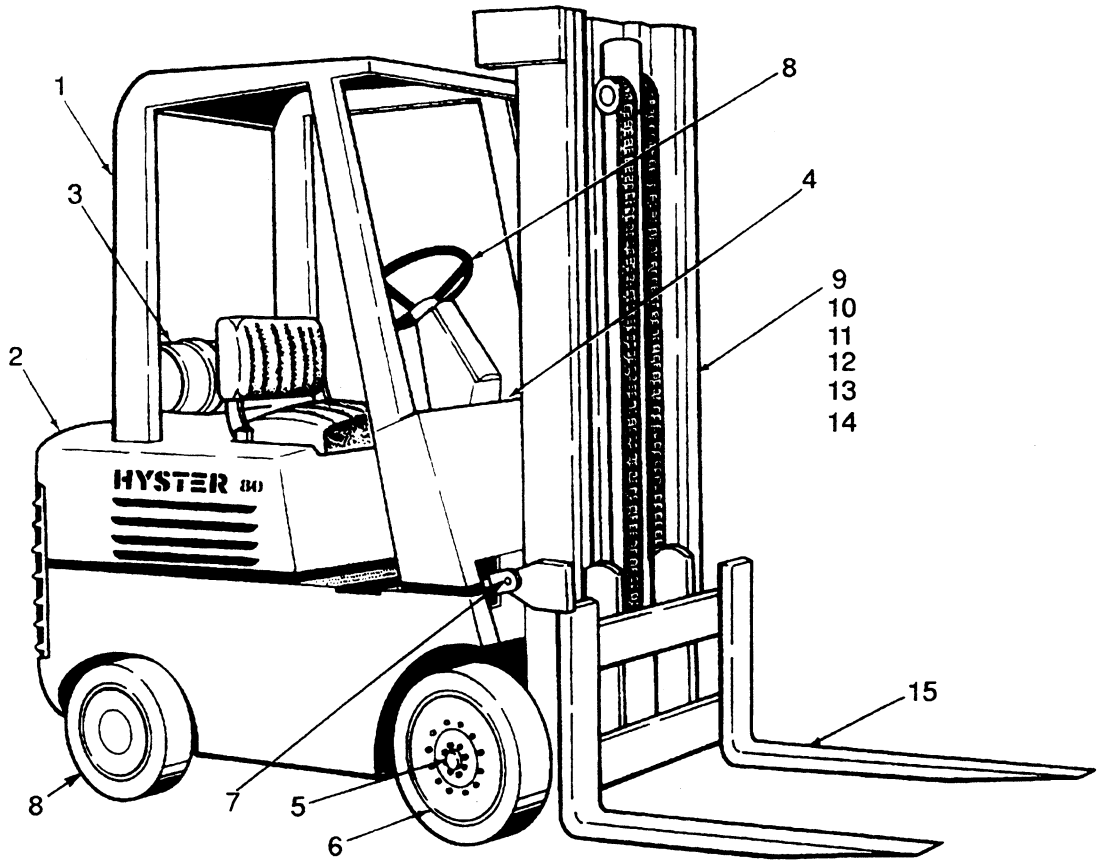
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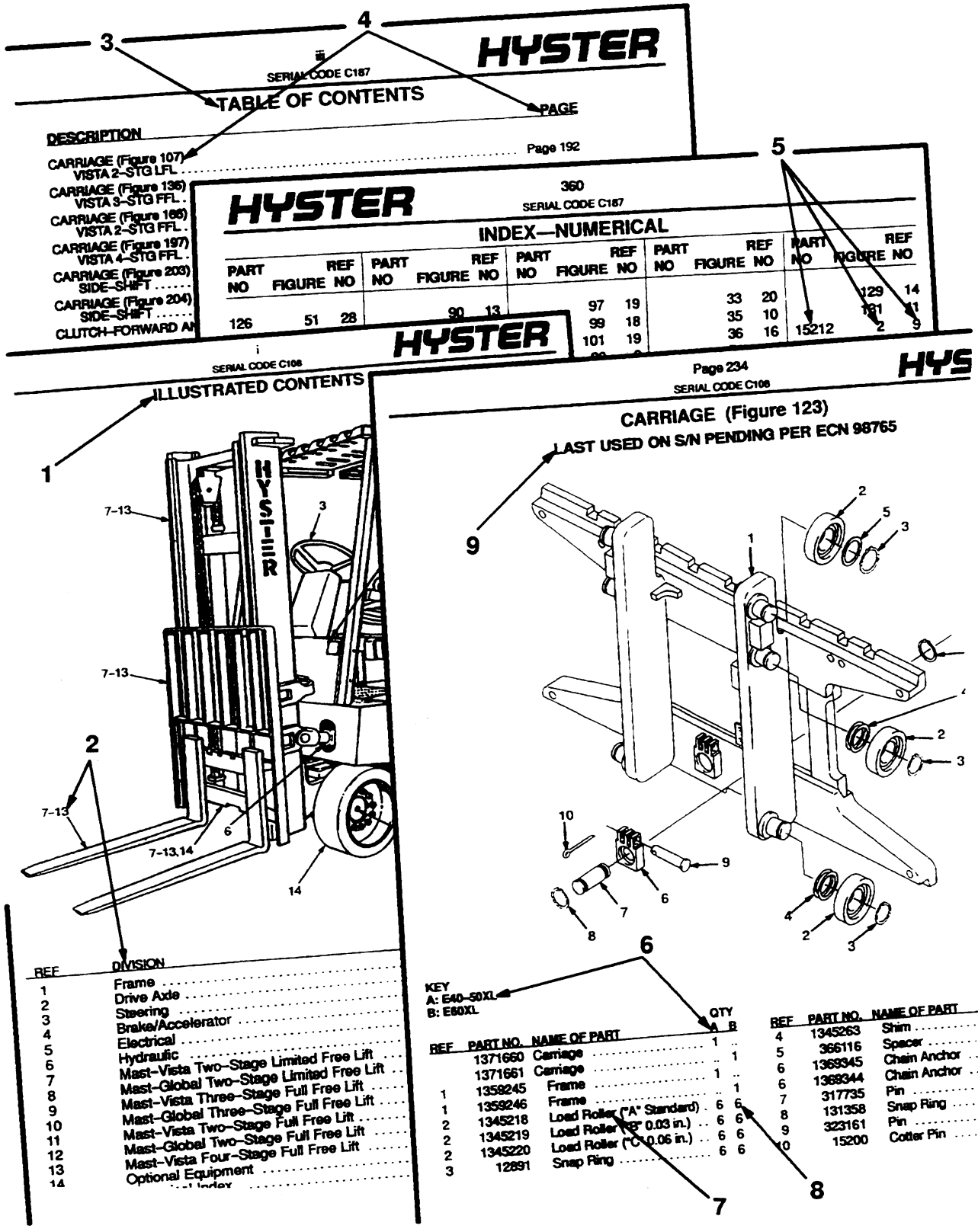
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HOW TO USE ILLUSTRATED PARTS MANUAL

This parts manual describes and illustrates assemblies, subassemblies, and detail parts needed for service replacement.

The different constructions are indicated by keys, symbols and footnotes.



HOW TO FIND THE DESIRED PART NUMBER

WHEN THE PART NUMBER AND THE NEXT HIGHER ASSEMBLY IS NOT KNOWN:

1. Determine the function and application of the part required. Turn to the illustrated index page immediately behind the front cover. Choose the general area of reference most likely to include the part.
2. Find the page number for the reference number you choose and turn to that page. Use the division index to determine the assembly which would normally contain the part required. Then locate the part on the assembly breakdown page.

WHEN THE PART NUMBER IS NOT KNOWN AND THE NEXT HIGHER ASSEMBLY IS KNOWN:

3. Determine the assembly the required part is used on. Turn to the Master Index immediately following the Illustrated Index.
4. Locate the assembly the required part is used on and turn to the page indicated for that assembly. Then locate the part on the assembly breakdown page.

WHEN THE PART NUMBER IS KNOWN:

5. Use the numerical index at the back of the manual to find the part number. Turn to the figure listed and locate the part as indicated by the reference number.

GENERAL:

The assembly breakdowns include part numbers, description, quantities required, keys and footnotes to help in selecting the correct parts.

6. Keys are used to show effective serial numbers for two or more similar assemblies, RH and LH assembly parts, etc. Select the appropriate key, "A", "B", "C" or "D" and the corresponding quantity column to find the required parts.
7. Indented descriptions under "Name of Part" are used to indicate assemblies and sub–parts of assemblies. In the example, *LOAD ROLLER* (Item 2) is a subpart of the major assembly *CARRIAGE*.
8. Quantities shown are for one assembly. The quantities of the subpart *LOAD ROLLER* are indicated as six and six. This means six per *CARRIAGE* assembly.
9. Engineering change notice (ECN) numbers for pending serial numbers are shown to allow for the inclusion of the most current parts information. Contact your local dealer for Hyster lift trucks for serial number information listed by ECN number.
10. Additional fork lengths are available. Contact your dealer for Hyster lift trucks.

ORDERING PARTS:

When ordering replacement parts, give the unit serial number, part number, name of part and quantity required.

For any further information on parts, service, or ordering, consult your local dealer for Hyster lift trucks.

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IDENTIFICATION OF TRUCK SERIAL NUMBERS

X OOO X OOOO X
(1) (2) (3) (4) (5)

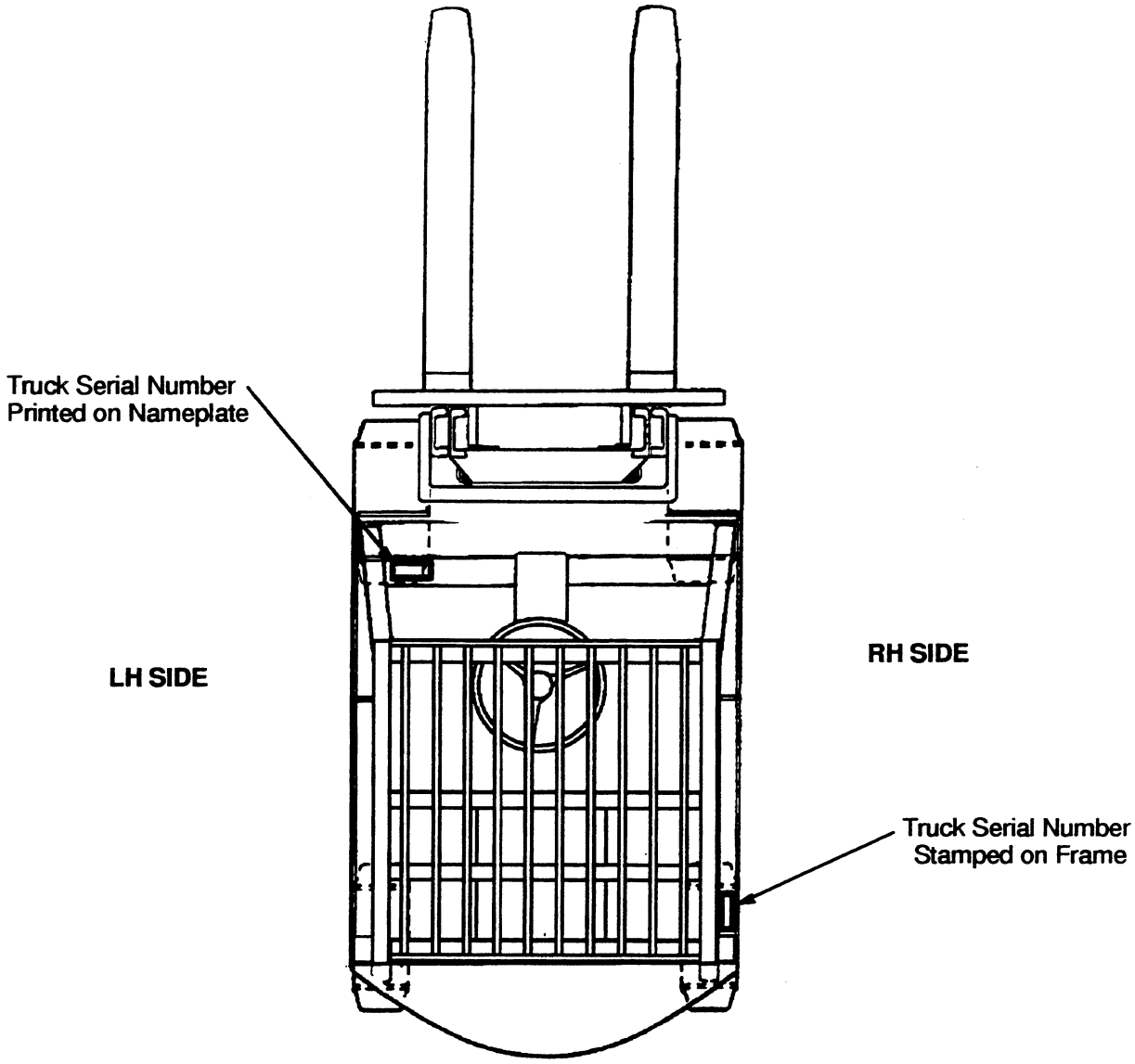
(1) & (2) The first letter and three numbers indicates the truck model code.

(3) The second letter indicates the plant of manufacture.

(4) The four or five digit number series indicates the serial number of the truck.

(5) The final letter indicates the year of manufacture starting with "A" in 1957 and 1980. The letters "I", "O", and "Q" will not be used.

For pending serial numbers contact your local dealer for Hyster lift trucks.

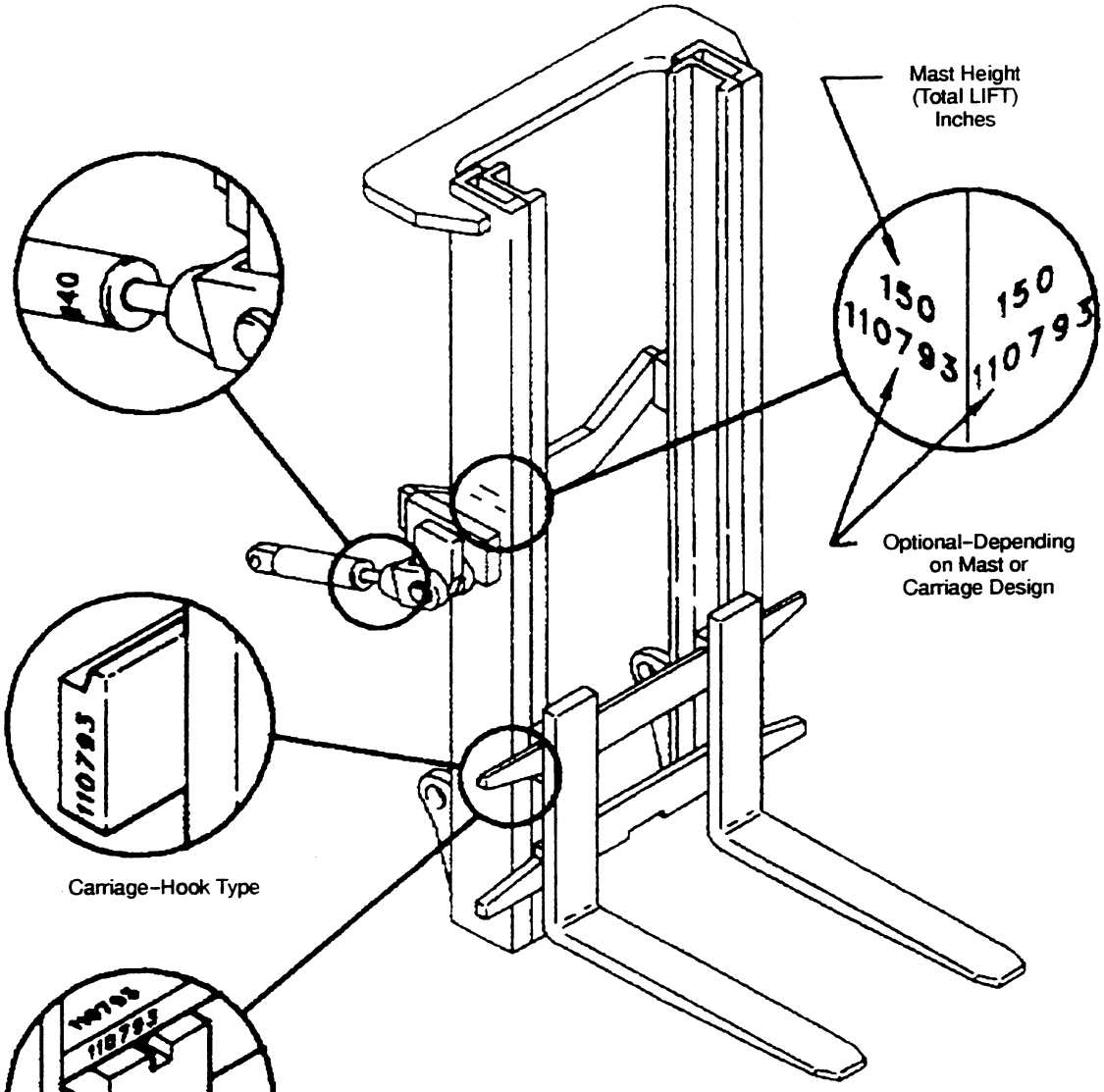


Parts referred to in this book as right or left hand parts are in accordance with the illustration above.

IDENTIFICATION OF MAST NUMBERS

LIFT EQUIPMENT IDENTIFICATION

1. Mast group numbers and total lift heights are stamped on the right hand outer mast approximately four feet from the bottom of the fork. The group numbers include the inner and outer masts, lift cylinder, lift chain and bleeder hoses or pipes.
2. The carriage and tilt cylinder numbers are located as shown. Lift cylinder numbers are stamped on the cylinder shell near the bleeder screw or on the chain anchor. Fork part number, capacity rating, plant code letter and date of manufacture are stamped approximately six inches below the top RH side of forks. Always refer to these group and part numbers when ordering service parts.



PUBLICATIONS

Every new lift truck is provided with at least three publications. These publications are the PARTS MANUAL, the OPERATING MANUAL, and the section of the SERVICE MANUAL called Periodic Maintenance.

The OPERATING MANUAL must always be available on every lift truck. This manual has information that the operator must know for inspection and operation of the lift truck. The section Periodic Maintenance has a recommended schedule of service intervals and the procedures for servicing the lift truck.

These manuals, other publications and programs are available from your Dealer for Hyster Lift Trucks to help you operate and maintain your lift truck professionally. See the list that follows for reference to items for lift trucks in this PARTS MANUAL.

Operating Manual	**Hyster Part Number**
English	897150
Service Manual (complete)	599761
The Frame (100 SRM 164)	910230
The GM Engine (600 SRM 3)	899766
The Perkins 4.154 Engine (600 SRM 196)	910231
The Cooling System (700 SRM 108)	899771
The Rochester Carburetor (900 SRM 11)	910057
The LPG Fuel System (900 SRM 15)	899772
The Oil Clutch (1200 SRM 190)	910232
The Two-Speed Manual Transmission (1300 SRM 187)	910235
Single-Speed Powershift Transmission - Description and Operation (1300 SRM 113)	899774
Repairs (1300 SRM 122)	910234
The Drive Axle (1400 SRM 92)	910236
The Steering Control Unit (1600 SRM 54)	910076
The Steering Axle (1600 SRM 60)	899777
The Master Cylinder (1800 SRM 13)	910082
The Brake System (1800 SRM 87)	910237
Hydraulic Gear Pumps (1900 SRM 97)	910091
The Hydraulic Pump Drive Assembly (1900 SRM 64)	899779
The Flow Control Valve (1900 SRM 123)	910239
The Main Control Valve (2000 SRM 90)	899783
The Tilt Cylinders (2100 SRM 103)	910102
The Alternator (2200 SRM 2)	899784
The Starter (2200 SRM 106)	910107
The High Energy Ignition System (2200 SRM 107)	899788
Instrument Panel Indicators and Senders (2200 SRM 143)	910110
Electrical System Troubleshooting (2200 SRM 153)	899793
Masts - Description (4000 SRM 167)	899796
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Vista Masts - Description (4000 SRM 197)	899797
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Operator Training Program

Operator Training Kit Complete
Slide Format with Carry Case 599628
1/2" VHS Format with Carry Case 852800
"Safety is an Attitude" (1/2" VHS) 852690
"Safety Rules" Playing Cards 852695

Guide for Users of Industrial Trucks 852930

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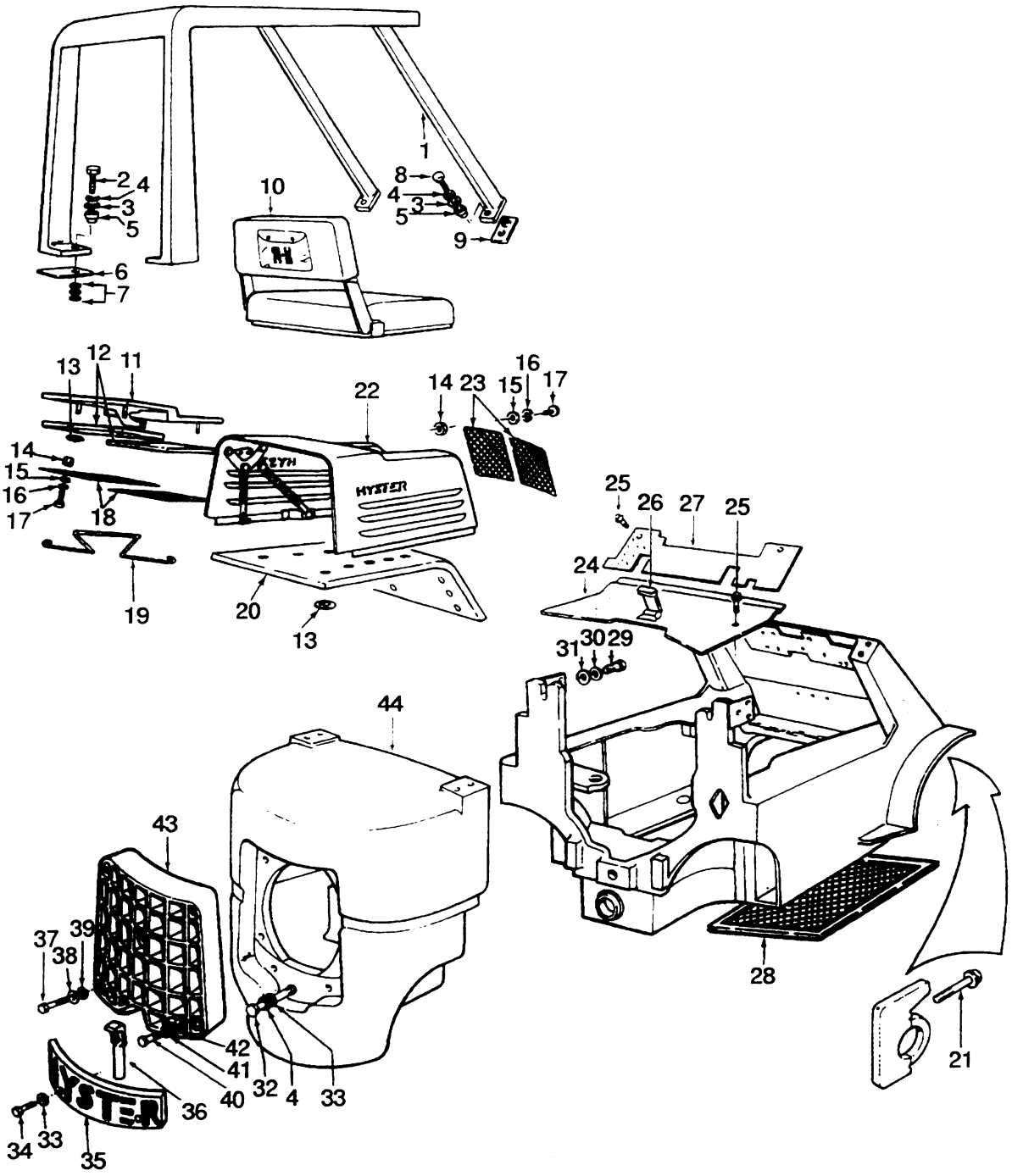
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WITH SEAT RESTRAINT
FIRST USED ON S/N D2D-13605 ..... Page 8

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FRAME

(Figure 1)



HYSTER

FRAME

KEY
A: S30E
B: S40E
C: S50E
D: S60ES

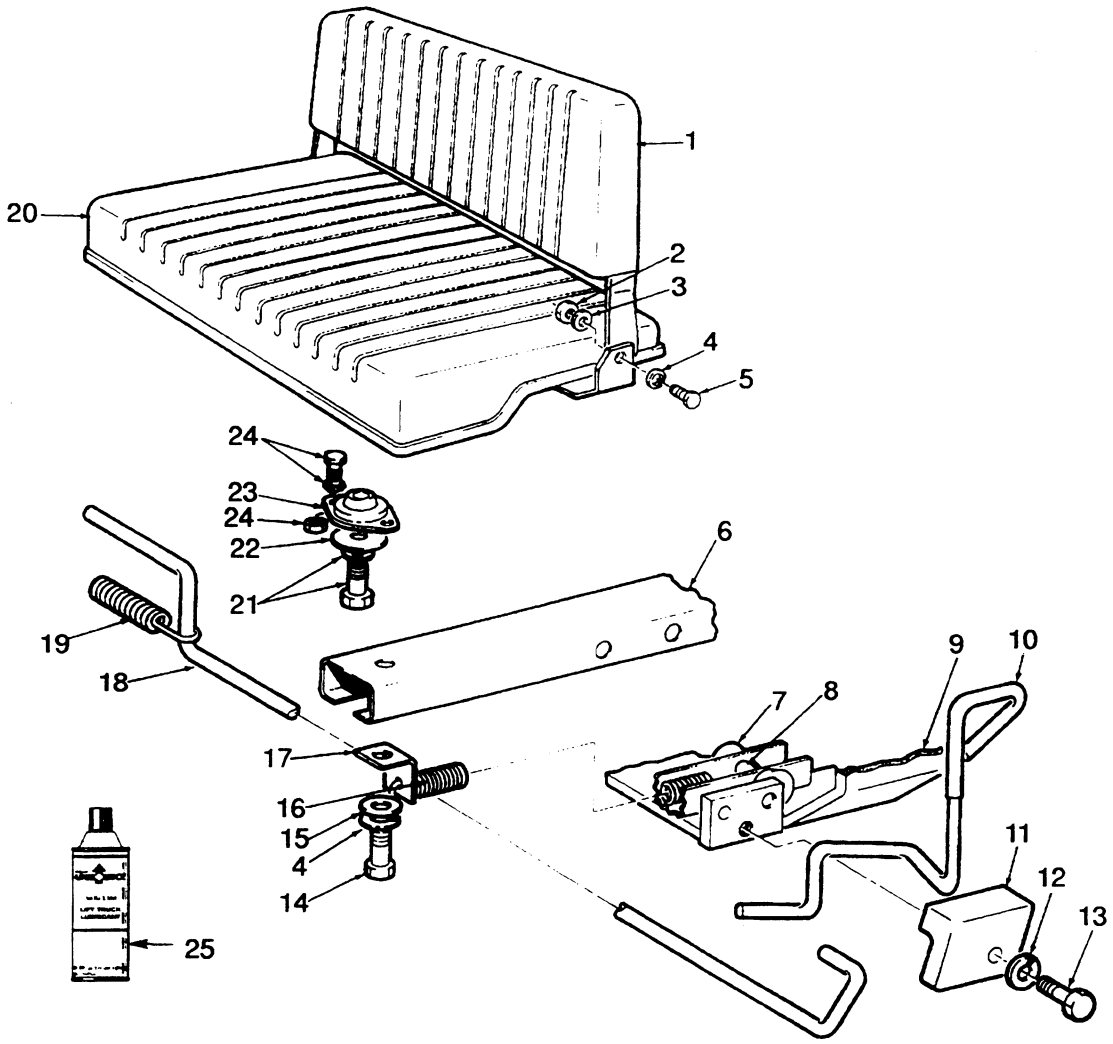
REF		PART NO.	NAME OF PART	QTY A	B	C	D
1		349679	Overhead Guard	1	1	1	1
2		18624	Capscrew	2	2	2	2
3		246828	Washer	4	4	4	4
4		15162	Lockwasher	5	5	5	5
5		237407	Isolator	4	4	4	4
6		250144	Isolator Pad	2	2	2	2
7		246829	Shim	AR	AR	AR	AR
8		18622	Capscrew	2	2	2	2
9		246825	Isolator Pad	2	2	2	2
10		.....	Seat	1	1	1	1
			☞ Figure 2 and Figure 3				
11		248055	Cover Plate	1	1	1	1
12		252728	Foam	2	2	2	2
13		246788	Washer	7	7	7	7
14	fgh	15054	Nut	20	20	20	20
14	fgk	15054	Nut	24	24	24	24
15	fgh	15127	Washer	20	20	20	20
15	fgk	15127	Washer	24	24	24	24
16	fgh	15154	Lockwasher	20	20	20	20
16	fgk	15154	Lockwasher	24	24	24	24
17	fgh	16718	Screw	20	20	20	20
17	fgk	16718	Screw	24	24	24	24
18	f	282227	Screen	2	2	2	2
19		225460	Spring	1	1	1	1
20		272121	Foam	1	1	1	1
21		249999	Capscrew	4	4	4	4
22		.....	Hood	1	1	1	1
			☞ Figure 4				
23	fgh	282173	Grille	2	2	2	2
23	fgk	379665	Grille	2	2	2	2
24	fh	239526	Floorplate	1	1	1	1
24	k	379175	Floorplate	1	1	1	1
25		134803	Screw	4	4	4	4
26	fh	241875	Hood Latch	1	1	1	1
26	k	.....	Latch	1	1	1	1
			☞ Figure 4				
27	c	190935	Floorplate	1	1	1	1
27	a	190937	Floorplate	1	1	1	1

REF		PART NO.	NAME OF PART	QTY A	B	C	D
27	b	288236	Floorplate	1	1	1	1
28		282448	Screen Kit	1	1	1	1
29		15785	Capscrew	2	2	2	2
30		136409	Lockwasher	2	2	2	2
31		150181	Washer	2	2	2	2
32		238475	Bolt	1	1	..	..
32		238476	Bolt	..	..	1	..
32		238477	Bolt	..	..	..	1
33		187080	Washer	3	3	3	3
34		225461	Capscrew	2	2	2	2
35		301074	Nameplate	1	1	1	1
36		301069	Tow Pin	1	1	1	1
37		18588	Capscrew	4	4	4	4
38		15158	Lockwasher	4	4	4	4
39		15135	Washer	4	4	4	4
40		16815	Capscrew	3	3	3	3
41		15156	Lockwasher	3	3	3	3
42		15134	Washer	3	3	3	3
43		248042	Grille	1	1	1	1
44	d	321014	Counterweight	1	..	..	..
44	d	321016	Counterweight	..	1	..	..
44	d	321018	Counterweight	..	..	1	..
44	d	321020	Counterweight	..	..	..	1
44	e	321015	Counterweight	1	..	..	..
44	e	321017	Counterweight	..	1	..	..
44	e	321019	Counterweight	..	..	1	..
44	e	321021	Counterweight	..	..	..	1

a Powershift With Monotrol Pedal
b Powershift With Forward And Reverse Lever
c Oil Clutch
d Rear Exhaust
e Overhead Exhaust
f Overhead Muffler
g Included In Overhead Muffler Kit 380235
h Without Seat Restraint Last Used On S/N D2D-13604
k With Seat Restraint First Used on S/N D2D-13605

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SEAT
WITHOUT SEAT RESTRAINT
LAST USED ON S/N D2D–13604
(Figure 2)



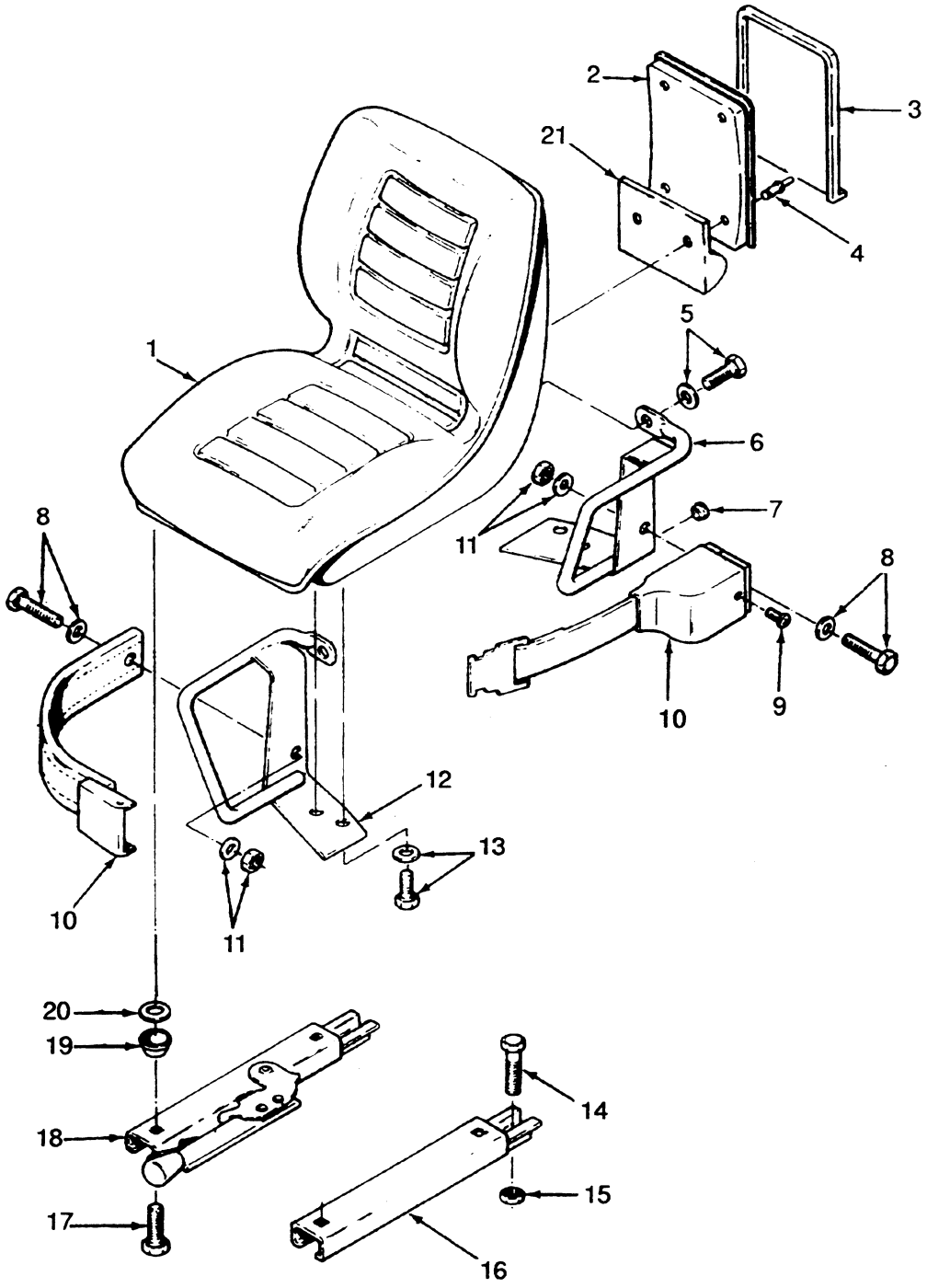
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SEAT
WITHOUT SEAT RESTRAINT
LAST USED ON S/N D2D–13604

REF	PART NO.	NAME OF PART	QTY
	226198	Seat	1
1	226180	Back Cushion	1
2	226187	Nut	2
3	226186	Washer	2
4	15155	Lockwasher	6
5	16818	Capscrew	2
6	274073	Bracket (Upper)	2
7	187707	Roller	8
8	187706	Roller Shaft	4
9	226191	Bracket (Lower)	1
10	226175	Handle	1
11	226188	Retainer	1
12	15932	Washer	1
13	16825	Capscrew	1
14	16663	Capscrew	4
15	18515	Washer	2
16	187716	Spring	2
17	226199	Plate	2
18	226189	Connector Rod	1
19	187720	Spring	1
20	226176	Seat Cushion	1
21	18510	Capscrew	4
21	15155	Lockwasher	4
22	166120	Washer	4
23	228731	Isolator	4
24	220490	Screw	8
24	15152	Lockwasher	8
24	15002	Nut	8
25	171351	Lubricant	AR

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SEAT
WITH SEAT RESTRAINT
FIRST USED ON S/N D2D-13605
(Figure 3)



HYSTER

SEAT
WITH SEAT RESTRAINT
FIRST USED ON S/N D2D-13605

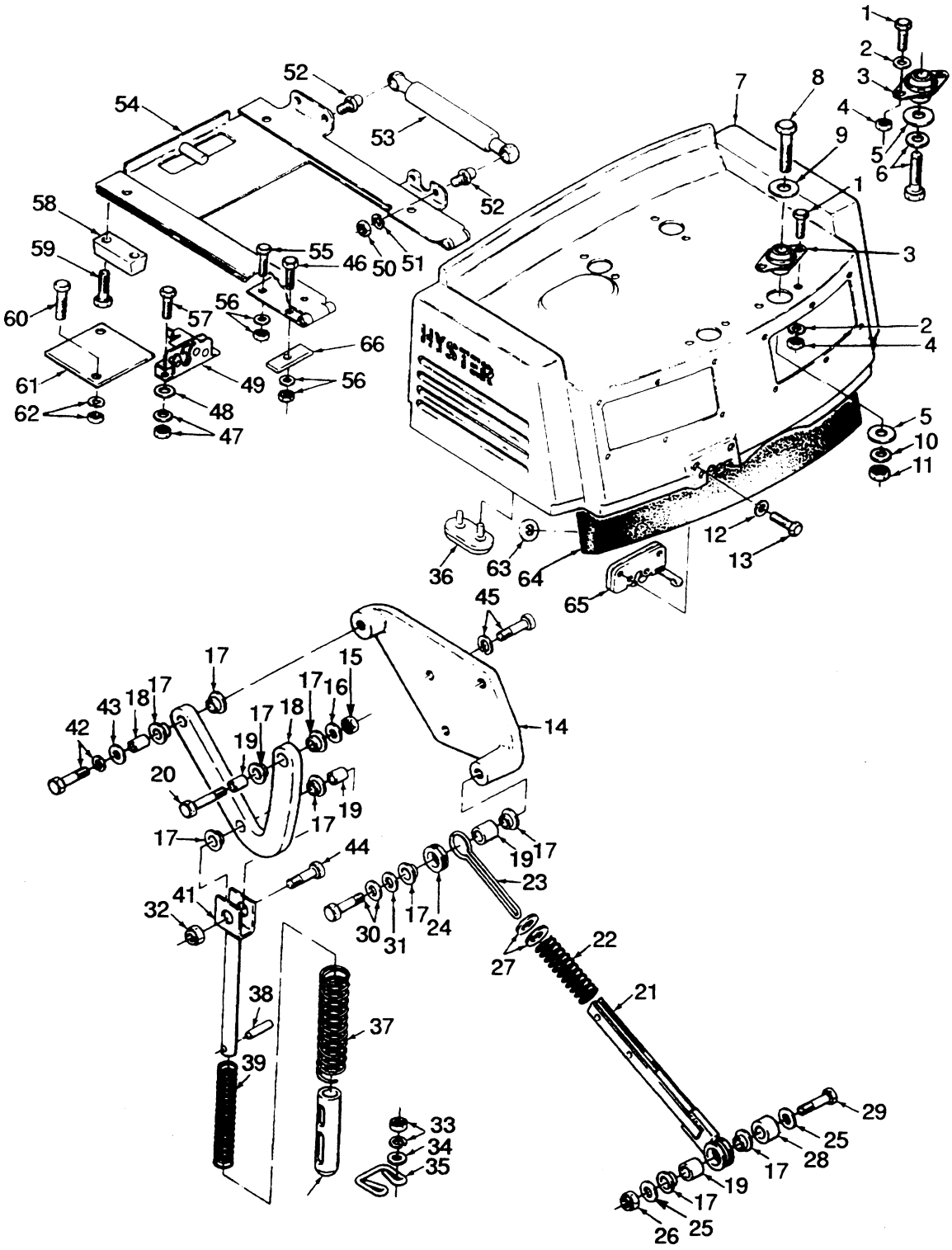
REF		PART NO.	NAME OF PART	QTY
1		377901	Seat	1
1	a	377908	Seat	1
2		335988	Base	1
3		335991	Cover	1
4		222029	Rivet	4
5		379197	Capscrew	2
5		379198	Washer	2
6		364808	Restraint (LH)	1
7		364854	Plug	2
8		379199	Capscrew	2
8		379697	Washer	2
9		379650	Screw	1
10		364843	Belt	1
11		379697	Washer	2
11		379698	Nut	2
12		364807	Restraint (RH)	1
13		18515	Washer	4
13		18727	Capscrew	4
14	b	16374	Capscrew	4
14	c	18509	Capscrew	4
15	b	145639	Locknut	4
15	c	191941	Locknut	4
16		269449	Seat Rail	1
17	d	364914	Capscrew	4
17	e	18731	Capscrew	4
18		269448	Seat Rail	1
19		204114	Spacer	4
20		221733	Flat Washer	2
21	f	379663	Bumper	1

a Optional Cloth
b LPG
c Gasoline and Diesel
d With Operator Restraint
e Without Operator Restraint
f LPG Boxcar Special and Stevedoring

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HOOD

(Figure 4)



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HOOD

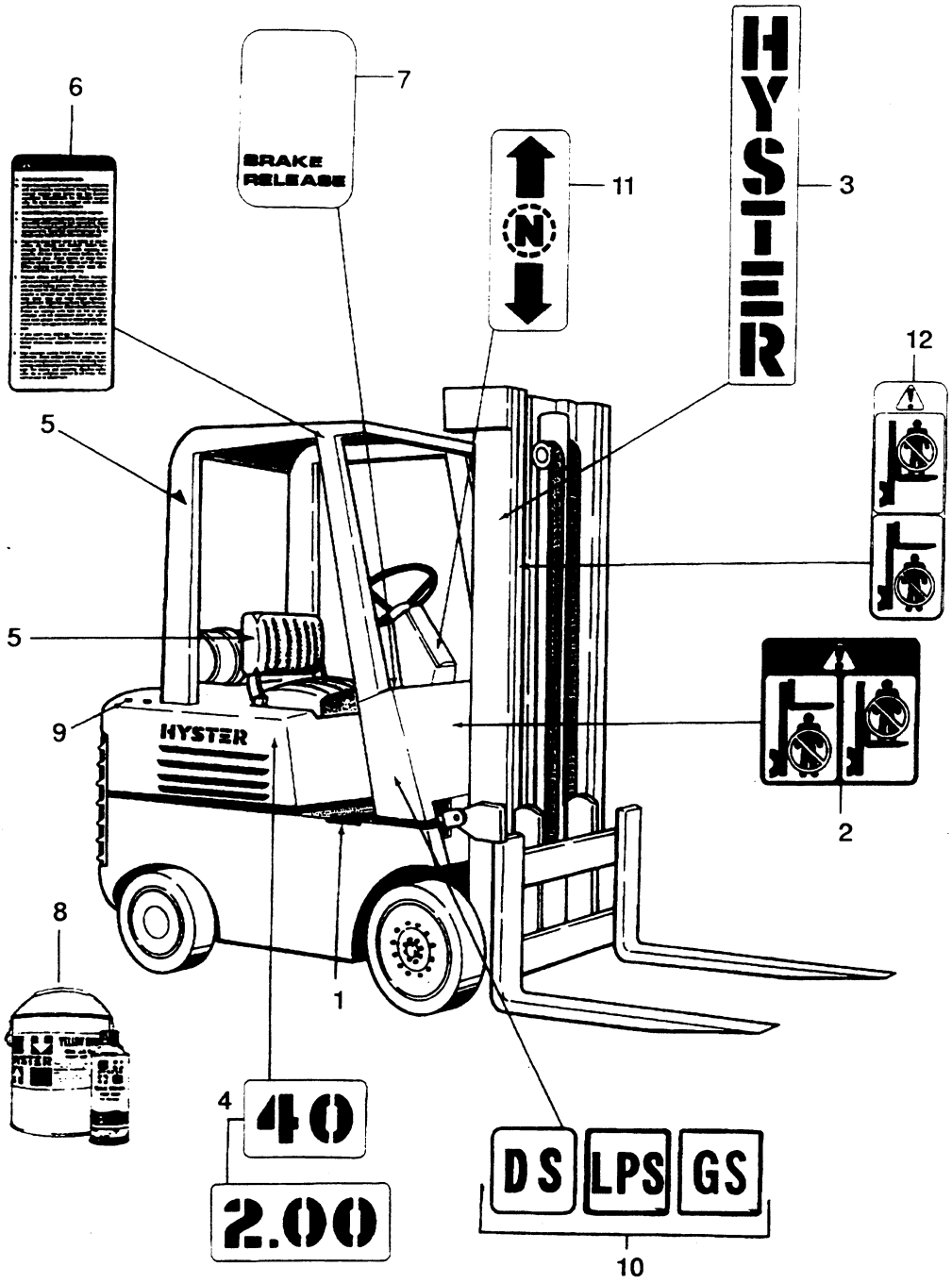
REF		PART NO.	NAME OF PART	QTY
1		220490	Screw	8
2		15152	Lockwasher	8
3		228731	Isolator	4
4		15002	Nut	8
5		166120	Washer	4
6		18510	Capscrew	4
6		15155	Lockwasher	4
7	a	271855	Hood	1
7	b	378559	Hood	1
8	b	18509	Capscrew	4
9	b	379181	Washer	4
10	b	15175	Washer	4
11	b	191941	Locknut	4
12	b	197068	Washer	4
13	b	364776	Capscrew	4
14		187755	Bracket	2
15		138750	Locknut	2
16		15135	Washer	2
17		197557	Bushing	20
18		187754	Link	2
19		137085	Spacer	10
20		37562	Capscrew	2
21		187687	Link	2
22		239534	Spring	2
23		187692	Link	2
24		187691	Bushing	2
25		15135	Washer	4
26		138750	Locknut	2
27		215589	Washer	4
28		187759	Spacer	2
29		16397	Capscrew	2
30		18742	Capscrew	2
30		15924	Lockwasher	2
31		15135	Washer	4
32		138750	Locknut	2
33		15156	Lockwasher	4
33		15056	Nut	4
34		15176	Washer	4
35		187751	Pivot	2
36		225374	Bumper	4
37		239533	Spring	2
38		187752	Groove Pin	2
39		239527	Spring	2
40		261731	Link	2
41		187693	Yoke End	2
42		18588	Capscrew	2
42		15158	Lockwasher	2
43		15135	Washer	2
44		37562	Capscrew	2
45		16830	Capscrew	6
45		15158	Lockwasher	6
46		16836	Capscrew	6
47	b	320156	Washer	4
47	b	313805	Nut	4
48	b	364940	Shim	AR
49	b	387051	Latch	1
50	b	329069	Nut	2
51	b	292681	Lockwasher	2
52	b	379190	Ball Stud	2
53	b	364976	Gas Spring	1
54	b	365017	Hinge	1
55	b	16374	Capscrew	4
56	b	145639	Locknut	6
56	b	15175	Washer	6
57	b	293602	Capscrew	4
58	b	306187	Bumper	2
59	b	309637	Screw	4
60	b	220490	Screw	4
61	b	379184	Cover	2
62	b	15152	Lockwasher	4
62	b	15002	Nut	4
63		246788	Washer	30
64	b	378554	Foam	1
65	b	364775	Latch	1
66		386218	Plate	1

[a] Last Used On S/N D2D-13604
[b] First Used On S/N D2D-13605

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LABELS AND PAINT

(Figure 5)



LABELS AND PAINT

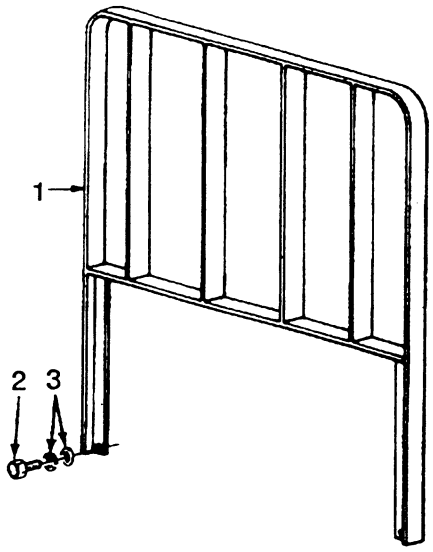
REF		PART NO.	NAME OF PART	QTY
1		299320	Anti-Slip Tread	2
2	a	356154	Label-Mast Warning	2
3	b	270859	Label-Hyster	2
3	c	369859	Label-Hyster	2
4		327026	Label-Model 30	2
4		327027	Label-Model 40	2
4		327028	Label-Model 50	2
4		327029	Label-Model 60	2
4	d	369861	Label-2.00	2
4	d	369862	Label-2.50	2
4	d	369863	Label-3.00	2
5	e	364918	Label-Operator Warning	2
5	e	1335142	Label-Operator Warning	1
6	f	1336592	Label-Operator Warning	1
7		264132	Label-Release	1
8		317226	Paint-Yellow	AR
8		317225	Paint-Yellow	AR
8		316844	Paint-Red Spray	AR
8	g	328626	Paint-Black Spray	AR
8	h	336594	Paint-Black 1 Gallon	AR
8	h	336593	Paint-Black Spray	AR
8		168811	Paint-Gloss Black Spray	AR
8		67661	Paint-Gloss Black 1 Gallon	AR
8		264135	Paint-White Spray	AR
8		264162	Paint-White 1 Gallon	AR
9	k	275081	Plug	4
10		154065	Label-GS	2
10		154067	Label-DS	2
10		154066	Label-LPS	2
11		288701	Label-Fwd/Rev	1
12		327927	Label-Mast Warning	1

a Vista Mast
b White Mast
c Yellow Mast
d Metric
e With Operator Restraint First Used On S/N D2D-13605
f US
g Hi-Temp
h Satin Finish
k UL Only-Non LPG Unit

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LOAD EXTENSION BACKREST

(Figure 6)



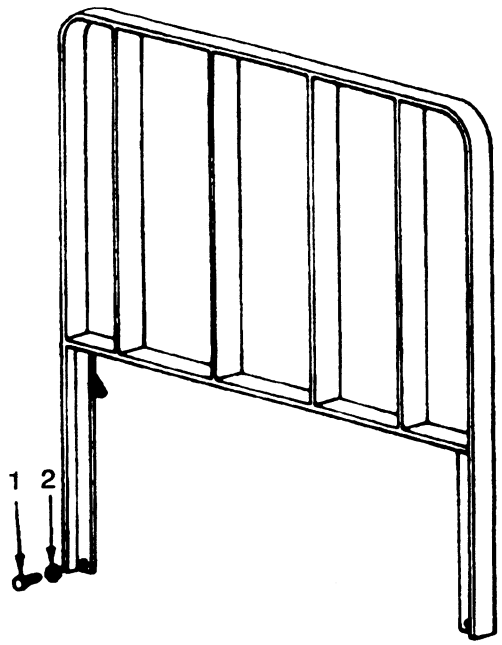
KEY
A: S30–50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
1	a	141918	Extension–38 inch	..	1
1	a	191184	Extension–38 inch	..	1
1	b	358543	Extension–38 inch	1	..
1	b	358545	Extension–38 inch	..	1
1	c	282587	Extension–42 inch	..	1
1	de	282584	Extension–42 inch	1	..
1	e	300990	Extension–42 inch	..	1
1		141923	Extension–45 inch	1	..
1	a	143521	Extension–45 inch	..	1
2	f	16644	Capscrew	..	4
2		292528	Capscrew	4	4
3	f	15160	Lockwasher	..	4
3		221771	Washer	4	4
3	f	15125	Washer	..	4
3		296423	Washer	4	4

a Side Shift Carriage
b Intermediate Free–Lift And Free–Lift
c Three Stage Mast
d Wide Three Stage Mast
e Four Stage Mast
f Use With Load Extension Backrest 282587

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LOAD EXTENSION BACKREST
VISTA MAST
(Figure 7)



KEY
A: S30–50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
	ab	320756	Extension–34 inch	1	..
	a	328489	Extension–34 inch	..	1
	ab	358543	Extension–38 inch	1	..
	a	358545	Extension–38 inch	..	1
	c	300990	Extension–42 inch	1	..
	c	315620	Extension–42 inch	..	1
1		292528	Capscrew	4	4
2		221771	Washer	4	4
2		296423	Washer	4	4

[a] Two Stage Mast
[b] Narrow Three Stage Mast
[c] Wide Three Stage Mast

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NOTES

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ENGINE

COOLING ..... Page 18

CRANKSHAFT and PISTONS
DIESEL ..... Page 36

CYLINDER BLOCK and CRANKCASE
4-153 GASOLINE and LPG ..... Page 20

CYLINDER BLOCK and CRANKCASE
4-153 GASOLINE and LPG ..... Page 24

CYLINDER BLOCK
DIESEL ..... Page 32

CYLINDER HEAD and MANIFOLD
4-153 GASOLINE and LPG ..... Page 28

CYLINDER HEAD COVER
DIESEL ..... Page 40

CYLINDER HEAD
DIESEL ..... Page 38

DRIVE SHAFT ..... Page 31

ENGINE MOUNTS
DIESEL ..... Page 48

ENGINE MOUNTS
GASOLINE and LPG ..... Page 47

EXHAUST ..... Page 50

INLET MANIFOLD
DIESEL ..... Page 46

OIL PAN
DIESEL ..... Page 44

OIL PUMP
GASOLINE ..... Page 30

OVERHEAD EXHAUST ..... Page 52

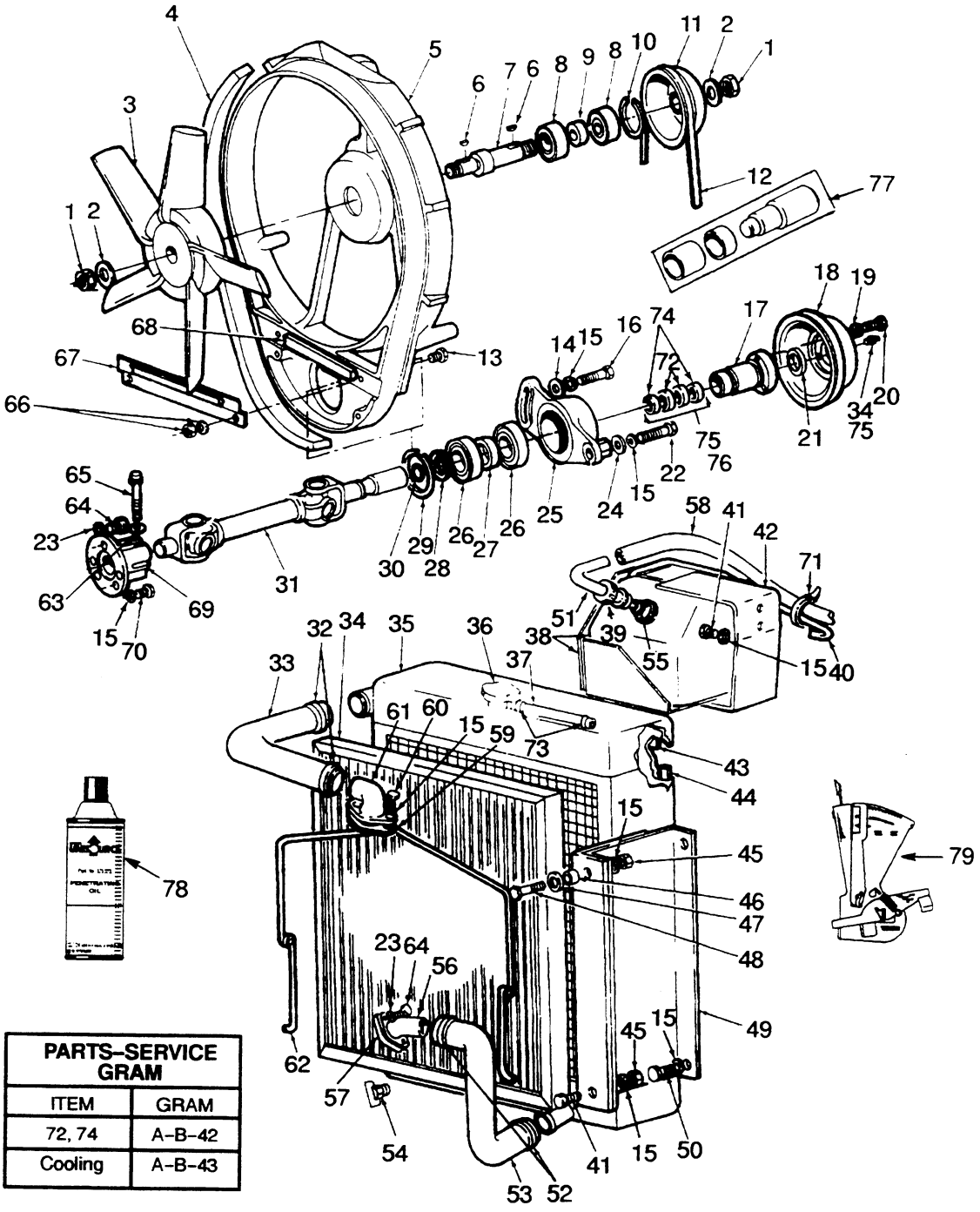
TIMING GEARS
DIESEL ..... Page 42

WATER PUMP
DIESEL ..... Page 34

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COOLING

(Figure 8)



PARTS–SERVICE GRAM	
ITEM	GRAM
72, 74	A–B–42
Cooling	A–B–43

COOLING

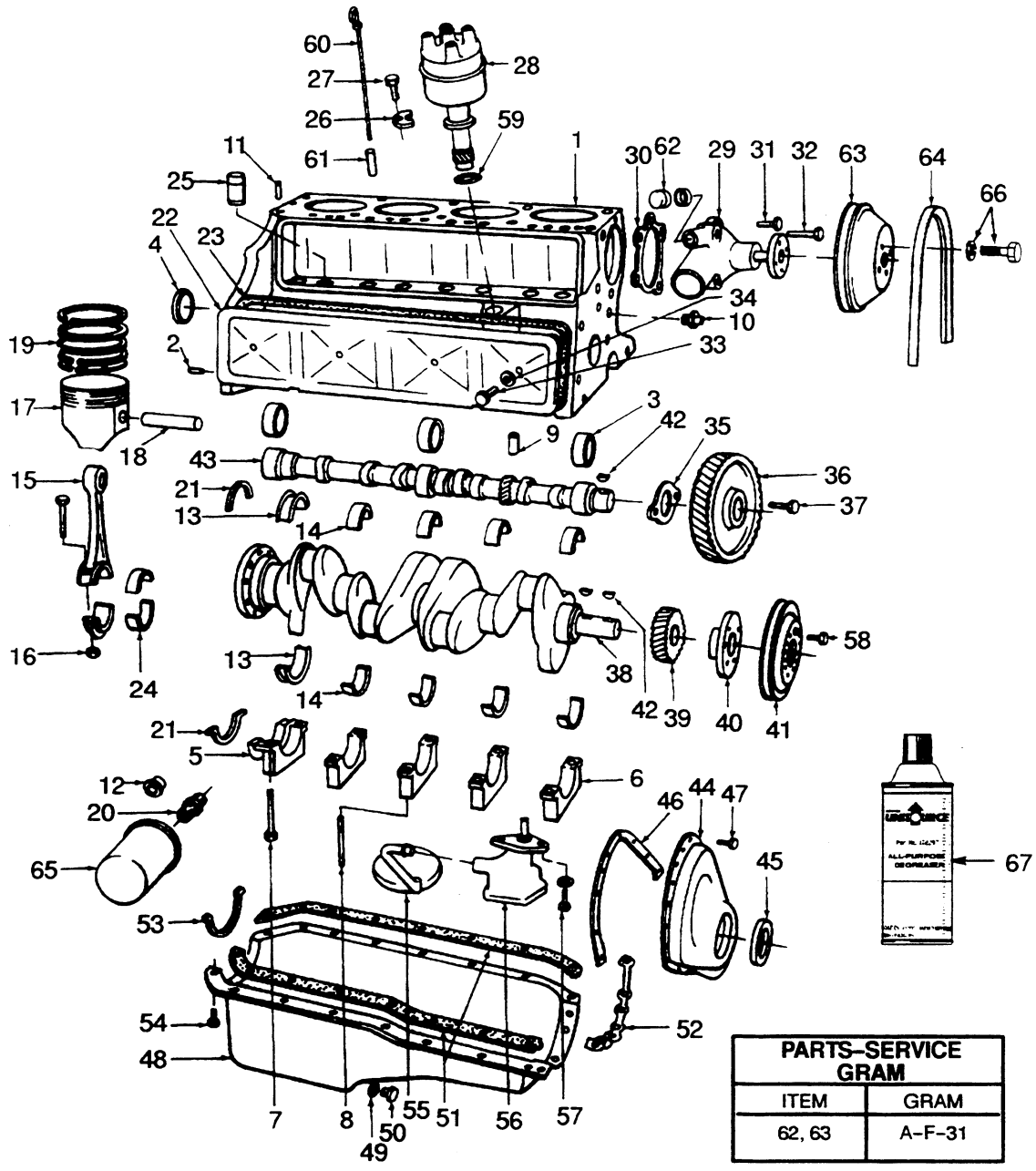
KEY
A: Gasoline and LPG
B: Diesel

REF		PART NO.	NAME OF PART	QTY A	QTY B
1		221355	Nut	2	2
2		221771	Washer	2	2
3		248040	Fan	1	1
4	a	.....	Tape-56 inch	1	1
5		248041	Shroud	1	1
6		28269	Key	2	2
7		248051	Shaft	1	1
8		124623	Ball Bearing	2	2
9		248049	Spacer	1	1
10		58914	Snap Ring	1	1
11		261799	Sheave	1	1
12		248044	Belt	1	1
13	b	16378	Capscrew	2	2
14		210752	Washer	1	1
15		15156	Lockwasher	14	18
16		16815	Capscrew	1	1
17	c	248054	Hub	1	1
17	d	275563	Hub	1	1
18	c	261769	Sheave	1	1
18	d	281485	Sheave	1	1
19		15154	Lockwasher	3	3
20		18460	Capscrew	3	3
21	c	248057	Seal (Felt)	1	1
22		16379	Capscrew	1	1
23		15155	Lockwasher	1	2
24		15134	Washer	1	1
25		248062	Bearing Carrier	1	1
26		184451	Ball Bearing	2	2
27		248060	Spacer	1	1
28		58901	Snap Ring	1	1
29		12921	Snap Ring	1	1
30	c	60836	O-Ring	1	1
31		.....	Drive Shaft	1	1
			☞ Figure 13		
32		127045	Clamp	2	2
33		225470	Hose	1	..
33		225466	Hose	..	1
34		252717	Screen	1	1
35		336320	Radiator	1	1
35		312949	Cooler	1	1
36		178899	Radiator Cap	1	1
37		274334	Hose	1	1
38	e	252701	Reservoir	1	1
38	f	344817	Reservoir	1	1
38	f	342498	Shield	1	1
39	g	345454	Cap	1	1
40	h	275884	Tube	1	1
40	k	225469	Tube	1	1
41		16597	Capscrew	4	4
42		187130	Bracket	1	1
43	a	.....	Tape-16 inch	2	2
44	a	.....	Tape-14 inch	2	2
45		15056	Nut	4	4
46		225463	Spacer	2	2
47		15176	Washer	2	2
48		16828	Capscrew	2	2
49		227420	Bracket	2	2
50		16598	Capscrew	4	4
51	g	345453	Outlet	1	1
52		119236	Clamp	2	2
53		223974	Hose	1	..
53		225462	Hose	..	1
54		12815	Drain Valve	1	1
55	g	336550	Bushing	1	1
56		187152	Elbow	..	1
57		187153	Gasket	..	1
58	g	339735	Hose	1	1
59		187151	Gasket	..	1
60		16634	Capscrew	..	2
61		187150	Elbow	..	1
62		252732	Spring	1	1
63		261377	Washer	1	1
64		16825	Capscrew	1	2
65		281490	Capscrew	1	1
66	b	15127	Washer	2	2
66	b	221341	Locknut	2	2
67	b	251274	Shield	1	1
68	amn	.....	Tape-10 inch	1	1
69		281491	Adapter	1	..
69		281492	Adapter	..	1
70		16634	Capscrew	2	..
70		16811	Capscrew	..	4
71	g	137852	Strap	1	1
72	d	280839	Roller Clutch	2	2
73		168718	Hose Clamp	2	2
74	d	280849	Roller Bearing	2	2
75		326457	Grease	AR	AR
76		340419	Retaining Compound	AR	AR
77		321006	Tool Kit	1	1
78		171352	Penetrating Oil	AR	AR
79		184529	Belt Tension Gauge	AR	AR

a Bulk Rubber Tape 261780-By The Foot
b S30-40E
c Last Used On S/N D2D-4263
d First Used On S/N D2D-4264
e Last Used On S/N D2D-11465 D2T-1897
f First Used On S/N D2D-11466 D2T-1898
g Included In Coolant Bottle Kit 344722
h First Used On S/N D2D-2974
k Last Used On S/N D2D-2973
m S50E
n S60ES

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CYLINDER BLOCK AND CRANKCASE
4–153 GASOLINE AND LPG
(Figure 9)



PARTS–SERVICE GRAM	
ITEM	GRAM
62, 63	A–F–31

CYLINDER BLOCK AND CRANKCASE
4–153 GASOLINE AND LPG

KEY
A: 6N 1976 Series Engine
B: 7N 1977 Series Engine
C: 8N 1978 Series Engine
D: 9N 1979 Series Engine

REF		PART NO.	NAME OF PART	QTY A	B	C	D
		274336	Engine	1	..	..	..
		280689	Engine	..	1	..	..
		285362	Engine	..	..	1	..
		297121	Engine	..	..	..	1
1		274359	Cylinder Block	1	1	1	1
1		14385	Fitting	1	..	..	..
1		.....	Plug	..	1	1	1
1		159971	Plug (Side)	2	2	2	2
1		159972	Plug (Rear)	1	1	1	1
1		164022	Plug	1	1	1	1
1		15314	Fitting	1	1	1	1
2		159976	Pin	1	1	1	1
3		149819	Bearing (Cam)	3	3	3	3
4		164017	Plug	1	1	1	1
5		164021	Cap (Main Brg)	1	1	1	1
6		244903	Cap (Bearing)	4	4	4	4
7		159973	Bolt	9	9	9	9
8		164023	Stud	1	1	1	1
9		149817	Bearing	1	1	1	1
9		159974	Thrust Washer	1	1	1	1
10		148827	Nozzle	1	1	1	1
11		159977	Pin	1	1	1	1
12		127645	By-Pass Valve	1	1	1	1
13		149805	Brg–Main Std	1	1	1	1
13	a	149807	Brg–Main .001 inch	1	1	1	1
13	a	149808	Brg–Main .002 inch	1	1	1	1
13	a	149809	Brg–Main .010 inch	1	1	1	1
13	a	149810	Brg–Main .020 inch	1	1	1	1
13	a	149811	Brg–Main .030 inch	1	1	1	1
14		149806	Brg–Main Std	4	4	4	4
14	a	149812	Brg–Main .001 inch	4	4	4	4
14	a	149813	Brg–Main .002 inch	4	4	4	4
14		149814	Brg–Main .010 inch	4	4	4	4
14		149815	Brg–Main .020 inch	4	4	4	4
14		149816	Main Bearing	4	4	4	4
15		159992	Connector Rod	4	4	4	4
15		162766	Bolt	8	..	..	..
15		279686	Bolt	..	8	8	8
16		177562	Nut	8	8	8	8
17		159983	Piston and Pin Std	4	..	..	..
17		159984	Piston and Pin Std	..	4	4	4
17	a	159986	Piston and Pin .030	4	4	4	4
18		.....	Pin	1	1	1	1
19		244906	Set–Ring Std	4	4	4	4
19	a	244907	Set–Ring .030 inch	4	4	4	4
20		159942	Connector	1	1	1	1
21	b	177561	Oil Seal (Rear)	2	2	2	2
22		244933	Push Rod Cover	1	1	1	1
23	c	245200	Gasket (Cover)	1	1	1	1
24		265522	Brg–Rod Std	4	4	4	4
24	a	265523	Brg–Rod .001 inch	4	4	4	4
24	a	244915	Brg–Rod .002 inch	4	4	4	4
24	a	244917	Brg–Rod .010 inch	4	4	4	4
24	a	244916	Brg–Rod .020 inch	4	4	4	4
25		213690	Valve Lifter	8	8	8	8
26		274247	Clamp	1	1	1	1
27		161195	Capscrew	1	1	1	1
28		.....	Distributor	1	1	1	1
			☞ Figure 51				
29	d	244943	Water Pump	1	..	..	..
29	e	279683	Water Pump	..	1	1	1
30	b	160372	Gasket	1	1	1	1
31		221455	Capscrew	2	2	2	2
32		18508	Bolt	2	2	2	2
33		149976	Bolt and Seal	4	4	4	4
34		.....	Seal	1	1	1	1
35		149842	Thrust Bearing	1	1	1	1
36		244927	Gear (Camshaft)	1	1	1	1
37		162768	Screw Assy	2	2	2	2
38		244912	Crankshaft	1	1	1	1
38		148826	Pilot Bearing	1	1	1	1
39		265509	Gear (Crankshaft)	1	1	1	..
39		244927	Gear (Camshaft)	..	..	..	1
40		.....	Hub (Pulley)	1	1	1	1
41		244939	Pulley	1	1	1	1

[a] Note–Oversize and Undersize Bearings
[b] Included In Gasket Set 301967
[c] Included In Gasket Set 265517
Oversize Pistons Are Not Included With Engine
[d] Remanufactured Water Pump 3002542 R
[e] Remanufactured Water Pump 3002530 R

(CONTINUED ON NEXT PAGE)

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CYLINDER BLOCK AND CRANKCASE
4–153 GASOLINE AND LPG

KEY
A: 6N 1976 Series Engine
B: 7N 1977 Series Engine
C: 8N 1978 Series Engine
D: 9N 1979 Series Engine

REF		PART NO.	NAME OF PART	QTY A	B	C	D
42		7882	Key	1	1	1	1
43		254388	Camshaft	1	1	1	1
44		189609	Cover	1	1	1	1
45	b	326359	Oil Seal	1	1	1	1
46	b	164034	Gasket	1	1	1	1
47		162768	Screw Assy	8	8	8	8
48		244918	Oil Pan	1	1	1	1
49		164030	Gasket	1	1	1	1
50		164029	Screw	1	1	1	1
51		244937	Oil Pan Gasket	1	1	1	1
52		164746	Seal	1	1	1	1
53		164747	Seal	1	1	1	1
54		177946	Lockwasher	18	18	18	18
54		16374	Capscrew	18	18	18	18
55		244920	Screen and Support	1	1	1	1
55		164027	Clamp	1	1	1	1
56		.....	Oil Pump	1	1	1	1
			☞ NO TAG				
57		221453	Capscrew	2	2	2	2
57		133469	Capscrew	1	1	1	1
57		145641	Nut	1	1	1	1
58		244941	Screw Assy	2	1	1	..
58		244942	Screw Assy	1	..	..	..

REF		PART NO.	NAME OF PART	QTY A	B	C	D
58		16663	Capscrew	..	1	1	1
58		279685	Lockwasher	..	1	1	..
59		149892	Gasket	1	1	1	1
60		244900	Oil Dipstick	1	1	1	1
61		275051	Tube	1	1	1	1
62		149929	Cap	1	1	1	1
62		130845	Hose Clamp	1	1	1	1
63		299947	Pulley	1	1	1	1
64		191845	V-Belt	1	1	..	..
64		188643	V-Belt	..	..	1	1
65		127644	Oil Filter	1	1	1	1
66		16818	Capscrew	4	4	4	4
66		15155	Lockwasher	4	4	4	4
67		178297	Degreaser	AR	AR	AR	AR

[a] Note–Oversize and Undersize Bearings
[b] Included In Gasket Set 301967
[c] Included In Gasket Set 265517
Oversize Pistons Are Not Included With Engine
[d] Remanufactured Water Pump 3002542 R
[e] Remanufactured Water Pump 3002530 R

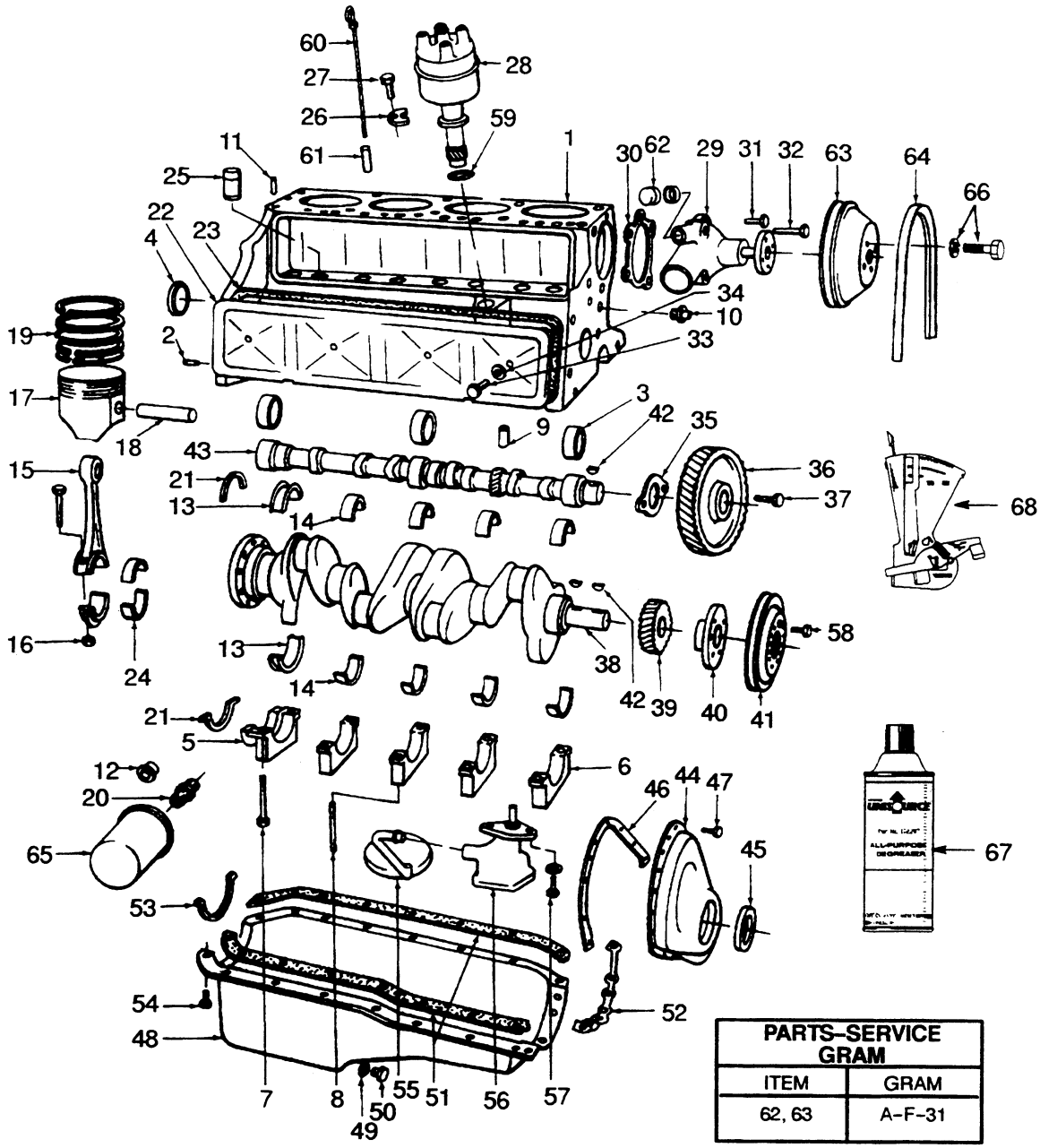
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NOTES

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CYLINDER BLOCK AND CRANKCASE
4–153 GASOLINE AND LPG
(Figure 10)



PARTS–SERVICE GRAM	
ITEM	GRAM
62, 63	A–F–31

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CYLINDER BLOCK AND CRANKCASE
4–153 GASOLINE AND LPG

KEY
A: 0N 1980 Series Engine
B: 1N 1981 Series Engine
C: 2N and 3N – 1982 and 1983 Series Engine
D: 4N, 5N, 6N and 7N – 1984,1985,1986 and 1987 Series Engine

REF		PART NO.	NAME OF PART	QTY A	B	C	D
		308324	Engine	1	..	..	..
		317516	Engine	..	1	..	..
		329707	Engine	..	..	1	..
	a	343825	Engine	..	..	..	1
	b	360959	Engine	..	..	..	1
	c	372568	Engine	..	..	..	1
	d	379913	Engine	..	..	..	1
1		274359	Cylinder Block	1	1	1	1
1		159971	Plug (Side)	1	1	1	1
1		159972	Plug (Rear)	1	1	1	1
1		164022	Plug	1	1	1	1
1		15314	Fitting	1	1	1	1
2		159976	Pin	2	2	2	2
3		149819	Bearing (Cam)	3	3	3	3
4		164017	Plug	1	1	1	1
5		164021	Cap (Main Brg)	1	1	1	1
6		244903	Cap (Bearing)	4	4	4	4
7		159973	Bolt	9	9	9	9
8		164023	Stud	1	1	1	1
9		149817	Bearing	1	1	1	1
9		159974	Thrust Washer	1	1	1	1
10		148827	Nozzle	1	1	1	1
11		159977	Pin	1	1	1	1
12		127645	By-Pass Valve	1	1	1	1
13		149805	Brg-Main Std	1	1	1	1
13	e	149807	Brg-Main .001 inch	1	1	1	1
13	e	149808	Brg-Main .002 inch	1	1	1	1
13	e	149809	Brg-Main .010 inch	1	1	1	1
13	e	149810	Brg-Main .020 inch	1	1	1	1
13	e	149811	Brg-Main .030 inch	1	1	1	1
14		149806	Brg-Main Std	4	4	4	4
14	e	149812	Brg-Main .001 inch	4	4	4	4
14	e	149813	Brg-Main .002 inch	4	4	4	4
14	e	149814	Brg-Main .010 inch	4	4	4	4
14	e	149815	Brg-Main .020 inch	4	4	4	4
14	e	149816	Main Bearing	4	4	4	4
15		159992	Connector Rod	4	..	..	..
15		326371	Connector Rod	..	4	4	4
15		279686	Bolt	2	2	2	2
16		177562	Nut	2	2	2	2
17		159983	Piston and Pin Std	..	..	4	4
17		159984	Piston and Pin Std	4	4	..	..
17	e	159986	Piston-Pin .030 inch	4	4	4	4
18		.....	Pin	1	1	1	1
19		244906	Set-Ring Std	4	4	4	4
19	e	244907	Set-Ring .030 inch	4	4	4	4
20		159942	Connector	1	1	1	1
21	f	177561	Oil Seal Rear	2	2	2	2
22		244933	Push Rod Cover	1	..	..	..
22		326372	Push Rod Cover	..	1	1	1
23	g	245200	Gasket	1	1	1	1
23	d	388322	Gasket	..	..	..	1
24		265522	Brg-Rod Std	4	4	4	4
24	e	265523	Brg-Rod .001 inch	4	4	4	4
24	e	244915	Brg-Rod .002 inch	4	4	4	4
24	e	244917	Brg-Rod .010 inch	4	4	4	4
24	e	244916	Brg-Rod .020 inch	4	4	4	4
25		213690	Valve Lifter	8	8	8	8
26		274247	Clamp	1	1	1	1
27		161195	Capscrew	1	1	1	1
28		.....	Distributor	1	1	1	1
			☞ Figure 51				
29		279683	Water Pump	1	1	1	1
30	f	160372	Gasket	1	1	1	1
31		221455	Capscrew	2	2	2	2
32		18508	Bolt	2	2	2	2
33		149976	Bolt and Seal	4	4	4	4
34		.....	Seal	1	1	1	1
35		149842	Thrust Bearing	1	1	1	1
36		244927	Gear (Camshaft)	1	1	1	1
37		162768	Screw Assy	2	2	2	2
38		244912	Crankshaft	1	1	1	1
38		148826	Pilot Bearing	1	1	1	1
39		265509	Gear (Crankshaft)	1	1	1	1
40		244940	Hub (Pulley)	1	1	1	1
41		244939	Pulley	1	..	1	1
41		275224	Pulley	..	1	..	..

a 4N 1984 Series Engine
b 5N 1985 Series Engine
c 6N 1986 Series Engine
d 7N 1987 Series Engine
e Note-Oversize and Undersize Bearings Oversize Pistons Are Not Included With Engine
f Included In Gasket Set 301967
g Included In Gasket Set 265517

(CONTINUED ON NEXT PAGE)

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CYLINDER BLOCK AND CRANKCASE
4–153 GASOLINE AND LPG

KEY
A: 0N 1980 Series Engine
B: 1N 1981 Series Engine
C: 2N and 3N – 1982 and 1983 Series Engines
D: 4N, 5N, 6N and 7N – 1984,1985,1986 and 1987 Series Engines

REF	PART NO.	NAME OF PART	QTY A	B	C	D
42	7882	Key	1	1	1	1
43	254388	Camshaft	1	1	1	1
44	189609	Cover	1	1	1	1
45	[f] 326359	Oil Seal	1	1	1	1
46	[f] 164034	Gasket	1	1	1	1
47	162768	Screw Assy	8	8	8	8
48	244918	Oil Pan	1	1	1	1
49	164030	Gasket	1	1	1	1
50	164029	Screw	1	1	1	1
51	244937	Oil Pan Gasket	1	1	1	1
51	388320	Oil Pan Gasket	..	..	..	1
52	164746	Seal	1	1	1	1
53	164747	Seal	1	1	1	1
54	16374	Capscrew	18	18	18	18
54	177946	Lockwasher	18	18	18	18
55	244920	Screen and Support	1	1	1	1
55	164027	Clamp	1	1	1	1
56	.....	Oil Pump	1	1	1	1
		☞ Figure 12				
57	312942	Bolt	1	1	1	1
57	145641	Nut	1	1	1	1
57	221453	Capscrew	2	2	2	2
58	16663	Capscrew	1	1	1	1

REF	PART NO.	NAME OF PART	QTY A	B	C	D
58	244941	Screw Assy	2	2	2	2
59	149892	Gasket	1	1	1	1
60	244900	Oil Dipstick	1	1	1	1
61	275051	Tube	1	1	1	1
62	149929	Cap	1	1	1	1
62	130845	Hose Clamp	1	1	1	1
63	299947	Pulley	1	1	1	1
64	188643	V-Belt	1	1	1	1
65	127644	Oil Filter	1	1	1	1
66	16818	Capscrew	..	4	4	4
66	15155	Lockwasher	..	4	4	4
67	178297	Degreaser	AR	AR	AR	AR
68	184529	Belt Tension Gauge	AR	AR	AR	AR

[a] 4N 1984 Series Engine
[b] 5N 1985 Series Engine
[c] 6N 1986 Series Engine
[d] 7N 1987 Series Engine
[e] Note–Oversize and Undersize Bearings Oversize Pistons Are Not Included With Engine
[f] Included In Gasket Set 301967
[g] Included In Gasket Set 265517

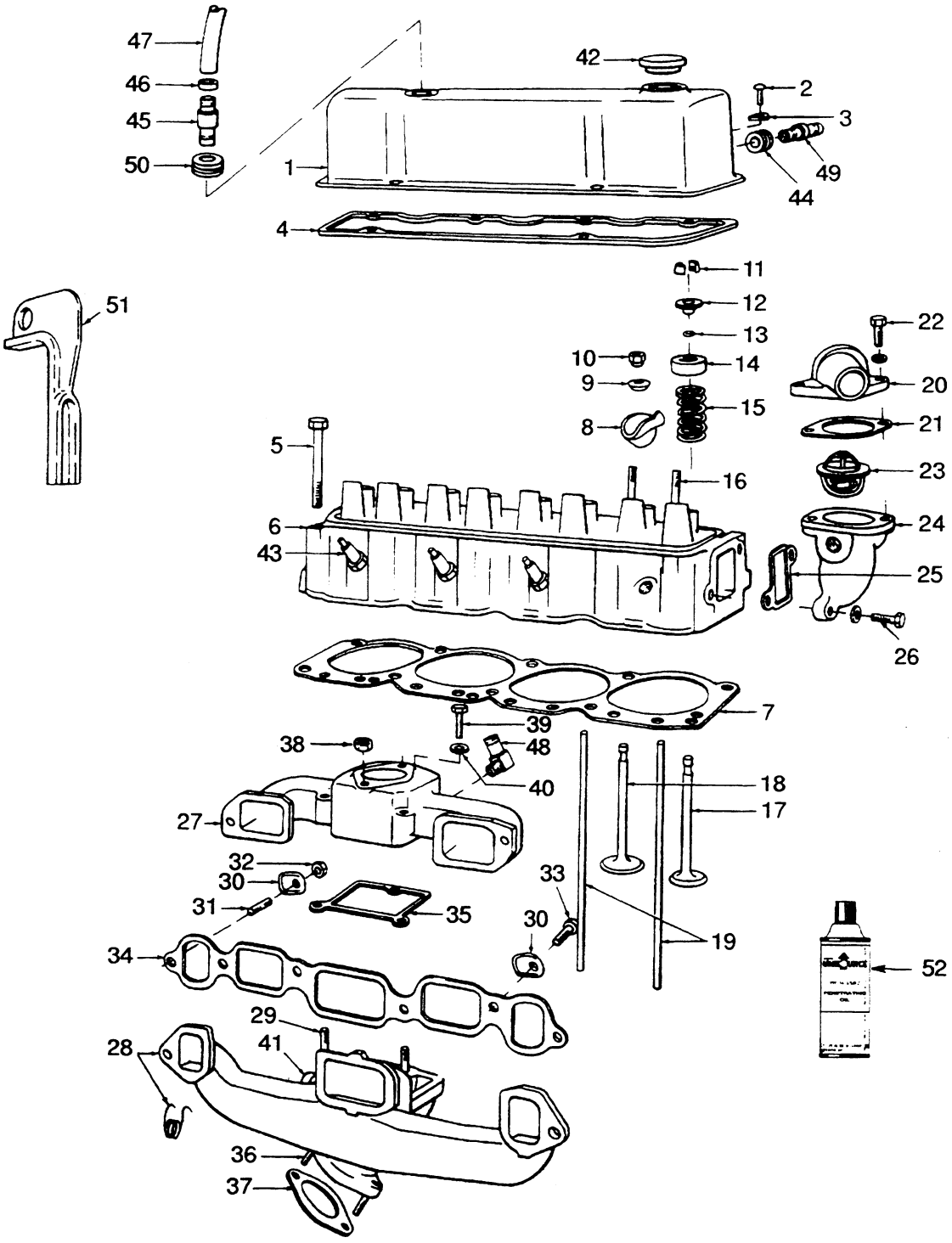
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CYLINDER HEAD AND MANIFOLD
4–153 GASOLINE AND LPG
(Figure 11)



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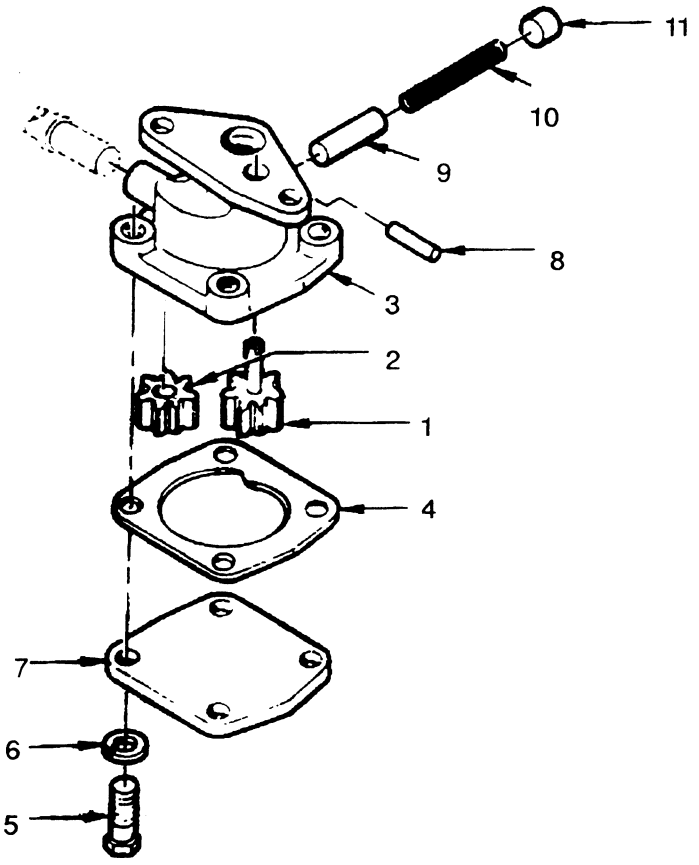
CYLINDER HEAD AND MANIFOLD
4–153 GASOLINE AND LPG

REF		PART NO.	NAME OF PART	QTY
		.....	Engine	1
		☞	Figure 9 and Figure 10	
1		245203	Valve Cover	1
2		133469	Capscrew	5
3		149978	Reinforcement	5
4	a	380323	Gasket	1
5		149977	Bolt	10
6		279684	Cylinder Head	1
6		.....	Plug	2
7	a	244936	Gasket	1
8		245202	Rocker Arm	8
9		189614	Ball	8
10		139743	Locknut	8
10	b	301195	Nut	8
11		263750	Valve Key	16
12		149868	Inlet Valve Cap	4
12		149867	Exhaust Valve Rotator	4
13	a	145173	Valve Seal	8
14		314539	Oil Shield	8
15		145172	Valve Spring	8
16	g	149857	Stud-.003 inch	8
16		149858	Stud-.013 inch	8
17		244909	Inlet Valve Std	4
17		149864	Inlet Valve .003 inch	4
17		244910	Inlet Valve .015 inch	4
17		244911	Inlet Valve .030 inch	4
18		253985	Exhaust Valve Std	4
18		183071	Exhaust Valve .003 inch	4
18	d	254384	Exhaust Valve .015 inch	4
18	e	253986	Exhaust Valve .015 inch	4
18	d	254385	Exhaust Valve .030 inch	4
18	f	253987	Exhaust Valve .030 inch	4
19		160250	Push Rod	8
20		244946	Outlet	1
21	a	149883	Gasket	1
22		161195	Capscrew	2
23		277088	Thermostat-195° F	1
23	g	231522	Thermostat-180° F	1
23	g	145668	Thermostat-170° F	1
24		160374	Housing	1
25	a	127915	Gasket	1
26		161195	Capscrew	2
27		244922	Inlet Manifold	1
28		271949	Exhaust Manifold	1
28		160376	Bushing	2
28		244924	Spring	1
29		149952	Stud	2
30		149888	Clamp	4
31		149889	Stud	2
31	d	162772	Stud	2
31	f	149952	Stud	2
32		.....	Nut	2
33		263850	Capscrew	2
34	a	244948	Gasket	1
35	h	279690	Gasket	1
36		149952	Stud	2
37		.....	Gasket	1
38		221708	Nut	2
39	d	159708	Capscrew	1
39	f	161195	Capscrew	1
40		15156	Lockwasher	1
41		244925	Thermostat	1
41		244924	Spring	1
41	c	160377	Spring	1
42		189713	Cap	1
43	d	274406	Spark Plug	4
43	d	274405	Spark Plug	4
43		281844	Spark Plug	4
44		189598	Grommet	1
45		278868	Vent Valve	1
45	c	321734	Vent Valve	1
46		149922	Clamp	1
47		85766	Hose	1
48		201808	Fitting	1
49		244901	Clamp	1
50		164050	Grommet	1
51		273256	Lift Bracket	1
52		171352	Penetrating Oil	AR

a Included In Gasket Set 265517
b 9N 1979 Series Engine
c 1N 1981 Series Engine
d 6N 1976 Series Engine
e 2N/3N 1982/1983 Series Engine
f 7N 1977 Series Engine
g Optional
h Included In Gasket Set 301967

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OIL PUMP
GASOLINE
(Figure 12)



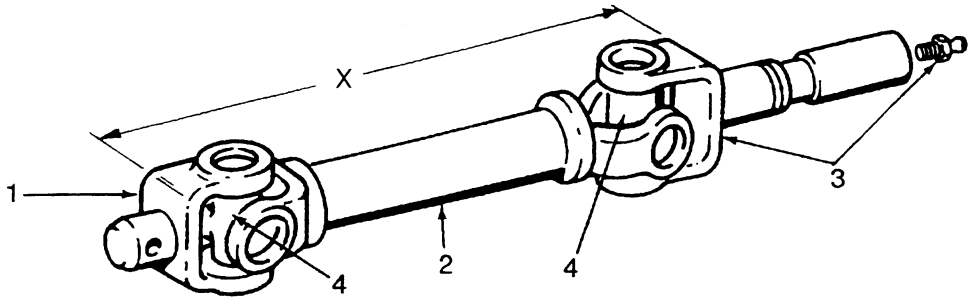
REF	PART NO.	NAME OF PART	QTY
	.....	Engine	1
		☞ Figure 9 and Figure 10	
	149844	Oil Pump	1
1	.....	Gear (Drive)	1
2	.....	Gear (Driven)	1
3	.....	Housing	1
4	[a] 149847	Gasket	1
5	16709	Screw	4
6	15154	Lockwasher	4
7	149846	Cover	1
8	149845	Retainer Pin	1
9	145176	Valve	1
10	145177	Spring	1
11	177563	Plug	1

[a] Included In Bottom Gasket Kit 301967

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DRIVE SHAFT

(Figure 13)



PARTS-SERVICE GRAM	
ITEM	GRAM
Drive Shaft	A-B-38

	S30-40E	S50E	S60ES
Drive Shaft	[a] 248035 [b] 286975	[a] 264103 [b] 286976	[a] 256052 [b] 286977
Measurement "X"	8.50 inch (216 mm)	11.40 inch (290 mm)	14.62 inch (371 mm)

[a] Last Used On S/N D2D-4263
[b] First Used On S/N D2D-4264

KEY
A: Last Used on S/N D2D-4263
B: First Used on S/N D2D-4264

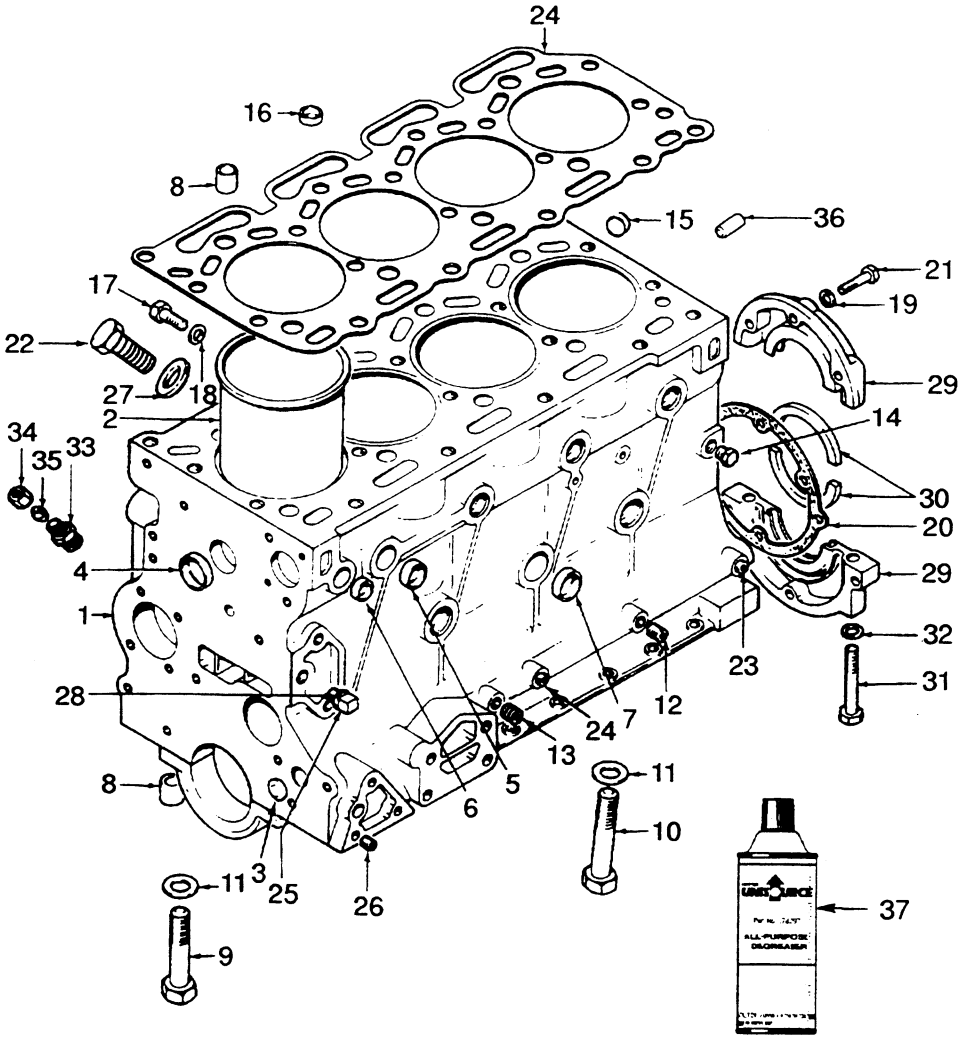
REF	PART NO.	NAME OF PART	QTY A	QTY B
[c]	.....	Drive Shaft	1	1
1	250915	Yoke	1	..
1	287377	Yoke	..	1
2	.....	Center Section	1	1
3	250916	Yoke	1	..
3	287378	Yoke	..	1

REF	PART NO.	NAME OF PART	QTY A	QTY B
3	.....	Grease Fitting	1	1
4	250914	Repair Kit	2	..
4	287379	Cross and Bearing	..	2

[c] ☞ Chart Above

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CYLINDER BLOCK
DIESEL
(Figure 14)



PARTS-SERVICE GRAM	
ITEM	GRAM
2	A-A-77
Engine	A-F-36

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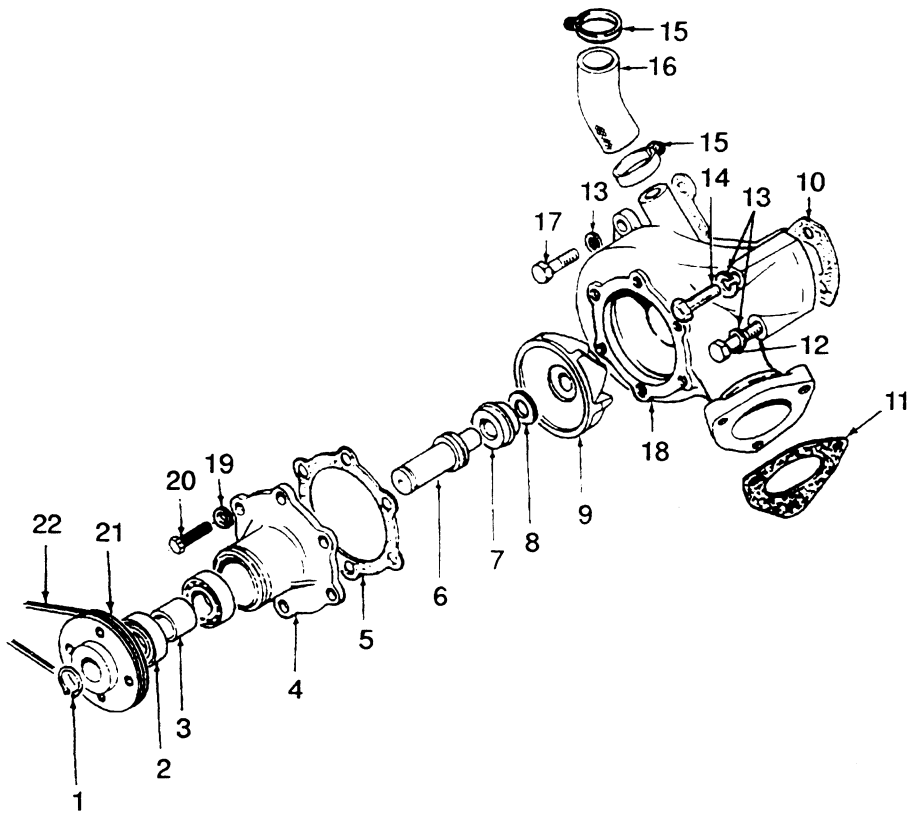
CYLINDER BLOCK
DIESEL

REF		PART NO.	NAME OF PART	QTY
		361196	Engine	1
1		.....	Cylinder Block	1
2		245217	Liner	4
3		245218	Plug	1
4		245219	Plug	4
5		245220	Plug	4
6		245221	Plug	1
7		245222	Plug	7
8		245223	Thimble (Brg Cap)	12
9		245224	Capscrew	8
10		245775	Capscrew	2
11		245776	Washer	10
12		245777	Plug	4
13		15347	Fitting	1
14		245778	Plug	2
15		245779	Plug	1
16		245780	Plug	1
17		16372	Capscrew	1
18		101985	Washer	1
19		15155	Lockwasher	6
20	a	245803	Gasket	1
21		18499	Capscrew	6
22		187742	Capscrew	1
23		245800	Plug	1
24	b	245801	Gasket	1
25		983784	Plug	1
26		99584	Plug	6
27		985299	Washer	1
28		101985	Washer	1
29		245799	Rear Housing	1
30		158025	Oil Seal	2
31		18514	Capscrew	2
32		15155	Lockwasher	2
33		981608	Union	1
34		16193	Fitting	1
35		51455	Sleeve	1
36		985644	Dowel	2
37		178297	Degreaser	AR

[a] Included In Bottom Gasket Kit 354163
[b] Included In Top Gasket Kit 224900

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WATER PUMP
DIESEL
(Figure 15)



REF		PART NO.	NAME OF PART	QTY
	a	371958	Water Pump	1
1	b	982328	Snap Ring	1
2	b	.....	Bearing	2
3	b	.....	Spacer	1
4		.....	Body–Front	1
5	b	245918	Gasket	1
6	b	.....	Shaft	1
7	b	245916	Seal	1
8	b	245917	Seal (Rear)	1
9	b	.....	Impeller	1
10	bc	245924	Gasket	1
11		245900	Gasket	1
12		18521	Capscrew	3

REF	PART NO.	NAME OF PART	QTY
13	15155	Lockwasher	5
14	18514	Capscrew	1
15	130845	Hose Clamp	2
16	367900	Hose	1
17	16691	Capscrew	1
18	367506	Body (Rear)	1
19	15155	Lockwasher	6
20	983268	Capscrew	6
21	248162	Pulley	1
22	100754	V-Belt	1

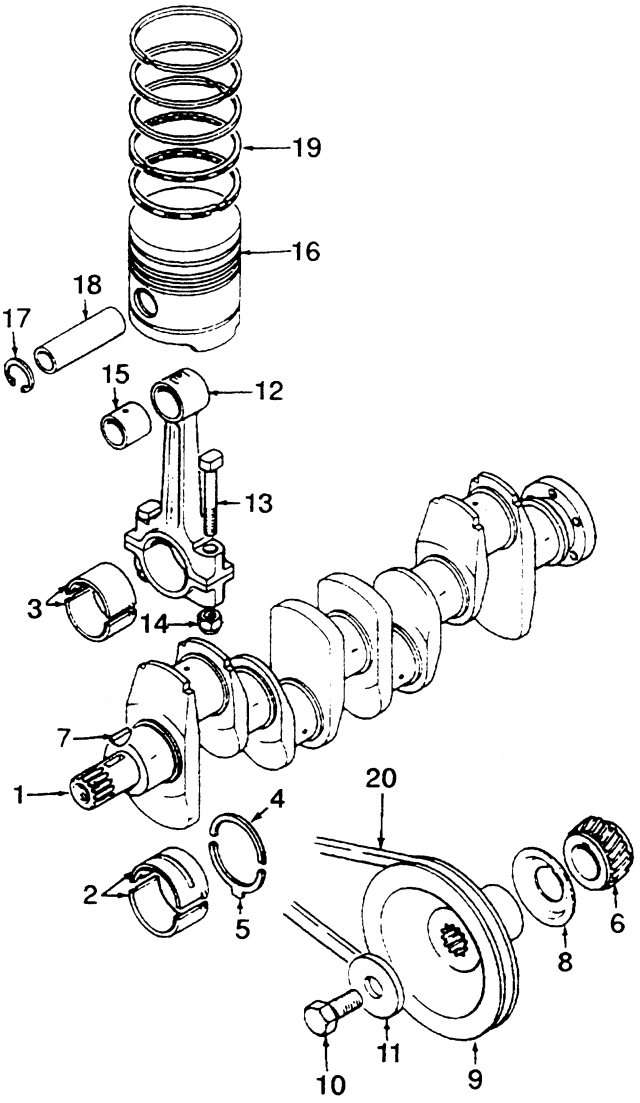
a Remanufactured Water Pump 3002544 R
b Included In Repair Kit 248160
c Included In Gasket Kit 354163

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NOTES

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CRANKSHAFT AND PISTONS
DIESEL
(Figure 16)



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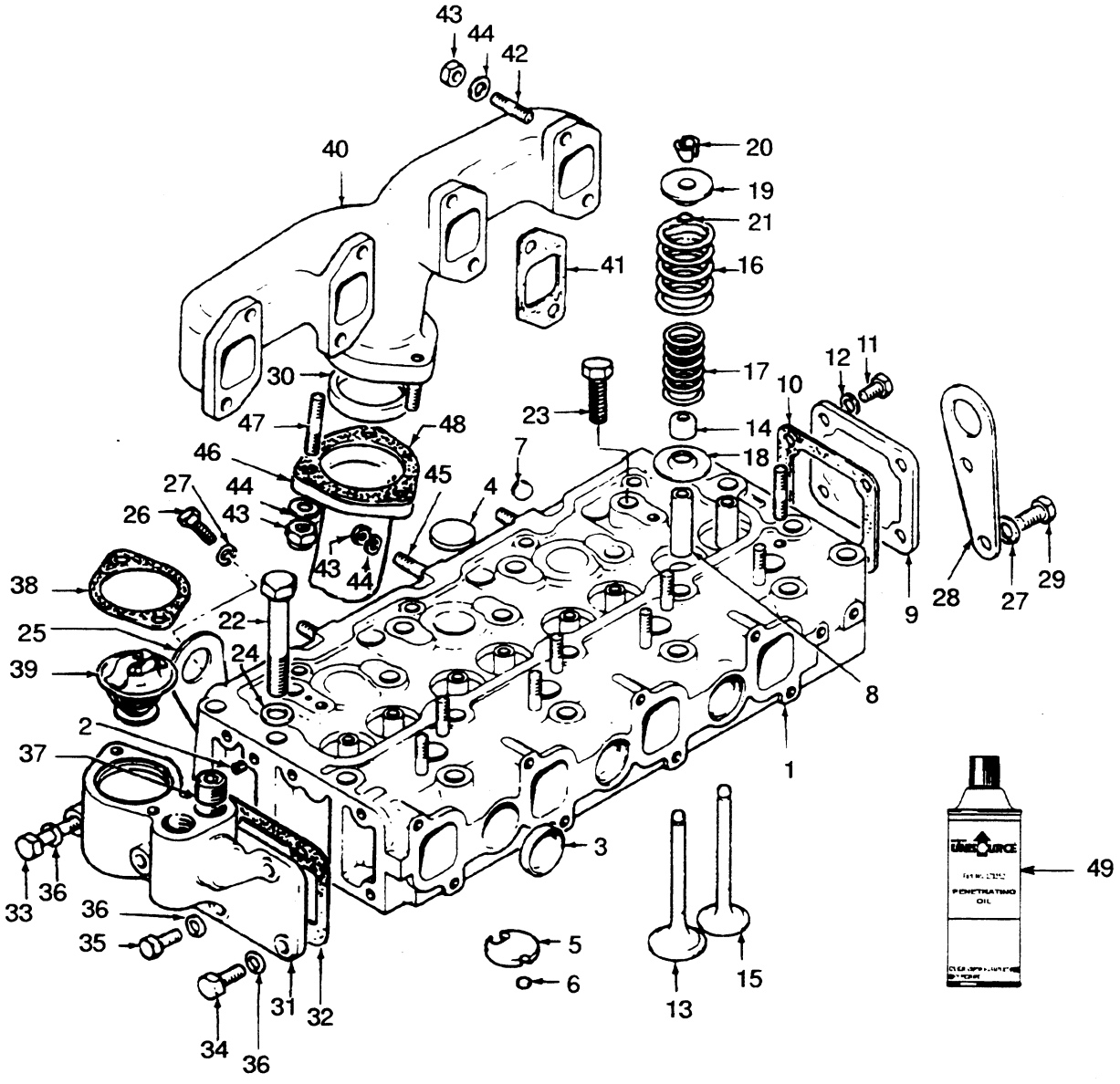
CRANKSHAFT AND PISTONS
DIESEL

REF		PART NO.	NAME OF PART	QTY
1	ab	.....	Crankshaft	1
2	ab	245244	Brg-Main Std	1
2		245825	Brg-Main .010 inch	1
2		245826	Brg-Main .020 inch	1
2		245827	Brg-Main .030 inch	1
3	ab	245245	Brg-Main Std	1
3		245828	Brg-Rod .010 inch	1
3		245829	Brg-Rod .020 inch	1
3		245830	Brg-Rod .030 inch	1
4	ab	358094	Thrust Washer	2
4		245831	Washer-.007 inch	2
5	ab	358094	Thrust Washer	2
5		245832	Washer-.007 inch	2
6	b	245833	Gear	1
7	b	245797	Gear Key	1
8	b	245834	Flange	1
9		245248	Pulley	1
10		245815	Screw	1
11		158066	Washer	1
12	b	245249	Connector Rod	4
13	b	245835	Bolt	2
14	b	360782	Nut	2
15	b	245837	Bushing	1
16	b	245838	Piston and Pin Std	4
16		245840	Piston and Pin .030 inch	4
17	b	990417	Snap Ring	2
18		.....	Pin	1
19	b	245839	Set-Ring Std	4
19		245841	Set-Ring .030 inch	4
20		100754	V-Belt	1

[a] Included In Crankshaft Kit 245243
[b] Included In Engine 361196

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CYLINDER HEAD
DIESEL
(Figure 17)



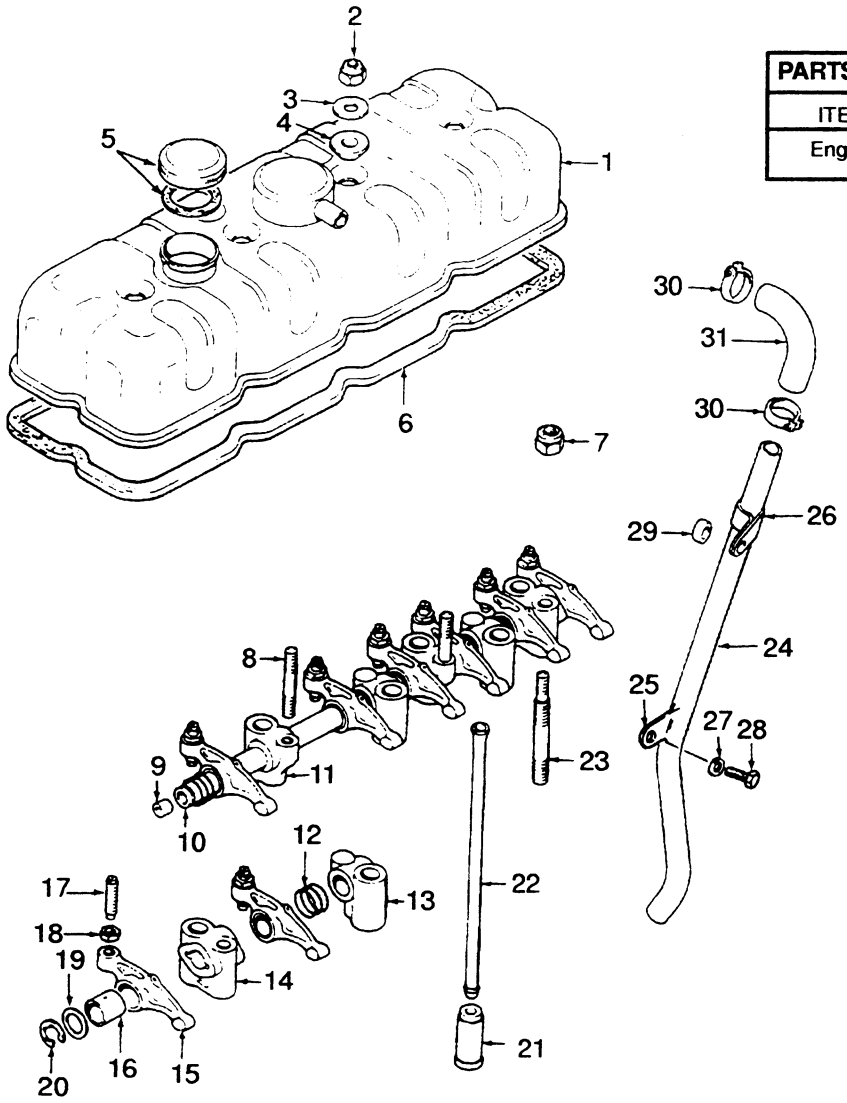
CYLINDER HEAD

REF	PART NO.	NAME OF PART	QTY
	361196	Engine	1
1	245226	Cylinder Head	1
2	245804	Plug	1
3	245805	Plug	7
4	245806	Plug	3
5	245807	Insert	4
6	245795	Washer	4
7	245227	Insert	4
8	245228	Valve Guide	8
9	245229	Cover	1
10	[a] 245808	Gasket	1
11	16663	Capscrew	4
12	15155	Lockwasher	4
13	245230	Inlet Valve	4
14	245231	Deflector	4
15	245232	Exhaust Valve	4
16	245809	Spring	8
17	245810	Spring	8
18	245811	Washer	8
19	245233	Valve Cap	8
20	245812	Valve Keeper	16
21	329453	Cap	8
22	245813	Capscrew	1
23	245814	Capscrew	7
24	245776	Washer	20
25	245235	Plate (Front)	1
26	16811	Capscrew	2
27	15156	Lockwasher	4
28	245236	Plate (Rear)	1
29	16811	Capscrew	2
30	[a] 224287	Gasket	1
31	245237	Outlet	1
32	[a] 245238	Gasket	1
33	18521	Capscrew	2
34	16825	Capscrew	3
35	16818	Capscrew	1
36	15155	Lockwasher	6
37	15962	Fitting	2
38	[a] 991441	Gasket	1
39	301793	Thermostat-180° F	1
40	245239	Exhaust Manifold	1
41	[a] 245240	Gasket	4
42	133555	Stud	7
43	983286	Nut	11
44	18515	Washer	11
45	158044	Stud	1
46	245241	Flange-Exhaust Pipe	1
47	99686	Stud	3
48	245242	Gasket	1
49	171352	Penetrating Oil	AR

[a] Included In Top Gasket Kit 224900

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CYLINDER HEAD COVER
DIESEL
(Figure 18)



PARTS-SERVICE GRAM	
ITEM	GRAM
Engine	A-A-82

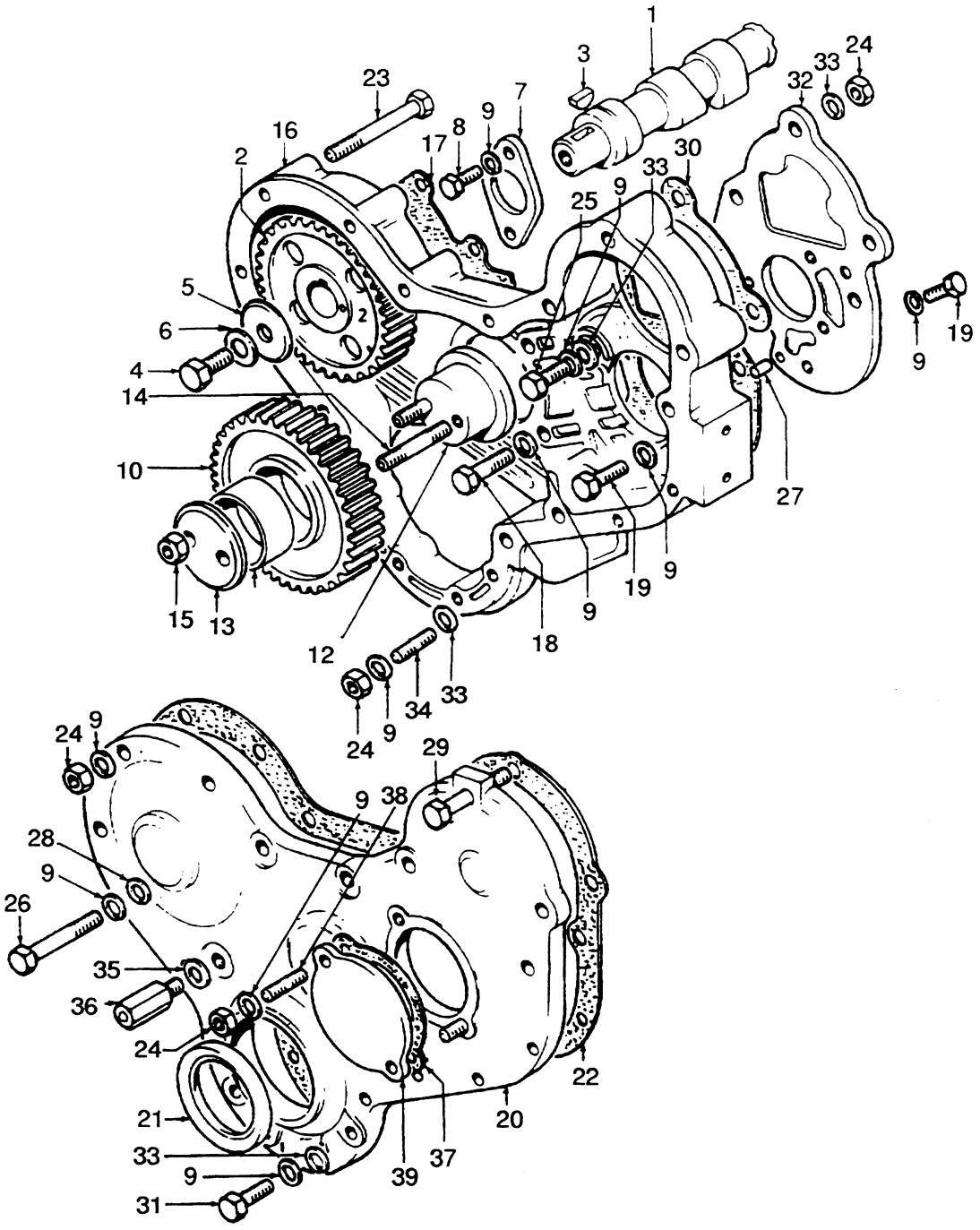
CYLINDER HEAD COVER
DIESEL

REF	PART NO.	NAME OF PART	QTY
	361196	Engine	1
1	245842	Cover	1
2	245816	Nut	4
3	245844	Seal	4
4	245845	Seal Plate	4
5	245798	Cap	1
5	158084	Gasket	1
6	[a] 245843	Gasket	1
7	302700	Nut	2
8	245819	Stud	2
9	990429	Plug	2
10	1319589	Rocker Shaft	1
11	245877	Bracket	3
12	245822	Spring	6
13	245876	Bracket	2
14	245875	Bracket	2
15	245878	Rocker Lever	8
16	158103	Bushing	1
17	245821	Screw	1
18	15025	Nut	1
19	245817	Washer	2
20	982292	Snap Ring	2
21	245879	Tappet	8
22	245880	Push Rod	8
23	245818	Stud (Long)	2
24	245846	Breather Pipe	1
25	.....	Bracket	1
26	985151	Clip	1
27	15158	Lockwasher	1
28	16642	Capscrew	1
29	245781	Spacer	1
30	130845	Hose Clamp	1
31	245848	Hose	1

[a] Included In Gasket Set 224900

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TIMING GEARS
DIESEL
(Figure 19)



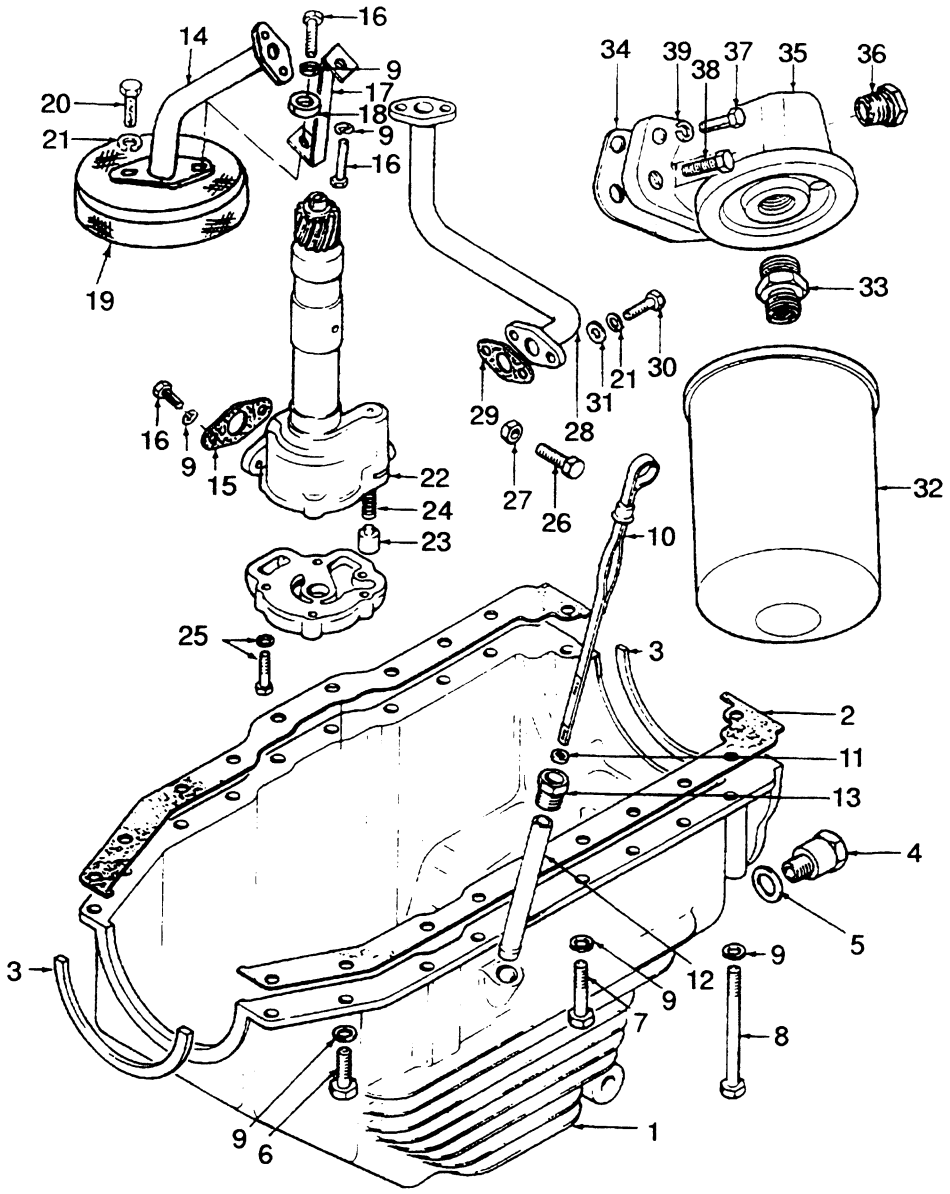
TIMING GEARS
DIESEL

REF		PART NO.	NAME OF PART	QTY
1	a	245886	Camshaft	1
2	a	245887	Gear (Camshaft)	1
3	a	7882	Key	1
4	a	173905	Capscrew	1
5	a	245823	Washer	1
6	a	245823	Washer	1
7	a	245889	Plate	1
8	a	16663	Capscrew	2
9	a	15155	Lockwasher	30
10	a	245890	Gear (Idler)	1
11	a	245891	Bushing	1
12	a	245892	Hub (Idler Gear)	1
13	a	245893	Plate (Retainer)	1
14	a	245786	Stud	2
15	a	221351	Locknut	2
16		245894	Housing	1
17	b	245895	Gasket	1
18		16691	Capscrew	7
19		983311	Bolt	2
20		329455	Cover	1
21		245897	Oil Seal	1
22	b	245898	Gasket	1
23		18514	Capscrew	2
24		15005	Nut	8
25		16818	Capscrew	3
26		99692	Capscrew	7
27		158139	Dowel Pin	1
28		985299	Washer	2
29		18519	Capscrew	3
30	b	245953	Gasket	1
31		16825	Capscrew	6
32		245952	Adapter	1
33		18515	Washer	6
34		983759	Stud	1
35		985299	Washer	1
36		245951	Pin	1
37	b	245950	Gasket	1
38		245787	Stud	2
39		245899	Gear Cover	1

[a] Included In Engine 361196
[b] Included In Bottom Gasket Kit 354163

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OIL PAN
DIESEL
(Figure 20)



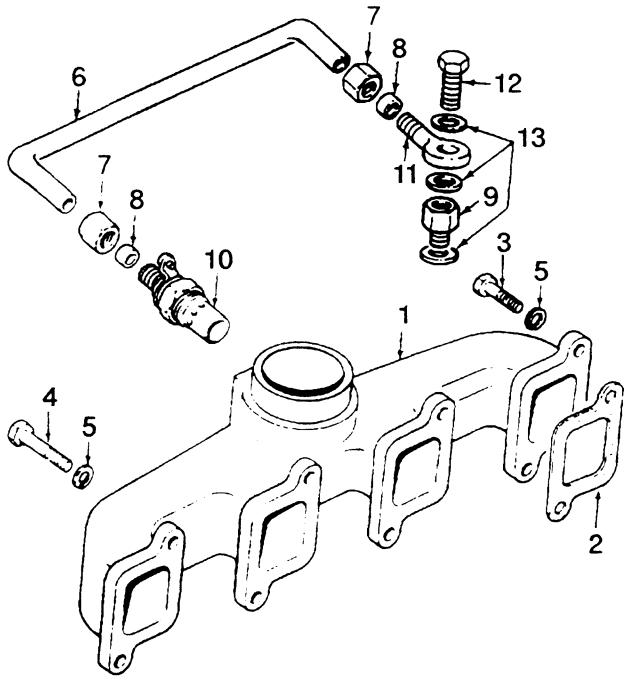
OIL PAN
DIESEL

REF		PART NO.	NAME OF PART	QTY
1		245954	Oil Pan	1
2	a	245955	Gasket (Pan)	2
3	a	158146	Gasket	2
4		361337	Plug	2
5		361338	Washer	2
6		16691	Capscrew	16
7		18510	Capscrew	2
8		18514	Capscrew	2
9		15155	Lockwasher	24
10		245956	Oil Dipstick	1
11		125519	Washer	1
12		245957	Tube (Dipstick)	1
13		222936	Fitting	1
14		245958	Oil Pipe	1
15	a	245959	Gasket	1
16		16663	Capscrew	4
17		.....	Bracket	1
18		18515	Washer	1
19		161496	Strainer	1
20		18459	Capscrew	1
21		15154	Lockwasher	6
22		245961	Oil Pump	1
23		167055	Plunger	1
24		167056	Spring	1
25		245788	Capscrew	5
25		15154	Lockwasher	5
26	b	245824	Screw	1
26	c	271848	Screw	1
27	b	15027	Nut	1
27	c	15026	Nut	1
28		245906	Oil Pipe	1
29	a	245907	Gasket	2
30		18461	Capscrew	4
31		15127	Washer	4
32		3000870	Oil Filter	1
33		169989	Fitting	1
34	a	245909	Gasket	1
35		319670	Filter Head	1
36	b	15483	Fitting	1
36	c	245911	Plug	1
37		986161	Set Screw	2
38		18571	Capscrew	2
39		15157	Lockwasher	4

[a] Included In Bottom Gasket Kit 354163
[b] First Used On Engine S/N 154U10964
[c] Last Used On Engine S/N 154U10963

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INLET MANIFOLD
DIESEL
(Figure 21)



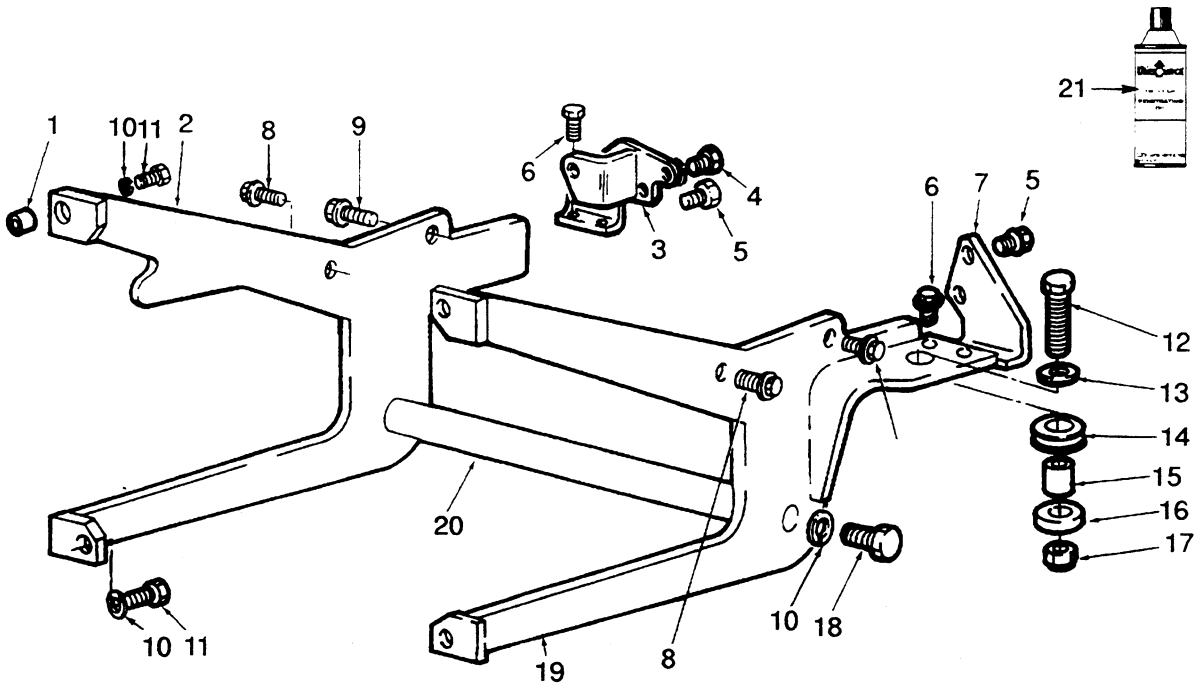
REF	PART NO.	NAME OF PART	QTY
1	245881	Manifold	1
2	[a] 245882	Gasket	4
3	16825	Capscrew	7
4	983311	Bolt	1
5	15155	Lockwasher	8
6	245883	Pipe (Cold Start)	1
7	152609	Nut	2
8	152608	Sleeve	2

REF	PART NO.	NAME OF PART	QTY
9	245884	Valve	1
10	986104	Heater	1
11	245784	Connector	1
12	982951	Bolt	1
13	981652	Washer	3

[a] Included In Top Gasket Kit 224900

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ENGINE MOUNTS
GASOLINE AND LPG
(Figure 22)



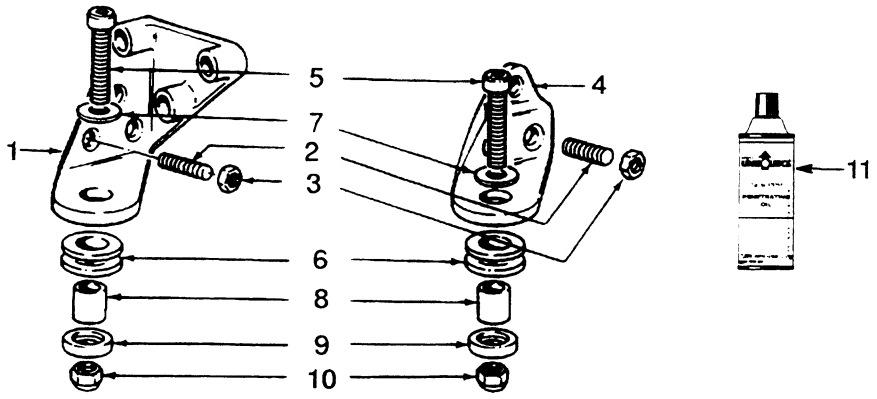
REF		PART NO.	NAME OF PART	QTY
1		185867	Sleeve	2
2	a	272101	Bracket (RH)	1
2	b	275214	Bracket (RH)	1
3	a	190944	Bracket	1
4	a	18557	Capscrew	2
4	a	15157	Lockwasher	2
5	a	174413	Capscrew	3
6	a	134803	Screw	4
7	a	190952	Plate	1
8		174413	Capscrew	3
9	a	174413	Capscrew	1
9	b	196898	Capscrew	1
10		15158	Lockwasher	6

REF	PART NO.	NAME OF PART	QTY
11	16813	Capscrew	4
12	12487	Capscrew	2
13	191123	Washer	2
14	190954	Mount	2
15	190955	Spacer	2
16	191125	Washer	2
17	53163	Locknut	2
18	18588	Capscrew	2
19	190949	Bracket (RH)	1
20	190953	Rod	1
21	171352	Penetrating Oil	AR

[a] Last Used On S/N D2D-2559
[b] First Used On S/N D2D-2560

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ENGINE MOUNTS
DIESEL
(Figure 23)



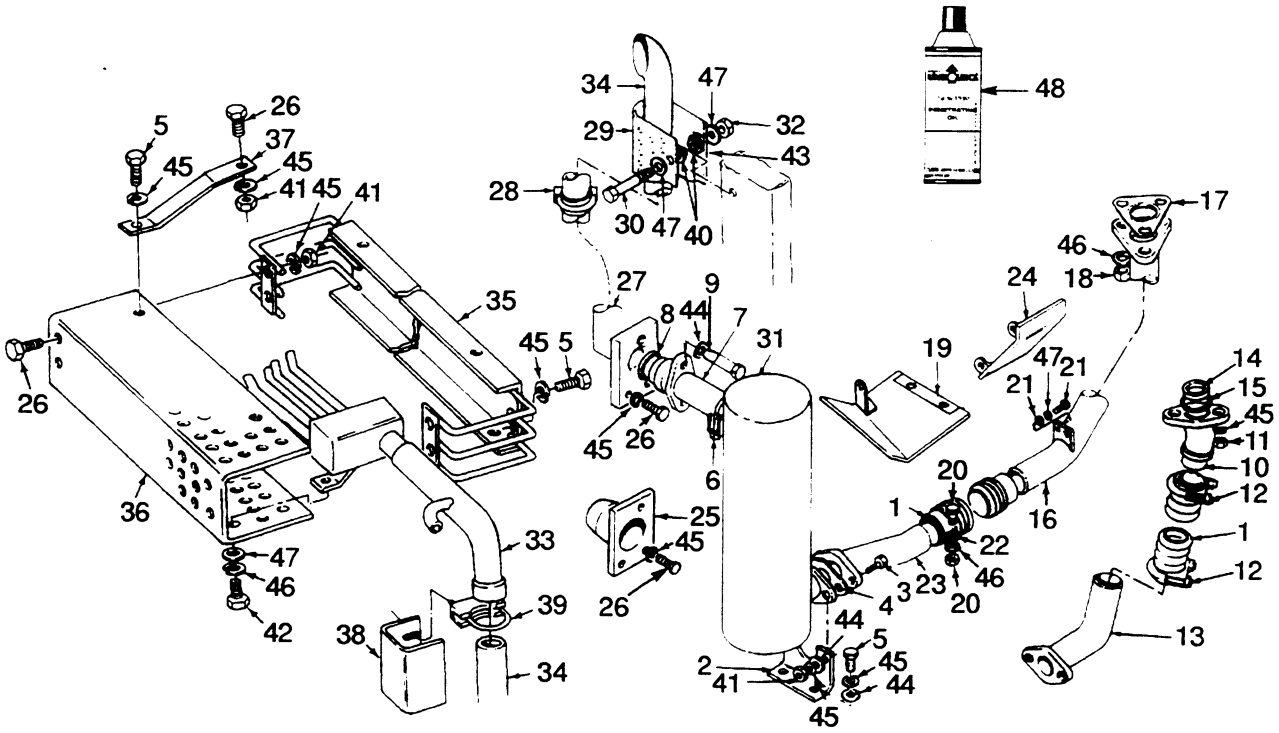
REF	PART NO.	NAME OF PART	QTY
1	191113	Bracket (RH)	1
2	241114	Stud	6
3	191115	Nut	6
4	218616	Bracket (RH)	1
5	18015	Capscrew	2
6	190954	Mount	2
7	191123	Washer	2
8	190955	Spacer	2
9	191125	Washer	2
10	53163	Locknut	2
11	171352	Penetrating Oil	AR

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NOTES

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EXHAUST
(Figure 24)



EXHAUST

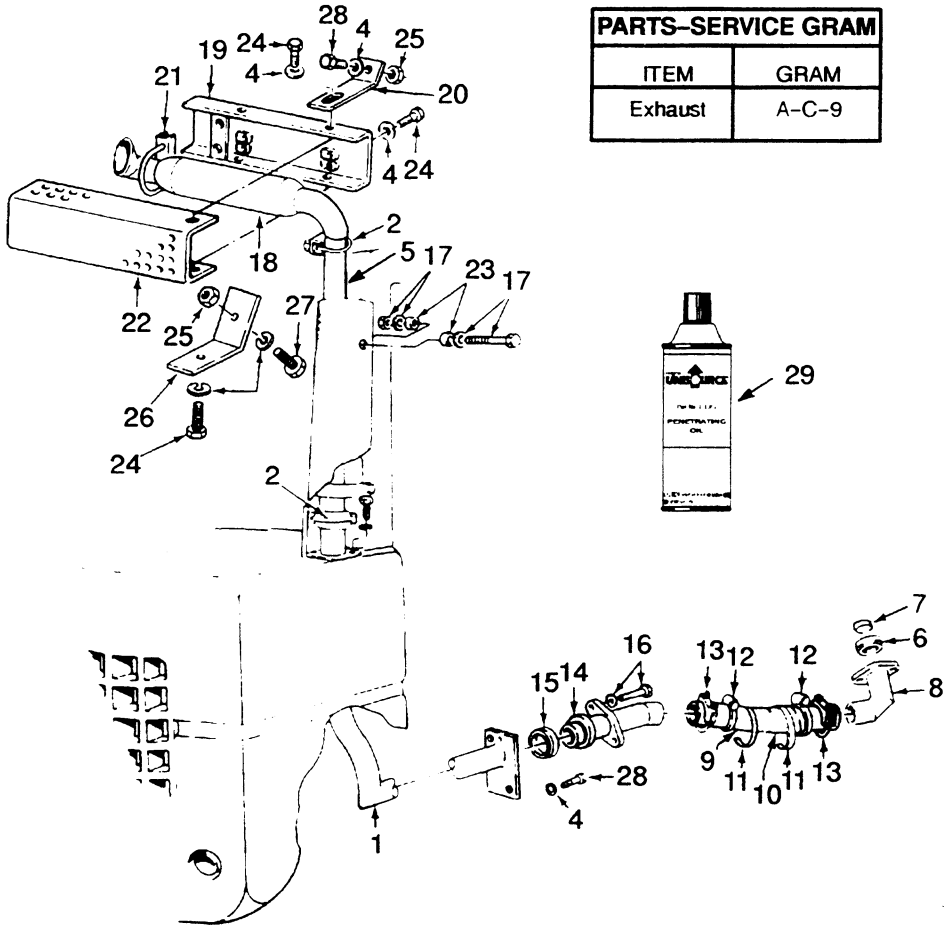
REF		PART NO.	NAME OF PART	QTY
1		189682	Exhaust Tube	1
2		189711	Bracket	1
3		16816	Capscrew	2
4		189712	Gasket	1
5		16597	Capscrew	8
6		63116	Exhaust Clamp	1
7		228977	Exhaust Pipe	1
8		157118	Pack Exhaust	1
9		18540	Capscrew	2
10	a	189679	Elbow	1
11	a	16526	Nut	2
12	a	68968	Exhaust Clamp	2
13	a	189683	Exhaust Elbow	1
14	a	189686	Sleeve	1
15	a	66763	Gasket	1
16	b	203096	Exhaust Pipe	1
17	b	189690	Gasket	1
18	b	14465	Nut	3
19	b	189691	Shield	1
20	b	18508	Bolt	2
20	b	15001	Nut	2
21	b	16836	Capscrew	2
21	b	18515	Washer	2
22	b	203098	Clamp	2
23	b	203094	Exhaust Pipe	1
24	b	261705	Shield (Oil Filter)	1
25	c	277848	Exhaust Pipe	1
26		16805	Capscrew	8
27	d	229855	Exhaust Pipe	1
28	d	30368	Clamp	1
29	d	229865	Exhaust Shield	1
30	d	18518	Capscrew	2
30	ed	299325	Capscrew	4
31	c	189710	Muffler	1
31	de	295248	Diffuser	1
31	de	251822	Muffler	1
32	d	191534	Nut	4
33	fe	295248	Diffuser	1
34	de	362943	Tube	1
34	d	229860	Exhaust Pipe	1
35	de	292108	Guard	1
36	de	292109	Cover	1
37	de	289473	Brace	2
38	de	362936	Shield	1
39	de	30368	Clamp	1
40	d	261395	Bushing	4
41		15056	Nut	8
42	de	16663	Capscrew	2
43	de	289472	Guard	1
44		15176	Washer	6
45		15156	Lockwasher	20
46		15155	Lockwasher	9
47		18515	Washer	8
48		171352	Penetrating Oil	AR

a Gasoline and LPG
b Diesel
c Counterweight Exhaust
d Overhead Exhaust
e Types GS, LPS, and DS
f First Used On S/N D2D-8433

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OVERHEAD EXHAUST

(Figure 25)



PARTS–SERVICE GRAM	
ITEM	GRAM
Exhaust	A–C–9

REF	PART NO.	NAME OF PART	QTY
1	229855	Exhaust Pipe	1
2	30368	Clamp	2
3	229865	Exhaust Shield	1
4	15156	Lockwasher	14
5	362941	Tube	1
6	66763	Gasket	1
7	189686	Sleeve	1
8	282067	Tube	1
9	282070	Tube	1
10	282159	Aluminum Sheet	AR
11	284024	Tape	AR
12	115696	Clamp	2
13	30371	Clamp	2
14	282071	Exhaust Pipe	1
15	157118	Pack Exhaust	1
16	18538	Capscrew	2

REF	PART NO.	NAME OF PART	QTY
16	15176	Washer	2
17	18518	Capscrew	2
17	18515	Washer	4
17	145639	Locknut	2
18	282057	Muffler	1
19	282062	Shield	1
20	289473	Brace	2
21	38738	Clamp	1
22	282056	Cover	1
23	261395	Bushing	4
24	16597	Capscrew	8
25	15056	Nut	4
26	339744	Bracket	1
27	16598	Capscrew	2
28	16805	Capscrew	4
29	171352	Penetrating Oil	AR

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FUEL

AIR FILTER ..... Page 78

CARBURETOR
GASOLINE
FIRST USED ON S/N D2D-9242 D2T-1752 ..... Page 68

CARBURETOR
GASOLINE
LAST USED ON S/N D2D-1947 ..... Page 64

CARBURETOR
GASOLINE
USED ON S/N D2D-1948 D2T-1501 THRU D2D-9241 D2T-1751 .... Page 66

CARBURETOR
LPG ..... Page 62

CONVERTER
LPG ..... Page 72

FUEL
DIESEL ..... Page 61

FUEL
GASOLINE ..... Page 54

FUEL
LPG
FIRST USED ON S/N D2D-9242 D2T-1752 ..... Page 58

FUEL
LPG
LAST USED ON S/N D2D-9241 D2T-1751 ..... Page 56

FUEL FILTER
DIESEL ..... Page 73

FUEL INJECTION
DIESEL ..... Page 74

FUEL PUMP
DIESEL ..... Page 76

LOCK-OFF FILTER
FIRST USED ON S/N D2D-5438 ..... Page 71

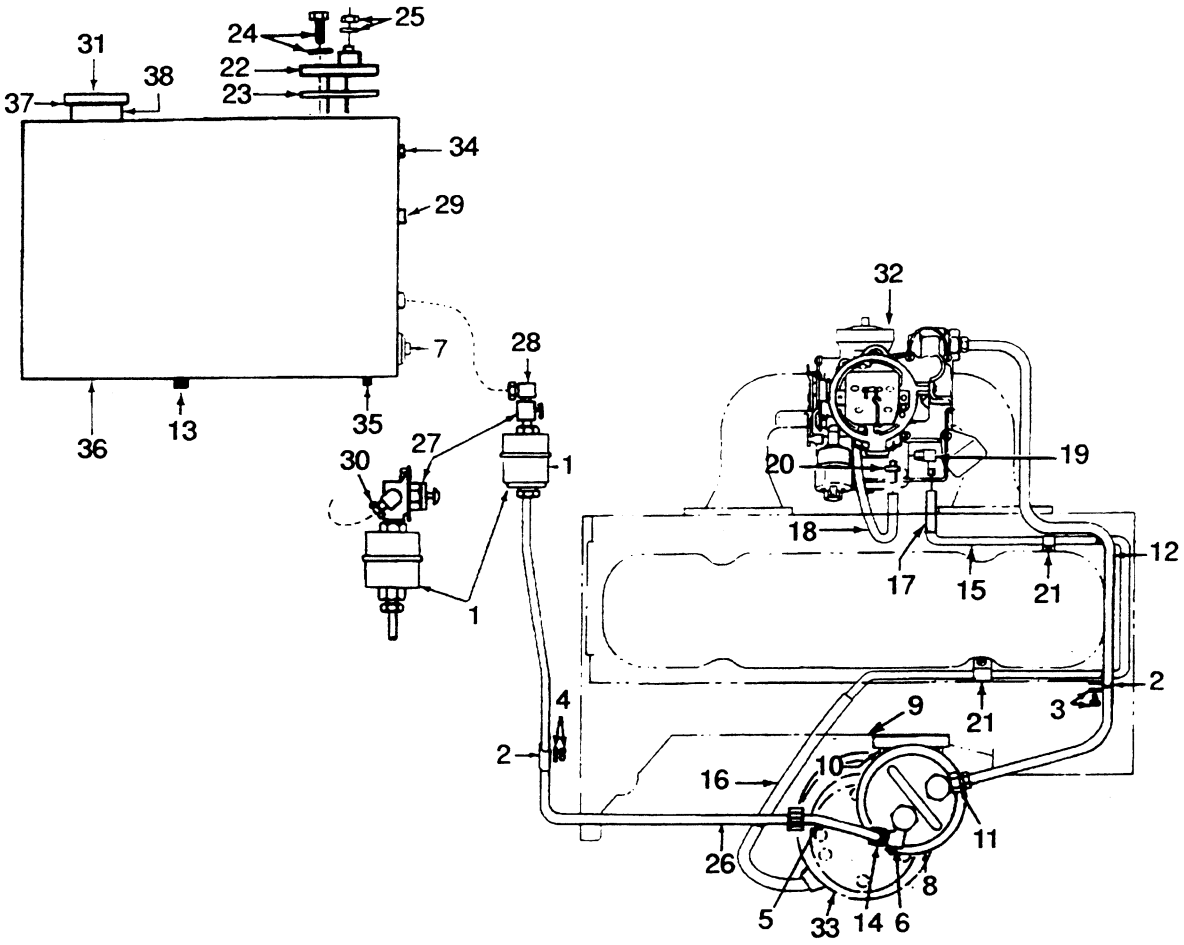
LOCK-OFF FILTER
LAST USED ON S/N D2D-5437 ..... Page 70

THROTTLE LINKAGE
TYPE GS ..... Page 82

THROTTLE LINKAGE ..... Page 80

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FUEL
GASOLINE
(Figure 26)



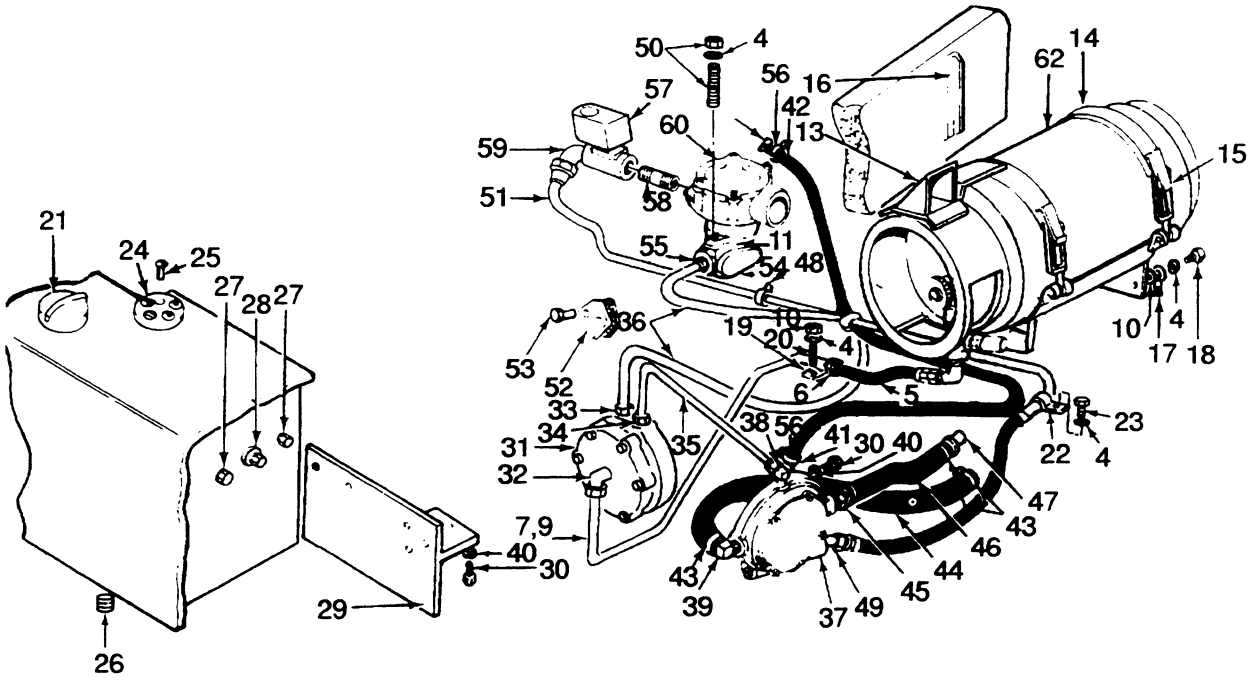
FUEL
GASOLINE

REF		PART NO.	NAME OF PART	QTY
1		172921	Gas Filter	1
2		118748	Clamp	2
3		15156	Lockwasher	1
3		16870	Capscrew	1
4		15155	Lockwasher	1
4		15055	Nut	1
5		191819	Hose	1
6		16151	Fitting	1
7		14385	Fitting	1
8		153995	Fuel Pump	1
9	a	149934	Gasket	1
10		191820	Capscrew	2
11		16138	Fitting	1
12	b	191821	Tube	1
12	b	16185	Fitting	1
12	c	274180	Tube	1
13		15962	Fitting	1
14		42213	Fitting	1
15	de	321746	Tube	1
15	f	329426	Tube	1
16	d	190421	Hose	1
17	de	321745	Hose	1
17	f	181082	Hose	1
18	d	181082	Hose	1
19	d	175347	Fitting	1
20	de	191805	Fitting	1
20	f	175347	Fitting	1
21	d	101569	Clamp	2
22		320149	Sender	1
23		111561	Gasket	1
24		16708	Screw	5
24		350483	Washer (Seal)	5
25		15916	Washer	1
25		15002	Nut	1
26	g	199069	Tube	1
26	h	265075	Tube	1
26	k	318808	Tube	1
27		87446	Valve (Needle)	1
27	h	117767	Valve (3 Way)	1
27	h	326907	Instrument Plate	1
27	h	16734	Screw	2
27	h	15154	Lockwasher	2
27	h	15004	Nut	2
28		16151	Fitting	1
29		17829	Fitting Plug	1
30	h	199068	Tube	1
30	h	16185	Fitting	1
30	h	14225	Connector	1
31	h	63899	Safety Cap	1
31		160773	Fuel Cap	1
32		.....	Carburetor	1
			☞ Figure 30 ⇒ Figure 33	
33		.....	Distributor	1
			☞ Figure 51	
34	k	16805	Capscrew	1
34	k	15156	Lockwasher	1
34	k	15176	Washer	1
35	k	15347	Fitting	1
36	k	318801	Tank	1
37	k	61843	Grommet	1
38	k	318807	Pipe	1

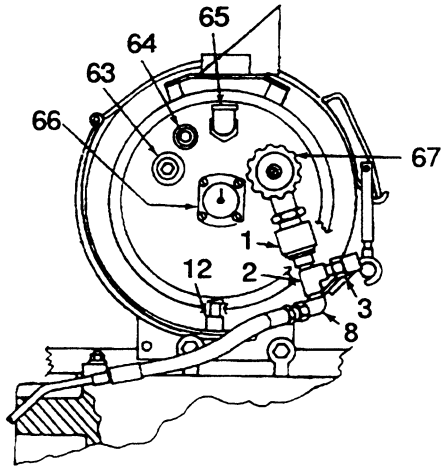
[a] Included In Bottom Gasket Kit 301967
[b] Last Used On S/N D2D-1947
[c] First Used On S/N D2D-1948
[d] First Used On S/N D2D-9242 D2T-1752
[e] Last Used On S/N D2D-10952
[f] First Used On S/N D2D-10953
[g] Last Used On S/N D2D-12883
[h] Type GS
[k] First Used On S/N D2D-12884

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FUEL
LPG
LAST USED ON S/N D2D-9241 D2T-1751
(Figure 27)



PARTS-SERVICE GRAM	
ITEM	GRAM
11, 55, 54	E-E-36
31	F-B-11



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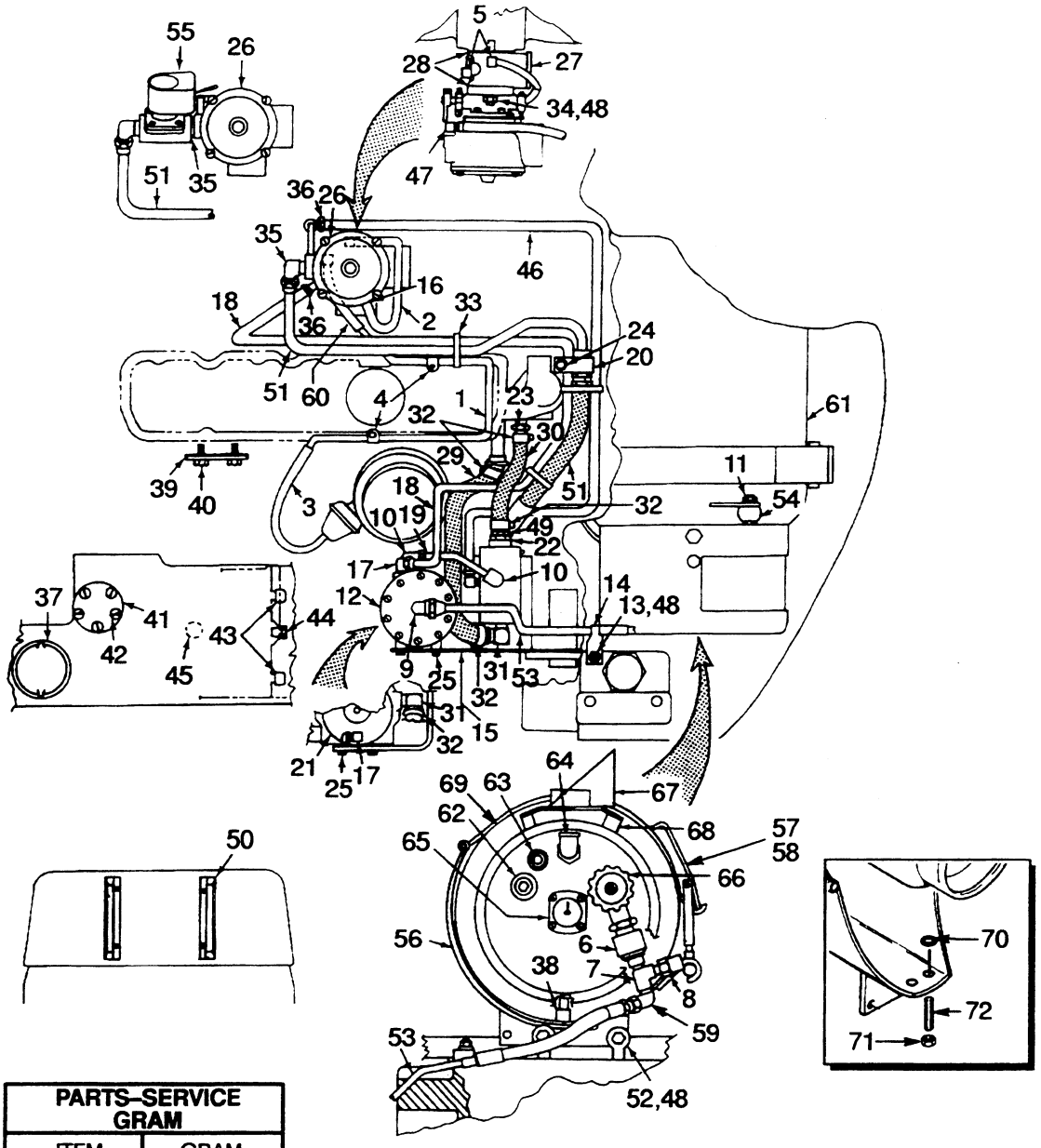
FUEL
LPG
LAST USED ON S/N D2D-9241 D2T-1751

REF		PART NO.	NAME OF PART	QTY
1		97999	Disconnect	1
2		17216	Fitting	1
3		101809	Relief Valve	1
4		15156	Lockwasher	8
5	a	159220	Hose	1
6	a	14310	Adapter	1
7	a	287636	Tube	1
8		14358	Fitting	1
9		287634	Hose	1
10		15056	Nut	5
11		195771	Gasket	1
12		196303	Pin	1
12		15058	Nut	1
12		15158	Lockwasher	1
13	b	278957	Diverter	1
13	b	261164	Foam Tape	AR
14		196287	Tank Bracket	1
14	a	265588	Tank Bracket	1
15		196297	Latch	2
15		18479	Capscrew	1
15		221342	Locknut	1
15		147294	Nut	2
16		248816	Bumper	2
16		227173	Screw	4
17		250590	Eye (Rod End)	4
18		15134	Washer	4
18		16815	Capscrew	4
18	a	16805	Capscrew	4
19		274192	Clamp	1
20		195938	Stud	1
21		17817	Fitting Plug	1
22		121181	Clamp	1
23		16828	Capscrew	1
24		188541	Cover Plate	1
24		150774	Gasket	1
25		16708	Screw	5
25		190887	Seal	5
26		15962	Fitting	1
27		17829	Fitting Plug	2
28		14385	Fitting	1
29		287635	Bracket	1
30		18460	Capscrew	4
31		.....	Lock-Off Filter	1
		☞	Figure 34	
32		14358	Fitting	1
33		52501	Fitting Elbow	1
33	a	16124	Adapter	1
34		14273	Fitting	1
34	a	52501	Fitting Elbow	1
35		303010	Tube	1
36		287632	Hose	1
37		.....	Converter	1
		☞	Figure 36	
38		14273	Fitting	1
38	a	14358	Fitting	1
39		125305	Fitting	1
40		15154	Lockwasher	4
41		17343	Fitting	1
42		210402	Hose	1
43		130845	Hose Clamp	4
44		250577	Hose	1
45		250591	Fitting	1
46		250576	Hose	1
47		250592	Fitting	1
48		289150	Clamp	3
49		216197	Fitting Elbow	1
50		175323	Stud	2
50		15006	Nut	2
51		250583	Hose	1
51	b	265914	Hose	1
52		149934	Gasket	1
52		145949	Cover	1
53		199566	Capscrew	2
54		321482	Governor	1
55		16124	Adapter	1
56		168718	Hose Clamp	2
57	b	322641	Solenoid	1
58		15334	Fitting	1
59		42598	Fitting	1
60		.....	Carburetor	1
		☞	Figure 30	
61		213798	Fitting	1
62		172654	Tank	1
63		15963	Fitting	1
64		197038	Gauge	1
64	c	344231	Gauge	1
65		200170	Relief Valve	1
65		344228	Adapter	1
65		200172	Rain Cap	1
66		344229	Float Gauge	1
66	a	374927	Float Gauge	1
66	c	197040	Float Gauge	1
66	c	374927	Float Gauge	1
67		233908	Valve	1
67		124010	Coupler	1

a Retractable Overhead Guard
b Type LPS
c Optional

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FUEL
LPG
FIRST USED ON S/N D2D-9242 D2T-1752
(Figure 28)



PARTS-SERVICE GRAM	
ITEM	GRAM
5, 28, 34, 27	E-E-36

FUEL
LPG
FIRST USED ON S/N D2D-9242 D2T-1752

REF	PART NO.	NAME OF PART	QTY
1	[a] 321746	Tube	1
1	[b] 329426	Tube	1
2	181082	Hose	1
3	190421	Hose	1
4	101569	Clamp	2
5	175347	Fitting	2
6	97999	Disconnect	1
7	17216	Fitting	1
8	101809	Relief Valve	1
9	14358	Fitting	1
10	14273	Fitting	2
11	16815	Capscrew	4
11	15056	Nut	4
12	.....	Lock-Off Filter	1
		☞ Figure 34	
13	195938	Stud	1
13	15056	Nut	1
14	274192	Clamp	1
15	287635	Bracket	1
16	191805	Fitting	1
17	17343	Fitting	2
18	1151268	Hose	1
19	303010	Tube	1
20	[a] 121181	Clamp	1
20	[b] 178119	Clamp	1
21	.....	Converter	1
		☞ Figure 36	
22	250591	Fitting	1
23	250592	Fitting	1
24	[a] 16828	Capscrew	1
24	[a] 15156	Lockwasher	1
25	18460	Capscrew	4
25	15154	Lockwasher	4
26	.....	Carburetor	1
		☞ Figure 30	
27	[a] 321731	Governor	1
27	[b] 321482	Governor	1
28	[a] 195771	Gasket	2
28	[b] 181763	Gasket	2
29	250577	Hose	1
30	250576	Hose	1
31	125305	Fitting	1
32	130845	Hose Clamp	4
33	289150	Clamp	3
34	175323	Stud	2
34	15006	Nut	2
35	42598	Fitting	1
35	[c] 15334	Fitting	1
36	168718	Hose Clamp	4
37	[d] 17817	Fitting Plug	1
37	[e] 329333	Plug	1
38	196303	Pin	1
38	[f] 313777	Pin	1
38	15058	Nut	1
38	[f] 292656	Nut	1
38	15158	Lockwasher	1
38	[f] 292683	Lockwasher	1
38	[g] 207169	Pin	1
38	[g] 221354	Locknut	1
39	145949	Cover	1
39	149934	Gasket	1
40	199566	Capscrew	2
41	150774	Gasket	1
41	188541	Cover Plate	1
42	16708	Screw	5
42	77610	Washer	5
43	17829	Fitting Plug	2
44	14385	Fitting	1
45	15962	Fitting	1
46	210402	Hose	1
47	213798	Fitting	1
48	15156	Lockwasher	7
49	216197	Fitting Elbow	1

[a] Last Used On S/N D2D-10952
[b] First Used On S/N D2D-10953
[c] LPS
[d] Last Used On S/N D2D-12883
[e] First Used On S/N D2D-12884
[f] First Used on S/N D2D-13219
[g] United Kingdom
[h] Last Used on S/N D2D-13604
[k] First Used on S/N D2D-13605
[m] Optional

(CONTINUED ON NEXT PAGE)

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FUEL
LPG
FIRST USED ON S/N D2D-9242 D2T-1752

REF		PART NO.	NAME OF PART	QTY
50	h	248816	Bumper	2
50	k	379663	Bumper	1
50	h	227173	Screw	4
50	k	227173	Screw	2
51	a	250583	Hose	1
51	ca	265914	Hose	1
51	b	336148	Hose	1
51	b	318933	Tube	1
51	cb	339691	Tube	1
52		250590	Eye (Rod End)	4
53		287634	Hose	1
54		15134	Washer	4
55	c	322641	Solenoid	1
56		196287	Tank Bracket	1
56	g	207170	Tank Bracket	1
56	f	374264	Tank Bracket	1
57		196297	Latch	2
57		18479	Capscrew	1
57		221342	Locknut	1
58		147294	Nut	2
59		14358	Fitting	1
59	g	16863	Fitting	1
60		181082	Hose	1
61		172654	Tank	1
62		15963	Fitting	1
63		197038	Gauge	1

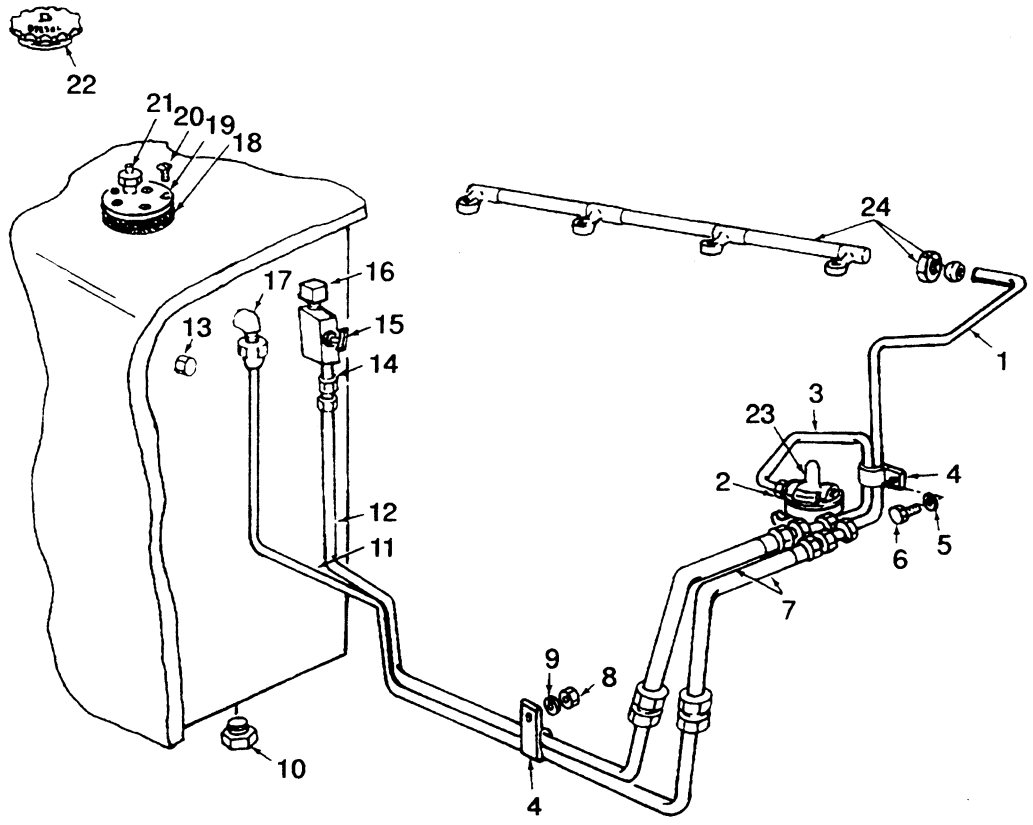
REF		PART NO.	NAME OF PART	QTY
63	m	344231	Gauge	1
63	m	374927	Float Gauge	1
64		200170	Relief Valve	1
64		344228	Adapter	1
64		200172	Rain Cap	1
65		344229	Float Gauge	1
65	m	197040	Float Gauge	1
66		233908	Valve	1
66		124010	Coupler	1
67	c	278957	Diverter	1
68	c	261164	Foam Tape	AR
69	f	306008	Strap	1
70	f	222675	Locknut	4
71	f	15010	Nut	4
72	f	374265	Stud	4

a Last Used On S/N D2D-10952
b First Used On S/N D2D-10953
c LPS
d Last Used On S/N D2D-12883
e First Used On S/N D2D-12884
f First Used on S/N D2D-13219
g United Kingdom
h Last Used on S/N D2D-13604
k First Used on S/N D2D-13605
m Optional

(CONTINUED FROM PREVIOUS PAGE)

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FUEL
DIESEL
(Figure 29)

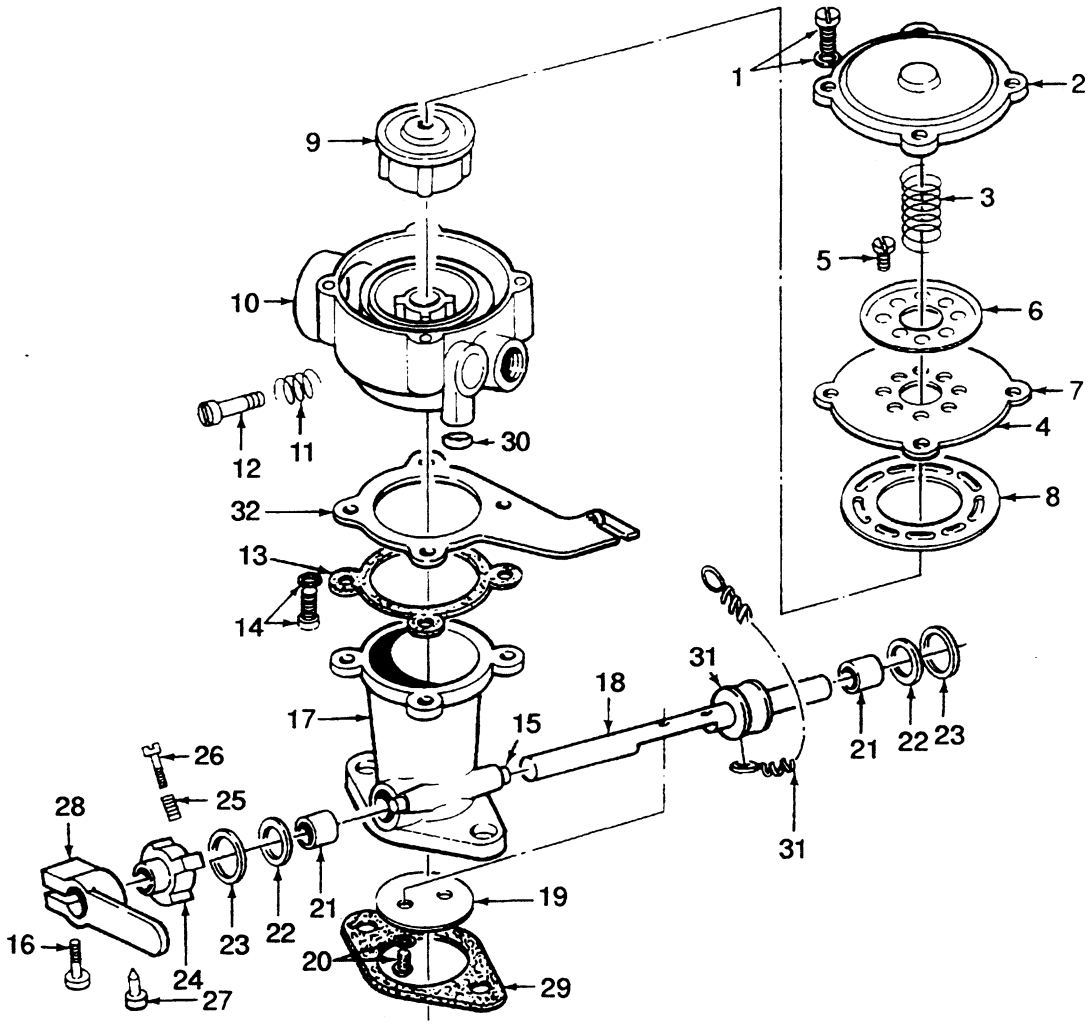


REF	PART NO.	NAME OF PART	QTY
1	218912	Tube	1
2	985222	Nut	1
2	16114	Fitting	1
3	191826	Tube	1
4	191828	Clamp	2
5	15156	Lockwasher	1
6	18536	Capscrew	1
7	191829	Hose	2
8	15055	Nut	1
9	15155	Lockwasher	1
10	15962	Fitting	1
11	199072	Tube	1
12	218615	Tube	1
13	17829	Fitting Plug	1
14	16115	Fitting	1

REF	PART NO.	NAME OF PART	QTY
15	87446	Valve (Needle)	1
16	16151	Fitting	1
17	16126	Fitting	1
18	111561	Gasket	1
19	320149	Sender	1
20	16708	Screw	5
20	350483	Washer (Seal)	5
21	15916	Washer	1
21	15002	Nut	1
22	63899	Protectoseal Cap	1
22	157704	Fuel Cap	1
23	.....	Fuel Pump	1
		☞ Figure 39	
24	.....	Leak Off Pipe	1
		☞ Figure 38	

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CARBURETOR
LPG
(Figure 30)



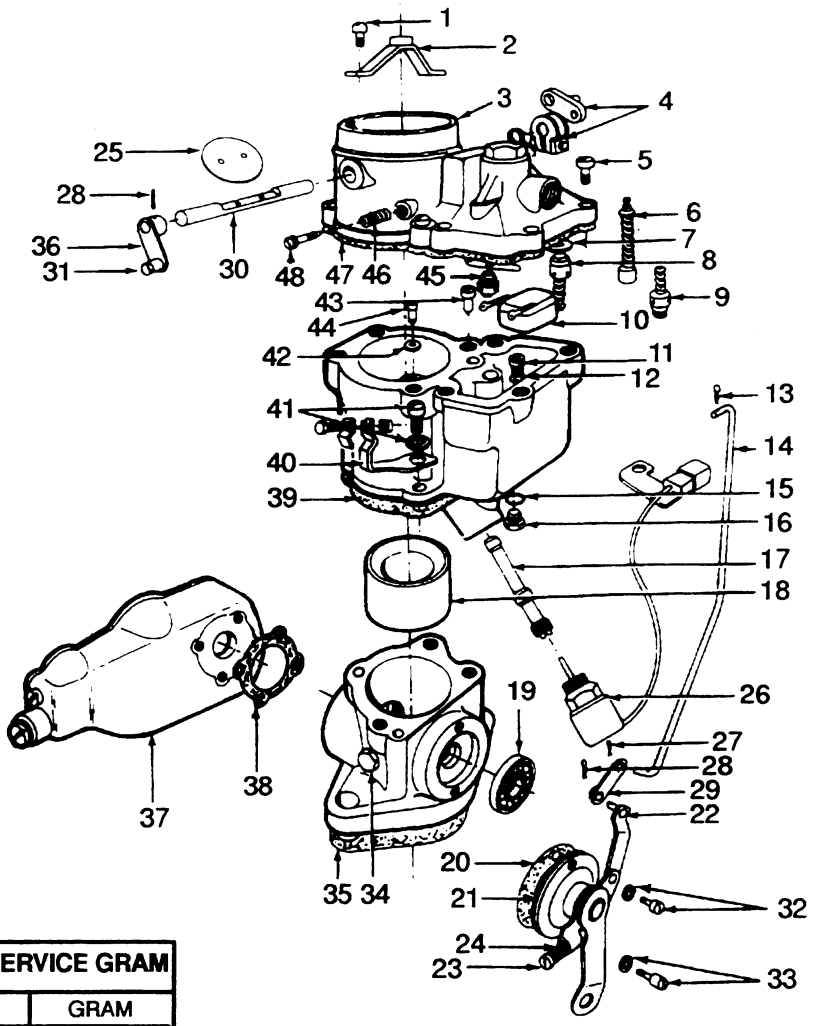
CARBURETOR
LPG

REF	PART NO.	NAME OF PART	QTY
	[a] 196785	Carburetor	1
	[b] 323539	Carburetor	1
1	.....	Screw Assy	4
2	.....	Cover	1
3	.....	Spring	1
4	204782	Valve and Diaphragm	1
5	.....	Screw	4
6	.....	Back-Up Plate	1
7	.....	Diaphragm	1
8	.....	Air Valve Ring	1
9	.....	Valve	1
10	.....	Body	1
11	.....	Spring	1
12	.....	Screw	1
13	204787	Gasket	1
14	.....	Screw Assy	4
15	.....	Pin	2
16	.....	Screw	1
17	204791	Venturi	1
18	204792	Throttle Shaft	1
19	.....	Fly	1
20	.....	Screw Assy	2
21	214121	Bearing	2
21	[b] 204795	Bearing	1
22	204796	Seal	2
23	204797	Retainer (Seal)	2
24	262175	Stop Lever	1
25	.....	Spring	1
26	.....	Screw	1
27	.....	Screw	1
28	.....	Throttle Lever	1
29	204827	Gasket	1
30	.....	Plug	1
31	256199	Throttle Spring	1
31	.....	Grommet	1
32	.....	Bracket	1

[a] Last Used On S/N D2D-1947
[b] First Used On S/N D2D-1948 D2T-1501

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CARBURETOR
GASOLINE
LAST USED ON S/N D2D-1947
(Figure 31)



PARTS-SERVICE GRAM	
ITEM	GRAM
212342	E-B-21

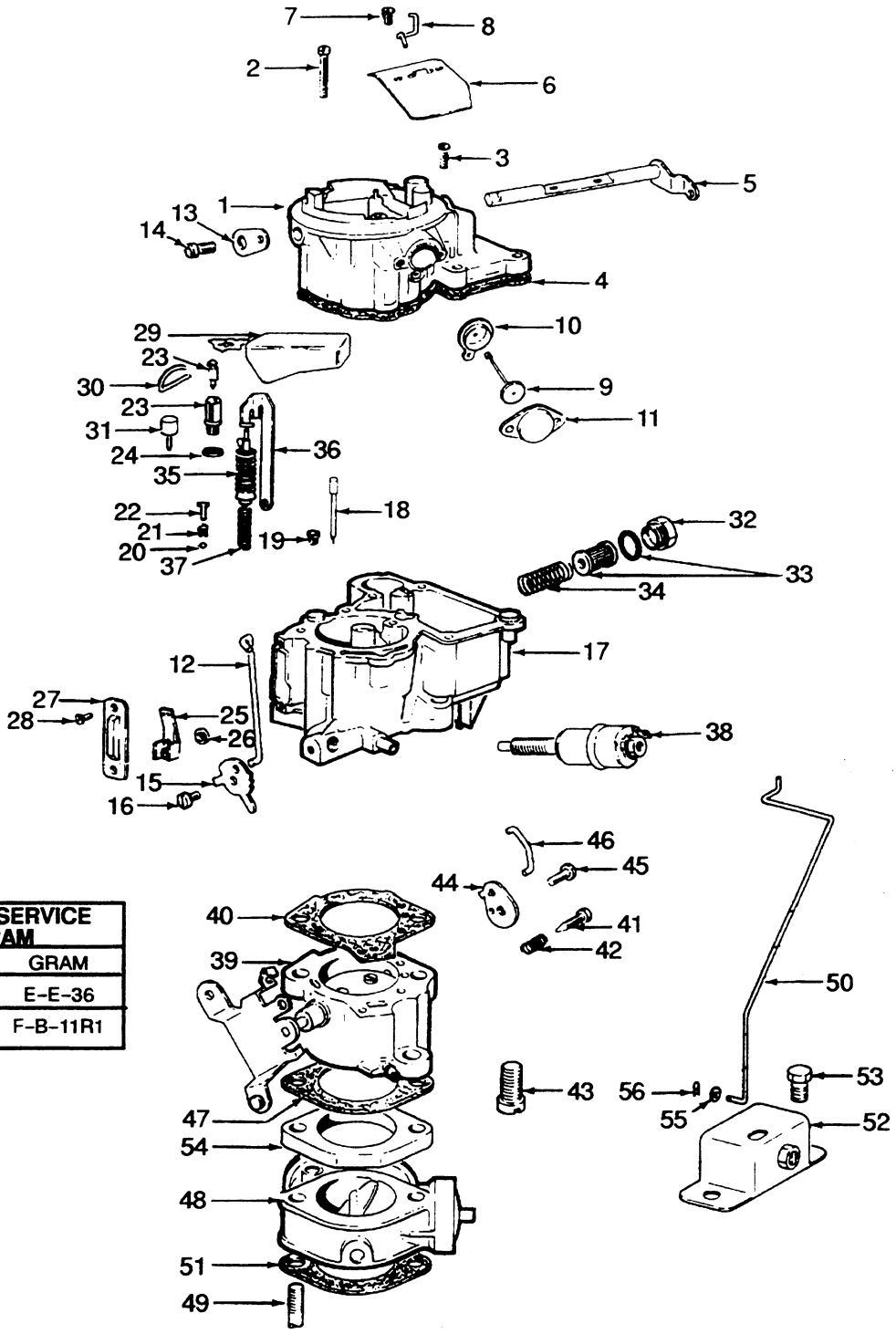
CARBURETOR
GASOLINE
LAST USED ON S/N D2D–1947

REF		PART NO.	NAME OF PART	QTY
		212342	Carburetor	1
1		56759	Screw Assy	2
2		218167	Bracket	1
3		.....	Body	1
4		218165	Lever and Stop	1
5		56754	Screw	6
6		254971	Pump	1
6	a	.....	Pump Piston	1
7	a	.....	Washer	1
8	a	.....	Vacuum Cylinder	1
9		254970	Valve	1
10		56013	Float	1
10	a	.....	Axle	1
11		254969	Main Jet	1
12	a	.....	Washer	1
13	a	.....	Pin	1
14		218173	Connector Rod	1
15	a	.....	Washer	1
16		56014	Plug	1
17		218277	Discharge Jet	1
18		218275	Venturi	1
19	a	254967	Race (Inner)	1
19	a	.....	Ball	1
20	a	.....	Gasket	1
21		244702	Shaft and Lever	1
22		254968	Lever and Stop	1
23		140981	Spring	1
24		140980	Screw	1
25		177830	Plate	1
26		218169	Solenoid (12V)	1
27	a	218177	Pin	1
28		221934	Spring Pin	1
29		218172	Advance Lever	1
30		218163	Choke Shaft	1
31	a	.....	Screw	1
32		218254	Screw Assy	1
33		218178	Screw	1
33		15919	Lockwasher	1
34		56014	Plug	1
35	a	.....	Gasket	1
36		218164	Lever	1
37		254965	Governor	1
38	a	218286	Gasket	1
39	a	.....	Gasket	1
40		218166	Bracket	1
40	a	.....	Screw Assy	1
41		56767	Screw Assy	2
42	a	.....	Washer	1
43		128079	Jet (Idle)	1
44	a	.....	Valve	1
45	a	.....	Valve and Seat	1
46		56756	Spring	1
47	a	.....	Gasket	1
48	a	.....	Screw (Idle)	1

a Included In Repair Kit 244706

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CARBURETOR
GASOLINE
USED ON S/N D2D-1948 D2T-1501 THRU D2D-9241 D2T-1751
(Figure 32)



PARTS-SERVICE GRAM	
ITEM	GRAM
49, 52	E-E-36
38	F-B-11R1

HYSTER

CARBURETOR
GASOLINE
USED ON S/N D2D-1948 D2T-1501 THRU D2D-9241 D2T-1751

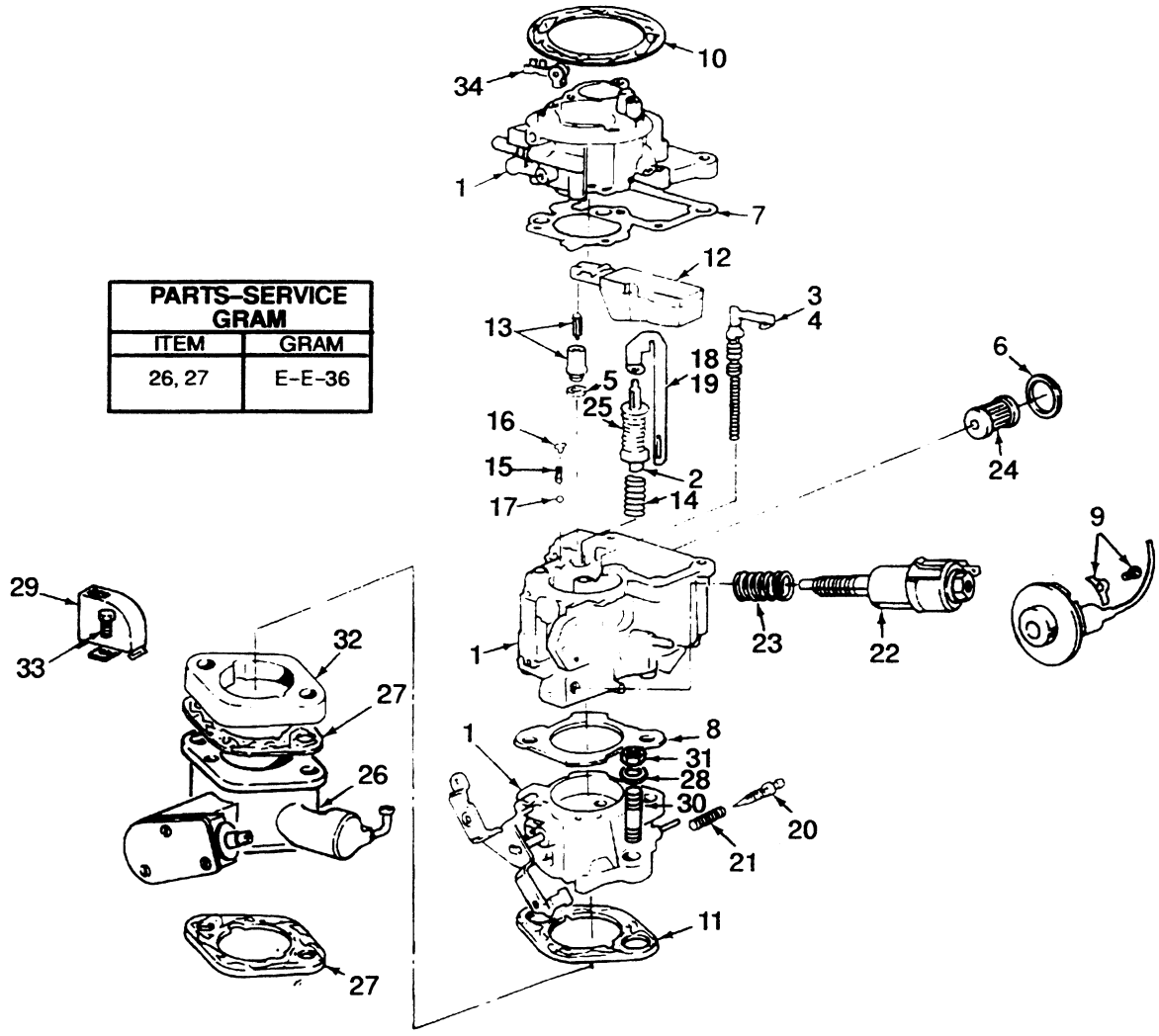
REF		PART NO.	NAME OF PART	QTY
	a	273330	Carburetor	1
	b	275899	Carburetor	1
1		.....	Cover	1
2		.....	Screw	3
3		.....	Screw	3
4	cd	.....	Gasket	1
5		275228	Shaft and Lever	1
6		.....	Choke Valve	1
7		.....	Screw	2
8		.....	Lever	1
9		275227	Link and Head	1
10	c	.....	Diaphragm	1
11		.....	Cover	1
12		275230	Rod (Choke)	1
13		.....	Lever (Choke)	1
14		.....	Screw	1
15		275232	Cam (Fast Idle)	1
16		172116	Screw	1
17		.....	Bowl (Float)	1
18		.....	Tube	1
19	c	.....	Main Jet	1
20	c	.....	Ball	1
21	c	.....	Spring	1
22	c	.....	Guide	1
23	c	.....	Needle and Seat	1
24	cd	.....	Gasket	1
25		.....	Compensator	1
26	d	.....	Gasket	1
27		.....	Cover	1
28		.....	Screw	2
29	c	.....	Float	1
30		.....	Pin	1
31		.....	Power Valve	1
32		.....	Filter Nut	1
33	cd	319022	Fuel Filter	1
34		.....	Spring	1
35	c	172131	Pump	1
36	c	.....	Pump Lever	1
37	c	.....	Spring	1
38		319021	Solenoid (Idle)	1
39		.....	Body	1
40	cd	.....	Gasket	1
41	a	275251	Screw (Idle)	1
41	cb	280298	Screw (Idle)	1
42	c	.....	Spring	1
43		.....	Screw	1
44		275245	Kit (Power Linkage)	1
45		.....	Screw	1
46		275246	Pump Lever Link	1
47	cd	275375	Gasket	1
48		321482	Governor	1
49		182942	Stud	2
50		274179	Rod (Choke)	1
51		195771	Gasket	2
52		322643	Control	1
53		239505	Capscrew	2
54		273328	Spacer	1
55		197065	Washer	1
56		274184	Cotter Pin	1

a Last Used On S/N D2D-3625
b First Used On S/N D2D-3626
c Included In Overhaul Kit 339329
d Included In Gasket Kit 321748

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CARBURETOR
GASOLINE
FIRST USED ON S/N D2D-9242 D2T-1752
(Figure 33)

PARTS-SERVICE GRAM	
ITEM	GRAM
26, 27	E-E-36



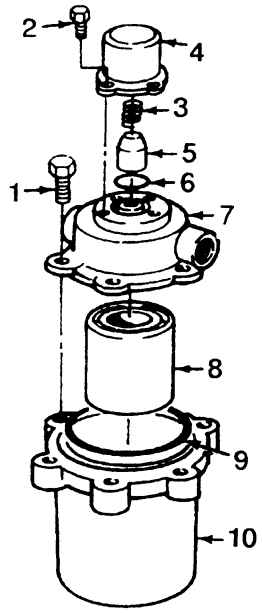
CARBURETOR
GASOLINE
FIRST USED ON S/N D2D-9242 D2T-1752

REF		PART NO.	NAME OF PART	QTY
1		319018	Carburetor	1
2	ab	.....	Seal	1
3	ab	.....	Seal	1
4	ab	.....	Retainer	1
5	ab	.....	Gasket	1
6	ab	.....	Gasket	1
7	ab	.....	Gasket	1
8	ab	.....	Gasket	1
9	ab	.....	Retainer	1
10	ab	.....	Gasket	1
11	ab	195771	Gasket	1
12	b	.....	Float Gauge	1
13	b	.....	Needle and Seat	1
14	b	.....	Spring	1
15	b	.....	Spring	1
16	b	.....	Guide	1
17	b	.....	Ball	1
18	b	.....	Bushing	1
19	b	.....	Pump and Plunger	1
20	b	.....	Needle	1
21	b	.....	Spring	1
22		319021	Solenoid (Idle)	1
23		.....	Spring	1
24		319022	Fuel Filter	1
25		327626	Pump	1
26		321482	Governor	1
27		181763	Gasket	2
28		15920	Lockwasher	1
29		322643	Control	2
30		182942	Stud	2
31		15026	Nut	2
32		273328	Spacer	1
33		239505	Capscrew	2
34		272128	Clip	1

[a] Included In Repair Kit 321748
[b] Included In Overhaul Kit 339329

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LOCK-OFF FILTER
LAST USED ON S/N D2D-5437
(Figure 34)



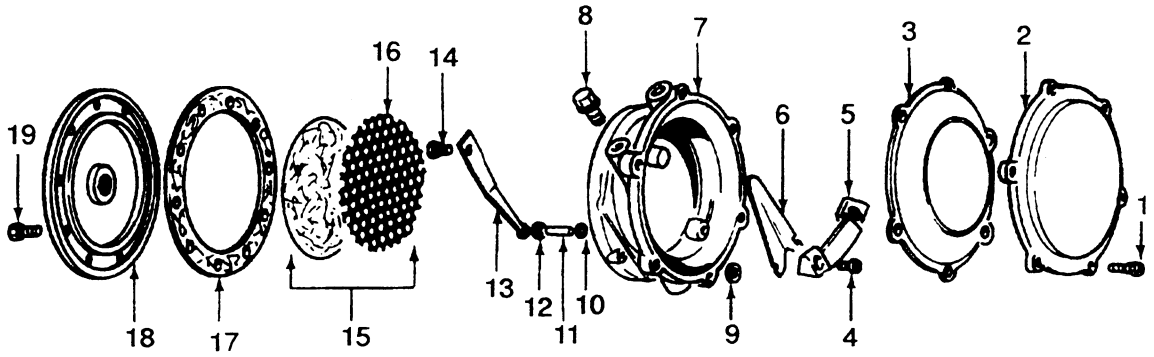
REF	PART NO.	NAME OF PART	QTY
	196191	Lock-Off Filter	1
1	16718	Screw	6
2	220326	Screw	4
3	.....	Spring	1
4	.....	Solenoid	1
5	.....	Poppet	1
6	203779	O-Ring	1

REF		PART NO.	NAME OF PART	QTY
7		.....	Body	1
8	a	.....	Filter	1
9	a	.....	O-Ring	1
10		.....	Bowl	1

[a] Included In Filter Kit 203780

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LOCK–OFF FILTER
FIRST USED ON S/N D2D–5438
(Figure 35)

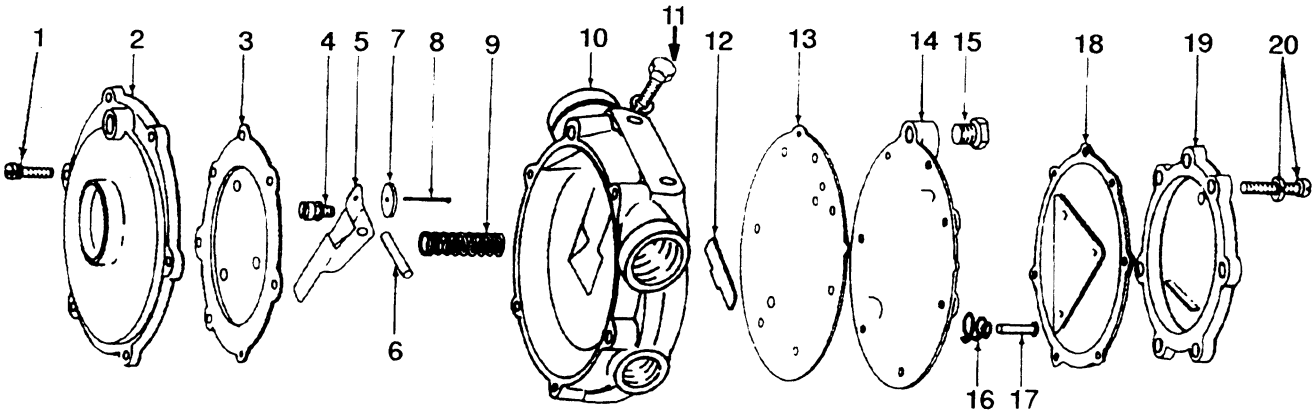


REF		PART NO.	NAME OF PART	QTY
		258321	Lock–Off Filter	1
1	a	.....	Screw	6
2		.....	Cover	1
3	a	.....	Diaphragm	1
4		.....	Screw	2
5		.....	Fulcrum	1
6		.....	Lever	1
7		.....	Body	1
8		.....	Screw	2
9		.....	Washer	1
10	a	.....	Seal	1
11		.....	Pin	1
12	a	.....	Valve Seat	1
13		.....	Spring	1
14		.....	Screw	1
15	a	.....	Filter	1
16		.....	Screen	1
17	a	.....	Gasket	1
18		.....	Cover	1
19	a	.....	Screw	10

[a] Included In Repair Kit 263958

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CONVERTER
LPG
(Figure 36)



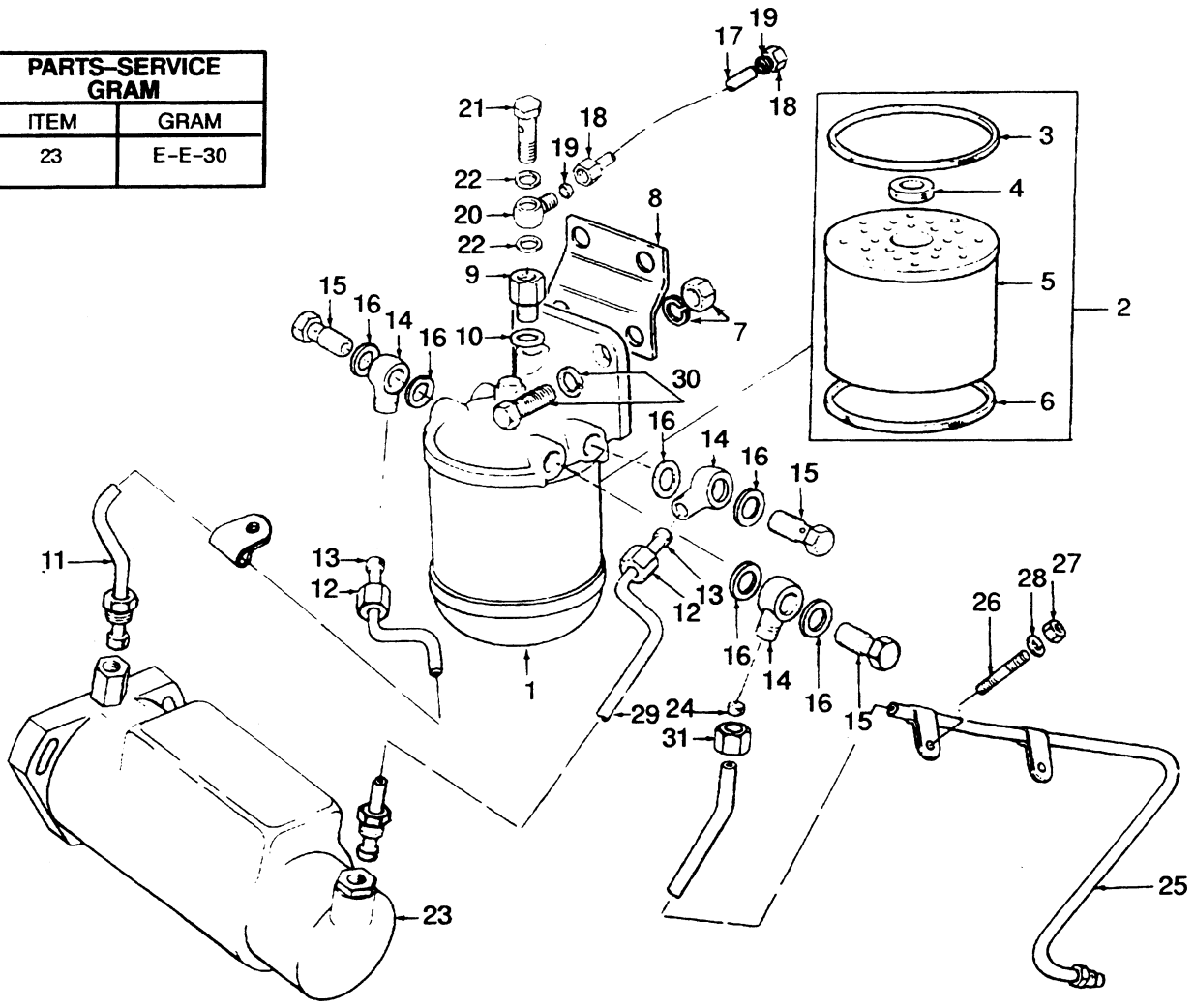
REF		PART NO.	NAME OF PART	QTY
		196193	Converter (LPG)	1
1	a	.....	Screw Assy	6
2		.....	Cover	1
3	a	.....	Diaphragm	1
4	a	.....	Screw Assy	1
5		204829	Lever	1
6		204830	Pin	1
7	a	.....	Seat	1
8	a	.....	Pin	1
9		204831	Spring	1
10		.....	Body	1
11		.....	Screw Assy	2
12	a	.....	Seat	1
13	a	.....	Gasket	1
14		.....	Plate	1
15		15483	Fitting	1
16		204835	Spring	1
17	a	.....	Pin	1
18	a	.....	Diaphagm	1
19		.....	Cover	1
20	a	.....	Screw Assy	7

a Included In Repair Kit 204837

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FUEL FILTER
DIESEL
(Figure 37)

PARTS–SERVICE GRAM	
ITEM	GRAM
23	E-E-30

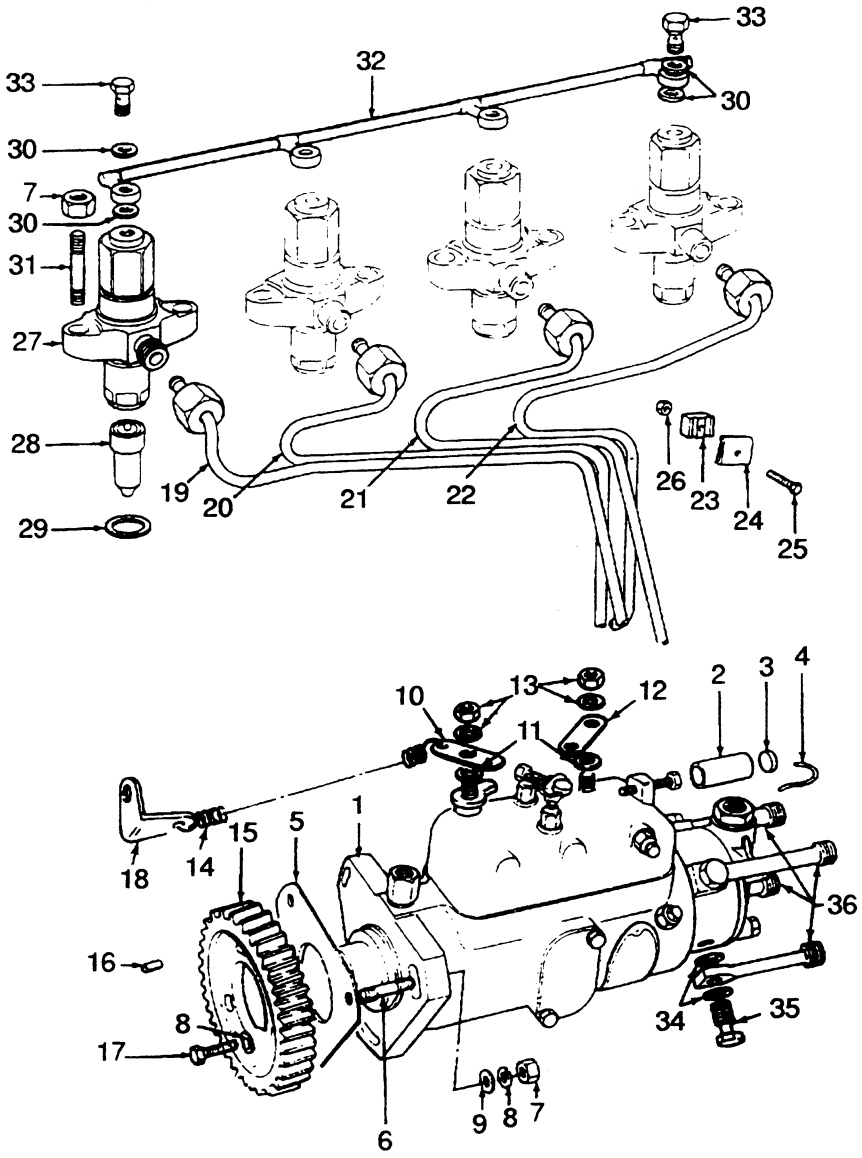


REF	PART NO.	NAME OF PART	QTY
1	173940	Fuel Filter	1
2	3000087	Element Kit	1
3	292782	Ring (Top)	1
4	124239	Seal	1
5	.....	Element	1
6	292781	Ring (Bottom)	1
7	15156	Lockwasher	2
7	15006	Nut	2
8	252785	Bracket	1
9	985228	Valve	1
10	983348	Washer	1
11	245905	Return Pipe	1
12	158186	Nut	2
13	158187	Sleeve	2
14	133590	Fitting	3
15	982951	Bolt	3
16	981260	Washer	6

REF	PART NO.	NAME OF PART	QTY
17	245925	Fuel Pipe	1
18	152609	Nut	2
19	152608	Sleeve	2
20	980763	Fitting	1
21	167510	Bolt	1
22	983348	Washer	2
23	.....	Fuel Injection Pump	1
		☞ Figure 38	
24	167508	Sleeve	1
25	245926	Pipe	1
26	245793	Stud	1
27	15005	Nut	1
28	15155	Lockwasher	1
29	245938	Pipe	1
30	985576	Bolt	1
30	992700	Washer	1
31	167507	Nut	1

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FUEL INJECTION
DIESEL
(Figure 38)



PARTS–SERVICE GRAM	
ITEM	GRAM
Fuel Injection	E-E-30

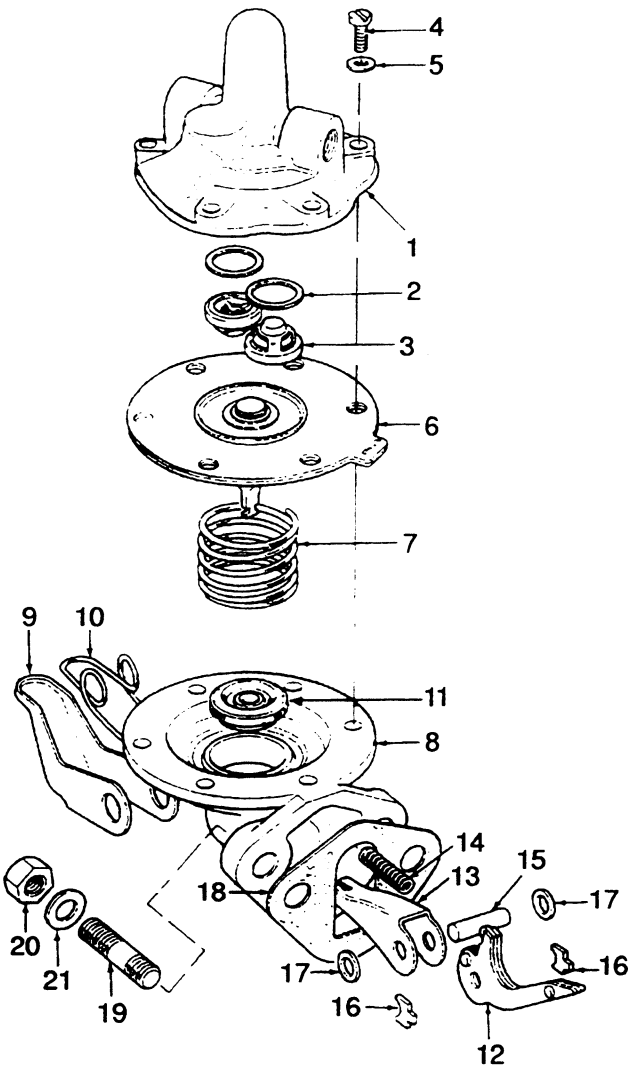
FUEL INJECTION
DIESEL

REF		PART NO.	NAME OF PART	QTY
1		249916	Fuel Injection Pump	1
2		134958	Sleeve	1
3		151315	Seal	1
4		151316	Wire	1
5	a	982352	Gasket	1
6		158142	Stud	3
7		15005	Nut	11
8		15155	Lockwasher	6
9		18515	Washer	3
10		134948	Lever	1
11		134949	Cap	2
12		158193	Throttle Lever	1
13		161678	Nut	2
13		984217	Washer	2
14		256200	Spring	1
15		271923	Gear	1
16		159105	Dowel	1
17		983311	Bolt	3
18		256201	Bracket	1
19		245929	Pipe (#1)	1
20		245930	Pipe (#2)	1
21		245931	Pipe (#3)	1
22		245932	Pipe (#4)	1
23		99779	Damper	4
24		99780	Plate	4
25		220501	Screw	2
26		132401	Locknut	2
27		332789	Atomizer	4
28		332790	Nozzle	1
29	b	990615	Washer	4
30		985567	Washer	8
31		245935	Stud	8
32		245936	Leak Off Pipe	1
33		983340	Capscrew	4
34		173996	Washer	8
35		165371	Pressure Valve	4
36		984253	Fitting	1
36		145696	Fitting	3

[a] Included In Bottom Gasket Kit 354163
[b] Included In Top Gasket Kit 224900

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FUEL PUMP
DIESEL
(Figure 39)



REF		PART NO.	NAME OF PART	QTY
		245902	Fuel Pump	1
1		.....	Housing	1
2	a	.....	Gasket	2
3	a	.....	Valve	2
4		.....	Screw	6
5		.....	Washer	6
6	a	.....	Diaphragm	1
7		.....	Spring	1
8		.....	Pump Body	1
9		.....	Lever	1
10		.....	Spring	1
11	a	.....	Seal	1
12		.....	Rocker Arm	1

REF		PART NO.	NAME OF PART	QTY
13		.....	Lever	1
14	a	.....	Spring	1
15	a	.....	Pin	1
16	a	.....	Pin Retainer	2
17	a	.....	Washer	2
18	ab	158905	Gasket	1
19		245790	Stud	2
20		15005	Nut	2
21		15155	Lockwasher	2

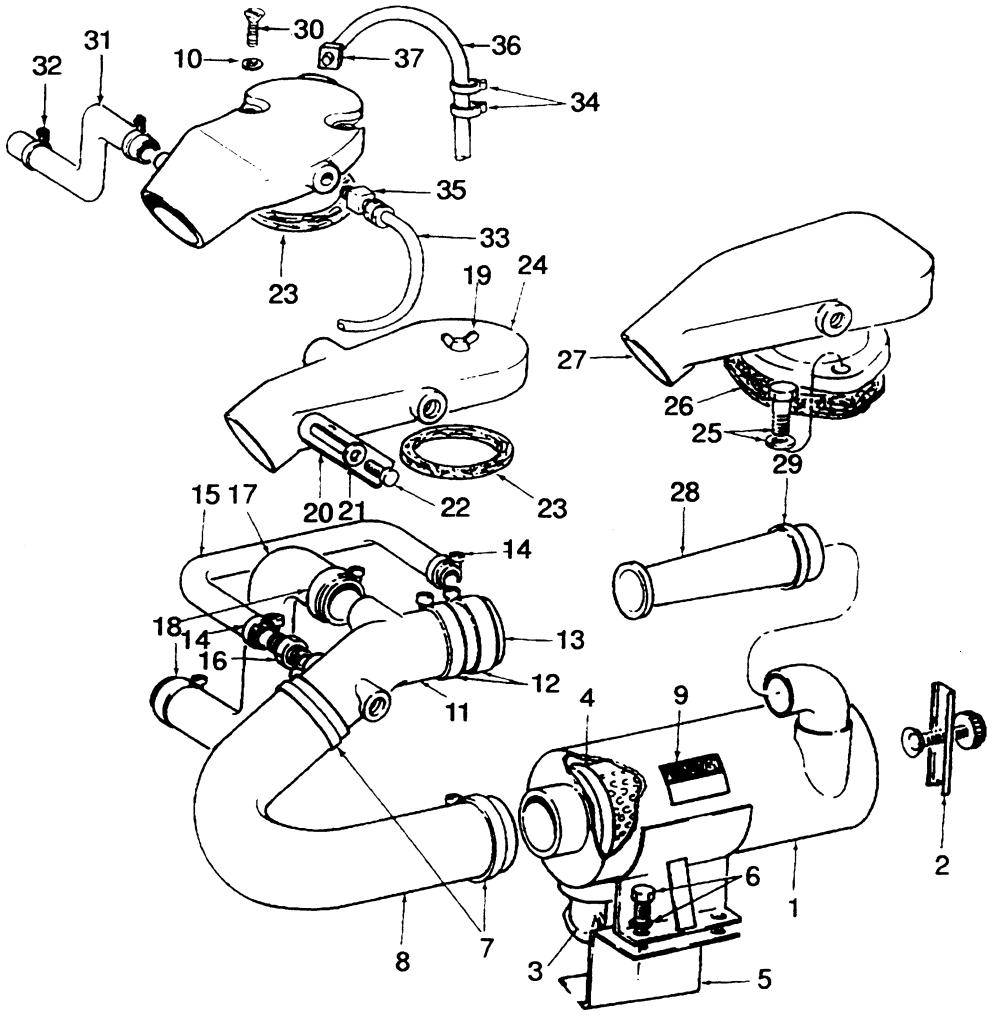
a Included In Repair Kit 148520
b Included In Bottom Gasket Kit 354163

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NOTES

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AIR FILTER
(Figure 40)



AIR FILTER

KEY
A: Gasoline
B: LPG
C: Diesel

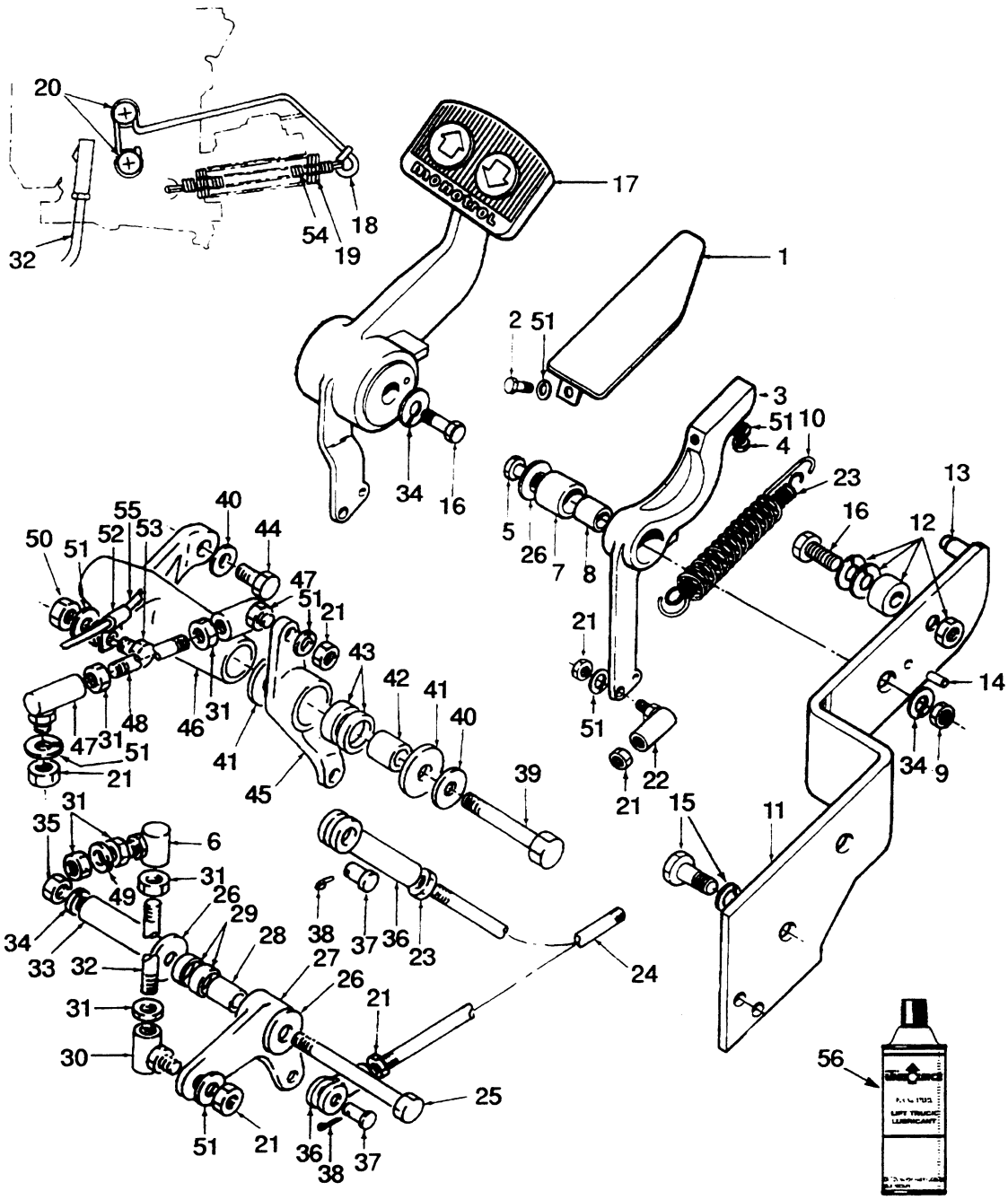
REF		PART NO.	NAME OF PART	QTY A	B	C
1		189634	Air Filter	1	1	1
2		234718	Retainer	1	1	1
3		138253	Dust Unloader	1	1	1
3		130845	Hose Clamp	1	1	1
4		234719	Element	1	1	1
5		261704	Dust Shield	1	1	1
6		18535	Capscrew	2	2	2
6		15156	Lockwasher	2	2	2
7		112989	Hose Clamp	2	2	2
8		189628	Hose	..	1	1
8		271336	Hose	1	..	..
9		194172	Decal-Caution	..	..	1
10	a	310975	Washer (Seal)	2	..	..
11		197388	Air Duct	..	1	..
12		112989	Hose Clamp	..	2	..
13		197387	Hose	..	1	..
14		168718	Hose Clamp	..	2	..
15		66773	Hose	..	1	..
16		16746	Fitting	..	1	..
17		189633	Hose	..	1	..
18		130845	Hose Clamp	..	2	..
19	b	244696	Screw	1	..	..
19	b	254255	Seal	1	..	..
20	b	261724	Brace	1	..	..
21	b	15134	Washer	1	..	..
22	b	190057	Capscrew	1	..	..
23		275740	Gasket	1	..	..
24	b	261376	Air Inlet Duct	1	..	..
24	ca	271332	Air Inlet Duct	1	..	..
24	d	323525	Air Inlet Duct	1	..	..
25		16825	Capscrew	..	..	3
25		15155	Lockwasher	..	..	3
26		189626	Gasket	..	..	1
27		189627	Air Inlet Duct	..	..	1
28		253272	Silencer	..	..	1
29		112989	Hose Clamp	..	..	1
30	a	276425	Screw	2	..	..
31	a	271346	Hose	1	..	..
32	a	130845	Hose Clamp	2	..	..
33	ca	225465	Hose	1	..	..
33	ca	168718	Hose Clamp	2	..	..
34	a	168718	Hose Clamp	2	..	..
35	ca	222476	Fitting	1	..	..
36	a	360955	Hose	1	..	..
37	a	213798	Fitting	1	..	..

a First Used On S/N D2D-1948
b Last Used On S/N D2D-1947
c Last Used On S/N D2D-9241 D2T-1751
d First Used On S/N D2D-9242 D2T-1752

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THROTTLE LINKAGE

(Figure 41)



THROTTLE LINKAGE

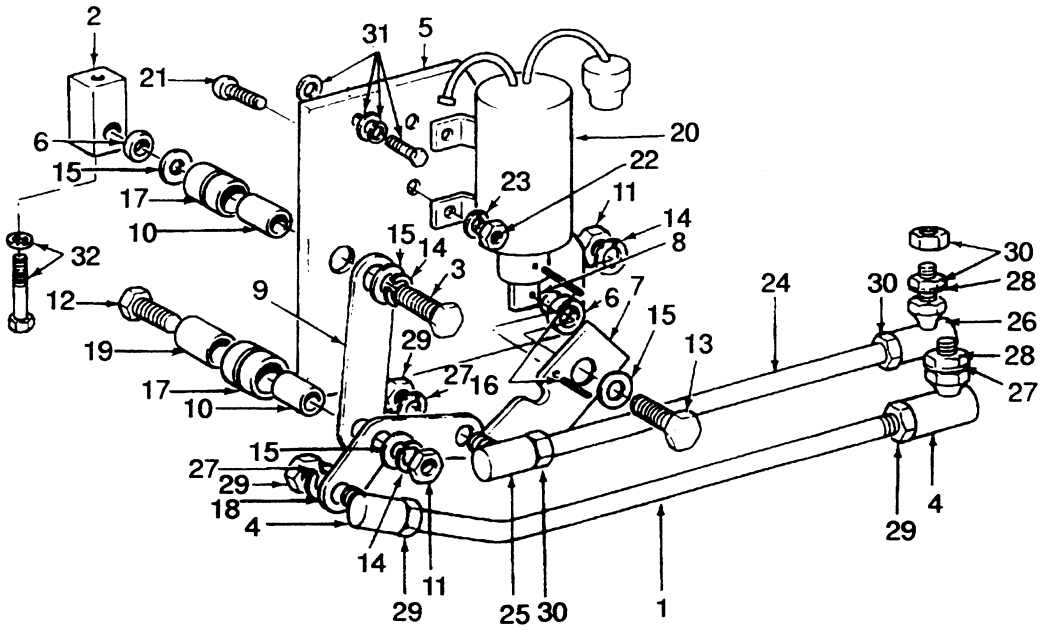
KEY
A: Gasoline and LPG
B: Diesel

REF		PART NO.	NAME OF PART	QTY A	QTY B
1	a	66958	Throttle Pedal	1	1
2	a	133469	Capscrew	1	1
3	a	191989	Lever	1	1
4	a	15004	Nut	1	1
5	a	16376	Capscrew	1	1
6		203010	Ball Joint	1	..
7	a	191990	Bearing	1	1
8	a	191842	Sleeve	1	1
9	a	15056	Nut	1	1
10		282247	Spring	1	1
11	b	195059	Bracket	1	1
11	c	343850	Bracket	1	1
12		15920	Lockwasher	2	2
12		385667	Pedal Stop	1	1
12		222668	Locknut	1	1
13		16066	Groove Pin	1	1
14	d	19866	Spring Pin	1	1
15		18588	Capscrew	2	2
15		15158	Lockwasher	2	2
16		18202	Capscrew	2	2
17	d	.....	Monotrol Pedal	1	1
			☞ Figure 76		
18		273325	Throttle Link	1	..
19		275871	Spring	1	..
20		16708	Screw	2	..
20		197067	Washer	2	..
21		15024	Nut	4	5
22		139024	Ball Joint	1	..
22		139012	Ball Joint	..	1
23		282248	Spring	1	1
24		272123	Link	1	..
24		254263	Link	..	1
25		18549	Capscrew	1	..
26		15176	Washer	3	1
27		272109	Crank	1	..
28		196481	Bushing	1	..
29		196480	Bearing	2	..
30		203010	Ball Joint	1	..
30	e	161252	Ball Joint	1	..
31		15002	Nut	4	2
32		251533	Straight Link	1	..
33		272110	Spacer	1	..
34		15156	Lockwasher	3	2
35		15056	Nut	1	..
36		125	Rod End	1	1
37		126	Pin	1	1
38		15200	Cotter Pin	1	1
39		18532	Capscrew	..	1
40		15155	Lockwasher	..	2
41		15175	Washer	..	2
42		254261	Spacer	..	1
43		1113570	Bearing	..	2
44		16825	Capscrew	..	1
45		254260	Crank	..	1
46		254265	Bracket	..	1
47		161252	Ball Joint	..	2
48		254262	Link	..	1
49		15152	Lockwasher	1	..
50		15054	Nut	..	1
51		15154	Lockwasher	4	6
52		101569	Clamp	..	1
53		18460	Capscrew	..	1
54	f	272162	Spring	1	..
55		.....	Shut-Off Cable	..	1
			☞ Figure 45 and Figure 46		
56		171351	Lubricant	AR	AR

[a] Oil Clutch And Powershift With Forward/ Reverse Lever
[b] Last Used On S/N D2D-1228 D2T-1957
[c] First Used On S/N D2D-1229 D2T-1958
[d] Powershift With Monotrol Pedal
[e] First Used On S/N D2D-1948
[f] GS, LPS, DS

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THROTTLE LINKAGE
TYPE GS
(Figure 42)



REF	PART NO.	NAME OF PART	QTY
	275292	Throttle Linkage	1
1	275863	Rod	1
2	274187	Spacer Block	1
3	16376	Capscrew	1
4	139024	Ball Joint	2
5	272146	Plate	1
6	265093	Bushing	2
7	275572	Latch Plate	1
8	265080	Plate	1
9	275866	Crank	1
10	196481	Bushing	2
11	15056	Nut	2
12	18537	Capscrew	1
13	16815	Capscrew	1
14	15156	Lockwasher	3
15	15176	Washer	4
16	19975	Spring Pin	2
17	196480	Bearing	4

REF	PART NO.	NAME OF PART	QTY
18	272109	Crank	1
19	272154	Bushing	1
20	265106	Solenoid	1
21	16716	Screw	4
22	15049	Nut	4
23	15151	Lockwasher	4
24	275865	Rod	1
25	161252	Ball Joint	1
26	203010	Ball Joint	1
27	15154	Lockwasher	3
28	15152	Lockwasher	1
29	15024	Nut	5
30	15002	Nut	4
31	15155	Lockwasher	1
31	15175	Washer	2
31	16836	Capscrew	1
32	15156	Lockwasher	1
32	18537	Capscrew	1

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ELECTRICAL

ALTERNATOR ..... Page 96

ALTERNATOR
TYPES GS, LPS, DS ..... Page 98

DISTRIBUTOR ..... Page 104

ELECTRICAL
DIESEL ..... Page 88

ELECTRICAL
GASOLINE AND LPG ..... Page 84

INSTRUMENT PANEL
FIRST USED ON S/N D2D-6711 EXCEPT D2D-7412 PS LPG
D2D-6722 PS DIESEL AND GASOLINE D2D-7244 PS LPS
D2D-6813 PS DS/GS D2D-7791 OC ..... Page 94

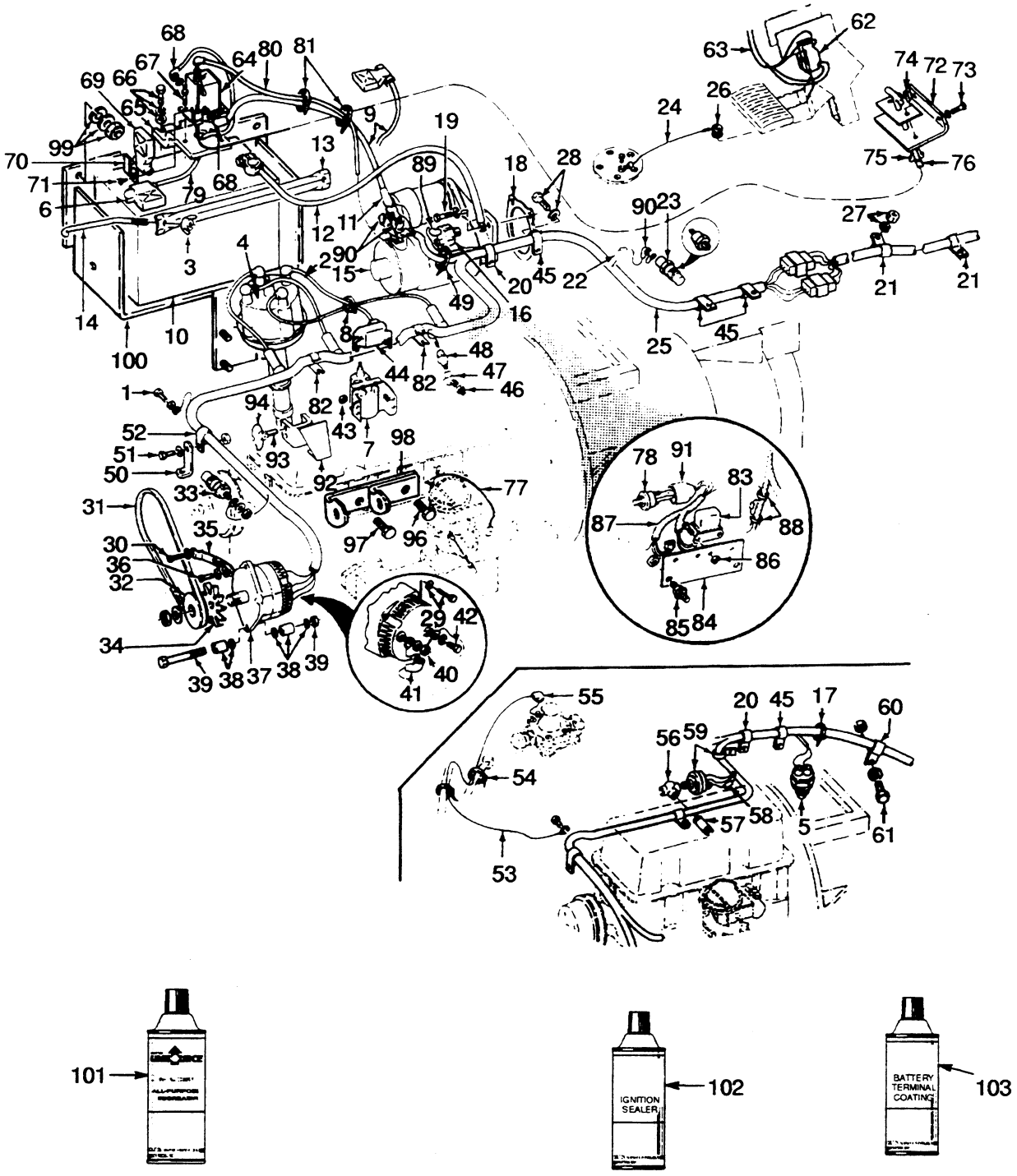
INSTRUMENT PANEL
LAST USED ON S/N D2D-6710 AND D2D-7412 PS LPG
D2D-6721 PS DIESEL AND GASOLINE D2D-7243 PS LPS
D2D-6812 PS DS/GS D2D-7790 OC ..... Page 92

STARTER
DIESEL ..... Page 102

STARTER
GASOLINE AND LPG ..... Page 100

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ELECTRICAL
GASOLINE AND LPG
(Figure 43)



ELECTRICAL
GASOLINE AND LPG

KEY
A: Standard
B: Types GS And LPS

REF		PART NO.	NAME OF PART	QTY A	QTY B
1		18635	Capscrew	1	1
1		15156	Lockwasher	1	1
2	a	272006	Wire	1	1
2	b	323542	Wire Harness	1	1
3		17443	Nut	2	2
4		.....	Distributor	1	1
			☞ Figure 51		
5	c	176409	Switch	1	1
6		257241	Cover	1	1
7	a	345429	Coil	1	1
8		236626	Retainer	2	2
9		213776	Battery Cable (Positive)	1	..
9		265903	Cable	..	1
10		146938	Wet Battery	1	1
10		177894	Dry Battery	1	1
11		204223	Cover	1	1
12		153935	Battery Cable (Negative)	1	1
13		191850	Bracket	1	1
14		191851	Clamp Stud	2	2
14	d	191855	Clamp Stud	2	2
15		.....	Starter	1	1
			☞ Figure 49		
16	e	342274	Pressure Switch	1	1
17		114312	Strap	1	1
18		178470	Gasket	1	1
19		15156	Lockwasher	3	3
19		16805	Capscrew	3	3
20		128408	Clamp	1	1
21		209266	Clamp	2	2
22	e	252738	Wire	1	1
23	e	285123	Temperature Sender	1	1
24		261744	Sender Wire	1	1
25	f	285370	Wire Harness	1	..
25	g	322645	Wire Harness	1	..
25	f	285371	Wire Harness	..	1
25	g	322646	Wire Harness	..	1
26		115700	Grommet	1	1
27		15155	Lockwasher	1	1
27		15055	Nut	1	1
28		15156	Lockwasher	1	1
28		16597	Capscrew	1	1
29		220490	Screw	..	1
29		15916	Washer	..	1
30	h	388319	Capscrew	1	1
30	k	18497	Capscrew	2	2
30	h	15156	Lockwasher	1	1
30	k	15155	Lockwasher	2	2
31	h	188643	V-Belt	1	1
31	k	191845	V-Belt	1	1
32	h	208483	Pulley	1	1
32	k	164083	Pulley	1	1
33		77328	Temperature Sender	1	1
33		15931	Lockwasher	1	1
33		15002	Nut	1	1
34		126358	Fan	1	1
35	h	253992	Brace	1	1
35	k	191843	Adjuster Strap	1	1
36		18497	Capscrew	..	1
36		136749	Capscrew	1	..
36		18515	Washer	1	1
36		15155	Lockwasher	1	1
37		.....	Alternator	1	1
			☞ Figure 47 and Figure 48		
38	k	191842	Sleeve	1	1
38	h	189338	Spacer	1	1
38		261379	Washer	2	2
38		305100	Metric Sleeve	1	1
39		18546	Capscrew	1	1
39		139743	Locknut	1	1
40		128436	Nut	..	1
40		136687	Nut	1	..
40		15915	Lockwasher	1	..
40		221854	Lockwasher	..	1
41		157065	Cover	1	1
42		136681	Capscrew	1	..
42		15155	Lockwasher	1	..
43	a	221706	Nut	2	2
44	a	271688	Coil Cover	1	1
45	e	113341	Clamp	3	3

[a] Last Used On S/N D2D-4327
[b] First Used On S/N D2D-4328
[c] Oil Clutch
[d] First Used On S/N D2D-12884
[e] Powershift
[f] Last Used On S/N D2D-4415
[g] First Used On S/N D2D-4416 D2T-1501
[h] First Used On S/N D2D-2560
[k] Last Used On S/N D2D-2559
[m] LPG
[n] Use 68 Inch Of Bulk Conduit 275496 Order By The Foot
[p] Gasoline

(CONTINUED ON NEXT PAGE)

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ELECTRICAL
GASOLINE AND LPG

KEY
A: Standard
B: Types GS And LPS

REF		PART NO.	NAME OF PART	QTY A	QTY B
46		15372	Fitting	1	1
47		69392	Fitting	1	..
47		12838	Fitting	..	1
48		190252	Pressure Switch	1	1
49		114312	Strap	1	1
50		203639	Bracket	1	1
51		16597	Capscrew	1	1
51		15156	Lockwasher	1	1
51		15056	Nut	1	1
52		164488	Clamp	1	1
53	mf	264111	Wire	1	1
54	mf	114312	Strap	2	2
55	mf	190382	Cover	1	1
56	mf	12838	Fitting	1	1
57	mf	15372	Fitting	1	1
58	mf	196194	Fused Wire	1	1
59	mf	98383	Pressure Switch	1	1
59	d	113341	Clamp	1	1
60	c	113341	Clamp	1	1
61	c	16805	Capscrew	1	1
61	c	15156	Lockwasher	1	1
62	e	88388	Switch	1	1
63	e	245992	Wire Harness	1	1
64		353305	Switch	..	1
64		74322	Bulb	..	1
65		265096	Bracket	..	1
66		16805	Capscrew	..	2
66		15134	Washer	..	2
66		15156	Lockwasher	..	2
67		18460	Capscrew	..	3
67		15154	Lockwasher	..	3
67		15054	Nut	..	3
68		204223	Cover	..	2
68		190383	Cover	..	2
69		257241	Cover	..	1
70		111763	Clamp	..	1
71		134102	Screw	..	1
72		265099	Bracket	..	1
73		16836	Capscrew	..	2
73		15155	Lockwasher	..	2
74		17173	Rivet	..	2
75		265910	Wire	..	1
76	n	.....	Conduit	..	1
77	p	265831	Wire Harness	..	1
78		265832	Pressure Switch	..	1
79		286754	Battery Cable (Positive)	..	1
80		276321	Wire Harness	..	1
81		114312	Strap	..	2
82		273333	Clamp	2	2
83		272156	Relay	..	2
84		272013	Plate	..	1
85		272007	Stud	..	2
85		221706	Nut	..	2
86		133469	Capscrew	..	4
86		221341	Locknut	..	4
87	f	265161	Wire Harness	..	1
87	g	288117	Wire Harness	..	1
88		114312	Strap	..	2
89		204223	Cover	..	1
90		190383	Cover	..	2
90		18500	Washer	..	2
91		190380	Cover	..	1
92		278231	Bracket	1	1
93		278229	Set Screw	2	2
94		277013	Lock Wire	1	1
95		.....	Spark Plug ☞ Figure 11	4	4
96		196898	Capscrew	1	1
97		197853	Screw	1	1
98	k	190944	Bracket	1	1
98	h	179920	Bracket	1	1
99	d	15134	Washer	2	2
99	d	15156	Lockwasher	2	2
99	d	15056	Nut	2	2
100	d	318809	Battery Tray	1	1
101		178297	Degreaser	AR	AR
102		178295	Ignition Sealer	AR	AR
103		178296	Battery Terminal Coating	AR	AR

a Last Used On S/N D2D-4327
b First Used On S/N D2D-4328
c Oil Clutch
d First Used On S/N D2D-12884
e Powershift
f Last Used On S/N D2D-4415
g First Used On S/N D2D-4416 D2T-1501
h First Used On S/N D2D-2560
k Last Used On S/N D2D-2559
m LPG
n Use 68 Inch Of Bulk Conduit 275496 Order By The Foot
p Gasoline

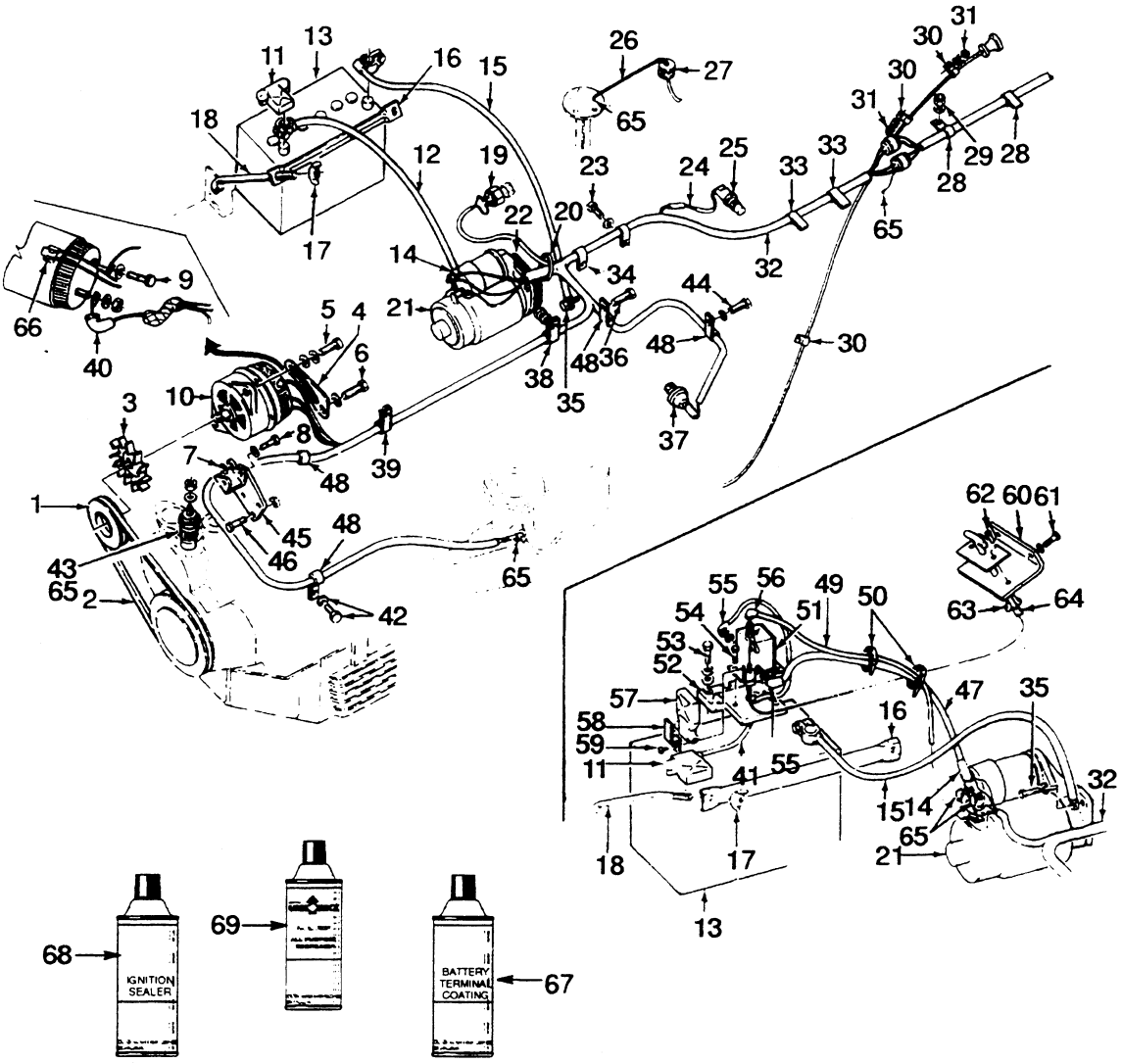
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NOTES

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ELECTRICAL
DIESEL
(Figure 44)



ELECTRICAL
DIESEL

REF		PART NO.	NAME OF PART	QTY
1		191844	Pulley	1
2		100754	V-Belt	1
3		126358	Fan	1
4		191846	Adjuster Strap	1
5	a	18497	Capscrew	1
5		136749	Capscrew	1
5		18515	Washer	1
5		15155	Lockwasher	1
6		16597	Capscrew	1
6		15156	Lockwasher	1
7		191842	Sleeve	1
7		305100	Metric Sleeve	1
7		261379	Washer	1
8		18542	Capscrew	1
8		15156	Lockwasher	1
9		16836	Capscrew	1
9		136681	Capscrew	1
9		15155	Lockwasher	1
10		.....	Alternator	1
			☞ Figure 47 and Figure 48	
11		257241	Cover	1
12		188637	Battery Cable (Positive)	1
13		.....	Battery (12 Volt)	1
14		204223	Cover	1
15		199849	Battery Cable (Negative)	1
16		191854	Bracket	1
17		17443	Nut	2
18		191855	Clamp Stud	2
19	b	342274	Pressure Switch	1
19	ba	204223	Cover	1
20		114312	Strap	1
21		.....	Starter	1
			☞ Figure 50	
22		178470	Gasket	1
23		113341	Clamp	2
23		15156	Lockwasher	2
23		16597	Capscrew	1
24	b	252738	Wire	1
25	b	285123	Temperature Sender	1
25	c	176409	Switch	1
25	ba	190383	Cover	1
25	ca	204223	Cover	1
26		261744	Sender Wire	1
27		115700	Grommet	1
28		209266	Clamp	2
29		15155	Lockwasher	1
29		15055	Nut	1
30		61824	Clamp	3
31		18515	Washer	2
31		15155	Lockwasher	2
31		15055	Nut	2
32		245994	Wire Harness	1
32	a	265830	Wire Harness	1
33		113341	Clamp	2
34		128408	Clamp	1
35		15156	Lockwasher	3
35		16805	Capscrew	3
36		16634	Capscrew	1
36		268288	Spacer	1
37		190252	Pressure Switch	1
38		391484	Clamp	1
38		16642	Capscrew	1
38		15158	Lockwasher	1
39		173246	Clamp	1
40	a	128436	Nut	1
40	a	221854	Lockwasher	1
40		136687	Nut	1
40		15915	Lockwasher	1
40		157065	Cover	1
41	a	265896	Battery Cable (Positive)	1
42		18459	Capscrew	1
42		15127	Washer	1
42		15154	Lockwasher	1
43		77328	Sender-Temp	1
43		15931	Lockwasher	1
43		15002	Nut	1
44		16811	Capscrew	1
44		15156	Lockwasher	1
45		196106	Plate	1
46		18451	Capscrew	3
46		139743	Locknut	3
47	a	265902	Battery Cable (Positive)	1
48		124297	Clamp	4

a Type DS
b Powershift
c Oil Clutch
d Use 68 Inch Of Bulk Conduit 275496-Order By The Foot

(CONTINUED ON NEXT PAGE)

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ELECTRICAL
DIESEL

REF		PART NO.	NAME OF PART	QTY
49	a	276321	Wire Harness	1
50	a	114312	Strap	2
51	a	353305	Switch	1
51		74322	Bulb	1
52	a	265096	Bracket	1
53	a	16805	Capscrew	2
53	a	15134	Washer	2
53	a	15156	Lockwasher	2
54	a	18460	Capscrew	3
54	a	15154	Lockwasher	3
54	a	15054	Nut	3
55	a	204223	Cover	2
56	a	190383	Cover	2
57	a	257241	Cover	1
58	a	111763	Clamp	1
59	a	134102	Screw	1
60	a	265099	Bracket	1
61	a	16836	Capscrew	2

REF		PART NO.	NAME OF PART	QTY
61	a	15155	Lockwasher	2
62	a	17173	Rivet	2
63	a	265910	Wire	1
64	da	.....	Conduit	1
65	a	190383	Cover	3
65	a	18500	Washer	3
66	a	15916	Washer	1
66	a	220490	Screw	1
67		178296	Battery Terminal Coating	AR
68		178295	Ignition Sealer	AR
69		178297	Degreaser	AR
67		178296	Battery Terminal Coating	AR

[a] Type DS
[b] Powershift
[c] Oil Clutch
[d] Use 68 Inch Of Bulk Conduit 275496-Order By The Foot

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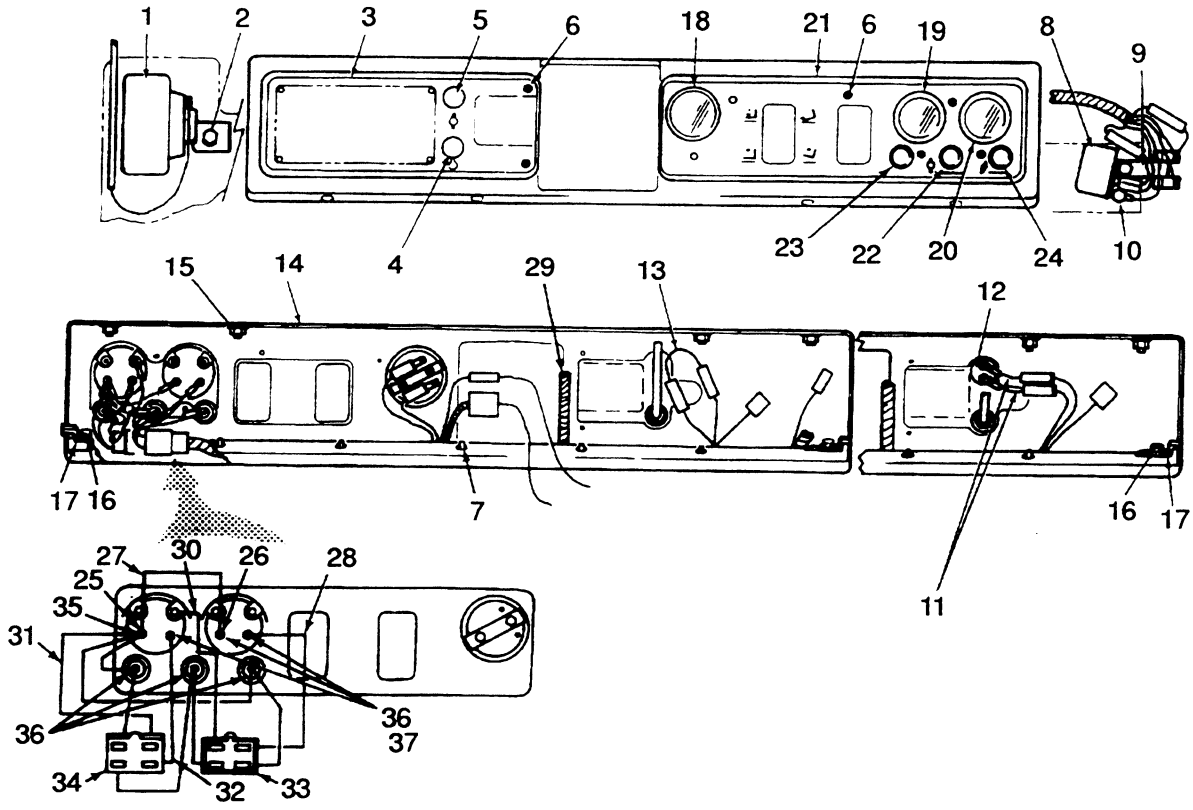
NOTES

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INSTRUMENT PANEL

LAST USED ON S/N D2D-6710 AND D2D-7412 PS LPG D2D-6721 PS DIESEL AND GASOLINE D2D-7243 PS LPS D2D-6812 PS DS/GS D2D-7790 OC

(Figure 45)



INSTRUMENT PANEL

LAST USED ON S/N D2D-6710 AND D2D-7412 PS LPG D2D-6721 PS DIESEL AND GASOLINE D2D-7243 PS LPS D2D-6812 PS DS/GS D2D-7790 OC

REF		PART NO.	NAME OF PART	QTY
1		126364	Horn	1
2		16394	Capscrew	1
2		15155	Lockwasher	1
3	ab	240920	Panel Plate	1
3	cb	240921	Panel Plate	1
3	ad	240922	Panel Plate	1
3	cd	240923	Panel Plate	1
4	ef	108147	Control Cable	1
4	d	108147	Control Cable	1
4	eg	252731	Button Plug	1
5	d	98541	Switch	1
6		222024	Rivet	8
7		137852	Strap	5
8		157554	Relay	1
9		155570	Resistor	1
10		133469	Capscrew	2
10		15154	Lockwasher	2
11	d	195604	Wire	2
12	hd	204223	Cover	1
13	b	195597	Wire	1
14		240909	Instrument Panel	1
15		15055	Nut	4
15		15175	Washer	4
15		15155	Lockwasher	4
16		16663	Capscrew	2
16		15155	Lockwasher	2
17		240917	Clamp	2
18		275648	Hour Meter	1
19	fd	169775	Fuel Gauge	1
19	g	69296	Plug Button	1
20		169779	Temperature Gauge	1
21		240918	Panel Plate	1
22	c	358176	Lamp (Red)	1
22	c	362108	Bulb	1
22	c	134810	Terminal	1
22	c	134812	Connector	1
22	a	252730	Button Plug	1
23		358176	Lamp (Red)	1
23		362108	Bulb	1
23		134810	Terminal	1
23		148604	Fitting	1
24		358176	Lamp (Red)	1
24		362108	Bulb	1
24		134812	Connector	1
24		148604	Fitting	1
25		16743	Washer	2
25		15049	Nut	2
26	fd	16743	Washer	2
26	fd	15049	Nut	2
27	fd	195594	Wire	1
28	fd	195596	Wire	1
29		245995	Wire Harness	1
30		195613	Wire	1
31		195614	Wire	1
32		195615	Wire	1
33		181049	Connector	1
34		181050	Connector	1
35	h	204223	Cover	1
36	h	190383	Cover	6
37	h	18500	Washer	3

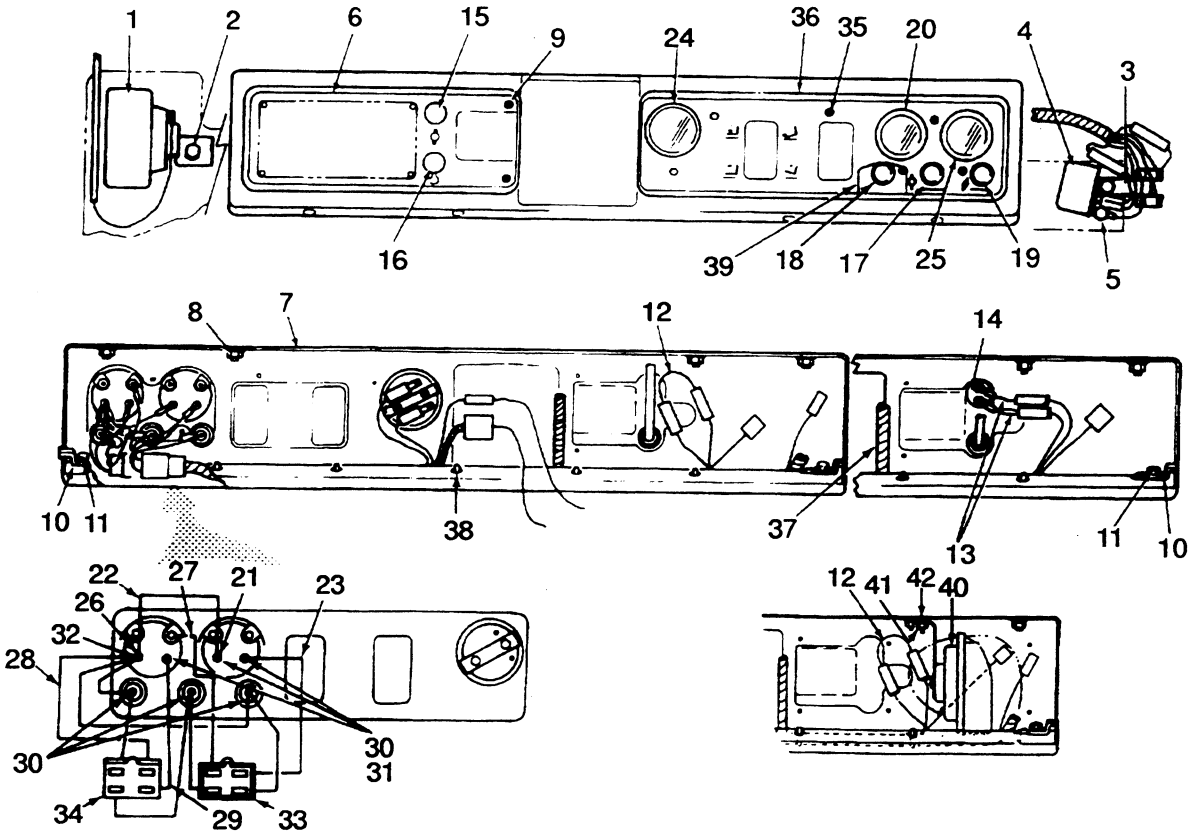
[a] Oil Clutch
[b] Gasoline And LPG
[c] Powershift
[d] Diesel
[e] Last Used On S/N D2D-1947
[f] Gasoline
[g] LPG
[h] Type GS, DS

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INSTRUMENT PANEL

FIRST USED ON S/N D2D-6711 EXCEPT D2D-7412 PS LPG D2D-6722 PS DIESEL AND GASOLINE D2D-7244 PS LPS D2D-6813 PS DS/GS D2D-7791 OC

(Figure 46)



INSTRUMENT PANEL

FIRST USED ON S/N D2D-6711 EXCEPT D2D-7412 PS LPG D2D-6722 PS DIESEL AND GASOLINE D2D-7244 PS LPS D2D-6813 PS DS/GS D2D-7791 OC

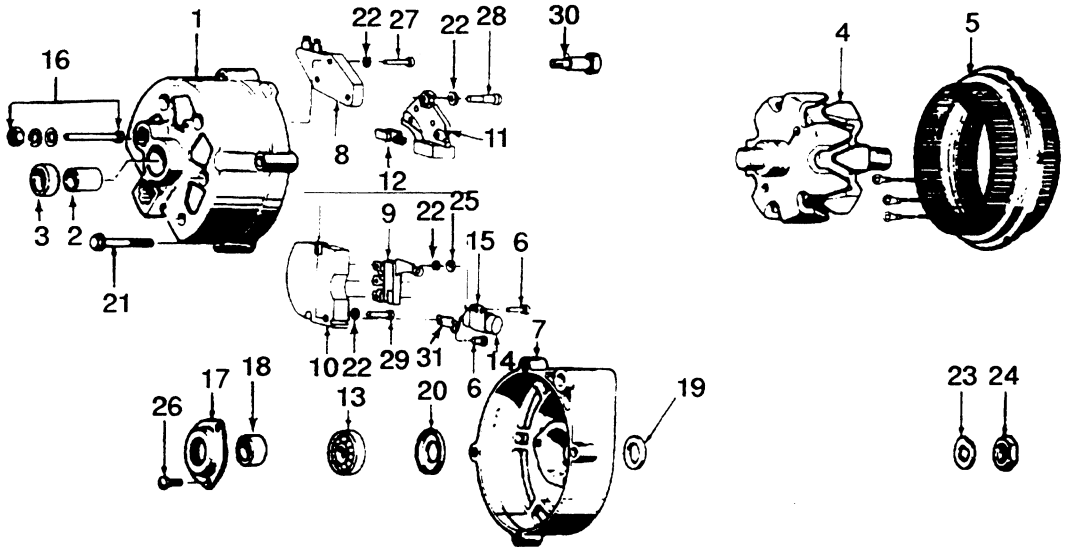
REF		PART NO.	NAME OF PART	QTY
1	a	126364	Horn	1
2	a	16394	Capscrew	1
2	a	15155	Lockwasher	1
3		155570	Resistor	1
4		157554	Relay	1
5		133469	Capscrew	2
5		15154	Lockwasher	2
6	bcd	283298	Panel Plate	1
6	ecd	283299	Panel Plate	1
6	bf	284075	Panel Plate	1
6	ef	284076	Panel Plate	1
7		240909	Instrument Panel	1
8		15055	Nut	4
8		15175	Washer	4
8		15155	Lockwasher	4
9		222024	Rivet	2
10		240917	Clamp	2
11		16663	Capscrew	2
11		15155	Lockwasher	2
12	cd	195597	Wire	1
13	f	195604	Wire	2
14	fg	204223	Cover	1
15	f	287163	Switch (Thermostat)	1
16	f	284080	Control Cable	1
16	f	336244	Spacer	2
17	e	358199	Lamp	1
18		358195	Lamp	1
19		358476	Lamp	1
20	fgc	169775	Fuel Gauge	1
21	fgc	16743	Washer	2
21	fgc	15049	Nut	2
22	fgc	195594	Wire	1
23	fgc	195596	Wire	1
24		275648	Hour Meter	1
25		285122	Temperature Gauge	1
26		16743	Washer	2
26		15049	Nut	2
27		195613	Wire	1
28		195614	Wire	1
29		195615	Wire	1
30	g	190383	Cover	6
31	g	18500	Washer	3
32	g	204223	Cover	1
33		181049	Connector	1
34		181050	Connector	1
35		284078	Screw	6
36		283289	Panel Plate	1
37	h	245995	Wire Harness	1
37	a	304635	Wire Harness	1
37	k	386557	Harness	1
38		137852	Strap	5
39		301112	Plate	1
40	k	371071	Horn	1
41	k	222665	Nut	1
42	k	15129	Washer	2

a Last Used On S/N D2D-13091
b Oil Clutch
c Gasoline
d LPG
e Powershift
f Diesel
g LPG
h Last Used On S/N D2D-9490 D2T-1770 OC PS With Monotrol Pedal D2T-1778 PS With Fwd/Rev Lever
k First Used On S/N D2D-13092

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ALTERNATOR

(Figure 47)



KEY
A: Last Used On S/N D2D–4415
B: First Used On S/N D2D–4416 – Replaced By Metric Alternator
C: Metric Alternator – Last Used on S/N D2D–10989
D: First Used on S/N D2D–10990

REF	PART NO.	NAME OF PART	QTY A	B	C	D
	241347	Alternator	1	..	..	..
	281029	Alternator	..	1	..	..
	322179	Alternator	..	..	1	..
	[a] 344235	Alternator	..	..	..	1
1	310083	Frame–SRE	1	1	..	..
1	310085	Frame–SRE	..	..	1	1
2	128838	Bearing	1	1	..	..
2	290508	Bearing	..	..	1	1
3	169519	Retainer (Felt)	1	..	..	..
4	223090	Rotor	1	1	1	..
4	343028	Rotor	..	..	..	1
5	223091	Stator	1	1	1	..
5	343034	Stator	..	..	..	1
6	198410	Screw	2	2	2	2
7	223093	Frame–DE	1	..	..	..
7	310087	Frame–DE	..	..	1	..
7	343033	Frame–DE	..	1	..	1
8	290303	Volt Regulator	1	1	1	1
9	223095	Diode	1	1	1	1
10	223096	Rectifier	1	1	..	..
10	271845	Rectifier	..	..	1	..
10	343031	Rectifier	..	..	..	1
11	268354	Brush	1	..	..	..
11	290300	Brush	..	..	1	1
11	343041	Brush	..	1	..	..
12	334970	Spring	1	1	1	1
13	189717	Bearing	1	..	..	..
13	290506	Bearing	..	1	..	..
13	290509	Bearing	..	..	1	1
14	198401	Capacitor	1	1	1	1
15	198402	Bracket	1	1	1	1
16	310081	BatteryTerminal Klt	1	1	1	1
17	128831	Retainer	1	1	1	..
17	202003	Retainer	..	..	..	1
18	138553	Collar	1	1	..	..
18	343029	Collar	..	..	..	1
19	128834	Collar	1	1	..	..
19	310088	Collar	..	..	1	1
20	223098	Slinger	1	1	..	..
21	128852	Bolt	4	4	4	4
22	128842	Washer	6	6	..	..
23	128835	Washer	1	1	1	1
24	55580	Nut	1	1	1	1
25	15039	Nut	3	3	3	3
26	344234	Screw	3	3	3	3
27	271846	Screw	1	1	1	..
27	290369	Screw	..	..	..	1
28	268356	Screw	2	2	2	2
29	343032	Screw Assy	1	1	1	1
30	290370	Screw	..	..	..	1
31	344233	Relay Terminal	..	..	..	1

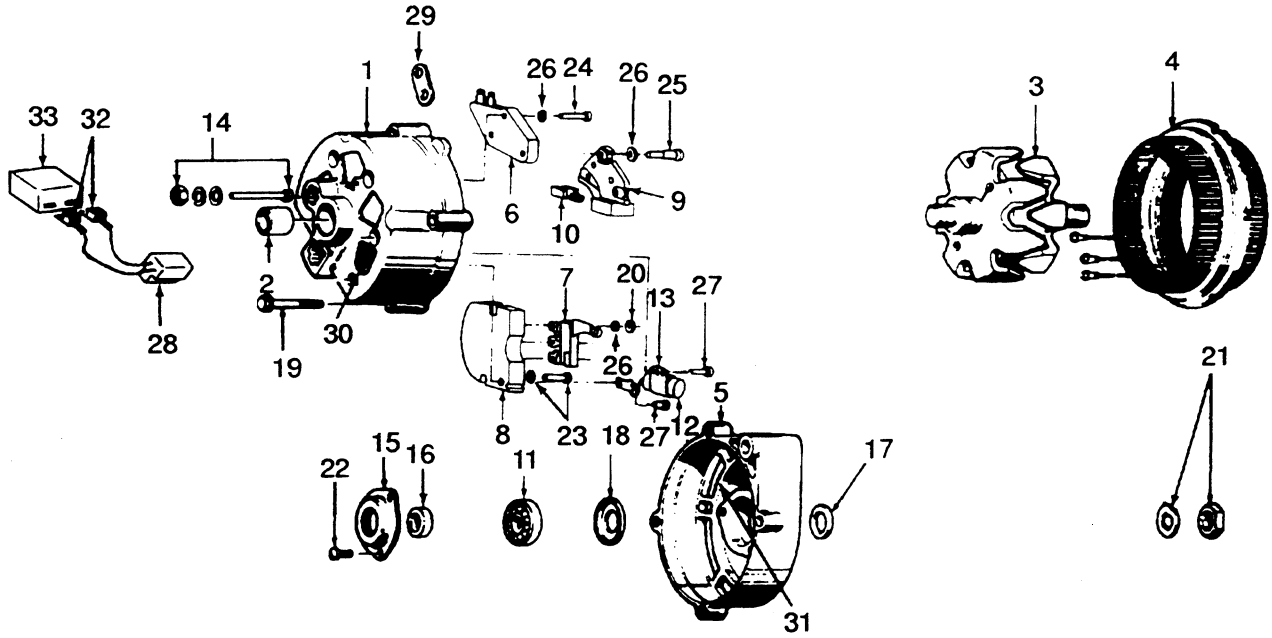
[a] Remanufactured Alternator 3000974 R

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NOTES

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ALTERNATOR
TYPES GS, LPS, DS
(Figure 48)



HYSTER

ALTERNATOR
TYPES GS, LPS, DS

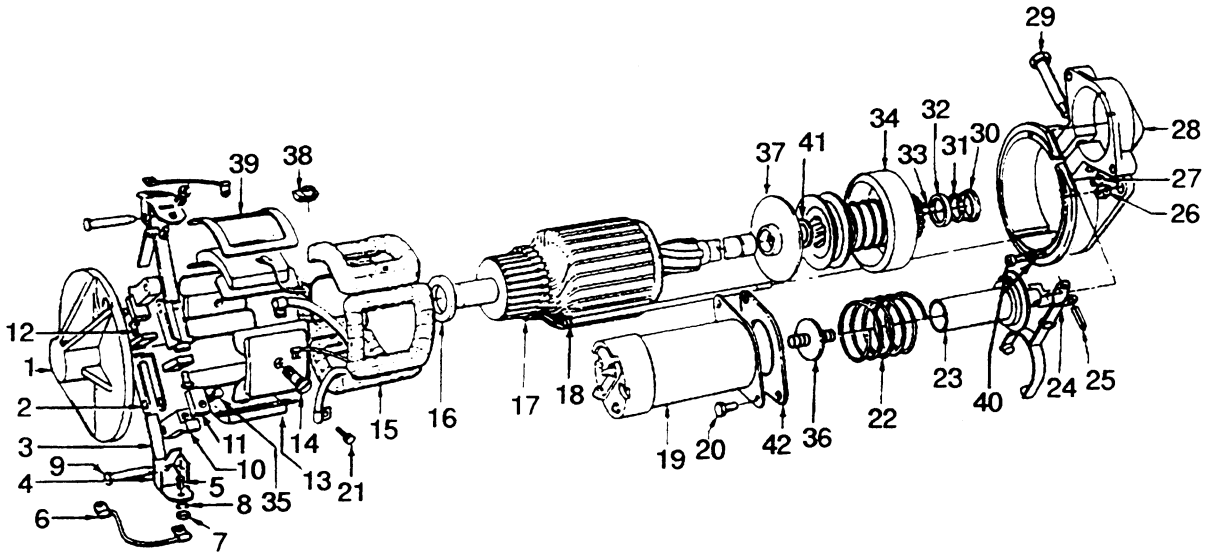
KEY
A: Replaced By Metric Alternator
B: Metric Alternator – Last Used on S/N D2D–10736
C: Used On S/N D2D–10737 Thru D2D–10971
D: First Used on S/N D2D–10972

REF	PART NO.	NAME OF PART	QTY A	B	C	D
	248819	Alternator	1	..	..	..
	[a] 302821	Alternator	..	1	..	..
	329433	Alternator	..	..	1	..
	[b] 341675	Alternator	..	..	..	1
1	268350	Frame–SRE	1	1	..	..
1	310083	Frame–SRE	..	..	1	..
1	343038	Frame–SRE	..	..	..	1
2	128838	Bearing	1	1	1	1
3	268351	Rotor	1	1	..	..
3	223090	Rotor	..	..	1	..
3	343046	Rotor	..	..	..	1
4	223091	Stator	1	1	1	..
4	343039	Stator	..	..	..	1
5	319149	Frame–DE	1	..	..	..
5	310082	Frame–DE	..	1	..	..
5	343033	Frame–DE	..	..	1	1
6	290303	Volt Regulator	1	1	1	..
6	343047	Regulator	..	..	..	1
7	223095	Diode	1	1	1	..
7	343040	Diode	..	..	..	1
8	223096	Rectifier	1	..	1	..
8	271845	Rectifier	..	1	..	..
8	343031	Rectifier	..	..	..	1
9	268354	Brush/Holder	1	1	..	..
9	343041	Brush/Holder	..	..	1	1
10	334970	Spring	1	1	1	1
11	189717	Bearing	1	1	..	..
11	290509	Bearing	..	..	1	1
12	198401	Capacitor	1	1	1	1
13	198402	Bracket	1	1	1	1
14	310081	Battery Terminal Kit	1	1	1	1
15	128831	Retainer	1	1	..	..
15	202003	Retainer	..	..	1	1
16	138553	Collar	1	..	..	..
16	343029	Collar	..	..	..	1
17	128834	Collar	1	1	..	..
17	322177	Collar	..	..	1	1
18	223098	Slinger	1	1	..	..
19	128852	Bolt	4	4	4	4
20	15039	Nut	3	3	3	3
21	55580	Nut	1	1	1	1
21	128835	Washer	1	1	1	1
22	344234	Screw	3	3	3	3
23	343032	Screw Assy	1	1	1	1
24	343032	Screw Assy	1	..	..	..
24	271846	Screw	..	1	1	..
24	343042	Screw	..	..	..	1
25	268356	Screw	2	2	2	2
26	128842	Washer	6	6	6	6
27	198410	Screw	2	2	2	2
28	268359	Terminal Kit	1	1	..	..
28	334974	Connector	..	..	1	1
29	335600	Clip	..	..	1	1
30	334973	Screen Cover	..	..	1	1
31	334972	Screen	..	..	1	1
32	134810	Terminal	..	..	2	2
33	329432	Connector	..	..	1	1

[a] Remanufactured Alternator 3000974 R
[b] Remanufactured Alternator 3042505 R

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STARTER
GASOLINE AND LPG
(Figure 49)



REF		PART NO.	NAME OF PART	QTY
	a	191848	Starter	1
	b	284074	Starter	1
	cd	335867	Starter	1
1		288917	Frame-CE	1
2		88572	Brush Holder	2
3		236069	Spring	2
4		236070	Bracket Kit	2
5		16720	Screw	2
6		173217	Wire	1
7		128436	Nut	2
8		15152	Lockwasher	2
9		164508	Pin	1
10		354650	Brush Holder	2
11	b	170607	Brush	4
11	d	236066	Brush	4
12		227097	Screw	2
13		164510	Shoe	4
14		168665	Screw	4
15	a	142740	Field Coil	1
15	b	288915	Field Coil	1
16		55901	Washer	1
17		236084	Armature	1
18		88567	Bolt	2
19	b	132728	Solenoid (Start)	1
19	d	339188	Solenoid	1
20		16848	Screw	2
21		220493	Screw	1
22		236074	Spring	1
23	b	236075	Plunger	1
23	d	354484	Plunger	1

REF		PART NO.	NAME OF PART	QTY
24		130676	Shift Lever	1
25		288919	Pin	1
26		164514	Nut	1
27		164513	Washer	1
28		142741	Housing-DE	1
28		55585	Bushing-.565 inch OD	1
28		142552	Bushing-.628 inch OD	1
29		236078	Stud	1
30		172813	Washer	1
31		236081	Retainer Ring	1
32		236082	Collar	1
33		55894	Pin	1
34		280501	Drive	1
35		168928	Screw	2
36	d	339187	Switch	1
37		123675	Bearing	1
37		88035	Oil Seal	1
37		131172	Bushing	1
37		131173	Gasket	1
38		288916	Grommet	1
39	b	151837	Insulator	4
39	d	339191	Insulator	4
40		378434	Screw Assy	2
41		55978	Washer	1
42		354492	Cover	1

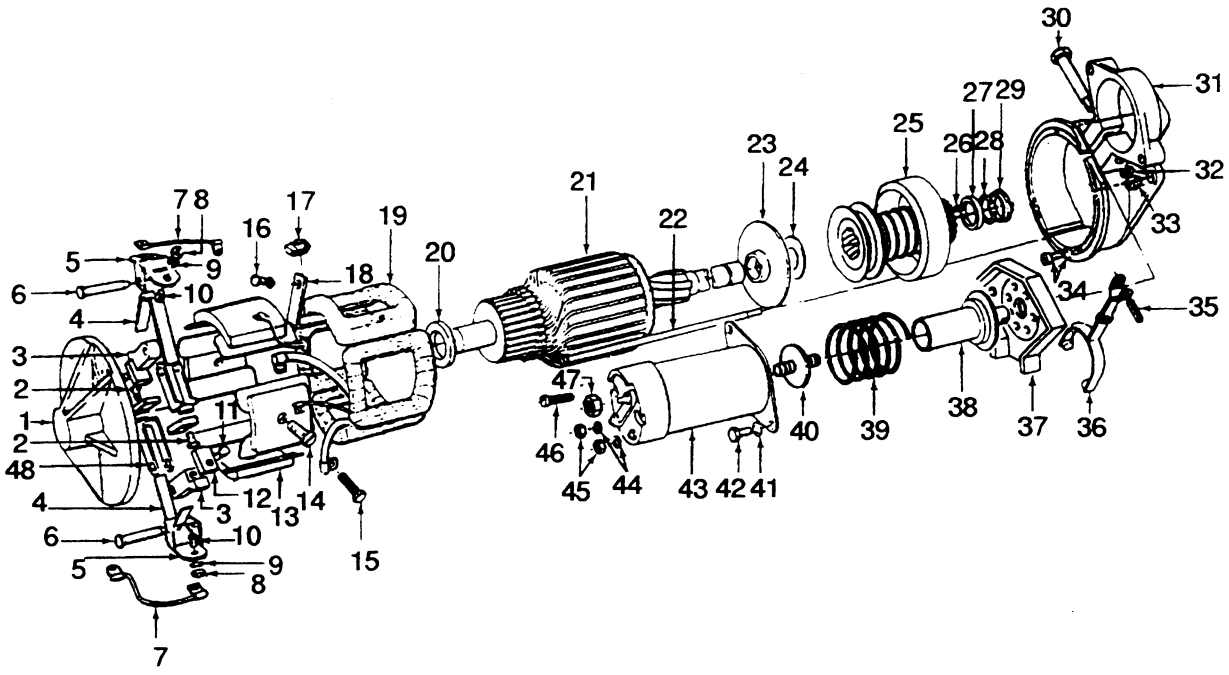
a Last Used On S/N D2D-4301
b Used On S/N D2D-4302 Thru D2D-10765
c Remanufactured Starter 3001023 R
d First Used On S/N D2D-10766

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NOTES

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STARTER
DIESEL
(Figure 50)



STARTER
DIESEL

KEY
A: Last Used on S/N D2D-11709
B: First Used on S/N D2D-11710

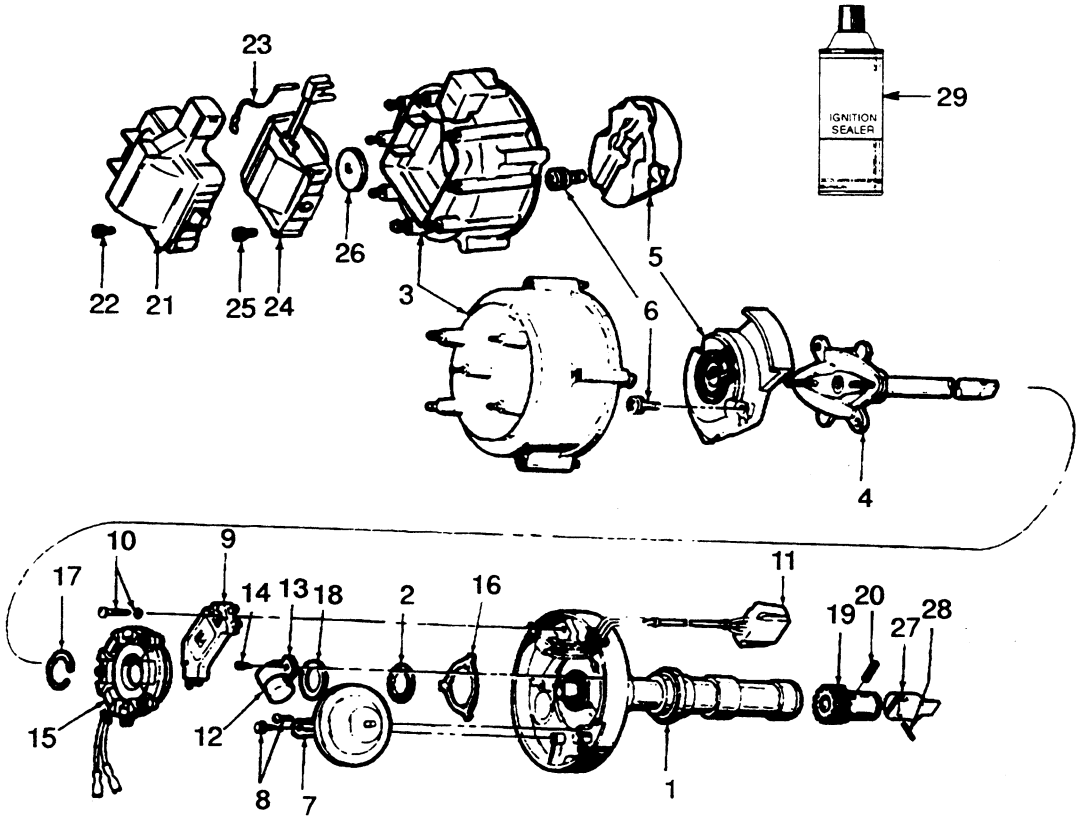
REF	PART NO.	NAME OF PART	QTY A	QTY B
	256642	Starter	1	..
	[a] 345435	Starter	..	1
1	97344	Frame-CE	1	..
1	354475	Frame-CE	..	1
2	86985	Screw Assy	2	..
2	354489	Screw	..	2
3	354650	Brush Holder	2	..
3	354478	Brush Holder	..	2
4	236069	Spring	4	..
4	354479	Spring	..	2
5	236070	Bracket Kit	2	..
5	354480	Support Kit	..	2
6	164508	Pin	2	2
7	173217	Wire	1	1
8	128436	Nut	2	2
9	15152	Lockwasher	2	2
10	16720	Screw	2	..
10	354482	Screw	..	2
11	86985	Screw Assy	2	..
11	227098	Screw	..	2
12	97345	Brush	4	..
12	354476	Brush	..	4
13	167009	Shoe	4	4
14	168665	Screw	4	4
15	164509	Screw	1	..
16	255717	Screw	1	..
16	15152	Lockwasher	1	..
16	220493	Screw	..	1
17	167010	Grommet	1	1
18	167007	Connector	1	1
19	154665	Field Coil	1	..
19	354499	Field Coil	..	1
20	55901	Washer	1	1
21	154664	Armature	1	1
22	97361	Bolt	2	..
22	354491	Bolt	..	2
23	123675	Bearing	1	1
23	88035	Oil Seal	1	1
23	131172	Bushing	1	1
23	131173	Gasket	1	1
24	55978	Washer	1	1
25	280501	Drive	1	1
26	55894	Pin	1	..
26	354493	Pin	..	1
27	236082	Collar	1	1
28	236081	Retainer Ring	1	1
29	172813	Washer	1	..
29	137968	Washer	..	1
30	236078	Stud	1	1
31	172814	Housing-DE	1	1
31	142552	Bushing-.628 inch OD	1	1
32	164513	Washer	1	2
33	164514	Nut	1	1
34	133720	Screw	4	..
34	378434	Screw Assy	..	4
35	288919	Pin	1	..
35	354485	Slotted Pin	..	1
36	130676	Shift Lever	1	1
37	354492	Cover	..	1
38	236075	Plunger	1	..
38	354484	Plunger	..	1
39	255724	Spring	1	..
39	236074	Spring	..	1
40	339187	Switch	1	1
41	15154	Lockwasher	2	2
42	231392	Screw	2	..
42	169308	Screw	..	2
43	132728	Solenoid-Start	1	..
43	339188	Solenoid	..	1
44	354486	Lockwasher	..	2
45	354488	Nut	..	2
46	168665	Screw	..	4
47	354487	Nut	..	1
48	88572	Brush Holder	2	..
48	354477	Brush Holder	..	2

[a] Remanufactured Starter 3005726 R

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DISTRIBUTOR

(Figure 51)



DISTRIBUTOR

KEY
A: 6N And 7N – 1976 And 1977 Series Engine
B: 8N, 9N And 0N – 1978 Thru 1980 Series Engine
C: 1N, 2N And 3N – 1981 Thru 1983 Series Engine
D: 4N, 5N And 6N – 1984, 1985 And 1986 Series Engine

REF	PART NO.	NAME OF PART	QTY A	B	C	D
	271686	Distributor	1	..	..	..
	288041	Distributor	..	1	..	..
	324056	Distributor	..	..	1	..
	355902	Distributor	..	..	..	1
1	271490	Base	1	..	..	..
1	288036	Base	..	1	1	1
2	166216	Seal	1	1	1	1
3	271671	Cap	1	..	..	..
3	288042	Cap	..	1	1	1
3	274370	Resistor	..	1	1	1
4	271672	Shaft	1	..	..	..
4	288043	Shaft	..	1	..	..
4	324058	Shaft	..	..	1	1
5	271673	Rotor	1	..	..	..
5	281846	Rotor	..	1	1	1
6	271494	Screw Assy	2	2	2	2
7	271495	Bracket	1	1	..	..
7	324059	Vacuum Control	..	..	1	..
7	356994	Vacuum Control	..	..	..	1
8	220470	Screw	2	..	2	2
8	220302	Screw	..	2	..	..
9	271496	Module	1	1	1	1
10	271497	Screw Assy	2	2	2	2
11	271498	Wire Harness	1	..	..	..
11	300653	Wire Harness	..	1	1	1
12	271499	Capacitor	1	1	..	..
13	198402	Bracket	1	1	..	..
14	271666	Screw Assy	1	1	..	..
15	271674	Pole Piece	1	1	1	1
16	271669	Retainer	1	..	..	..
17	271668	Retainer Ring	1	1	1	1
18	271670	Washer	1	..	..	..
19	149965	Gear	1	1	1	1
20	19868	Spring Pin	1	1	1	1
21	274363	Cover	..	1	1	1
22	274364	Screw	..	2	2	2
23	288032	Ground Strap	..	1	1	1
24	274366	Coil	..	1	1	1
25	274367	Screw Assy	..	4	4	4
26	274368	Seal	..	1	1	1
27	281842	Shaft	..	1	1	1
28	281843	Pin	..	1	1	1
29	178295	Ignition Sealer	AR	AR	AR	AR

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NOTES

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BRAKES

BRAKE LINKAGE
OIL CLUTCH ..... Page 108

BRAKE LINKAGE
POWERSHIFT ..... Page 110

BRAKES
FIRST USED ON S/N D2D-10046 STANDARD TREAD, D2D-9927 WIDE TREAD, D2T-1827 (EXCEPT D2T-1834) STANDARD TREAD, D2T-1822 WIDE TREAD ..... Page 118

BRAKES
LAST USED ON S/N D2D-10045 STANDARD TREAD, D2D-9926 WIDE TREAD, D2T-1826 (INCLUDING D2T-1834) STANDARD TREAD, D2T-1821 WIDE TREAD ..... Page 116

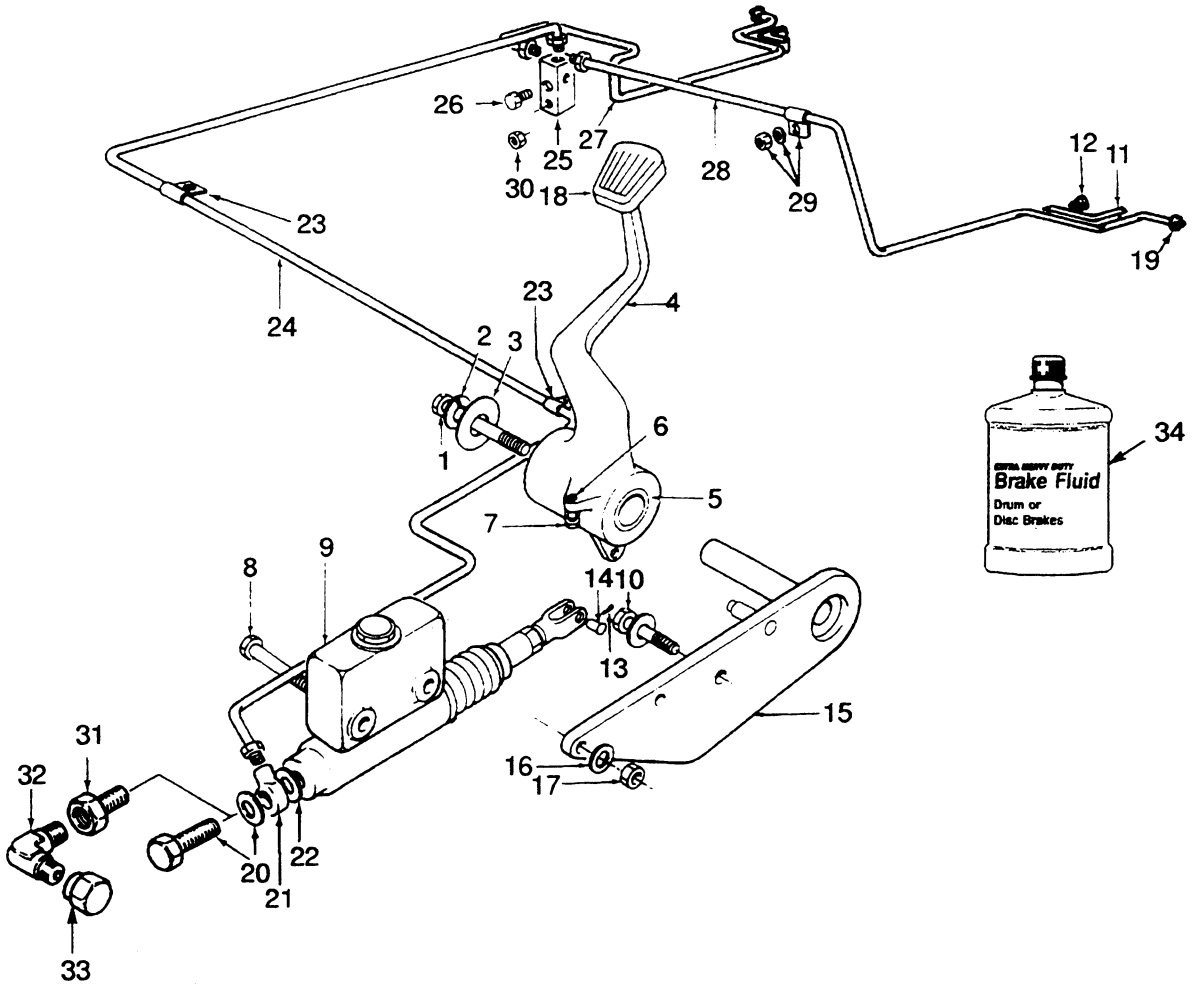
MASTER CYLINDER ..... Page 115

PARK BRAKE LINKAGE
FIRST USED ON S/N D2D-10046 STANDARD TREAD, D2D-9927 WIDE TREAD, D2T-1827 (EXCEPT D2T-1834) STANDARD TREAD, D2T-1822 WIDE TREAD ..... Page 114

PARK BRAKE LINKAGE
LAST USED ON S/N D2D-10045 STANDARD TREAD, D2D-9926 WIDE TREAD, (INCLUDING D2T-1834) STANDARD TREAD, D2T-1821 WIDE TREAD ..... Page 112

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BRAKE LINKAGE
OIL CLUTCH
(Figure 52)



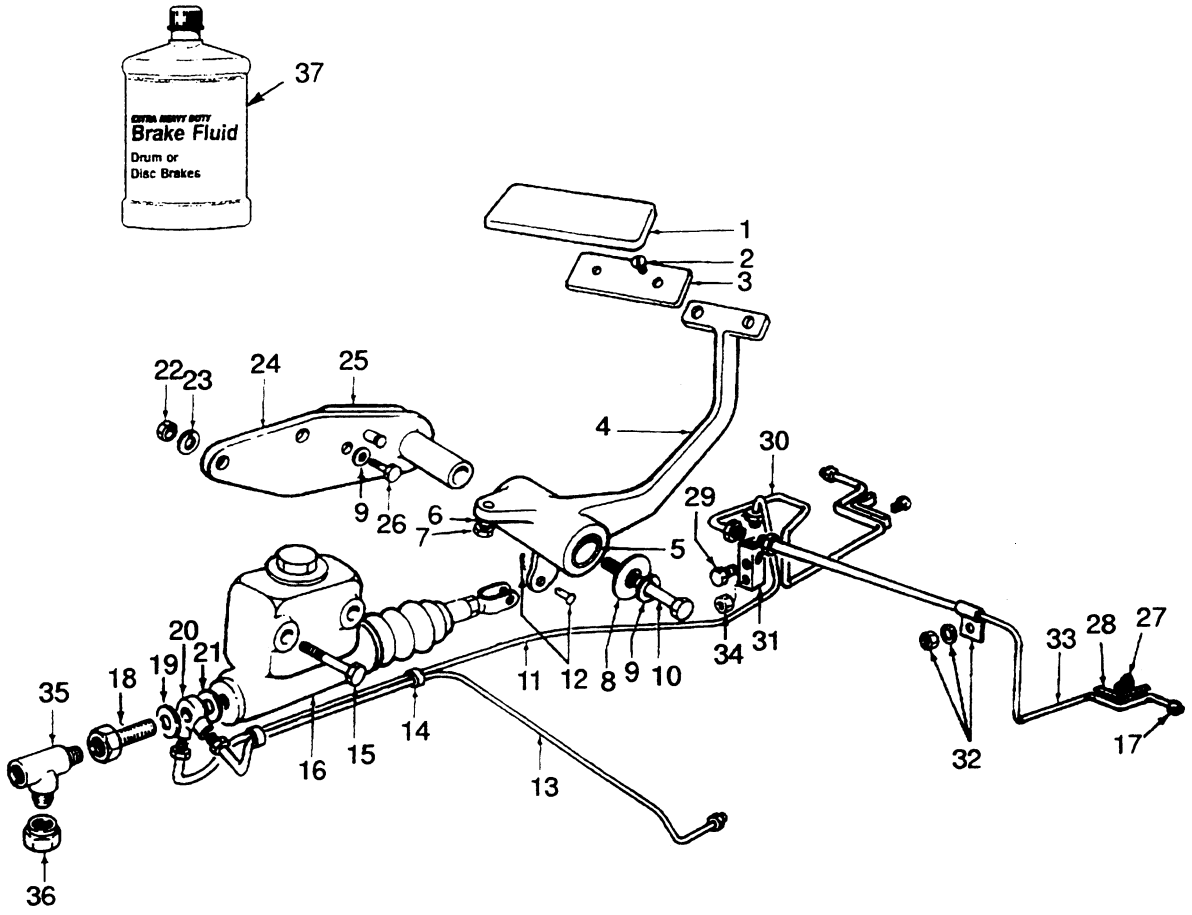
BRAKE LINKAGE
OIL CLUTCH

REF		PART NO.	NAME OF PART	QTY
1		18596	Capscrew	1
2		15158	Lockwasher	1
3		16637	Flat Washer	1
4		227769	Brake Pedal	1
5		66359	Bushing	2
6		15086	Nut	1
7		16805	Capscrew	1
8		18542	Capscrew	2
9		.....	Master Cylinder	1
			☞ Figure 56	
10		16085	Capscrew	2
10		15158	Lockwasher	1
11	ab	193427	Protector	2
11	ac	193432	Protector	2
12	a	18497	Capscrew	4
12	a	15155	Lockwasher	4
13		15212	Pin	1
14		142	Pin	1
15		194853	Bracket	1
16		15156	Lockwasher	2
17		15056	Nut	2
18		114496	Pedal Pad	1
19	d	14241	Fitting	2
20		29583	Bolt	1
20		29582	Gasket	1
21		111404	Fitting	1
22		24092	Gasket	1
23		101666	Clamp	2
24		316022	Tube	1
25		264120	Fitting	1
26		14349	Fitting	1
27	ab	261711	Tube (LH)	1
27	ac	261712	Tube (LH)	1
27	db	316070	Tube (LH)	1
27	dc	316073	Tube (LH)	1
28	ab	261713	Tube (RH)	1
28	ac	261714	Tube (RH)	1
28	db	316072	Tube (RH)	1
28	dc	316074	Tube (RH)	1
29		15155	Lockwasher	1
29		15055	Nut	1
29		101666	Clamp	1
30		222667	Locknut	1
31	e	28301	Bolt	1
32	e	52501	Fitting	1
33	e	281700	Cap Nut	1
34		26758	Brake Fluid (12 Ounce)	AR
34		357973	Brake Fluid (1 Quart)	AR
34		357956	Brake Fluid (1 Gallon)	AR

a Last Used On S/N D2D-10045 Standard Tread, D2D-9926 Wide Tread, D2T-1826 (Including D2T-1834) Standard Tread, D2T-1821 Wide Tread
b Standard Tread Axle
c Wide Tread Axle
d First Used On S/N D2D-10046 Standard Tread, D2D-9927 Wide Tread, D2T-1827 (Except D2T-1834) Standard Tread, D2T-1822 Wide Tread
e Optional

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BRAKE LINKAGE
POWERSHIFT
(Figure 53)



BRAKE LINKAGE
POWERSHIFT

REF		PART NO.	NAME OF PART	QTY
1		139051	Pad	1
2		16080	Screw	2
3		140374	Plate	1
4		227768	Brake Pedal	1
5		66359	Bushing	2
6		15086	Nut	1
7		16805	Capscrew	1
8		16637	Flat Washer	1
9		15158	Lockwasher	2
10		18596	Capscrew	1
11		348695	Tube	1
12		142	Pin	1
12		15212	Pin	1
13	a	261399	Tube	1
13	b	288786	Tube	1
14		137852	Strap	2
15		18542	Capscrew	2
16		.....	Master Cylinder	1
			☞ Figure 56	
17	c	14241	Fitting	2
18		28301	Bolt	1
19		29582	Gasket	1
20		29580	Fitting	1
21		24092	Gasket	1
22		15056	Nut	2
23		15156	Lockwasher	2
24		194857	Bracket	1
25		194858	Plate	1
26		16085	Capscrew	1
27	d	18497	Capscrew	4
27	d	15155	Lockwasher	4
28	de	193427	Protector	2
28	df	193432	Protector	2
29		14349	Fitting	1

REF		PART NO.	NAME OF PART	QTY
30	de	261711	Tube (LH)	1
30	df	261712	Tube (LH)	1
30	ce	316070	Tube (LH)	1
30	cf	316073	Tube (LH)	1
31		264120	Fitting	1
32		15155	Lockwasher	1
32		15055	Nut	1
32		101666	Clamp	1
33	de	261713	Tube (RH)	1
33	df	261714	Tube (RH)	1
33	ce	316072	Tube (RH)	1
33	cf	316074	Tube (RH)	1
34		222667	Locknut	1
35	g	16125	Fitting	1
36	g	281700	Nut-Cap	1
37		26758	Brake Fluid (12 Ounce)	AR
37		357973	Brake Fluid (1 Quart)	AR
37		357956	Brake Fluid (1 Gallon)	AR

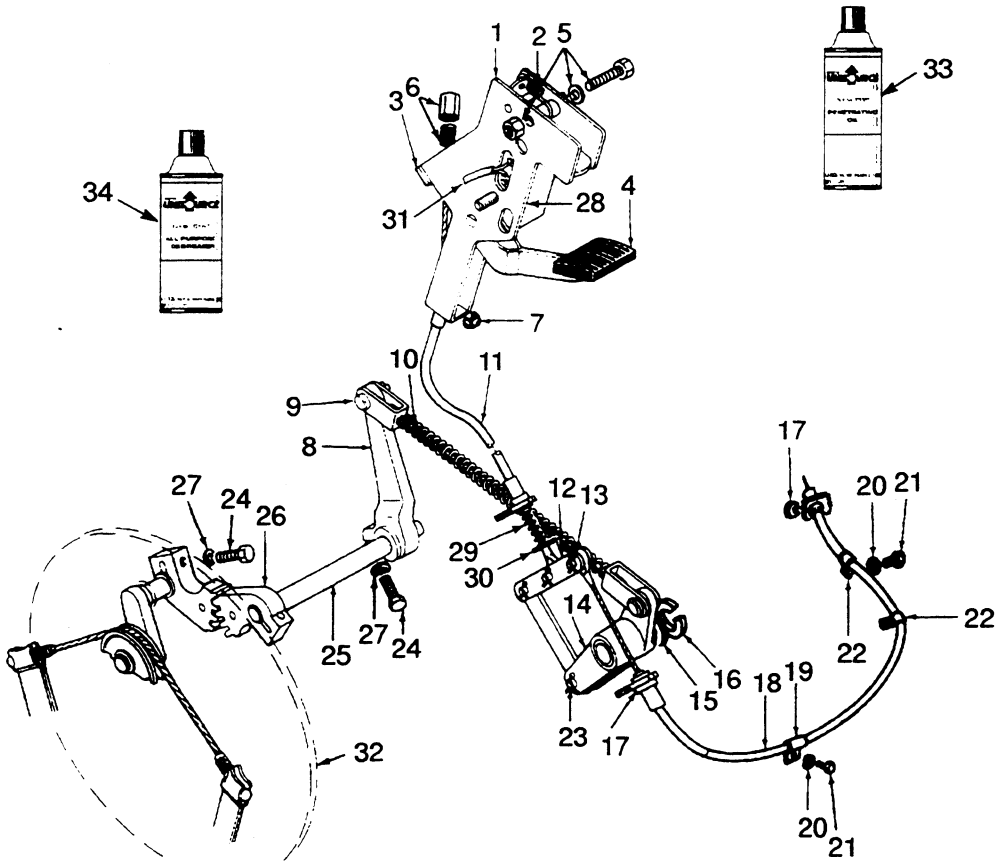
a Last Used On S/N D2D-4774
b First Used On S/N D2D-4775
c First Used On S/N D2D-10046 Standard Tread, D2D-9927 Wide Tread, D2T-1827 (Except D2T-1834) Standard Tread, D2T-1822 Wide Tread
d Last Used On S/N D2D-10045 Standard Tread, D2D-9926 Wide Tread, D2T-1826 (Including D2T-1834) Standard Tread, D2T-1821 Wide Tread
e Standard Tread Axle
f Wide Tread Axle
g Optional

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PARK BRAKE LINKAGE

LAST USED ON S/N D2D-10045 STANDARD TREAD, D2D-9926 WIDE TREAD, (INCLUDING D2T-1834) STANDARD TREAD, D2T-1821 WIDE TREAD

(Figure 54)



PARK BRAKE LINKAGE

LAST USED ON S/N D2D-10045 STANDARD TREAD, D2D-9926 WIDE TREAD, (INCLUDING D2T-1834) STANDARD TREAD, D2T-1821 WIDE TREAD

REF		PART NO.	NAME OF PART	QTY
1	a	251815	Brake Lever	1
1	b	344821	Brake Lever	1
2	a	251811	Spring	1
2	b	355172	Spring	1
3	a	.....	Brake Pad	1
3	a	222025	Rivet	2
3	a	.....	Washer	2
4		182115	Pad	1
5	a	16379	Capscrew	2
5	b	16835	Capscrew	2
5	a	15156	Lockwasher	2
5	b	15155	Lockwasher	2
5	b	15055	Nut	2
6	a	239404	Nut	1
6	a	239400	Spring	1
7	a	182118	E-Ring	1
8		217576	Crank (LH)	1
8		217577	Crank (RH)	1
9		240724	Rod Pin End	3
9		15211	Cotter Pin	3
10		239397	Cable	1
11	a	261739	Cable	1
11	b	299926	Cable	1
12		239395	Plate	3
13		167218	Pin	3
13		15200	Cotter Pin	3
14		210649	Crank	1
15		251364	Washer	1
16		131357	Snap Ring	1
17		182118	E-Ring	3
18		239398	Cable	1
19		216798	Clamp	1
20		15156	Lockwasher	2
21		18535	Capscrew	2
22		124297	Clamp	2
23		126	Pin	1
23		15200	Cotter Pin	1
24		18498	Capscrew	4
25	c	218079	Shaft	1
25	d	218080	Shaft	1
26		186395	Gear	2
27		15155	Lockwasher	4
28	a	.....	Spacer	2
29	a	216550	Spring	1
29	b	282503	Spring	1
30		278137	Washer	1
31	e	245992	Wire Harness	1
31	e	88388	Switch	1
31	e	123702	Screw	2
31	ae	.....	Spacer	2
31	be	15049	Nut	2
32		.....	Brakes	2
			☞ Figure 57 and Figure 58	
33		171352	Penetrating Oil	AR
34		178297	Degreaser	AR

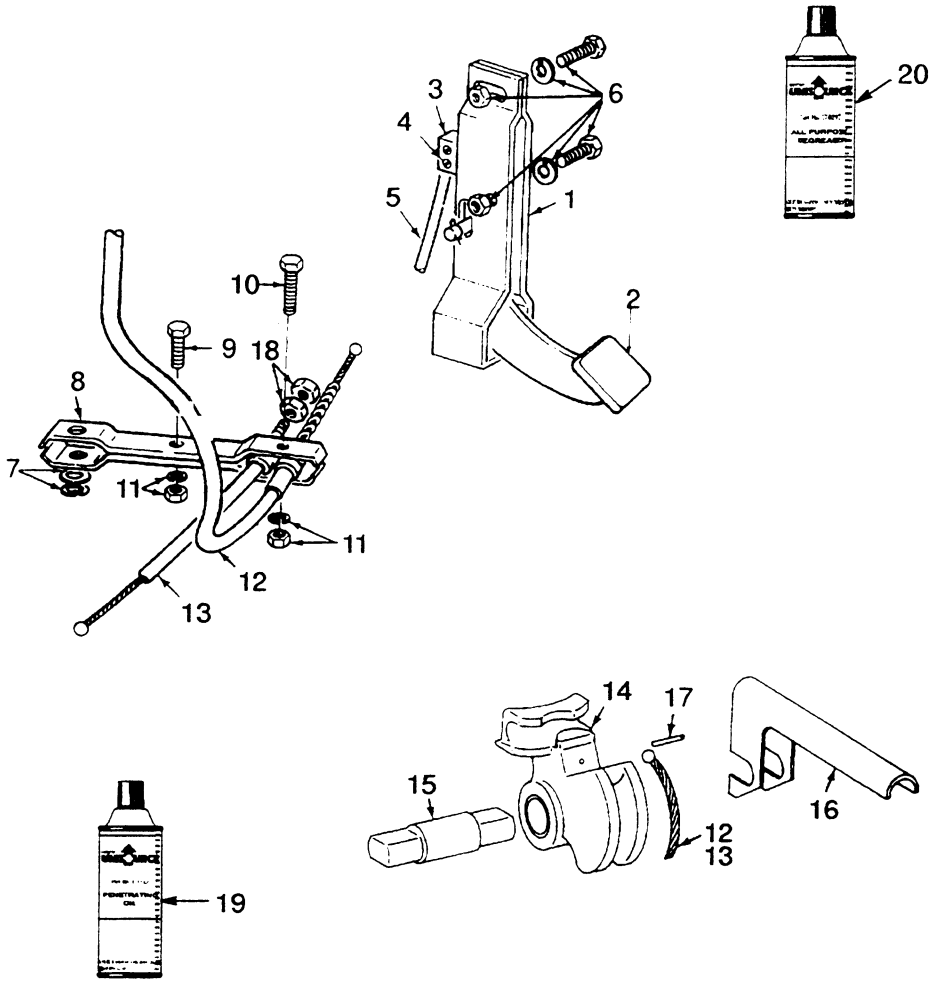
a Last Used On S/N D2D-7477
b First Used On S/N D2D-7478
c Standard Tread Axle
d Wide Tread Axle
e Powershift

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PARK BRAKE LINKAGE

FIRST USED ON S/N D2D-10046 STANDARD TREAD, D2D-9927 WIDE TREAD, D2T-1827 (EXCEPT D2T-1834) STANDARD TREAD, D2T-1822 WIDE TREAD

(Figure 55)



REF		PART NO.	NAME OF PART	QTY
1		344821	Brake Lever	1
1		355172	Spring	1
2		182115	Pad	1
2		238810	Adhesive	AR
3	a	88388	Switch	1
4	a	15049	Nut	2
4	a	123702	Screw	2
5	a	245992	Wire Harness	1
6		16835	Capscrew	2
6		15155	Lockwasher	2
6		15055	Nut	2
7		15175	Washer	1
7		307251	Snap Ring	1
8		299938	Lever Plate	2
9		16374	Capscrew	1
10		18497	Capscrew	1
11		15155	Lockwasher	2

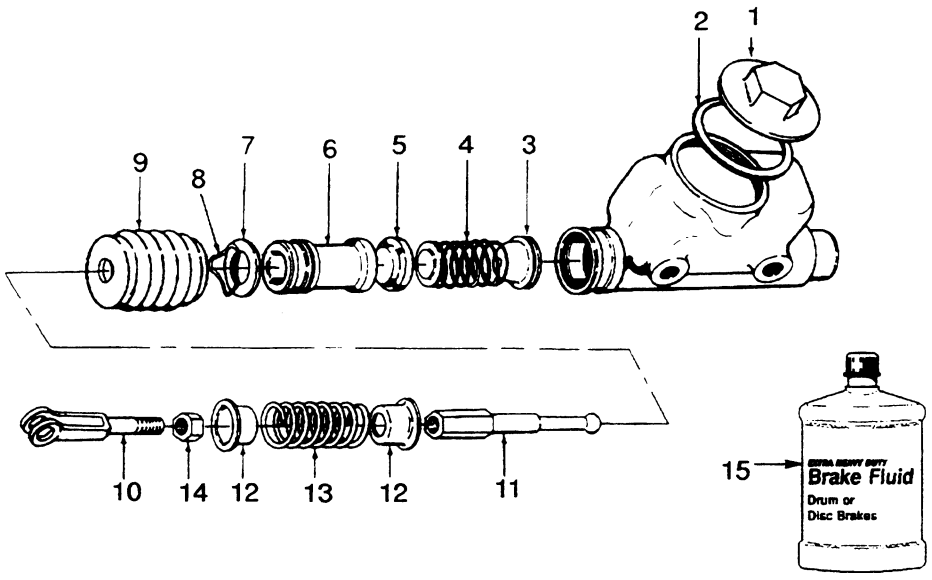
REF		PART NO.	NAME OF PART	QTY
11		15055	Nut	2
12	b	299942	Cable	1
12	c	318595	Cable	1
13	b	299940	Cable	1
13	c	299941	Cable	1
14		317999	Crank	2
15		299946	Shaft	2
16		318698	Guard	2
17		19868	Spring Pin	2
18		15025	Nut	2
19		171352	Penetrating Oil	AR
20		178297	Degreaser	AR

[a] Powershift
[b] Standard Tread Axle
[c] Wide Tread Axle

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MASTER CYLINDER

(Figure 56)



REF		PART NO.	NAME OF PART	QTY
		183218	Master Cylinder	1
1		54657	Filler Cap	1
2		54659	Gasket	1
3	a	.....	Check Valve	1
4		.....	Spring	1
5	a	.....	Primary Cup	1
6	a	.....	Piston	1
7		.....	Plate	1
8	a	.....	Lock Wire	1
9		259588	Cover	1
10	b	336317	Rod End	1
11	b	214636	Push Rod	1
12	b	261271	Cup	2
13		183222	Spring	1
14	b	15026	Nut	1
15		26758	Brake Fluid (12 Ounce)	AR
15		357973	Brake Fluid (1 Quart)	AR
15		357956	Brake Fluid (1 Gallon)	AR

[a] Included In Repair Kit 193180
[b] Included In Push Rod Kit 240496

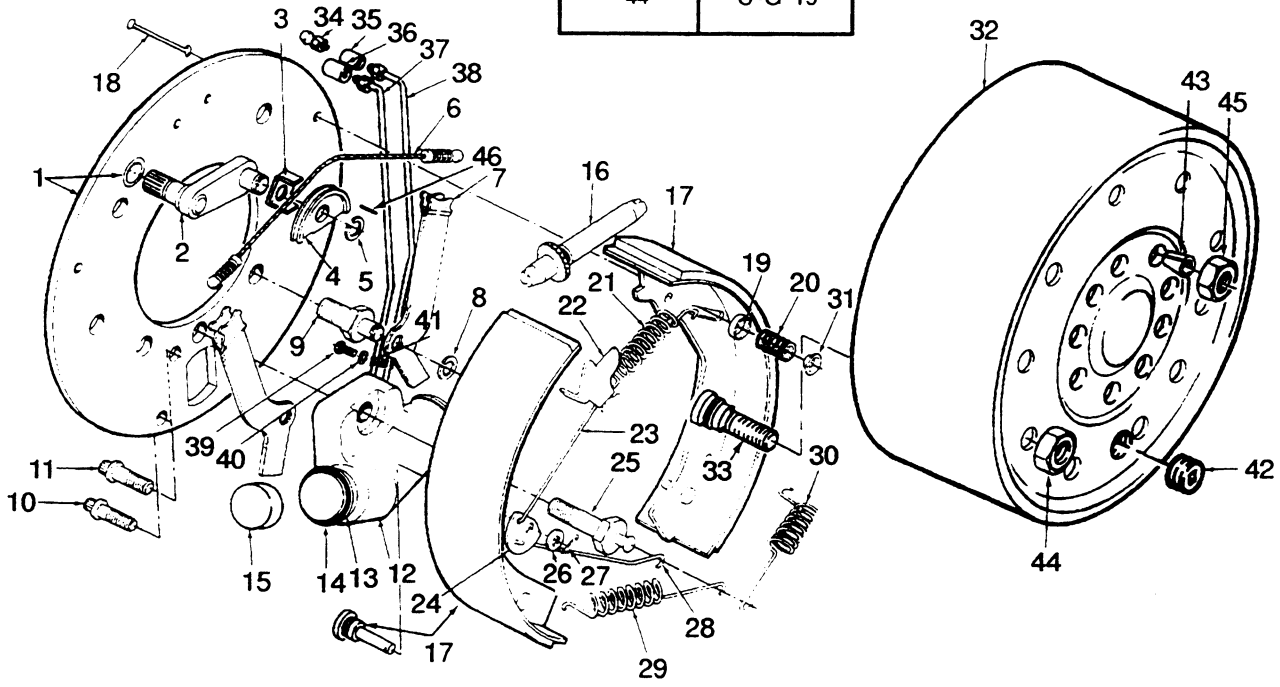
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BRAKES

LAST USED ON S/N D2D-10045 STANDARD TREAD, D2D-9926 WIDE TREAD, D2T-1826 (INCLUDING D2T-1834) STANDARD TREAD, D2T-1821 WIDE TREAD

(Figure 57)

PARTS-SERVICE GRAM	
ITEM	GRAM
44	C-G-19



BRAKES

LAST USED ON S/N D2D-10045 STANDARD TREAD, D2D-9926 WIDE TREAD, D2T-1826 (INCLUDING D2T-1834) STANDARD TREAD, D2T-1821 WIDE TREAD

KEY
A: Right Hand
B: Left Hand

REF		PART NO.	NAME OF PART	QTY A	QTY B
		186446	Brake (RH)	1	..
		186447	Brake (LH)	..	1
1		198603	Plate (RH)	1	..
1		198427	Plate (LH)	..	1
1		.....	Bushing	1	1
2		315977	Actuator	1	1
3		198434	Retainer Cable	1	1
4		198433	Sheave-Cable	1	1
5		198436	Retainer Ring	1	1
6	abc	320977	Cable	1	1
7		198429	Brake Lever	2	2
8		198435	Retainer Ring	2	2
9		198432	Bolt	2	2
10		197523	Bolt	2	2
11		197524	Bolt	2	2
12	bc	327103	Wheel Cylinder	1	1
13		197518	Spring	2	2
14	d	.....	Cover	2	2
15	d	.....	Cup	2	2
16		197537	Screw	1	..
16		197513	Screw	..	1
16		197538	Pivot Nut	1	..
16		197514	Pivot Nut	..	1
16		197515	Washer	1	1
16		197516	Socket	1	1
17	ac	316414	Kit-Shoe and Lining	1	1
17		348525	Pin	1	1
18		38014	Hold Down Pin	2	2
19		197531	Cup	2	2
20		197530	Spring	2	2
21		197525	Spring (Adjusting)	1	1
22		197550	Adjusting Lever	1	..
22		197526	Adjusting Lever	..	1
23		197533	Link (Blue)	1	1
24		197535	Toggle Lever	1	1
25		197529	Bolt	1	1
26		197534	Washer	1	1
27		221877	Cotter Pin	1	1
28		197532	Link (Gray)	..	1
28		197556	Link	1	..
29		197528	Spring (Gray)	1	1
30		197527	Spring (Return)	1	1
31		157773	Cup	2	2
32		.....	Wheel	1	1
			☞ Figure 166		
33		251272	Bolt	10	10
34		28320	Screw	1	1
35		187812	Insert	1	1
36		187810	Insert	1	1
37		351327	Brake Tube (RH)	1	..
37		351328	Brake Tube (LH)	..	1
38		351325	Brake Tube (RH)	1	..
38		351326	Brake Tube (LH)	..	1
39		187742	Capscrew	1	1
40		15155	Lockwasher	1	1
41		186432	Clamp	1	1
42		15316	Fitting	1	1
43		114827	Dowel	9	9
44		184174	Nut	10	10
45		278326	Nut	9	9
46		19901	Spring Pin	1	1

[a] Included In Brake Shoe Kit 327116
[b] Included In Wheel Cylinder Kit 327102
[c] First Used On S/N D2D-9484 Standard Tread, D2D-9382 Wide Tread
[d] Included In Wheel Cylinder Kit 197519

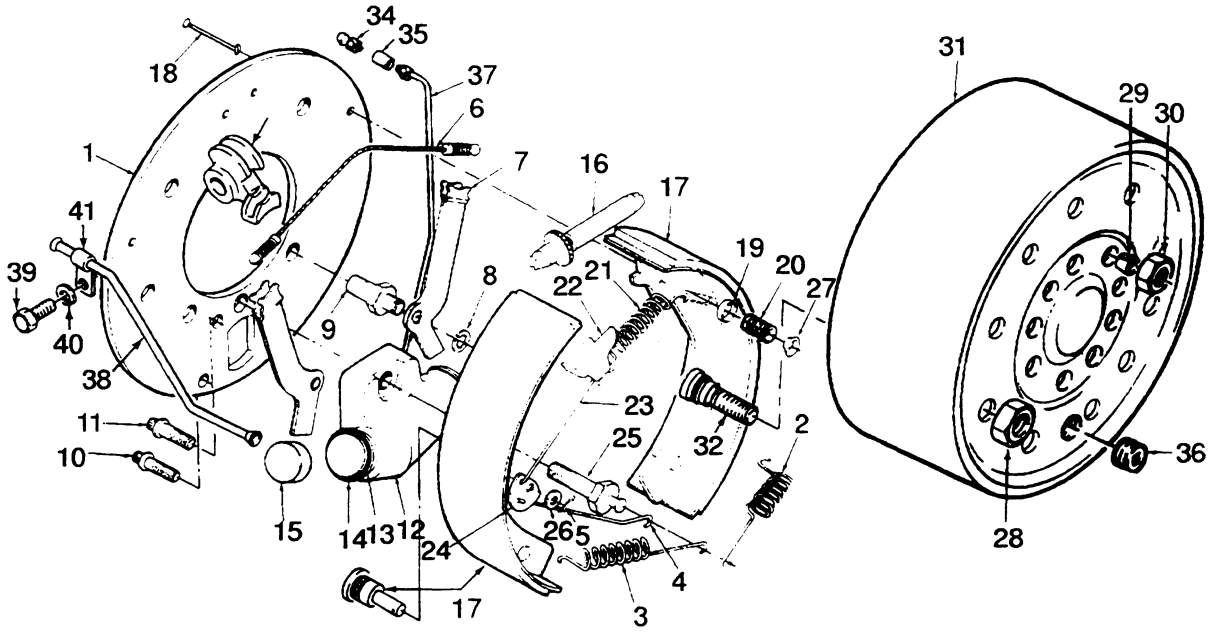
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BRAKES

FIRST USED ON S/N D2D-10046 STANDARD TREAD, D2D-9927 WIDE TREAD, D2T-1827 (EXCEPT D2T-1834) STANDARD TREAD, D2T-1822 WIDE TREAD

(Figure 58)

PARTS-SERVICE GRAM	
ITEM	GRAM
28	C-G-19



BRAKES

FIRST USED ON S/N D2D-10046 STANDARD TREAD, D2D-9927 WIDE TREAD, D2T-1827 (EXCEPT D2T-1834) STANDARD TREAD, D2T-1822 WIDE TREAD

KEY
A: Right Hand
B: Left Hand

REF		PART NO.	NAME OF PART	QTY A	QTY B
		316066	Brake (RH)	1	..
		316067	Brake (LH)	..	1
1		321921	Back Plate	1	..
1		321920	Back Plate	..	1
2		197527	Spring (Return)	1	1
3		197528	Spring (Gray)	1	1
4		197532	Link (Gray)	1	..
4		197556	Link	..	1
5		221877	Cotter Pin	1	1
6		321738	Cable Assy	1	1
7		198429	Brake Lever	2	2
8		198435	Retainer Ring	2	2
9		198432	Bolt	2	2
10		197523	Bolt	2	2
11		197524	Bolt	2	2
12		327103	Wheel Cylinder	1	1
13		197518	Spring	2	2
14	a	.....	Cover	2	2
15	a	.....	Cup	2	2
16		197537	Screw	1	..
16		197513	Screw	..	1
16		197538	Pivot Nut	1	..
16		197514	Pivot Nut	..	1
16		197515	Washer	1	1
16		197516	Socket	1	1
17		316414	Kit-Shoe and Lining	1	1
17		348525	Pin	1	1
18		38014	Hold Down Pin	2	2
19		197531	Cup	2	2
20		197530	Spring (Shoe)	2	2
21		197525	Adjusting Spring	1	1
22		197550	Adjusting Lever	1	..
22		197526	Adjusting Lever	..	1
23		197533	Link (Blue)	1	1
24		197535	Toggle Lever	1	1
25		197529	Bolt	1	1
26		197534	Washer	1	1
27		157773	Cup	2	2
28		184174	Nut	10	10
29		114827	Dowel	9	9
30		278326	Nut	9	9
31		.....	Wheel	1	1
			☞ Figure 166		
32		251272	Bolt	10	10
33		.....	Crank	1	1
			☞ Figure 55		
34		28320	Screw	1	1
35		187812	Insert	1	1
36		15316	Fitting	1	1
37		351327	Brake Tube (RH)	1	..
37		351328	Brake Tube LH	..	1
38		316069	Tube (RH)	1	..
38		316068	Tube (LH)	..	1
39		187742	Capscrew	1	1
40		15155	Lockwasher	1	1
41		193161	Clamp	1	1

[a] Included In Wheel Cylinder Kit 197519

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NOTES

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TRANSMISSION

CLUTCH LINKAGE
FIRST USED ON S/N D2D-7791, D2T-1501 ..... Page 126

CLUTCH LINKAGE
LAST USED ON S/N D2D-7790 ..... Page 125

CONTROL VALVE
POWERSHIFT
FIRST USED ON TRANSMISSION S/N T15M-11424 HISPD,
T30M-3128 LOSPD ..... Page 138

CONTROL VALVE
POWERSHIFT
LAST USED ON TRANSMISSION S/N T15M-11423 HISPD,
T30M-3127 LOSPD ..... Page 136

DIFFERENTIAL ..... Page 146

DIPSTICK
FIRST USED ON TRANSMISSION S/N T29M-3075 OC LOSPD,
T14M-3396 OC HISPD, T30M-3248 PS LOSPD,
T15M-12754 PS HISPD ..... Page 149

DIPSTICK
LAST USED ON TRANSMISSION S/N T29M-3074 OC LOSPD,
T14M-3395 OC HISPD, T30M-3247 PS LOSPD,
T15M-12753 PS HISPD ..... Page 148

DRIVE AXLE
FIRST USED ON S/N D2D-10046 STANDARD TREAD,
D2D-9927 WIDE TREAD, D2T-1827 EXCEPT
D2T-1834 STANDARD TREAD, D2T-1822 WIDE TREAD ..... Page 144

DRIVE AXLE
LAST USED ON S/N D2D-10045 STANDARD TREAD,
D2D-9926 WIDE TREAD, D2T-1826 AND D2T-1834 STANDARD
TREAD, D2T-1821 WIDE TREAD ..... Page 142

FLYWHEEL AND DRIVE-PUMP ..... Page 122

FORWARD AND REVERSE LEVER
POWERSHIFT ..... Page 150

MONOTROL PEDAL
POWERSHIFT ..... Page 152

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SHIFT LINKAGE
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TRANSMISSION GEARS
OIL CLUTCH ..... Page 130

TRANSMISSION GEARS
POWERSHIFT ..... Page 140

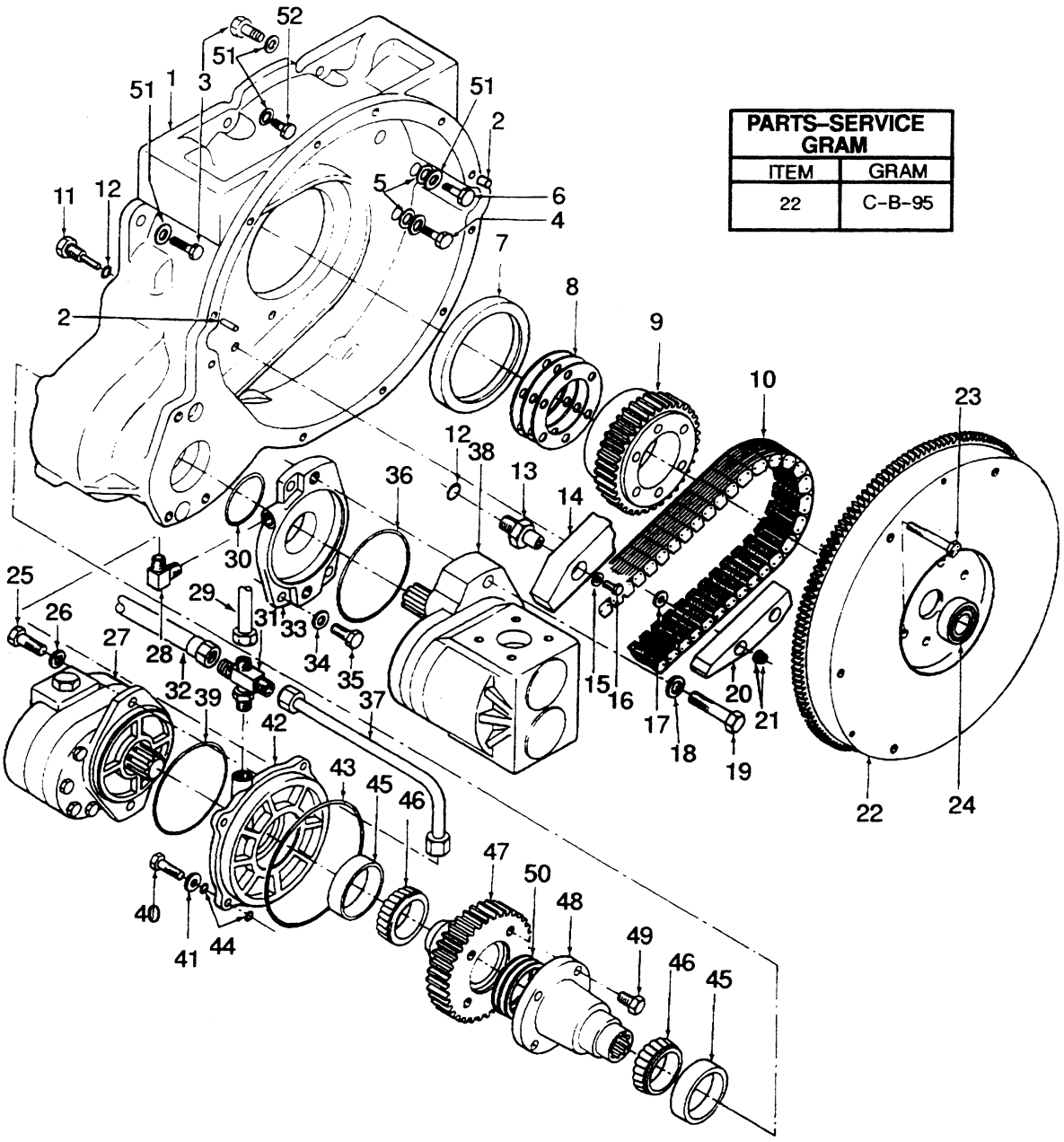
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POWERSHIFT ..... Page 134

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FLYWHEEL AND DRIVE–PUMP

(Figure 59)



PARTS–SERVICE GRAM	
ITEM	GRAM
22	C–B–95

FLYWHEEL AND DRIVE-PUMP

KEY
A: Gasoline and LPG
B: Diesel

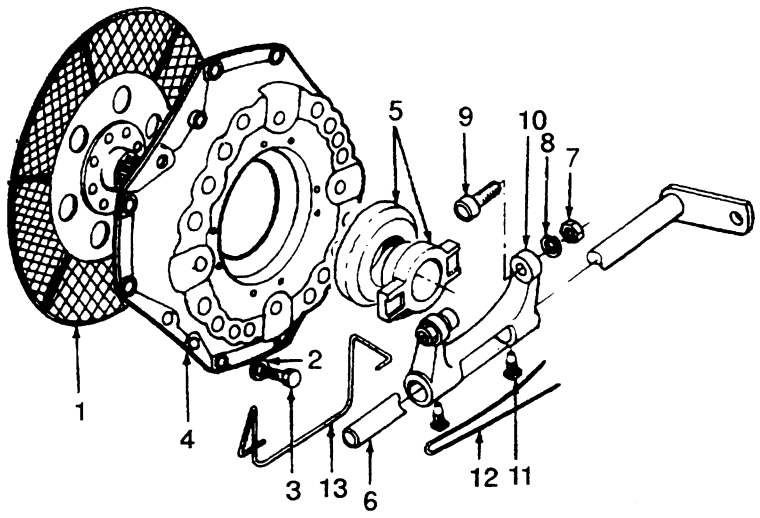
REF		PART NO.	NAME OF PART	QTY A	QTY B
1	a	245267	Flywheel Housing	1	..
1	a	245268	Flywheel Housing	..	1
1	b	299370	Flywheel Housing	1	..
1	b	299372	Flywheel Housing	..	1
2		184923	Dowel Pin	2	4
3		17112	Bolt	4	4
4		184945	Bolt	..	1
5		184924	O-Ring	2	4
6		135169	Bolt	..	3
6		17112	Bolt	2	..
7		339681	Oil Seal	1	..
7		184947	Oil Seal	..	1
8		184928	Shim-.005 inch	AR	..
8		184929	Shim-.007 inch	AR	..
8		184930	Shim-.020 inch	AR	..
8		184949	Shim-.005 inch	..	AR
8		184950	Shim-.007 inch	..	AR
8		184951	Shim-.020 inch	..	AR
9		263401	Chain Sprocket	1	..
9		263402	Chain Sprocket	..	1
10		259660	Chain	1	1
11		321735	Capscrew	2	2
12		16482	O-Ring	4	4
13		245263	Capscrew	2	2
14		245262	Snubber (Top)	1	1
15		221763	Washer	2	2
16		191436	Bolt	2	2
17		18515	Washer	2	2
18		15158	Lockwasher	2	2
19		16085	Capscrew	2	2
20		261701	Snubber	1	1
21		221342	Locknut	2	2
21		15127	Washer	2	2
22		184940	Flywheel-OC	1	..
22		280828	Flywheel-PS	1	..
22		184956	Flywheel-OC	..	1
22	c	281654	Flywheel-PS	..	1
22	d	280831	Flywheel-PS	..	1
22		195856	Ring Gear	1	1
23		53127	Bolt	6	..
23		184955	Bolt	..	6
24	e	43205	Ball Bearing	1	1
25		16828	Capscrew	2	2
26		15156	Lockwasher	2	2
27		.....	Steering Pump	1	1
			☞ Figure 97 and Figure 98		
28		16557	Fitting	1	1
29		275379	Tube	1	1
30	a	191834	O-Ring	1	1
31		16575	Fitting	1	1
31		16968	Fitting	1	1
32		251189	Hose	1	1
33	a	281661	Pump Adapter	1	1
34	a	261379	Washer	3	3
35	a	15945	Bolt	3	3
36	f	190753	O-Ring	1	1
36	ag	281663	O-Ring	1	1
36	b	317513	Gasket	1	1
36	b	288394	Sealant	AR	AR
37	a	199303	Tube	1	1
37	b	304629	Tube	1	1
38		.....	Hydraulic Pump	1	1
			☞ Figure 79		
39	h	192274	O-Ring	1	1
39	k	146670	Gasket	1	1
40		17112	Bolt	4	4
41		261379	Washer	2	2
42		259668	Pump Adapter	1	1
43		184962	O-Ring	1	1
44		79970	O-Ring	4	4
44		210752	Washer	2	2
45		135658	Bearing Cup	2	2
46		135657	Bearing Cone	2	2
47		263400	Chain Sprocket	1	1
48	a	259669	Hub	1	1
48	b	299368	Hub	1	1
49		16070	Bolt	4	4
50		275867	Shim-.005 inch	AR	AR
50		275868	Shim-.007 inch	AR	AR
50		275869	Shim-.020 inch	AR	AR
51		261379	Washer	6	10
52		18881	Bolt	..	2

[a] Last Used On S/N D2D-9276 Gasoline And LPG D2D-10357 Diesel D2T-1745
[b] First Used On S/N D2D-9277 Gasoline And LPG D2D-10358 Diesel D2T-1746
[c] Last Used On S/N D2D-4590
[d] First Used On S/N D2D-4591
[e] Oil Clutch
[f] Last Used On S/N D2D-4281
[g] First Used On S/N D2D-4282
[h] Last Used On S/N D2D-6499
[k] First Used On S/N D2D-6500

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OIL CLUTCH

(Figure 60)



REF		PART NO.	NAME OF PART	QTY
1		277010	Plate (Driven)	1
2		177947	Lockwasher	6
3		277826	Capscrew	6
4		176422	Clutch Cover	1
5		366706	Carrier and Bearing	1
5		230303	Bearing	1
6	a	278127	Clutch Crank	1
6	b	291937	Clutch Crank	1
7		15026	Nut	2
8		15156	Lockwasher	2
9		172048	Follower (Cam)	2

REF		PART NO.	NAME OF PART	QTY
10	c	172052	Yoke	1
10	d	366705	Yoke	1
11	c	27981	Screw	2
11	d	27936	Screw	1
12		67355	Wire	1
13		176429	Spring	1

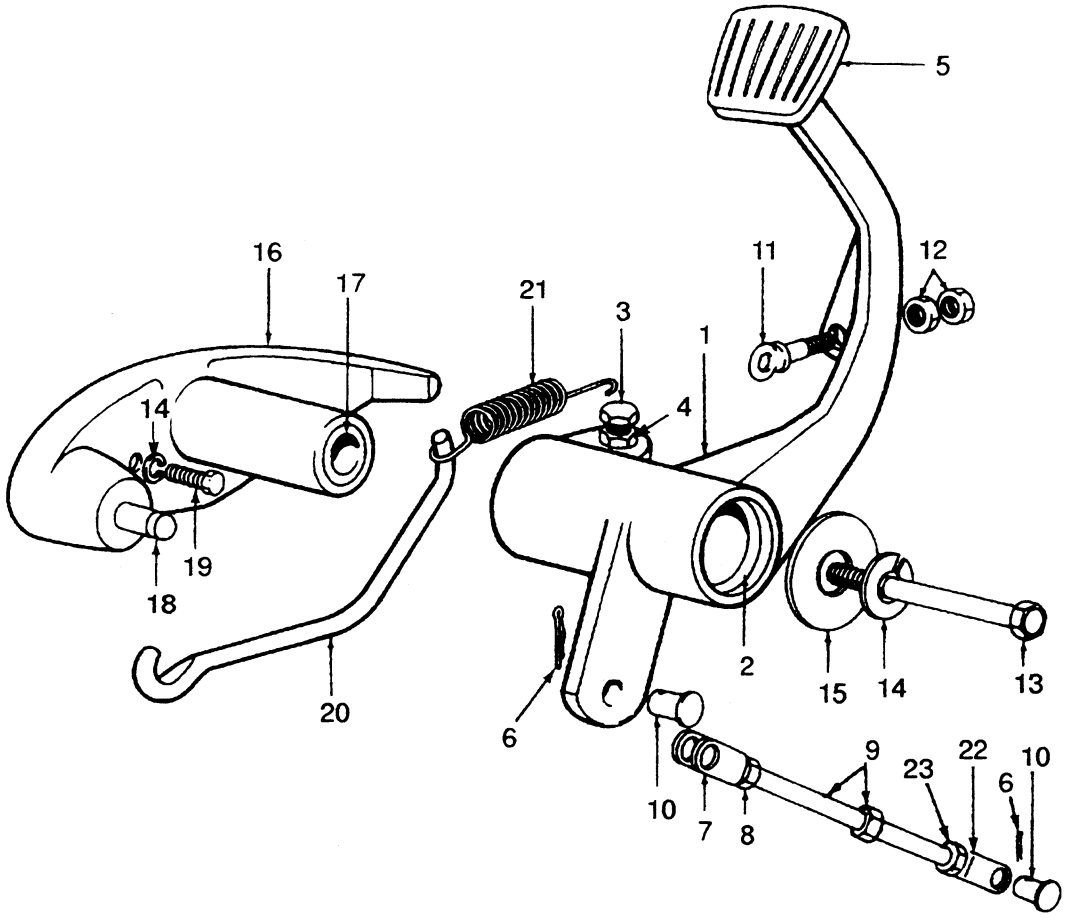
[a] Last Used On S/N D2D-7790
[b] First Used On S/N D2D-7791 D2T-1501
[c] Last Used On S/N D2D-3604
[d] First Used On S/N D2D-3605

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CLUTCH LINKAGE

LAST USED ON S/N D2D-7790

(Figure 61)



REF	PART NO.	NAME OF PART	QTY
1	279441	Clutch Pedal	1
2	66359	Bushing	2
3	16805	Capscrew	1
4	15086	Nut	1
5	132690	Pedal Pad	1
6	15213	Cotter Pin	2
7	149	Rod End	1
8	15027	Nut	1
9	279449	Link	1
10	150	Pin	2
11	191873	Eyebolt	1
12	15086	Nut	2
13	18596	Capscrew	1
14	15158	Lockwasher	2
15	16637	Flat Washer	1
16	279439	Bracket	1
17	261752	Sleeve	1
18	191870	Groove Pin	1
19	16085	Capscrew	1
20	[b] 278128	Link	1
20	[a] 191871	Link	1
21	[b] 288637	Spring	1
21	[a] 191872	Spring	1
22	274615	Rod End	1
23	222125	Nut	1

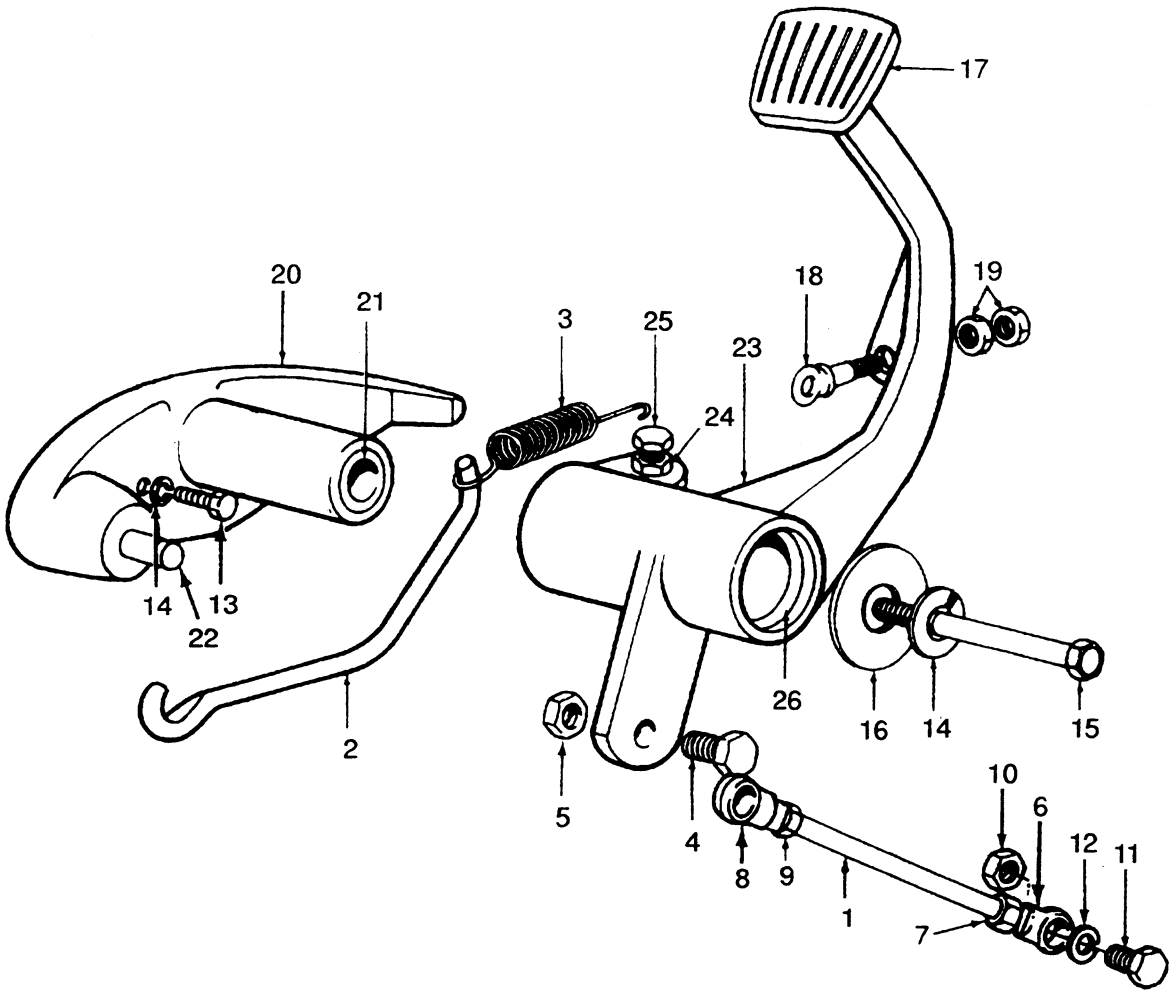
[a] Last Used On S/N D2D-3421
[b] First Used On S/N D2D-3422

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CLUTCH LINKAGE

FIRST USED ON S/N D2D-7791, D2T-1501

(Figure 62)



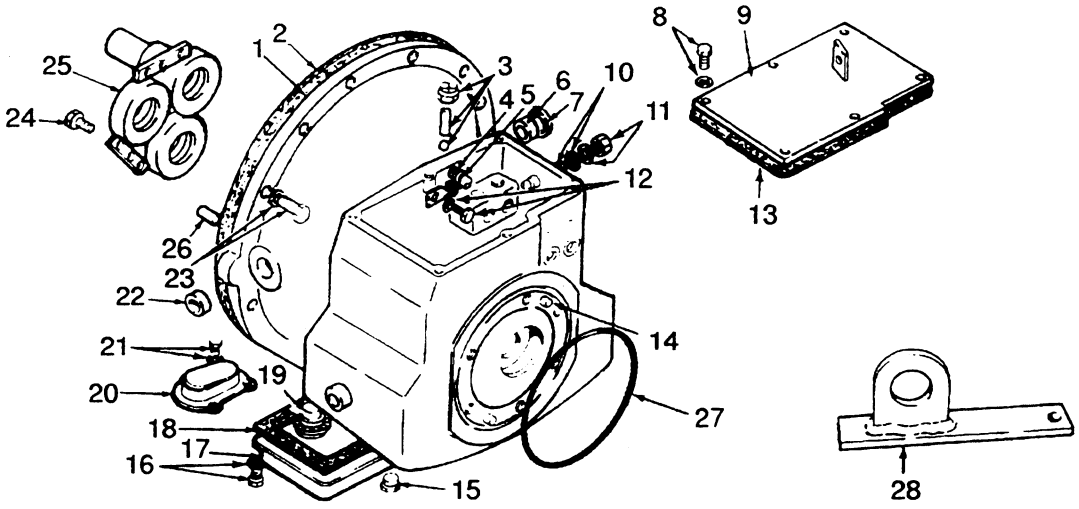
REF	PART NO.	NAME OF PART	QTY
1	293868	Link	1
2	291939	Link	1
3	288637	Spring	1
4	16828	Capscrew	1
5	15086	Nut	1
6	301101	Ball Joint	1
7	222123	Nut	1
8	301100	Ball Joint	1
9	15026	Nut	1
10	15056	Nut	1
11	16815	Capscrew	1
12	15156	Lockwasher	1
13	16085	Capscrew	1
14	15158	Lockwasher	2
15	18596	Capscrew	1
16	16637	Flat Washer	1
17	132690	Pedal Pad	1
18	296815	Eyebolt	1
19	15011	Nut	2
20	291941	Bracket	1
21	261752	Sleeve	1
22	291949	Groove Pin	1
23	293854	Clutch Pedal	1
24	15086	Nut	1
25	16805	Capscrew	1
26	245105	Bearing	2

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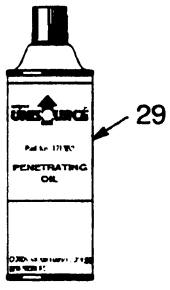
NOTES

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TRANSMISSION HOUSING
OIL CLUTCH
(Figure 63)



PARTS–SERVICE GRAM	
ITEM	GRAM
9,13,17,19,20	C–I–19
19	C–I–20





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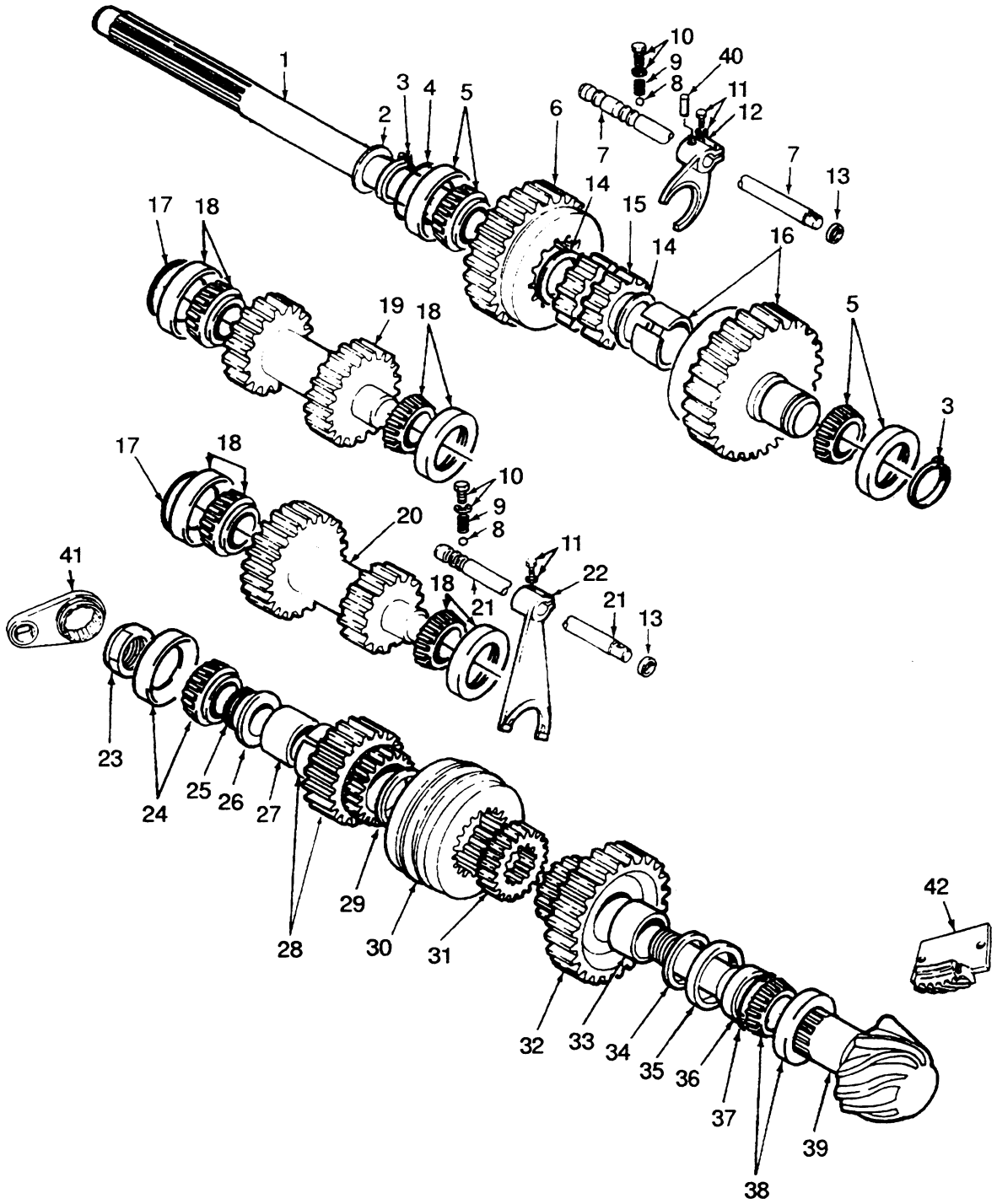
TRANSMISSION HOUSING
OIL CLUTCH

REF		PART NO.	NAME OF PART	QTY
		306237	Transmission (High)	1
		306238	Transmission (Low)	1
		.....	Differential	1
			☞ Figure 72	
1	a	176355	Xmsn Housing	1
1	bc	276445	Xmsn Housing	1
1	d	329832	Xmsn Housing	1
1	e	366466	Xmsn Housing	1
2		176205	Gasket	1
3		176409	Switch	1
3		307364	Rod	1
3		21278	Ball	1
4		184061	Clamp	1
4		133469	Capscrew	1
4		15154	Lockwasher	1
4		15054	Nut	1
5		176415	Tube	1
6		176356	Needle Bearing	1
7		145753	Oil Seal	1
8		16598	Capscrew	6
8		15156	Lockwasher	6
9	f	301926	Cover	1
10		176411	Tube	1
10		176414	Seal	1
11		15146	Washer	1
11		16585	Nut	1
12		16597	Capscrew	1
12		15156	Lockwasher	1
13	f	176360	Gasket	1
14	a	176208	Dowel Pin	2
14	b	275222	Dowel Pin	2
15		240905	Fitting	1
16		17112	Bolt	11
16		261379	Washer	11
17	c	176417	Pan	1
17	fd	299995	Pan	1
18	f	313022	Sealant	AR
18		336674	Gasket	1
19	c	176276	Valve and Screen	1
19	fd	338730	Screen	1
20	c	253264	Filter	1
20	fd	.....	Filter	1
			☞ Figure 91	
21	c	16374	Capscrew	3
21	c	15155	Lockwasher	3
22		69017	Bearing	1
23		15943	Bolt	9
23		261379	Washer	9
23		221520	Capscrew	1
23	g	221522	Capscrew	2
23	g	261379	Washer	3
23	h	221520	Capscrew	1
23	h	261379	Washer	1
24		17112	Bolt	9
25	a	282231	Carrier	1
25	b	296823	Carrier	1
25	b	296822	Carrier	1
25		280827	Tube	1
25	a	280423	Oil Seal	2
26		184055	Dowel Pin	2
27		113586	O-Ring	1
28		273250	Lift Bracket	1
29		171352	Penetrating Oil	AR
30		178297	Degreaser	AR

a Last Used On Xmsn S/N T29M-1512 LOSP, T14M-1691 HISP
b First Used On Xmsn S/N T29M-1513 LOSP, T14M-1692 HISP
c Last Used On Xmsn S/N T29M-3062 LOSP, T14M-3288 HISP
d Used On Xmsn S/N T29M-3063 LOSP, T14M-HISP Thru T29M-3138 LOSP, T14M-4000 HISP
e First Used On Xmsn S/N T29M-3064 LOSP, T14M-4001 HISP
f Included In OC External Filter Kit 304362
g Gasoline And LPG
h Diesel

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TRANSMISSION GEARS
OIL CLUTCH
(Figure 64)



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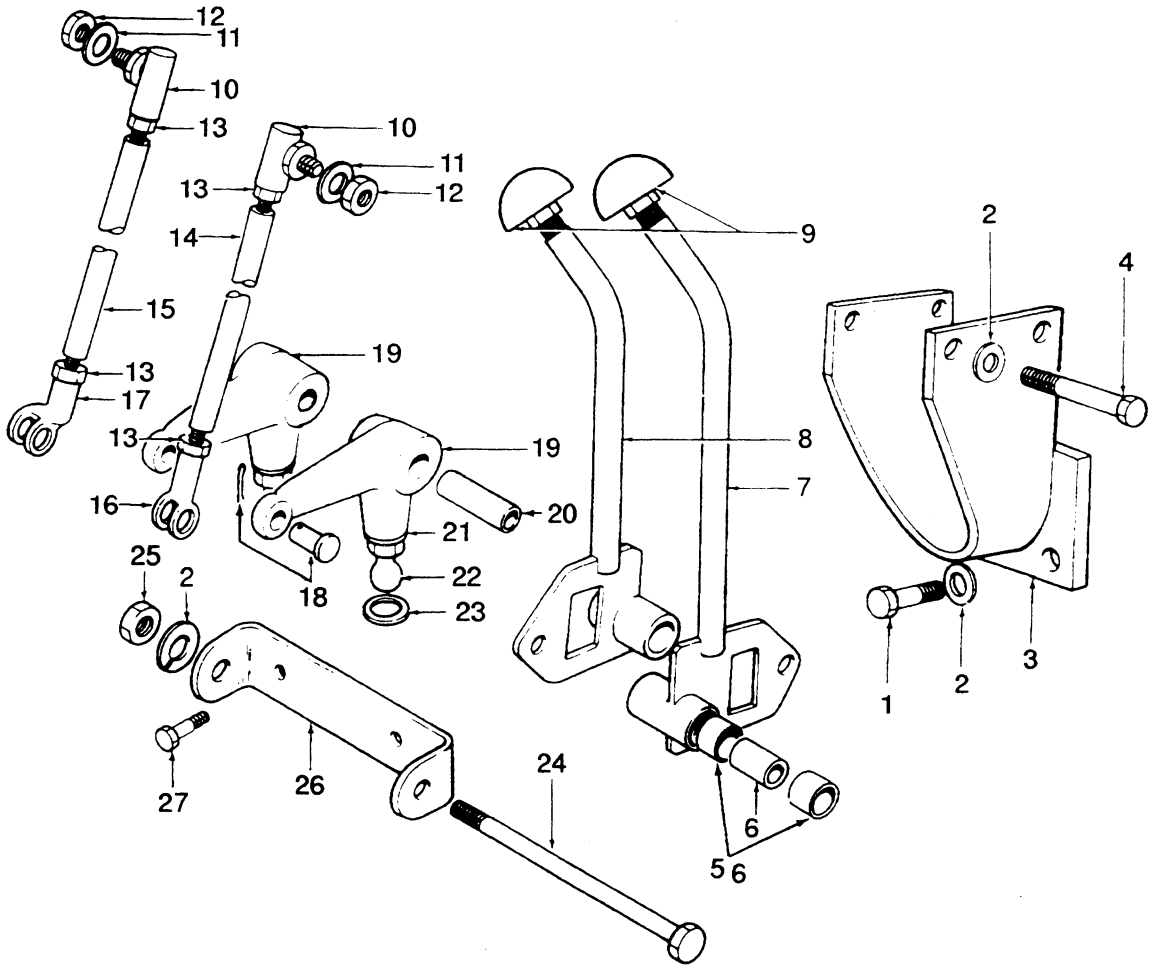
TRANSMISSION GEARS
OIL CLUTCH

REF		PART NO.	NAME OF PART	QTY
		.....	Transmission-OC	1
			☞ Figure 63	
1	a	282230	Input Shaft	1
1	bc	280405	Input Shaft	1
1	d	296804	Input Shaft	1
2	bc	.....	Wear Sleeve	1
3	a	176389	Washer	2
3	b	276431	Snap Ring .087 inch	2
3	b	276432	Snap Ring .093 inch	2
3	b	276433	Snap Ring .095 inch	2
3	b	276434	Snap Ring .101 inch	2
4	a	135670	Shim	AR
4	a	135669	Shim	AR
4	a	135668	Shim	AR
4	b	276438	Shim-.005 inch	AR
4	b	276437	Shim-.007 inch	AR
4	b	276436	Shim-.020 inch	AR
5	a	183620	Bearing Cone	2
5	a	183621	Bearing Cup	2
5	b	276439	Bearing Cone	2
5	b	276440	Bearing Cup	2
6	c	280401	Gear (Reverse)	1
6	d	296801	Gear (Reverse)	1
6	c	176393	Split Bushing	1
6	d	296808	Split Bushing	1
7		377832	Shaft	1
8		21278	Ball	2
9		278244	Spring	2
10		237121	Capscrew	2
10		15157	Lockwasher	2
11		18202	Capscrew	4
11		15156	Lockwasher	4
12	c	274610	Fork (Fwd/Rev)	1
12	d	377833	Fork (Fwd/Rev)	1
13		176403	Wiper Seal	2
14	d	53506	Spacer (Forward)	2
15	a	176403	Wiper Seal	1
15	c	280404	Clutch (Dental)	1
15	d	53507	Clutch (Dental)	1
16	c	280403	Gear (Forward)	1
16	d	296800	Gear (Forward)	1
16	c	176393	Split Bushing	1
16	d	296808	Split Bushing	1
17		135670	Shim	AR
17		135669	Shim	AR
17		135668	Shim	AR
18		183620	Bearing Cone	4
18		183621	Bearing Cup	4
19	c	243696	Gear (Forward Idle)	1
19	d	296810	Gear (Forward Idle)	1
20		296809	Gear (High and Low)	1
21		176405	Shaft	1
22		274607	Fork (High and Low)	1
23		253728	Nut	1
24		176236	Bearing Cone	1
24		230421	Bearing Cup	1
25		176378	Shim-.020 inch	5
25		176379	Shim-.007 inch	4
25		176380	Shim-.005 inch	3
26		223931	Spacer	1
27		223930	Spacer	1
28		243693	Gear (High)	1
28		223928	Split Bushing	1
29		176370	Shim-.080 inch	1
29		176371	Shim-.100 inch	1
29		176372	Shim-.120 inch	1
29		223929	Shim-.060 inch	1
30		252759	Synchronizer	1
31		176369	Gear (Clutch)	1
32		243691	Gear (Low)	1
32		223928	Split Bushing	1
33		223927	Spacer	1
34		184056	Washer	1
35		176364	Oil Seal	1
36		176363	Spacer	1
37		176225	Shim-.005 inch	3
37		176226	Shim-.007 inch	3
37		176227	Shim-.020 inch	3
38		230420	Bearing Cone	1
38		230419	Bearing Cup	1
39		.....	Gear and Pinion	1
			☞ Figure 72	
40	e	226250	Groove Pin	1
41		273263	Pinion Tool	1
42		369820	Pinion Tool	1

[a] Last Used On Xmsn S/N T29M-1512 LOSPD T14M-1691 HISPD
[b] First Used On Xmsn S/N T29M-1513 LOSPD T14M-1692 HISPD
[c] Last Used On S/N D2D-7790
[d] First Used On S/N D2D-7791 D2T-1501
[e] First Used on Xmsn S/N T29M-3167 LOSPD, T14M-3694 HISPD

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SHIFT LINKAGE
OIL CLUTCH
(Figure 65)



REF		PART NO.	NAME OF PART	QTY
1		16805	Capscrew	2
2		15156	Lockwasher	5
3		274489	Bracket	1
4		18537	Capscrew	2
5	a	193756	Bushing	4
5	b	28294	Bushing	4
6	b	301109	Sleeve	2
7	a	193750	Lever (High and Low)	1
7	b	296821	Lever (High and Low)	1
8	a	193753	Lever (Fwd/Rev)	1
8	b	296819	Lever (Fwd/Rev)	1
9		.....	Control Knobs	1
			☞ Figure 169	
10	a	152045	Ball Joint	2
10	b	301104	Ball Joint	2
11		15158	Lockwasher	2
12		15008	Nut	2
13		15028	Nut	4
14		193757	Link	1

REF		PART NO.	NAME OF PART	QTY
15		301111	Link	1
16		152	Rod End	1
17		21326	Rod End	1
18		153	Pin	2
18		15223	Cotter Pin	2
19	a	253254	Crank	2
19	b	301107	Crank	2
20		274343	Sleeve	2
20	b	301108	Sleeve	2
21		15158	Lockwasher	2
22		193760	Stud (Ball)	2
23		193761	Cover	2
24		18549	Capscrew	1
25		15056	Nut	1
26		274342	Bracket	1
27		190057	Capscrew	2

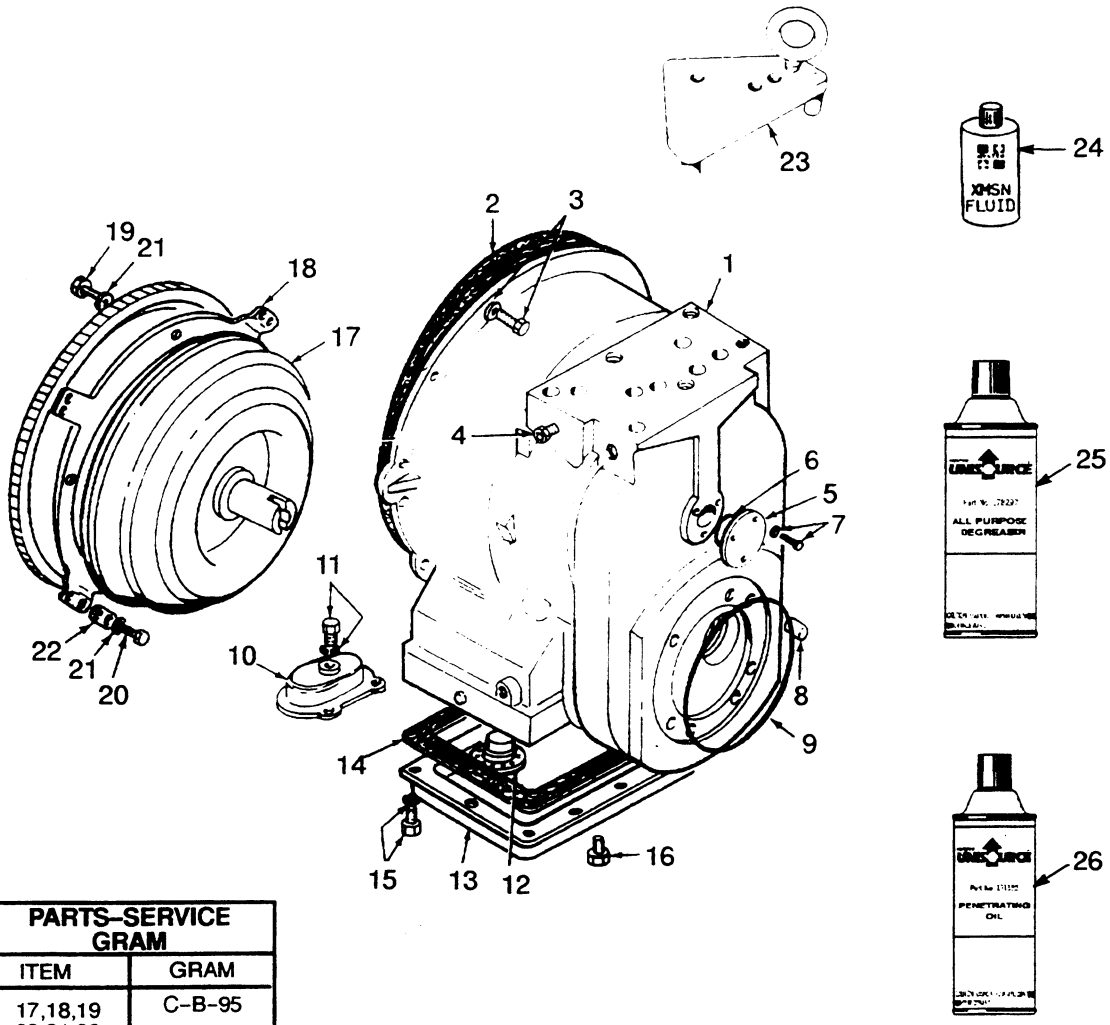
[a] Last Used On S/N D2D-7790
[b] First Used On S/N D2D-7791 D2T-1501

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NOTES

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TRANSMISSION HOUSING
POWERSHIFT
(Figure 66)



PARTS–SERVICE GRAM	
ITEM	GRAM
17,18,19 20,21,22	C–B–95
10,12,13,14	C–I–19
12	C–I–20

TRANSMISSION HOUSING
POWERSHIFT

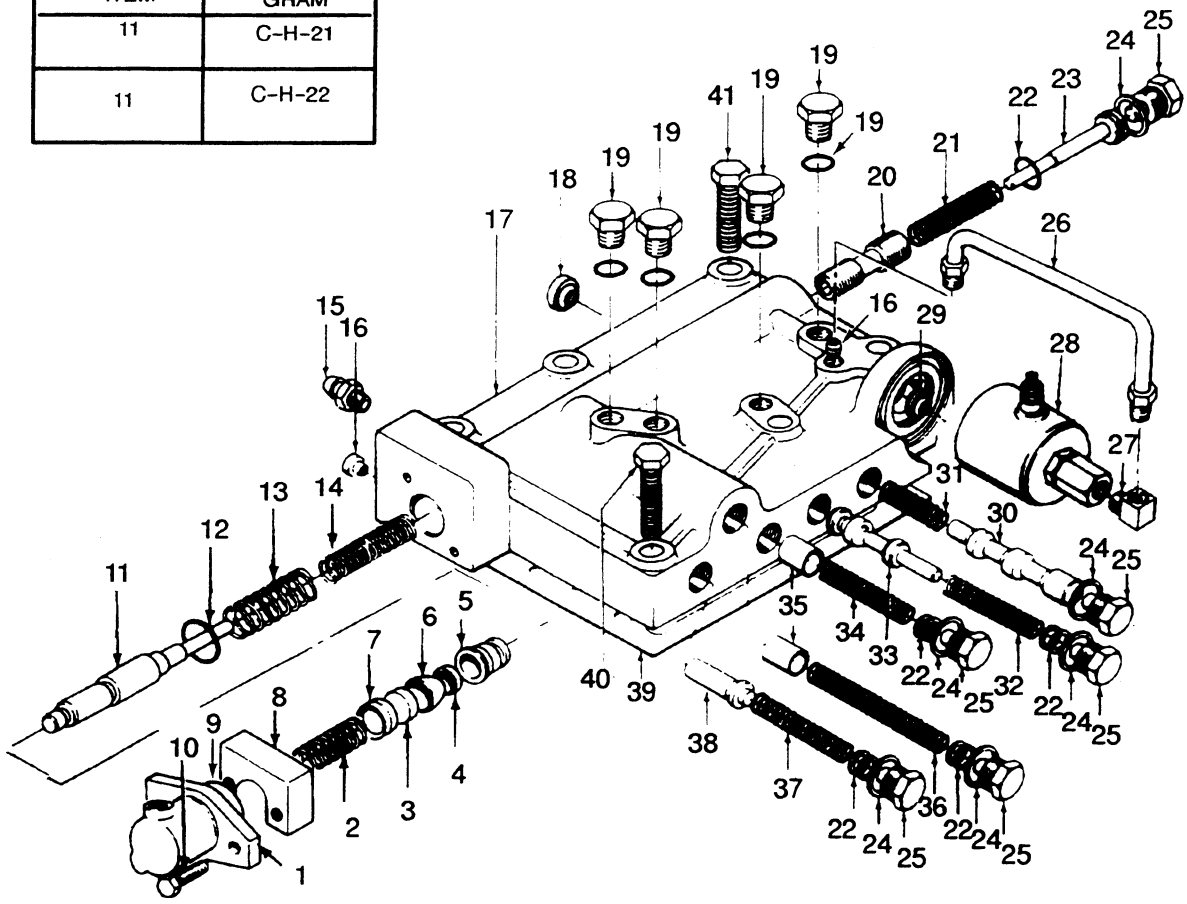
REF		PART NO.	NAME OF PART	QTY
		306233	Xmsn and Valve (High)	1
		306234	Xmsn and Valve (Low)	1
		.....	Differential	1
			☞ Figure 72	
		.....	Control Valve	1
			☞ Figure 67 and Figure 68	
1		329831	Xmsn Housing	1
1	a	366464	Xmsn Housing	1
2		176205	Gasket	1
3		15943	Bolt	10
3		261379	Washer	10
3	b	221522	Capscrew	2
3	b	261379	Washer	2
3	c	18549	Capscrew	2
3	c	15156	Lockwasher	2
4		21420	Breather Plug	1
5		261375	Cover	1
6	d	39673	O-Ring	1
7		15945	Bolt	3
7		261379	Washer	3
8	d	113586	O-Ring	1
9		275222	Dowel Pin	2
10	e	253264	Filter	1
10	fg	.....	Filter	1
			☞ Figure 91	
11	e	16374	Capscrew	3
11	e	15155	Lockwasher	3
12	e	176276	Valve and Screen	1
12	fg	338725	Sump Screen	1
13	e	176262	Pan	1
13	fg	299988	Pan	1
14	e	313022	Sealant	..
14	fg	336652	Gasket	2
15		17112	Bolt	12
15		261379	Washer	12
16		240905	Fitting	1
17		387458	Converter (Torque)	1
18		282812	Mount Plate	1
19		104702	Capscrew	4
20		194277	Bolt	8
21		183605	Washer	12
22		279763	Plate	4
23		273268	Lift Bracket	1
24		336830	Xmsn Fluid (Quart)	AR
24		336831	Xmsn Fluid (Two Gallon)	AR
24		336832	Xmsn Fluid (Five Gallon)	AR
25		178297	Degreaser	AR
26		171352	Penetrating Oil	AR

a First Used On Xmsn S/N T30M-3919 LOSPD T15M-18872 HISPD
b Gasoline And LPG
c Diesel
d Included In Seal Kit 342484
e Last Used On Xmsn S/N T30M-3174 LOSPD T15M-11614 HISPD
f Included In PS External Filter Kit 304363
g First Used On Xmsn S/N T30M-3175 LOSPD T15M-11615 HISPD

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CONTROL VALVE
POWERSHIFT
LAST USED ON TRANSMISSION S/N T15M–11423 HISPD, T30M–3127 LOSPD
(Figure 67)

PARTS–SERVICE GRAM	
ITEM	GRAM
11	C–H–21
11	C–H–22



HYSTER

CONTROL VALVE
POWERSHIFT
LAST USED ON TRANSMISSION S/N T15M-11423 HISPD, T30M-3127 LOSPD

KEY
A: Last Used on Xmsn S/N T15M-4163 HISPD, T30M-2081 LOSPD
B: Used on Xmsn S/N T15M-4164 HISPD, T30M-2082 LOSPD Thru T15M-10216 HISPD, T30M-2889 LOSPD
C: First Used on Xmsn S/N T15M-10217 HISPD, T30M-2890 LOSPD

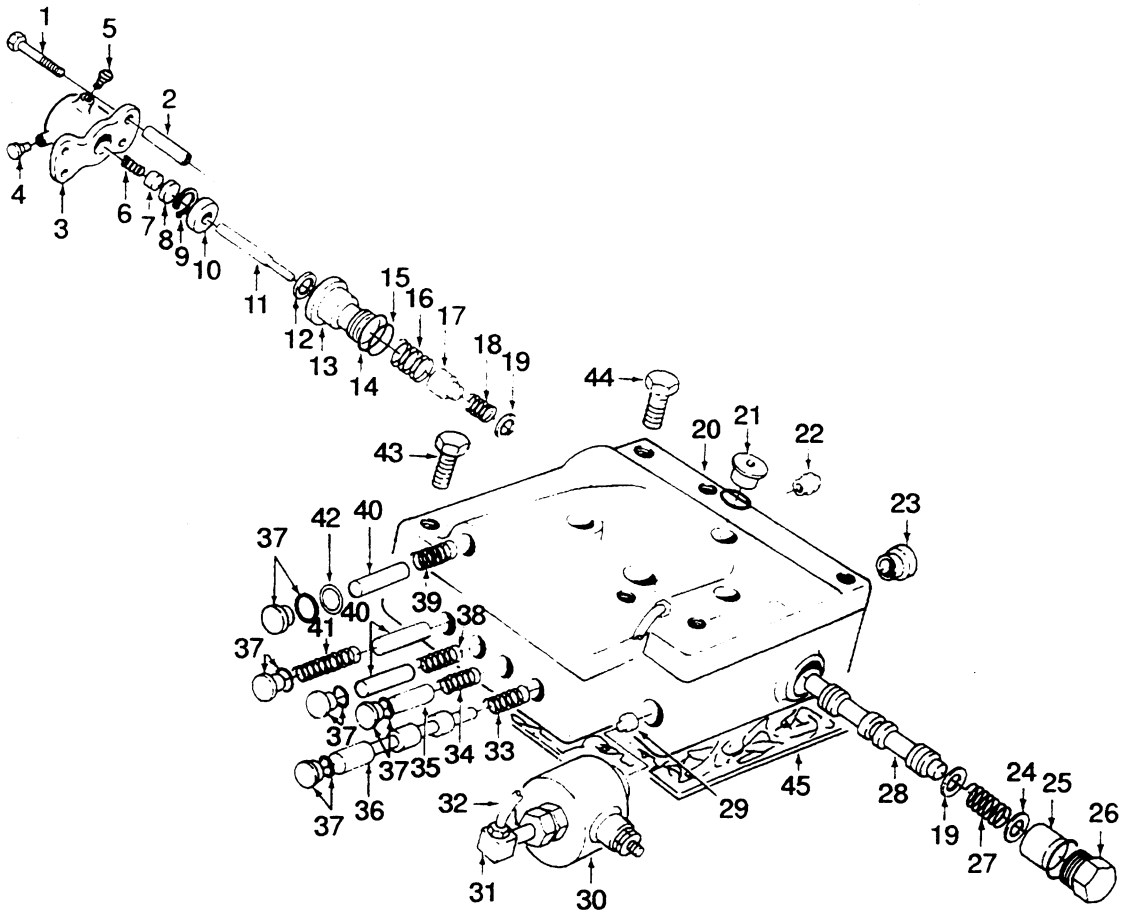
REF	PART NO.	NAME OF PART	QTY A	QTY B	QTY C
	176203	Control Valve	1	..	..
	285115	Control Valve	..	1	..
	305014	Control Valve	..	..	1
1	184892	End Cover	1	1	..
1	288788	Cylinder Body	..	..	1
2	141997	Spring	1	1	..
2	288784	Spring	..	..	1
3	137110	Cup	1	1	..
3	288781	Piston	..	..	1
4	288782	Oil Seal	..	..	1
5	288778	Plug (Guide)	..	..	1
6	299332	Cover	..	..	1
7	140735	Spring	1	1	..
7	137110	Cup	..	..	1
8	288783	Spacer	..	..	1
9	137112	O-Ring	1	1	..
10	199563	Capscrew	2	2	..
10	18126	Capscrew	..	..	2
11	136654	Plunger	1	..	..
11	240083	Plunger	..	1	..
11	[a] 305010	Plunger	..	..	1
12	288301	O-Ring	1	1	..
12	190763	O-Ring	..	..	1
13	254252	Spring	1	..	1
13	136652	Spring	..	1	..
14	183625	Spring	1	1	1
15	28320	Screw	1	1	1
16	291347	Tube Seat	5	5	5
17	.....	Valve Body	1	1	1
18	251363	Tube Seat	1	1	1
19	14591	Adapter	4	4	4
19	16481	O-Ring	1	1	1
20	[a] 305011	Inching Spool	1	1	1
21	183626	Spring	1	1	1
22	108408	Washer-.0625 inch	AR	AR	AR
23	183627	Plunger Spool	1	..	1
23	137118	Plunger Spool	..	1	..
24	29582	Gasket	6	8	8
25	147220	Retainer	6	6	6
26	176268	Tube	1	1	1
27	14269	Connector	1	1	1
28	137121	Solenoid	1	1	1
29	156897	Valve Seat	1	1	1
30	275873	Spool	1	1	1
31	137122	Spring	1	1	1
32	254266	Spring	1	1	1
33	137125	Spool	1	1	1
34	116541	Spring	1	1	1
35	108406	Plunger	2	2	2
36	146421	Spring	1	1	1
37	114280	Spring	1	1	1
38	113645	Plunger	1	1	1
39	[b] 279753	Gasket	1	1	1
40	199575	Capscrew	3	3	3
41	199574	Capscrew	3	3	3

[a] Included In Inching Spool Kit 305015 - Use On Valves Prior To Xmsn S/N T15M-10217, T30M-2890
[b] Included In Seal Kit 342484

Note: Increase Inch and Brake Overlap - Use Kit 305019

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CONTROL VALVE
POWERSHIFT
FIRST USED ON TRANSMISSION S/N T15M-11424 HISPD, T30M-3128 LOSPD
(Figure 68)



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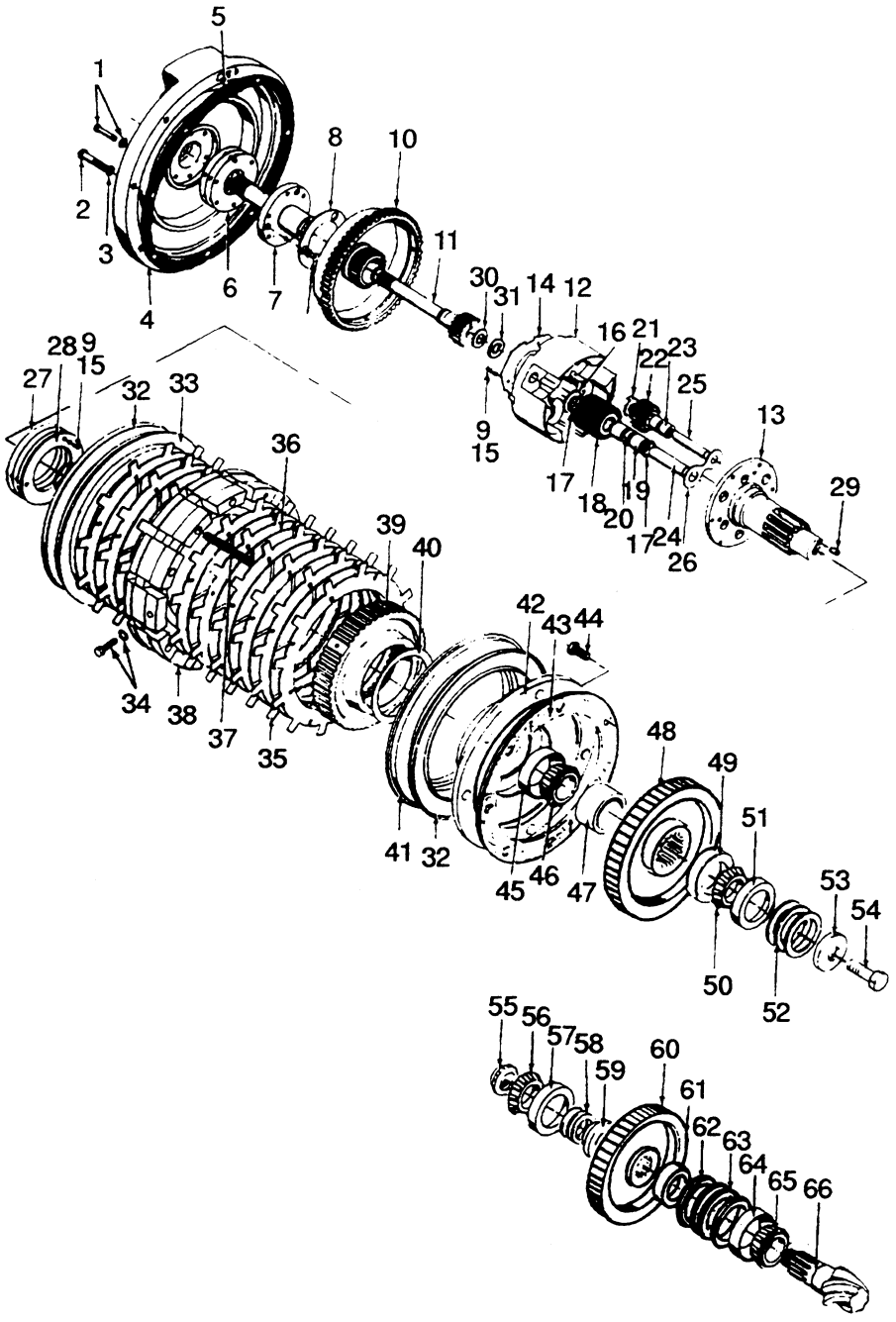
CONTROL VALVE
POWERSHIFT
FIRST USED ON TRANSMISSION S/N T15M-11424 HISPD, T30M-3128 LOSPD

REF	PART NO.	NAME OF PART	QTY
	333768	Control Valve	1
1	18470	Capscrew	2
2	287413	Spacer	2
3	287492	Cylinder	1
3	.....	Body	1
4	291347	Tube Seat	1
5	28320	Screw	1
6	305024	Spring	1
7	287421	Brake Cup	1
8	287419	Piston	1
9	171862	Snap Ring	1
10	299332	Cover	1
11	287438	Shaft	1
12	1194881	Oil Seal	1
13	287409	Plug	1
14	16486	O-Ring	1
15	79986	O-Ring	1
16	287466	Spring	1
17	287488	Guide (Spring)	1
18	287487	Spring	1
19	287436	Washer	2
20	.....	Body	1
21	222442	Fitting	4
21	16481	O-Ring	1
22	291347	Tube Seat	4
23	251363	Tube Seat	1
24	287497	Shim-.030 inch	AR
25	287402	Spool (Park Brake)	1
26	216590	Fitting	1
26	16485	O-Ring	1
27	305023	Spring	1
28	319772	Inching Spool	1
29	156897	Seat-Valve	1
30	137121	Solenoid	1
31	14269	Connector	1
32	176268	Tube	1
33	287468	Spring	1
34	287498	Spring	1
35	287461	Pressure Spool	1
36	287457	Spool (Fwd/Rev)	1
37	222443	Adapter	5
37	16483	O-Ring	1
38	287486	Spring	1
39	287485	Spring	1
40	287472	Spool	3
41	287484	Spring	1
42	287473	Shim-.030 inch	AR
43	199575	Capscrew	3
44	199574	Capscrew	3
45	[a] 342483	Gasket	1

[a] Included In Seal Kit 342484

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TRANSMISSION GEARS
POWERSHIFT
(Figure 69)



TRANSMISSION GEARS
POWERSHIFT

REF		PART NO.	NAME OF PART	QTY
		.....	Transmission	1
		☞	Figure 66	
1		135230	Bolt	6
1		18515	Washer	6
2		15943	Bolt	8
3		261379	Washer	8
4		282816	Housing	1
5	a	183604	Gasket	1
6		198001	Shim-.020 inch	AR
6		198003	Shim-.007 inch	AR
6		198004	Shim-.005 inch	AR
7		176258	Sleeve	1
7		135225	Bushing	1
8	b	.....	Wear Plate	1
9	cbd	135201	Capscrew	9
10		295247	Gear	1
10		239989	Bushing	1
11		245331	Shaft (Output)	1
12		299345	Carrier	1
13		.....	Hub	1
14	c	.....	Wear Plate	1
15	cbd	318650	Loctite	AR
16		135192	Washer	3
17		135189	Snap Ring	6
18		245334	Pinion (Long)	3
19		135190	Bearing	6
20		135191	Spacer	3
21		135185	Washer	3
22		245333	Pinion (Short)	3
23		135184	Bearing	6
24		135193	Shaft (Long)	3
25		135187	Shaft (Short)	3
26		135186	Washer	3
27		135203	Shim-.020 inch	AR
27		135204	Shim-.007 inch	AR
27		135205	Shim-.005 inch	AR
28	d	.....	Wear Plate	1
29		18882	Groove Pin	1
30		146543	Washer	1
31		146944	Shim-.020 inch	AR
32	a	135216	Piston Seal	2
33		206781	Clutch Piston	1
34		183602	Capscrew	1
34	a	192293	O-Ring	1
35		78803	Separator Plate	10
35	e	292989	Separator Plate	10
36		175198	Friction Disc	8
36	e	328154	Friction Disc	8
37		225467	Spring	10
38		333583	Clutch Ring	1
39		245335	Gear	1
40		135214	Washer	1
41		135215	Clutch Piston	1
42		183612	Bearing	1
43	a	183613	Gasket	1
44		15945	Bolt	11
45		183614	Bearing Cup	1
46		183615	Bearing	1
47		183616	Sleeve	1
48		216019	Gear	1
49		176242	Spacer	1
50		183620	Bearing Cone	1
51		183621	Bearing Cup	1
52		135670	Shim-.005 inch	AR
52		135669	Shim-.007 inch	AR
52		135668	Shim-.020 inch	AR
53		137398	Washer	1
54		93260	Bolt	1
55		253728	Nut	1
56		176236	Bearing Cone	1
57		230421	Bearing Cup	1
58		176378	Shim-.020 inch	AR
58		176379	Shim-.007 inch	AR
58		176380	Shim-.005 inch	AR
59		176234	Spacer	1
60		216020	Gear	1
61		176228	Spacer	1
62	a	176364	Oil Seal	1
63		176225	Shim-.005 inch	AR
63		176226	Shim-.007 inch	AR
63		176227	Shim-.020 inch	AR
64		176224	Bearing Cup	1
65		176223	Bearing Cone	1
66		.....	Gear and Pinion	1
		☞	Figure 72	

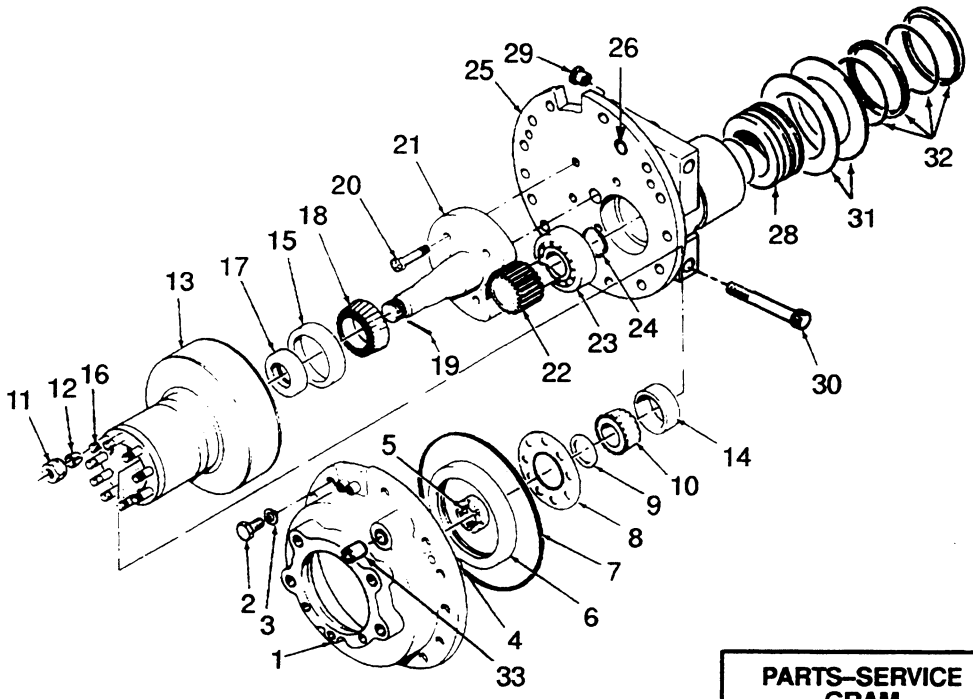
a Included In Seal Kit 342484
b Included In Wear Plate Kit 318731
c Included In Wear Plate Kit 318732
d Included In Wear Plate Kit 318730
e Used on Xmsn S/N T15M19210 Thru T15M19713 And T30M3669 Thru T30M4082

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DRIVE AXLE

LAST USED ON S/N D2D-10045 STANDARD TREAD, D2D-9926 WIDE TREAD, D2T-1826 AND D2T-1834 STANDARD TREAD, D2T-1821 WIDE TREAD

(Figure 70)



PARTS-SERVICE GRAM	
ITEM	GRAM
Drive Axle	C-F-8
27	C-F-10
28	C-F-14
8	C-F-15

DRIVE AXLE

LAST USED ON S/N D2D-10045 STANDARD TREAD, D2D-9926 WIDE TREAD, D2T-1826 AND D2T-1834 STANDARD TREAD, D2T-1821 WIDE TREAD

KEY
A: Standard Tread Axle
B: Wide Tread Axle

REF		PART NO.	NAME OF PART	QTY A	QTY B
1		240910	Cover (RH)	1	1
1		240911	Cover (LH)	1	1
2		97663	Capscrew	14	14
3		15158	Lockwasher	14	14
4		186420	Dowel Pin	3	3
5		328134	Nut	1	1
6		240912	Oil Seal	1	1
7		186422	O-Ring	1	1
8	a	186427	O-Ring	2	2
9		186421	Washer	1	1
10		186424	Bearing Cone	1	1
11		278326	Nut	18	18
12		114827	Dowel	18	18
13		311084	Gear (Internal)	1	1
14		186411	Bearing Cup	1	1
15		186412	Bearing Cup	1	1
16		199431	Stud	9	9
16		226414	Adhesive	AR	AR
17		186417	Oil Seal	1	1
18		186415	Bearing Cone	1	1
19		15226	Cotter Pin	1	1
20		250780	Capscrew	4	4
21		186407	Spindle	1	1
22		186393	Gear Shaft (RH)	1	..
22		186394	Gear Shaft (LH)	1	..
22		186403	Gear Shaft (RH)	..	1
22		186404	Gear Shaft (LH)	..	1
23		41308	Bearing	1	1
24		29557	Snap Ring	1	1
25	b	186387	Axle Housing (RH)	1	..
25	b	186391	Axle Housing (LH)	1	..
25	b	186399	Axle Housing (RH)	..	1
25	b	186401	Axle Housing (LH)	..	1
25	c	312693	Axle Housing (RH)	1	..
25	c	312694	Axle Housing (LH)	1	..
25	c	312697	Axle Housing (RH)	..	1
25	c	312698	Axle Housing (LH)	..	1
26		186390	Bushing	1	1
27	b	186389	Wear Sleeve	1	1
28	d	.....	Bushing	1	1
29		16016	Breather	1	1
30		249998	Capscrew	4	4
31	e	186423	Dust Seal	2	2
31	f	380807	Shim-.030 inch	AR	AR
31	f	380808	Shim-.048 inch	AR	AR
32	e	79981	O-Ring	2	2
32	df	.....	Quadrant Ring	4	4
33		186390	Bushing	1	1

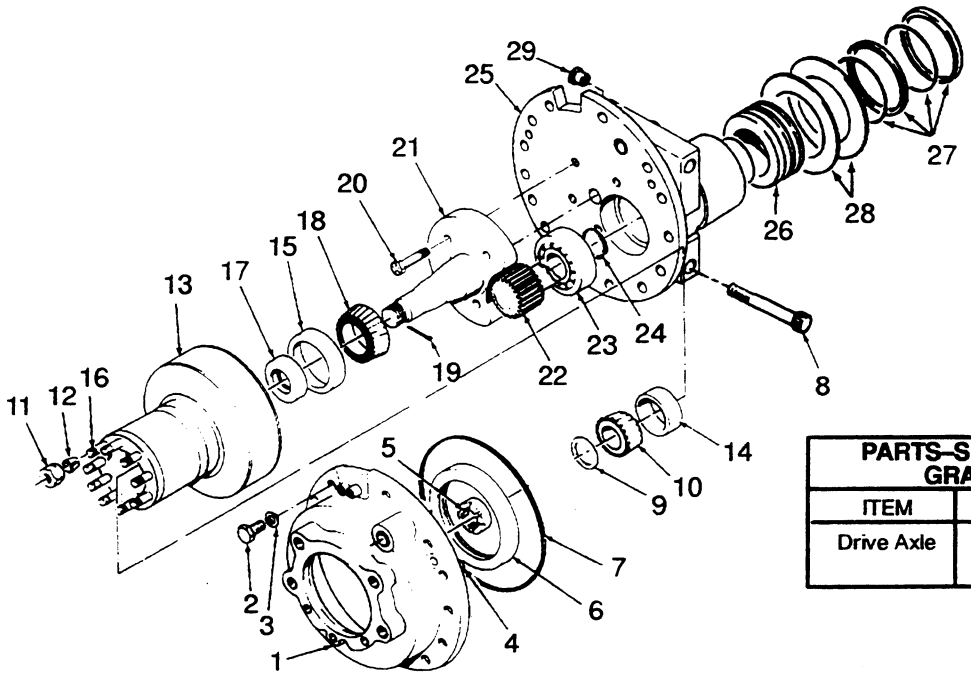
[a] Last Used On S/N D2D-8580
[b] Last Used On S/N D2D-8391 Std Tread, D2D-8436 Wide Tread, D2T-1548 Std Tread
[c] First Used On S/N D2D-8392 Std Tread, D2D-8437 Wide Tread, D2T-1549 Std Tread, D2T-1551 Wide Tread
[d] Included In Bushing And Seal Kit 340423
[e] Last Used On S/N D2D-4746
[f] First Used On S/N D2D-4747

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DRIVE AXLE

FIRST USED ON S/N D2D-10046 STANDARD TREAD, D2D-9927 WIDE TREAD, D2T-1827 EXCEPT D2T-1834 STANDARD TREAD, D2T-1822 WIDE TREAD

(Figure 71)



PARTS-SERVICE GRAM	
ITEM	GRAM
Drive Axle	C-F-8

DRIVE AXLE

FIRST USED ON S/N D2D-10046 STANDARD TREAD, D2D-9927 WIDE TREAD, D2T-1827 EXCEPT D2T-1834 STANDARD TREAD, D2T-1822 WIDE TREAD

KEY
A: Standard Tread Axle
B: Wide Tread Axle

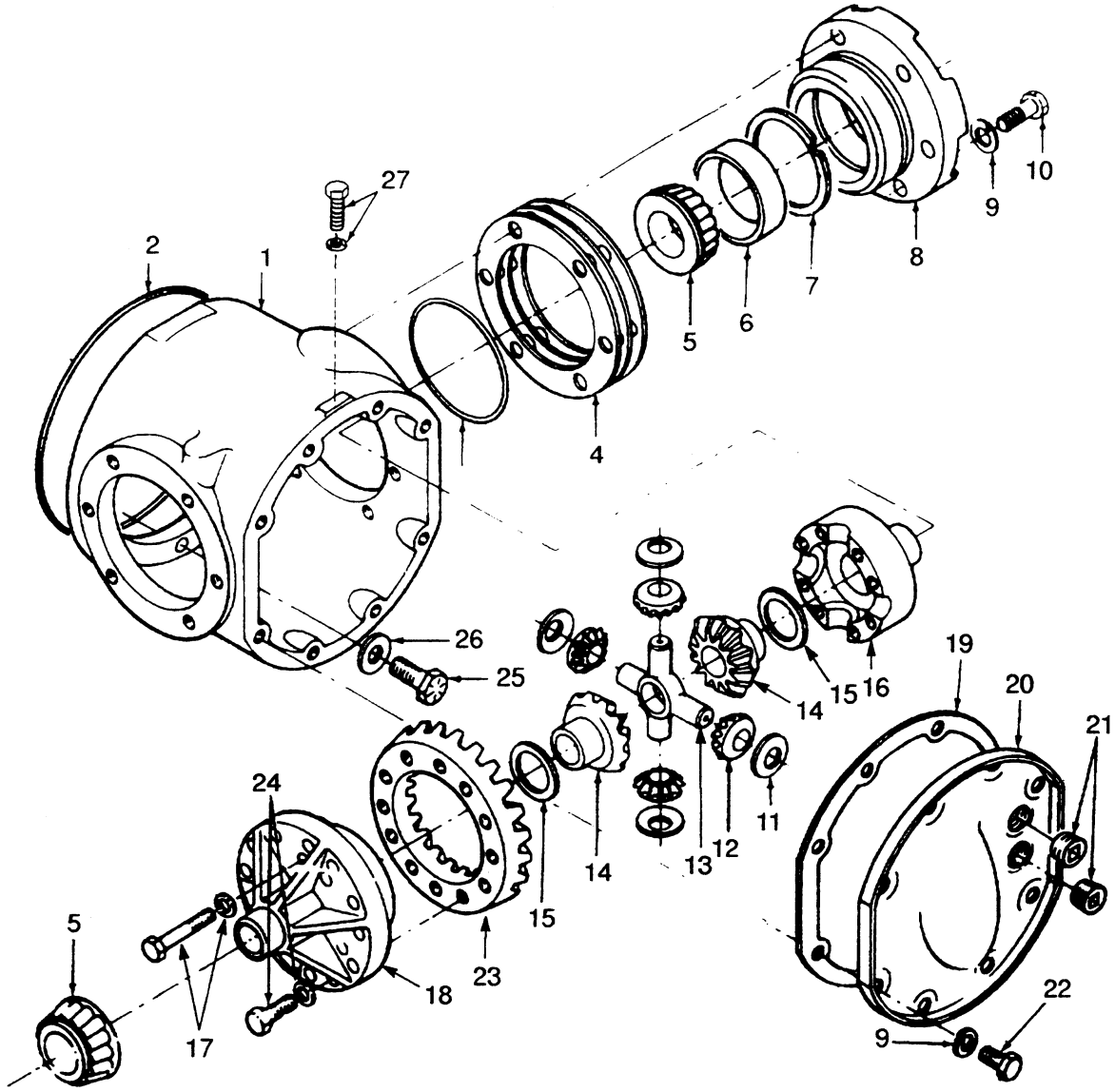
REF		PART NO.	NAME OF PART	QTY A	QTY B
1		318575	Cover (RH)	1	1
1		318577	Cover (LH)	1	1
2		97663	Capscrew	13	13
3		15158	Lockwasher	13	13
4		186420	Dowel Pin	3	3
5		328134	Nut	1	1
6		240912	Oil Seal	1	1
7		186422	O-Ring	1	1
8		249998	Capscrew	4	4
9		186421	Washer	1	1
10		186424	Bearing Cone	1	1
11		278326	Nut	18	18
12		114827	Dowel	18	18
13		311084	Internal Gear	1	1
14		186411	Bearing Cup	1	1
15		186412	Bearing Cup	1	1
16		199431	Stud	9	9
16		226414	Adhesive	AR	AR
17		186417	Oil Seal	1	1
18		186415	Bearing Cone	1	1
19		15226	Cotter Pin	1	1
20		250780	Capscrew	4	4
21		186407	Spindle	1	1
22		186393	Gear Shaft (RH)	1	..
22		186394	Gear Shaft (LH)	1	..
22		186403	Gear Shaft (RH)	..	1
22		186404	Gear Shaft (LH)	..	1
23		41308	Bearing	1	1
24		29557	Snap Ring	1	1
25		318598	Housing (RH)	1	..
25		318599	Housing (LH)	1	..
25		318684	Housing (RH)	..	1
25		318685	Housing (LH)	..	1
26	ab	.....	Bushing	1	1
26	c	340418	Bushing	1	1
27	ab	.....	Quadrant Ring	4	4
27	dc	340420	Seal Ring	4	4
27	dc	118358	O-Ring	4	4
28		380807	Shim-.030 inch	AR	AR
28		380808	Shim-.048 inch	AR	AR
29	e	16016	Breather	1	1

[a] Included In Bushing And Seal Kit 340423
[b] Last Used On S/N D2D-11014 Standard Tread, D2D-11033 Wide Tread
[c] First Used On S/N D2D-11015 Standard Tread, D2D-11034 Wide Tread
[d] Included In Seal Kit 339680
[e] Left Hand Axle

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DIFFERENTIAL

(Figure 72)



PARTS–SERVICE GRAM	
ITEM	GRAM
23	C-E-31

DIFFERENTIAL

REF		PART NO.	NAME OF PART	QTY
		.....	Transmission-PS	1
			☞ Figure 66	
		.....	Transmission-OC	1
			☞ Figure 63	
1		176209	Housing	1
2	a	113586	O-Ring	1
3	a	39742	O-Ring	2
4		176216	Shim-.005 inch	6
4		176217	Shim-.007 inch	2
5		30198	Bearing Cone	2
6		30208	Bearing Cup	2
7		183609	Snap Ring	2
8		340422	Plate (Differential Side)	2
9		15156	Lockwasher	20
10		183611	Capscrew	12
11		306232	Differential	1
11		209645	Washer	4
12		209643	Pinion Gear	4
13		209642	Cross Pin	1
14		209644	Gear	2
15		355912	Thrust Washer	2
16		.....	Case	1
17		248323	Bolt	8
17		292422	Washer	8
18		.....	Case (Flange)	1
19	a	176213	Gasket	1
20		176212	Cover	1
21		15315	Fitting	2
22		16598	Capscrew	8
23	b	306228	Gear and Pinion (Low)	1
23	c	306241	Gear and Pinion (Low)	1
23	b	306225	Gear and Pinion (High)	1
23	c	306239	Gear and Pinion (High)	1
24		92942	Bolt	12
24		306231	Washer	12
25		53176	Bolt	6
26		221771	Washer	6
27		18451	Capscrew	1
27		15026	Nut	1

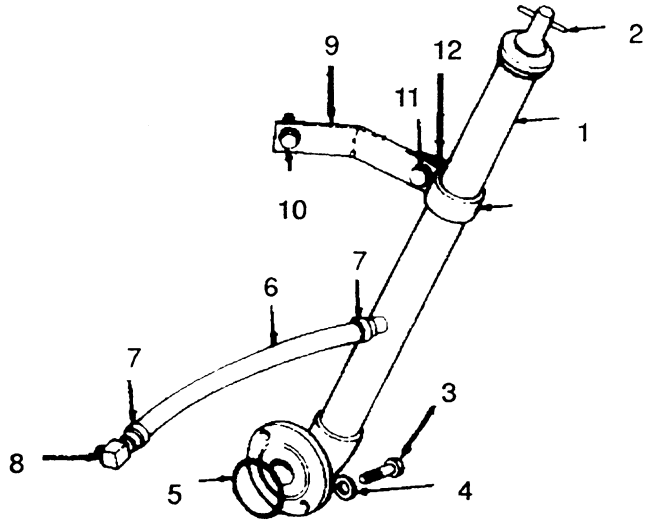
[a] Included In Seal Kit 342484
[b] Powershift
[c] Oil Clutch

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DIPSTICK

LAST USED ON TRANSMISSION S/N T29M-3074 OC LOSPD, T14M-3395 OC HISPD, T30M-3247 PS LOSPD, T15M-12753 PS HISPD

(Figure 73)



REF		PART NO.	NAME OF PART	QTY
1		193766	Filler Tube	1
2		218617	Dipstick	1
3		16805	Capscrew	2
4		15156	Lockwasher	2
5		193771	O-Ring	1
6		193772	Hose	1
7		168718	Hose Clamp	2
8	a	17343	Fitting	1
8	b	174374	Fitting	1
8	b	28584	Fitting	1
9		193774	Strap	1
10		103871	Clamp	1
11		16597	Capscrew	2
11		15156	Lockwasher	2
12		15056	Nut	1

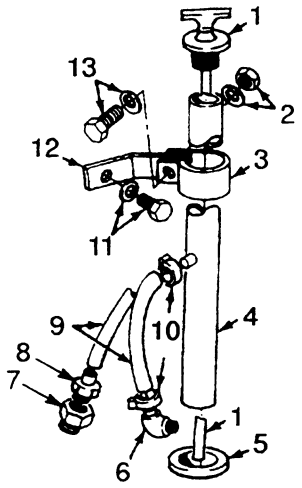
a Powershift
b Oil Clutch

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DIPSTICK

FIRST USED ON TRANSMISSION S/N T29M-3075 OC LOSPD, T14M-3396 OC HISPD, T30M-3248 PS LOSPD, T15M-12754 PS HISPD

(Figure 74)

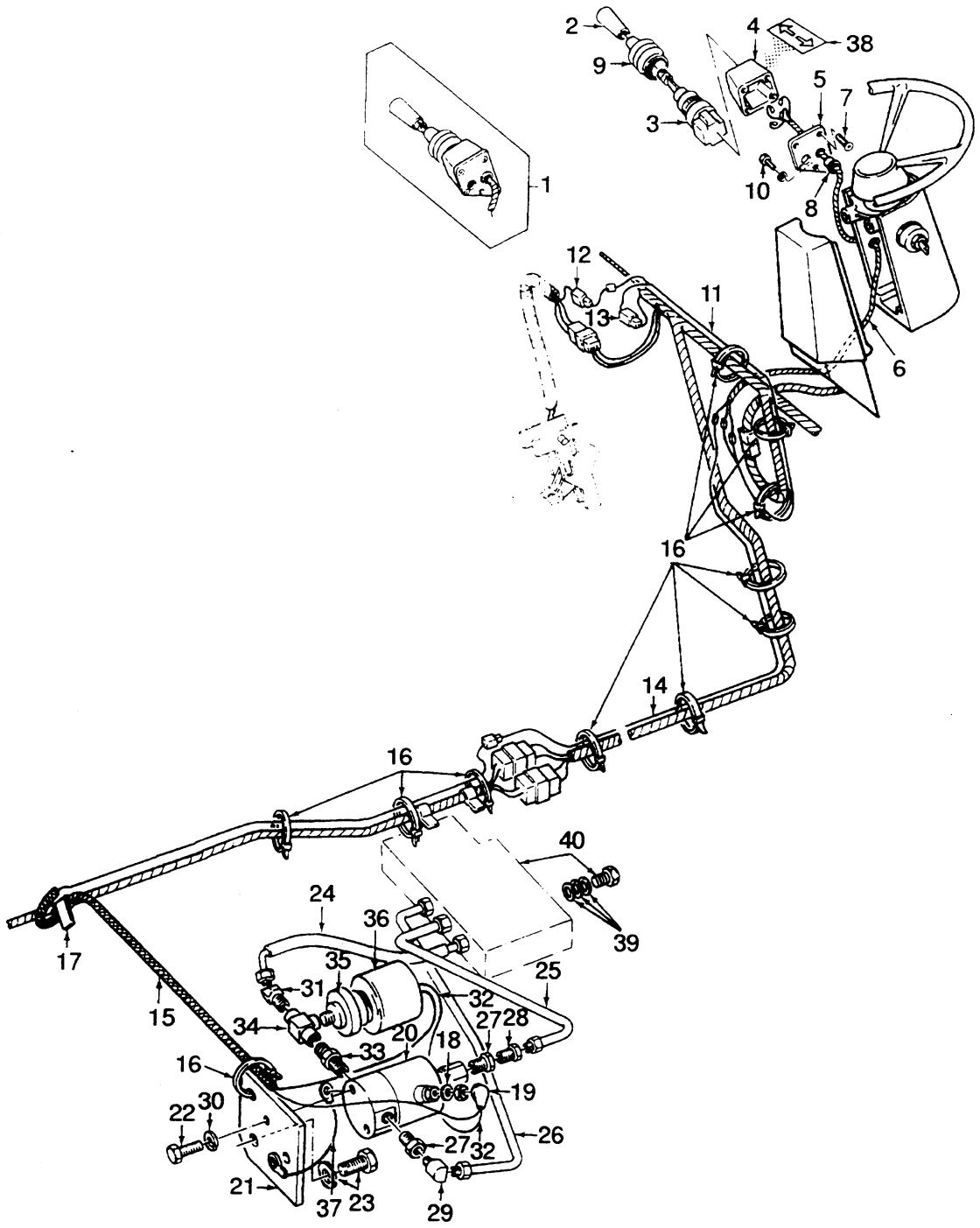


REF		PART NO.	NAME OF PART	QTY
1		301928	Dipstick	1
2		15056	Nut	1
2		15156	Lockwasher	1
3		329835	Clamp	1
4		301929	Dipstick Tube	1
4	a	366468	Dipstick Tube	1
5		44483	Oil Seal	1
5	a	118365	O-Ring	1
6	b	17343	Fitting	1
7	c	174374	Fitting	1
8	c	28584	Fitting	1
9		193772	Hose	1
10		168718	Hose Clamp	2
11		16597	Capscrew	1
11		15156	Lockwasher	1
12		193774	Strap	1
13		16805	Capscrew	1
13		15176	Washer	1

a First Used On Xmsn S/N T29M-3139 OC LOSPD, T14M-4001 OC HISPD, T30M-3919 PS LOSPD, T15M-18872 PS HISPD
b Powershift
c Oil Clutch

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FORWARD AND REVERSE LEVER
POWERSHIFT
(Figure 75)

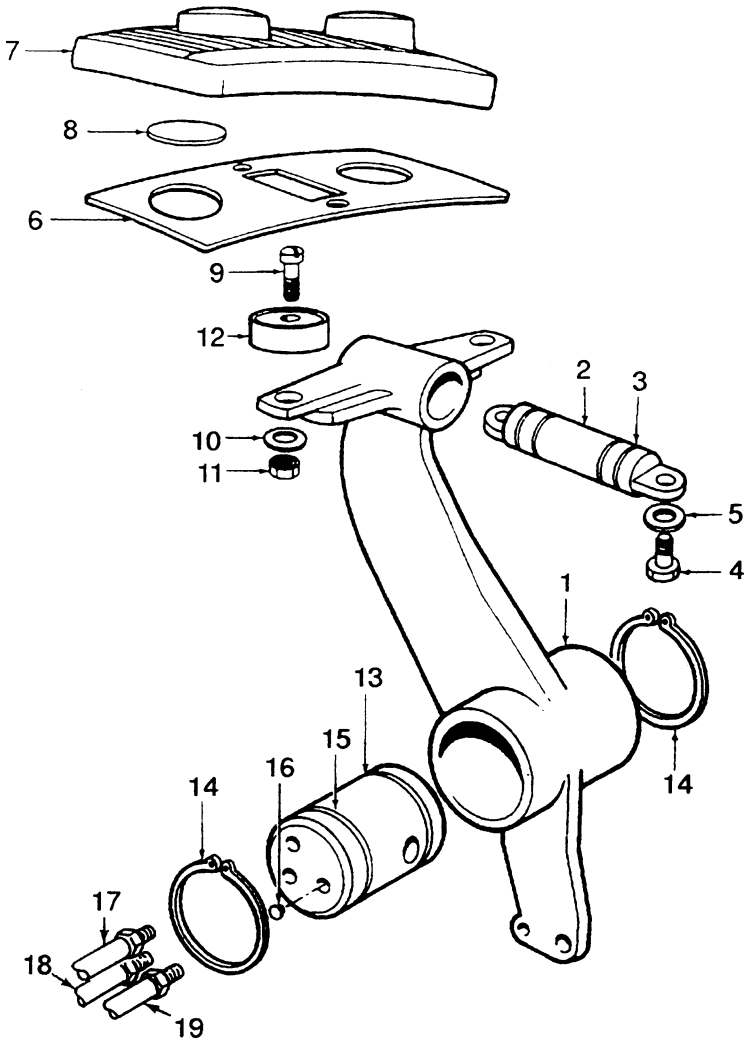


FORWARD AND REVERSE LEVER
POWERSHIFT

REF	PART NO.	NAME OF PART	QTY
1	289144	Lever (Fwd/Rev)	1
2	289143	Handle	1
3	300538	Switch	1
4	286906	Switch Housing	1
5	286907	Bracket	1
6	286924	Wire Harness	1
7	18706	Screw	4
8	286901	Bushing	1
9	289166	Dust Cover	1
10	18720	Capscrew	2
10	15154	Lockwasher	2
11	286902	Wire Harness	1
12	181045	Connector	1
13	181046	Connector	1
14	288238	Wire Harness	1
15	286903	Wire Harness	1
16	114312	Strap	11
17	164488	Clamp	1
18	18500	Washer	1
19	190383	Cover	1
20	286900	Solenoid Valve	1
21	286916	Plate	1
22	220493	Screw	2
23	15943	Bolt	1
23	261379	Washer	1
24	191894	Hose	1
25	286914	Tube	1
26	286915	Tube	1
27	16187	Fitting	2
28	14209	Connector	1
29	14269	Connector	1
30	15152	Lockwasher	2
31	14251	Connector	1
32	304884	Wire	1
33	16167	Fitting	1
34	12838	Fitting	1
35	300539	Pressure Switch	1
36	190380	Cover	1
37	69309	Wire	1
38	288701	Decal (Fwd/Rev)	1
39	287473	Shim-.030 inch	AR
40	.....	Control Valve	1
		☞ Figure 67 and Figure 68	

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MONOTROL PEDAL
POWERSHIFT
(Figure 76)



REF	PART NO.	NAME OF PART	QTY
	[a] 270931	Monotrol Pedal	1
	[b] 343847	Monotrol Pedal	1
1	.....	Pedal	1
2	316410	Rotary Spool	1
3	[c] 191903	O-Ring	2
4	220476	Screw	2
5	15919	Lockwasher	2
6	191905	Plate	1
7	239405	Pad	1
8	191907	Plate	2
9	16853	Screw	2
10	15163	Lockwasher	2
11	15039	Nut	2
12	191908	Magnet	2

REF	PART NO.	NAME OF PART	QTY
13	[a] 270929	Pivot Shaft	1
13	[b] 343848	Pivot Shaft	1
14	[c] 122400	Snap Ring	2
15	[c] 191910	O-Ring	2
16	[c] 291347	Tube Seat	3
17	191894	Hose	1
18	191895	Hose	1
19	191896	Hose	1

[a] Last Used On S/N D2D-1228 And D2T-1957
[b] First Used On S/N D2D-1229 And D2T-1958
[c] Included In Seal Kit 291348

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HYDRAULIC

CONTROL VALVE LINKAGE ..... Page 160

CONTROL VALVE
FIRST USED ON S/N D2D-11239, D2T-1908 TWO FUNCTION,
D2D-11373, D2T-1884 THREE FUNCTION,
D2D-11034, D2T-1889 FOUR FUNCTION ..... Page 168

CONTROL VALVE
LAST USED ON S/N D2D-2996 TWO FUNCTION,
D2D-2558 THREE FUNCTION, D2D-2593 FOUR FUNCTION ..... Page 162

CONTROL VALVE
USED ON S/N D2D-2997 THRU D2D-7247 TWO FUNCTION,
2D2-2559 THRU D2D-7131 THREE FUNCTION,
D2D-2574 THRU D2D-7155 FOUR FUNCTION ..... Page 164

CONTROL VALVE
USED ON S/N D2D-7248 TWO FUNCTION, D2D-7132 THREE FUNCTION,
D2D-7156 FOUR FUNCTION THRU D2D-11238, D2T-1907
TWO FUNCTION, D2D-11372, D2T-1883 THREE FUNCTION,
D2D-11033, D2T-1888 FOUR FUNCTION ..... Page 166

FLOW DIVIDER ..... Page 175

HYDRAULIC FILTER ..... Page 176

HYDRAULIC PUMP
FIRST USED ON S/N D2D-11175, D2T-1891 ..... Page 159

HYDRAULIC PUMP
LAST USED ON S/N D2D-11174, D2T-1890 ..... Page 158

HYDRAULIC
FIRST USED ON S/N D2D-7248 TWO FUNCTION,
D2D-7132 THREE FUNCTION, D2D-7156 FOUR FUNCTION ..... Page 156

HYDRAULIC
LAST USED ON S/N D2D-7247 TWO FUNCTION,
D2D-7131 THREE FUNCTION, D2D-7155 FOUR FUNCTION ..... Page 154

TILT CYLINDER
FIRST USED ON S/N D2D-10631, D2T-1853 ..... Page 172

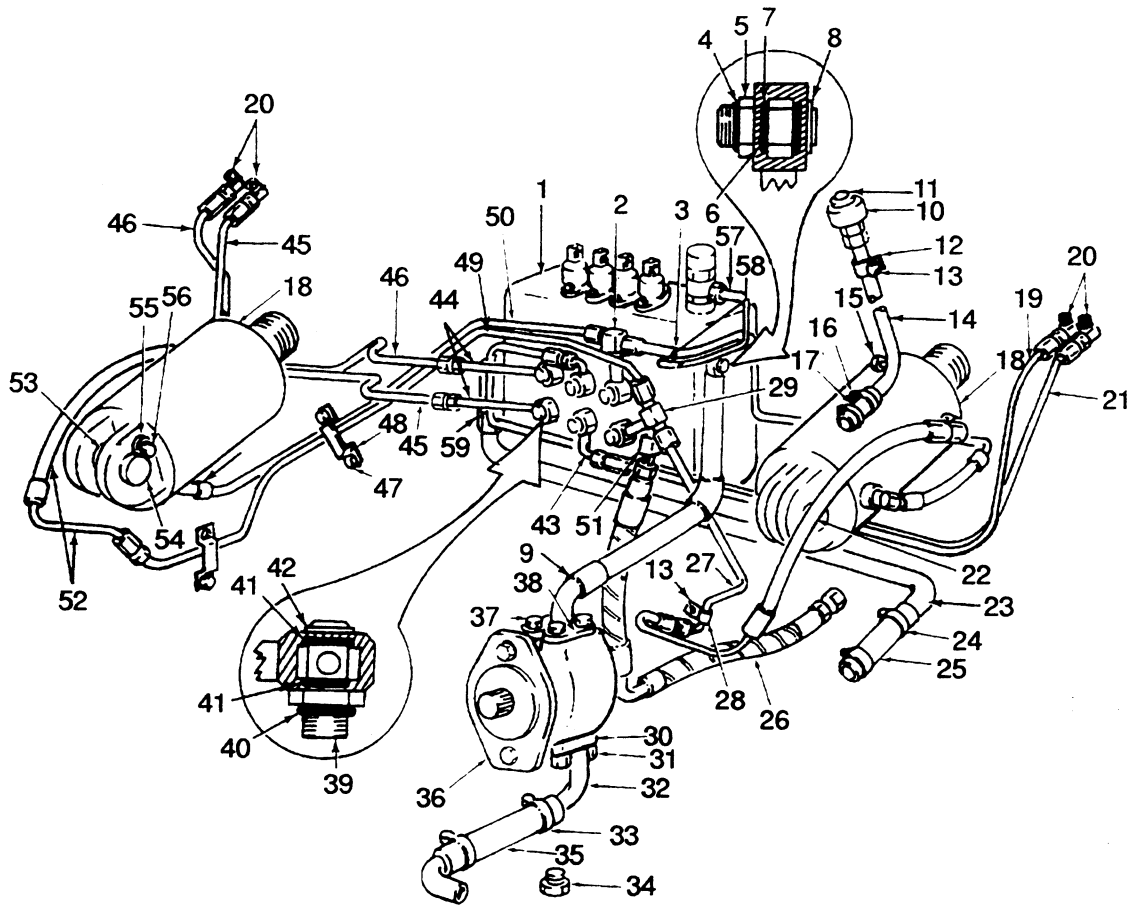
TILT CYLINDER
LAST USED ON S/N D2D-10630, D2T-1852 ..... Page 170

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HYDRAULIC

LAST USED ON S/N D2D-7247 TWO FUNCTION, D2D-7131 THREE FUNCTION, D2D-7155 FOUR FUNCTION

(Figure 77)



HYDRAULIC

LAST USED ON S/N D2D-7247 TWO FUNCTION, D2D-7131 THREE FUNCTION, D2D-7155 FOUR FUNCTION

REF		PART NO.	NAME OF PART	QTY
1		.....	Control Valve	1
			☞ Figure 82-Figure 85	
2		190764	Tube	1
3		190771	Hose	1
4		16485	O-Ring	1
5		190759	Fitting	1
6		190760	Back-Up Ring	2
7		190761	O-Ring	2
8		58933	Snap Ring	1
9		190754	Hose	1
10		75649	Air Filter	1
10		78122	Element	1
11		16704	Screw	1
11		15152	Lockwasher	1
12		113687	Clamp	1
13		16597	Capscrew	2
13		15156	Lockwasher	2
14		282428	Vent	1
14		282431	Adapter	1
15		17829	Fitting Plug	1
16		127045	Clamp	2
17		190780	Hose	1
18		.....	Tilt Cylinder	2
			☞ Figure 86 and Figure 87	
19	ab	190797	Tube	1
20	ab	16458	Fitting	2
21	ab	190798	Tube	1
22		190772	Hose	1
23	c	189213	Tube	1
23	b	189217	Tube	1
23	a	189232	Tube	1
24		127045	Clamp	2
25		215985	Hose	1
26		190781	Hose	1
27		190773	Tube	1
28		133696	Clamp	1
29		190769	Tube	1
30		17764	Adapter	2
30		79980	O-Ring	1
31		18557	Capscrew	4
31		15157	Lockwasher	4
32		190751	Fitting	1
33		127045	Clamp	2
34		15962	Fitting	1
35		261745	Hose	1
36		.....	Hydraulic Pump	1
			☞ Figure 79	
37		16828	Capscrew	4
37		15156	Lockwasher	4
38		190757	Fitting	2
38		156689	O-Ring	1
39		190762	Fitting	AR
40		16485	O-Ring	AR
41		252729	O-Ring	AR
42		58929	Snap Ring	AR
43		190794	Tube	2
44	a	190799	Tube	2
45	a	190801	Tube	1
46	a	190802	Tube	1
47		15156	Lockwasher	2
47		15134	Washer	2
47		15056	Nut	2
48		192051	Clamp	1
49		190778	Tube	1
50		190776	Hose	1
51		16569	Fitting	1
52		190777	Hose	1
53		189066	Bushing	2
54		236839	Pin	2
55		195566	Anchor	2
56		16597	Capscrew	2
56		15156	Lockwasher	2
57	d	189246	Tube	1
58	d	14668	Fitting	1
59		184761	Fitting	1

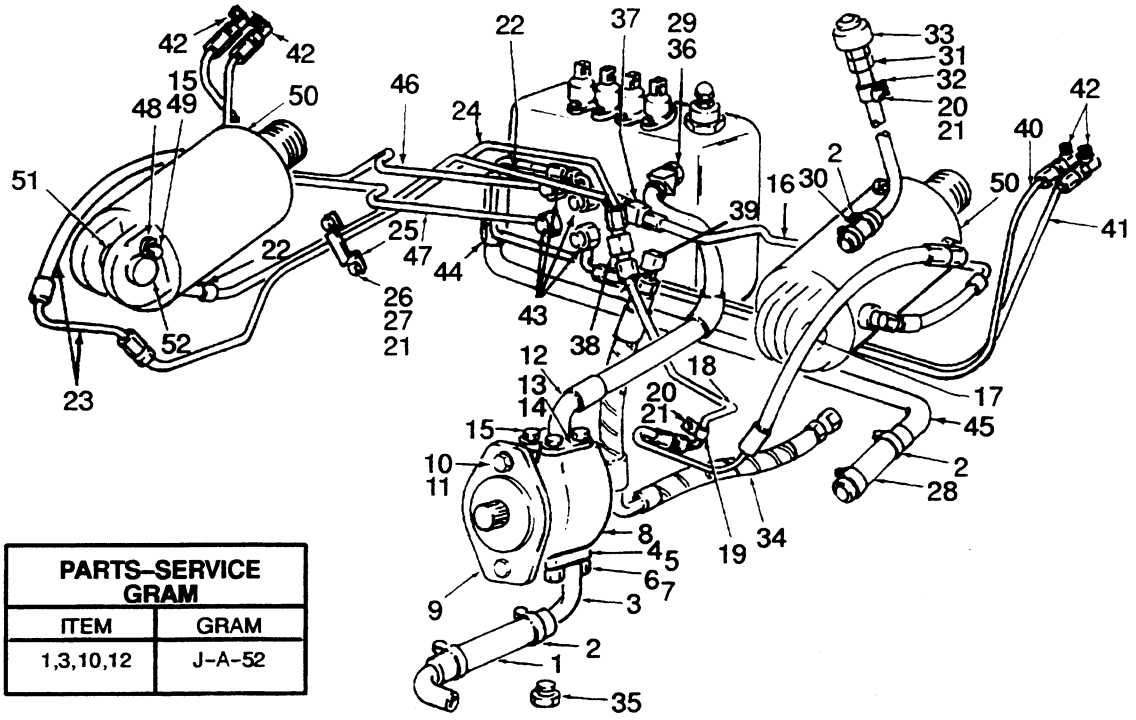
a Four Function Valve
b Three Function Valve
c Two Function Valve
d Last Used On S/N D2D-2558

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HYDRAULIC

FIRST USED ON S/N D2D-7248 TWO FUNCTION, D2D-7132 THREE FUNCTION, D2D-7156 FOUR FUNCTION

(Figure 78)



PARTS-SERVICE GRAM	
ITEM	GRAM
1,3,10,12	J-A-52

HYDRAULIC

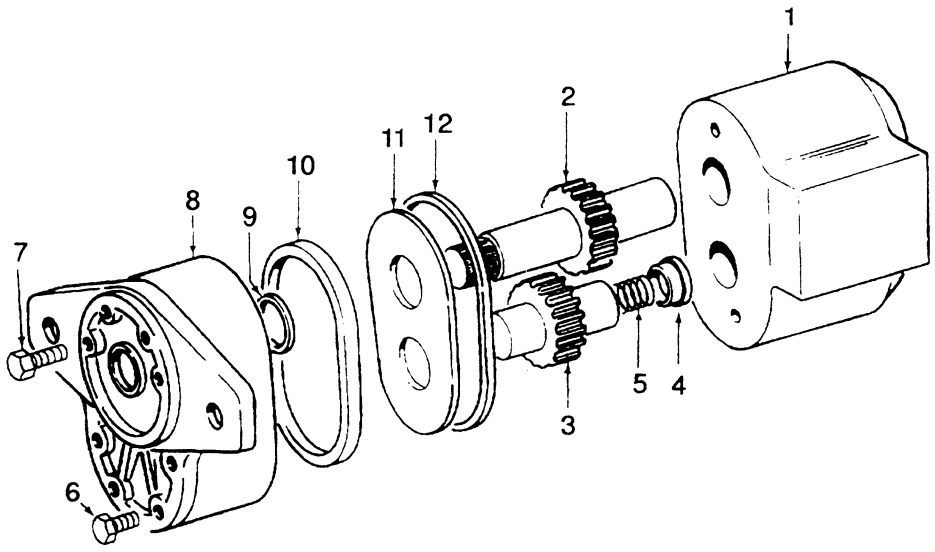
FIRST USED ON S/N D2D-7248 TWO FUNCTION, D2D-7132 THREE FUNCTION, D2D-7156 FOUR FUNCTION

REF		PART NO.	NAME OF PART	QTY
1	a	261745	Hose	1
1	b	345451	Hose	1
2		127045	Clamp	6
3	c	190751	Fitting	1
4	a	17764	Adapter	2
4	b	78459	Elbow	1
5	c	79980	O-Ring	1
6	c	18557	Capscrew	4
7	c	15157	Lockwasher	4
8		.....	Hydraulic Pump	1
			☞ Figure 80	
9	d	281663	O-Ring	1
9	e	317513	Gasket	1
9	e	288394	Sealant	AR
10	a	16085	Capscrew	2
10	b	16830	Capscrew	2
10	b	15135	Washer	2
11		15158	Lockwasher	2
12	d	293178	Hose	1
12	ae	304626	Hose	1
12	b	344734	Hose	1
13		190757	Fitting	2
14		156689	O-Ring	1
15		16828	Capscrew	4
16		293189	Hose	1
17		190772	Hose	1
18		293188	Tube	1
19		133696	Clamp	1
20		16597	Capscrew	2
21		15156	Lockwasher	10
22		293190	Hose	1
23		190777	Hose	1
24		293183	Tube	1
25		192051	Clamp	1
26		15134	Washer	2
27		15056	Nut	2
28		215985	Hose	1
29		14349	Fitting	1
30		190780	Hose	1
31		282428	Vent	1
32		113687	Clamp	1
33		75649	Filter	1
34		190781	Hose	1
35		15962	Fitting	1
35	e	273338	Thread Sealant	AR
36		326465	Fitting	1
37		293197	Fitting	1
38		16576	Fitting	1
39		16569	Fitting	1
40	fg	293184	Tube	1
41	fg	293185	Tube	1
42	fg	16458	Fitting	4
43	fg	239449	Fitting	4
44		293198	Fitting	1
45	c	293180	Tube	1
45	g	293181	Tube	1
45	f	293182	Tube	1
46	f	293186	Tube	1
47	f	293187	Tube	1
48		195566	Anchor	2
49		16805	Capscrew	2
50		.....	Tilt Cylinder	2
			☞ Figure 86 and Figure 87	
51		189066	Bushing	2
52		236839	Pin	2

a Last Used On S/N D2D-11174 And D2T-1890
b First Used On S/N D2D-11175 And D2T-1891
c Two Function Valve
d Last Used On S/N D2D-9276 Gasoline And LPG D2D-10357, Diesel D2T-1745
e First Used On S/N D2D-9277 Gasoline And LPG D2D-10358, Diesel D2T-1746
f Four Function Valve
g Three Function Valve

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HYDRAULIC PUMP
LAST USED ON S/N D2D–11174, D2T–1890
(Figure 79)



REF		PART NO.	NAME OF PART	QTY
		190752	Hydraulic Pump	1
1		.....	Housing	1
2		.....	Shaft and Gear	1
3		.....	Shaft and Gear	1
4		.....	Seat	1
5		.....	Spring	1
6		285800	Screw	3
7		285801	Screw	5
8	a	.....	Cover	1

REF		PART NO.	NAME OF PART	QTY
9	ab	.....	Seal	1
10	ab	.....	Seal	1
11	ab	.....	Pressure Plate	1
12	ab	.....	O-Ring	1

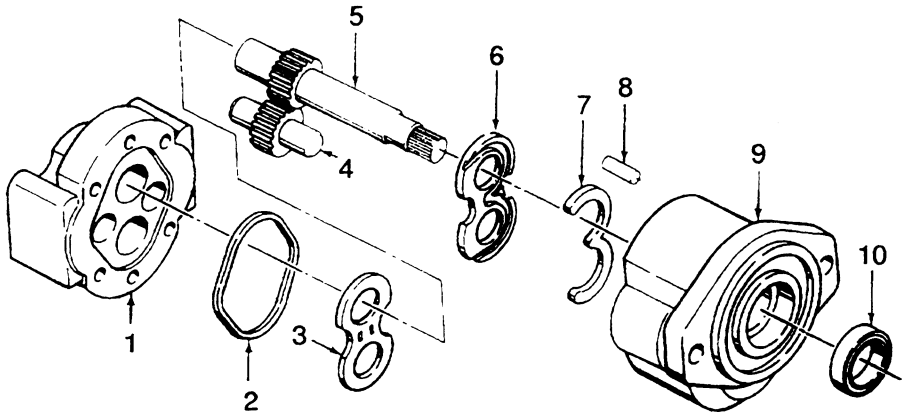
[a] Included In Pump Kit 297041
[b] Included In Seal Kit 297040

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HYDRAULIC PUMP

FIRST USED ON S/N D2D-11175, D2T-1891

(Figure 80)



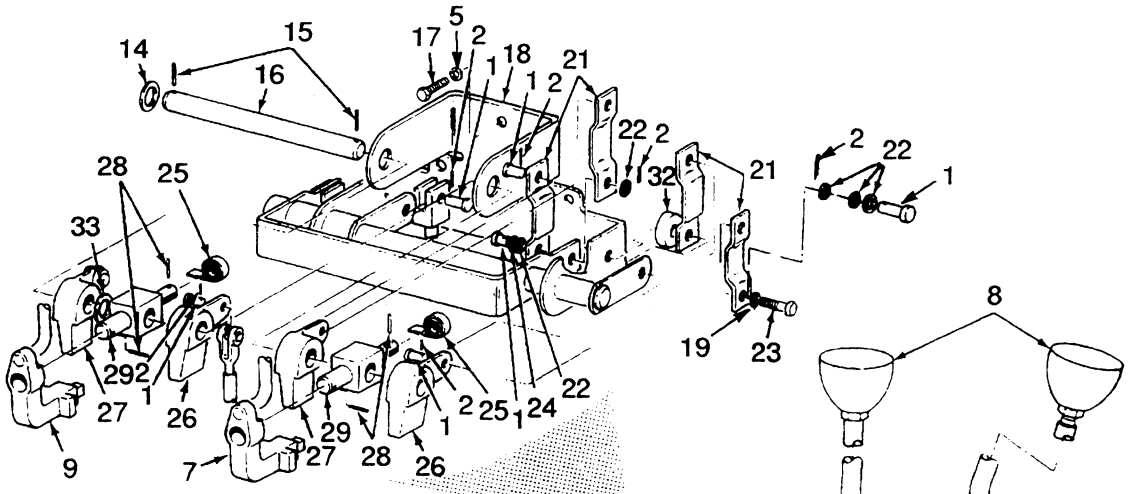
REF		PART NO.	NAME OF PART	QTY
		344725	Hydraulic Pump	1
1		.....	Rear Body	1
2	a	.....	Ring	1
3		346543	Thrust Plate	1
4		347052	Gear	1
5		346549	Gear	1
6		360421	Wear Plate	1
7	a	.....	Seal	1
8		.....	Dowel Pin	2
9		.....	Front Body	1
10	a	.....	Shaft Seal	1

a Included In Seal Kit 354651

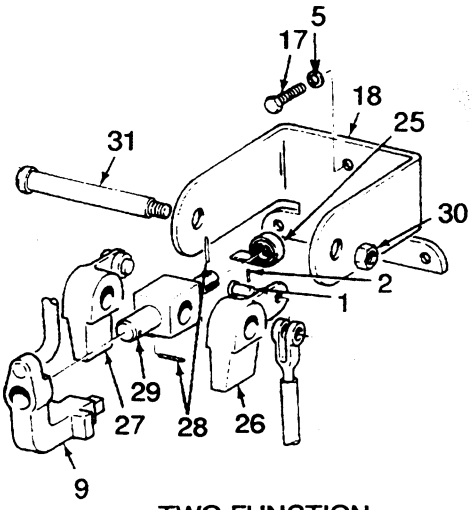
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CONTROL VALVE LINKAGE

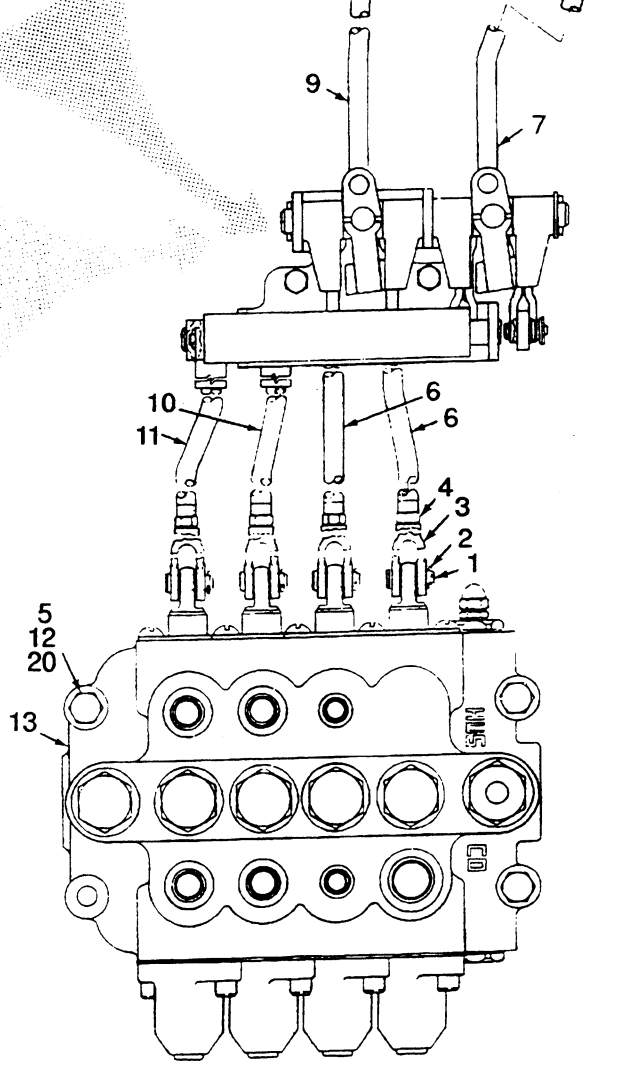
(Figure 81)



THREE AND FOUR FUNCTION



TWO FUNCTION



CONTROL VALVE LINKAGE

KEY
A: Two Function Valve
B: Three Function Valve
C: Four Function Valve

REF	PART NO.	NAME OF PART	QTY A	QTY B	QTY C
1	139	Pin	4	9	12
2	15212	Pin	4	9	12
3	192822	Rod End	2	3	4
4	15028	Nut	2	3	4
5	15156	Lockwasher	6	6	6
6	[a] 189244	Link	2	2	2
6	293191	Link	2	2	2
7	189233	Hand Lever	..	1	1
8	.....	Control Knobs	1	2	2
		☞ Figure 169			
9	189241	Hand Lever	1	1	1
10	[a] 189229	Link	..	..	2
10	293193	Link	..	..	2
11	[a] 251269	Link	..	1	..
11	293195	Link	..	1	..
12	18540	Capscrew	3	3	3
13	.....	Control Valve	1	1	1
		☞ Figure 82 ⇒ Figure 85			
14	15125	Washer	..	1	1
15	19976	Slotted Pin	..	2	2
16	189228	Shaft	..	1	1
17	16597	Capscrew	3	3	3
18	189240	Crank	1	..	..
18	210828	Crank	..	1	1
19	15155	Lockwasher	..	1	..
20	293199	Washer	3	3	3
21	189223	Plate	..	4	4
22	140393	Washer	..	2	4
23	18498	Capscrew	..	1	..
24	18515	Washer	..	1	2
25	199000	Spring	1	2	2
26	114382	Valve Lever	1	2	2
27	114381	Valve Lever	1	2	2
28	19976	Slotted Pin	2	4	4
29	199001	Pin	1	2	2
30	222671	Nut	1	..	..
31	151495	Screw	1	..	..
32	118613	Spacer	..	1	..
33	116848	Shim-.020 inch	AR	AR	AR

[a] Last Used On S/N D2D-7247 Two Function, D2D-7131 Three Function, D2D-7155 Four Function

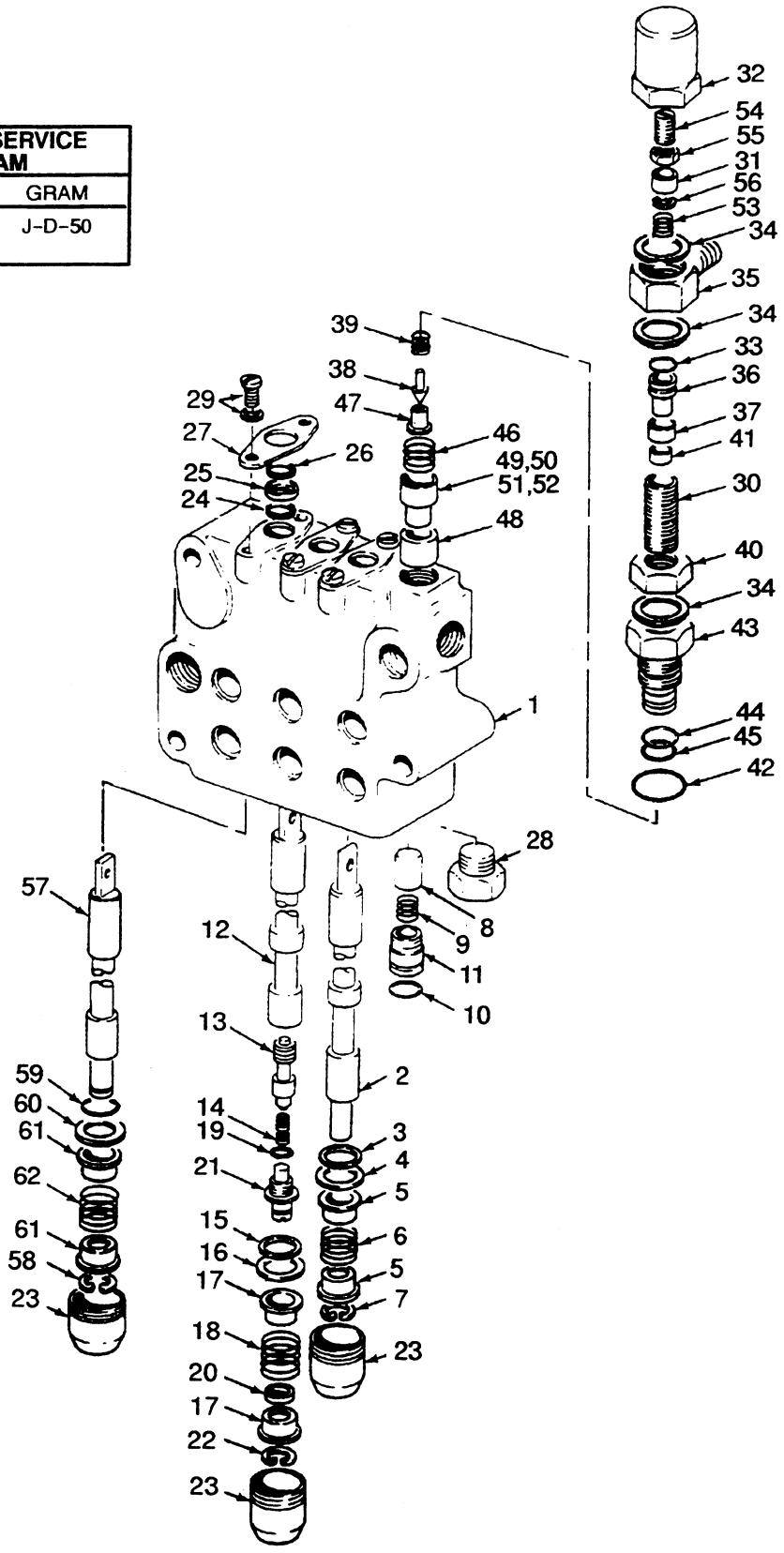
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CONTROL VALVE

LAST USED ON S/N D2D-2996 TWO FUNCTION, D2D-2558 THREE FUNCTION, D2D-2593 FOUR FUNCTION

(Figure 82)

PARTS-SERVICE GRAM	
ITEM	GRAM
Control Valve	J-D-50



CONTROL VALVE

LAST USED ON S/N D2D-2996 TWO FUNCTION D2D-2558 THREE FUNCTION, D2D-2593 FOUR FUNCTION

KEY
A: Two Function Valve
B: Three Function Valve
C: Four Function Valve

REF	PART NO.	NAME OF PART	QTY A	QTY B	QTY C
	189212	Valve-2 Function	1	..	..
	189216	Valve-3 Function	..	1	..
	189231	Valve-4 Function	..	..	1
1	.....	Housing	1	1	1
2	.....	Spool	1	1	1
3	60836	O-Ring	1	1	1
4	233498	Retainer	1	1	1
5	233494	Spacer	2	2	2
6	233497	Spring	1	1	1
7	233495	Snap Ring	1	1	1
8	209029	Check Valve	2	3	4
8	236028	Poppet	2	3	4
9	233491	Spring	2	3	4
10	118389	O-Ring	2	3	4
11	233492	Cap	2	3	4
12	.....	Spool	1	1	1
13	.....	Shuttle	1	1	1
14	209035	Spring	1	1	1
15	60836	O-Ring	1	1	1
16	233498	Retainer	1	1	1
17	233494	Spacer	2	2	2
18	233497	Spring	1	1	1
19	16483	O-Ring	1	1	1
20	234544	Washer	2	2	2
21	209036	Plug	1	1	1
22	233495	Snap Ring	1	1	1
23	233496	Cap	2	3	4
24	60836	O-Ring	2	3	4
25	[a] 233506	Retainer	2	3	4
26	[a] 233505	Wiper	2	3	4
27	[a] 233508	Plate	2	3	4
28	233693	Plug	2	2	2
29	[a] 233696	Screw Assy	4	6	8
30	.....	Relief Valve	1	1	1
30	209038	Screw (Adjuster)	1	1	1
31	209039	Retainer	1	1	1
32	209040	Cover	1	1	1
33	39346	O-Ring	1	1	1
34	209042	Seal	3	3	3
35	209043	Fitting	1	1	1
36	209044	Piston	1	1	1
37	209045	Sleeve	1	1	1
38	234820	Spool	1	1	1
39	209046	Spring	1	1	1
40	209047	Nut	1	1	1
41	209048	Follower	1	1	1
42	16484	O-Ring	1	1	1
43	209049	Cap	1	1	1
44	159858	Back-Up Ring	1	1	1
45	159859	O-Ring	1	1	1
46	234814	Spring	1	1	1
47	293311	Relief Seat	1	1	1
48	234812	Seat	1	1	1
49	166918	Poppet	1	1	1
50	.....	Function	1	1	1
51	.....	Screen	1	1	1
52	.....	Snap Ring	1	1	1
53	234821	Spring	1	1	1
54	220973	Setscrew	1	1	1
55	233502	Nut	1	1	1
56	209051	Shim	AR	AR	AR
57	.....	Spool	..	1	2
58	233495	Snap Ring	..	1	1
59	60836	O-Ring	..	1	1
60	233498	Retainer	..	1	1
61	233494	Spacer	..	2	2
62	233497	Spring	..	1	1

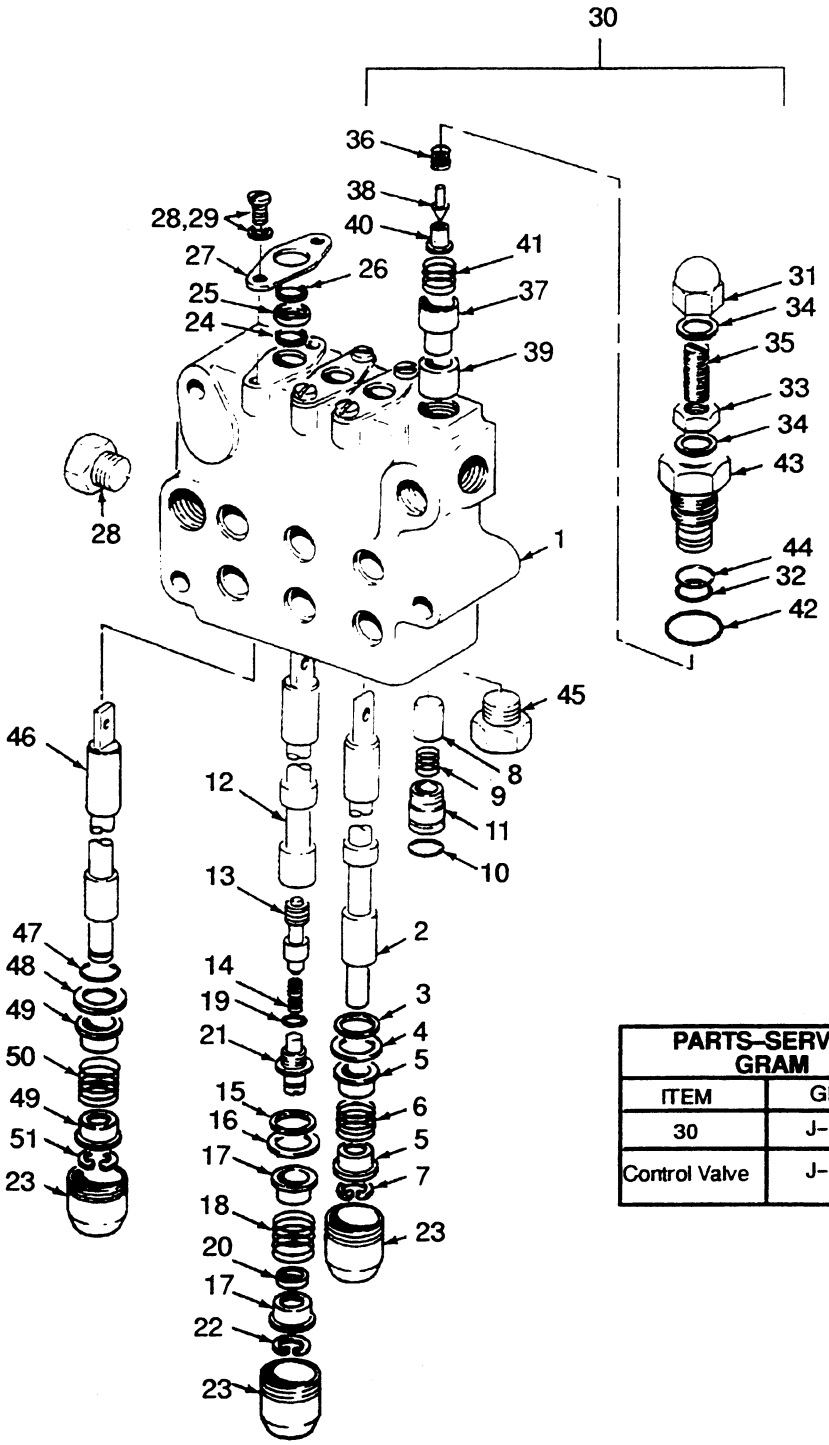
[a] Included In Seal Kit 176539 - Use One Kit Per Spool

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CONTROL VALVE

USED ON S/N D2D-2997 THRU D2D-7247 TWO FUNCTION, 2D2-2559 THRU D2D-7131 THREE FUNCTION, D2D-2574 THRU D2D-7155 FOUR FUNCTION

(Figure 83)



PARTS-SERVICE GRAM	
ITEM	GRAM
30	J-D-50
Control Valve	J-D-54

CONTROL VALVE

USED ON S/N D2D-2997 THRU D2D-7247 TWO FUNCTION, 2D2-2559 THRU D2D-7131 THREE FUNCTION, D2D-2574 THRU D2D-7155 FOUR FUNCTION

KEY
A: Two Function Valve
B: Three Function Valve
C: Four Function Valve

REF		PART NO.	NAME OF PART	QTY A	B	C
		277001	Valve-2 Function	1	..	..
		277002	Valve-3 Function	..	1	..
		277003	Valve-4 Function	..	..	1
1		.....	Housing	1	1	1
2		.....	Spool (Type P)	1	1	1
3	a	60836	O-Ring	1	1	1
3	b	288578	Seal	1	1	1
4		233498	Retainer	1	1	1
5		233494	Spacer	2	2	2
6		233497	Spring	1	1	1
7	b	233495	Snap Ring	1	1	1
8		209029	Check Valve	2	3	4
8		236028	Poppet	2	3	4
9		233491	Spring	2	3	4
10		118389	O-Ring	2	3	4
11		233492	Cap	2	3	4
12		.....	Spool (Type D)	1	1	1
13		259878	Function	1	1	1
14		209035	Spring	1	1	1
14		259880	Ball	1	1	1
14		259881	Washer	1	1	1
15	a	60836	O-Ring	1	1	1
15	b	288578	Seal	1	1	1
16		233494	Spacer	1	1	1
17		233498	Retainer	2	2	2
18		233497	Spring	1	1	1
19		16483	O-Ring	1	1	1
20		234544	Washer	2	2	2
21		209036	Plug	1	1	1
22	b	233495	Snap Ring	1	1	1
23		288473	Spool Cap	2	3	4
23		288474	Bleeder Plug	2	3	4
24	a	60836	O-Ring	2	3	4
24	b	288578	Seal	2	3	4
25	c	233506	Retainer	2	3	4
26	c	233505	Wiper	2	3	4
27	c	233508	Plate	2	3	4
28		222444	Plug	2	2	2
29	c	233696	Screw Assy	4	6	8
30		234811	Relief Valve	1	1	1
31		233503	Nut	1	1	1
32		159859	O-Ring	1	1	1
33		233502	Nut	1	1	1
34		278833	Seal	2	3	3
35		221386	Screw	1	1	1
36		234821	Spring	1	1	1
37		166918	Poppet	1	1	1
38		234820	Spool	1	1	1
39		234812	Seat	1	1	1
40		293311	Relief Seat	1	1	1
41		234814	Spring	1	1	1
42		16484	O-Ring	1	1	1
43		234815	Cap	1	1	1
44		159858	Back-Up Ring	1	1	1
45		233693	Plug	3	2	2
46		.....	Spool (Type D)	..	1	2
47	a	60836	O-Ring	..	1	1
47	b	288578	Seal	..	1	1
48		233498	Retainer	..	1	1
49		233494	Spacer	..	2	2
50		233497	Spring	..	1	1
51	b	233495	Snap Ring	..	1	1

[a] Last Used On S/N D2D-5273 Two Function, D2D-5274 Three Function, D2D-5129 Four Function

[b] Included In SCL Seal Kit 292107 - Use One Kit Per Spool

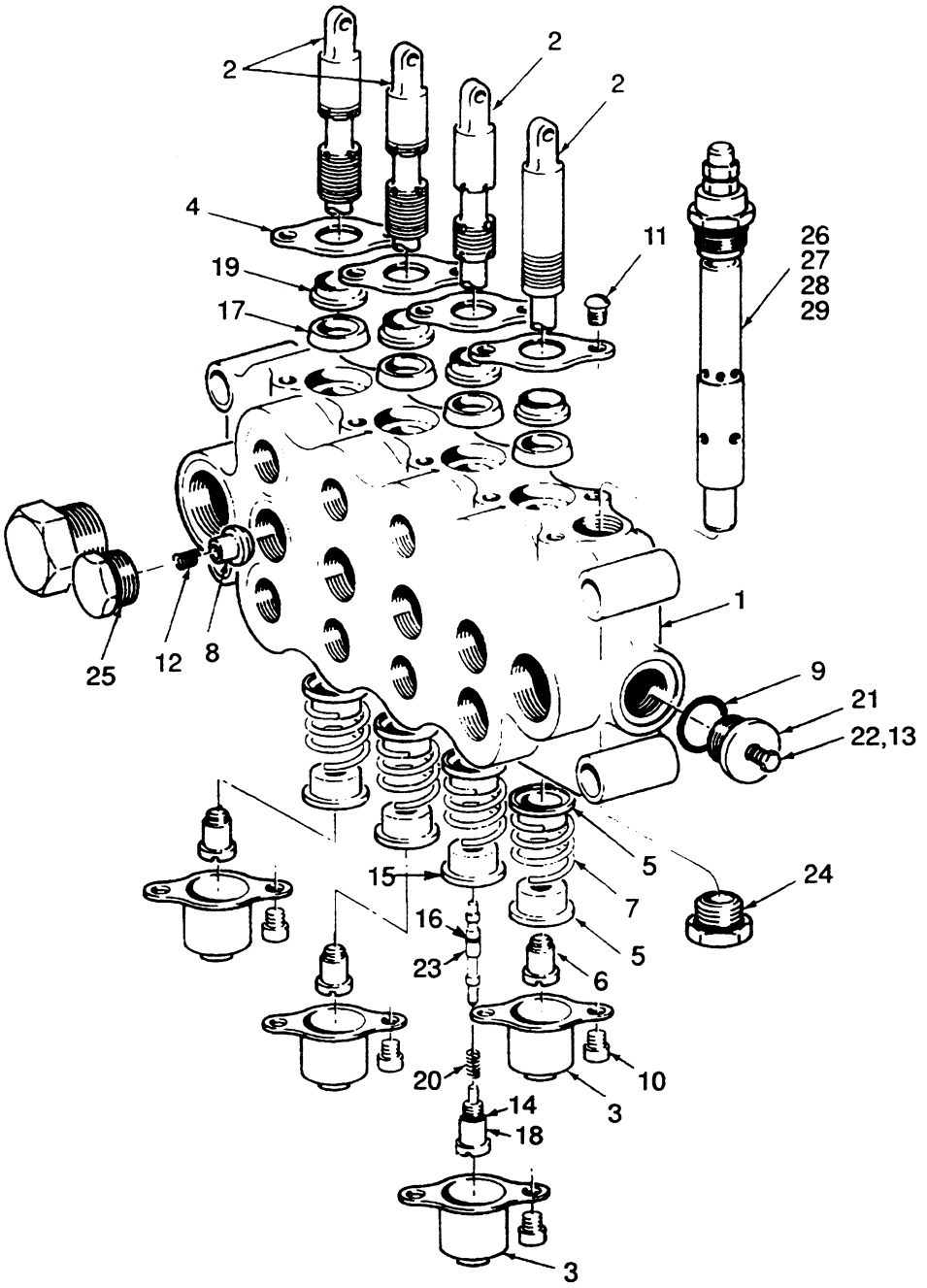
[c] Included In Seal Kit 176539 - Use One Kit Per Spool

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CONTROL VALVE

USED ON S/N D2D-7248 TWO FUNCTION, D2D-7132 THREE FUNCTION, D2D-7156 FOUR FUNCTION THRU D2D-11238, D2T-1907 TWO FUNCTION D2D-11372, D2T-1883 THREE FUNCTION, D2D-11033, D2T-1888 FOUR FUNCTION

(Figure 84)



CONTROL VALVE

USED ON S/N D2D-7248 TWO FUNCTION, D2D-7132 THREE FUNCTION, D2D-7156 FOUR FUNCTION THRU D2D-11238, D2T-1907 TWO FUNCTION D2D-11372, D2T-1883 THREE FUNCTION, D2D-11033, D2T-1888 FOUR FUNCTION

KEY
A: Two Function Valve
B: Three Function Valve
C: Four Function Valve

REF		PART NO.	NAME OF PART	QTY A	QTY B	QTY C
		293175	Valve-2 Function	1	..	..
		293176	Valve-3 Function	..	1	..
		293177	Valve-4 Function	..	..	1
1		.....	Housing	1	1	1
2		.....	Function	1	1	2
2		.....	Function	..	1	1
2		.....	Function	..	1	1
3		274426	Cap	2	3	4
4		275475	Seal Plate	2	3	4
5		274427	Spring Seat	2	4	6
6		274548	Capscrew	1	2	3
7		300723	Spring	2	3	4
8		77443	Poppet	2	3	4
9		16486	O-Ring	1	1	1
10		77445	Capscrew	4	6	8
11		16706	Screw	4	6	8
12		77442	Spring	2	3	4
13		16481	O-Ring	1	1	1
14		16482	O-Ring	1	1	1
15		300724	Insert	2	2	2
16		140594	O-Ring	1	1	..
17	a	.....	Seal	4	6	8
18		304006	Capscrew	1	1	1
19	a	.....	Wiper	2	3	4
20		304002	Spring	1	1	1
21		304003	Plug	1	1	1
22		304004	Plug	1	1	1
23		.....	Piston	1	1	1
24		255145	Plug and O-Ring	2	2	2
25		274430	Plug and O-Ring	2	3	4
26		274433	Relief Valve	1	1	1
27		.....	O-Ring	1	1	1
27	b	.....	Back-Up Ring	1	1	1
28	b	.....	O-Ring	1	1	1
28	b	.....	Back-Up Ring	1	1	1
29	b	.....	O-Ring	1	1	1

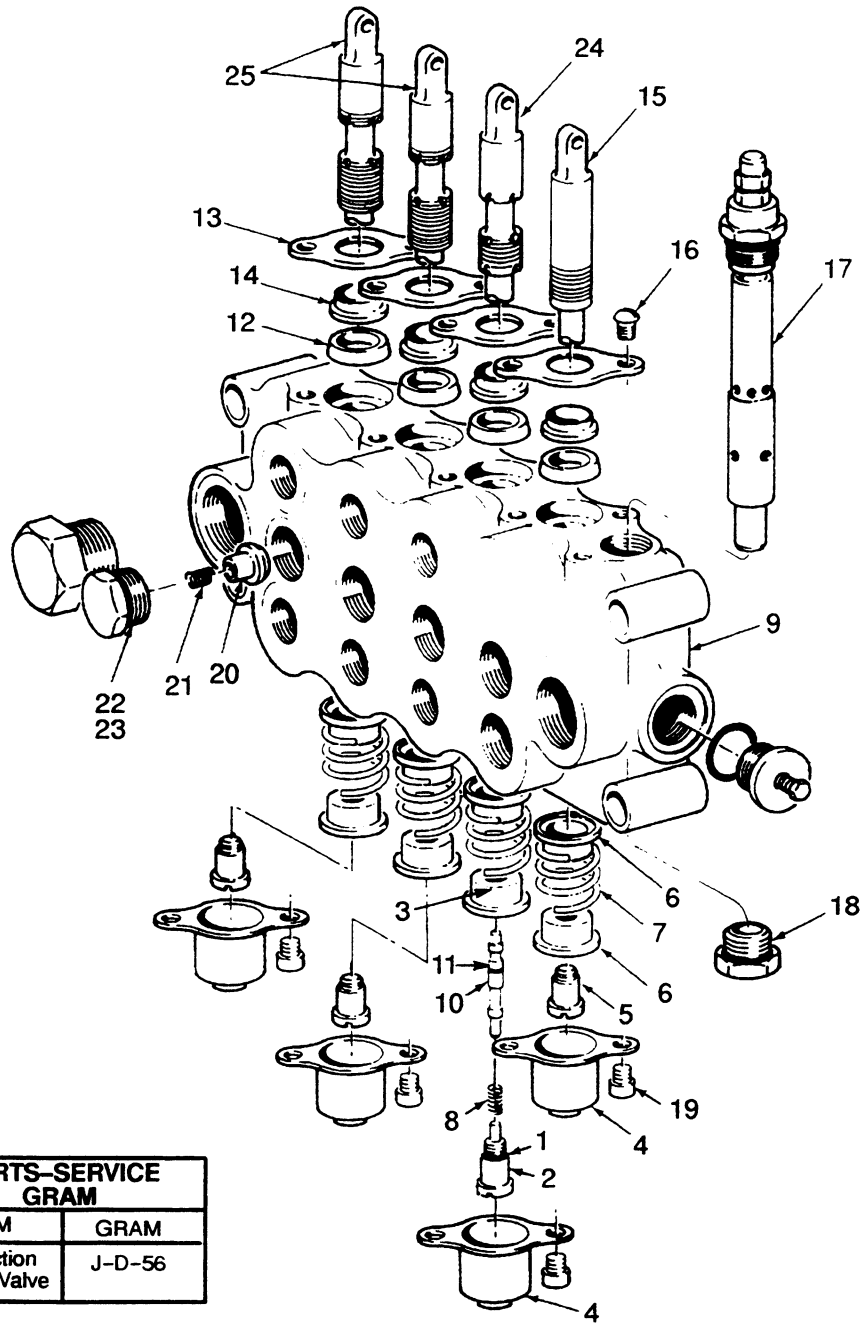
[a] Included In Seal Kit 336837 - Use One Kit Per Spool
[b] Included In Seal Kit 305069

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CONTROL VALVE

FIRST USED ON S/N D2D-11239, D2T-1908 TWO FUNCTION, D2D-11373, D2T-1884 THREE FUNCTION, D2D-11034, D2T-1889 FOUR FUNCTION

(Figure 85)



PARTS-SERVICE GRAM	
ITEM	GRAM
3-Function Control Valve	J-D-56

CONTROL VALVE

FIRST USED ON S/N D2D-11239, D2T-1908 TWO FUNCTION, D2D-11373, D2T-1884 THREE FUNCTION, D2D-11034, D2T-1889 FOUR FUNCTION

KEY
A: Two Function Valve
B: Three Function Valve
C: Four Function Valve

REF		PART NO.	NAME OF PART	QTY A	QTY B	QTY C
		336670	Valve-2 Function	1	..	..
		336671	Valve-3 Function	..	1	..
		336672	Valve-4 Function	..	..	1
1		16482	O-Ring	1	1	1
2		304006	Capscrew	1	1	1
3		300724	Insert	2	2	2
4		274426	Cap	2	3	4
5		274548	Capscrew	1	2	3
6		274427	Spring Seat	2	4	6
7		300723	Spring	2	3	4
8		304002	Spring	1	1	1
9		.....	Housing	1	1	1
10		.....	Piston	1	1	1
11		140594	O-Ring	1	1	1
12	a	.....	Seal	4	6	8
13		275475	Seal Plate	4	6	8
14	a	.....	Wiper	2	3	4
15		.....	Spool	1	1	1
16		16706	Screw	4	6	8
17		274433	Relief Valve	1	1	1
17		305069	Seal Kit	1	1	1
18		255145	Plug and O-Ring	3	3	3
18		16486	O-Ring	1	1	1
19		77445	Capscrew	4	6	8
20		77443	Poppet	2	3	4
21		77442	Spring	2	3	4
22		274430	Plug and O-Ring	2	3	4
23		16485	O-Ring	1	1	1
24		.....	Spool	1	1	1
25		.....	Spool	..	1	2

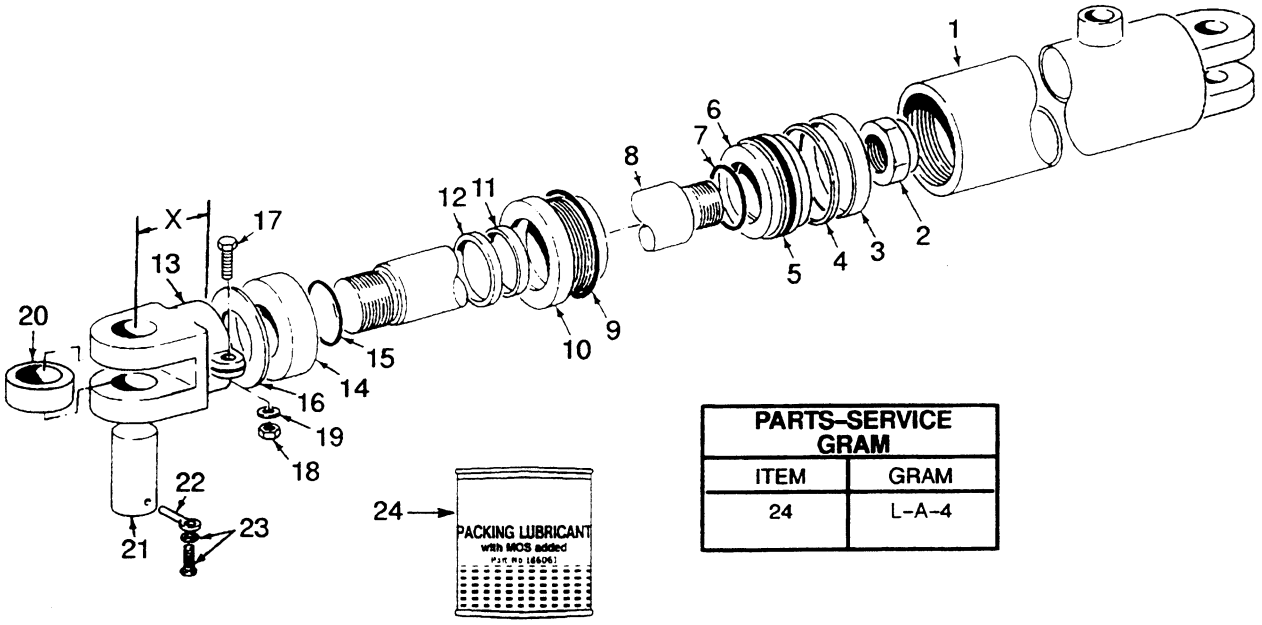
[a] Included In Seal Kit 336837 - Use One Kit Per Spool

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TILT CYLINDER

LAST USED ON S/N D2D-10630, D2T-1852

(Figure 86)



PARTS-SERVICE GRAM	
ITEM	GRAM
24	L-A-4

ROD END	MEASUREMENT "X"	DEGREE TILT
196147	2.81 inch	3° And 6° Forward
192875	3.96 inch	10° Forward

REF		PART NO.	NAME OF PART	QTY
		189065	Tilt Cylinder	2
1		189069	Cylinder	1
2		221371	Locknut	1
3	a	199919	Guide Ring	1
4	a	199918	Piston Ring	1
5	a	79982	O-Ring	1
6		199961	Piston	1
7	a	199917	O-Ring	1
8		189073	Piston Rod	1
9	a	199921	O-Ring	1
10		286106	End Plug	1
11	a	210181	Rod Seal	1
12	a	199922	Wiper	1
13	b	.....	Rod End	2
14	c	198876	Spacer	2
14	d	280834	Spacer	2
14	e	313005	Spacer	2
14	f	313006	Spacer	2
15		55287	O-Ring	2
16	g	134677	Shim-.060 inch	AR
17		18589	Capscrew	2
18		15058	Nut	2
19		15158	Lockwasher	4
20		189066	Bushing	2
21		236838	Pin	2
22		195566	Anchor	2
23		16805	Capscrew	2
23		15156	Lockwasher	2
24		186061	Packing Lubricant	AR

[a] Included In Seal Kit 250050
[b] ☞ Chart Above
[c] 6 Degree Forward-6 Degree Back
[d] 6 Degree Forward-5 Degree Back
[e] 6 Degree Forward-4 Degree Back
[f] 6 Degree Forward-3 Degree Back
[g] All Except 6 Degree Forward-12 Degree Back And 10 Degree Forward-8 Degree Back

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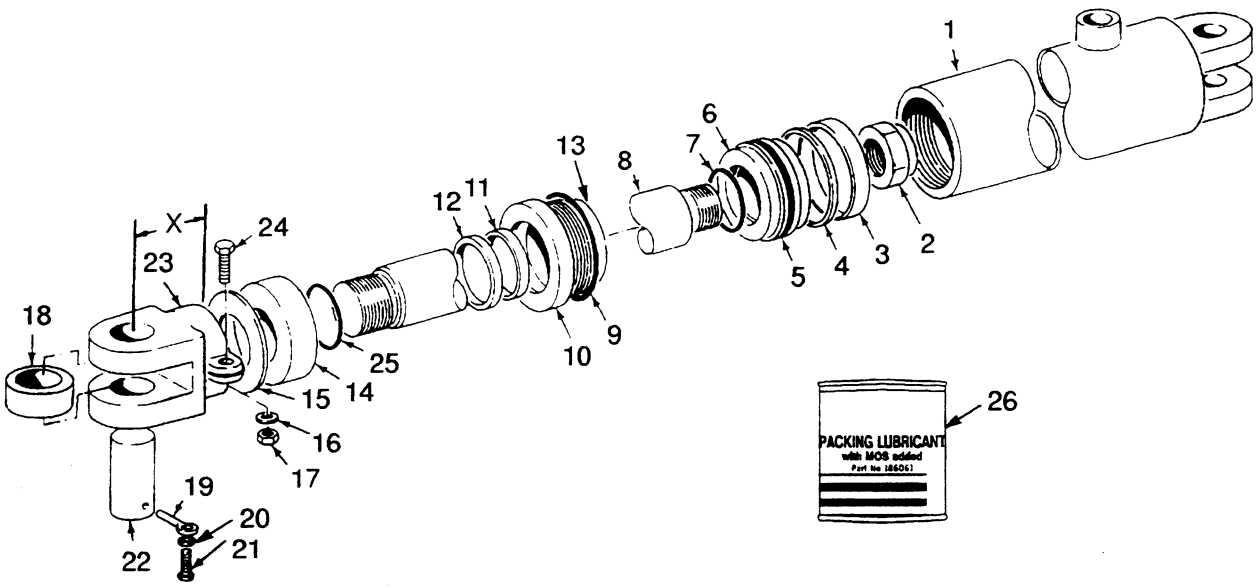
NOTES

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TILT CYLINDER

FIRST USED ON S/N D2D-10631, D2T-1853

(Figure 87)



TILT CYLINDER
FIRST USED ON S/N D2D-10631, D2T-1853

NON-EUROPE						
MAST	DEGREE TILT	ROD END (REF 23)	MEASUREMENT X	SPACER (REF 14)	SHIM (REF 15)	O-RING (REF 25)
Free-Lift	10° Forward-6° Back 6° Forward-10° Back	328124 328122	5.20 inch (132 mm) 4.32 inch (110 mm)	....	....	....
Intermediate Free-Ilft	6° Forward-6° Back	328122	4.32 inch (110 mm)	339070	134677	55287
Vista Two-Stage	6° Forward-5° Back	328122	4.32 inch (110 mm)	339071	134677	55287
Four-Stage	6° Forward-5° Back	328122	4.32 inch (110 mm)	339071	134677	55287
Vista Three-Stage	6° Forward-5° Back 6° Forward-4° Back 6° Forward-3° Back	[a] 328122 [a] 328122 [a] 328122	4.32 inch (110 mm) 4.32 inch (110 mm) 4.32 inch (110 mm)	339071 328234 328235	134677 134677 134677	55287 55287 55287
Vista Three-Stage	6° Forward-5° Back 6° Forward-4° Back 6° Forward-3° Back	[b] 196147 [b] 196147 [b] 196147	2.81 inch (71 mm) 2.81 inch (71 mm) 2.81 inch (71 mm)	339071 328234 328235	134677 134677 134677	55287 55287 55287

[a] S30-50E Narrow
[b] S30-50E Wide And S60ES

EUROPE						
MAST	DEGREE TILT	ROD END (REF 23)	MEASUREMENT X	SPACER (REF 14)	SHIM (REF 15)	O-RING (REF 25)
Intermediate Free-Lift	3° Forward-8° Back	328225	6.04 inch (153 mm)	.....	.....	.....
Vista Two-Stage	3° Forward-5° Back	328225	6.04 inch (153 mm)	336933	134677	55287
Vista Three-Stage	3° Forward-5° Back	[a] 328225	6.04 inch (153 mm)	336933	134677	55287
Vista Three-Stage	3° Forward-5° Back	[b] 328123	4.74 inch (120 mm)	336933	134677	55287

[a] S30-50E Narrow

[b] S30-50E Wide And S60ES

(CONTINUED ON NEXT PAGE)

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TILT CYLINDER
FIRST USED ON S/N D2D-10631, D2T-1853

KEY
A: Non-Europe
B: Europe

REF		PART NO.	NAME OF PART	QTY A	QTY B
		328119	Tilt Cylinder	2	..
		328118	Tilt Cylinder	..	2
1		328109	Cylinder Shell	1	..
1		328108	Cylinder Shell	..	1
2		221371	Locknut	1	1
3	c	199919	Guide Ring	1	1
4	c	199918	Piston Ring	1	1
5	c	15881	O-Ring	1	1
6		328115	Piston	1	1
7	c	199917	O-Ring	1	1
8		328113	Cylinder Rod	1	..
8		328111	Piston Rod	..	1
9		55468	O-Ring	1	1
10		327320	End Plug	1	1
11	c	210181	Rod Seal	1	1
12		199922	Wiper	1	1
13	c	270015	Back-Up Ring	1	1
14	d	.....	Spacer	2	2
15	d	.....	Shim	AR	AR
16		15158	Lockwasher	2	2
17		15058	Nut	2	2
18		189066	Bushing	2	2
19		195566	Anchor	2	2
20		15156	Lockwasher	2	2
21		16805	Capscrew	2	2
22		236838	Pin	2	2
23	d	.....	Rod End	2	2
24		18589	Capscrew	2	2
25	d	.....	O-Ring	2	2
26		186061	Packing Lubricant	AR	AR

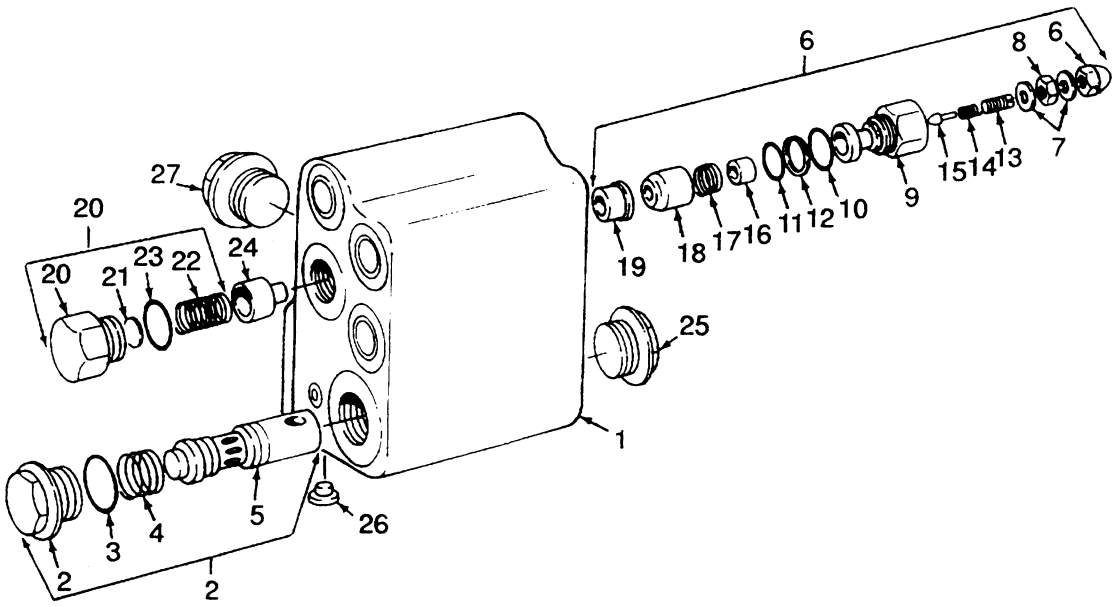
c Included In Seal Kit 328236
d ☞ Chart Above

(CONTINUED FROM PREVIOUS PAGE)

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FLOW DIVIDER

(Figure 88)



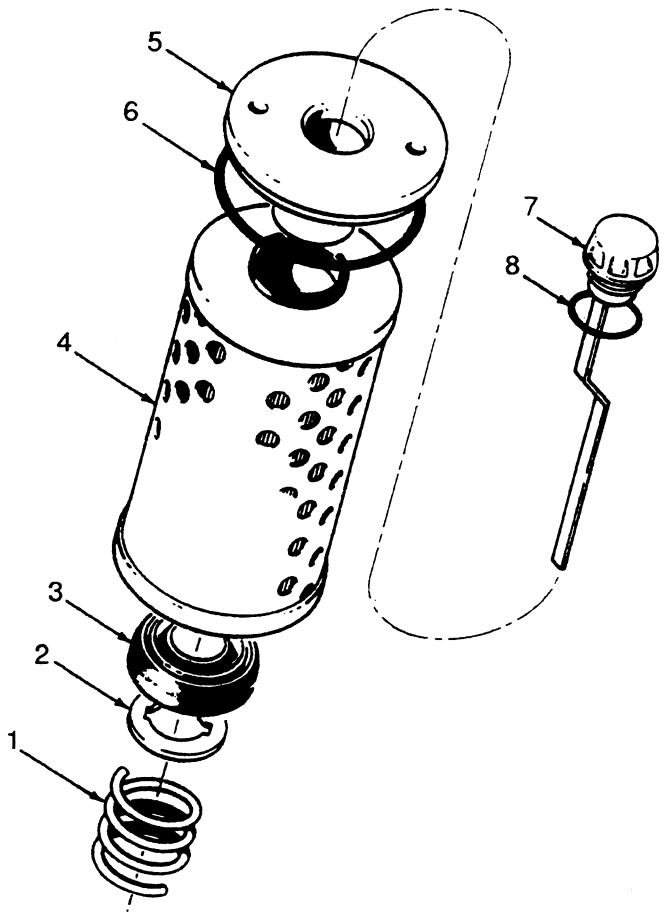
KEY
A: Oil Clutch
B: Powershift

REF	PART NO.	NAME OF PART	QTY A	QTY B
	261748	Flow Divider	1	..
	245252	Flow Divider	..	1
1	.....	Body	1	1
2	259046	Flow Control	1	1
2	259047	Cap	1	1
3	16485	O-Ring	1	1
4	231942	Spring	1	1
5	259048	Spool	1	1
6	234811	Relief Valve	1	1
6	233503	Nut	1	1
7	278833	Seal	2	2
8	233502	Nut	1	1
9	234815	Cap	1	1
10	16484	O-Ring	1	1
11	159859	O-Ring	1	1
12	159858	Back-Up Ring	1	1
13	221386	Screw	1	1
14	234821	Spring	1	1
15	234820	Spool	1	1
16	293311	Relief Seat	1	1
17	234814	Spring	1	1
18	166918	Poppet	1	1
19	234812	Seat	1	1
20	259080	Relief Cooler	..	1
20	259082	Cap	..	1
21	217742	Shim-.001 inch	..	1
22	259083	Spring	..	1
23	16484	O-Ring	..	1
24	259081	Poppet	1	1
25	235691	Fitting	2	1
26	259084	Plug	2	2
27	222443	Adapter	1	1

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HYDRAULIC FILTER

(Figure 89)



REF	PART NO.	NAME OF PART	QTY
1	190784	Spring	1
2	190785	Washer	1
3	181941	Seal	1
4	190786	Filter	1
5	190787	Filter Head	1
6	39742	O-Ring	1
7	218611	Dipstick	1
8	16487	O-Ring	1

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STEERING AND LINKAGE

HAND PUMP
FIRST USED ON S/N D2D-9491, D2T-1771 OC AND PS WITH MONOTROL, D2T-1779 WITH FORWARD/REVERSE LEVER ..... Page 188

HAND PUMP
LAST USED ON S/N D2D-5061 ..... Page 186

HAND PUMP
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LAST USED ON TRANSMISSION S/N T29M-3062 OC LOSPD, T14M-3288 OC HISPD, T30M-3174 PS LOSPD, T15M-11614 PS HISPD ..... Page 178

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LAST USED ON S/N D2D-9490, D2T-1770 OC AND PS WITH MONOTROL, D2T-1778 PS WITH FORWARD/REVERSE LEVER ..... Page 182

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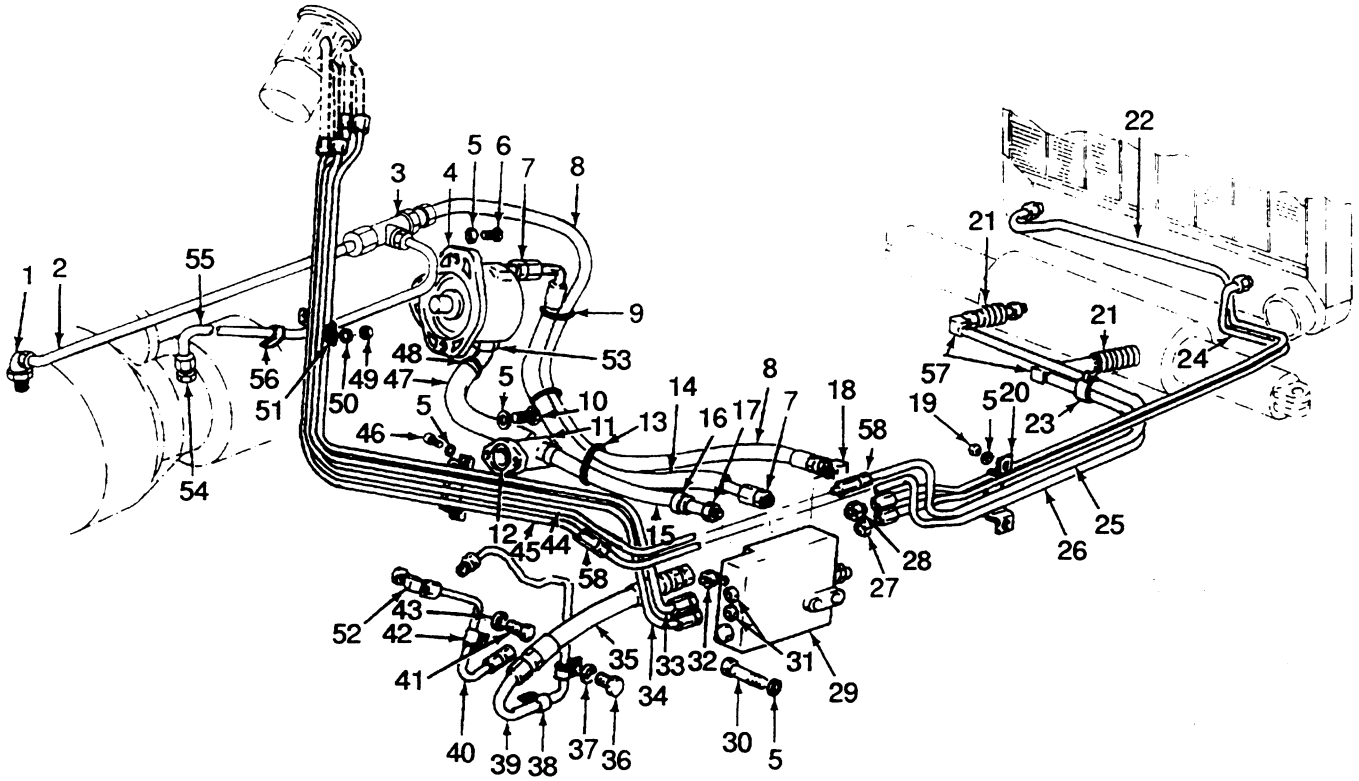
STEERING PUMP
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STEERING

LAST USED ON TRANSMISSION S/N T29M-3062 OC LOSPD, T14M-3288 OC HISPD, T30M-3174 PS LOSPD, T15M-11614 PS HISPD

(Figure 90)



PARTS-SERVICE GRAM	
ITEM	GRAM
4	G-B-4

STEERING

LAST USED ON TRANSMISSION S/N T29M-3062 OC LOSPD, T14M-3288 OC HISPD, T30M-3174 PS LOSPD, T15M-11614 PS HISPD

REF		PART NO.	NAME OF PART	QTY
1		16557	Fitting	1
1		16482	O-Ring	1
2		199303	Tube	1
3	a	16968	Fitting	1
3	b	16575	Fitting	1
3		16584	Nut	1
3		16482	O-Ring	1
4		.....	Steering Pump	1
		☞	Figure 97-Figure 99	
5		15156	Lockwasher	8
6		16828	Capscrew	2
7		16543	Fitting	2
8	b	251189	Hose	1
9	b	289150	Clamp	2
10		16805	Capscrew	2
11		192278	Manifold	1
11	cd	301946	Plate	1
12		139807	O-Ring	2
12	cd	304359	Gasket	1
13		289150	Clamp	1
14		192275	Hose	1
15		186226	Hose	1
16		130845	Hose Clamp	2
17		222505	Fitting	1
18	b	16558	Fitting	1
19		15056	Nut	2
20		210698	Cushion Clamp	2
21		192298	Hose	2
22	a	248152	Tube	1
23		166857	Hose Clamp	1
24	a	248153	Tube	1
25	e	227416	Tube	1
25	f	305275	Tube	1
26		305276	Tube	1
27	a	16540	Fitting	1
27	b	14594	Adapter	1
28	a	16540	Fitting	1
29		.....	Flow Divider	1
		☞	Figure 88	
30		18540	Capscrew	2
31		16540	Fitting	2
32	b	16745	Fitting	1
32	a	16541	Fitting	1
33	e	227412	Tube	1
33	f	304644	Tube	1
34	e	227413	Tube	1
34	f	304643	Tube	1
35	b	243110	Hose	1
35	a	228840	Hose	1
36	a	16870	Capscrew	1
37	a	15156	Lockwasher	1
38	a	118807	Clamp	2
39	a	228839	Tube	1
40	b	251031	Tube	1
41	b	16394	Capscrew	1
42	b	154277	Clamp	1
43	b	15155	Lockwasher	1
44	e	192286	Tube	2
44	f	304645	Tube	1
45	e	192287	Tube	1
45	f	304642	Tube	1
46		16597	Capscrew	2
47		344732	Hose	1
48		127045	Clamp	2
49		15055	Nut	2
50		15155	Lockwasher	2
51		192288	Clamp	1
52	b	16883	Fitting	2
53		251362	Fitting	1
54	a	16539	Fitting	1
55	a	275379	Tube	1
56	a	118748	Clamp	1
57	f	14479	Fitting	2
58	f	14691	Fitting	2

a Powershift
b Oil Clutch
c Included In PS External Filter Kit 304363
d Included In OC External Filter Kit 304362
e Last Used On S/N D2D-9490 D2T-1770 OC And PS With Monotrol D2T-1778 PS With Forward/Reverse Lever
f First Used On S/N D2D-9491 D2T-1771 OC And PS With Monotrol D2T-1779 PS With Forward/Reverse Lever

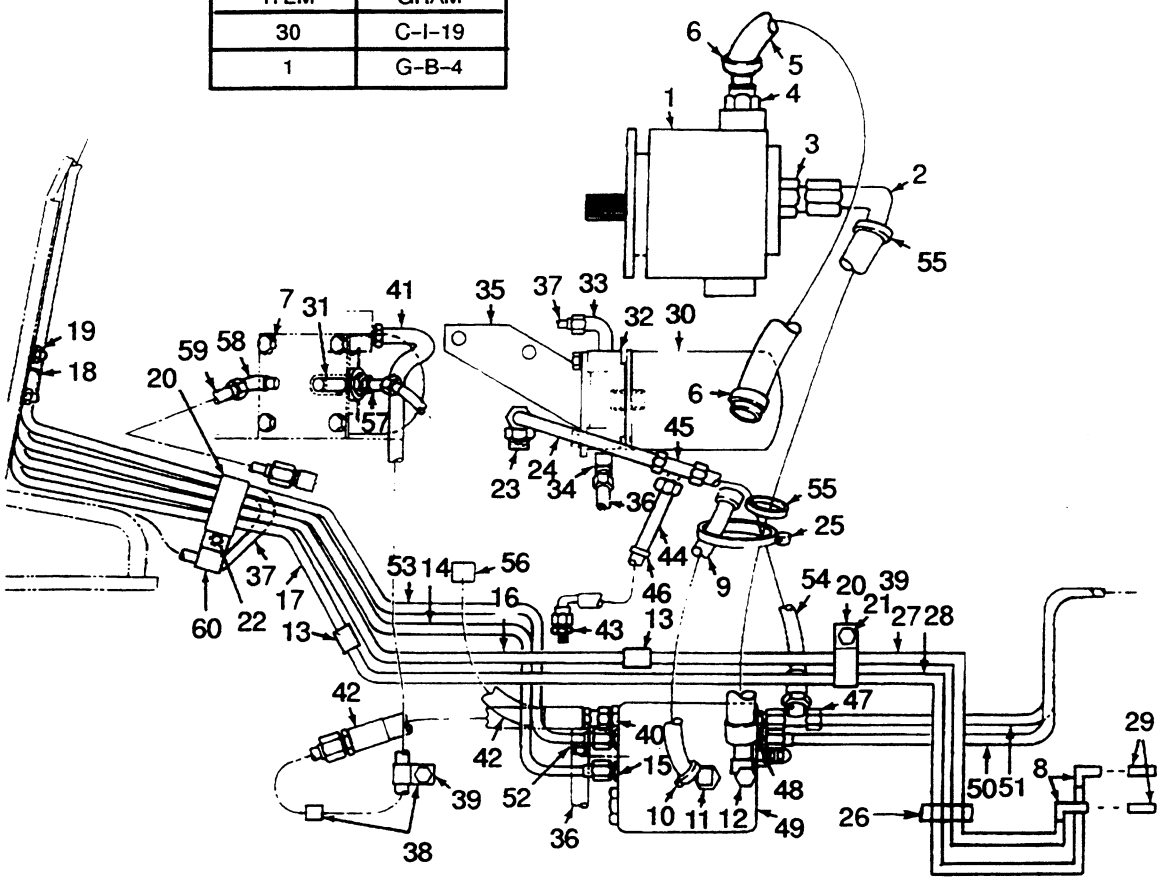
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STEERING

FIRST USED ON TRANSMISSION S/N T29M-3063 OC LOSPD, T14M-3289 OC HISPD, T30M-3175 PS LOSPD, T15M-11615 PS HISPD

(Figure 91)

PARTS-SERVICE GRAM	
ITEM	GRAM
30	C-I-19
1	G-B-4



STEERING

FIRST USED ON TRANSMISSION S/N T29M–3063 OC LOSPD, T14M–3289 OC HISPD, T30M–3175 PS LOSPD, T15M–11615 PS HISPD

KEY
A: Powershift
B: Oil Clutch

REF		PART NO.	NAME OF PART	QTY A	QTY B
1		.....	Steering Pump	1	1
		☞	Figure 97 ⇒ Figure 99		
2		192275	Hose	1	1
3		16543	Fitting	2	2
4		251362	Fitting	1	1
5		344732	Hose	1	1
6		127045	Clamp	2	2
7	ab	16805	Capscrew	4	4
7	ab	15156	Lockwasher	4	4
8		14479	Fitting	2	2
9		186226	Hose	1	1
10		130845	Hose Clamp	2	2
11		222505	Fitting	1	1
12		18540	Capscrew	2	2
12		15156	Lockwasher	2	2
13		14691	Fitting	2	2
14		304643	Tube	1	1
15		16540	Fitting	1	1
16		304645	Tube	1	1
17		304642	Tube	1	1
18		192288	Clamp	1	1
19		15155	Lockwasher	2	2
19		15055	Nut	2	2
20		210698	Cushion Clamp	2	2
21		15056	Nut	2	2
21		15156	Lockwasher	2	2
22		16597	Capscrew	2	2
22		15156	Lockwasher	2	2
23		16557	Fitting	1	1
24		304629	Tube	1	1
25		289150	Clamp	1	1
26		166857	Hose Clamp	1	1
27		305275	Tube	1	1
28		305276	Tube	1	1
29		192298	Hose	2	2
30	ab	297865	Filter	1	1
31	ab	181766	Fitting	1	1
31	b	226414	Adhesive	AR	AR
32	ab	297864	Base (Filter)	1	1
33	b	69239	Fitting	1	..
34	b	14548	Fitting	1	..
35	b	299977	Bracket	1	..
36	b	116486	Hose	1	..
37		301947	Tube	1	..
37	b	316402	Hose	1	..
38		118807	Clamp	2	..
39		16870	Capscrew	1	..
39		15156	Lockwasher	1	..
40		16541	Fitting	1	..
40		16745	Fitting	..	1
41		228839	Tube	1	..
42		228840	Hose	1	..
42	a	165118	Hose	..	1
43		16539	Fitting	1	..
44		275379	Tube	1	..
45		16968	Fitting	1	..
45		16575	Fitting	..	1
46		118748	Clamp	1	..
47		16540	Fitting	1	..
47		16558	Fitting	..	1
48		16540	Fitting	1	..
48		14594	Adapter	..	1
49		.....	Flow Divider	1	1
		☞	Figure 88		
50		248153	Tube	1	..
51		248152	Tube	1	..
52		17222	Fitting	1	..
52	b	16883	Fitting	1	..
52		16540	Fitting	..	1
53		304644	Tube	..	1
54		251189	Hose	..	1
55		129563	Strap	..	2
56	a	154628	Clamp	..	1
57	a	16999	Fitting	..	1
57	a	14677	Fitting	..	1
58	a	16883	Fitting	..	2
59	a	304352	Tube	..	1
60	b	154628	Clamp	1	..

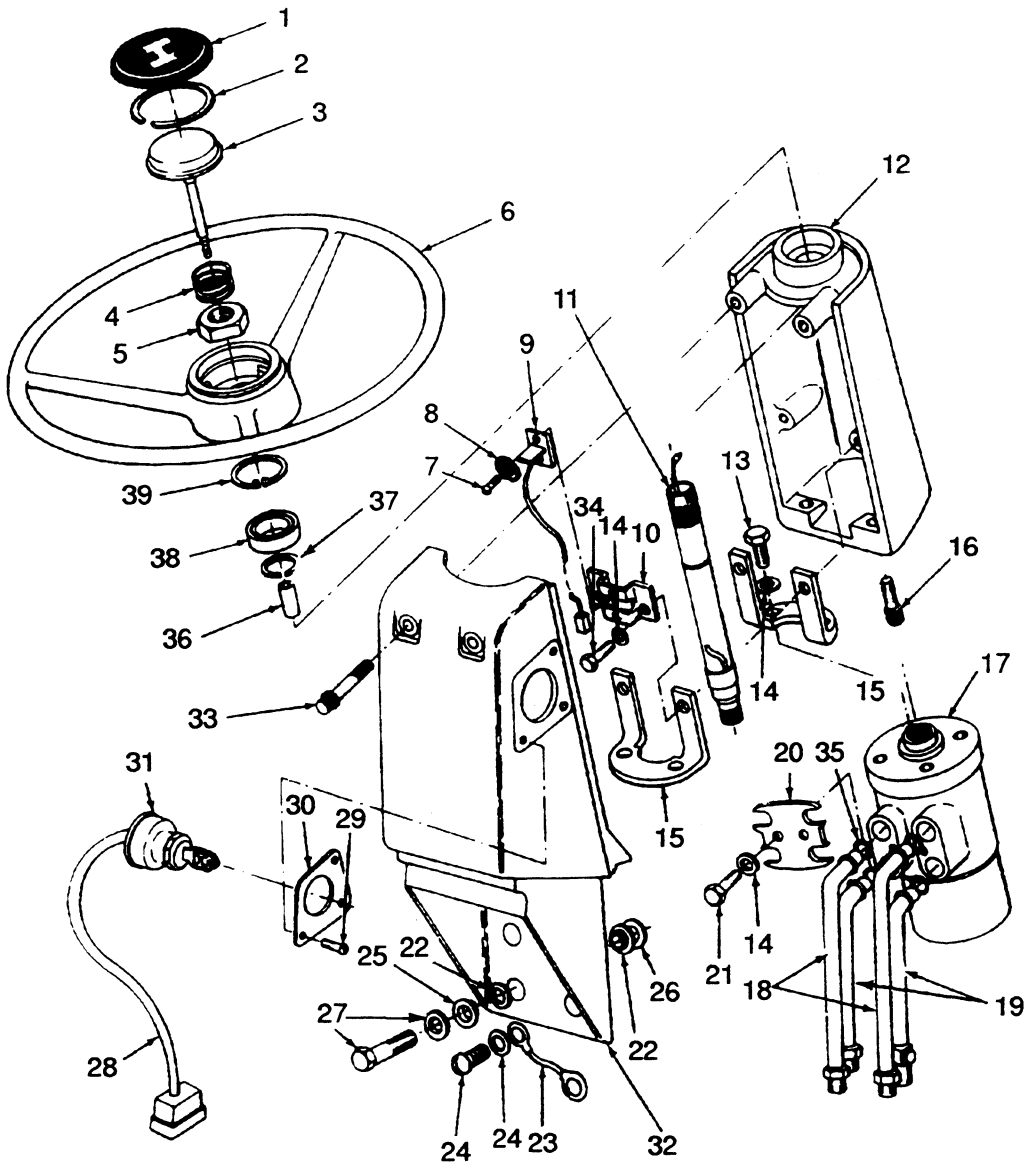
a Included In OC External Filter Kit 304363
b Included In PS External Filter Kit 304362

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STEERING CONTROL

LAST USED ON S/N D2D-9490, D2T-1770 OC AND PS WITH MONOTROL, D2T-1778 PS WITH FORWARD/REVERSE LEVER

(Figure 92)



STEERING CONTROL

LAST USED ON S/N D2D-9490, D2T-1770 OC AND PS WITH MONOTROL, D2T-1778 PS WITH FORWARD/REVERSE LEVER

REF	PART NO.	NAME OF PART	QTY
1	224650	Cover	1
2	189189	Lock Ring	1
3	347136	Horn Switch Kit	1
4	189187	Contact Spring	1
5	161865	Nut	1
6	189186	Steering Wheel	1
7	223029	Screw	2
8	197067	Washer	2
9	243724	Horn Brush	1
10	248324	Bracket	1
11	292000	Shaft	1
12	223035	Cover	1
13	16598	Capscrew	4
14	15156	Lockwasher	8
15	223032	Bracket	2
16	18758	Capscrew	2
17	.....	Hand Pump	1
		☞ Figure 94 and Figure 95	
18	189201	Tube	2
19	189204	Tube	2
20	223033	Plate	1
21	16696	Capscrew	2
22	185793	Isolator	8
23	132856	Wire	1
24	16720	Screw	1
24	15931	Lockwasher	1
25	185792	Washer	4
26	261772	Spacer	4
27	16828	Capscrew	4
27	15156	Lockwasher	4
28	196190	Harness Wire	1
29	18689	Screw	3
30	195311	Plate	1
31	272041	Ignition Switch	1
31	186304	Key	1
32	[a] 274349	Housing	1
32	[b] 286923	Housing	1
33	18756	Capscrew	2
34	16828	Capscrew	2
35	87300	O-Ring	4
36	42958	Connector	1
37	189198	Snap Ring	1
38	189199	Bearing	1
39	58914	Snap Ring	1

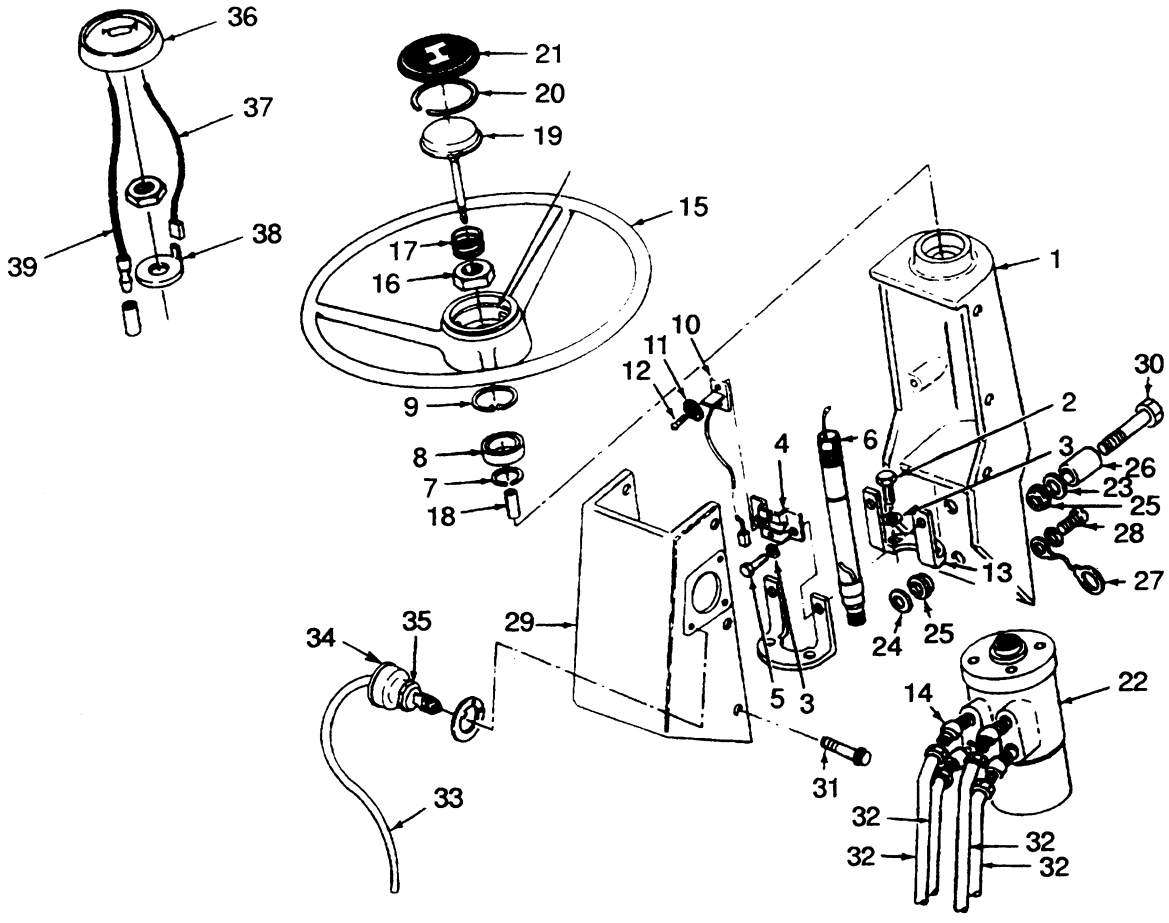
[a] Oil Clutch And Powershift With Monotrol Pedal
[b] Powershift With Forward/Reverse Lever

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STEERING CONTROL

FIRST USED ON S/N D2D-9491, D2T-1771 OC AND PS WITH MONOTROL, D2T-1779 WITH FORWARD/REVERSE LEVER

(Figure 93)



STEERING CONTROL

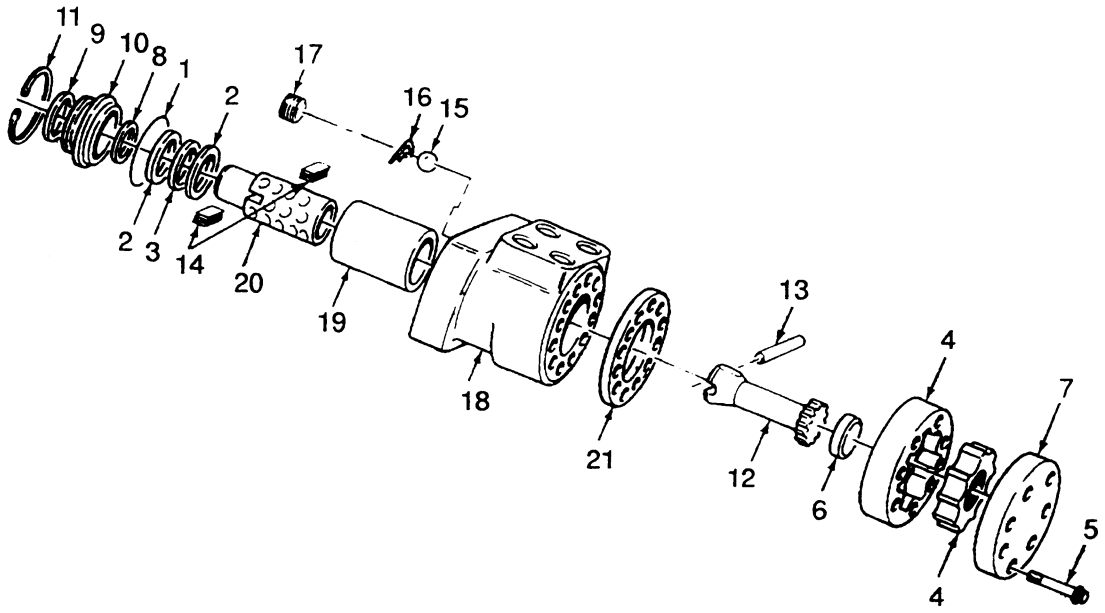
FIRST USED ON S/N D2D-9491, D2T-1771 OC AND PS WITH MONOTROL, D2T-1779 WITH FORWARD/REVERSE LEVER

REF	PART NO.	NAME OF PART	QTY
	304633	Steering Control	1
[a]	379900	Steering Control	1
1	289500	Pump Housing	1
2	16598	Capscrew	4
3	15156	Lockwasher	6
4 [b]	248324	Bracket	1
4 [c]	354138	Bracket	1
5	16828	Capscrew	2
6	292000	Shaft	1
7	189198	Snap Ring	1
8	189199	Bearing	1
9	58914	Snap Ring	1
10 [b]	243724	Horn Brush	1
10 [c]	374874	Contact	1
10 [c]	367935	Wire	1
11	223029	Screw	2
12	197067	Washer	2
13	223032	Bracket	2
14	16567	Fitting	4
15 [d]	189186	Steering Wheel	1
15 [e]	347131	Steering Wheel	1
16	161865	Nut	1
17 [d]	189187	Contact Spring	1
18	42958	Connector	1
19 [d]	189188	Horn Switch	1
20	189189	Lock Ring	1
21 [d]	224650	Cover	1
22	.....	Hand Pump	1
		☞ Figure 96	
23	15156	Lockwasher	4
24	185792	Washer	4
25	185793	Isolator	8
26	261772	Spacer	4
27	132856	Wire	1
28	15931	Lockwasher	1
28	16720	Screw	1
29 [f]	289722	Cover	1
29 [g]	289148	Cover	1
30	16828	Capscrew	4
31	17209	Capscrew	6
32	.....	Tube	4
		☞ Figure 90 and Figure 91	
33	.....	Harness Wire	1
		☞ Figure 46	
34 [h]	326482	Switch Plate	1
35	272041	Ignition Switch	1
35	186304	Key	1
36 [ke]	347125	Horn Button	1
37 [ke]	347135	Wire	1
38 [ke]	347126	Terminal	1
39 [ke]	347134	Wire	1

[a] First Used On S/N D2D-13689
[b] Last Used On S/N D2D-13141, D2T-2018
[c] First Used On S/N D2D-13142, D2T-2019
[d] Last Used On S/N D2D-11756, D2T-1924
[e] First Used On S/N D2D-11757, D2T-1925
[f] Oil Clutch And Powershift With Monotrol Pedal
[g] Powershift With Forward/Reverse Lever
[h] Europe
[k] Included In Horn Button Kit 347136

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HAND PUMP
LAST USED ON S/N D2D-5061
(Figure 94)



REF		PART NO.	NAME OF PART	QTY
		223036	Hand Pump	1
1	a	92861	O-Ring	1
2		271288	Bearing Kit	2
3		209627	Bearing	1
4		245316	Gear Set	1
5		258174	Capscrew	7
6		158830	Spacer	1
7		258168	End Cap	1
8	a	158835	Quadrant Ring Seal	1
9	a	.....	Oil Seal	1
10		258172	Bushing	1
11		258171	Retainer Ring	1
12		158832	Drive	1

REF		PART NO.	NAME OF PART	QTY
13	b	158839	Pin	1
14	b	342724	Spring Kit	1
15	b	61141	Ball	1
16	b	248318	Spring	1
17	b	248319	Insert	1
18	b	.....	Valve Housing	1
19	b	.....	Control Sleeve	1
20	b	.....	Control Spool	1
21		258169	Spacer Plate	1

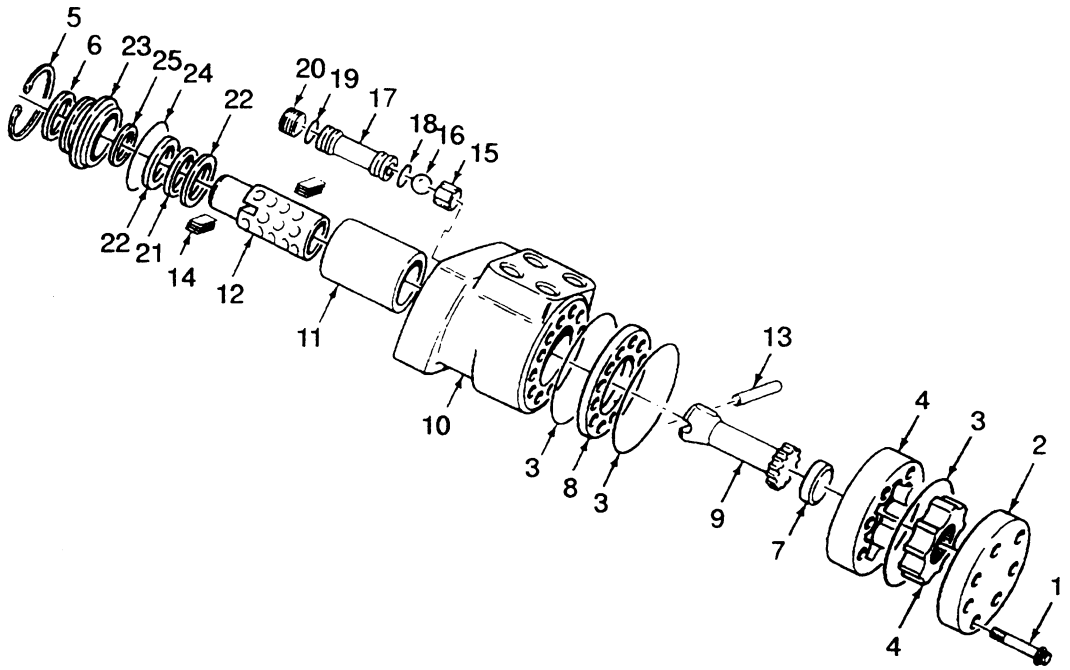
[a] Included In Seal Kit 314993
[b] Included In Control Parts 258173

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HAND PUMP

USED ON S/N D2D-5062 D2T-1501 THRU D2D-9490, D2T-1770 OC AND PS WITH MONOTROL, D2T-1778 PS WITH FORWARD/REVERSE LEVER

(Figure 95)



REF		PART NO.	NAME OF PART	QTY
		290569	Hand Pump	1
1		198022	Capscrew	7
2		291414	End Cap	1
3	a	291423	O-Ring	3
4		294145	Gear Set	1
5		258171	Retainer Ring	1
6	a	.....	Oil Seal	1
7		271046	Spacer	1
8		291416	Plate	1
9		158832	Drive	1
10		.....	Housing	1
11		.....	Sleeve	1
12		.....	Spool	1
13		158839	Pin	1
14		342724	Spring Kit	6
15		291418	Retainer	1
16		291422	Ball	1
17		291420	Check Seat	1
18	a	15859	O-Ring	1
19	a	15860	O-Ring	1
20		291421	Setscrew	1
21		209627	Bearing	1
22		271288	Bearing Kit	2
23		258172	Bushing	1
24	a	.....	O-Ring Seal	1
25	a	158835	Quadrant Ring Seal	1

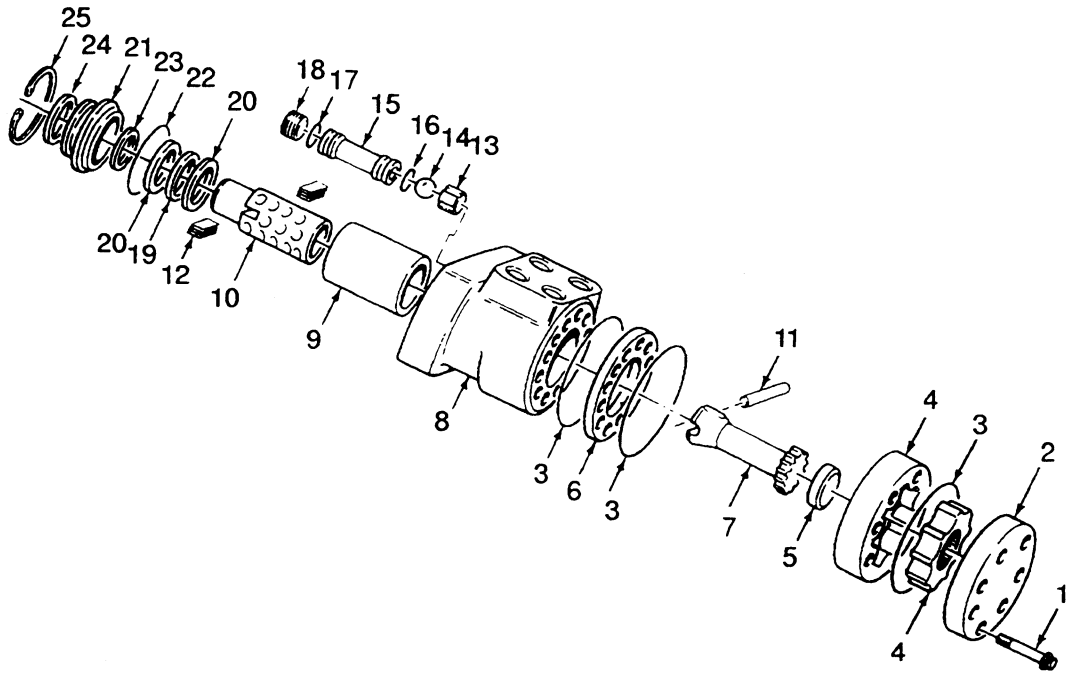
[a] Included In Seal Kit 314993

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HAND PUMP

FIRST USED ON S/N D2D-9491, D2T-1771 OC AND PS WITH MONOTROL, D2T-1779 WITH FORWARD/REVERSE LEVER

(Figure 96)



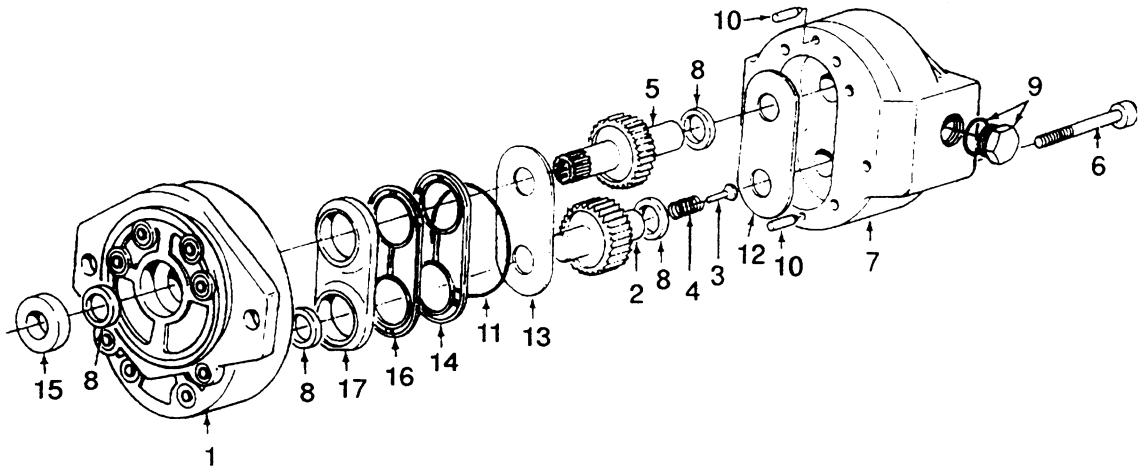
REF		PART NO.	NAME OF PART	QTY
		304630	Hand Pump	1
	a	375643	Hand Pump	1
1		198022	Capscrew	7
2		291414	End Cap	1
2	a	353877	End Cap	1
3	b	291423	O-Ring	3
4		294145	Gear Set	1
4	a	353878	Gear Set	1
5		271046	Spacer	1
6		291416	Plate	1
6	a	355624	Plate	1
7		158832	Drive	1
8		.....	Housing	1
8	a	353879	Housing	1
9		.....	Sleeve	1
10		.....	Spool	1
11		158839	Pin	1

REF		PART NO.	NAME OF PART	QTY
12		342724	Spring Kit	6
13		291418	Retainer	1
14		291422	Ball	1
15		291420	Check Seat	1
16	b	15859	O-Ring	1
17	b	15860	O-Ring	1
18		291421	Setscrew	1
19		209627	Bearing	1
20		271288	Bearing Kit	2
21		258172	Bushing	1
22	b	92861	O-Ring	1
23	b	158835	Quadrant Ring Seal	1
24	b	.....	Oil Seal	1
25		258171	Retainer Ring	1

[a] First Used On S/N D2D-13689
[b] Included In Seal Kit 314993

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STEERING PUMP
LAST USED ON S/N D2D-6499
(Figure 97)



REF		PART NO.	NAME OF PART	QTY
		227743	Hydraulic Pump	1
1	a	.....	Cover	1
2		.....	Gear	1
3		.....	Seat	1
4		.....	Spring	1
5		.....	Gear	1
6		17138	Capscrew	8
7		.....	Body	1
8	a	.....	Bearing	4
9		254694	Plug	1
9		15859	O-Ring	1

REF		PART NO.	NAME OF PART	QTY
10	a	.....	Pin	2
11	ba	.....	O-Ring	1
12		.....	Wear Plate	1
13	b	.....	Pressure Plate	1
14	ba	.....	Backing Web	1
15	ba	.....	Seal	1
16	ba	.....	Backing Web	1
17	ba	.....	Seal Web	1

[a] Included In Pump Kit 278175
[b] Included In Seal Kit 298572

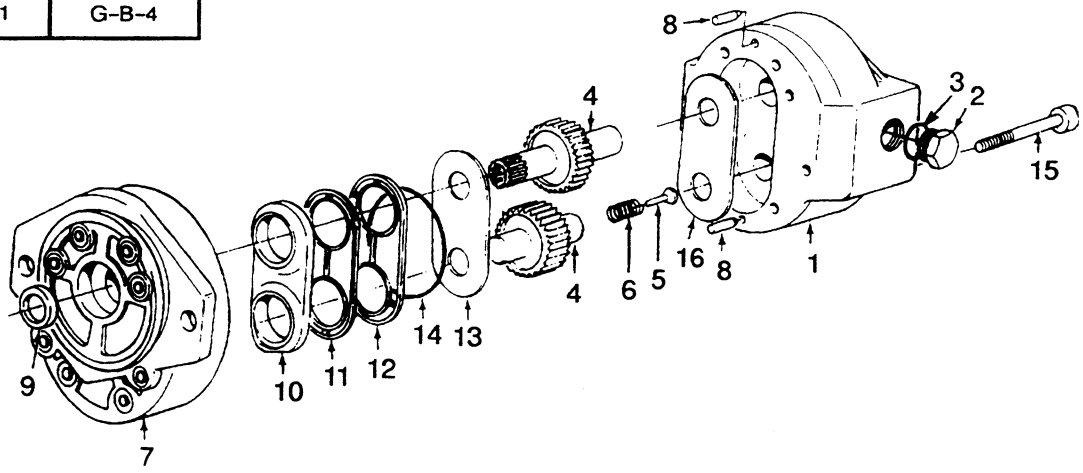
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STEERING PUMP

USED ON S/N D2D-6500, D2T-1501 THRU S/N D2D-11177, D2T-1886

(Figure 98)

PARTS-SERVICE GRAM	
ITEM	GRAM
1	G-B-4



REF		PART NO.	NAME OF PART	QTY
		296653	Hydraulic Pump	1
1		.....	Housing	1
2		254694	Plug	1
3		15859	O-Ring	1
4		.....	Gear	1
5		.....	Seat	1
6		.....	Spring	1
7		.....	Cover	1
8		.....	Pin	2
9	a	.....	Seal	1
10	a	.....	Seal Web	1
11	a	.....	Back Paper Web	1
12	a	.....	Back Web	1
13	a	.....	Pressure Plate	1
14	a	.....	O-Ring	1
15		298573	Screw	8
16		.....	Wear Plate	1

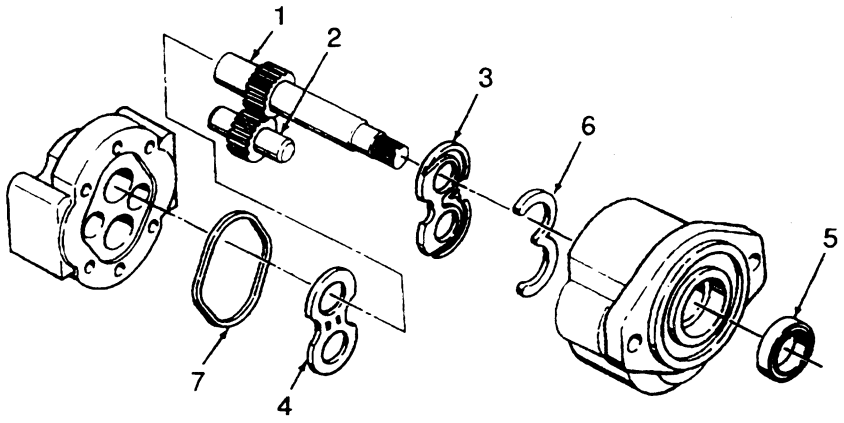
[a] Included In Seal Kit 298572

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STEERING PUMP

FIRST USED ON S/N D2D-11178 D2T-1887

(Figure 99)



REF	PART NO.	NAME OF PART	QTY
	342773	Hydraulic Pump	1
1	.....	Gear	1
2	.....	Gear	1
3	346548	Wear Plate	1
4	346543	Thrust Plate	1

REF	PART NO.	NAME OF PART	QTY
5	[a]	Seal	1
6	[a]	Seal	2
7	[a]	Ring	1

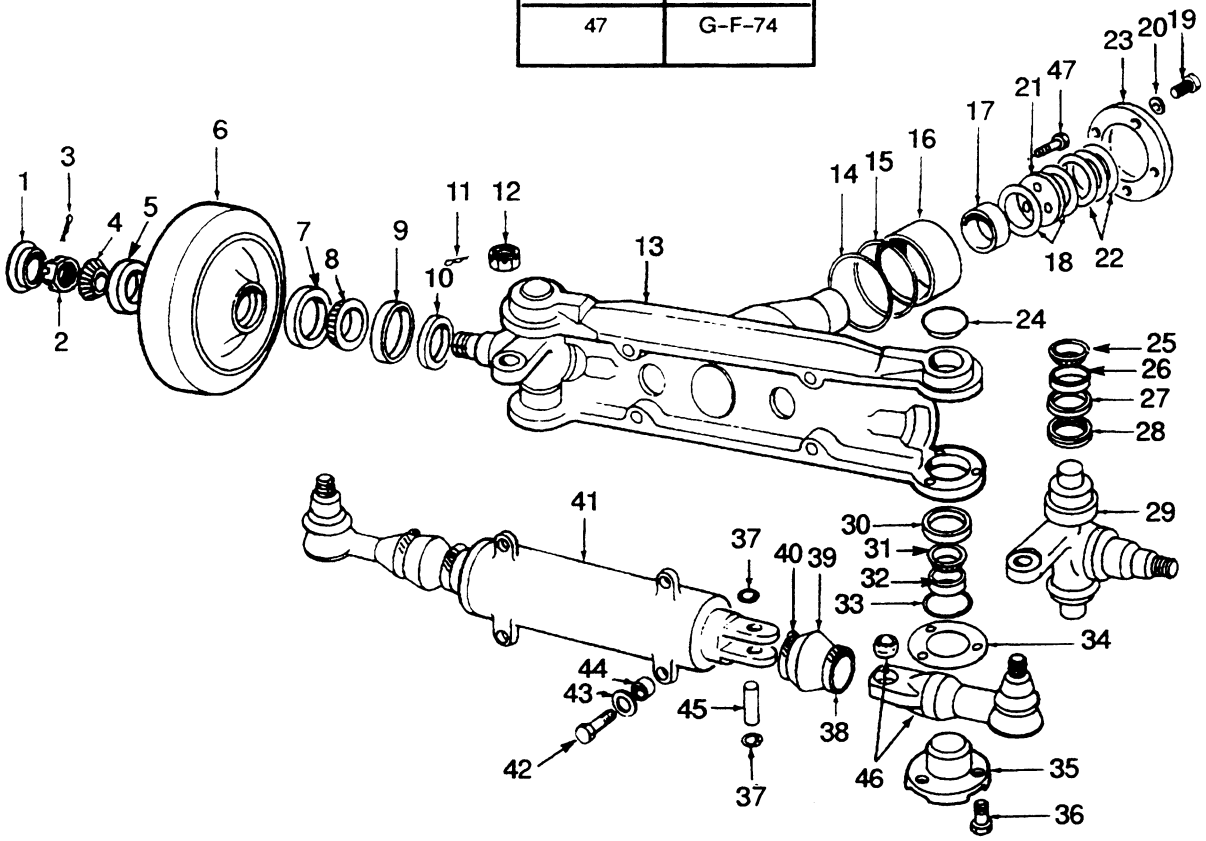
[a] Included In Seal Kit 346545

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STEERING AXLE

(Figure 100)

PARTS–SERVICE GRAM	
ITEM	GRAM
47	G-F-74



STEERING AXLE

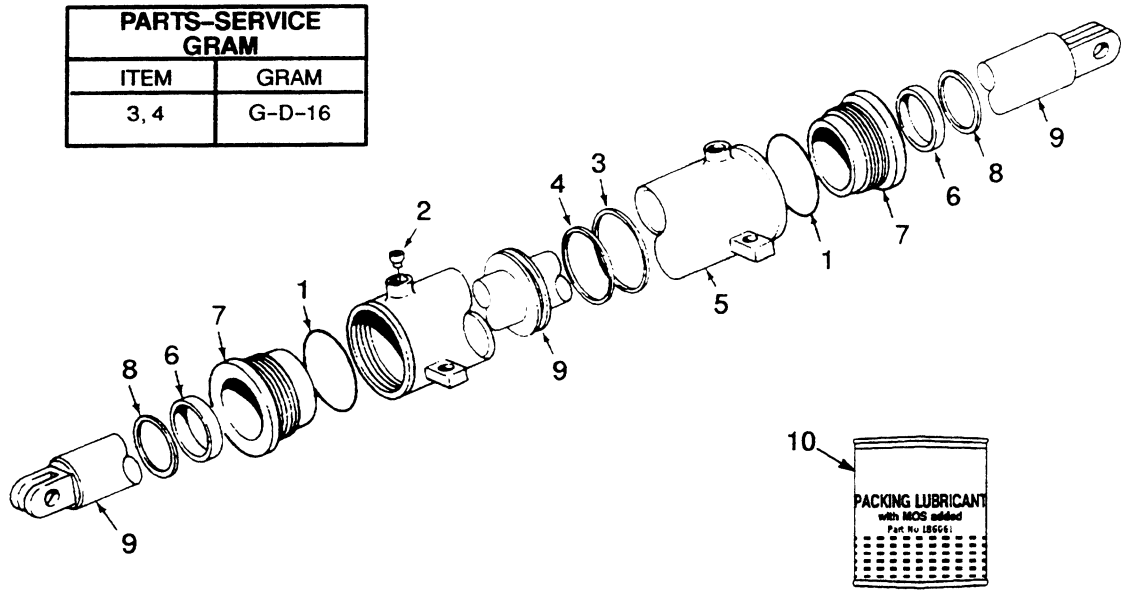
REF	PART NO.	NAME OF PART	QTY
1	185874	Cap	2
2	15226	Cotter Pin	2
3	328134	Nut	2
4	328135	Bearing Cone	2
5	163971	Bearing Cup	2
6	.....	Tires and Wheels	2
		☞ Figure 169	
7	183614	Bearing Cup	2
8	183615	Bearing	2
9	164639	Wear Sleeve	2
10	44542	Oil Seal	2
11	15225	Cotter Pin	2
12	21189	Nut	2
13	295234	Steering Axle	1
14	187393	Retainer	1
15	15873	O-Ring	1
16	136616	Bushing	1
17	136617	Bushing	1
18	265654	Thrust Washer	2
19	15946	Bolt	4
20	221767	Washer	4
21	265651	Thrust Plate	1
22	187397	Shim-.005 inch	AR
22	187398	Shim-.007 inch	AR
22	187399	Shim-.020 inch	AR
23	286157	Cover	1
24	185860	Plug	2
25	156195	Bearing Cone	2
26	156194	Bearing Cup	2
27	153717	Sleeve	2
28	153716	Seal	2
29	185853	Spindle (RH)	1
29	185854	Spindle (LH)	1
30	266733	Seal	2
31	135657	Bearing Cone	2
32	135658	Bearing Cup	2
33	39678	O-Ring	2
34	185856	Shim-.005 inch	AR
34	185857	Shim-.007 inch	AR
34	185858	Shim-.020 inch	AR
35	369812	Bearing Cap	2
35	16009	Grease Fitting	1
36	15945	Bolt	6
37	58903	Snap Ring	4
38	127045	Clamp	2
39	185869	Boot	2
40	119236	Clamp	2
41	.....	Steering Cylinder	1
		☞ Figure 101	
42	92816	Capscrew	4
43	231739	Shim-.005 inch	AR
44	185867	Dowel (Sleeve)	1
45	326498	Pin	2
46	185870	Tie Rod	2
46	185872	Bushing	1
47	265024	Capscrew	3

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STEERING CYLINDER

(Figure 101)

PARTS–SERVICE GRAM	
ITEM	GRAM
3, 4	G-D-16



REF		PART NO.	NAME OF PART	QTY
		185565	Steering Cylinder	1
1	a	199086	O-Ring	2
2		176270	Tube Seat	2
3	a	365055	Seal	1
4	a	365054	Seal	1
5		185568	Shell	1
6	a	210183	Rod Seal	2
7		185577	End Plug	2
8	a	203071	Wiper	2
9		185571	Piston Rod	1
10		186061	Packing Lubricant	AR

a Included In Seal Kit 282400

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INTERMEDIATE FREE-LIFT MAST

CARRIAGE
INTERMEDIATE FREE-LIFT MAST
181000, 184000, 257000, AND 266000 SERIES MASTS ..... Page 208

CARRIAGE
INTERMEDIATE FREE-LIFT MAST
280000 AND 282000 SERIES MASTS ..... Page 209

LIFT
INTERMEDIATE FREE-LIFT MAST
181000, 184000, 257000, AND 266000 SERIES MASTS ..... Page 200

LIFT
INTERMEDIATE FREE-LIFT MAST
280000 AND 282000 SERIES MASTS ..... Page 202

LIFT CYLINDER
INTERMEDIATE FREE-LIFT MAST
181000, 184000, 257000, AND 266000 SERIES MASTS ..... Page 204

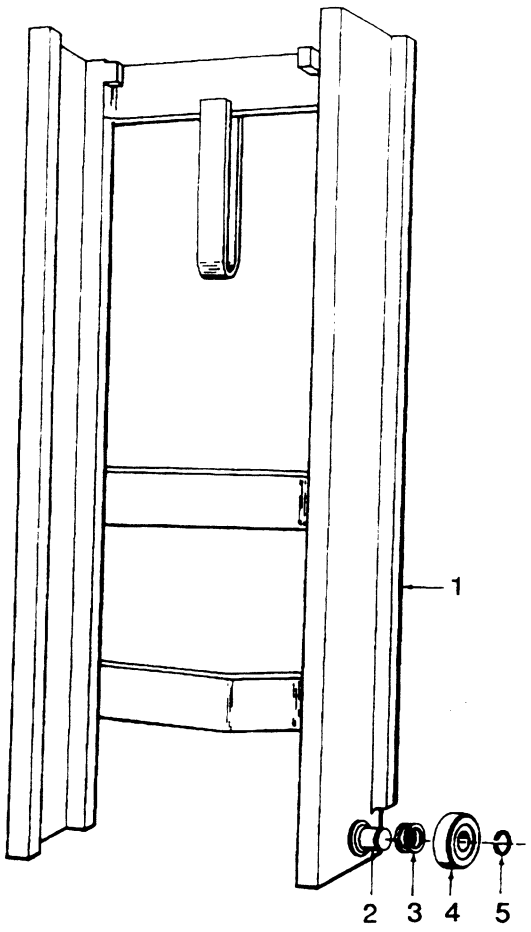
LIFT CYLINDER
INTERMEDIATE FREE-LIFT MAST
280000 AND 282000 SERIES MASTS ..... Page 206

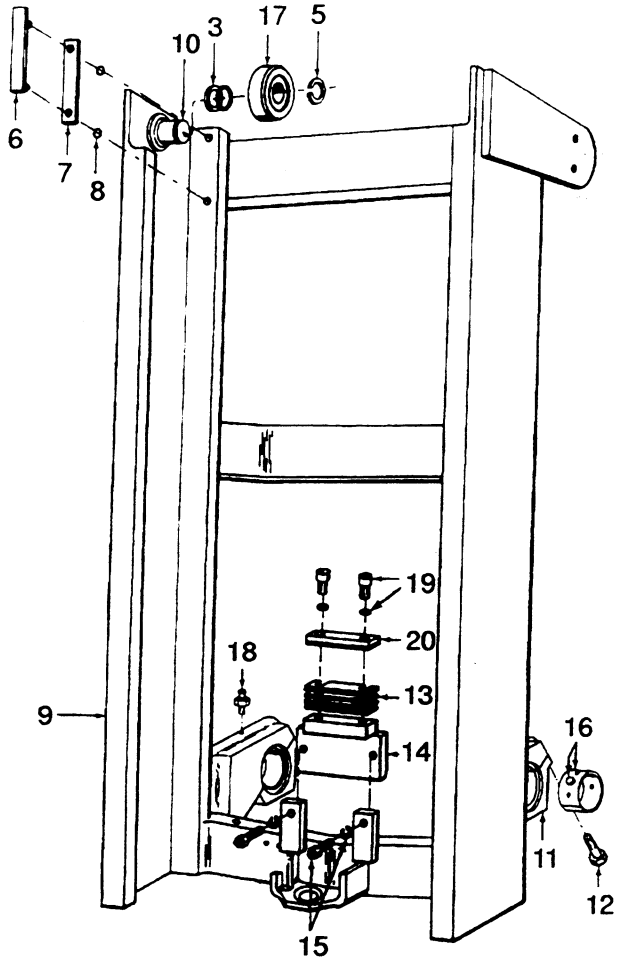
MAST
INTERMEDIATE FREE-LIFT
181000, 184000, 257000, AND 266000 SERIES MASTS ..... Page 196

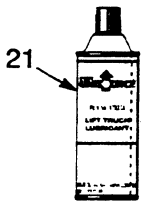
MAST
INTERMEDIATE FREE-LIFT
280000 AND 282000 SERIES MASTS ..... Page 198

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MAST
INTERMEDIATE FREE-LIFT
181000, 184000, 257000, AND 266000 SERIES MASTS
(Figure 102)







PARTS-SERVICE GRAM	
ITEM	GRAM
16	I-F-59

MAST
INTERMEDIATE FREE-LIFT
181000, 184000, 257000, AND 266000 SERIES MASTS

S30-50E

REF NO	NAME OF PART	Lift Height To Bottom Of Forks				QTY
		104.5 inch (2650 mm)	116.5 inch (2960 mm)	128.5 inch (3260 mm)	148.5 inch (3770 mm)	
	Mast	257952 181400	257953 181409	257954 181412	257955 181415	1
1	Inner Mast	191984	191985	191986	192010	1
9	Outer Mast	285153	285154	285155	285156	1

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Forks				QTY
		98.5 inch (2500 mm)	110.5 inch (2810 mm)	122.5 inch (3110 mm)	142.5 inch (3620 mm)	
	Mast	266625 184700	266626 184712	266627 184717	266628 184722	1
1	Inner Mast	266653 184707	266654 184714	266655 184719	266656 184724	1
9	Outer Mast	285157 184704	285158 184713	285159 184718	285160 184723	1

KEY
A: S30-50E
B: S60ES

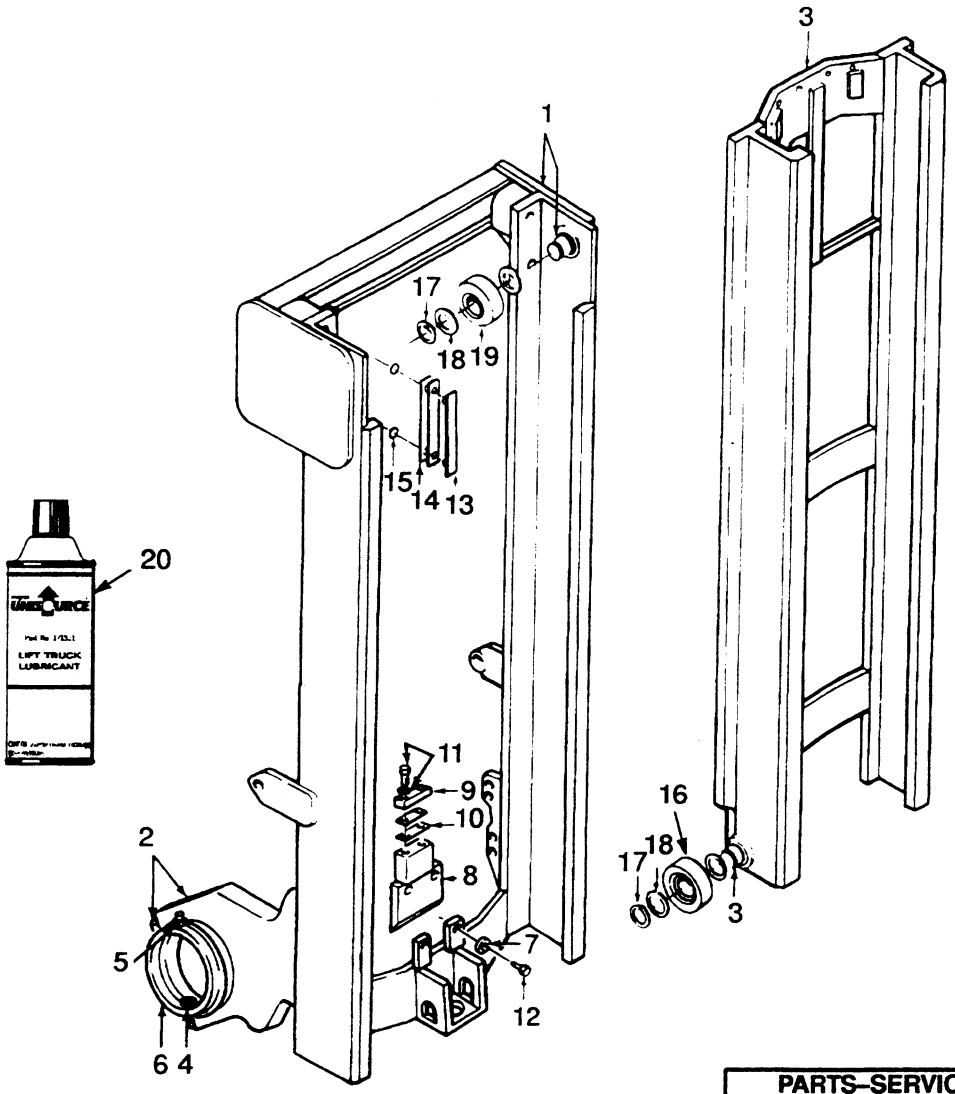
REF		PART NO.	NAME OF PART	QTY A	QTY B
1	a	.....	Inner Mast	1	1
2		129259	Stubshaft	2	2
3		129387	Shim-.020 inch	AR	AR
4		329091	Load Roller	2	2
5		58901	Snap Ring	4	4
6		129354	Bearing Kit	2	2
6		215211	Bearing Strip	1	1
7		131716	Shim-.065 inch	AR	AR
8		104506	O-Ring	2	2
9	a	.....	Outer Mast	1	1
10		129259	Stubshaft	2	2
11		287961	Hanger (RH)	1	1
11		287958	Hanger (LH)	1	1
12		18807	Bolt	4	4
13		136310	Shim-.065 inch	AR	AR

REF	PART NO.	NAME OF PART	QTY A	QTY B
13	150136	Shim-.035 inch	AR	AR
14	185455	Bracket	1	..
14	143335	Bracket	..	1
15	37562	Capscrew	2	2
15	15158	Lockwasher	2	2
16	252274	Split Bushing	4	4
16	252273	Thimble	4	4
17	329090	Load Roller	2	2
18	13971	Fitting	2	2
19	16337	Capscrew	2	2
19	177946	Lockwasher	2	2
20	136309	Cushion	1	1
21	171351	Lubricant	AR	AR

[a] ☞ Chart Above

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MAST
INTERMEDIATE FREE-LIFT
280000 AND 282000 SERIES MASTS
(Figure 103)



PARTS-SERVICE GRAM	
ITEM	GRAM
4, 6	I-F-59

MAST
INTERMEDIATE FREE-LIFT
280000 AND 282000 SERIES MASTS

S30-50E

REF NO	NAME OF PART	Lift Height To Bottom Of Forks				QTY
		104.5 inch (2650 mm)	116.5 inch (2960 mm)	128.5 inch (3260 mm)	148.5 inch (3770 mm)	
	Mast	280925	280926	280927	280928	1
1	Outer Mast	285153	285154	285155	285156	1
3	Inner Mast	282196	282197	282198	282199	1

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Forks				QTY
		98.5 inch (2500 mm)	110.5 inch (2810 mm)	122.5 inch (3110 mm)	142.5 inch (3620 mm)	
	Mast	282188	282189	282190	282191	1
1	Outer Mast	285157	285158	285159	285160	1
3	Inner Mast	282351	282352	282353	282354	1

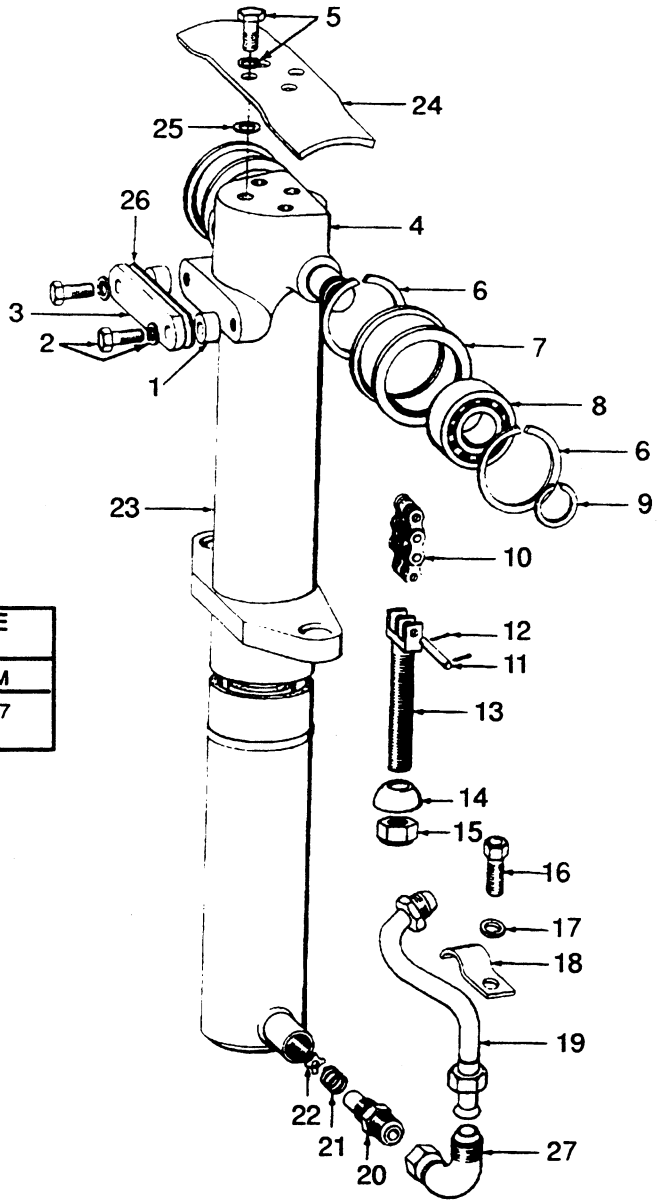
KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
1	a	.....	Outer Mast	1	1
1		129259	Stubshaft	2	2
2		287961	Hanger (RH)	1	1
2		287958	Hanger (LH)	1	1
2		18807	Bolt	2	2
2		221775	Washer	1	1
3	a	.....	Inner Mast	1	1
3		129259	Stubshaft	2	2
4		252273	Thimble	2	2
4	b	307365	Thimble	4	4
5		13960	Grease Fitting	2	2
6		252274	Split Bushing	4	4
6	b	307362	Half Bushing	4	4
7	c	164638	Spacer	2	..
8		257946	Bracket	1	..
8		143335	Bracket	..	1
9		136309	Cushion	1	1
10		136310	Shim-.065 inch	AR	AR
10		150136	Shim-.035 inch	AR	AR
11		16337	Capscrew	2	2
11		177946	Lockwasher	2	2
12		37562	Capscrew	2	2
13		129354	Bearing Kit	2	2
13		215211	Bearing Strip	1	1
14		131716	Shim-.020 inch	AR	AR
15		104506	O-Ring	2	2
16		329091	Load Roller	2	2
17		58901	Snap Ring	4	4
18		129387	Shim-.020 inch	AR	AR
19		329090	Load Roller	2	2
20		171351	Lubricant	AR	AR

a ☞ Chart Above
b First Used On D2D-8392, D2T-1549 Standard Tread D2D-8437, D2T-1551 Wide Tread
c 148.5 inch Lift Height

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LIFT
INTERMEDIATE FREE-LIFT MAST
181000, 184000, 257000, AND 266000 SERIES MASTS
(Figure 104)



PARTS-SERVICE GRAM	
ITEM	GRAM
3	I-F-57

LIFT
INTERMEDIATE FREE-LIFT MAST
181000, 184000, 257000, AND 266000 SERIES MASTS

S30-50E

REF NO	NAME OF PART	Lift Height To Bottom Of Fork				QTY
		104.5 inch (2650 mm)	116.5 inch (2960 mm)	128.5 inch (3260 mm)	148.5 inch (3770 mm)	
10	Lift Chain	135619	164474	337174	135588	2

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Fork				QTY
		98.5 inch (2500 mm)	110.5 inch (2810 mm)	122.5 inch (3110 mm)	142.5 inch (3620 mm)	
10	Lift Chain	184711	184716	184721	184726	2

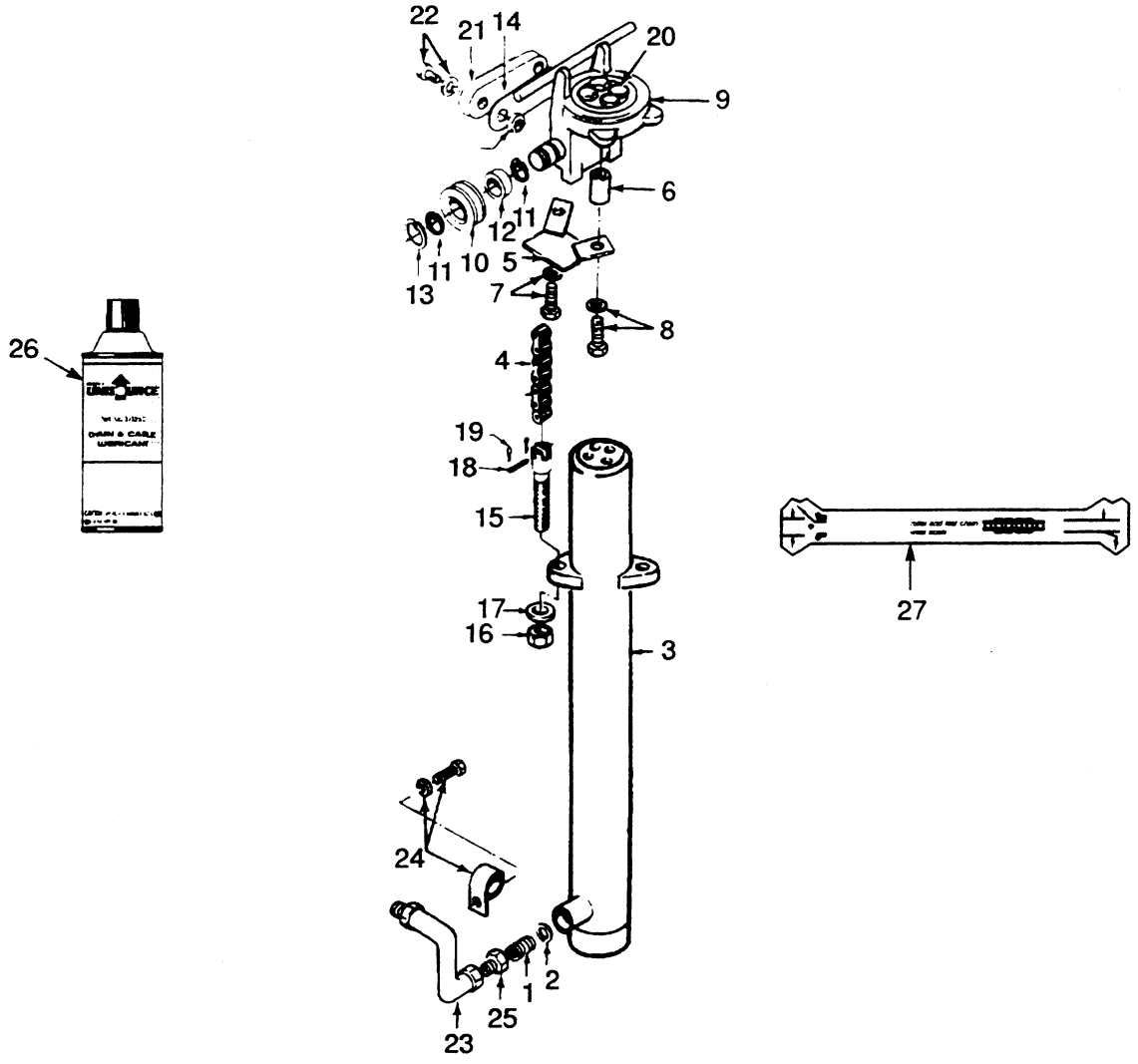
KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
1		119256	Spacer	2	2
2		16085	Capscrew	2	2
2		15158	Lockwasher	2	2
3		215706	Guide Plate	1	1
4		135608	Crosshead	1	..
4		184737	Crosshead	..	1
5		16808	Capscrew	..	4
5		16397	Capscrew	4	..
5		15158	Lockwasher	4	4
6		60592	Snap Ring	4	4
7		184740	Chain Sheave	..	2
7		129356	Chain Sheave	2	..
8		135609	Bearing	2	2
9		58908	Snap Ring	2	2
10	a	.....	Lift Chain	2	2
11		135306	Pin	2	..
11		147485	Anchor Pin	..	2
12		15211	Cotter Pin	..	4
12		15200	Cotter Pin	4	..
13		88415	Chain Anchor	2	..
13		184741	Chain Anchor	..	2
14		104267	Base Ring	2	..
14		110516	Washer	..	2
15		248320	Locknut	2	..
15		43685	Nut	..	2
16		16811	Capscrew	1	1
17		15156	Lockwasher	1	1
18		154628	Clamp	1	1
19		266699	Tube	1	..
19		266700	Tube	..	1
20		198006	Fitting	1	..
20		189595	Fitting	..	1
21		154355	Spring	1	..
21		145592	Spring	..	1
22		113921	Washer	1	1
23		.....	Lift Cylinder	1	1
			☞ Figure 106		
24		184738	Chain Guard	..	1
24		181418	Chain Guard	1	..
25		184739	Spacer	..	4
25		181427	Spacer	4	..
26		217207	Wear Pad	1	1
27		16882	Fitting	1	..

a ☞ Charts Above

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LIFT
INTERMEDIATE FREE-LIFT MAST
280000 AND 282000 SERIES MASTS
(Figure 105)



LIFT
INTERMEDIATE FREE-LIFT MAST
280000 AND 282000 SERIES MASTS

S30-50E

REF NO	NAME OF PART	Lift Height To Bottom Of Forks				QTY
		104.5 inch (2650 mm)	116.5 inch (2960 mm)	128.5 inch (3260 mm)	148.5 inch (3770 mm)	2
4	Lift Chain	88436	88441	129361	180176	

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Forks				QTY
		98.5 inch (2500 mm)	110.5 inch (2810 mm)	122.5 inch (3110 mm)	142.5 inch (3620 mm)	2
4	Lift Chain	184716	184721	282365	282366	

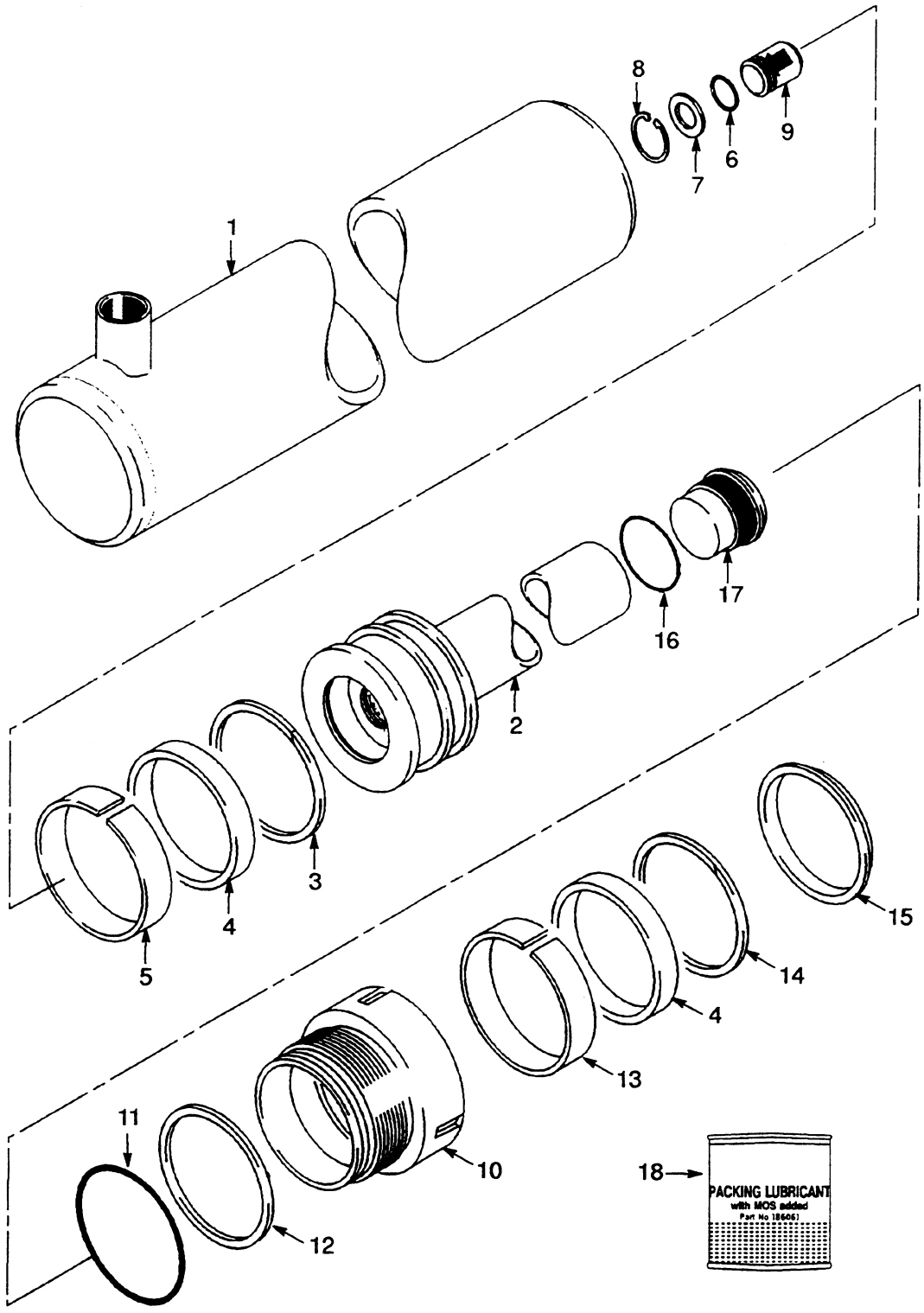
KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
1		145592	Spring	1	1
2		113921	Washer	1	1
3		.....	Lift Cylinder	1	1
			☞ Figure 107		
4	a	.....	Lift Chain	2	2
5		282373	Guard	2	2
6		390949	Spacer	2	2
7		15156	Lockwasher	2	2
7		16597	Capscrew	2	2
8		15156	Lockwasher	2	2
8		18542	Capscrew	2	2
9		282186	Crosshead	1	..
9		282187	Crosshead	..	1
10		282183	Chain Sheave	2	..
10		282184	Chain Sheave	..	2
11		58947	Snap Ring	4	4
12		282459	Ball Bearing	2	2
13		58901	Snap Ring	2	2
14		217207	Wear Pad	2	2
15		88415	Chain Anchor	2	..
15		184741	Chain Anchor	..	2
16		43299	Locknut	2	..
16		43685	Nut	..	2
17		104267	Base Ring	2	..
17		110516	Washer	..	2
18		135306	Pin	2	..
18		147485	Anchor Pin	..	2
19		15200	Cotter Pin	4	..
19		15211	Cotter Pin	..	4
20		16807	Capscrew	4	4
20		15158	Lockwasher	4	4
21		215706	Guide Plate	1	1
22		119256	Spacer	2	2
22		16805	Capscrew	2	2
22		15158	Lockwasher	2	2
23		279105	Tube	1	1
24		154628	Clamp	1	1
24		16811	Capscrew	1	1
24		15156	Lockwasher	1	1
25		282367	Fitting	1	1
26		171350	Chain Lubricant	AR	AR
27		599737	Chain Wear Scale	AR	AR

[a] ☞ Charts Above

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LIFT CYLINDER
INTERMEDIATE FREE-LIFT MAST
181000, 184000, 257000, AND 266000 SERIES MASTS
(Figure 106)



LIFT CYLINDER
INTERMEDIATE FREE-LIFT MAST
181000, 184000, 257000, AND 266000 SERIES MASTS

S30-50E

REF NO	NAME OF PART	Lift Height To Bottom Of Forks				QTY
		104.5 inch (2650 mm)	116.5 inch (2960 mm)	128.5 inch (3260 mm)	148.5 inch (3770 mm)	
	Lift Cylinder	181407	181411	181414	181417	1
1	Shell	640613	640617	639595	640621	1
2	Rod	640614	640618	639596	640622	1

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Forks				QTY
		98.5 inch (2500 mm)	110.5 inch (2810 mm)	122.5 inch (3110 mm)	142.5 inch (3620 mm)	
	Lift Cylinder	184710	184715	184720	184725	1
1	Shell	643628	643630	643632	643634	1
2	Rod	645044	645046	645048	645050	1

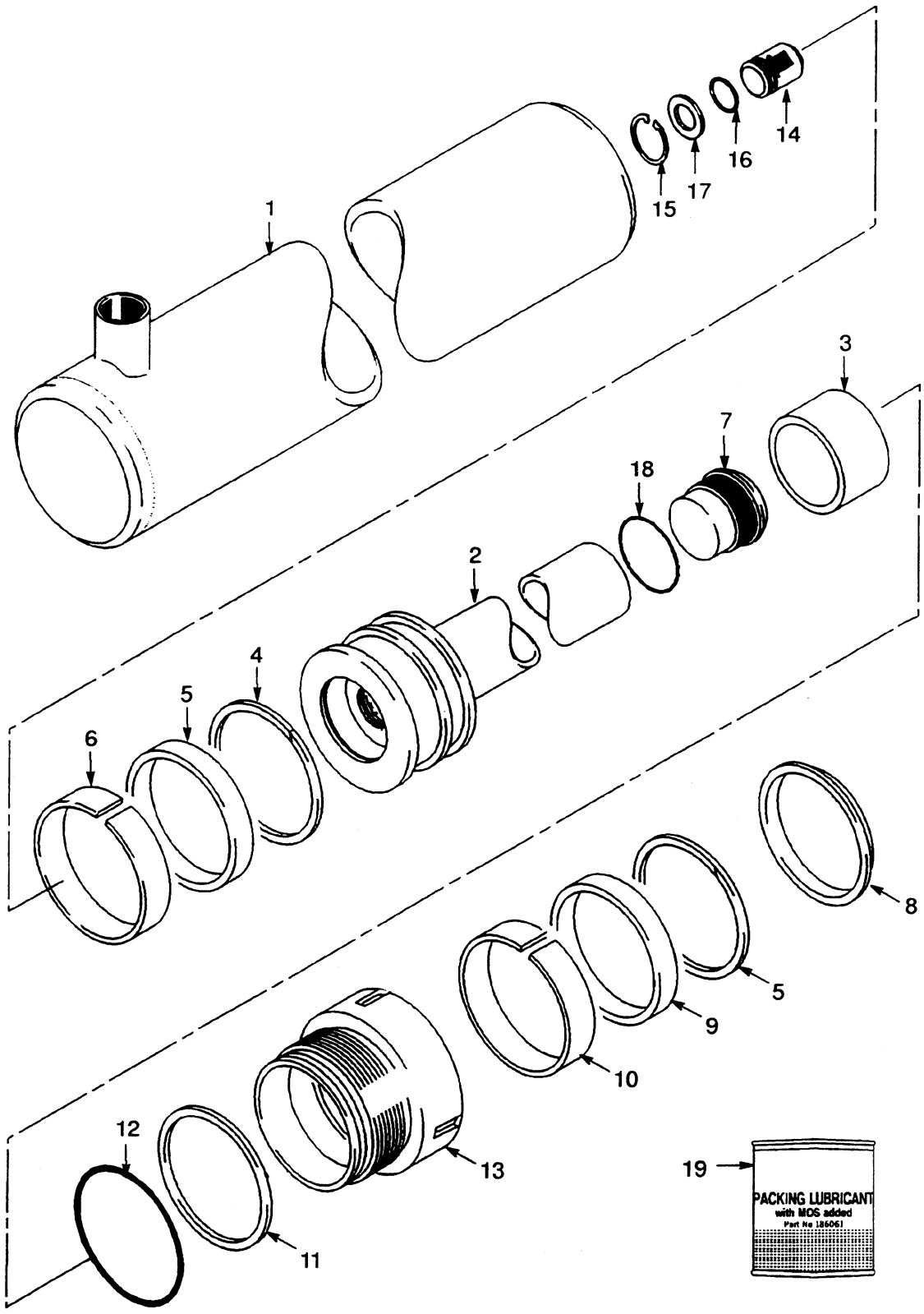
KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
	a	.....	Lift Cylinder	1	1
1	a	.....	Shell	1	1
2	a	.....	Rod	1	1
3	b	638292	Back-Up Ring	1	..
3	c	638293	Back-Up Ring	..	1
4	b	637161	Seal	2	..
4	c	637162	Seal	..	2
5	bc	636949	Wear Ring	1	1
6	cdb	39348	O-Ring	1	1
7	d	637635	Washer	1	1
8		187388	Snap Ring	1	1
9	d	.....	Check Valve	1	1
10		638805	Retainer	1	..
10		639453	Retainer	..	1
11	b	15880	O-Ring	1	..
11	c	55468	O-Ring	..	1
12	b	154358	Back-Up Ring	1	..
12	c	270015	Back-Up Ring	..	1
13	b	636900	Wear Ring	1	..
13	c	636950	Bearing	..	1
14	b	638251	Back-Up Ring	1	..
14	c	636071	Ring	..	1
15	b	636858	Wiper Ring	1	..
15	c	636859	Wiper Ring	..	1
16	b	57664	O-Ring	1	..
16	c	46388	O-Ring	..	1
17		639460	Plug	1	..
17		639455	Plug	..	1
18		186061	Packing Lubricant	AR	AR

[a] ☞ Charts Above
[b] Included In Repair Kit 639461 For S30-50E
[c] Included In Repair Kit 639456 For S60ES
[d] Included In Check Valve Kit 658947

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LIFT CYLINDER
INTERMEDIATE FREE-LIFT MAST
280000 AND 282000 SERIES MASTS
(Figure 107)



LIFT CYLINDER
INTERMEDIATE FREE-LIFT MAST
280000 AND 282000 SERIES MASTS

S30-50E

REF NO	NAME OF PART	Lift Height To Bottom Of Forks				QTY
		104.5 inch (2650 mm)	116.5 inch (2960 mm)	128.5 inch (3260 mm)	148.5 inch (3770 mm)	
	Lift Cylinder	282356	282357	282358	282359	1
1	Shell	285711	285712	285713	285714	1
2	Rod	640614	640618	639596	640622	1

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Forks				QTY
		98.5 inch (2500 mm)	110.5 inch (2810 mm)	122.5 inch (3110 mm)	142.5 inch (3620 mm)	
	Lift Cylinder	282361	282362	282363	282364	1
1	Shell	285722	285723	285724	285750	1
2	Rod	645044	645046	645048	645050	1

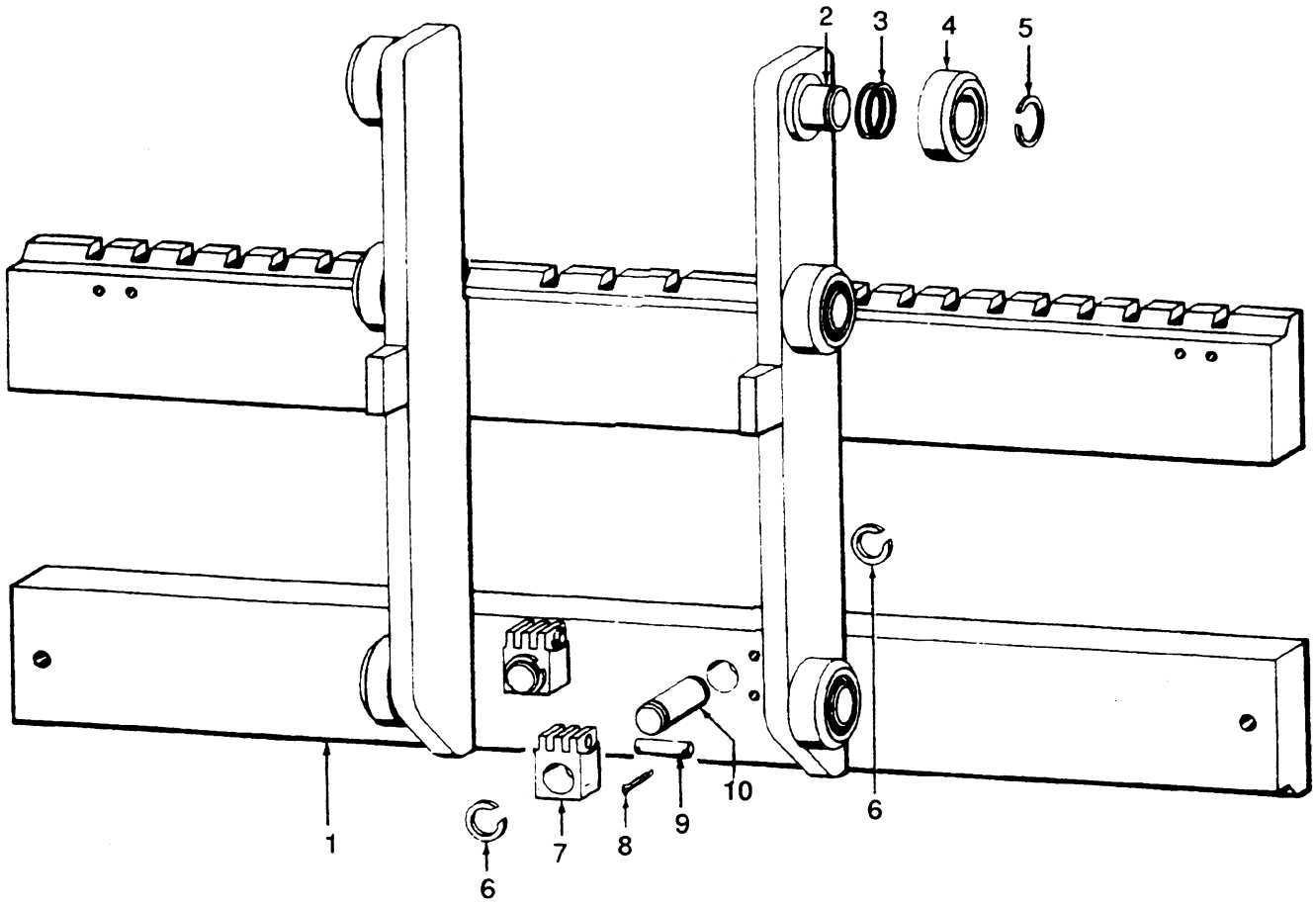
KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
	a	.....	Cylinder	1	1
1	a	.....	Shell	1	1
2	a	.....	Rod	1	1
3	b	638880	Spacer	1	..
3	b	639591	Spacer	..	1
4	c	638292	Back-Up Ring	1	..
4	d	638293	Back-Up Ring	..	1
5	c	637161	Seal	2	..
5	d	637162	Seal	..	2
6	cd	636949	Wear Ring	1	1
7	c	57664	O-Ring	1	..
7	d	46388	O-Ring	..	1
8	c	636858	Wiper Ring	1	..
8	d	636859	Wiper Ring	..	1
9	c	638251	Back-Up Ring	1	..
9	d	636071	Ring	..	1
10	c	636900	Wear Ring	1	..
10	d	636950	Bearing	..	1
11	c	154358	Back-Up Ring	1	..
11	d	270015	Back-Up Ring	..	1
12	c	15880	O-Ring	1	..
12	d	55468	O-Ring	..	1
13		638805	Retainer	1	..
13		639453	Retainer	..	1
14	cde	39348	O-Ring	1	1
15		187388	Snap Ring	1	1
16	e	.....	Check Valve	1	1
17	e	15175	Washer	1	1
18		639460	Rod Plug	1	..
18		639455	Rod Plug	..	1
19		186061	Packing Lubricant	AR	AR

a ☞ Charts Above
b Required For Strokes Greater Than 80 inch
c Included In Seal Kit 639461
d Included In Seal Kit 639456
e Included In Check Valve Kit 658947

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CARRIAGE
INTERMEDIATE FREE-LIFT MAST
181000, 184000, 257000, AND 266000 SERIES MASTS
(Figure 108)

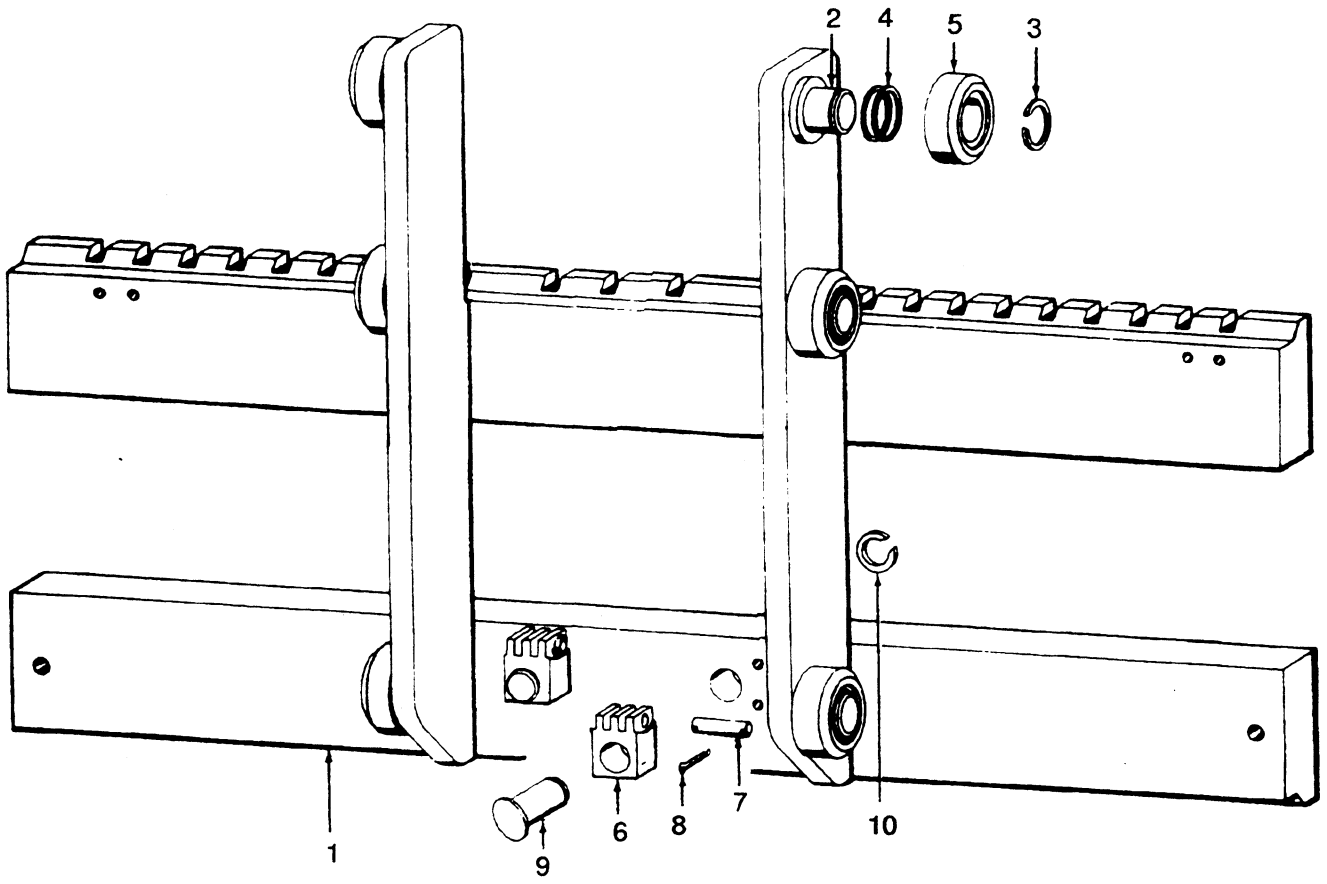


KEY
A: S30-50E
B: S60ES

REF	PART NO.	NAME OF PART	QTY A	QTY B
	192370	Carriage-36 inch	1	..
	184743	Carriage-36 inch	..	1
1	192371	Frame-36 inch	1	..
1	184746	Frame-36 inch	..	1
2	129259	Stubshaft	6	6
3	129387	Shim-.020 inch	AR	AR
4	329090	Load Roller	6	6
5	58901	Snap Ring	6	6
6	131358	Snap Ring	4	2
7	88452	Chain Anchor	2	..
7	126691	Chain Anchor	..	2
8	15200	Cotter Pin	4	..
8	15211	Cotter Pin	..	4
9	135306	Pin	2	..
9	147485	Anchor Pin	..	2
10	147224	Pin	2	..
10	185597	Pin	..	2

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CARRIAGE
INTERMEDIATE FREE-LIFT MAST
280000 AND 282000 SERIES MASTS
(Figure 109)



KEY
A: S30-50E
B: S60ES

REF	PART NO.	NAME OF PART	QTY A	QTY B
	345049	Carriage-34 inch	1	..
	345064	Carriage-34 inch	..	1
	280933	Carriage-36 inch	1	..
	279106	Carriage-36 inch	..	1
	377475	Carriage-38 inch	1	..
	377477	Carriage-38 inch	..	1
1	345048	Frame-34 inch	1	..
1	345063	Frame-34 inch	..	1
1	280935	Frame-36 inch	1	..
1	279122	Frame-36 inch	..	1
1	377476	Frame-38 inch	1	..
1	377478	Frame-38 inch	..	1
2	129259	Stubshaft	6	6
3	58901	Snap Ring	6	6
4	129387	Shim-.020 inch	AR	AR
5	329090	Load Roller	6	6
6	88452	Chain Anchor	2	..
6	126691	Chain Anchor	..	2
7	135306	Pin	2	..
7	147485	Anchor Pin	..	2
8	15200	Cotter Pin	4	..
8	15211	Cotter Pin	..	4
9	147224	Pin	2	..
9	126692	Pin	..	2
10	131358	Snap Ring	4	..
10	58933	Snap Ring	..	2

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NOTES

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FREE-LIFT MAST

CARRIAGE
FREE-LIFT MAST ..... Page 220

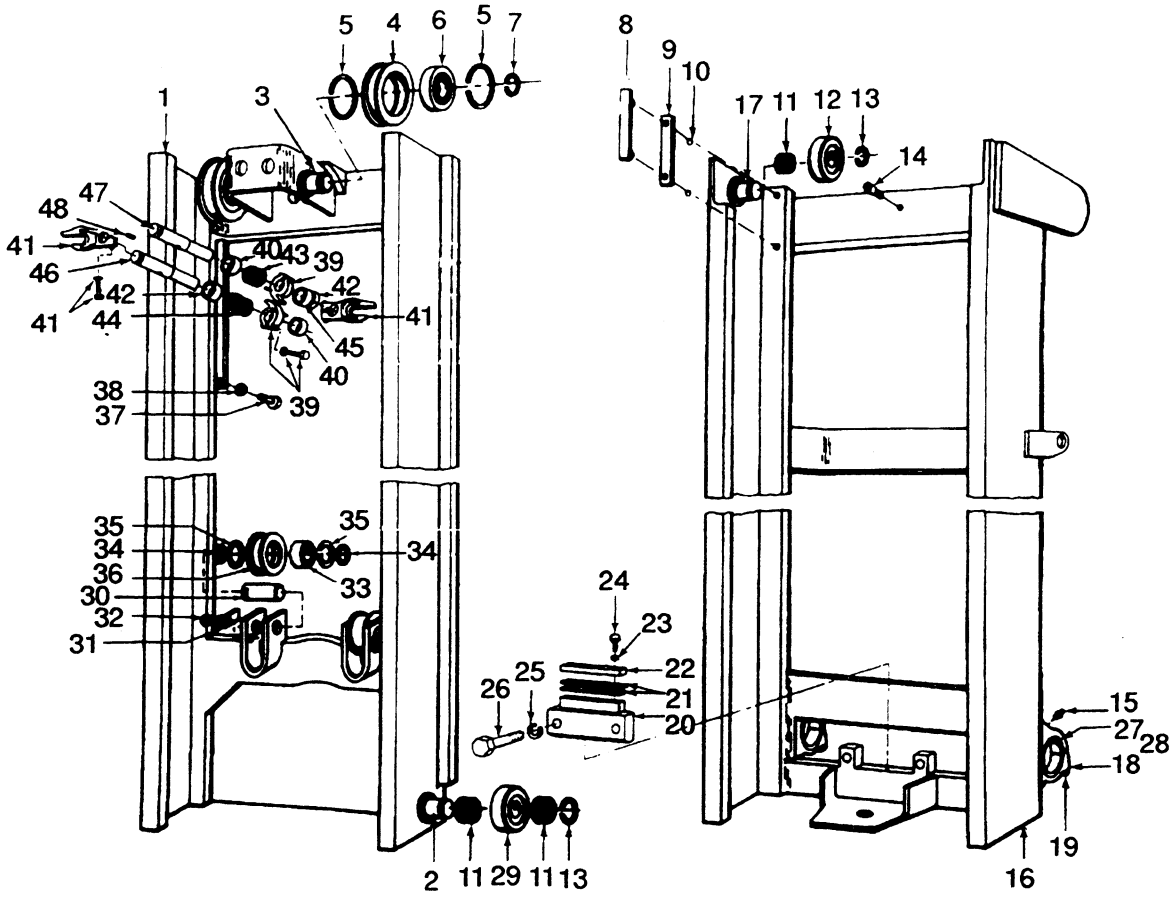
LIFT CYLINDER
FREE-LIFT MAST ..... Page 218

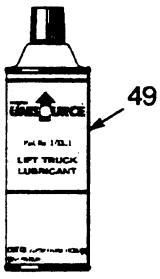
LIFT
FREE-LIFT MAST ..... Page 216

MAST
FREE-LIFT ..... Page 212

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MAST
FREE-LIFT
(Figure 110)





PARTS-SERVICE GRAM	
ITEM	GRAM
27, 28	I-F-59

MAST
FREE-LIFT

S30-50E

REF NO	NAME OF PART	Lift Height To Bottom Of Fork				QTY
		104.5 inch (2650 mm)	116.5 inch (2960 mm)	128.5 inch (3260 mm)	148.5 inch (3770 mm)	
	Mast	181542 257961	181553 257962	181558 257963	181562 257964	1
1	Inner Mast	[a] 181548 [b] 275848	[a] 181555 [b] 275849	[a] 181560 [b] 278550	[a] 181564 [b] 278551	1
16	Outer Mast	[a] 181545 [b] 257957	[a] 181554 [b] 257958	[a] 181559 [b] 257959	[a] 181563 [b] 257960	1

[a] 181000 Series Mast
[b] 257000 Series Mast

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Fork				QTY
		98.5 inch (2500 mm)	100.5 inch (2550 mm)	122.5 inch (3110 mm)	142.5 inch (3620 mm)	
	Mast	185400 257966	185420 257967	185421 257968	185427 257969	1
1	Inner Mast	277461	277462	277463	277464	1
16	Outer Mast	[c] 185404 [d] 266716	[c] 185415 [d] 266717	[c] 185422 [d] 266718	[c] 185428 [d] 266719	1

[c] 185000 Series Mast
[d] 257000 Series Mast

(CONTINUED ON NEXT PAGE)

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MAST
FREE-LIFT

KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
1	a	.....	Inner Mast	1	1
2		129259	Stub Shaft	2	2
3		135295	Stub Shaft	2	..
3		185444	Stub Shaft	..	2
4		216100	Chain Sheave	2	..
4		226020	Chain Sheave	..	2
5		67551	Snap Ring	2	2
6		135277	Bearing	2	2
7		12891	Snap Ring	2	2
8		129354	Bearing Kit	2	2
8		215211	Bearing Strip	1	1
9		131716	Shim-.020 inch	AR	AR
10		104506	O-Ring	2	2
11		129387	Shim-.020 inch	AR	AR
12		329091	Load Roller	2	2
13		58901	Snap Ring	4	4
14		181537	Capscrew	1	1
15		13971	Fitting	2	2
16	a	.....	Outer Mast	1	1
17		129259	Stub Shaft	2	2
18		287961	Hanger (RH)	1	1
18		287958	Hanger (LH)	1	1
19		18807	Bolt	2	2
20		257943	Bracket	1	..
20		185455	Bracket	..	1
21		136310	Shim-.065 inch	AR	AR
21		150136	Shim-.035 inch	AR	AR
22		136309	Cushion	1	1
23		177946	Lockwasher	2	2
24		14466	Screw	2	2
25		15158	Lockwasher	2	2
26		37562	Capscrew	2	..
26		16808	Capscrew	..	2
27		252274	Split Bushing	4	4
27	b	307362	Half Bushing	4	4
28		252273	Thimble	4	4
28	b	307365	Thimble	4	4
29		329090	Load Roller	2	2
30		160992	Pin	2	..
30		203747	Pin	..	2
31		135281	Keeper	2	2
32		16811	Capscrew	2	2
32		15156	Lockwasher	2	2
33		129002	Bearing	2	2
34		135280	Spacer	4	..
34		185457	Spacer	..	4
35		12921	Snap Ring	4	4
36		216105	Chain Sheave	2	..
36		185456	Chain Sheave	..	2
37		16326	Capscrew	2	2
38		177949	Washer	2	2
39		181540	Latch	2	2
39		16594	Capscrew	2	2
39		15026	Nut	2	2
40		46861	Bushing	2	2
41		181541	Latch	2	2
41		16779	Capscrew	2	2
41		15026	Nut	2	2
42		45645	Bushing	2	2
43		181539	Torsion Spring	1	1
44		181538	Torsion Spring	1	1
45		181524	Spacer	1	..
45		185454	Spacer	..	1
46		181523	Shaft	1	..
46		213212	Spacer	1	1
46		185452	Shaft	..	1
47		181522	Shaft	1	..
47		213211	Spacer	1	1
47		185453	Shaft	..	1
48		91527	Slotted Pin	2	2
49		171351	Lubricant	AR	AR

a ☞ Charts On Previous Page
b First Used On S/N D2D-8392 D2T-1549 Standard Tread D2D-8437 D2T-1551 Wide

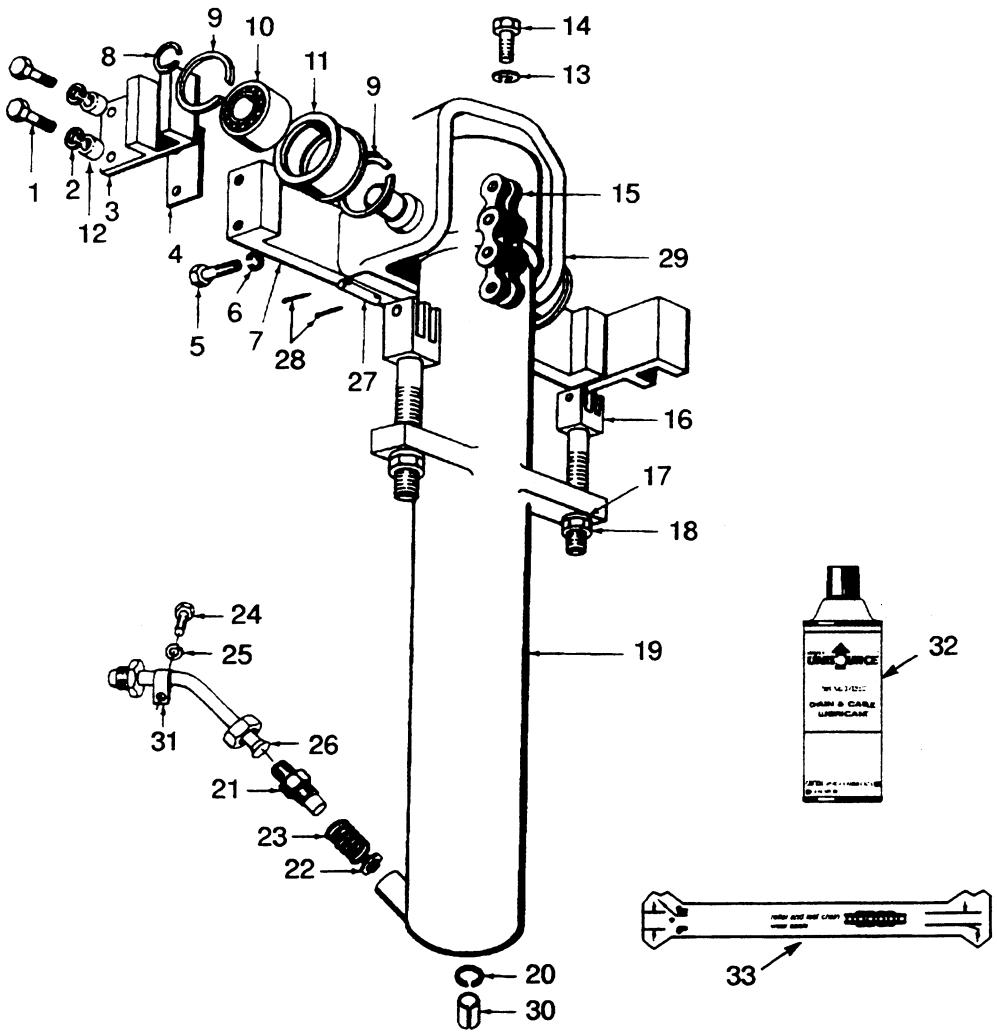
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NOTES

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LIFT
FREE-LIFT MAST
(Figure 111)



LIFT
FREE-LIFT MAST

S30-50E

REF NO	NAME OF PART	Lift Height To Bottom Of Fork				QTY
		104.5 inch (2650 mm)	116.5 inch (2960 mm)	128.5 inch (3260 mm)	148.5 inch (3770 mm)	
15	Lift Chain	168975	203462	203463	136268	2

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Fork				QTY
		98.5 inch (2500 mm)	110.5 inch (2810 mm)	122.5 inch (3110 mm)	142.5 inch (3620 mm)	
15	Lift Chain	190074	140012	190075	185425	2

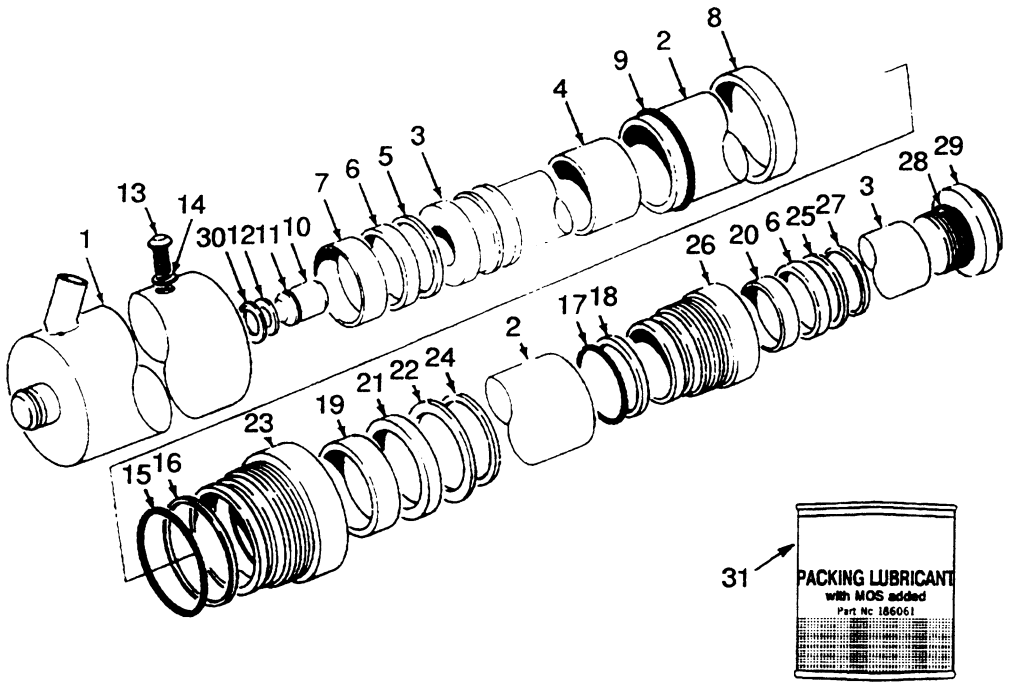
KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
1		16807	Capscrew	4	..
1		18202	Capscrew	..	4
2		15158	Lockwasher	4	..
2		15156	Lockwasher	..	4
3		181573	Guide	2	..
3		160993	Guide	..	2
3		257915	Spacer	..	4
4		135313	Shim-.031 inch	AR	AR
4		160994	Shim-.062 inch	AR	AR
5		16830	Capscrew	2	..
6		15158	Lockwasher	2	..
7		181571	Bracket	1	..
7		185451	Bracket	..	1
8		58908	Snap Ring	2	2
9		12921	Snap Ring	4	4
10		129002	Bearing	2	2
11		135278	Chain Sheave	2	..
11		185456	Chain Sheave	..	2
12		257915	Spacer	..	4
13		37562	Capscrew	4	..
13		16821	Capscrew	..	4
14		15158	Lockwasher	4	4
15	a	.....	Lift Chain	2	2
16		161006	Chain Anchor	2	..
16		190073	Chain Anchor	..	2
17		161004	Base Ring	2	2
18		161003	Nut	2	2
19		.....	Lift Cylinder	1	1
			☞ Figure 112		
20		131358	Snap Ring	1	1
21		198006	Fitting	1	..
21		189595	Fitting	..	1
22		113921	Washer	1	1
23		154355	Spring	1	..
23		145592	Spring	..	1
24		16811	Capscrew	1	1
25		15156	Lockwasher	1	1
26		181567	Tube	1	..
26		185449	Tube	..	1
27		135306	Pin	2	..
27		147485	Anchor Pin	..	2
28		15200	Cotter Pin	4	..
28		15211	Cotter Pin	..	4
29		216102	Crosshead	1	..
29		185450	Crosshead	..	1
30		190086	Slotted Pin	1	1
31		154628	Clamp	1	1
32		171350	Chain Lubricant	AR	AR
33		599737	Chain Wear Scale	AR	AR

[a] ☞ Chart Above

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LIFT CYLINDER
FREE-LIFT MAST
(Figure 112)



S30-50E

REF NO	NAME OF PART	Lift Height To Bottom Of Fork				QTY
		104.5 inch (2650 mm)	116.5 inch (2960 mm)	128.5 inch (3260 mm)	148.5 inch (3770 mm)	
	Lift Cylinder	177496	177497	177498	177499	1
1	Shell	640634	640640	640646	639781	1
2	Tube	640636	640642	640648	638355	1
3	Rod	640637	640643	640649	638863	1
4	Secondary Spacer	640631	640630	611264	639780	1

(CONTINUED ON NEXT PAGE)

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LIFT CYLINDER
FREE-LIFT MAST

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Fork				QTY
		98.5 inch (2500 mm)	110.5 inch (2810 mm)	122.5 inch (3110 mm)	142.5 inch (3620 mm)	
	Lift Cylinder	185410	226000	226001	185430	1
1	Shell	644947	655110	655111	644948	1
2	Tube	640654	655116	655117	639565	1
3	Rod	640655	655122	655123	639573	1
4	Secondary Spacer	640666	640844	651528	640666	1

KEY
A: S30-50E
B: S60ES

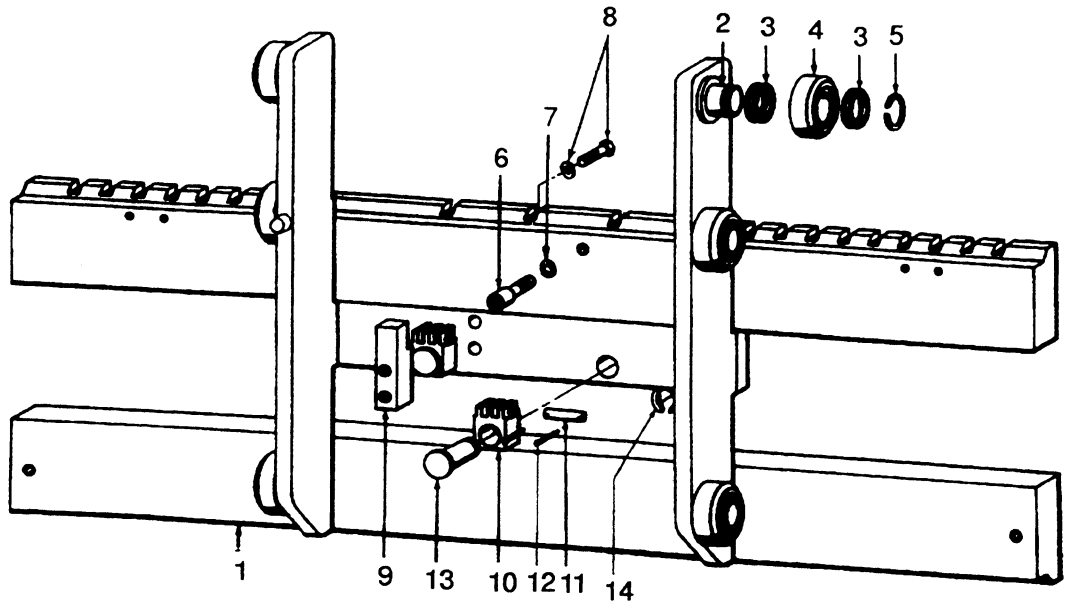
REF		PART NO.	NAME OF PART	QTY A	QTY B
	a	.....	Lift Cylinder	1	1
1	a	.....	Shell	1	1
2	a	.....	Tube	1	1
3	a	.....	Rod	1	1
4	a	.....	Second Spacer	1	1
5	b	638292	Back-Up Ring	1	..
5	c	638293	Back-Up Ring	..	1
6	b	637161	Seal	2	..
6	c	637162	Seal	..	2
7	b	636949	Wear Ring	1	..
7	c	636950	Wear Ring	..	1
8		638802	Half Piston	2	..
8		639450	Half Piston	..	2
9		638804	Retainer Ring	1	..
9		611125	Retainer Ring	..	1
10	d	.....	Check Valve	1	1
11	bcd	39348	O-Ring	1	1
12	d	637635	Washer	1	1
13		632093	Capscrew	1	1
14		607287	Seal	1	1
15	b	15885	O-Ring	1	..
15	c	15887	O-Ring	..	1
16	b	154679	Back-Up Ring	1	..
16	c	615148	Back-Up Ring	..	1
17	b	15880	O-Ring	1	..
17	c	55468	O-Ring	..	1
18	b	154358	Back-Up Ring	1	..
18	c	270015	Back-Up Ring	..	1
19	b	636952	Bearing	1	..
19	c	636905	Bearing	..	1
20	b	636900	Wear Ring	1	..
20	c	636901	Wear Ring	..	1
21	b	368486	Seal	1	..
21	c	637166	Seal	..	1
22	b	638254	Ring	1	..
22	c	638224	Ring	..	1
23		638020	Retainer	1	..
23		639452	Retainer	..	1
24	b	626429	Wiper Ring	1	..
24	c	636862	Wiper Ring	..	1
25	b	638251	Back-Up Ring	1	..
25	c	636701	Ring	..	1
26		638805	Retainer	1	..
26		639453	Retainer	..	1
27	b	636858	Wiper Ring	..	..
27	c	636859	Wiper Ring	..	1
28	b	57664	O-Ring	1	..
28	c	46388	O-Ring	..	1
29		639459	Plug	1	..
29		639454	Plug	..	1
30		187388	Snap Ring	1	1
31		186061	Packing Lubricant	AR	AR

a ☞ Chart Above And On Previous Page
b Included In Repair Kit 638884 For S30-50E
c Included In Repair Kit 639457 For S60ES
d Included In Check Valve Kit 658947

(CONTINUED FROM PREVIOUS PAGE)

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CARRIAGE
FREE-LIFT MAST
(Figure 113)



REF	PART NO.	NAME OF PART	QTY A	QTY B
	345044	Carriage-34 inch	1	..
	345059	Carriage-34 inch	..	1
	181588	Carriage-36 inch	1	..
	185460	Carriage-36 inch	..	1
	377479	Carriage-38 inch	1	..
	377481	Carriage-38 inch	..	1
1	345043	Frame-34 inch	1	..
1	345058	Frame-34 inch	..	1
1	181589	Frame-36 inch	1	..
1	185461	Frame-36 inch	..	1
1	377480	Frame-38 inch	1	..
1	377482	Frame-38 inch	..	1
2	129259	Stub Shaft	6	6
3	129387	Shim-.020 inch	AR	AR
4	329090	Load Roller	6	6
5	58901	Snap Ring	6	6
6	181537	Capscrew	1	1
7	15162	Lockwasher	..	1
8	38759	Capscrew	2	..
8	16807	Capscrew	..	2
8	15158	Lockwasher	..	2
9	181536	Bar	1	..
9	[a] 185466	Bar	..	1
9	[b] 345065	Bar	..	1
10	135565	Chain Anchor	2	..
10	126691	Chain Anchor	..	2
11	135306	Pin	2	..
11	147485	Anchor Pin	..	2
12	15200	Cotter Pin	4	..
12	15211	Cotter Pin	..	4
13	147223	Pin	2	..
13	185597	Pin	..	2
14	131358	Snap Ring	2	2

[a] 36 inch Carriage
[b] 34 inch And 38 inch Carriage

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THREE-STAGE MAST

CARRIAGE
THREE-STAGE MAST
240000 SERIES MASTS ..... Page 252

CARRIAGE
THREE-STAGE MAST
282000 AND 322000 SERIES MASTS ..... Page 253

FREE-LIFT
THREE-STAGE MAST
240000 SERIES MASTS ..... Page 238

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THREE-STAGE MAST
282000 AND 322000 SERIES MASTS ..... Page 242

LIFT CYLINDER
THREE-STAGE MAST
S30-50E ..... Page 246

LIFT CYLINDER
THREE-STAGE MAST
S60ES ..... Page 250

MAIN LIFT
THREE-STAGE MAST
282000 AND 322000 SERIES MASTS ..... Page 234

MAIN LIFT
THREE-STAGE
240000 SERIES MASTS ..... Page 230

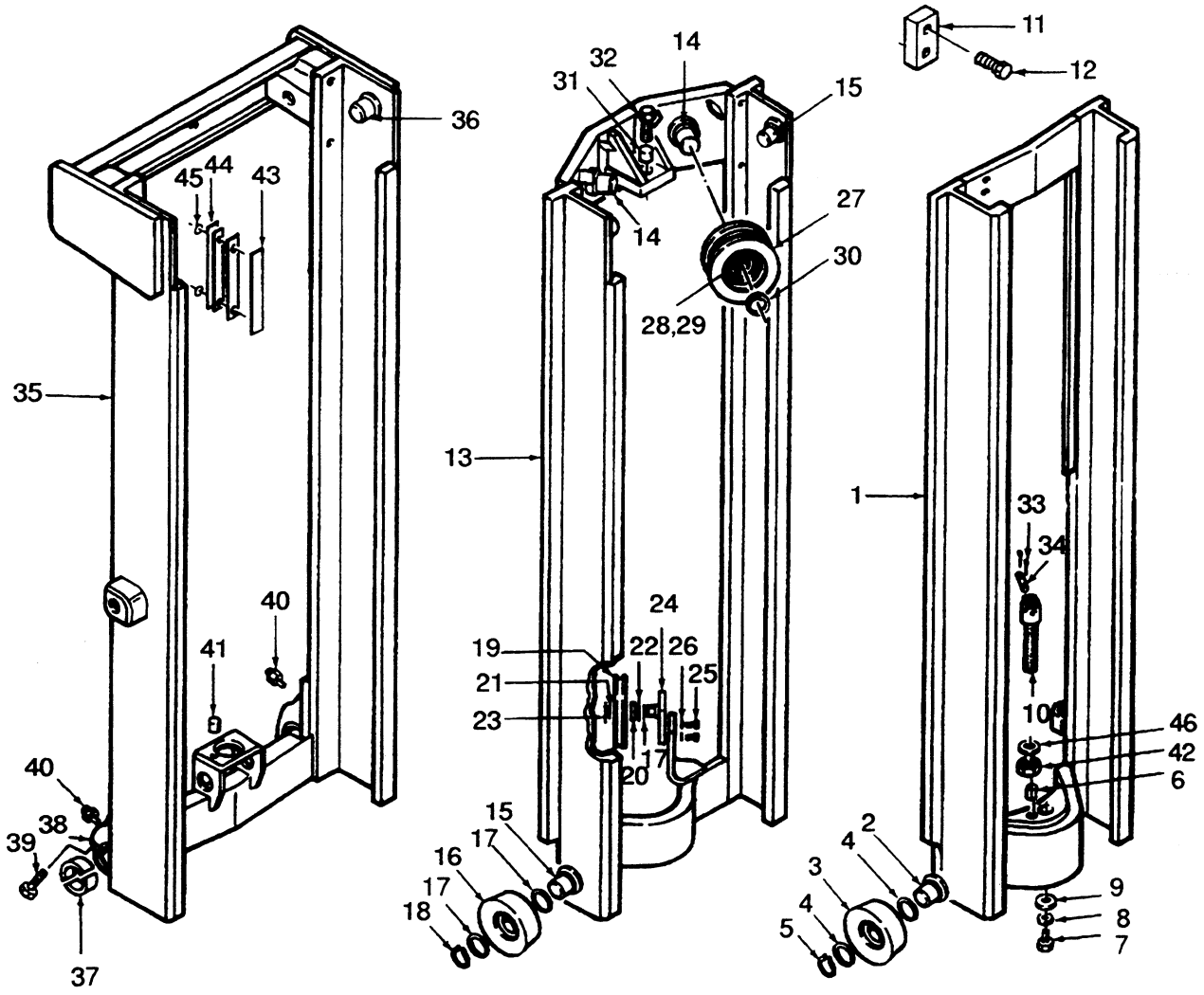
MAST
THREE-STAGE
240000 SERIES MASTS ..... Page 222

MAST
THREE-STAGE
282000 AND 322000 SERIES MASTS ..... Page 226

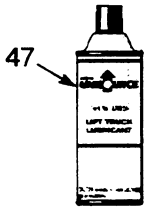
PHASE VALVE
THREE-STAGE MAST ..... Page 233

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MAST
THREE-STAGE
240000 SERIES MASTS
(Figure 114)



PARTS-SERVICE GRAM	
ITEM	GRAM
39	I-F-59



MAST
THREE-STAGE
240000 SERIES MASTS

S30-50E NARROW

REF NO	NAME OF PART	Lift Height To Bottom Of Forks			QTY
		150 inch (3810 mm)	168 inch (4260 mm)	186 inch (4720 mm)	
	Mast	240557	240558	240559	1
1	Inner Mast	180022	180054	180069	1
13	Intermediate Mast	180015	180051	282582	1
35	Outer Mast	180004	180047	180062	1

S30-50E WIDE

REF NO	NAME OF PART	Lift Height To Bottom Of Forks			QTY
		186 inch (4720 mm)	198 inch (5020 mm)	216 inch (5470 mm)	
	Mast	240550	240551	240552	1
1	Inner Mast	180133	180157	180172	1
13	Intermediate Mast	282576	282577	282578	1
35	Outer Mast	240546	180150	240548	1

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Forks					QTY
		139.5 inch (3550 mm)	157.5 inch (4000 mm)	175.5 inch (4450 mm)	196.5 inch (4975 mm)	214.5 inch (5430 mm)	
	Mast	240601	240602	240603	240604	240605	1
1	Inner Mast	186782	186805	186821	186797	186854	1
13	Intermediate Mast	240576	240577	240578	240579	240580	1
35	Outer Mast	240582	240583	240584	240585	240586	1

CONTINUED ON NEXT PAGE

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MAST
THREE-STAGE
240000 SERIES MASTS

KEY
A: S30-50E Narrow
B: S30-50E Wide
C: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B	QTY C
1	a	.....	Inner Mast	1	1	1
2		129259	Stub Shaft	2	2	2
3		329090	Load Roller	6	6	6
4		129387	Shim-.020 inch	AR	AR	AR
5		58901	Snap Ring	6	6	6
6		168800	Slotted Pin	1	1	1
7		277283	Capscrew	1	1	1
8		15160	Lockwasher	1	1	1
9		†5156	Lockwasher	1	1	1
10		225550	Chain Anchor	2	2	..
10		190073	Chain Anchor	..	..	2
11		180115	Bar	1	1	..
11		172848	Bar	..	..	1
12		28055	Capscrew	2	2	..
12		37297	Capscrew	..	..	2
13	a	.....	Intermediate Mast	1	1	1
14		180099	Stub Shaft	2	..	..
14		135295	Stub Shaft	..	2	..
14		186909	Stub Shaft	..	..	2
15		129259	Stub Shaft	4	4	4
16		329091	Load Roller	2	2	2
17		129387	Shim-.020 inch	AR	AR	AR
18		58901	Snap Ring	2	2	2
19		226022	Hose Sheave	2	..	..
19		226023	Hose Sheave	..	2	2
19		180042	Sheave	1	..	..
19		180146	Sheave	..	1	1
20		128469	Ball Bearing	1	1	1
21		46102	Snap Ring	2	2	2
22		162568	Shim-.060 inch	2	2	2
23		160996	Snap Ring	1	1	1
24		180113	Bracket	1	1	1
25		16696	Capscrew	4	4	4
26		15156	Lockwasher	4	4	4
27		216108	Chain Sheave	2	..	..
27		216105	Chain Sheave	..	2	..
27		226020	Chain Sheave	..	..	2
27		180044	Chain Sheave	1	..	..
27		135278	Chain Sheave	..	1	..
27		185458	Chain Sheave	..	..	1
28		129002	Bearing	1	1	..
28		135277	Bearing	..	..	1
29		12921	Snap Ring	2	2	..
29		67551	Snap Ring	..	..	2
30		58903	Snap Ring	2	..	..
30		12891	Snap Ring	..	2	2
31		180107	Spacer Tube	1	1	..
31		186915	Spacer Tube	..	..	1
32		16800	Capscrew	1	1	..
32		16831	Capscrew	..	..	1
33		15200	Cotter Pin	4	4	4
34		135306	Pin	2	2	2
35	a	.....	Outer Mast	1	1	1
36		129259	Stub Shaft	2	2	2
37		287950	Hanger (RH)	1	..	..
37		287954	Hanger (RH)	..	1	1
37		287952	Hanger (LH)	1	..	..
37		287956	Hanger (LH)	..	1	1
38		18807	Bolt	2	2	2
39		252274	Split Bushing	2	2	2
39		252273	Thimble	4	4	4
40		13971	Fitting	2	..	..
40		13960	Grease Fitting	..	2	2
41		168800	Slotted Pin	1	1	1
42		161003	Nut	2	2	2
43		129354	Bearing Kit	4	4	4
43		215211	Bearing Strip	1	1	1
44		131716	Shim	AR	AR	AR
45		104506	O-Ring	2	2	2
46		161004	Base Ring	2	2	2
47		171351	Lubricant	AR	AR	AR

a ☞ Charts On Previous Page

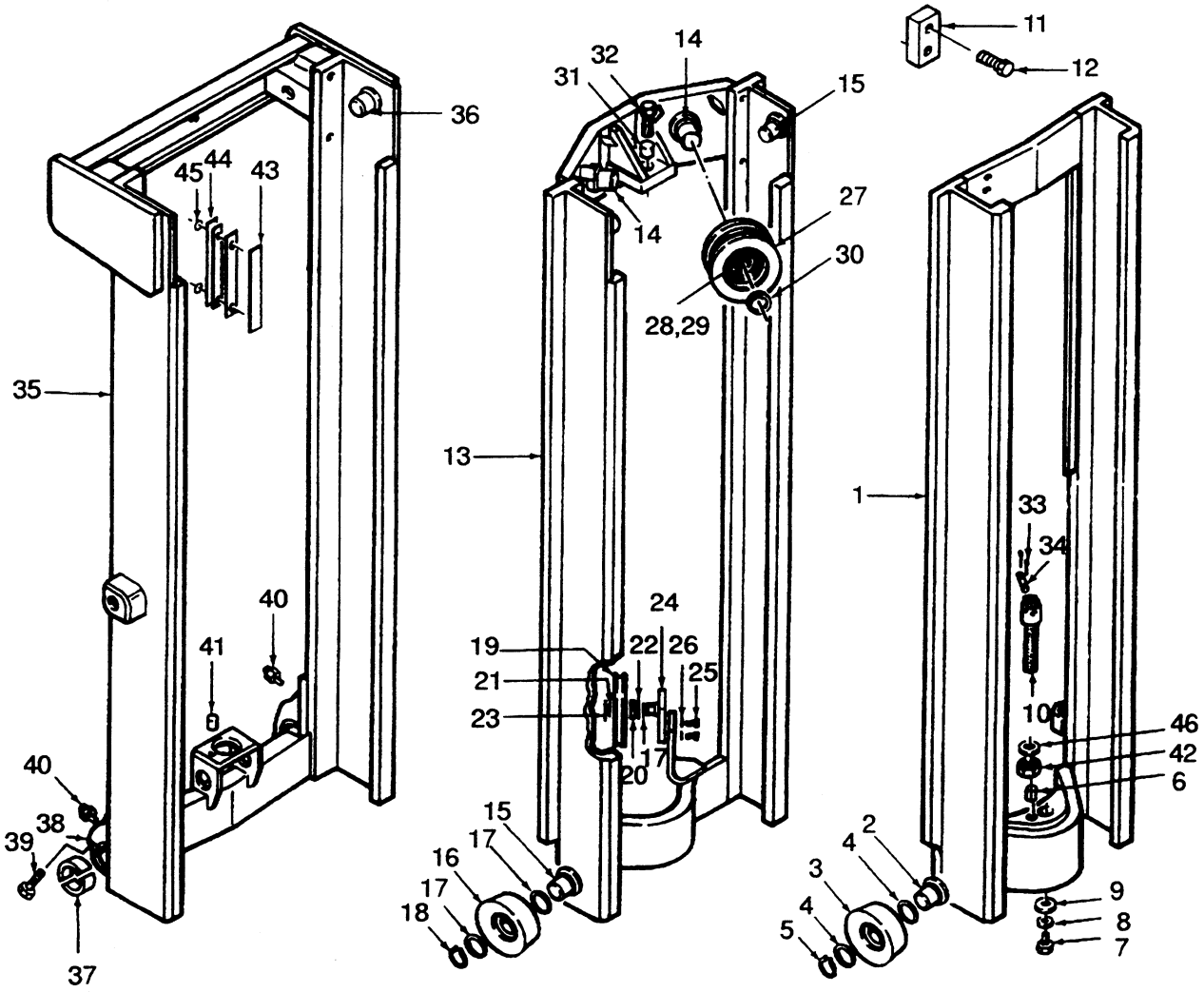
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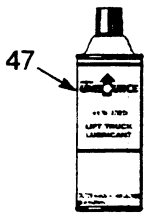
NOTES

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MAST
THREE-STAGE
282000 AND 322000 SERIES MASTS
(Figure 115)



PARTS-SERVICE GRAM	
ITEM	GRAM
39	I-F-59



MAST
THREE-STAGE
282000 AND 322000 SERIES MASTS

S30-50E NARROW

REF NO	NAME OF PART	Lift Height To Bottom Of Fork			QTY
		150 inch (3810 mm)	168 inch (4260 mm)	186 inch (4720 mm)	
	Mast	282391 322089	282392 322090	282393 322091	1 1
1	Inner Mast	180022	180054	180069	1
13	Intermediate Mast	282377	282378	282379	1
35	Outer Mast	282387	282388	282389	1

S30-50E WIDE

REF NO	NAME OF PART	Lift Height To Bottom Of Fork			QTY
		186 inch (4720 mm)	198 inch (5020 mm)	216 inch (5470 mm)	
	Mast	282526	282527	282528	1
1	Inner Mast	180133	180157	180172	1
13	Intermediate Mast	238632	238633	238634	1
35	Outer Mast	282491	282492	282493	1

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Fork					QTY
		139.5 inch (3550 mm)	157.5 inch (4000 mm)	175.5 inch (4450 mm)	196.5 inch (4975 mm)	214.5 inch (5430 mm)	
	Mast	282495	282496	282497	282498	282499	1
1	Inner Mast	186782	186805	186821	186797	186854	1
13	Intermediate Mast	240576	240577	240578	240579	240580	1
35	Outer Mast	282485	282486	282487	282488	282489	1

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MAST
THREE-STAGE
282000 AND 322000 SERIES MASTS

KEY
A: S30-50E Narrow
B: S30-50E Wide
C: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B	QTY C
1	a	.....	Inner Mast	1	1	1
2		129259	Stub Shaft	2	2	2
3		329090	Load Roller	6	6	6
4		129387	Shim-.020 inch	AR	AR	AR
5		58901	Snap Ring	6	6	6
6		168800	Slotted Pin	1	1	1
7		277283	Capscrew	1	1	1
8		15160	Lockwasher	1	1	1
9		15125	Washer	1	1	1
10		225550	Chain Anchor	2	2	..
10		190073	Chain Anchor	..	..	2
11		180115	Bar	1	1	..
11		172848	Bar	..	..	1
12		28055	Capscrew	2	2	..
12		37297	Capscrew	..	..	2
13	a	.....	Intermediate Mast	1	1	1
14		180099	Stub Shaft	2	..	..
14		135295	Stub Shaft	..	2	..
14		186909	Stub Shaft	..	..	2
15		129259	Stub Shaft	4	4	4
16		329091	Load Roller	2	2	2
17		129387	Shim-.020 inch	AR	AR	AR
18		58901	Snap Ring	2	2	2
19		226022	Hose Sheave	2	..	..
19		226023	Hose Sheave	..	2	2
19		180042	Sheave	1	..	..
19		180146	Sheave	..	1	1
20		128469	Ball Bearing	1	1	1
21		46102	Snap Ring	2	2	2
22		162568	Shim-.060 inch	2	2	2
23		160996	Snap Ring	1	1	1
24		180113	Bracket	1	1	1
25		16696	Capscrew	4	4	4
26		15156	Lockwasher	4	4	4
27		216108	Chain Sheave	2	..	..
27		216106	Chain Sheave	..	2	..
27		226020	Chain Sheave	..	..	2
27		180044	Chain Sheave	1	..	..
27		135278	Chain Sheave	..	1	..
27		185458	Chain Sheave	..	..	1
28		129002	Bearing	1	..	..
28		135277	Bearing	..	1	1
29		12921	Snap Ring	2	..	..
29		67551	Snap Ring	..	2	2
30		58903	Snap Ring	2	..	..
30		12891	Snap Ring	..	2	2
31		180107	Spacer Tube	1	1	..
31		186915	Spacer Tube	..	..	1
32		16800	Capscrew	1	1	..
32		16831	Capscrew	..	..	1
33		15200	Cotter Pin	4	4	..
33		15211	Cotter Pin	..	..	4
34		135306	Pin	2	2	..
34		147485	Anchor Pin	..	..	2
35	a	.....	Outer Mast	1	1	1
36		129259	Stub Shaft	2	2	2
37		287950	Hanger (RH)	1	..	..
37		287954	Hanger (RH)	..	1	1
37		287952	Hanger (LH)	1	..	..
37		287956	Hanger (LH)	..	1	1
38		18807	Bolt	2	2	2
39		252274	Split Bushing	4	4	4
39	b	307362	Half Bushing	4	4	4
39		252273	Thimble	4	4	4
39	b	307365	Thimble	4	4	4
40		13960	Grease Fitting	2	2	2
41		168800	Slotted Pin	1	1	1
42		161003	Nut	2	2	2
43		129354	Bearing Kit	4	4	4
43		215211	Bearing Strip	1	1	1
44		131716	Shim-.020 inch	AR	AR	AR
45		104506	O-Ring	2	2	2
46		161004	Base Ring	2	2	2
47		171351	Lubricant	AR	AR	AR

[a] ☞ Charts On Previous Page
[b] First Used On S/N D2D-8392 And D2T-1549 Standard Tread, D2D-8437 And D2T-1551 Wide Tread

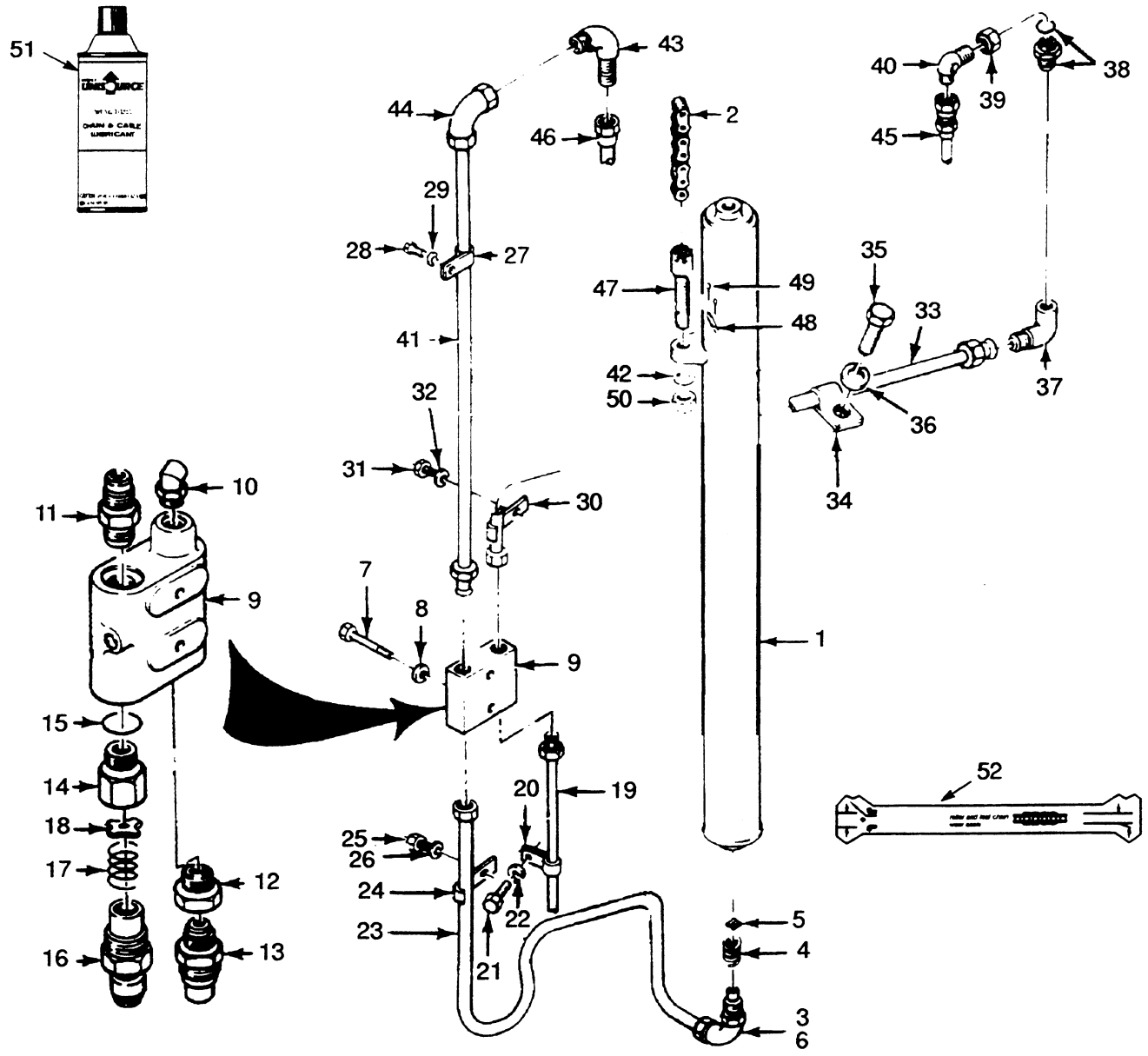
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NOTES

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MAIN LIFT
THREE–STAGE
240000 SERIES MASTS
(Figure 116)



MAIN LIFT
THREE-STAGE
240000 SERIES MASTS

S30-50E NARROW

REF NO	NAME OF PART	Lift Height To Bottom Of Fork			QTY
		150 inch (3810 mm)	168 inch (4260 mm)	186 inch (4720 mm)	
2	Main Lift Chain	180029	180057	223389	2
33	Crossover Tube	238727	238728	238729	1
41	Tube	238719	238720	238721	1
45	Hose (LH)	238693	238694	240589	1
46	Hose (RH)	240565	122561	189371	1

S30-50E WIDE

REF NO	NAME OF PART	Lift Height To Bottom Of Fork			QTY
		186 inch (4720 mm)	198 inch (5020 mm)	216 inch (5470 mm)	
2	Main Lift Chain	180137	135588	180176	2
33	Crossover Tube	243943	243944	243946	1
41	Tube	230058	230059	230061	1
45	Hose (LH)	212182	212172	212156	1
46	Hose (RH)	202777	189370	189369	1

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Forks					QTY
		139.5 inch (3550 mm)	157.5 inch (4000 mm)	175.5 inch (4450 mm)	196.5 inch (4675 mm)	214.5 inch (5430 mm)	
2	Main Chain Lift	186789	186808	186824	186840	186858	2
33	Crossover Tube	243941	243942	243943	243945	243947	1
41	Tube	230056	230057	230058	230060	230062	1
45	Hose (LH)	238693	238694	212182	212172	212156	1
46	Hose (RH)	213788	188700	202777	189370	189369	1

(CONTINUED ON NEXT PAGE)

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MAIN LIFT
THREE-STAGE
240000 SERIES MASTS

KEY
A: S30-50E Narrow
B: S30-50E Wide
C: S60ES

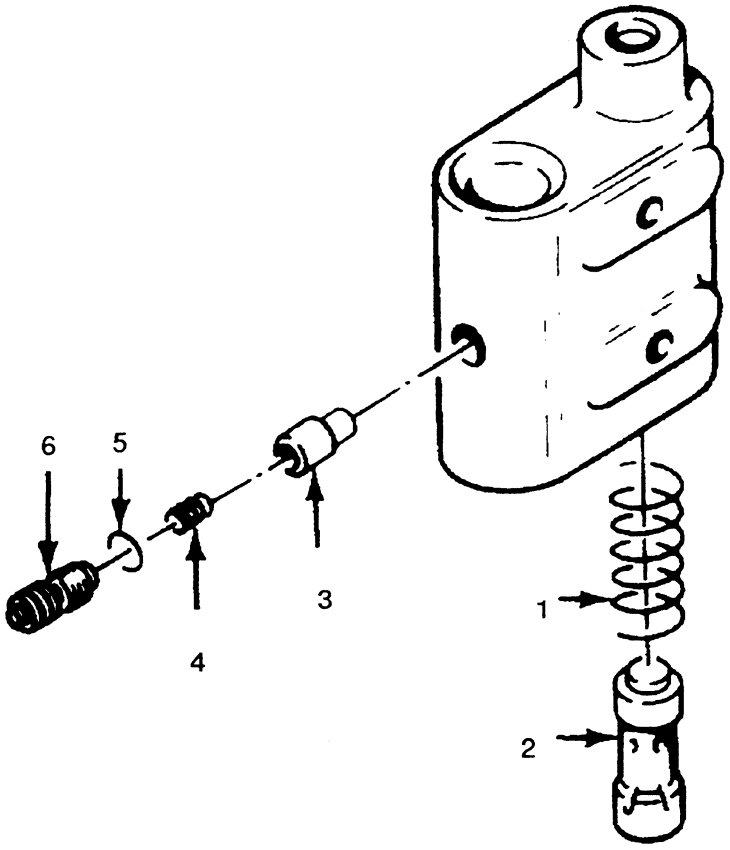
REF		PART NO.	NAME OF PART	QTY A	QTY B	QTY C
1	a	.....	Main Cylinder	1	1	1
2	b	.....	Lift Chain Main	2	2	2
3		189595	Fitting	1	..	..
3		238637	Fitting	..	1	1
4		145592	Spring	1	1	1
5		113921	Washer	1	1	1
6		83857	Fitting	..	..	1
7		18539	Setscrew	2	..	2
7		17154	Capscrew	..	2	..
8		15156	Lockwasher	2	2	2
9		.....	Phase Valve	1	1	1
			☞ Figure 117			
10		16567	Fitting	1	..	..
10		16540	Fitting	..	1	1
11		16543	Fitting	1	1	1
12		121259	Fitting	1	1	1
13		167260	Fitting	1	1	1
14		238107	Adapter	1	1	1
15		16487	O-Ring	1	1	1
16		194730	Fitting	1	1	1
17		271980	Spring	1	1	1
18		189253	Washer	1	1	1
19		238732	Tube	1	..	..
19		316017	Tube	..	1	1
20		154628	Clamp	1	..	..
20		154278	Clamp	..	1	1
21		16811	Capscrew	1	1	1
22		15156	Lockwasher	1	1	1
23		238730	Tube	1	..	..
23		240591	Tube	..	1	1
24		154278	Clamp	1	1	1
25		16811	Capscrew	1	1	1
26		15156	Lockwasher	1	1	1
27		154277	Clamp	1	..	..
28		16811	Capscrew	1	..	..
29		15156	Lockwasher	1	..	..
30		183779	Clamp	1	..	..
30		154278	Clamp	..	1	1
31		16811	Capscrew	1	1	1
32		15156	Lockwasher	1	1	1
33	b	.....	Crossover Tube	1	1	1
34		154278	Clamp	1	..	..
35		16811	Capscrew	1	..	..
36		15156	Lockwasher	1	..	..
37		83857	Fitting	..	1	1
38		16561	Fitting	1	..	..
38		16543	Fitting	..	1	1
38		16486	O-Ring	1	1	1
39		201783	Fitting	..	1	..
39		16542	Fitting	..	..	1
39		16485	O-Ring	..	..	1
40		222413	Fitting	1	..	..
40		16882	Fitting	..	1	1
41	b	.....	Tube	1	1	1
42		161004	Base Ring	2	2	2
43		16883	Fitting	..	1	1
44		16457	Fitting	1	1	1
45	b	.....	Hose (LH)	1	1	1
46	b	.....	Hose (RH)	1	1	1
47		161006	Chain Anchor	2	2	..
47		190073	Chain Anchor	..	..	2
48		135306	Pin	2	2	..
48		147485	Anchor Pin	..	..	2
49		15200	Cotter Pin	4	4	..
49		15211	Cotter Pin	..	..	4
50		161003	Nut	2	2	2
51		171350	Chain Lubricant	AR	AR	AR
52		599737	Chain Wear Scale	AR	AR	AR

a ☞ Charts For Figure 121 And Figure 122
b ☞ Charts On Previous Page

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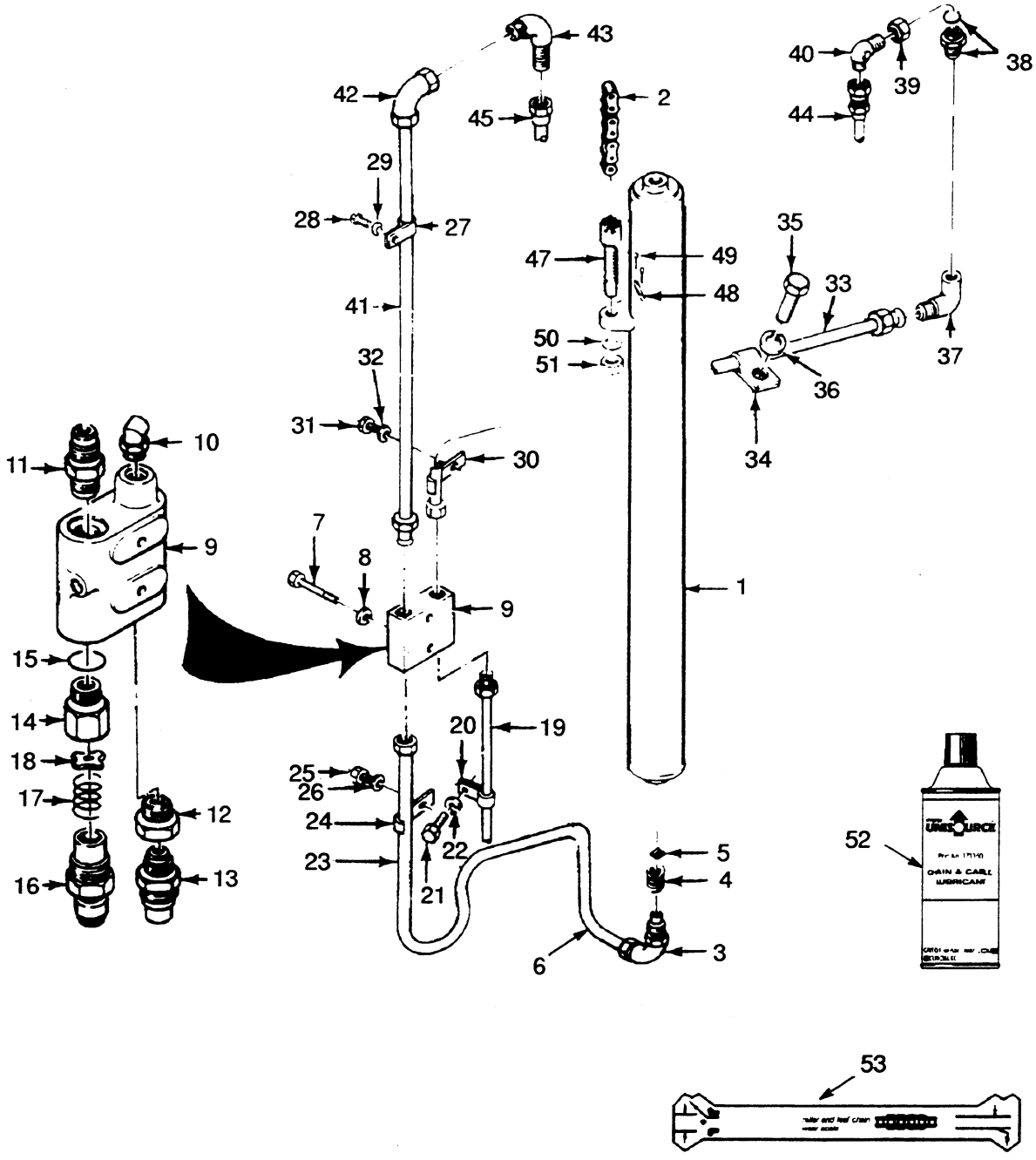
PHASE VALVE
THREE-STAGE MAST
(Figure 117)



REF	PART NO.	NAME OF PART	QTY
	238017	Phase Valve	1
1	242916	Spring	1
2	242917	Spool	1
3	236028	Poppet	1
4	233491	Spring	1
5	118389	O-Ring	1
6	233492	Cap	1

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MAIN LIFT
THREE-STAGE MAST
282000 AND 322000 SERIES MASTS
(Figure 118)



MAIN LIFT
THREE-STAGE MAST
282000 AND 322000 SERIES MASTS

S30-50E NARROW

REF NO	NAME OF PART	Lift Height To Bottom Of Fork			QTY
		150 inch (3810 mm)	168 inch (4260 mm)	186 inch (4720 mm)	
2	Main Chain Lift	180217	986599	180137	2
33	Crossover Tube	285927	285928	285929	1
41	Tube	285891	285892	285893	1
44	Hose (LH)	343991	279563	279564	1
45	Hose (RH)	238693	238694	240589	1

S30-50E WIDE

REF NO	NAME OF PART	Lift Height To Bottom Of Fork			QTY
		186 inch (4720 mm)	198 inch (5020 mm)	216 inch (5470 mm)	
2	Main Chain Lift	129361	177352	240201	2
33	Crossover Tube	285903	285904	285906	1
41	Tube	230058	230059	230061	1
44	Hose (LH)	212182	212172	212156	1
45	Hose (RH)	279554	279555	279556	1

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Fork					QTY
		139.5 inch (3550 mm)	157.5 inch (4000 mm)	175.5 inch (4450 mm)	196.5 inch (4975 mm)	214.5 inch (5430 mm)	
2	Main Chain Lift	186789	186808	186824	186840	186858	2
33	Crossover Tube	285901	285902	285903	285905	285907	1
41	Tube	230096	230057	230058	230060	230062	1
44	Hose (LH)	343991	343991	279564	279555	279556	1
45	Hose (RH)	238693	238694	212182	212172	212156	1

(CONTINUED ON NEXT PAGE)

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MAIN LIFT
THREE-STAGE MAST
282000 AND 322000 SERIES MASTS

KEY
A: S30-50E Narrow
B: S30-50E Wide
C: S60ES

REF		PART NO.	NAME OF PART	QTY A	B	C
1	a	.....	Main Cylinder	1	1	1
2	b	.....	Lift Chain Main	2	2	2
3		189595	Fitting	1	..	..
3		238637	Fitting	..	1	1
4		154355	Spring	..	..	1
4		288648	Spring	1	1	..
5		113921	Washer	1	1	1
5		300689	Washer	1	1	..
6		83857	Fitting	..	1	1
7		17154	Capscrew	2	2	2
8		15156	Lockwasher	2	2	2
9		.....	Phase Valve	1	1	1
			☞ Figure 117			
10		16567	Fitting	1	..	..
10		16540	Fitting	..	1	1
11		16543	Fitting	1	1	1
12		121259	Fitting	1	1	1
13		167260	Fitting	1	..	..
14		238107	Adapter	1	1	1
15		16487	O-Ring	1	1	1
16		194730	Fitting	1	1	1
17		279818	Spring	1	1	1
18		300690	Washer	1	..	..
18		189253	Washer	..	1	1
19		238732	Tube	1	..	..
19		316017	Tube	..	1	1
20		154278	Clamp	1	1	1
21		16811	Capscrew	1	1	1
22		15156	Lockwasher	1	1	1
23		238730	Tube	1	..	..
23		240591	Tube	..	1	1
24		154278	Clamp	1	1	1
25		16811	Capscrew	1	1	1
26		15156	Lockwasher	1	1	1
27		154277	Clamp	1	..	..
28		16811	Capscrew	1	..	..
29		15156	Lockwasher	1	..	..
30		183779	Clamp	1	..	..
30		154278	Clamp	..	1	1

REF		PART NO.	NAME OF PART	QTY A	B	C
31		16811	Capscrew	1	1	1
32		15156	Lockwasher	1	1	1
33	b	.....	Crossover Tube	1	1	1
34		154278	Clamp	1	..	..
35		16811	Capscrew	1	..	..
36		15156	Lockwasher	1	..	..
37		83857	Fitting	..	1	..
37		16561	Fitting	1	..	..
37		16486	O-Ring	1	..	..
38		16543	Fitting	..	1	..
38		16486	O-Ring	..	1	..
39		201832	Nut-Lock	..	1	..
39		16542	Fitting	..	..	1
39		16485	O-Ring	..	..	1
40		16882	Fitting	..	..	1
40	c	16560	Fitting	1	..	..
40	d	222413	Fitting	1	..	..
40		16485	O-Ring	1	..	..
41	b	.....	Tube	1	1	1
42		16457	Fitting	1	1	1
43		16883	Fitting	..	1	1
44	b	.....	Hose (LH)	1	1	1
45	b	.....	Hose (RH)	1	1	1
46		122400	Snap Ring	1	1	1
47		161006	Chain Anchor	2	2	..
47		190073	Chain Anchor	..	..	2
48		135306	Pin	2	2	..
48		147485	Anchor Pin	..	..	2
49		15200	Cotter Pin	4	4	..
49		15211	Cotter Pin	..	..	4
50		161004	Base Ring	2	2	2
51		161003	Nut	2	2	2
52		171350	Chain Lubricant	AR	AR	AR
53		599737	Chain Wear Scale	AR	AR	AR

a ☞ Charts For Figure 121 And Figure 122
b ☞ Chart On Previous Page
c 282000 Series Mast
d 322000 Series Mast

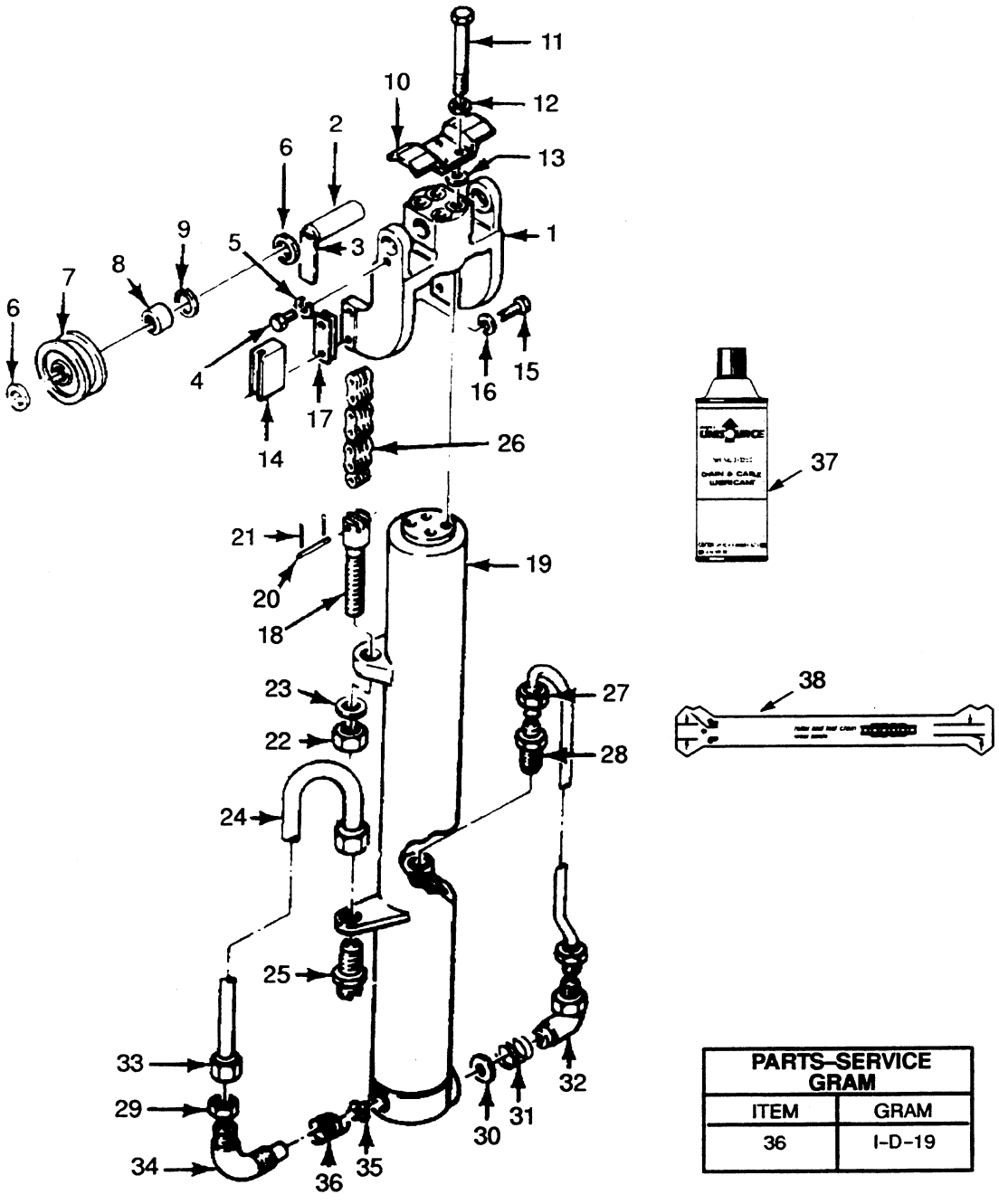
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NOTES

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FREE–LIFT
THREE–STAGE MAST
240000 SERIES MASTS
(Figure 119)



PARTS–SERVICE GRAM	
ITEM	GRAM
36	I-D-19

FREE-LIFT
THREE-STAGE MAST
240000 SERIES MASTS

S30-50E NARROW

REF NO	NAME OF PART	Lift Height To Bottom Of Forks			QTY
		150 inch (3810 mm)	168 inch (4260 mm)	186 inch (4720 mm)	
26	Lift Chain	180030	180058	180074	2

S30-50E WIDE

REF NO	NAME OF PART	Lift Height To Bottom Of ForkS			QTY
		186 inch (4720 mm)	198 inch (5020 mm)	216 inch (5470 mm)	
26	Lift Chain	180074	161059	180177	2

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Forks					QTY
		139.5 inch (3550 mm)	157.5 inch (4000 mm)	175.5 inch (4450 mm)	196.5 inch (4975 mm)	214.5 inch (5430 mm)	
26	Lift Chain	186790	186809	186941	186841	184711	2

(CONTINUED ON NEXT PAGE)

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FREE-LIFT
THREE-STAGE MAST
240000 SERIES MASTS

KEY
A: S30-50E Narrow
B: S30-50E Wide
C: S60ES

REF	PART NO.	NAME OF PART	QTY A	QTY B	QTY C
1	216107	Crosshead	1	..	..
1	216104	Crosshead	..	1	..
1	226018	Crosshead	..	..	1
1	180043	Crosshead	1	..	..
1	186916	Crosshead	..	1	..
1	180147	Crosshead	..	..	1
2	160992	Pin	2	2	..
2	186920	Pin	..	..	2
3	135281	Keeper	2	2	2
4	16597	Capscrew	2	2	2
5	15156	Lockwasher	2	2	2
6	135280	Spacer	4	4	..
6	186921	Spacer	..	..	4
7	216105	Chain Sheave	2	2	..
7	226019	Chain Sheave	..	..	2
7	135278	Chain Sheave	1	1	..
7	126578	Chain Sheave	..	..	1
8	129002	Bearing	1	1	..
8	231020	Bearing	..	..	1
9	12921	Snap Ring	1	1	..
9	37752	Snap Ring	..	..	1
10	180108	Chain Keeper	1	1	..
10	186917	Chain Keeper	..	..	1
11	18597	Capscrew	4	4	4
12	15158	Lockwasher	4	4	4
13	15135	Washer	4	4	4
14	160993	Shoe Guide	2	2	2
15	16814	Capscrew	4	4	4
16	15156	Lockwasher	4	4	4
17	167817	Shim-.030 inch	AR	AR	AR
17	160994	Shim-.062 inch	AR	AR	AR
18	161006	Chain Anchor	4	4	..
18	190073	Chain Anchor	..	..	4
19 [a]	.....	Cylinder (FL)	1	1	1
20	135306	Pin	6	6	..
20	147485	Anchor Pin	..	..	6
21	15200	Cotter Pin	12	12	..
21	15211	Cotter Pin	..	..	12
22	161003	Nut	6	6	6
23	161004	Base Ring	6	6	6
24	238133	Tube	1	1	1
25	16447	Fitting	1	1	1
26 [b]	.....	Lift Chain (FL)	1	1	1
27	180112	Tube	1	1	1
28	16449	Fitting	1	1	1
29	14491	Fitting	1	1	..
30	189253	Washer	1	1	1
31	271980	Spring	1	1	1
32	271954	Fitting	1	1	1
33	17778	Fitting	1	1	1
34	189595	Fitting	1	1	1
35	113921	Washer	1	1	1
36	145592	Spring	1	1	1
37	171350	Chain Lubricant	AR	AR	AR
38	599737	Chain Wear Scale	AR	AR	AR

[a] ☞ Charts For Figure 121 And Figure 122
[b] ☞ Charts On Previous Page

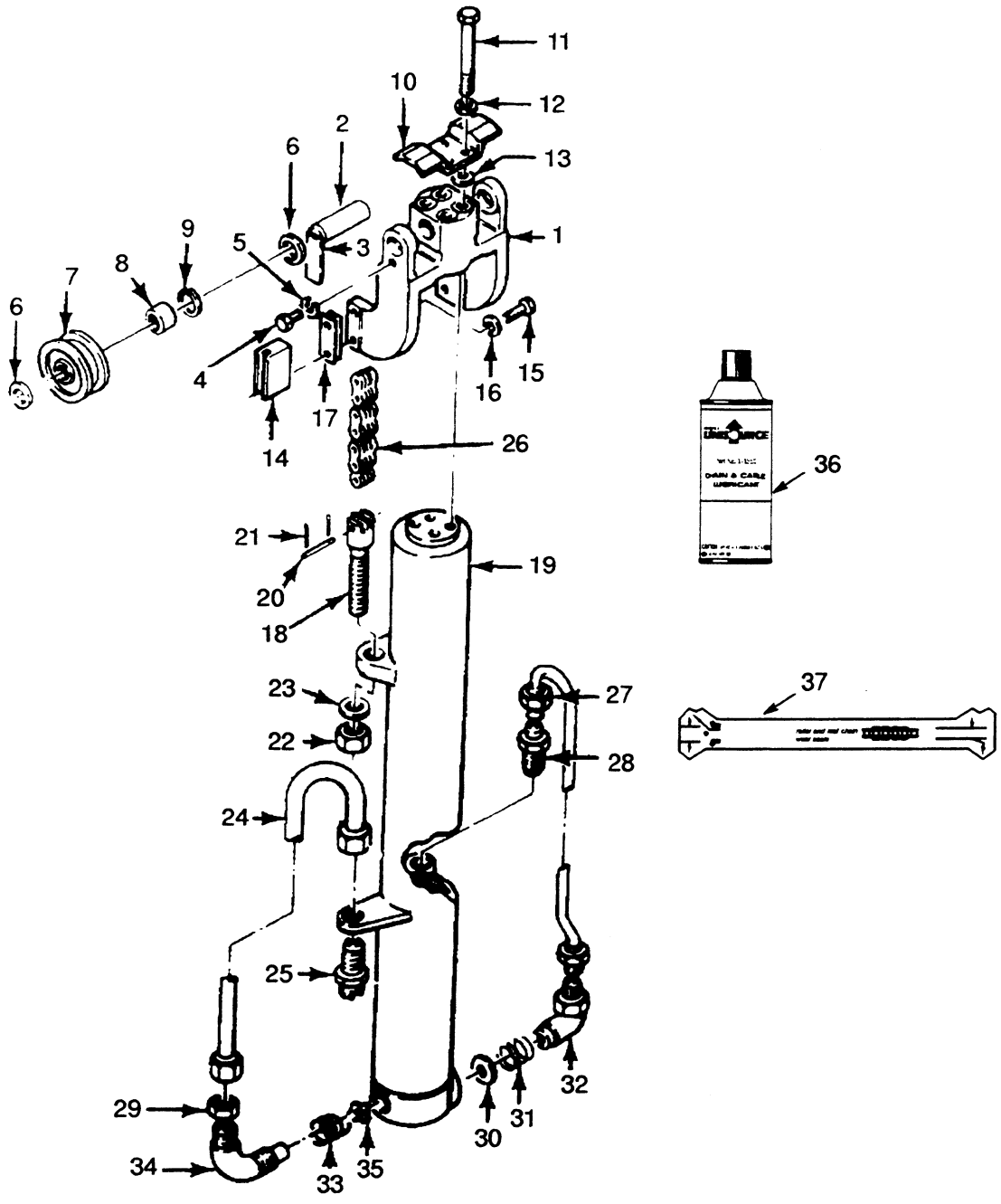
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NOTES

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FREE–LIFT
THREE–STAGE MAST
282000 AND 322000 SERIES MASTS
(Figure 120)



FREE–LIFT
THREE–STAGE MAST
282000 AND 322000 SERIES MASTS

S30–50E NARROW

REF NO	NAME OF PART	Lift Height To Bottom Of Forks			QTY
		150 inch (3810 mm)	168 inch (4260 mm)	186 inch (4720 mm)	
26	Lift Chain	180030	180058	180074	2

S30–50E WIDE

REF NO	NAME OF PART	Lift Height To Bottom Of Forks			QTY
		186 inch (4720 mm)	198 inch (5020 mm)	216 inch (5470 mm)	
26	Lift Chain	180074	161059	180177	2

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Forks					QTY
		139.5 inch (3550 mm)	157.5 inch (4000 mm)	175.5 inch (4450 mm)	196.5 inch (4975 mm)	214.5 inch (5430 mm)	
26	Lift Chain	186790	186809	186941	186841	186859	2

(CONTINUED ON NEXT PAGE)

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FREE–LIFT
THREE–STAGE MAST
282000 AND 322000 SERIES MASTS

KEY
A: S30–50E Narrow
B: S30–50E Wide
C: S60ES

REF	PART NO.	NAME OF PART	QTY A	QTY B	QTY C
1	216107	Crosshead	1	..	..
1	216104	Crosshead	..	1	..
1	226018	Crosshead	..	..	1
1	180043	Crosshead	1	..	..
1	186916	Crosshead	..	..	1
1	180147	Crosshead	..	1	..
2	160992	Pin	2	2	..
2	186920	Pin	..	..	2
3	135281	Keeper	2	2	2
4	16597	Capscrew	2	2	2
5	15156	Lockwasher	2	2	2
6	135280	Spacer	4	4	..
6	186921	Spacer	..	..	4
7	216105	Chain Sheave	2	2	..
7	226019	Chain Sheave	..	..	2
7	135278	Chain Sheave	1	1	..
7	126578	Chain Sheave	..	..	1
8	129002	Bearing	1	1	..
8	231020	Bearing	..	..	1
9	12921	Snap Ring	1	1	..
9	37752	Snap Ring	..	..	1
10	180108	Chain Keeper	1	1	..
10	186917	Chain Keeper	..	..	1
11	18597	Capscrew	4	4	4
12	15158	Lockwasher	4	4	4
13	15135	Washer	4	4	4
14	160993	Shoe Guide	2	2	2
15	16814	Capscrew	4	4	4
16	15156	Lockwasher	4	4	4
17	167817	Shim–.030 inch	AR	AR	AR
17	160994	Shim–.062 inch	AR	AR	AR
18	161006	Chain Anchor	4	4	..
18	190073	Chain Anchor	..	..	4
19 [a]	.....	Cylinder (FL)	1	1	1
20	135306	Pin	6	6	..
20	147485	Anchor Pin	..	..	6
21	15200	Cotter Pin	12	12	..
21	15211	Cotter Pin	..	..	12
22	161003	Nut	6	6	6
23	161004	Base Ring	6	6	6
24 [b]	285956	Tube	1	1	1
24 [c]	322076	Tube	1	..	..
25	16447	Fitting	1	1	1
26 [d]	.....	Lift Chain (FL)	1	1	1
27 [b]	180112	Tube	1	1	1
27 [c]	322075	Tube	1	..	..
28	16449	Fitting	1	1	1
29	14491	Fitting	1	1	..
29	17778	Fitting	..	..	1
30	189253	Washer	..	..	1
30	300690	Washer	1	1	..
31	279818	Spring	1	1	1
32	16882	Fitting	..	1	1
32	271954	Fitting	1	..	..
33	154355	Spring	1	1	1
34	189595	Fitting	1	1	1
35	113921	Washer	1	1	1
36	171350	Chain Lubricant	AR	AR	AR
37	599737	Chain Wear Scale	AR	AR	AR

[a] ☞ Charts For Figure 121 And Figure 122
[b] 282000 Series Mast
[c] 322000 Series Mast
[d] ☞ Chart On Previous Page

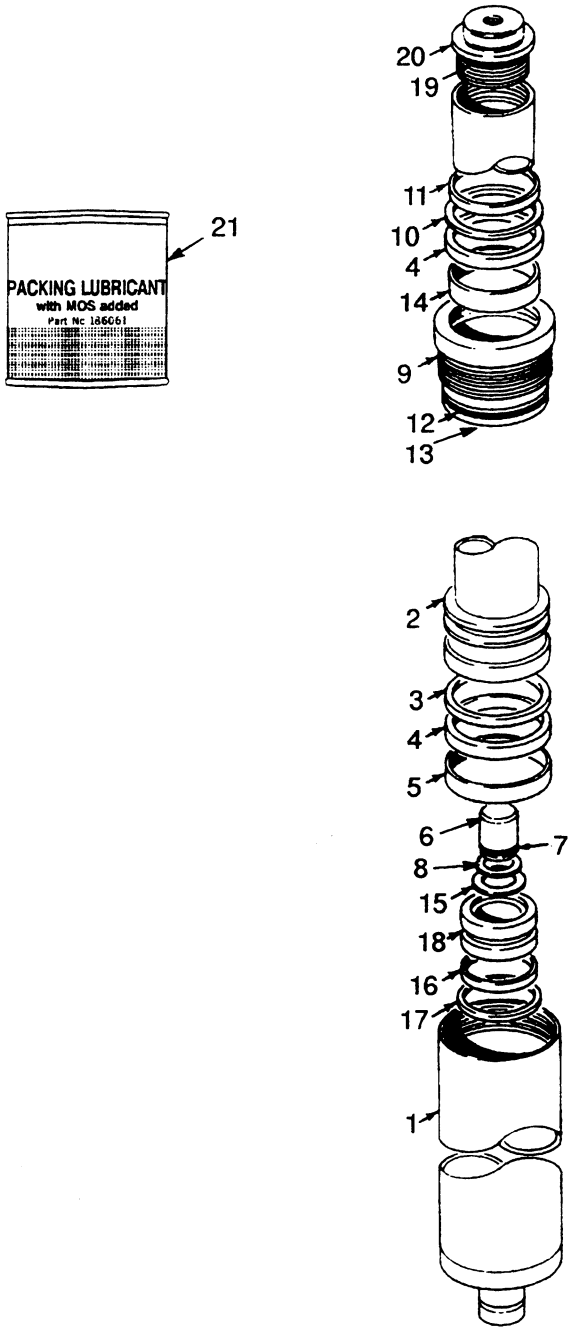
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NOTES

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LIFT CYLINDER
THREE-STAGE MAST
S30-50E
(Figure 121)



LIFT CYLINDER
THREE-STAGE MAST
S30-50E

S30-50E NARROW

REF NO	NAME OF PART	Lift Height To Bottom Of Fork			QTY
		150 inch (3810 mm)	168 inch (4260 mm)	186 inch (4720 mm)	
	Main Lift Cylinder	180026	180055	180071	1
1	Shell	645108	645110	645112	1
2	Rod	644064	644068	644072	1
	Lift Cylinder	[a] 282536	[a] 282537	[a] 282538	1
1	Shell	[b] 322078 [a] 297044	[b] 322079 [a] 297045	[b] 322080 [a] 297046	1
2	Rod	[b] 323613 644865	[b] 323614 644869	[b] 323615 644873	1

[a] 282000 Series Mast
[b] 322000 Series Mast

S30-50E WIDE

REF NO	NAME OF PART	Lift Height To Bottom Of Fork			QTY
		186 inch (4720 mm)	198 inch (5020 mm)	216 inch (5470 mm)	
	Main Lift Cylinder	180136	180159	180174	1
1	Shell	644071	644075	644079	1
2	Rod	644072	644076	644080	1
	Lift Cylinder	285962	285963	285964	1
1	Shell	251255	651257	651259	1
2	Rod	644873	644877	644881	1

(CONTINUED ON NEXT PAGE)

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LIFT CYLINDER
THREE-STAGE MAST
S30-50E

KEY
A: Main Lift Cylinder
B: Free-Lift Lift Cylinder

REF		PART NO.	NAME OF PART	QTY A	QTY B
	a	.....	Cylinder	1	1
1	a	.....	Shell	1	1
2	a	.....	Rod	1	1
3	b	638292	Back-Up Ring	1	..
3	c	638293	Back-Up Ring	..	1
4	b	637161	Seal	2	..
4	c	637162	Seal	..	2
5	b	636949	Wear Ring	1	..
5	c	636950	Wear Ring	..	1
6		658947	Valve	1	1
7	cb	39348	O-Ring	1	1
8		637635	Washer	1	1
9		638805	Retainer	1	..
9		639453	Retainer	..	1
10	b	638251	Back-Up Ring	1	..
10	c	636071	Ring	..	1
11	b	636858	Wiper Ring	1	..
11	c	636859	Wiper Ring	..	1
12	b	15880	O-Ring	1	..
12	c	55468	O-Ring	..	1
13	b	154358	Back-Up Ring	1	..
13	c	270015	Back-Up Ring	..	1
14	b	636900	Wear Ring	1	..
14	c	636901	Wear Ring	..	1
15		187388	Snap Ring	1	1
16		640429	Ring-Piston	1	..
17		15969	Snap Ring	1	..
18	b	640428	Ring-Cushion	1	..
19	b	57664	O-Ring	1	..
20		644032	Plug	1	..
21		186061	Packing Lubricant	AR	AR

a ☞ Chart On Previous Page
b Included In Repair Kit 639461 For Main Lift Cylinder
c Included In Repair Kit 643280 For Free-Lift Cylinder

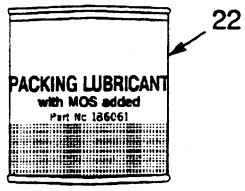
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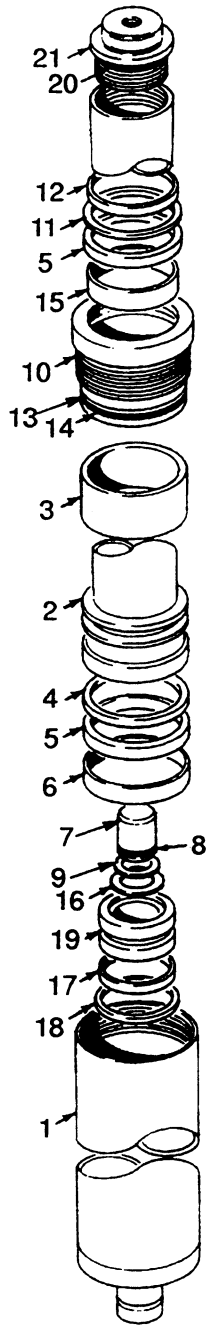
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NOTES

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LIFT CYLINDER
THREE–STAGE MAST
S60ES
(Figure 122)





LIFT CYLINDER
THREE-STAGE MAST
S60ES

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Fork					QTY
		139.5 inch (3550 mm)	157.5 inch (157.5 mm)	175.5 inch (4450 mm)	196.5 inch (4975 mm)	214.5 inch (5430 mm)	
	Main Lift Cylinder	186785	186806	186822	186838	186856	1
1	Shell	644924	644925	644926	644927	640424	1
2	Rod	644928	644929	644930	644931	640425	1
3	Spacer	640666	640666	640666	639697	639697	1
	Lift Cylinder (FL)	285966	285967	285968	285969	285970	1
1	Shell	297675	297676	297677	297678	297679	1
2	Rod	643988	643992	643996	644000	640405	1
3	Spacer	.....	.....	.....	.....	.....	1

KEY
A: Main Lift Cylinder
B: Free-Lift Lift Cylinder

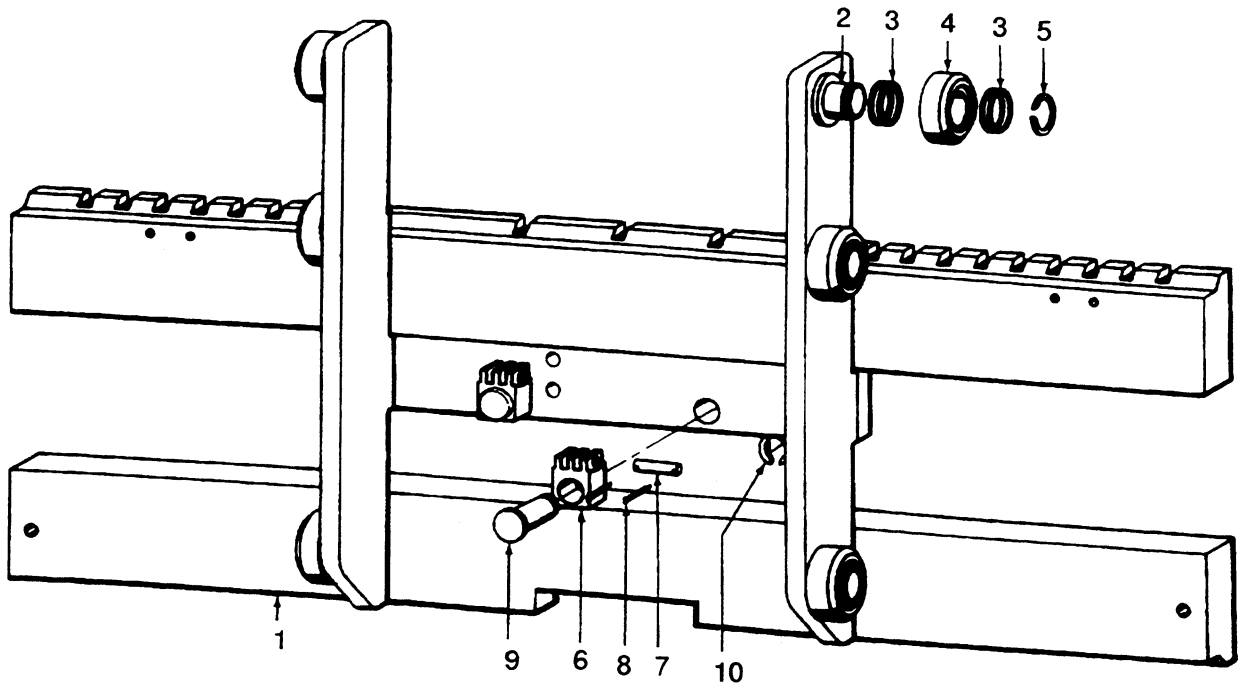
REF		PART NO.	NAME OF PART	QTY A	QTY B
	a	.....	Cylinder	1	1
1	a	.....	Shell	1	1
2	a	.....	Rod	1	1
3	a	.....	Spacer	1	..
4	b	638293	Back-Up Ring	1	..
4	c	638252	Ring	..	1
5	b	637162	Seal	2	..
5	c	637163	Seal	..	2
6	b	636949	Wear Ring	1	..
6	c	636951	Wear Ring	..	1
7		658947	Valve	1	1
8	bc	39348	O-Ring	1	1
9		637635	Washer	1	..
10		639453	Retainer	1	..
10		640386	Retainer	..	1
11	b	636071	Ring	1	..
11	c	638252	Ring	..	1
12	b	636859	Wiper Ring	1	..
12	c	636860	Wiper Ring	..	1

REF		PART NO.	NAME OF PART	QTY A	QTY B
13	b	55468	O-Ring	1	..
13	c	46629	O-Ring	..	1
14	b	270015	Back-Up Ring	1	..
14	c	270330	Back-Up Ring	..	1
15	bc	636950	Bearing	1	1
16		187388	Snap Ring	1	1
17		640429	Ring-Piston	1	..
18		15969	Snap Ring	1	..
19		640428	Cushion Ring	1	..
20	b	46388	O-Ring	1	..
20	c	55146	O-Ring	..	1
21		640416	Plug	1	..
21		640387	Plug	..	1
22		186061	Packing Lubricant	AR	AR

a ☞ Chart Above
b Included In Repair Kit 639456 For Main Lift Cylinder
c Included In Repair Kit 640388 For Free-Lift Cylinder

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CARRIAGE
THREE-STAGE MAST
240000 SERIES MASTS
(Figure 123)



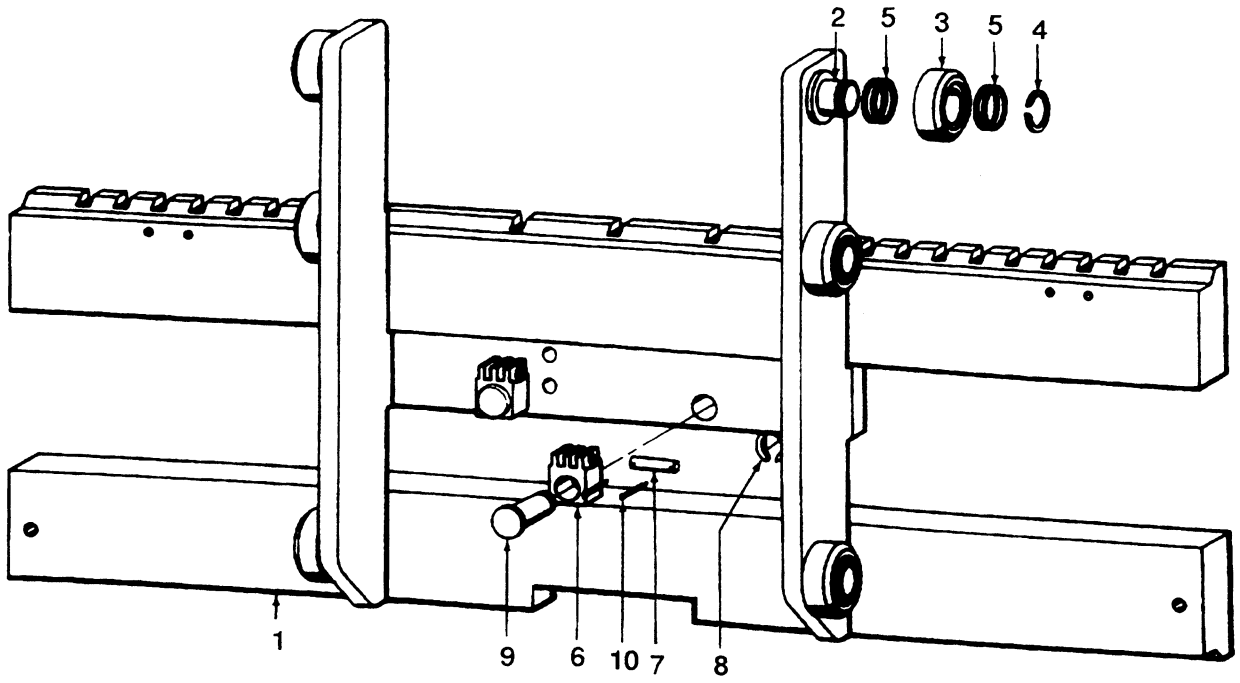
KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
	[a]	180117	Carriage-36 inch	1	..
	[b]	180204	Carriage-42 inch	1	..
		186925	Carriage-42 inch	..	1
1	[a]	282591	Frame-36 inch	1	..
1	[b]	282590	Frame-42 inch	1	..
1		282626	Frame-42 inch	..	1
2		129259	Stub Shaft	6	6
3		129387	Shim-.020 inch	AR	AR
4		329090	Load Roller	6	6
5		58901	Snap Ring	6	6
6		136330	Chain Anchor	2	..
6		126691	Chain Anchor	..	2
7		135306	Pin	2	..
7		147485	Anchor Pin	..	2
8		15200	Cotter Pin	4	..
8		15211	Cotter Pin	..	4
9		147223	Pin	2	..
9		185597	Pin	..	2
10		131358	Snap Ring	2	2

[a] Standard Mast
[b] Wide Mast

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CARRIAGE
THREE-STAGE MAST
282000 AND 322000 SERIES MASTS
(Figure 124)



KEY
A: S30-50E Narrow
B: S30-50E Wide
C: S60ES

REF	PART NO.	NAME OF PART	QTY A	QTY B	QTY C
	377485	Carriage-36 inch	1	..	..
	377512	Carriage-42 inch	..	1	..
	282629	Carriage-42 inch	..	..	1
1	377486	Frame-36 inch	1	..	..
1	377513	Frame-42 inch	..	1	..
1	282626	Frame-42 inch	..	..	1
2	129259	Stub Shaft	6	6	6
3	329090	Load Roller	6	6	6
4	58901	Snap Ring	6	6	6
5	129387	Shim-.020 inch	6	6	6
6	136330	Chain Anchor	2	2	..
6	126691	Chain Anchor	..	..	2
7	135306	Pin	2	2	..
7	147485	Pin	..	..	2
8	131358	Snap Ring	2	2	2
9	147223	Pin	2	2	..
9	185597	Anchor Pin	..	..	2
10	15200	Cotter Pin	4	4	..
10	15211	Cotter Pin	..	..	4

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NOTES

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FOUR-STAGE MAST

CARRIAGE
FOUR-STAGE MAST ..... Page 264

INNER AND NUMBER THREE MAST
FOUR-STAGE ..... Page 258

LIFT CYLINDER
FOUR-STAGE MAST
FREE-LIFT ..... Page 262

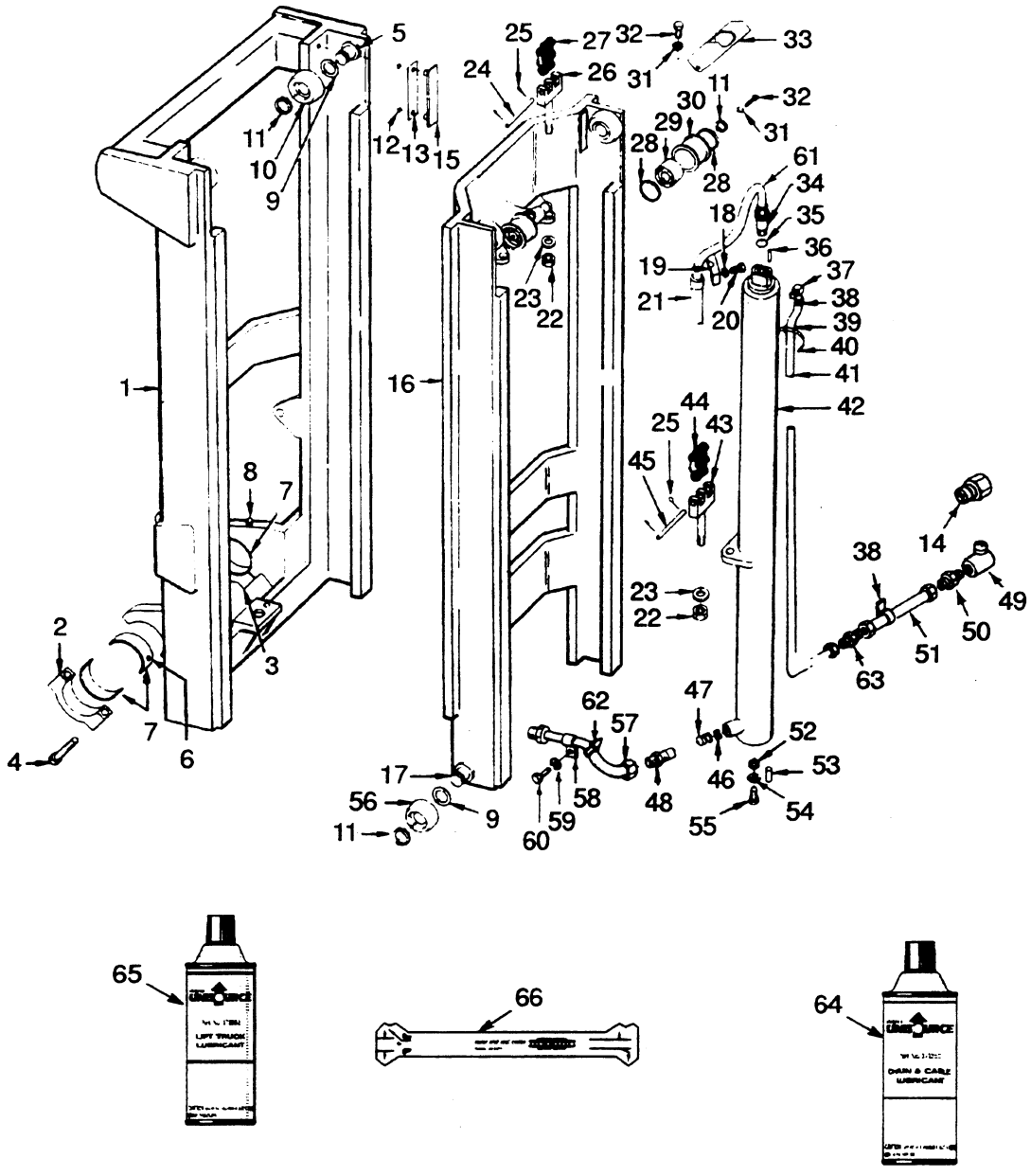
LIFT CYLINDER
FOUR-STAGE MAST
MAIN ..... Page 260

OUTER AND NUMBER TWO MAST
FOUR-STAGE ..... Page 256

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OUTER AND NUMBER TWO MAST
FOUR-STAGE
(Figure 125)

PARTS-SERVICE GRAM	
ITEM	GRAM
7	I-F-59



OUTER AND NUMBER TWO MAST
FOUR-STAGE

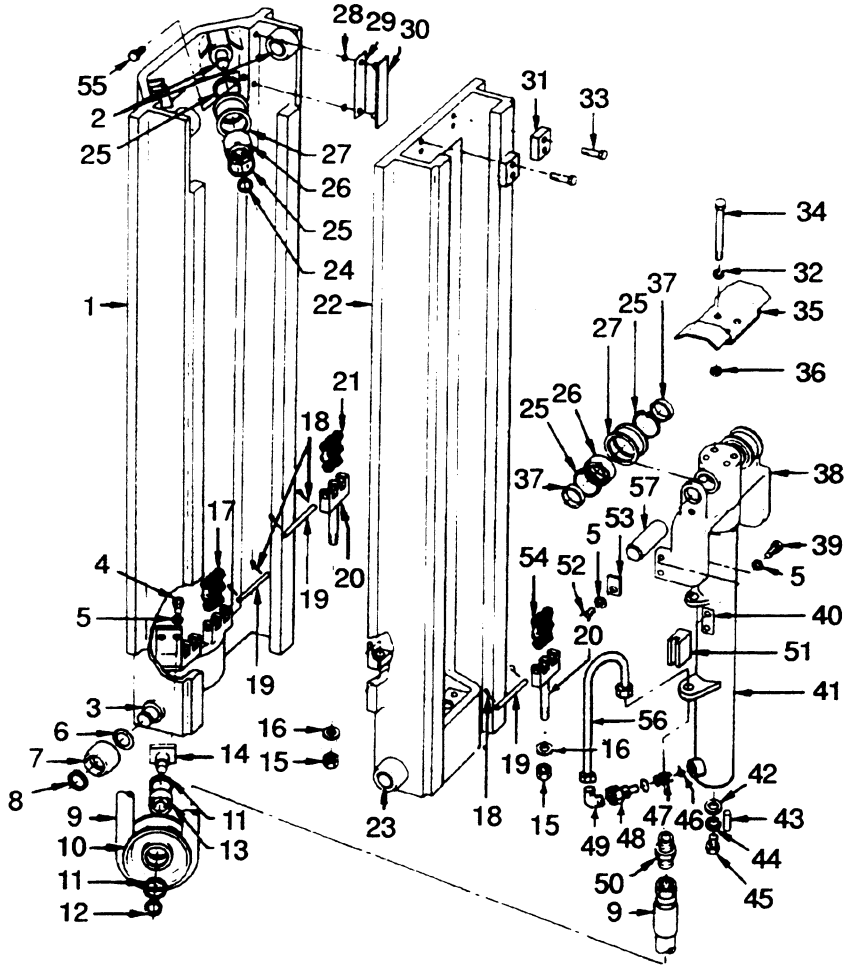
REF NO	NAME OF PART	Lift Height To Bottom Of Fork					QTY
		190.5 inch (4840 mm)	214.5 inch (5450 mm)	238.5 inch (6060 mm)	254.5 inch (6460 mm)	285.5 inch (7250 mm)	
	Mast	241313	241214	241215 288561	252883	252884	1
1	Outer Mast	288559	288560	182326 288556	288557	288558	1
16	Mast No. Two	241227	241228	241229	252863	252864	1
21	Hose	241209	241210	241211	252879	252880	1
27	Intermediate Lift Chain	161059	182332	182343	88441	88446	2
41	Hose	208796	208797	208798	107775	156536	1
44	Main Lift Chain	182319	182331	182342	191085	191089	2

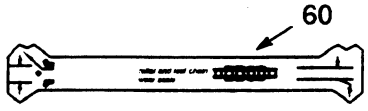
REF		PART NO.	NAME OF PART	QTY
1	a	.....	Outer Mast	1
2		288550	Hanger (RH)	1
3		288553	Hanger (LH)	1
4		18807	Bolt	2
5		129259	Stubshaft	2
6		252273	Thimble	4
6	b	307365	Thimble	4
7		252274	Split Bushing	4
7	b	307362	Half Bushing	4
8		16010	Grease Fitting	2
9		129387	Shim-.020 inch	AR
10		329090	Load Roller	4
11		58901	Snap Ring	8
12	c	104506	O-Ring	8
13	c	131716	Shim-.020 inch	AR
14		282431	Adapter	1
15	c	215211	Bearing Strip	4
16	a	.....	Mast-No. Two	1
17		129259	Stub Shaft	4
18		15156	Lockwasher	2
19		182356	Clamp	1
20		16696	Capscrew	2
21	a	.....	Hose	1
22		182377	Nut	2
23		182376	Base Ring	2
24		135306	Pin	2
25		15222	Cotter Pin	8
26		161006	Chain Anchor	2
27	a	.....	Intermediate Chain	2
28		58901	Snap Ring	4
29		184330	Ball Bearing	2
30		216062	Chain Sheave	2
31		15156	Lockwasher	3
32		18536	Capscrew	3
33		182366	Chain Keeper	1
34		241225	Fitting	1
35		16486	O-Ring	1
36		161001	Groove Pin	1
37		16746	Fitting	1
38		166857	Hose Clamp	2
39		68513	Hose Clip	2
40		162562	Hose Clamp	2
41	a	.....	Hose	1
42		.....	Main Cylinder	1
			☞ Figure 127	
43		351666	Chain Anchor	2
44	a	.....	Main Lift Chain	2
45		129339	Pin	4
46		189253	Washer	1
47		271980	Spring	1
48		317297	Fitting	1
49		17736	Fitting	1
50		17352	Fitting	1
51		111329	Hose	1
52		15125	Washer	1
53		168800	Slotted Pin	1
54		15160	Lockwasher	1
55		277283	Capscrew	1
56		329091	Load Roller	2
57		182323	Tube	1
58		154278	Clamp	1
59		15156	Lockwasher	1
60		16811	Capscrew	1
61		241212	Tube	1
62		137852	Strap	1
63		14719	Fitting	1
64		171350	Chain Lubricant	AR
65		171351	Lubricant	AR
66		599737	Chain Wear Scale	AR

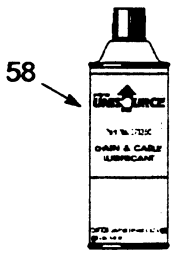
a ☞ Chart On Previous Page
b First Used On S/N D2D-8392, D2T-1549
Standard Tread D2D-8437, D2T-1551 Wide
c Included In Bearing Strip Kit 129354

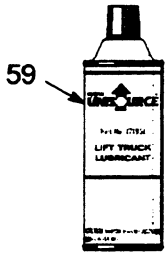
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INNER AND NUMBER THREE MAST
FOUR-STAGE
(Figure 126)









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INNER AND NUMBER THREE MAST
FOUR-STAGE

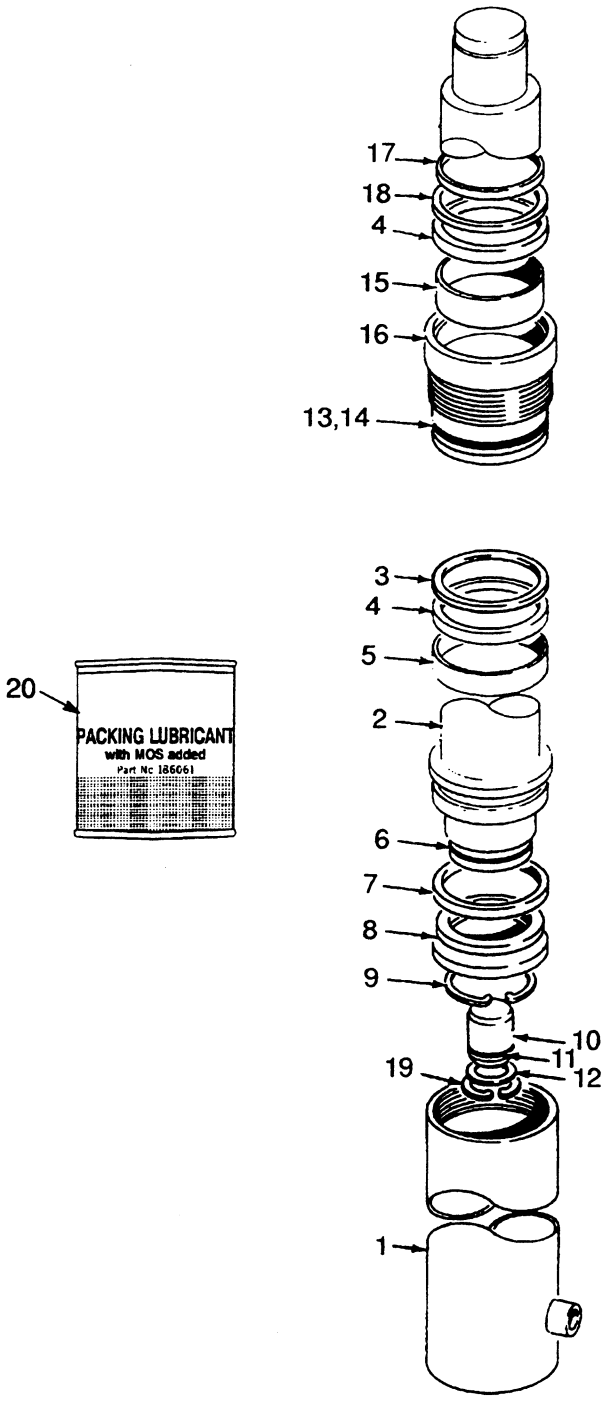
REF NO	NAME OF PART	Lift Height To Bottom Of Fork					QTY
		190.5 inch (4840 mm)	214.5 inch (5450 mm)	238.5 inch (6060 mm)	254.5 inch (6460 mm)	285.5 inch (7250 mm)	
	Mast	241213	241214	241215 288561	252883	252884	1
1	Mast-No. Three	241231	241232	241233	252861	252862	1
9	Hose	241209	241210	241211	252879	252880	1
17	Main Lift Chain	182319	182331	182342	191085	191089	2
21	Lift Chain (Intermediate)	161059	182332	182343	88441	88446	2
22	Inner Mast	241204	241205	241206	252857	252858	1
54	Lift Chain (FL)	182333	180030	180058	180074	231084	2

REF		PART NO.	NAME OF PART	QTY
1	a	.....	Mast No. Three	1
2		161079	Stub Shaft	4
3		129259	Stub Shaft	2
4		16696	Capscrew	2
5		15156	Lockwasher	8
6		129387	Shim-.020 inch	AR
7		329090	Load Roller	6
8		58901	Snap Ring	6
9	a	.....	Hose (FL)	1
10		226023	Hose Sheave	1
11		46102	Snap Ring	2
12		160996	Snap Ring	1
13		128469	Ball Bearing	1
13		162568	Shim-.060 inch	AR
14		180113	Bracket	1
15		161003	Nut	6
16		161004	Base Ring	6
17	a	.....	Main Lift Chain	2
18		15200	Cotter Pin	12
19		135306	Pin	6
20		161006	Chain Anchor	6
21	a	.....	Intermediate Chain	2
22	a	.....	Inner Mast	1
23		129259	Stub Shaft	2
24		58908	Snap Ring	2
25		12921	Snap Ring	8
26		129002	Bearing	4
27		216105	Chain Sheave	4
28	b	104506	O-Ring	4
29	b	131716	Shim-.020 inch	AR
30	b	215211	Bearing Strip	2
31		172848	Bar	2
32		15158	Lockwasher	4
33		37297	Capscrew	4
34		16809	Capscrew	4
35		161007	Chain Keeper	1
36		15135	Washer	4
37		135280	Spacer	4
38		160991	Crosshead	1
39		18202	Capscrew	4
40		160994	Shim-.062 inch	AR
40		167817	Shim-.030 inch	AR
41		.....	Cylinder (FL)	1
		☞ Figure 128		
42		15125	Washer	1
43		80976	Slotted Pin	1
44		15160	Lockwasher	1
45		277283	Capscrew	2
46		189253	Washer	1
47		271980	Spring	1
48		189254	Fitting	1
48		16485	O-Ring	1
49		16882	Fitting	1
50		14719	Fitting	1
51		160993	Shoe Guide	2
52		16597	Capscrew	2
53		135281	Keeper	2
54	a	.....	Lift Chain (FL)	2
55		18768	Capscrew	1
56		182378	Tube	2
56		16449	Fitting	4
57		160992	Pin	2
58		171350	Chain Lubricant	AR
59		171351	Lubricant	AR
60		599737	Chain Wear Cable	AR

a ☞ Chart Above
b Included In Bearing Strip Kit 129354

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LIFT CYLINDER
FOUR-STAGE MAST
MAIN
(Figure 127)



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LIFT CYLINDER
FOUR-STAGE MAST
MAIN

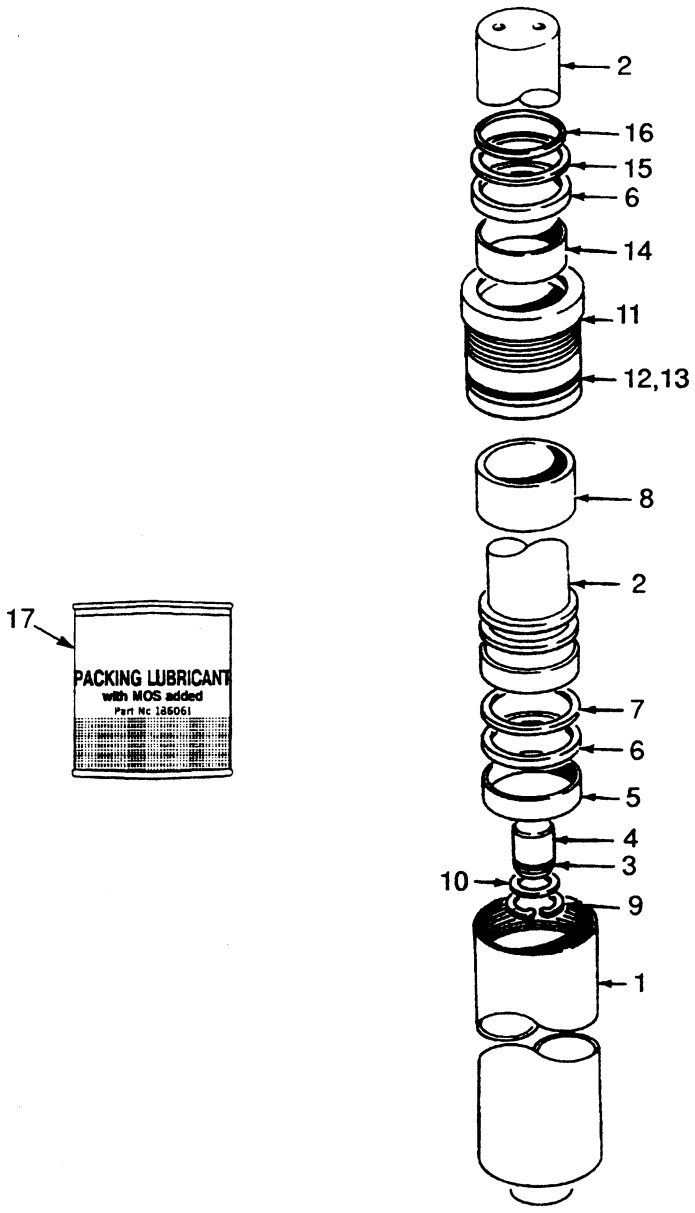
REF NO	NAME OF PART	Lift Height To Bottom Of Fork					QTY
		190.5 inch (4840 mm)	214.5 inch (5450 mm)	238.5 inch (6060 mm)	254.5 inch (6460 mm)	285.5 inch (7250 mm)	
	Main Lift Cylinder	319301	319302	319303	252873	252874	1
1	Shell	323521	323522	323523	656767	656769	1
2	Rod	651871	651873	651875	657768	656770	1

REF		PART NO.	NAME OF PART	QTY
	[a]	.....	Lift Cylinder	1
1	[a]	.....	Shell	1
2	[a]	.....	Rod	1
3	[b]	638295	Back-Up Ring	1
4	[b]	637164	Seal	2
5	[b]	636952	Wear Ring	1
6	[b]	90263	O-Ring	1
7		622610	Piston Ring	1
8		644479	Piston	1
9		213126	Snap Ring	1
10		658947	Valve	1
11	[b]	39348	O-Ring	1
12		637635	Washer	1
13	[b]	92482	O-Ring	1
14	[b]	154363	Back-Up Ring	1
15	[b]	636903	Wear Ring	1
16		639875	Retainer	1
17	[b]	636861	Wiper Ring	1
18	[b]	638253	Ring	1
19		187388	Snap Ring	1
20		186061	Packing Lubricant	AR

[a] ☞ Chart Above
[b] Included In Seal Kit 644484

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LIFT CYLINDER
FOUR-STAGE MAST
FREE-LIFT
(Figure 128)



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LIFT CYLINDER
FOUR-STAGE MAST
FREE-LIFT

REF NO	NAME OF PART	Lift Height To Bottom Of Fork					QTY
		190.5 inch (4840 mm)	214.5 inch (5450 mm)	238.5 inch (6060 mm)	254.5 inch (6460 mm)	285.5 inch (7250 mm)	
	Main Cylinder Lift	240613	240614	240615	252877	252878	1
1	Shell	651882	651884	651886	656777	656778	1
2	Rod	643752	643755	643758	656772	656775	1

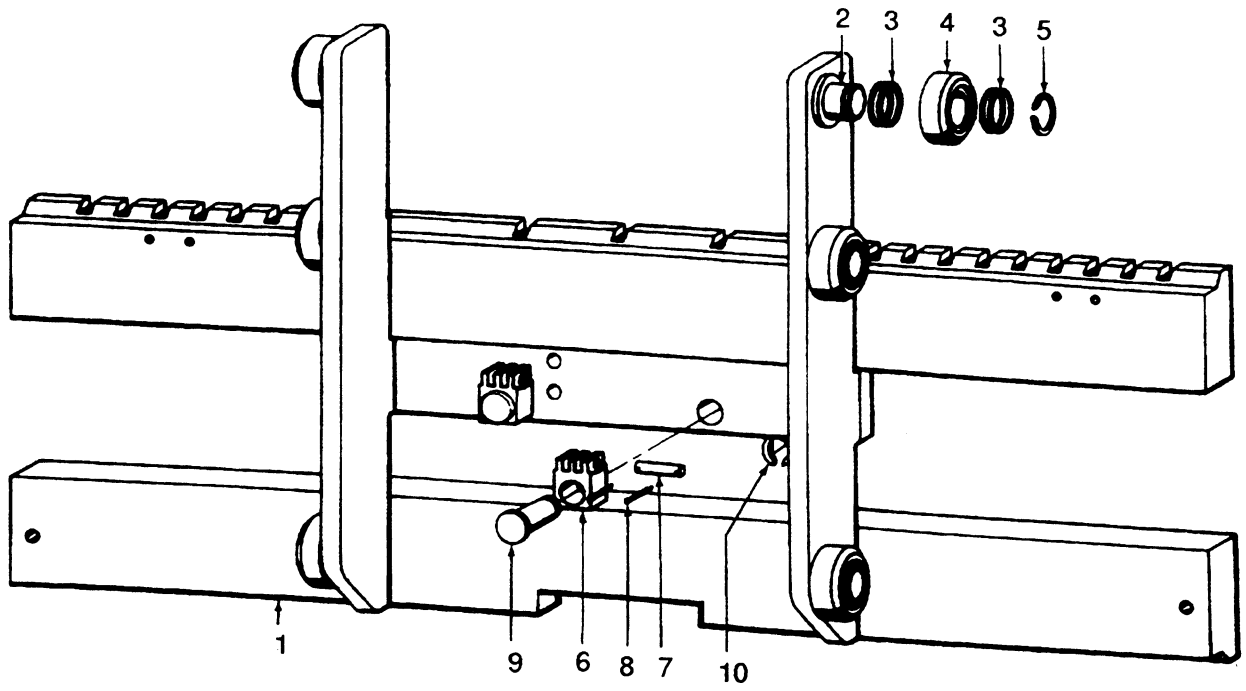
REF		PART NO.	NAME OF PART	QTY
		.....	Lift Cylinder	1
1	a	.....	Shell	1
2	a	.....	Rod	1
3	bc	39348	O-Ring	1
4	b	.....	Valve	1
5	c	636950	Wear Ring	1
6	c	637162	Seal	2
7	c	638293	Back-Up Ring	1
8		643283	Spacer	1
9		187388	Snap Ring	1
10	b	637635	Washer	1

REF		PART NO.	NAME OF PART	QTY
11		639453	Retainer	1
12	c	55468	O-Ring	1
13	c	270015	Back-Up Ring	1
14	c	636901	Wear Ring	1
15	c	636071	Ring	1
16	c	636859	Wiper Ring	1
17		186061	Packing Lubricant	AR

a ☞ Chart Above
b Included In Check Valve Kit 658947
c Included In Seal Kit 643280

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CARRIAGE
FOUR-STAGE MAST
(Figure 129)



REF		PART NO.	NAME OF PART	QTY
		182383	Carriage-42 inch	1
		377483	Carriage-42 inch	1
1	a	182385	Frame-42 inch	1
1	b	377484	Frame-42 inch	1
2		129259	Stub Shaft	6
3		129387	Shim-.020 inch	AR
4		329090	Load Roller	6
5		58901	Snap Ring	6
6		136330	Chain Anchor	2
7		135306	Pin	2
8		15200	Cotter Pin	4
9		147223	Pin	2
10		131358	Snap Ring	2

[a] Use With 182383 Carriage
[b] Use With 377483 Carriage

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VISTA TWO-STAGE MAST

CARRIAGE
VISTA TWO-STAGE ..... Page 276

INNER MAST
VISTA TWO-STAGE ..... Page 268

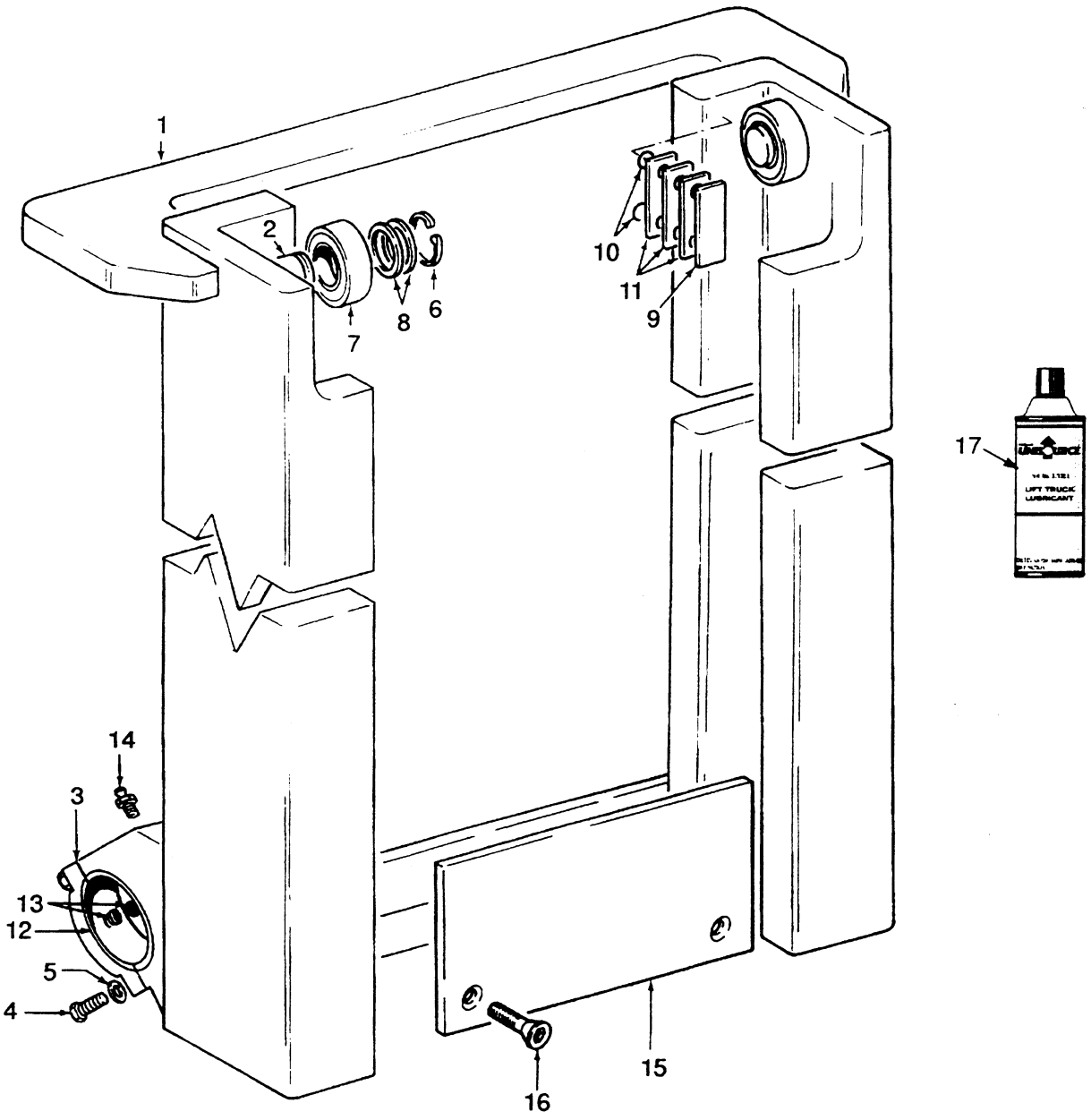
LIFT CYLINDER
VISTA TWO-STAGE ..... Page 274

MAIN LIFT
VISTA TWO-STAGE ..... Page 270

OUTER MAST
VISTA TWO-STAGE ..... Page 266

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OUTER MASS
VISTA TWO-STAGE
(Figure 130)



OUTER MAST
VISTA TWO-STAGE

KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
	[a]	.....	Mast-Two Stage	1	1
1	[a]	.....	Outer Mast	1	1
2		297565	Stub Shaft	2	2
3		.....	Hanger (RH/LH)	2	2
4		18807	Bolt	2	2
5		221775	Washer	2	2
6		58901	Snap Ring	2	2
7		329091	Load Roller	2	2
8		129387	Shim-.020 inch	AR	AR
9		129384	Bearing Strip	2	2
10		104506	O-Ring	4	4
11		131716	Shim-.020 inch	AR	AR
11		315212	Shim-.125 inch	AR	AR
12		307362	Half Bushing	4	4
13		307365	Thimble	4	4
14		13960	Grease Fitting	2	2
15		349308	Shield	1	1
16		139140	Capscrew	2	2
17		171351	Lubricant	AR	AR

[a] ☞ Charts Below

S30-50E

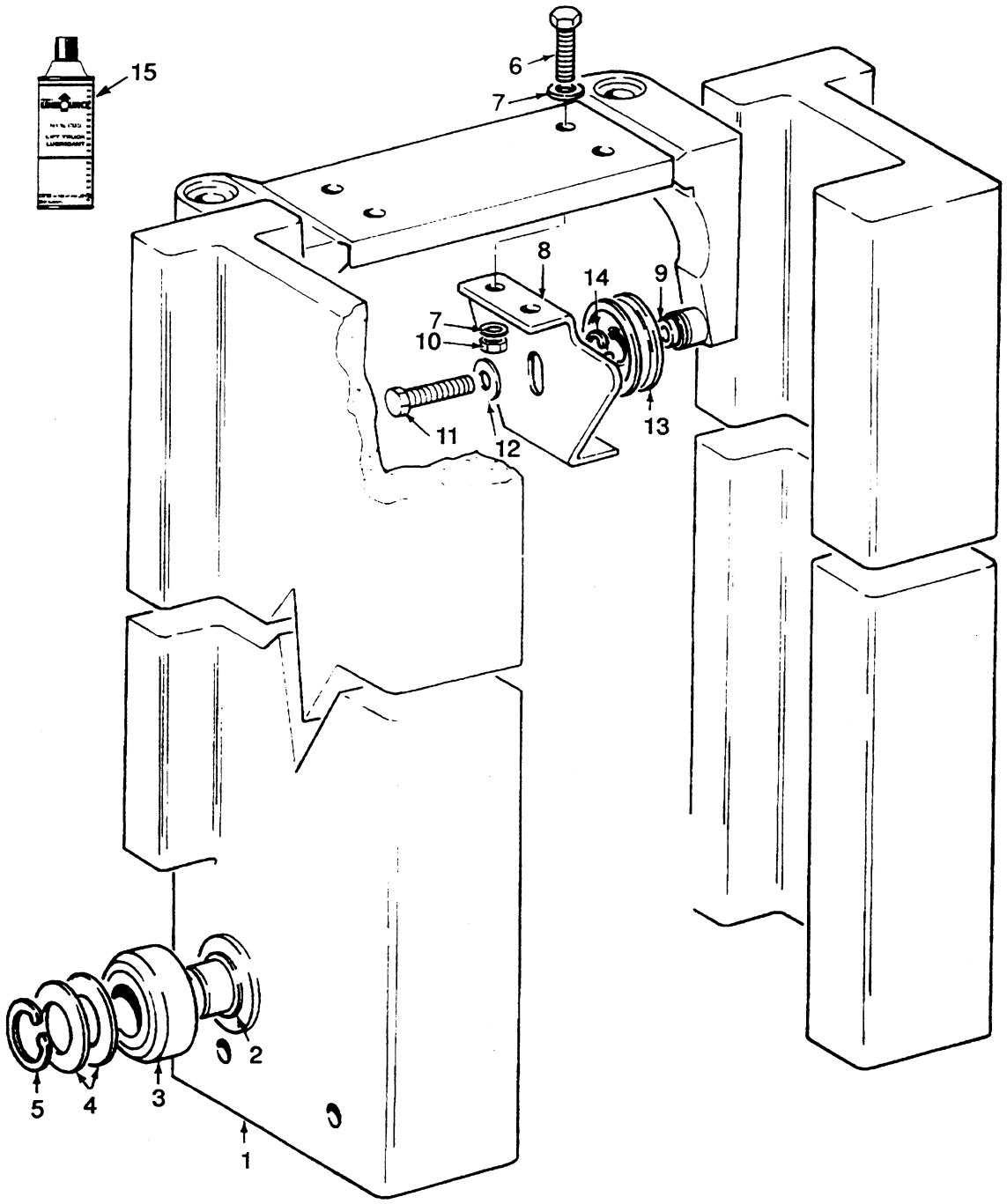
REF NO	NAME OF PART	Lift Height To Bottom Of Forks							
		2960 mm	3260 mm	3760 mm	4260 mm	4560 mm	4860 mm	5160 mm	5460 mm
		116.5 inch	128.5 inch	148.0 inch	167.5 inch	179.5 inch	191.5 inch	203.0 inch	215.0 inch
	Mast	328416 372710	328417 372711	328418 372712	328419 372713	328420 372714	328421 372715	328422 372716	328423 372717
1	Upper Mast	356075	356076	356077	356078	356079	356080	356081	356082

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Forks						
		2800 mm	3100 mm	3600 mm	4100 mm	4400 mm	4700 mm	5000 mm
		110.0 inch	122.0 inch	141.5 inch	161.5 inch	173.0 inch	185.0 inch	197.0 inch
	Mast	328424 372535	328425 372536	328426 372537	328427 372538	328428	328429	328430
1	Outer Mast	356075	356076	356077	356078	356079	356080	356081

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INNER MAST
VISTA TWO-STAGE
(Figure 131)



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INNER MAST
VISTA TWO-STAGE

KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
	a	.....	Mast-Two Stage	1	1
1	a	.....	Inner Mast	1	1
2		297565	Stub Shaft	2	2
3		329091	Load Roller	2	2
4		129387	Shim-.020 inch	AR	AR
5		58901	Snap Ring	2	2
6		16782	Capscrew	2	2
7		221765	Washer	4	4
8	b	328464	Guard Plate	2	2
8	c	369271	Guard Plate	2	2
9		335661	Spacer	2	2
10		221705	Nut	2	2
11		16597	Capscrew	2	2
12		15134	Washer	2	2
13		315311	Sheave	2	..
13		315312	Sheave	..	2
14		304526	Snap Ring	2	2
15		171351	Lubricant	AR	AR

a ☞ Charts Below
b 328000 Series Mast
c 372000 Series Mast

S30-50E

REF NO	NAME OF PART	Lift Height To Bottom Of Forks							
		2960 mm	3260 mm	3760 mm	4260 mm	4560 mm	4860 mm	5160 mm	5460 mm
		116.5 inch	128.5 inch	148.0 inch	167.5 inch	179.5 inch	191.5 inch	203.0 inch	215.0 inch
	Mast	328416 372710	328417 372711	328418 372712	328419 372713	328420 372714	328421 372715	328422 372716	328423 372717
1	Inner Mast	a 328439 b 372483	a 328440 b 372484	a 328441 b 372485	a 328442 b 372486	a 328443 b 372487	a 328444 b 372488	a 328445 b 372489	a 328446 b 372490

a 328000 Series Mast
b 372000 Series Mast

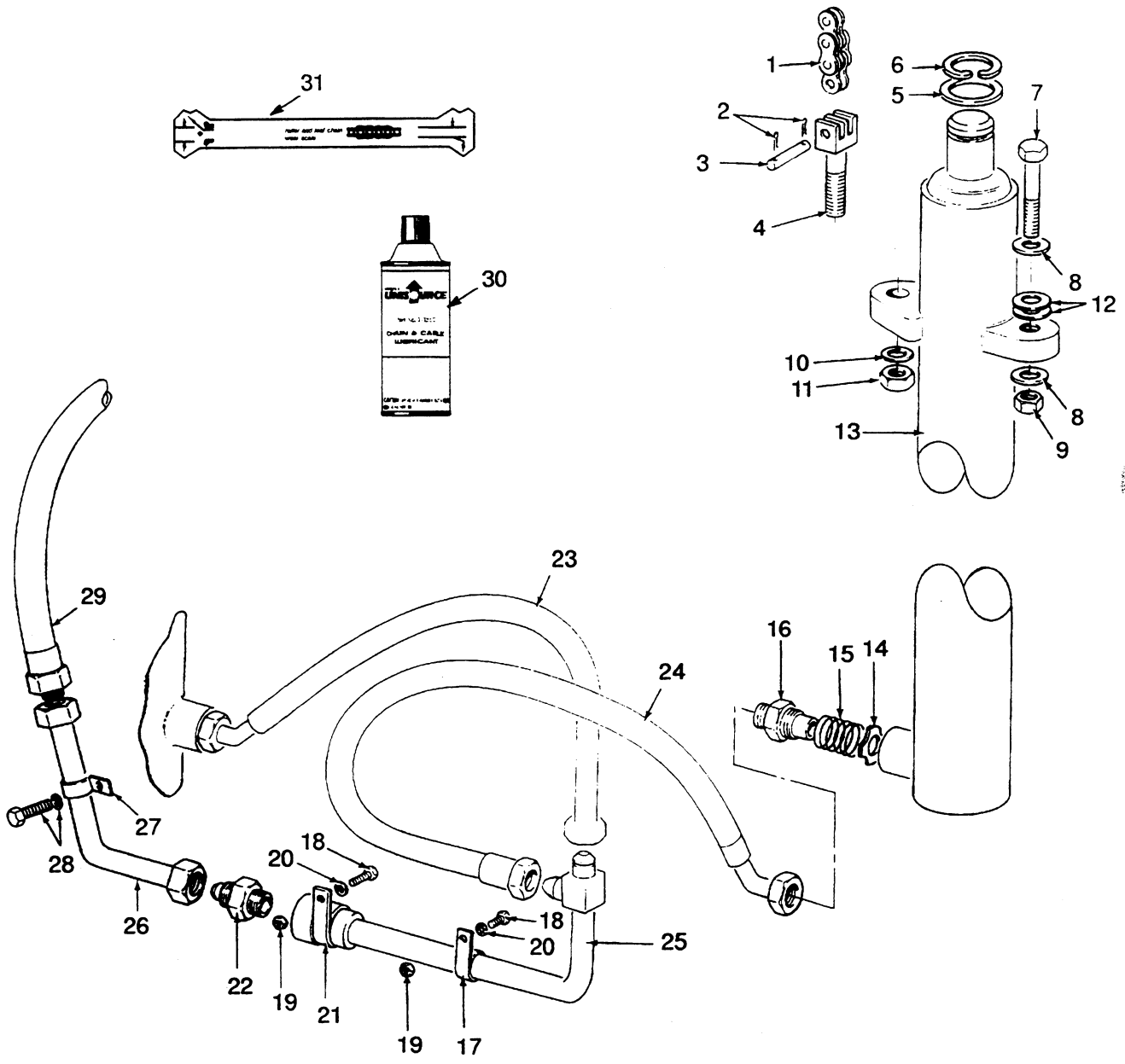
S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Forks						
		2800 mm	3100 mm	3600 mm	4100 mm	4400 mm	4700 mm	5000 mm
		110.0 inch	122.0 inch	141.5 inch	161.5 inch	173.0 inch	185.0 inch	197.0 inch
	Mast	328424 372535	328425 372536	328426 372537	328427 372538	328428 372539	328429 372540	328430 372541
1	Inner Mast	a 328447 b 372501	a 328448 b 372502	a 328449 b 372503	a 328450 b 372504	a 328451 b 372505	a 328452 b 372506	a 328453 b 372507

a 328000 Series Mast
b 372000 Series Mast

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MAIN LIFT
VISTA TWO-STAGE
(Figure 132)



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MAIN LIFT
VISTA TWO-STAGE

KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
	a	.....	Two-Stage Mast	1	1
1	a	.....	Lift Chain	2	2
2		15200	Cotter Pin	4	..
2		15211	Cotter Pin	..	4
3		135306	Pin	2	..
3		147485	Anchor Pin	..	2
4		161006	Chain Anchor	2	..
4	b	320313	Chain Anchor	2	..
4		190073	Chain Anchor	..	2
4	b	297569	Chain Anchor	..	2
5		328492	Washer	2	2
6		131357	Snap Ring	2	2
7		221155	Capscrew	2	2
8		221775	Washer	4	4
8	b	296426	Flat Washer	4	4
9		221357	Nut	2	2
10		161004	Base Ring	2	2
10	b	297649	Base Ring	2	2
11		161003	Nut	2	2
12		134674	Shim-.060 inch	AR	AR
13		.....	Lift Cylinder	2	2
		☞ Figure 133			
14		320334	Washer	2	2
15		154355	Spring	2	2
16		184799	Fitting	2	2
17		128408	Clamp	1	1
18		16815	Capscrew	2	2
19		15056	Nut	2	2
20		15134	Washer	2	2
21		210403	Clamp	1	1
22		315262	Control Valve	1	1
23		335666	Hose	1	1
24		335667	Hose	1	1
25		335669	Tube	1	1
26		328469	Tube	1	1
27		154278	Clamp	1	1
28		16870	Capscrew	1	1
28		15156	Lockwasher	1	1
29		315758	Hose	1	1
30		171350	Chain Lubricant	AR	AR
31		599737	Chain Wear Scale	AR	AR

a ☞ Charts Next Page
b Optional

CONTINUED ON NEXT PAGE

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MAIN LIFT
VISTA TWO-STAGE

S30-50E

REF NO	NAME OF PART	Lift Height To Bottom Of Forks							
		2960 mm	3260 mm	3760 mm	4260 mm	4560 mm	4860 mm	5160 mm	5460 mm
		116.5 inch	128.5 inch	148.0 inch	167.5 inch	179.5 inch	191.5 inch	203.0 inch	215.0 inch
	Mast	328416 372710	328417 372711	328418 372712	328419 372713	328420 372714	328421 372715	328422 372716	328423 372717
1	Lift Chain	135634	129361	180176	197327	129358	315341	315338	315344

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Forks						
		2800 mm	3100 mm	3600 mm	4100 mm	4400 mm	4700 mm	5000 mm
		110.0 inch	122.0 inch	141.5 inch	161.5 inch	173.0 inch	185.0 inch	197.0 inch
	Mast	328424 372535	328425 372536	328426 372537	328427 372538	328428 372539	328429 372540	328430 372541
1	Lift Chain	186824	315346	186858	315299	315344	315349	323793

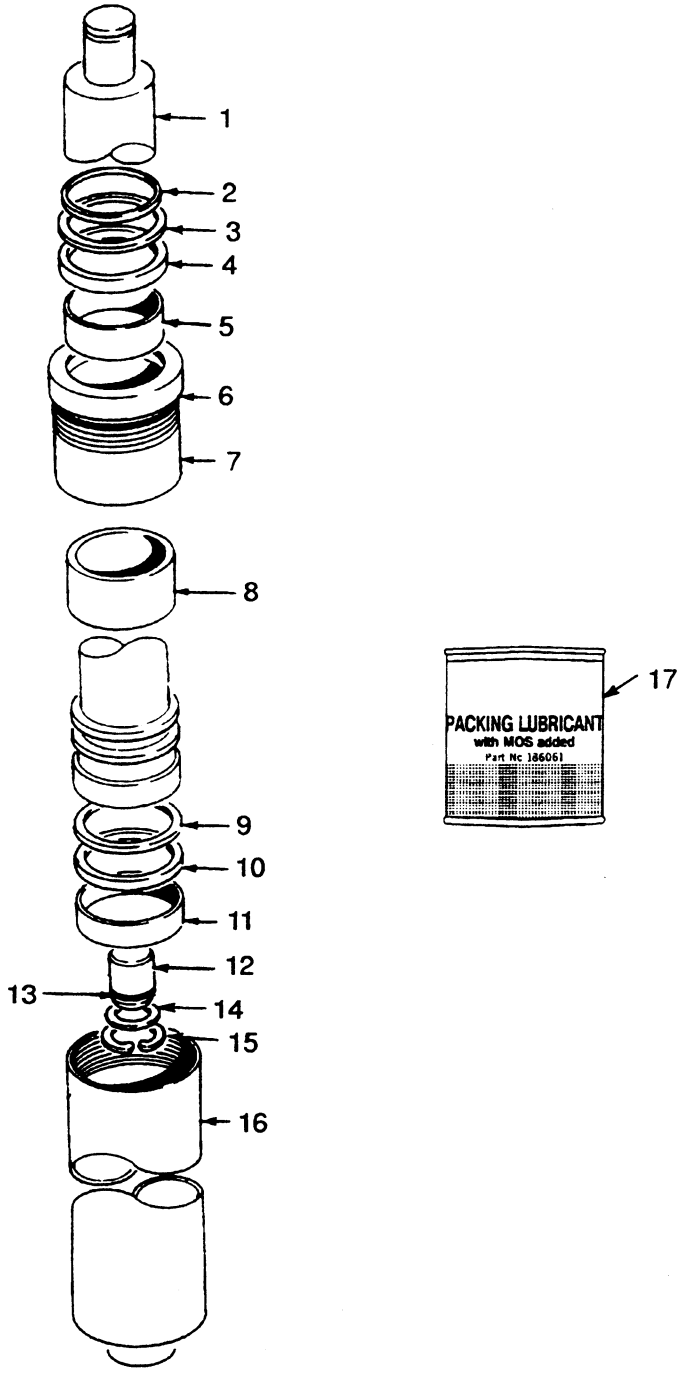
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NOTES

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LIFT CYLINDER
VISTA TWO-STAGE
(Figure 133)



LIFT CYLINDER
VISTA TWO-STAGE

REF		PART NO.	NAME OF PART	QTY
	a	.....	Lift Cylinder	2
1	a	.....	Rod	1
2	b	215430	Wiper Ring	1
3	b	638248	Back-Up Ring	1
4	b	215924	Seal	1
5	b	215427	Wear Ring	1
6	b	198518	O-Ring	1
7		361628	Retainer	1
8	a	.....	Spacer	1
9	b	638249	Back-Up Ring	1
10	b	270077	Seal	1
11	b	297532	Wear Ring	1
12	c	.....	Valve	1
13	cb	39348	O-Ring	1
14	c	637635	Washer	1
15		187388	Snap Ring	1
16	a	.....	Shell	1
17		186061	Packing Lubricant	AR

a ☞ Chart Below
b Included In Seal Kit 323785
c Included In Check Valve Kit 658947

S30-50E

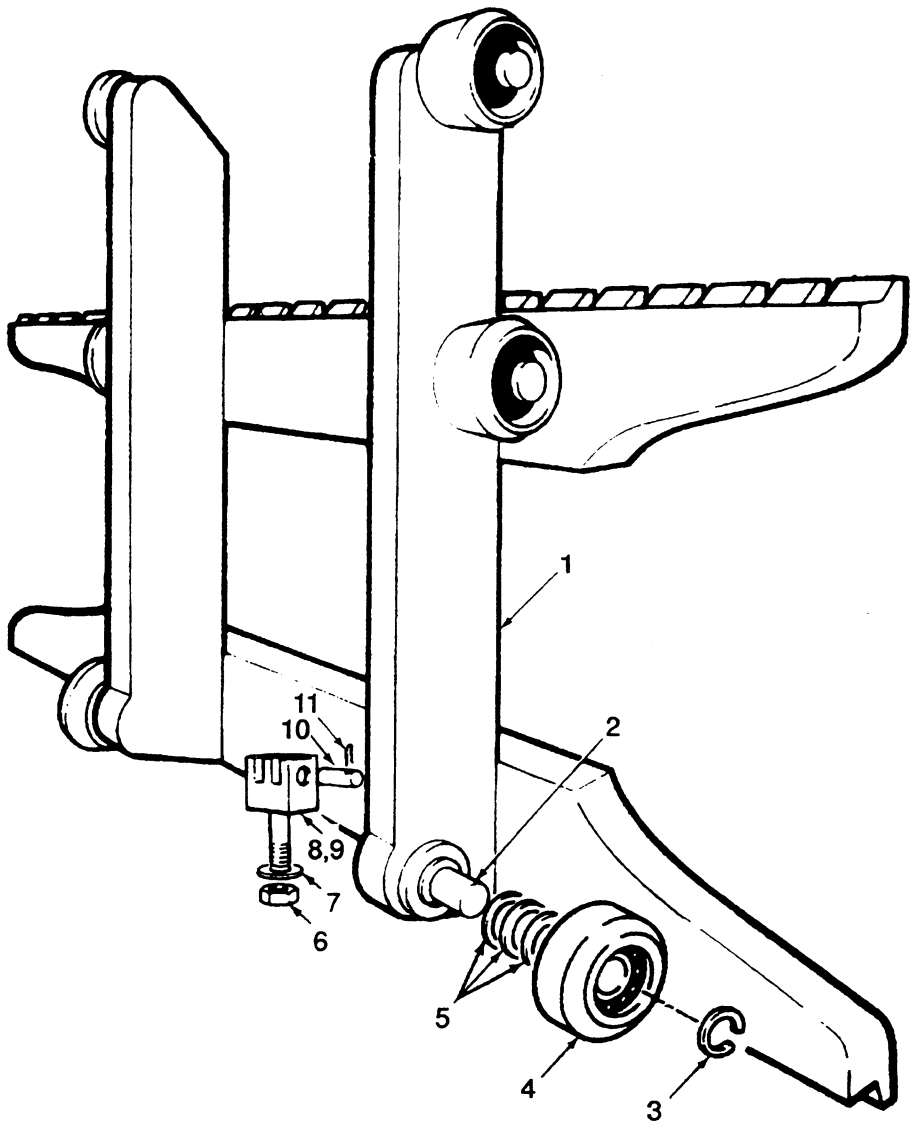
REF NO	NAME OF PART	Lift Height To Bottom Of Forks							
		2960 mm	3260 mm	3760 mm	4260 mm	4560 mm	4860 mm	5160 mm	5460 mm
		116.5 inch	128.5 inch	148.0 inch	167.5 inch	179.5 inch	191.5 inch	203.0 inch	215.0 inch
	Lift Cylinder	315369	315371	315373	315394	315396	315398	315297	315298
1	Rod	315479	315480	315481	315482	315484	315486	315488	315489
8	Spacer	.....	.....	.....	315339	315339	315339	315339	315339
16	Shell	315446	315447	315448	315449	315451	315453	315455	315456

S60ES

REF NO	NAME OF PART	Lift Height To Bottom Of Forks						
		2800 mm	3100 mm	3600 mm	4100 mm	4400 mm	4700 mm	5000 mm
		110.0 inch	122.0 inch	141.5 inch	161.5 inch	173.0 inch	185.0 inch	197.0 inch
	Lift Cylinder	315370	315372	315374	315395	315397	315399	323794
1	Rod	315479	315480	315481	315482	315484	315486	315488
8	Spacer	315337	315337	315337	315340	315340	315340	315340
16	Shell	315446	315447	315448	315449	315451	315453	315455

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CARRIAGE
VISTA TWO-STAGE
(Figure 134)



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CARRIAGE
VISTA TWO-STAGE

KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
	a	341602	Carriage-34 inch	1	..
	a	341604	Carriage-34 inch	..	1
	a	358908	Carriage-38 inch	1	..
	a	377487	Carriage-38 inch	..	1
	b	377489	Carriage-38 inch	1	..
	b	372467	Carriage-38 inch	..	1
1	a	341601	Frame-34 inch	1	..
1	a	341603	Frame-34 inch	..	1
1	a	358906	Frame-38 inch	1	..
1	a	358904	Frame-38 inch	..	1
1	b	377488	Frame-38 inch	1	..
1	b	377490	Frame-38 inch	..	1
2		297565	Stub Shaft	6	6
3		58901	Snap Ring	6	6
4		329090	Load Roller	6	6
5		129387	Shim-.020 inch	AR	AR
6		161003	Nut	2	2
7		161004	Base Ring	2	2
7	c	297649	Base Ring	2	2
8		225550	Chain Anchor	2	..
8	c	320426	Chain Anchor	2	..
9		190073	Chain Anchor	..	2
9	c	297569	Chain Anchor	..	2
10		135306	Pin	2	..
10		147485	Anchor Pin	..	2
11		15200	Cotter Pin	4	..
11		15211	Cotter Pin	..	4

[a] 328000 Series Mast
[b] 372000 Series Mast
[c] Optional

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NOTES

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LIFT CYLINDER
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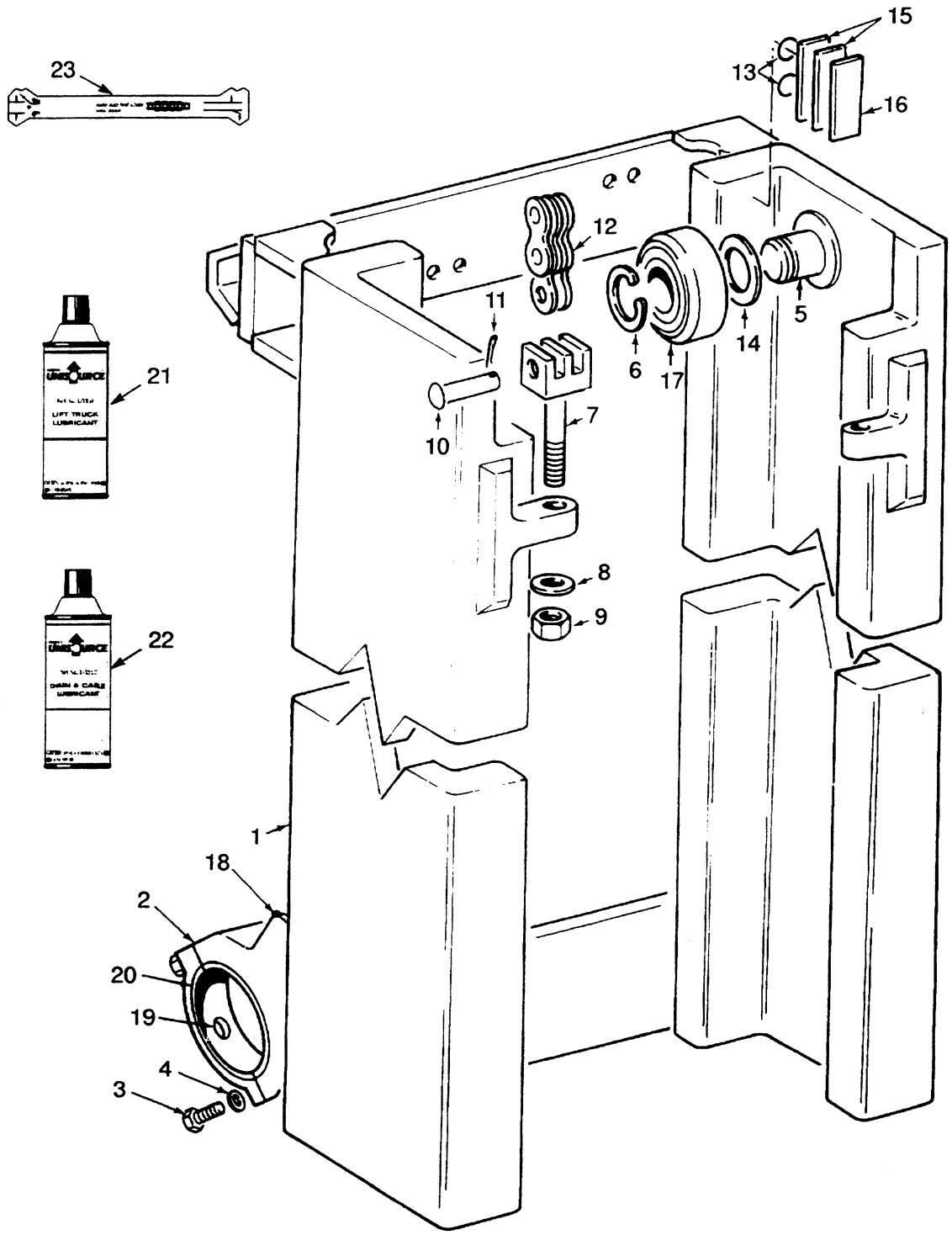
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OUTER MAST
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OUTER MAST
VISTA THREE-STAGE
(Figure 135)



OUTER MAST
VISTA THREE-STAGE

KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
	a	.....	Mast	1	1
1	a	.....	Outer Mast	1	1
2		.....	Hanger (RH/LH)	2	2
3		18807	Bolt	2	2
4		221775	Washer	2	2
5		343382	Stubshaft	2	2
6		58901	Snap Ring	2	2
7		320313	Chain Anchor	2	..
7		297569	Chain Anchor	..	2
8		297649	Base Ring	2	2
9		161003	Nut	2	2
10		315635	Pin	2	..
10		315634	Pin	..	2
11		15200	Cotter Pin	2	..
11		15211	Cotter Pin	..	2
12	a	.....	Main Chain	2	2
13		104506	O-Ring	4	4
14		129387	Shim-.020 inch	AR	AR
15		131716	Shim-.020 inch	AR	AR
16		215211	Bearing Strip	2	2
17		329091	Load Roller	2	2
18		13960	Grease Fitting	2	2
19		307365	Thimble	4	4
20		307362	Half Bushing	4	4
21		171351	Lubricant	AR	AR
22		171350	Chain Lubricant	AR	AR
23		599737	Chain Wear Scale	AR	AR

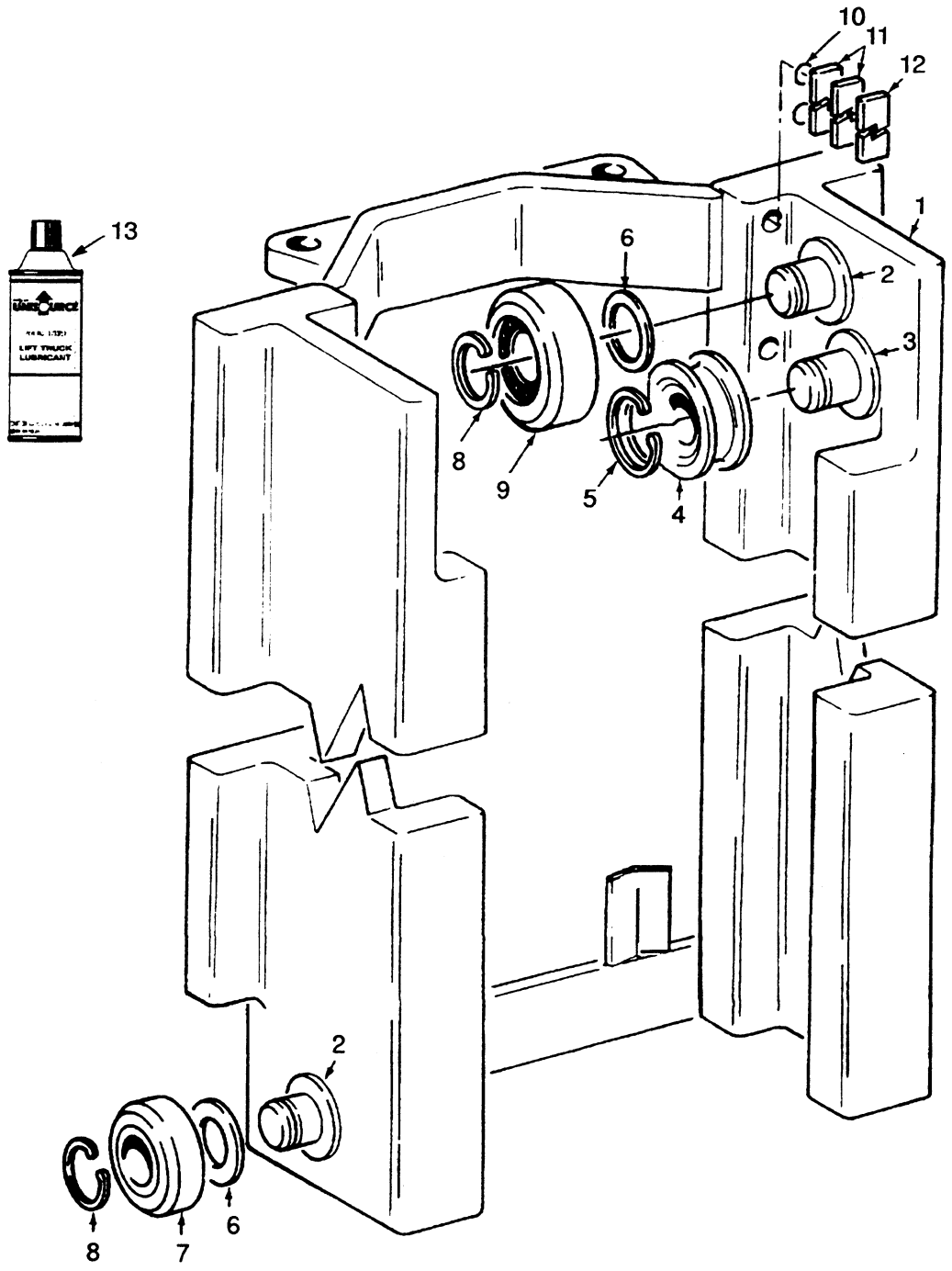
[a] ☞ Chart Below

S30-50E NARROW						S30-50E WIDE		
REF NO	NAME OF PART	Lift Height To Bottom Of Forks						
		3810 mm	4260 mm	4410 mm	4710 mm	4710 mm	5010 mm	5460 mm
		150.0 inch	167.5 inch	173.5 inch	185.5 inch	185.5 inch	197.0 inch	215.0 inch
	Mast	320587	320588	320589	320590	320579	320580	320581
1	Outer Mast	320592	320593	320594	320595	320583	320584	320585
12	Main Chain	88431	180217	182343	986559	986559	180137	88446

S60ES							
REF NO	NAME OF PART	Lift Height To Bottom Of Forks					
		3550 mm	4000 mm	4150 mm	4450 mm	4750 mm	5425 mm
		140.0 inch	157.5 inch	163.5 inch	175.0 inch	187.0 inch	213.5 inch
	Mast	320776	320777	315847	297642	315848	315849
1	Outer Mast	320698	320699	315707	297632	315708	315709
12	Main Chain	320711	320712	186808	315345	315346	315347

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INTERMEDIATE MAST
VISTA THREE-STAGE
(Figure 136)



INTERMEDIATE MAST
VISTA THREE-STAGE

KEY
A: S30-50E
B: S60ES

REF	PART NO.	NAME OF PART	QTY A	QTY B
[a]	.....	Mast	1	1
1	[a]	Intermediate Mast	1	1
2	297565	Stubshaft	4	4
3	320308	Stubshaft	2	2
4	320423	Chain Sheave	2	..
4	315632	Chain Sheave	..	2
5	58908	Snap Ring	2	..
5	58901	Snap Ring	..	2
6	129387	Shim-.020 inch	AR	AR
7	329091	Load Roller	2	2
8	58901	Snap Ring	4	4
9	329090	Load Roller	2	2
10	104506	O-Ring	4	4
11	297571	Shim-.020 inch	AR	AR
12	297568	Bearing Strip	2	2
13	171351	Lubricant	AR	AR

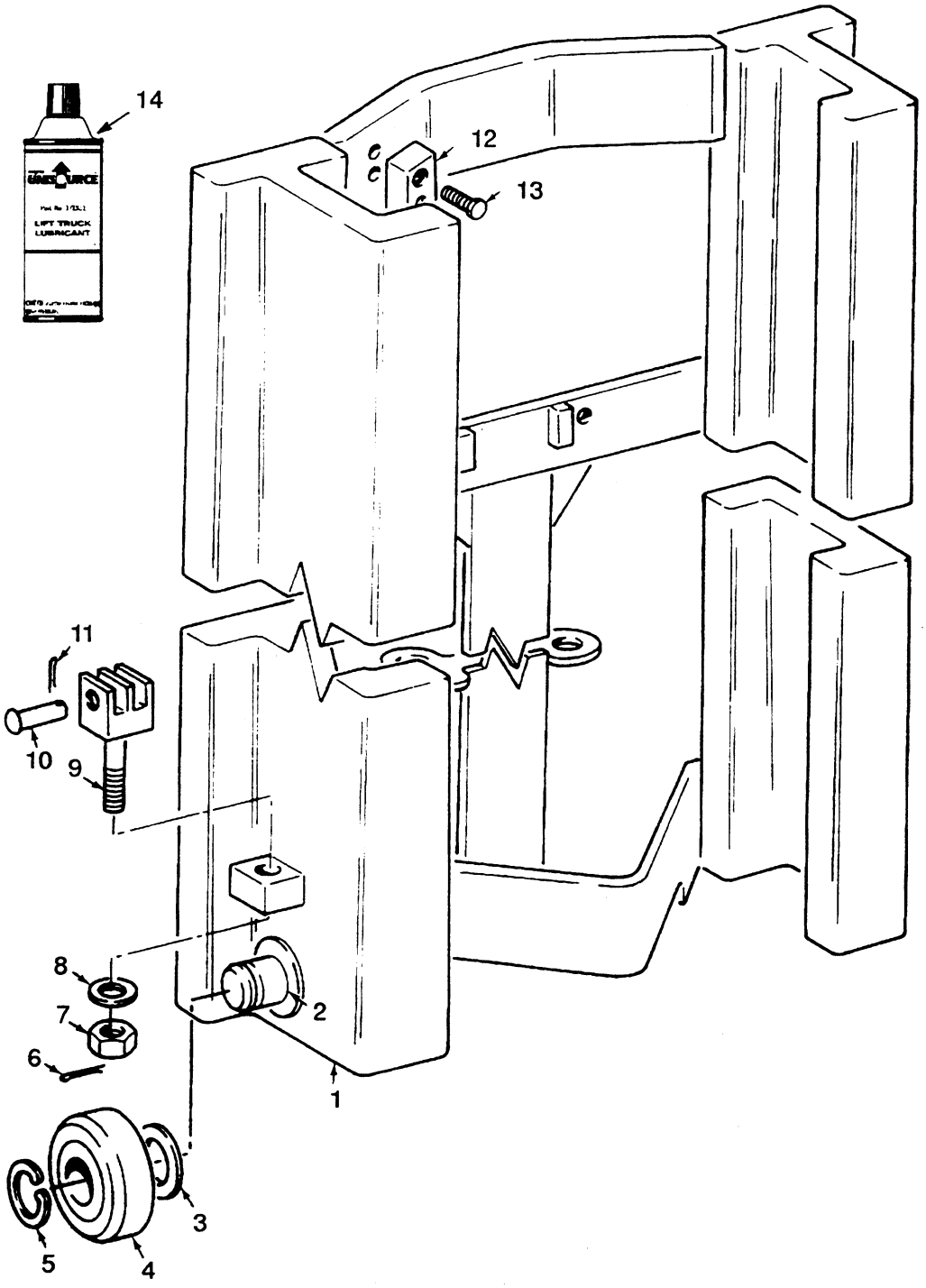
[a] ☞ Chart Below

		S30-50E NARROW				S30-50E WIDE		
REF NO	NAME OF PART	Lift Height To Bottom Of Forks						
		3810 mm	4260 mm	4410 mm	4710 mm	4710 mm	5010 mm	5460 mm
		150.0 inch	167.5 inch	173.5 inch	185.5 inch	185.5 inch	197.0 inch	215.0 inch
	Mast	320587	320588	320589	320590	320579	320580	320581
1	Intermediate Mast	347205	347206	347207	347208	347202	347203	347204

		S60ES					
REF NO	NAME OF PART	Lift Height To Bottom Of Forks					
		3550 mm	4000 mm	4150 mm	4450 mm	4750 mm	5425 mm
		140.0 inch	157.5 inch	163.5 inch	175.0 inch	187.0 inch	213.5 inch
	Mast	320776	320777	315847	297642	315848	315849
1	Intermediate Mast	346418	346419	346420	346421	346422	346423

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INNER MAST
VISTA THREE-STAGE
(Figure 137)



INNER MAST
VISTA THREE-STAGE

KEY
A: S30-50E
B: S60ES

REF	PART NO.	NAME OF PART	QTY A	QTY B
	[a]	Mast	1	1
1	[a]	Inner Mast	1	1
2	320306	Stubshaft	2	..
2	297564	Stubshaft	..	2
3	129387	Shim-.020 inch	AR	AR
4	329090	Load Roller	2	2
5	58901	Snap Ring	2	2
6	15223	Cotter Pin	2	2
7	161003	Nut	2	2
8	297649	Base Ring	2	2
9	320426	Chain Anchor	2	..
9	297580	Chain Anchor	..	2
10	315635	Pin	2	..
10	315634	Pin	..	2
11	15200	Cotter Pin	2	..
11	15211	Cotter Pin	..	2
12	172848	Bar	1	1
13	37297	Capscrew	2	2
14	171351	Lubricant	AR	AR

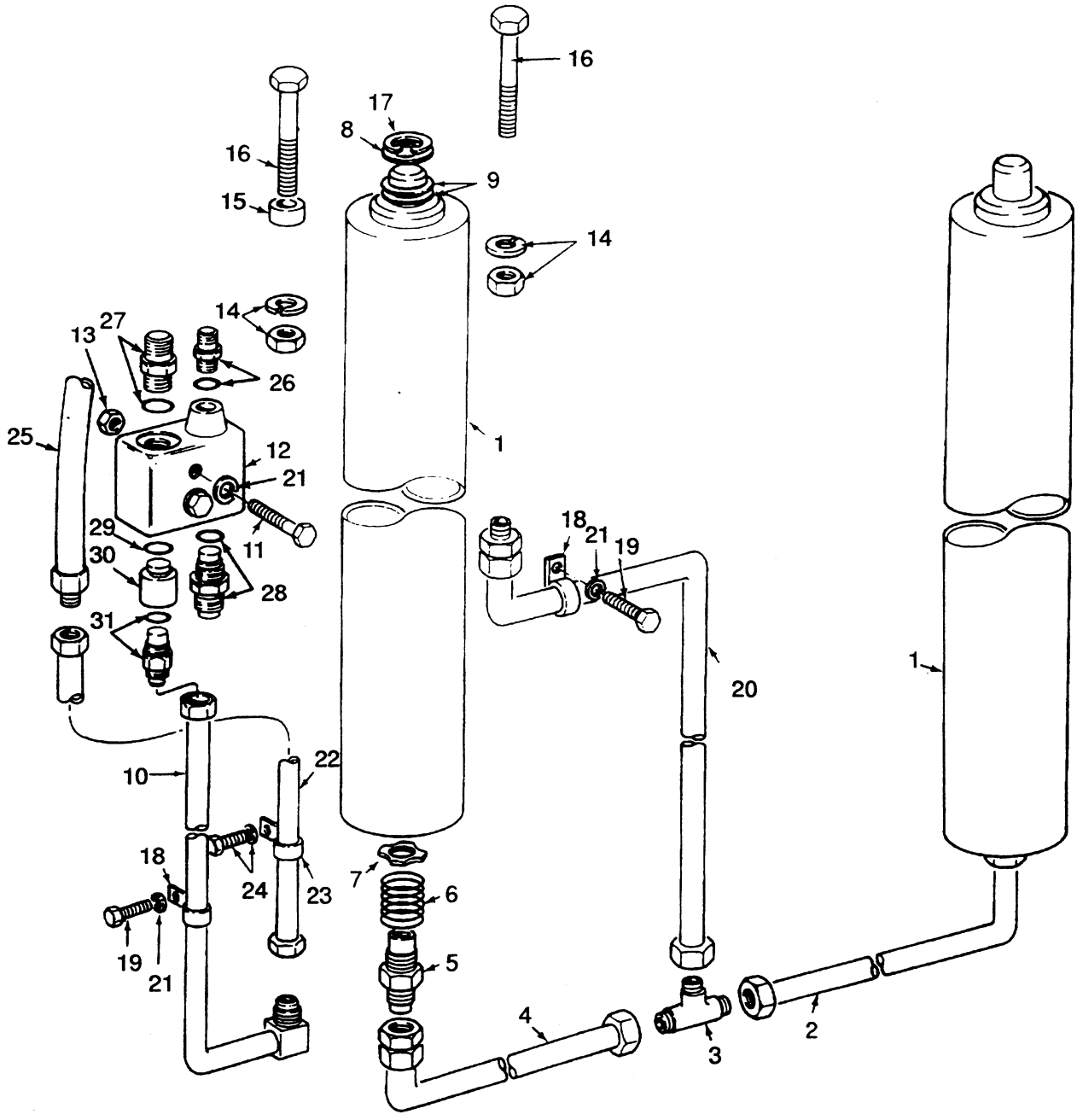
[a] ☞ Chart Below

S30-50E NARROW						S30-50E WIDE	
REF NO	NAME OF PART	Lift Height To Bottom Of Forks						
		3810 mm	4260 mm	4410 mm	4710 mm	4710 mm	5010 mm	5460 mm
		150.0 inch	167.5 inch	173.5 inch	185.5 inch	185.5 inch	197.0 inch	215.0 inch
	Mast	320587	320588	320589	320590	320579	320580	320581
1	Inner Mast	320610	320611	320612	320613	320370	320441	320442

S60ES							
REF NO	NAME OF PART	Lift Height To Bottom Of Forks					
		3550 mm	4000 mm	4150 mm	4450 mm	4750 mm	5425 mm
		140.0 inch	157.5 inch	163.5 inch	175.0 inch	187.0 inch	213.5 inch
	Mast	320776	320777	315847	297642	315848	315849
1	Inner Mast	320658	320659	315713	297595	315714	315715

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MAIN LIFT
VISTA THREE-STAGE
(Figure 138)



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MAIN LIFT
VISTA THREE-STAGE

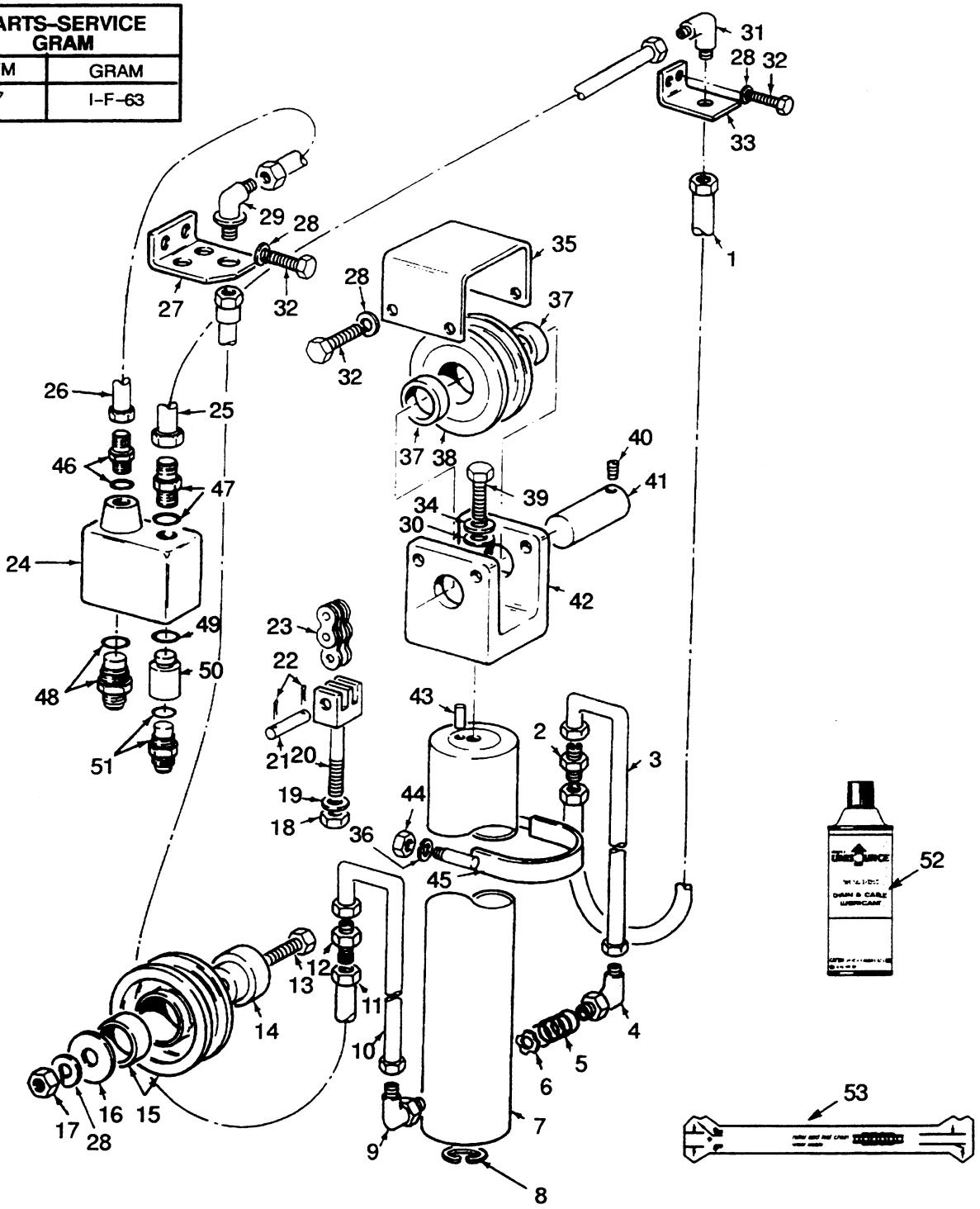
REF		PART NO.	NAME OF PART	QTY
		.....	Mast	1
			☞ Figure 135 ⇒ Figure 137	
1		.....	Cylinder	2
			☞ Figure 140	
2	a	315799	Tube	1
2	b	320751	Tube	1
3		315611	Fitting	1
4	a	315774	Tube	1
4	b	320752	Tube	1
5		184799	Fitting	2
6		288648	Spring	2
7		320334	Washer	2
8		328492	Washer	2
9		346410	Shim-.060 inch	AR
10	a	354108	Tube	1
10	b	320764	Tube	1
11		16741	Capscrew	2
12		.....	Phase Valve	1
			☞ Figure 117	
13		15056	Nut	2
14		15158	Lockwasher	4
14		15058	Nut	4
15		297639	Spacer	2
16		17269	Capscrew	4
17		131357	Snap Ring	2
18		154278	Clamp	2
19		16597	Capscrew	2
20	a	315812	Tube	1
20	b	320763	Tube	1
21		15156	Lockwasher	4
22		332167	Tube	1
23		154278	Clamp	1
24		16870	Capscrew	1
24		15156	Lockwasher	1
25		315758	Hose	1
26		16540	Fitting	1
26		16483	O-Ring	1
27		16543	Fitting	1
27		16486	O-Ring	1
28		121259	Fitting	1
28		16486	O-Ring	1
29		16487	O-Ring	1
30		320336	Adapter	1
31		315262	Control Valve	1
31		16982	O-Ring	1

a S30-50E Wide And S60ES
b S30-50E Narrow

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FREE-LIFT
VISTA THREE-STAGE
(Figure 139)

PARTS-SERVICE GRAM	
ITEM	GRAM
27	I-F-63



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FREE-LIFT
VISTA THREE-STAGE

KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
	a	.....	Mast	1	1
1	a	.....	Hose	1	1
2		16449	Fitting	1	1
3		315816	Tube	1	1
4		271954	Fitting	1	1
5		271980	Spring	1	1
6		300690	Washer	1	1
7		.....	Cylinder	1	1
			☞ Figure 141		
8		131358	Snap Ring	1	1
9		16558	Fitting	1	1
10		356096	Tube	1	1
11	a	.....	Hose	1	1
12		16447	Fitting	1	1
13		18538	Capscrew	2	2
14		297613	Stubshaft	2	2
15		309007	Sheave	2	2
15		313807	Bushing	1	1
16		333395	Washer	2	2
17		15056	Nut	2	2
18		182377	Nut	1	1
19		182376	Base Ring	1	1
20		351666	Chain Anchor	1	..
20		315629	Chain Anchor	..	1
21		129339	Pin	1	..
21		151294	Pin	..	1
22		15222	Cotter Pin	2	2
23	a	.....	Free-Lift Chain	1	1
24		.....	Phase Valve	1	1
			☞ Figure 117		
25	a	.....	Tube	1	1
26	a	.....	Tube	1	1
27		355724	Bracket	1	1
28		15156	Lockwasher	10	10
29		16457	Fitting	1	1
30		15136	Washer	1	1
31		315616	Fitting	1	1
32		16597	Capscrew	8	8
33		367290	Chain Guard	1	1
34		15162	Lockwasher	1	1
35		297572	Chain Guard	1	1
36		15158	Lockwasher	2	2
37		297573	Spacer	2	2
38		320424	Chain Sheave	1	..
38		297644	Chain Sheave	..	1
39		222163	Capscrew	1	1
40		221149	Screw	1	1
41		297555	Pin	1	1
42		297558	Crosshead	1	1
43		226857	Groove Pin	1	1
44		15058	Nut	2	2
45		297592	Bracket	2	2
46		16540	Fitting	1	1
46		16483	O-Ring	1	1
47		16543	Fitting	1	1
47		16486	O-Ring	1	1
48		121259	Fitting	1	1
48		16486	O-Ring	1	1
49		16487	O-Ring	1	1
50		320336	Adapter	1	1
51		315262	Control Valve	1	1
51		16982	O-Ring	1	1
52		171350	Lubricant	AR	AR
53		599737	Chain Wear Scale	AR	AR

a ☞ Chart On Next Page

CONTINUED ON NEXT PAGE

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FREE-LIFT
VISTA THREE-STAGE

REF NO	NAME OF PART	S30-50E NARROW				S30-50E WIDE		
		Lift Height To Bottom Of Forks						
		3810 mm	4260 mm	4410 mm	4710 mm	4710 mm	5010 mm	5460 mm
		150.0 inch	167.5 inch	173.5 inch	185.5 inch	185.5 inch	197.0 inch	215.0 inch
	Mast	320587	320588	320589	320590	320579	320580	320581
1	Hose	320519	320520	320391	320392	320392	320393	320716
11	Hose	320414	320415	320400	320401	320401	320402	320715
23	Chain	320466	320467	320468	194665	194665	194608	182319
25	Tube	320625	320626	320627	320628	315835	315836	315837
26	Tube	356086	356087	356088	356089	356089	356090	356091

REF NO	NAME OF PART	S60ES					
		Lift Height To Bottom Of Forks					
		3550 mm	4000 mm	4150 mm	4450 mm	4750 mm	5245 mm
		140.0 inch	157.5 inch	163.5 inch	175.0 inch	187.0 inch	213.5 inch
	Mast	320776	320777	315847	297642	315848	315849
1	Hose	320519	320520	320391	320392	320393	320394
11	Hose	320414	320415	320400	320401	320402	320403
23	Chain	320713	320714	320395	297640	320396	320397
25	Tube	320523	320524	315834	315835	315836	320732
26	Tube	356086	356087	356088	356089	356090	356092

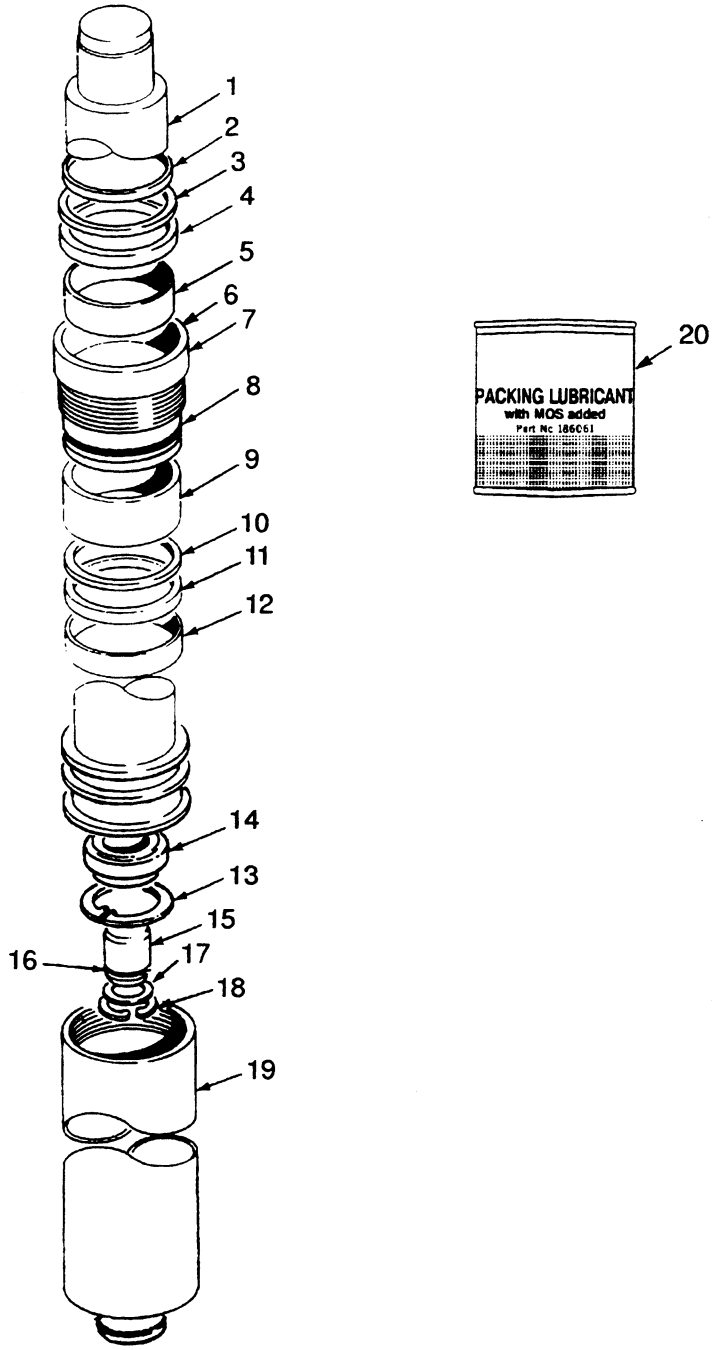
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NOTES

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LIFT CYLINDER
VISTA THREE-STAGE
MAIN
(Figure 140)



HYSTER

LIFT CYLINDER
VISTA THREE-STAGE
MAIN

REF		PART NO.	NAME OF PART	QTY
	a	.....	Cylinder	2
1	a	.....	Rod	1
2	b	215430	Wiper Ring	1
3	b	638248	Back-Up Ring	1
4	b	215924	Seal	1
5	b	215427	Wear Ring	1
6		297516	Plate	1
7		297536	Retainer	1
8	b	615130	Back-Up Ring	1
8	b	301991	Seal	1
9	a	.....	Spacer	1
10	b	638249	Back-Up Ring	1
11	b	270077	Seal	1
12	b	297532	Wear Ring	1
13		12931	Snap Ring	1
14		215295	Piston	1
15		297530	Check Valve	1
16	b	265787	O-Ring	1
17		297531	Washer	1
18		187388	Snap Ring	1
19	a	.....	Shell	1
20		186061	Packing Lubricant	AR

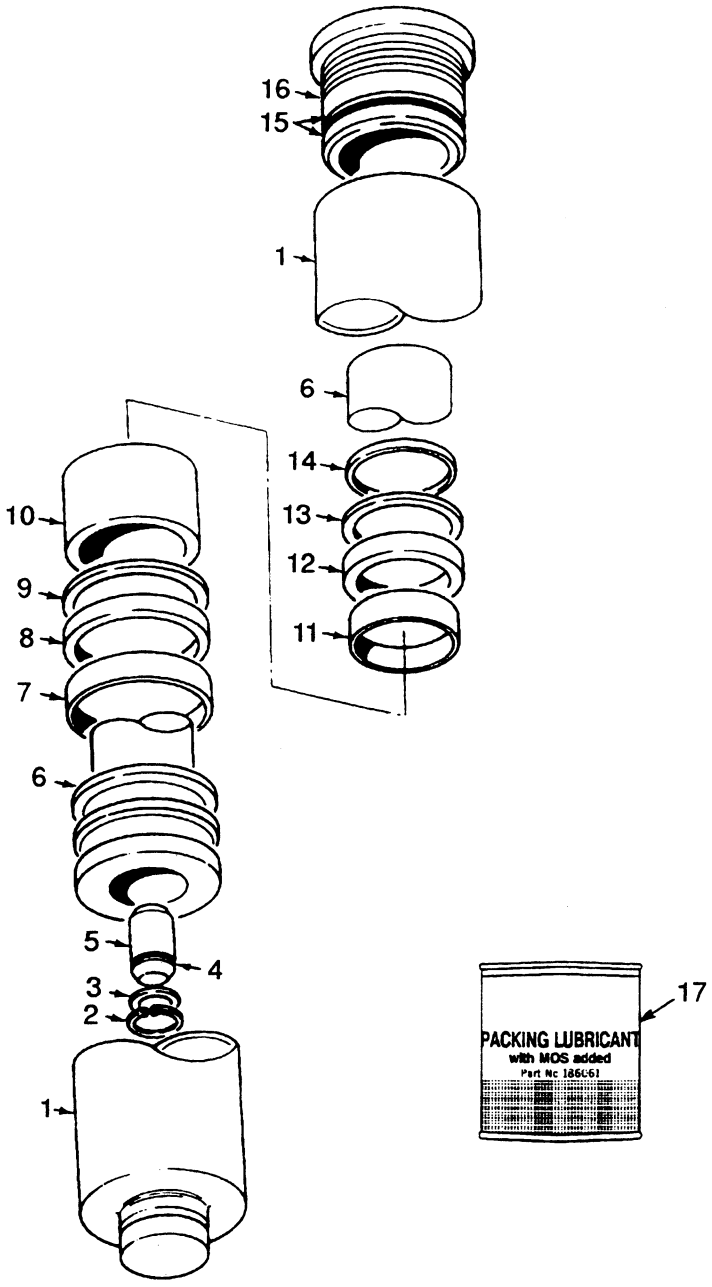
a ☞ Chart Below
b Included In Seal Kit 297454

S30-50E							
REF NO	NAME OF PART	Lift Height To Bottom Of Forks					
		3810 mm	4260 mm	4410 mm	4710 mm	5010 mm	5460 mm
		150.0 inch	167.5 inch	173.5 inch	185.5 inch	197.0 inch	215.0 inch
	Lift Cylinder	320489	320490	315717	315718	315719	315720
1	Rod	320495	320496	315689	297514	319521	319522
9	Spacer	.....	.....	.....	.....	315678	315678
19	Shell	320491	320492	315695	297520	319517	319518

S60ES							
REF NO	NAME OF PART	Lift Height To Bottom Of Forks					
		3550 mm	4000 mm	4150 mm	4450 mm	4750 mm	5425 mm
		140.0 inch	157.5 inch	163.5 inch	175.0 inch	187.0 inch	213.5 inch
	Lift Cylinder	320662	320663	315704	297524	315705	315706
1	Rod	320495	320496	315689	297514	319521	315691
9	Spacer	297529	297529	297529	297529	315679	315679
19	Shell	320491	320492	315695	297520	319517	315697

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LIFT CYLINDER
VISTA THREE-STAGE
FREE-LIFT
(Figure 141)



HYSTER

LIFT CYLINDER
VISTA THREE-STAGE
FREE-LIFT

REF		PART NO.	NAME OF PART	QTY
	a	.....	Cylinder	1
1	a	.....	Shell	1
2		187388	Snap Ring	1
3	b	637635	Washer	1
4	c	190580	O-Ring	1
5		658947	Valve	1
6	a	.....	Rod	1
7	c	297489	Wear Ring	1
8	c	297491	Seal	1
9	c	297485	Back-Up Ring	1
10	a	.....	Spacer	1
11	c	215427	Wear Ring	1
12	c	215924	Seal	1
13	c	638248	Back-Up Ring	1
14	c	215430	Wiper Ring	1
15	c	157237	Washer	1
15	c	297484	O-Ring	1
16		297476	Retainer	1
17		186061	Packing Lubricant	AR

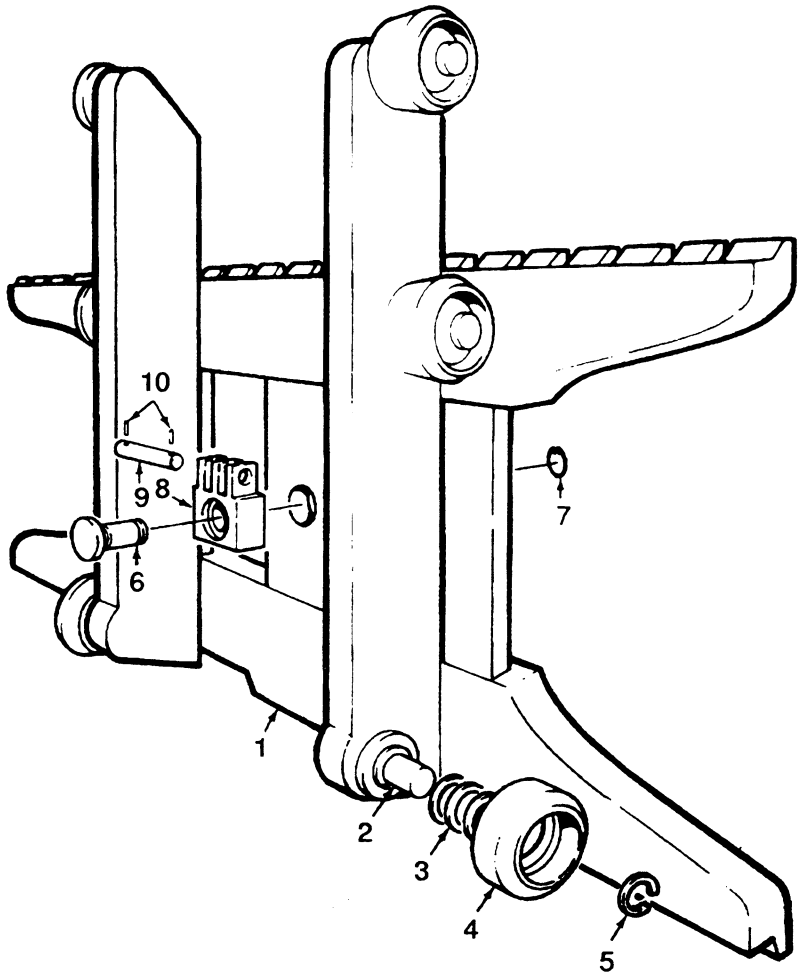
a ☞ Chart Below
b Optional
c Included In Seal Kit 297455

REF NO	NAME OF PART	S30-50E					
		Lift Height To Bottom Of Forks					
		3810 mm	4260 mm	4410 mm	4710 mm	5010 mm	5460 mm
		150.0 inch	167.5 inch	173.5 inch	185.5 inch	197.0 inch	215.0 inch
	Lift Cylinder	320501	320502	319511	319512	319513	319514
1	Shell	320507	320508	315793	297501	315794	315795
6	Rod	320509	320510	315813	297483	315814	315815
10	Spacer	.....	.....	.....	.....	.....	.....

REF NO	NAME OF PART	S60ES					
		Lift Height To Bottom Of Forks					
		3550 mm	4000 mm	4150 mm	4450 mm	4750 mm	5425 mm
		140.0 inch	157.5 inch	163.5 inch	175.0 inch	187.0 inch	213.5 inch
	Lift Cylinder	320505	320506	315820	297503	315821	315822
1	Shell	320507	320508	315793	297501	315794	320707
6	Rod	320509	320510	315813	297483	315814	320710
10	Spacer	315762	315762	315762	315762	315762	315762

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CARRIAGE
VISTA THREE-STAGE
(Figure 142)



KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
	[a]	377493	Carriage-42 inch	1	..
	[b]	341608	Carriage-34 inch	1	..
	[b]	377491	Carriage-38 inch	1	..
		377495	Carriage-42 inch	..	1
1	[a]	377494	Frame-42 inch	1	..
1	[b]	341606	Frame-34 inch	1	..
1		377492	Frame-38 inch	1	..
1		377496	Frame-42 inch	..	1
2		297565	Stubshaft	6	6
3		129387	Shim-.020 inch	AR	AR
4		329090	Load Roller	6	6
5		58901	Snap Ring	6	6
6		320327	Pin	1	..
6		297553	Pin	..	1
7		131358	Snap Ring	1	..
7		122400	Snap Ring	..	2
8		320328	Chain Anchor	1	..
8		315602	Chain Anchor	..	1
9		129339	Pin	1	..
9		151294	Pin	..	1
10		15222	Cotter Pin	2	2

[a] Wide
[b] Narrow

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OPTIONAL EQUIPMENT

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IDENTIFY BY PART NUMBER ..... Page 300

FORK
IDENTIFY BY PART NUMBER ..... Page 301

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EXTERNAL
INTERMEDIATE FREE-LIFT MAST ..... Page 328

HEADER HOSE
INTERNAL
INTERMEDIATE FREE-LIFT MAST ..... Page 330

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FOUR FUNCTION CONTROL VALVE ..... Page 338

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VISTA THREE-STAGE MAST
THREE FUNCTION CONTROL VALVE ..... Page 336

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VISTA THREE-STAGE TWINLINE
FOUR FUNCTION CONTROL VALVE ..... Page 340

HEADER HOSES
VISTA TWO-STAGE MAST
328000 SERIES ..... Page 332

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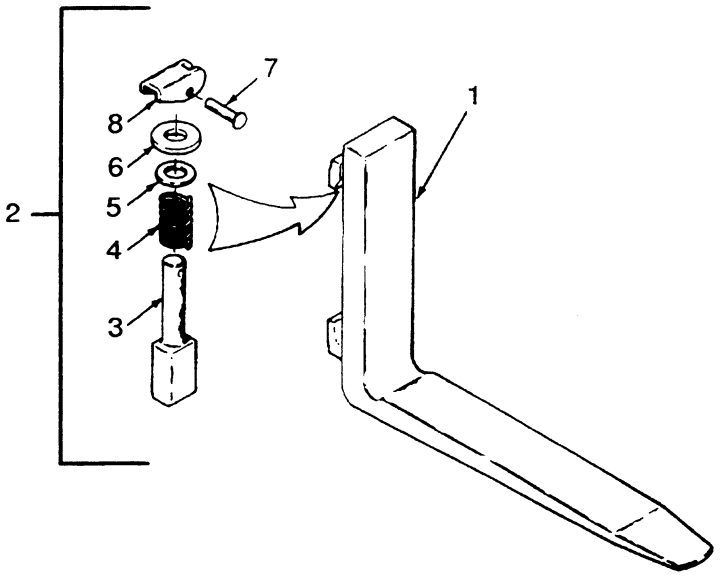
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NOTES

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FORK
IDENTIFY BY PART NUMBER
(Figure 143)

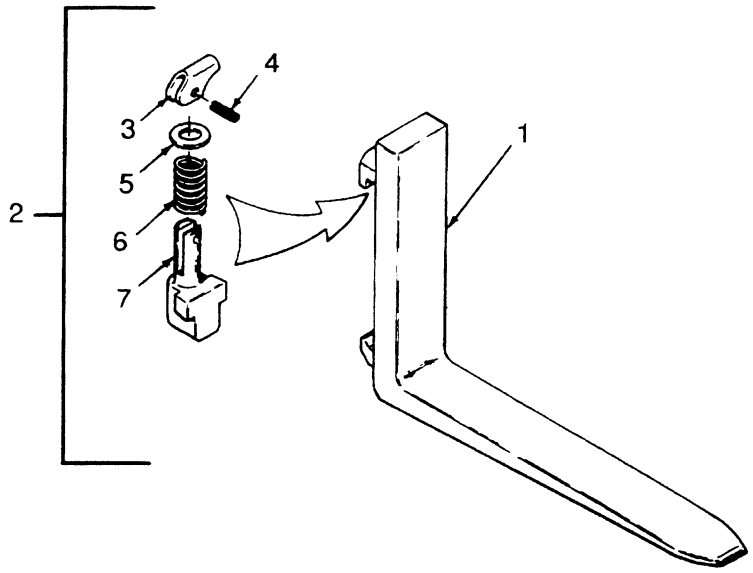


REF NO	NAME OF PART		STANDARD TAPER			FULL BOTTOM TAPER			QTY
			S30-50E		S60ES	S30-50E		S60ES	
	inch	mm	1.50 X 4.00	1.50 X 5.00	2.00 X 5.00	1.50 X 4.00	1.50 X 5.00	1.50 X 7.00	
1	Fork 30	762	365082	[a] 249209					2
	36	914	365083	[a] 249211	248925	381442	[a] 248915		2
	42	1067	365084	[a] 249215	248927	381443	[a] 248917	280467	2
	47.5	1207						280468	2
	48	1219	365085	[a] 249217	248929	381444	[a] 248919		2
	54	1372	365086	[a] 249219	248931			280469	2
	60	1524	365087	[a] 249221	248933				2
	72	1829			248937				2
2	Latch		328647	328647	328647	328647	328647	332378	1
3	Pin		322672	322672	322672	322672	322672	332377	1
4	Spring		141852	141852	141852	141852	141852	141852	1
5	Washer		157001	157001	157001	157001	157001	157001	1
6	Washer		195436	195436	195436	195436	195436	195436	1
7	Rivet		141853	141853	141853	141853	141853	141853	1
8	Handle		141856	141856	141856	141856	141856	141856	1

[a] Optional

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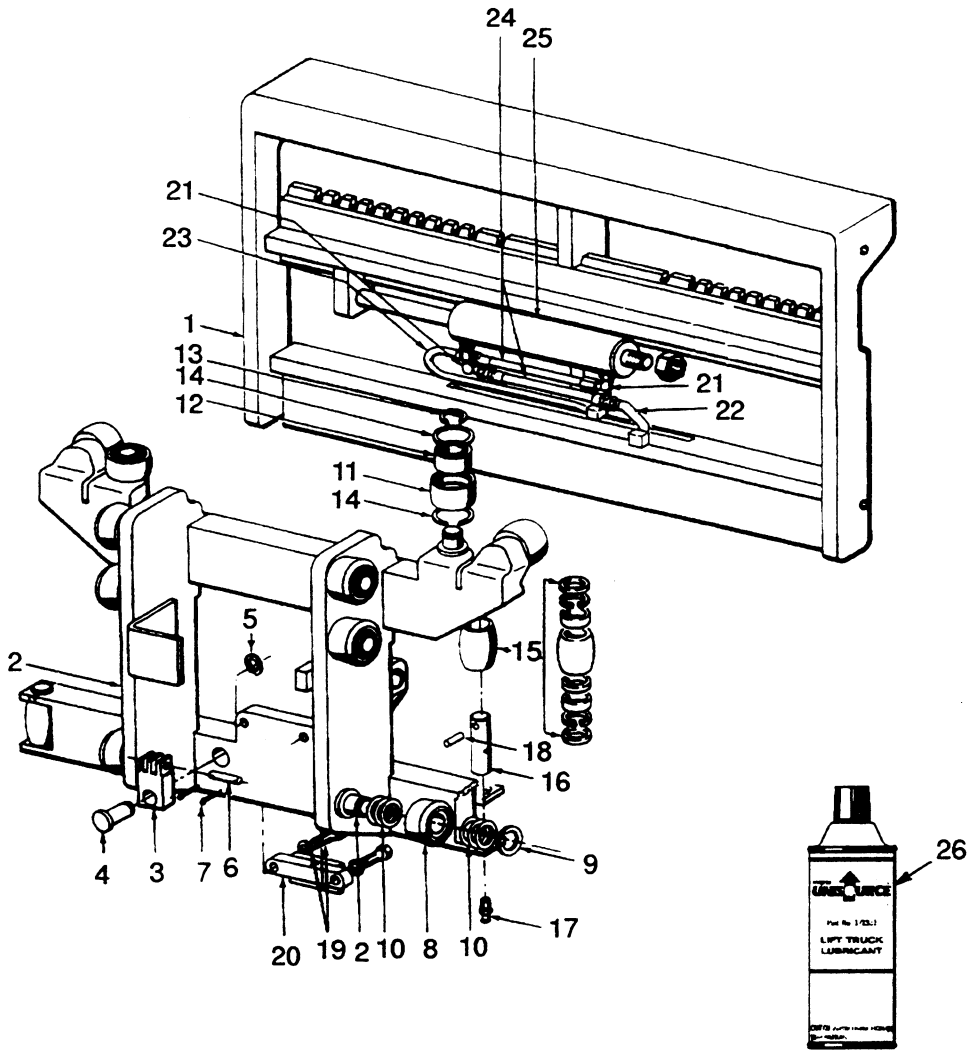
FORK
IDENTIFY BY PART NUMBER
(Figure 144)



REF NO	NAME OF PART		STANDARD TAPER		FULL BOTTOM TAPER		QTY
			S30-50E	S60-ES	S30-50E	S60ES	
	inch	mm	1.50 X 5.00	2.00 X 5.00	1.50 X 5.00	1.50 X 7.00	
1	Fork 30	762	384210				2
	36	914	384211	367419	368309		2
	42	1067	384213	367420	368310	367438	2
	47.5	1207				367439	2
	48	1219	384214	367421	368311		2
	54	1372	384215	367422		367440	2
	60	1524	384216	367423			2
	72	1829		367424			2
2	Latch		369795	369796	369765	369796	1
3	Lever		368706	368706	368706	368706	1
4	Pin		71153	71153	71153	71153	1
5	Washer		368707	368707	368707	368707	1
6	Spring		368705	368705	368705	368705	1
7	Pin		368702	368703	368702	368703	1

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SIDESHIFT CARRIAGE
INTERMEDIATE FREE-LIFT MAST
(Figure 145)



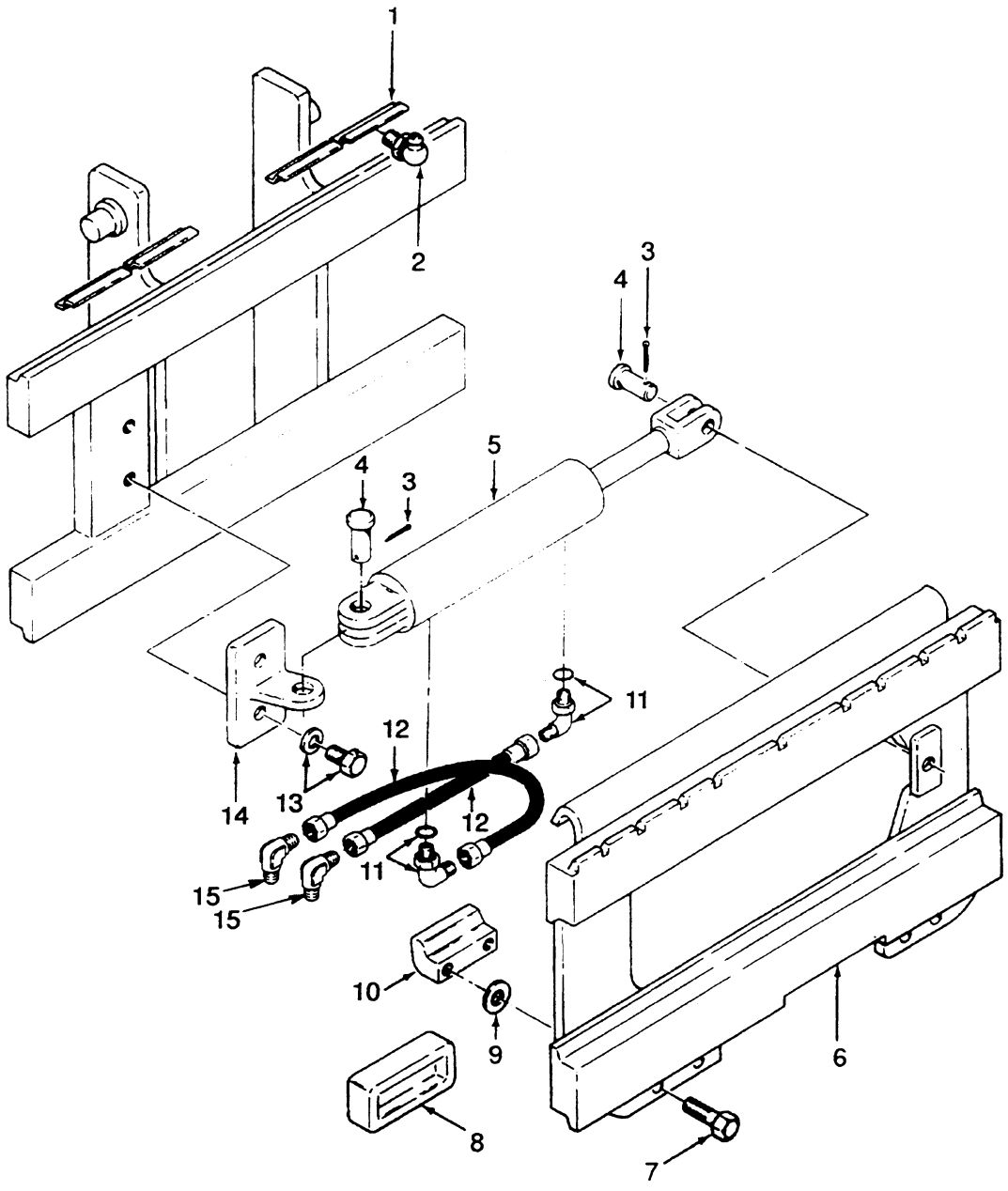
SIDESHIFT CARRIAGE
INTERMEDIATE FREE-LIFT MAST

KEY
A: S30-50E
B: S60ES

REF	PART NO.	NAME OF PART	QTY A	QTY B
	280936	Carriage-38 inch	1	..
	282369	Carriage-38 inch	..	1
1	257496	Apron-38 inch	1	..
1	257509	Apron-38 inch	..	1
2	280939	Frame-38 inch	1	..
2	282368	Frame-38 inch	..	1
2	129259	Stub Shaft	6	6
3	136330	Chain Anchor	2	..
3	126691	Chain Anchor	..	2
4	147222	Pin	2	..
4	190673	Pin	..	2
5	131358	Snap Ring	2	2
6	135306	Pin	2	..
6	147485	Anchor Pin	..	2
7	15200	Cotter Pin	4	..
7	15211	Cotter Pin	..	4
8	329090	Load Roller	6	6
9	58901	Snap Ring	6	6
10	129387	Shim-.020 inch	AR	AR
11	140844	Roller	4	4
12	129002	Bearing	4	4
13	34507	Snap Ring	4	4
14	24702	Snap Ring	4	4
15	161278	Roller	2	2
15	161280	Bearing	2	2
15	161281	Spacer	1	1
15	161282	Snap Ring	2	2
15	161283	Seal	2	2
16	161284	Pin	2	2
17	16001	Grease Fitting	2	2
18	122997	Pin	2	2
19	16397	Capscrew	2	2
19	15158	Lockwasher	2	2
20	257349	Stop	1	1
21	16558	Fitting	2	2
22	279120	Tube	1	1
23	279121	Tube	1	1
24	166388	Hose	2	2
25	.....	Cylinder	1	1
		☞ Figure 154		
26	171351	Lubricant	AR	AR

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SIDESHIFT CARRIAGE
INTERMEDIATE FREE-LIFT
(Figure 146)



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SIDESHIFT CARRIAGE
INTERMEDIATE FREE-LIFT

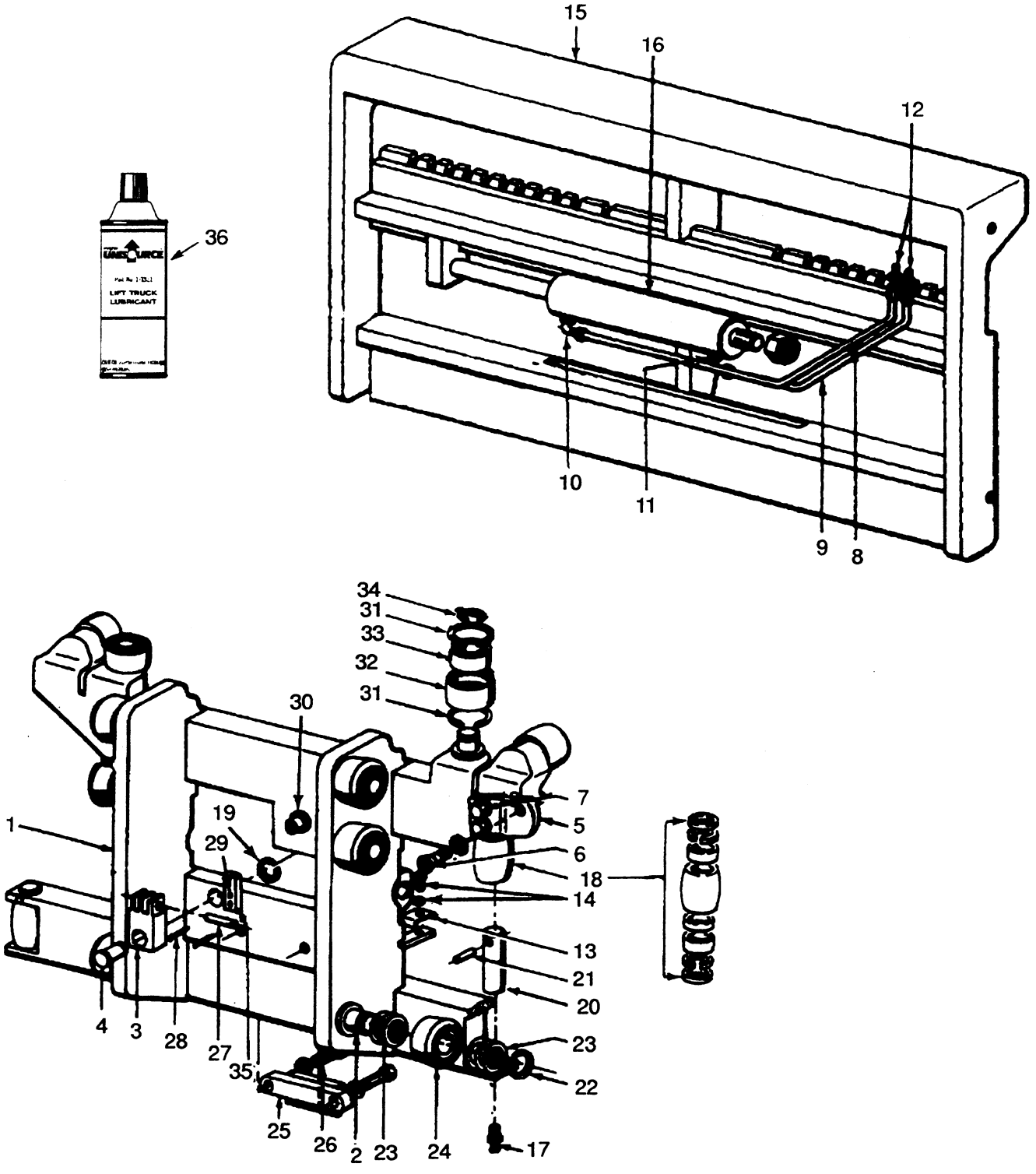
KEY
A: S30-50E
B: S60ES

REF	PART NO.	NAME OF PART	QTY A	QTY B
	373473	Carriage-38 inch	1	..
	374200	Carriage-38 inch	..	1
1	373471	Bearing	4	..
1	373472	Bearing	..	4
2	16041	Grease Fitting	4	4
3	15234	Cotter Pin	2	2
4	172	Pin	2	2
5	.....	Cylinder	1	1
		☞ Figure 156		
6	374204	Apron-38 inch	1	..
6	374206	Apron-38 inch	..	1
7	1300702	Capscrew	4	4
8	331781	Bearing Block	2	2
8 [a]	351458	Bearing Block	2	2
9	296426	Flat Washer	..	4
10	343961	Carriage Hook	2	2
11	16558	Fitting	2	2
11	16483	O-Ring	1	1
12	348096	Hose	2	2
13	361574	Capscrew	2	2
13	296430	Washer	2	2
14	369996	Bracket	1	1
15	14479	Fitting	2	2

[a] Optional

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SIDESHIFT CARRIAGE
FREE-LIFT
(Figure 147)



HYSTER

SIDESHIFT CARRIAGE
FREE-LIFT

KEY
A: S30-50E
B: S60ES

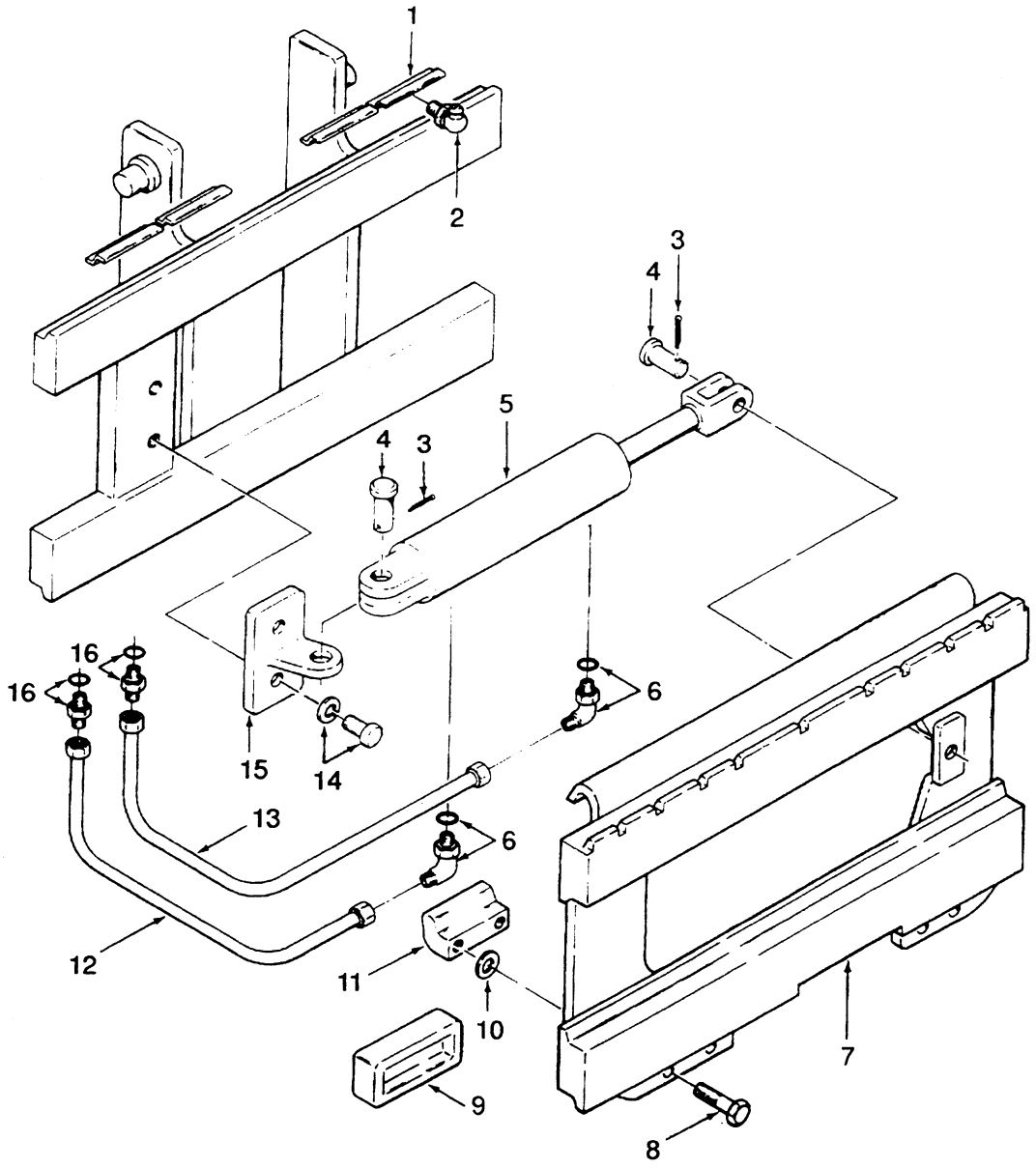
REF	PART NO.	NAME OF PART	QTY A	QTY B
	190092	Carriage-38 inch	1	1
	257501	Carriage-38 inch	1	..
	257511	Carriage-38 inch	..	1
1	190093	Frame-38 inch	1	..
1	190689	Frame-38 inch	..	1
2	129259	Stub Shaft	6	6
3	135565	Chain Anchor	2	..
3	126691	Chain Anchor	..	2
4	147223	Pin	2	..
4	190678	Pin	..	2
5	251085	Bracket	1	1
6	16634	Capscrew	2	2
6	15156	Lockwasher	2	2
7	139140	Capscrew	2	2
7	15156	Lockwasher	2	2
7	15056	Nut	2	2
8	251092	Tube	1	..
8	190693	Tube	..	1
9	251093	Tube	1	..
9	190694	Tube	..	1
10	17119	Fitting	1	1
10	16483	O-Ring	1	1
11	16558	Fitting	1	1
11	16483	O-Ring	1	1
12	16745	Fitting	..	1
12	17196	Fitting	1	..
12	16484	O-Ring	1	1
13	128259	Clamp	1	1
14	18459	Capscrew	1	1
14	15154	Lockwasher	1	1
15	257496	Apron-38 inch	1	..
15	257509	Apron-38 inch	..	1
16	.....	Cylinder	1	1
		☞ Figure 154		
17	16001	Grease Fitting	2	2
18	161278	Roller	2	2
18	161280	Bearing	2	2
18	161281	Spacer	1	1
18	161282	Snap Ring	2	2
18	161283	Seal	2	2
19	131358	Snap Ring	2	2
20	161284	Pin	2	2
21	122997	Pin	2	2
22	58901	Snap Ring	6	6
23	129387	Shim-.020 inch	AR	AR
24	329090	Load Roller	6	6
25	257448	Stop	1	1
26	16397	Capscrew	2	2
26	15158	Lockwasher	2	2
27	135306	Pin	1	..
27	147485	Anchor Pin	..	1
28	15200	Cotter Pin	4	..
28	15211	Cotter Pin	..	4
29	38759	Capscrew	2	..
30	181537	Capscrew	1	1
31	24702	Snap Ring	8	8
32	140844	Roller	4	4
33	129002	Bearing	4	4
34	34507	Snap Ring	4	4
35	190088	Bar	1	..
36	171351	Lubricant	AR	AR

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SIDESHIFT CARRIAGE

FREE-LIFT

(Figure 148)



SIDESHIFT CARRIAGE
FREE-LIFT

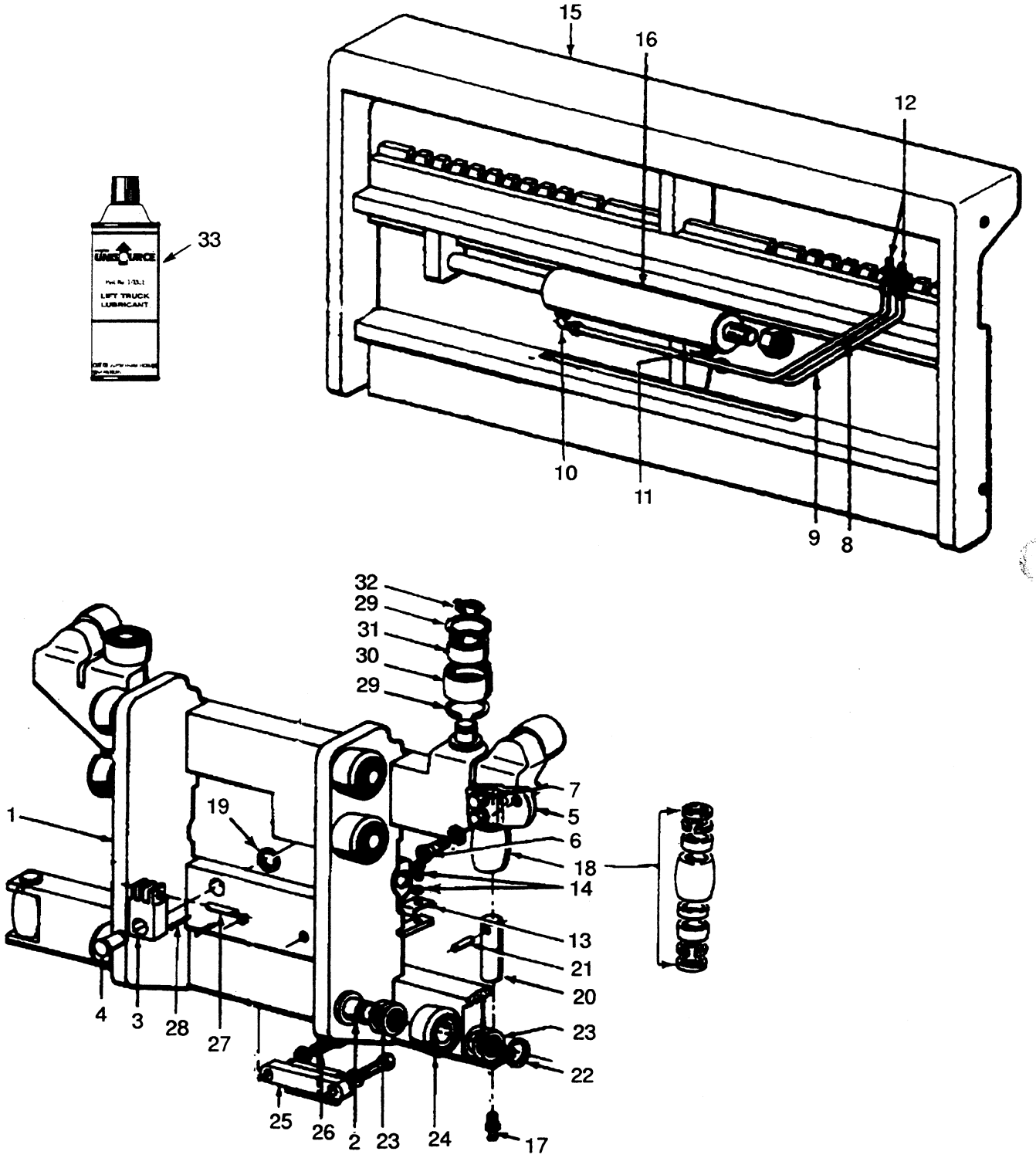
KEY
A: S30-50E
B: S60ES

REF	PART NO.	NAME OF PART	QTY A	QTY B
	373473	Carriage-38 inch	1	..
	374200	Carriage-38 inch	..	1
1	373471	Bearing	4	..
1	373472	Bearing	..	4
2	16745	Fitting	4	4
3	15234	Cotter Pin	2	2
4	172	Pin	2	2
5	.....	Cylinder	1	1
		☞ Figure 156		
6	16558	Fitting	2	2
6	16483	O-Ring	1	1
7	374204	Apron-38 inch	1	..
7	374206	Apron-38 inch	..	1
8	1300702	Capscrew	4	4
9	331781	Bearing Block	2	2
9	[a] 351458	Bearing Block	2	2
10	296426	Flat Washer	..	4
11	343961	Carriage Hook	2	2
12	348076	Tube	1	..
12	348077	Tube	..	1
13	348081	Tube	1	..
13	348082	Tube	..	1
14	361574	Capscrew	2	2
14	296430	Washer	2	2
15	369996	Bracket	1	1
16	16745	Fitting	2	2
16	16484	O-Ring	1	1

[a] Optional

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SIDESHIFT CARRIAGE
THREE-STAGE MAST
(Figure 149)



SIDESHIFT CARRIAGE
THREE-STAGE MAST

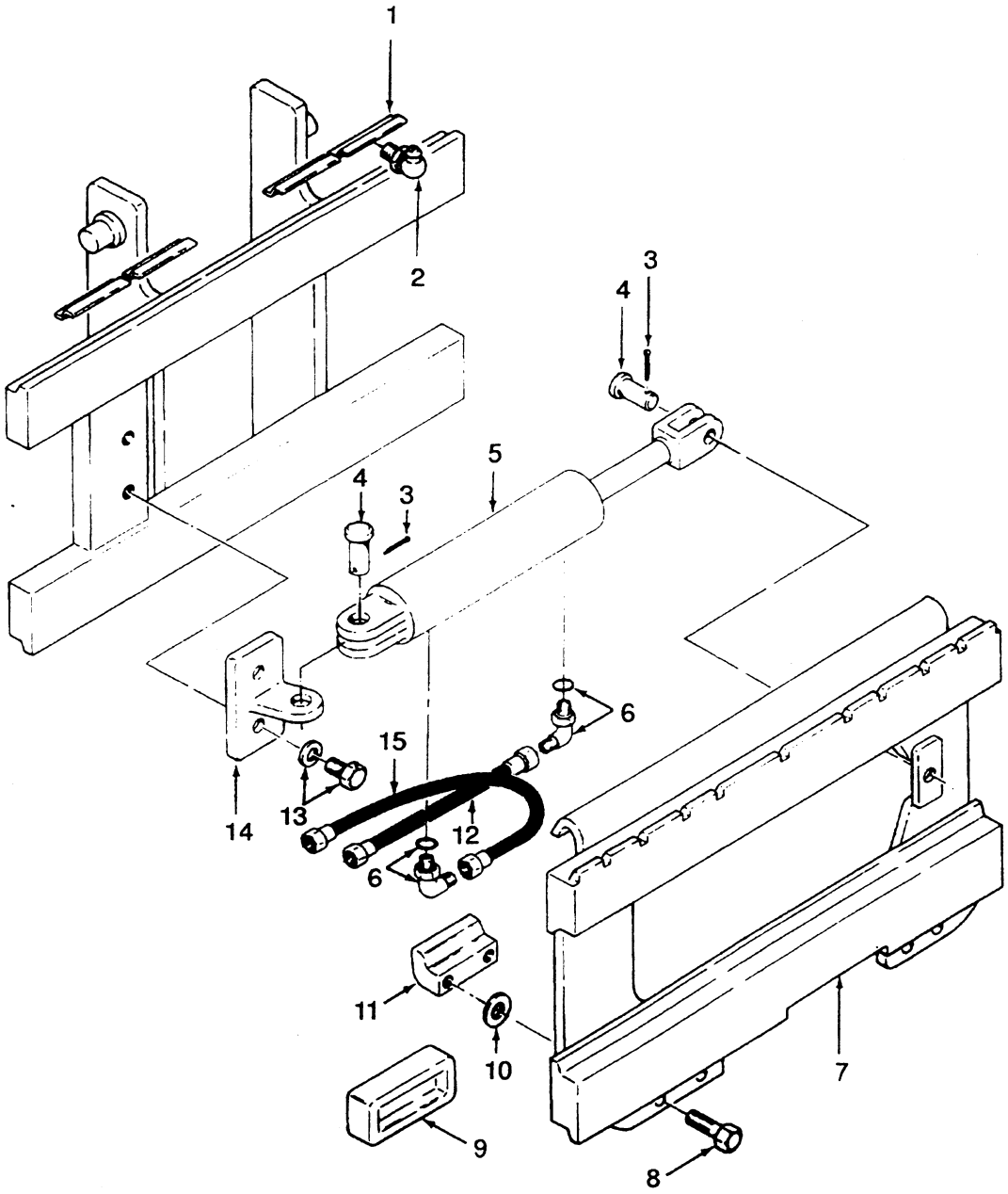
KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
		190316	Carriage-38 inch	1	1
	a	190317	Carriage-45 inch	1	..
		257503	Carriage-38 inch	1	..
	a	257505	Carriage-45 inch	1	..
		257513	Carriage-45 inch	..	1
1		190310	Frame-38 inch	1	..
1	a	190312	Frame-45 inch	1	..
1		191162	Frame-45 inch	..	1
2		129259	Stub Shaft	6	6
3		135565	Chain Anchor	2	..
3		126691	Chain Anchor	..	2
4		147223	Pin	2	..
4		185597	Pin	..	2
5		251085	Bracket	1	..
5	a	251082	Bracket	1	1
6		16634	Capscrew	2	2
6		15156	Lockwasher	2	2
7		139140	Capscrew	2	2
7		15156	Lockwasher	2	2
7		15056	Nut	2	2
8		190097	Tube	1	..
8	a	190319	Tube	1	..
8		191174	Tube	..	1
9		190298	Tube	1	..
9	a	190320	Tube	1	..
9		191175	Tube	..	1
10		17119	Fitting	1	1
10		16483	O-Ring	1	1
11		16558	Fitting	1	1
11		16483	O-Ring	1	1
12		16745	Fitting	2	2
12		16484	O-Ring	1	1
13		128259	Clamp	1	1
14		18459	Capscrew	1	1
14		15154	Lockwasher	1	1
15		257496	Apron-38 inch	1	..
15	a	257479	Apron-45 inch	1	..
15		257488	Apron-45 inch	..	1
16		.....	Cylinder	1	1
			☞ Figure 155		
17		16001	Grease Fitting	2	2
18		161278	Roller	2	2
18		161280	Bearing	2	2
18		161281	Spacer	1	1
18		161282	Snap Ring	2	2
18		161283	Seal	2	2
19		131358	Snap Ring	2	2
20		161284	Pin	2	2
21		122997	Pin	2	2
22		58901	Snap Ring	6	6
23		129387	Shim-.020 inch	AR	AR
24		329090	Load Roller	6	6
25		257448	Stop	1	1
26		16397	Capscrew	2	2
26		15158	Lockwasher	2	2
27		135306	Pin	1	..
27		147485	Anchor Pin	..	1
28		15200	Cotter Pin	4	..
28		15211	Cotter Pin	..	4
29		24702	Snap Ring	8	8
30		140844	Roller	4	4
31		129002	Bearing	4	4
32		34507	Snap Ring	4	4
33		171351	Lubricant	AR	AR

[a] Wide

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SIDESHIFT CARRIAGE
VISTA TWO–STAGE
328000 SERIES MAST
(Figure 150)



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SIDESHIFT CARRIAGE
VISTA TWO-STAGE
328000 SERIES MAST

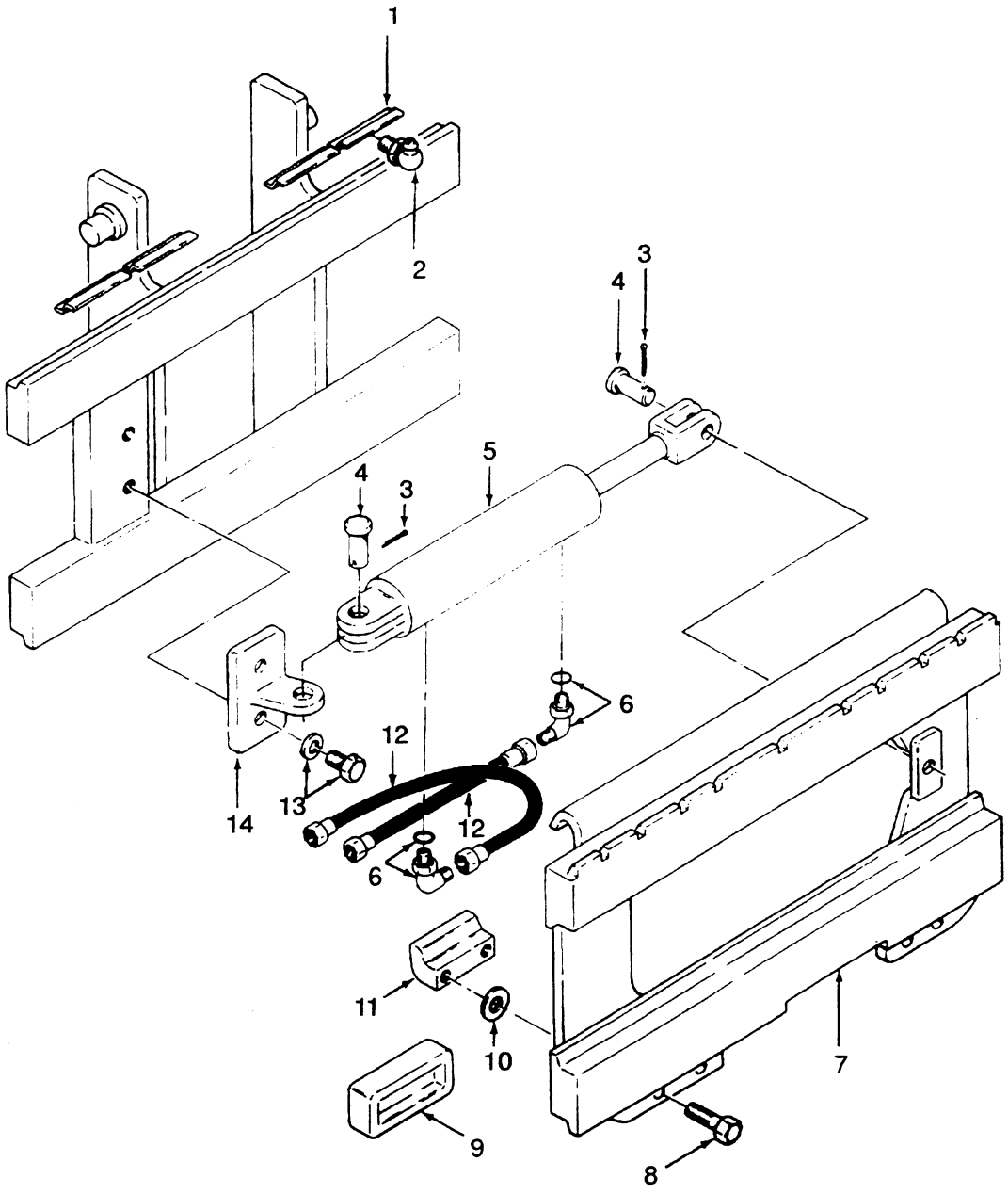
KEY
A: S30-50E
B: S60ES

REF	PART NO.	NAME OF PART	QTY A	QTY B
	343968	Carriage-34 inch	1	..
	343969	Carriage 34 inch	..	1
1	329202	Bearing	4	..
1	329203	Bearing	..	4
2	16046	Grease Fitting	4	4
3	15234	Cotter Pin	2	2
4	172	Pin	2	2
5	.....	Cylinder	1	1
		☞ Figure 155		
6	16558	Fitting	2	2
6	16483	O-Ring	1	1
7	343964	Apron-34 inch	1	..
7	343962	Apron-34 inch	..	1
8	1300702	Capscrew	4	4
9	331781	Bearing Block	2	2
9	[a] 351458	Bearing Block	2	2
10	296426	Flat Washer	..	4
11	343961	Carriage Hook	2	2
12	130790	Hose	1	1
13	361574	Capscrew	2	2
13	296430	Washer	2	2
14	369996	Bracket	1	1
15	144578	Hose	1	1

[a] Optional

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SIDESHIFT CARRIAGE
VISTA TWO-STAGE
372000 SERIES MAST
(Figure 151)



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SIDESHIFT CARRIAGE
VISTA TWO-STAGE
372000 SERIES MAST

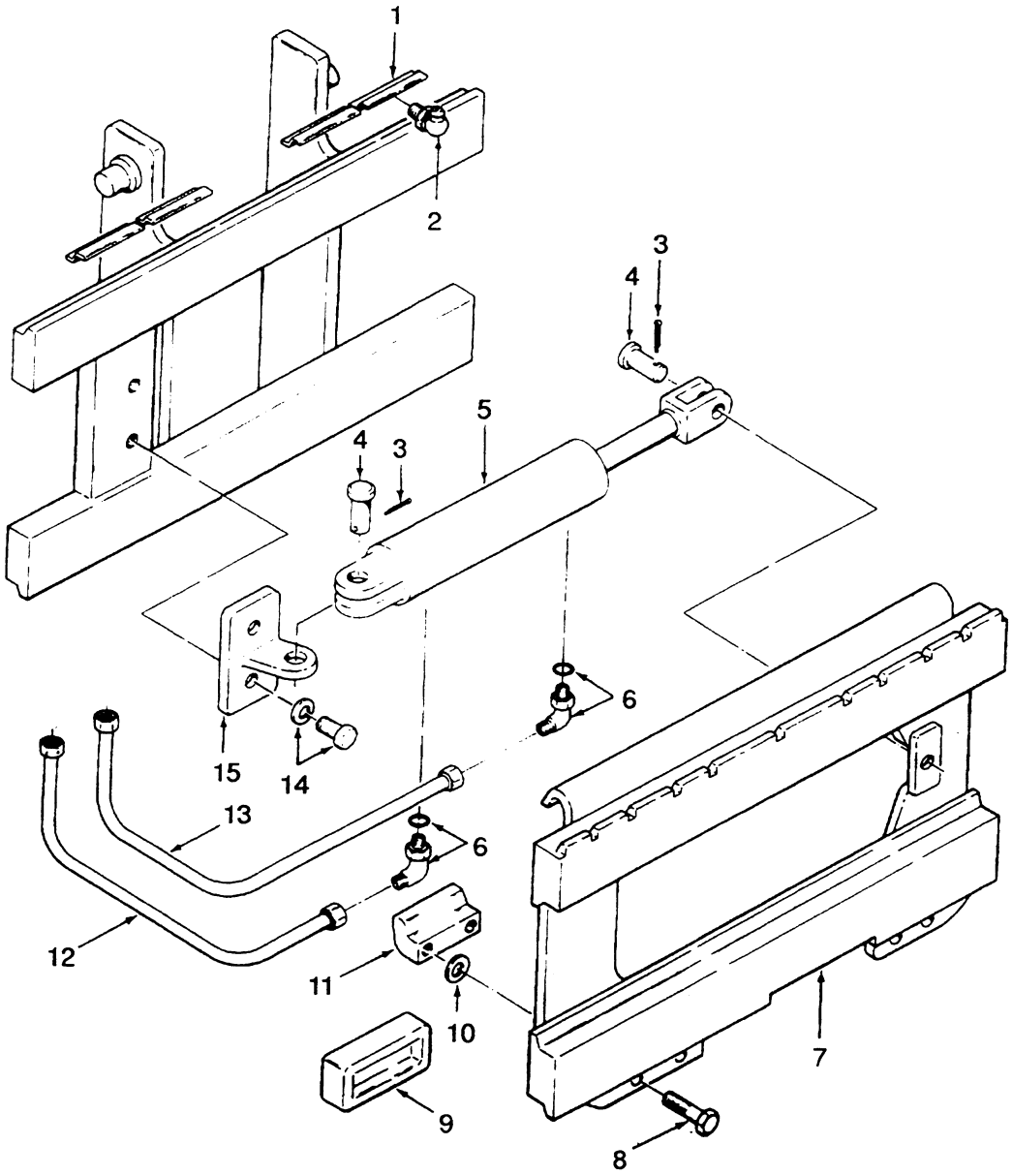
KEY
A: S30-50E
B: S60ES

REF	PART NO.	NAME OF PART	QTY A	QTY B
	373473	Carriage-38 inch	1	..
	374200	Carriage-38 inch	..	1
1	373471	Bearing	4	..
1	373472	Bearing	..	4
2	16046	Grease Fitting	4	4
3	15234	Cotter Pin	2	2
4	172	Pin	2	2
5	.....	Cylinder	1	1
		☞ Figure 156		
6	16558	Fitting	2	2
6	16483	O-Ring	1	1
7	374204	Apron-38 inch	1	..
7	374206	Apron-38 inch	..	1
8	1300702	Capscrew	4	4
9	331781	Bearing Block	2	2
9	[a] 351458	Bearing Block	2	2
10	296426	Flat Washer	..	4
11	343961	Carriage Hook	2	2
12	130790	Hose	2	2
13	361574	Capscrew	2	2
13	296430	Washer	2	2
14	369996	Bracket	1	1

[a] Optional

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SIDESHIFT CARRIAGE
VISTA THREE-STAGE
328000 SERIES MAST
(Figure 152)



HYSTER

SIDESHIFT CARRIAGE
VISTA THREE-STAGE
328000 SERIES MAST

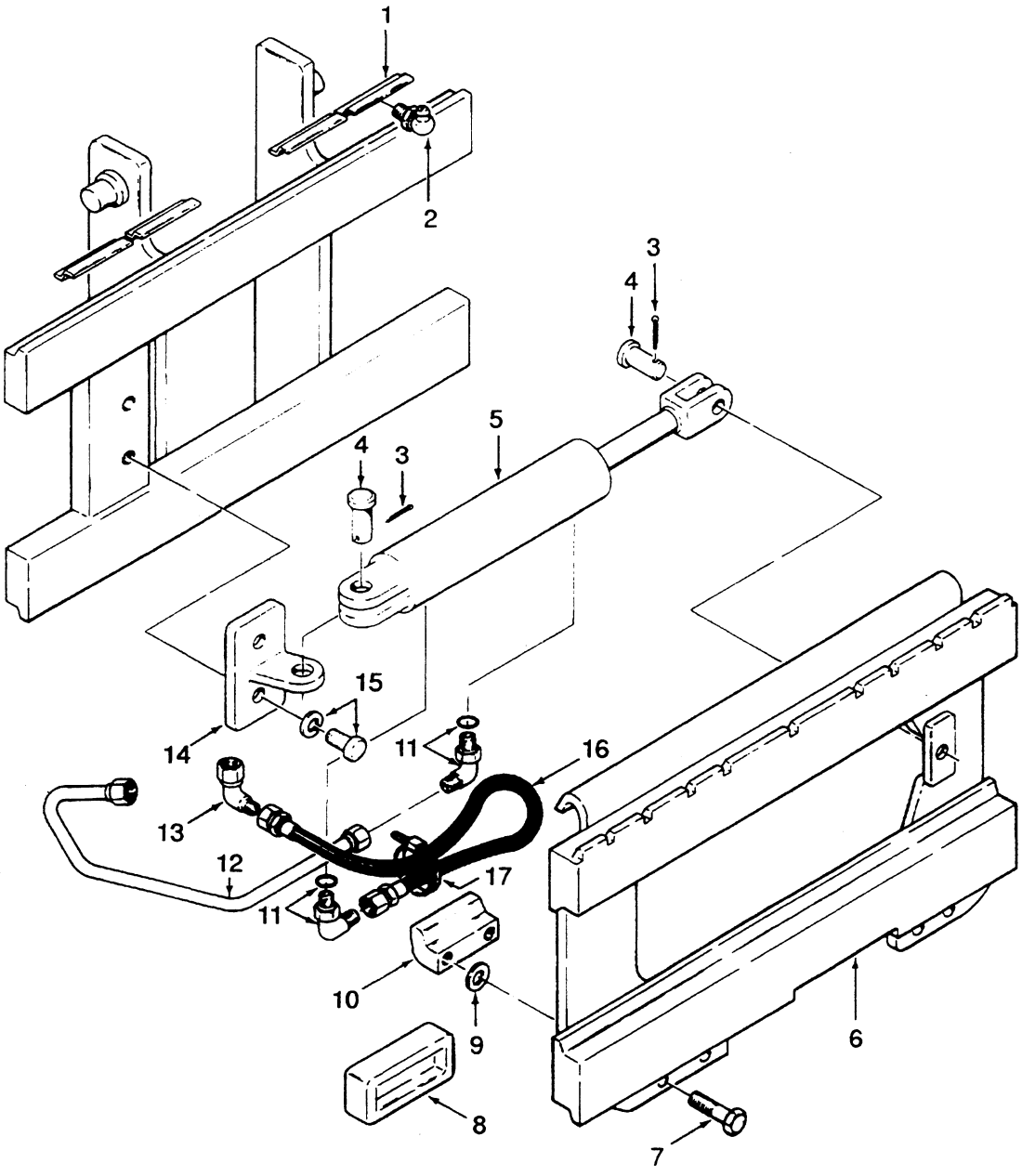
KEY
A: S30-50E
B: S60ES

REF		PART NO.	NAME OF PART	QTY A	QTY B
	[a]	343968	Carriage-34 inch	1	..
	[b]	343966	Carriage-42 inch	1	..
		343967	Carriage-42 inch	..	1
1		329202	Bearing	4	..
1		329203	Bearing	..	4
2		16046	Grease Fitting	4	4
3		15234	Cotter Pin	2	2
4		172	Pin	2	2
5		.....	Cylinder	1	1
			☞ Figure 155		
6		16558	Fitting	2	2
6		16483	O-Ring	1	1
7	[a]	343964	Apron-34 inch	1	..
7	[b]	343965	Apron-42 inch	1	..
7		343963	Apron-42 inch	..	1
8		1300702	Capscrew	4	4
9		331781	Bearing Block	2	2
9	[c]	351458	Bearing Block	2	2
10		296426	Flat Washer	..	4
11		343961	Carriage Hook	2	2
12		359103	Hose	1	1
13		377594	Tube	1	..
13		340094	Tube	..	1
14		361574	Capscrew	2	2
14		296430	Washer	2	2
15		369996	Bracket	1	1

[a] Narrow Mast
[b] Wide Mast
[c] Optional

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SIDESHIFT CARRIAGE
VISTA THREE-STAGE
372000 SERIES MAST
(Figure 153)



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SIDESHIFT CARRIAGE
VISTA THREE-STAGE
372000 SERIES MAST

KEY
A: S30-50E
B: S60ES

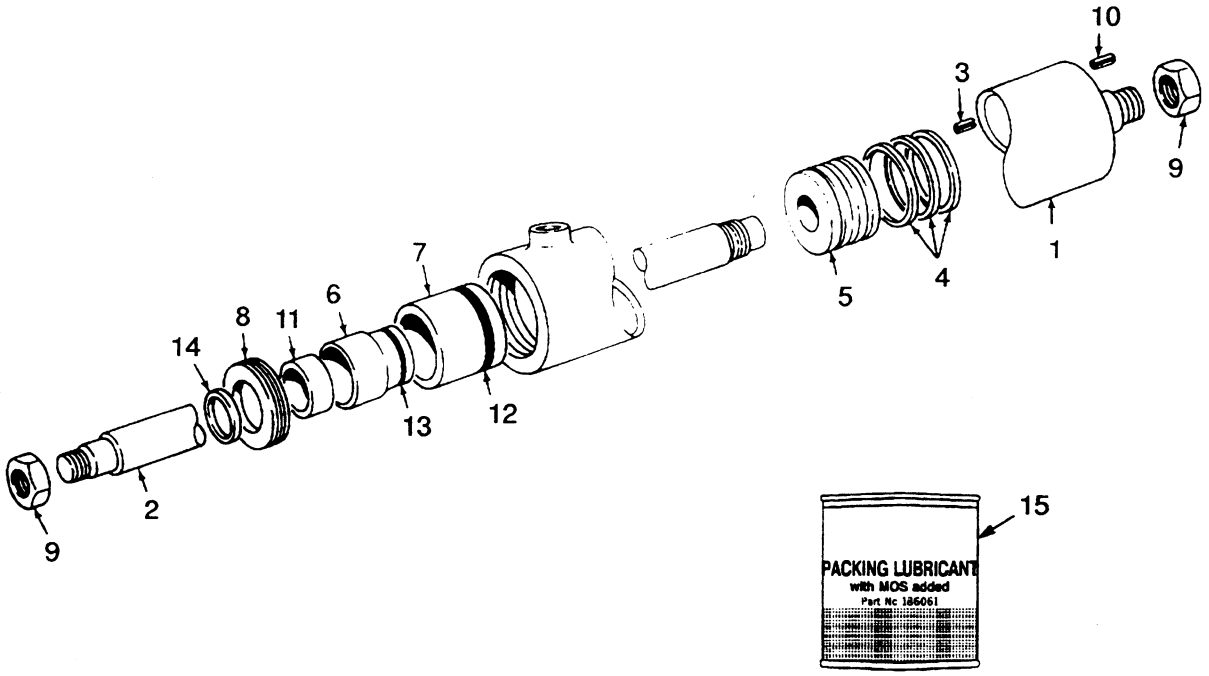
REF		PART NO.	NAME OF PART	QTY A	QTY B
	[a]	373473	Carriage-38 inch	1	..
	[b]	373474	Carriage-42 inch	1	..
		374201	Carriage-42 inch	..	1
1		373471	Bearing	4	..
1		373472	Bearing	..	4
2		16046	Grease Fitting	4	4
3		15234	Cotter Pin	2	2
4		172	Pin	2	2
5		.....	Cylinder	1	1
			☞ Figure 156		
6		374204	Apron-38 inch	1	..
6		374205	Apron-42 inch	1	..
6		374207	Apron-42 inch	..	1
7		1300702	Capscrew	4	4
8		331781	Bearing Block	2	2
8	[c]	351458	Bearing Block	2	2
9		296426	Flat Washer	..	4
10		343961	Carriage Hook	2	2
11		16558	Fitting	2	2
11		16483	O-Ring	1	1
12		340093	Tube	1	..
12		340094	Tube	..	1
13		16883	Fitting	1	1
14		369996	Bracket	1	1
15		361574	Capscrew	2	2
15		296430	Washer	2	2
16		359103	Hose	1	1
17		137852	Strap	1	1

[a] Narrow Mast
[b] Wide Mast
[c] Optional

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SIDESHIFT CYLINDER

(Figure 154)



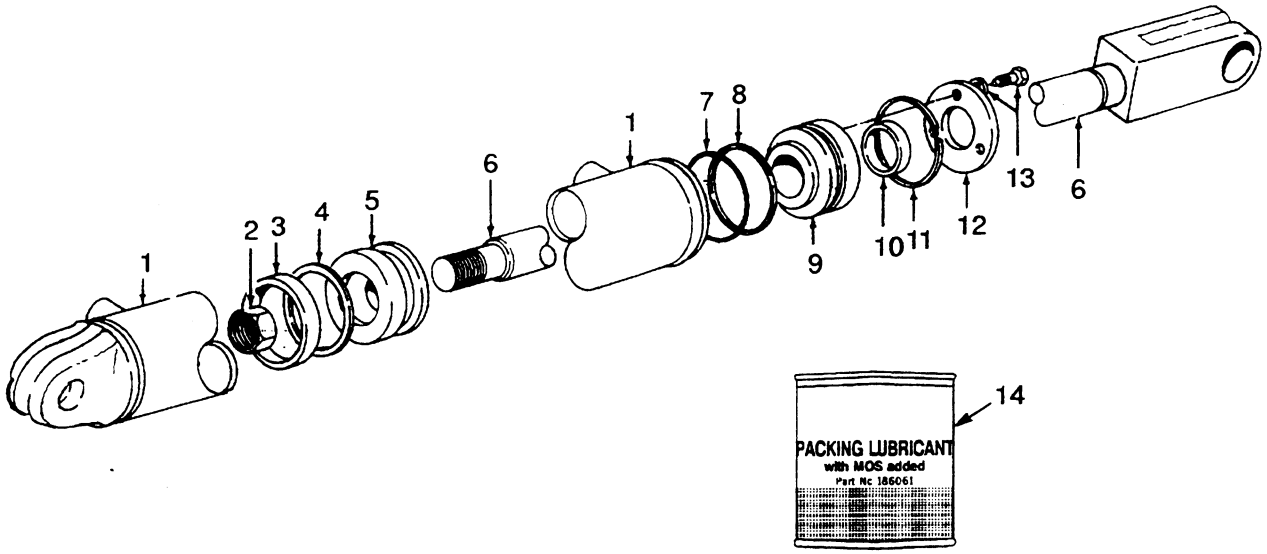
REF	PART NO.	NAME OF PART	QTY
	147233	Cylinder	1
1	621153	Shell	1
2	604854	Rod	1
3	19979	Spring Pin	1
4	602193	Piston Ring	3
5	601618	Piston	1
6	601627	Bushing	1
7	601626	Retainer	1
8	601628	Washer	1
9	17422	Locknut	2

REF	PART NO.	NAME OF PART	QTY
10	19864	Spring Pin	1
11	[a] 232362	Packing	1
12	[a] 55407	O-Ring	1
12	[a] 153919	Back-Up Ring	1
13	[a] 39152	O-Ring	1
14	[a] 202783	Wiper Ring	1
15	186061	Packing Lubricant	AR

[a] Included In Seal Kit 145378

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SIDESHIFT CYLINDER
VISTA MAST
(Figure 155)



REF		PART NO.	NAME OF PART	QTY
		331777	Cylinder	1
1		332793	Shell	1
2		43299	Locknut	1
3	a	270077	Seal	1
4	a	638249	Back-Up Ring	1
5		332795	Piston	1
6		332794	Rod	1
7	a	59229	O-Ring	1
8	a	615130	Back-Up Ring	1
9		332796	Retainer	1
10	a	239145	Rod Seal	1
11		332797	Ring	1
12		332799	Washer	1
13		18718	Capscrew	3
13		15154	Lockwasher	3
14		186061	Packing Lubricant	AR

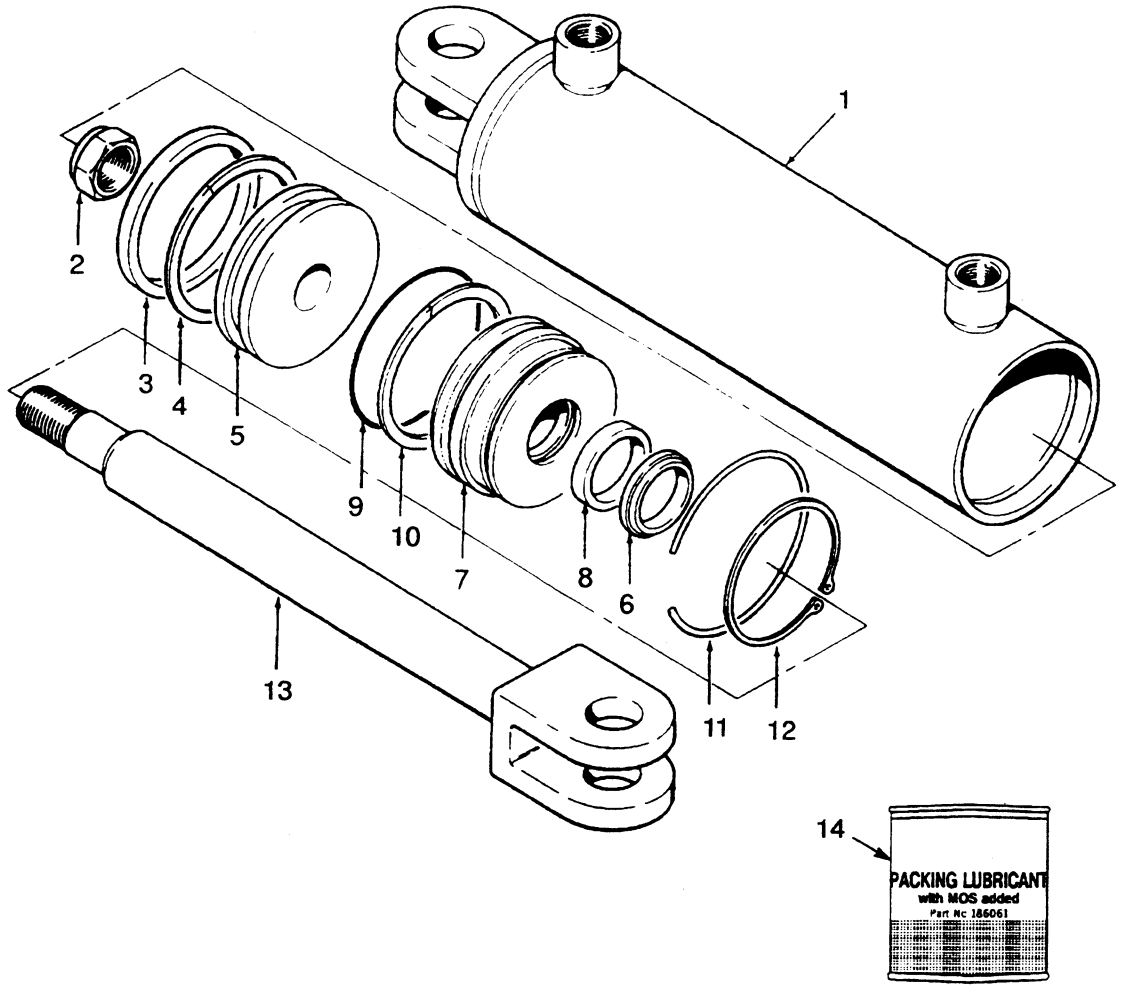
[a] Included In Seal Kit 332798

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SIDESHIFT CYLINDER

FREE-LIFT AND INTERMEDIATE FREE-LIFT MAST
VISTA TWO-STAGE AND VISTA THREE-STAGE 372000 SERIES MAST

(Figure 156)



REF	PART NO.	NAME OF PART	QTY
	343875	Cylinder	1
1	341674	Shell	1
2	53163	Locknut	1
3	334156	Seal	1
4	335012	Back-Up Ring	1
5	341666	Piston	1
6	294643	Seal-Rod	1
7	341669	Retainer	1
8	636851	Wiper-Rod	1
9	55407	O-Ring	1
10	153919	Back-Up Ring	1
11	343876	Ring-Retainer	1
12	307268	Snap Ring	1
13	341668	Rod	1
14	186061	Packing Lubricant	AR

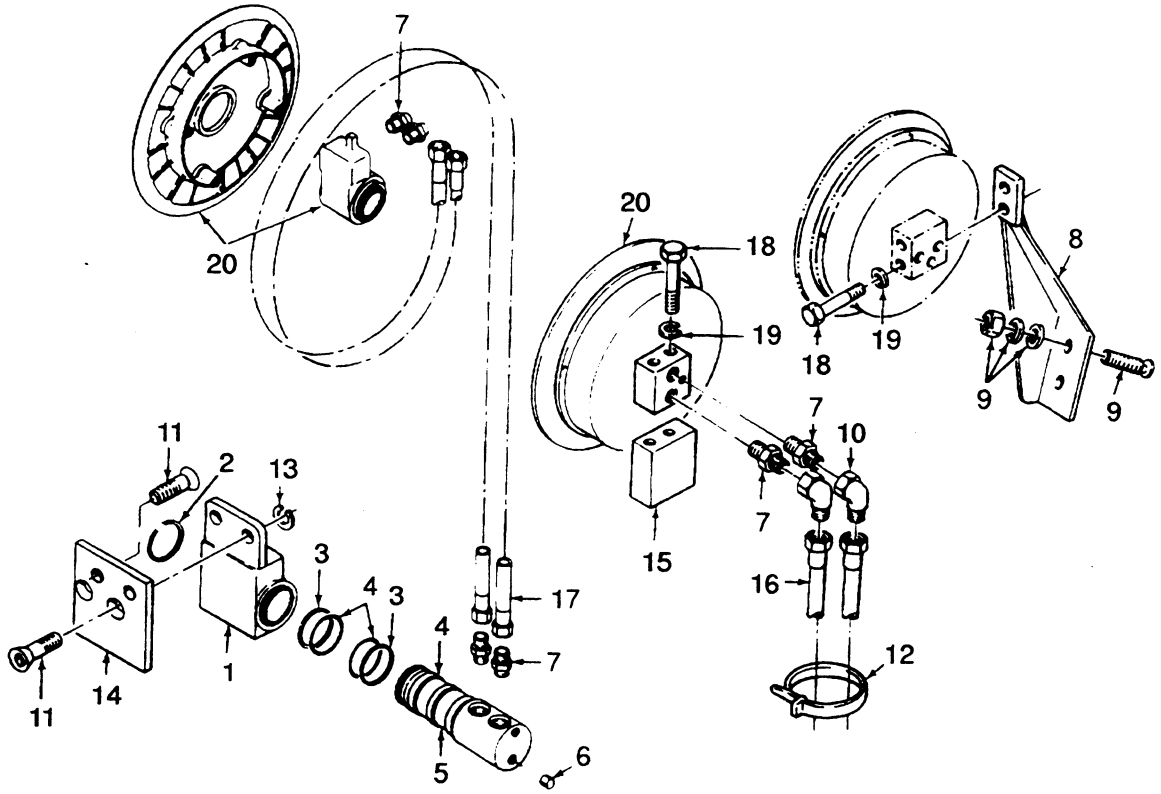
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NOTES

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HEADER HOSES

(Figure 157)



HEADER HOSES

KEY
A: Free-Lift Mast
B: Three-Stage Mast
C: Four-Stage Mast

REF		PART NO.	NAME OF PART	QTY A	B	C
1	ab	388172	Junction Block	1	1	1
1	b	388173	Junction Block	1	1	1
1		.....	Body	1	1	1
2		57919	Snap Ring	1	1	1
3	c	648569	Back-Up Ring	2	2	2
4	c	654926	O-Ring	3	3	3
5		646032	Shaft	1	1	1
6		15483	Fitting	2	2	2
7	a	16541	Fitting	4	6	6
7		16484	O-Ring	1	1	1
7	b	16541	Fitting	8	12	12
7		16484	O-Ring	1	1	1
8	ab	189476	Bracket (RH)	..	..	1
8	b	189481	Bracket (LH)	..	..	1
9	a	153636	Stud	..	..	2
9	b	153636	Stud	..	..	4
9	a	15135	Washer	..	..	2
9	b	15135	Washer	..	..	4
9	a	15158	Lockwasher	..	..	2
9	b	15158	Lockwasher	..	..	4
9	a	15058	Nut	..	..	2
9	b	15058	Nut	..	..	4
10	a	16989	Fitting	2	2	2
10	b	16989	Fitting	4	4	4
11	a	16805	Capscrew	..	..	2
11	b	16805	Capscrew	..	..	4
11	a	16597	Capscrew	2	2	..
11	b	16597	Capscrew	4	4	..
11	a	139140	Capscrew	2	2	..
11	b	139140	Capscrew	4	4	..
12	a	184641	Strap-Black	2	2	..
12	b	184641	Strap-Black	4	4	..
13	a	15156	Lockwasher	2	2	2
13	b	15156	Lockwasher	4	4	4
14	a	210190	Mount Plate	1	1	..
14	b	210190	Mount Plate	2	2	..
15	da	189386	Mount Block	1	1	..
15	db	189386	Mount Block	2	2	..
15	ea	189425	Mount Block	..	1	..
15	eb	189425	Mount Block	..	2	..
16	af	.....	Header Hose	2	2	2
16	bf	.....	Header Hose	4	4	4
17	af	.....	Header Hose	2	2	2
17	bf	.....	Header Hose	4	4	4
18	a	17114	Capscrew	2	2	2
18	b	17114	Capscrew	4	4	4
19	a	15158	Lockwasher	2	2	2
19	b	15158	Lockwasher	4	4	4
20	ab	388164	Hose Reel (LH)	1	..	..
20	b	388163	Hose Reel (RH)	1	..	..
20	ab	646042	Hose Reel (RH)	..	1	..
20	b	646043	Hose Reel (LH)	..	1	..
20	ab	388167	Hose Reel (RH)	..	..	1
20	b	388168	Hose Reel (LH)	..	..	1

a Three Function Valve
b Four Function Valve
c Included In Seal Kit 646340
d S30-50E Standard Three-Stage Mast
e S30-50E Wide And S60ES Three-Stage Mast
f ☞ Chart On Next Page

(CONTINUED ON NEXT PAGE)

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HEADER HOSES

MAST		UNIT	LIFT HEIGHT		REF 16	REF 17
			inch	mm	HEADER HOSE	HEADER HOSE
Free-Lift			104.5	2654	234673	140925
		S30E	116.5	2959	63179	189374
		S40E	128.5	3264	189428	189379
		S50E	148.5	3772	189428	140927
			98.5	2502	234673	140925
		S60ES	110.5	2807	63179	189374
			122.5	3112	189428	189379
			142.5	3620	189428	140927
Three-Stage	Narrow	S30E	150	3810	234673	140928
		S40E	168	4267	63179	189472
		S50E	186	4724	189428	202639
	Wide	S30E	186	4724	189429	202639
		S40E	198	5029	189376	204174
		S50E	216	5486	189431	202640
			139.5	3543	189432	77101
			157.5	4001	189433	201769
		S60ES	175.5	4458	189429	141949
			196.5	4991	189434	204174
			214.5	5448	189435	202640
		S30E	238.5	6058	197710	77100
		S40E	254.5	6465	197710	260804
		S50E	285.5	7250	197710	260805
		S60ES				

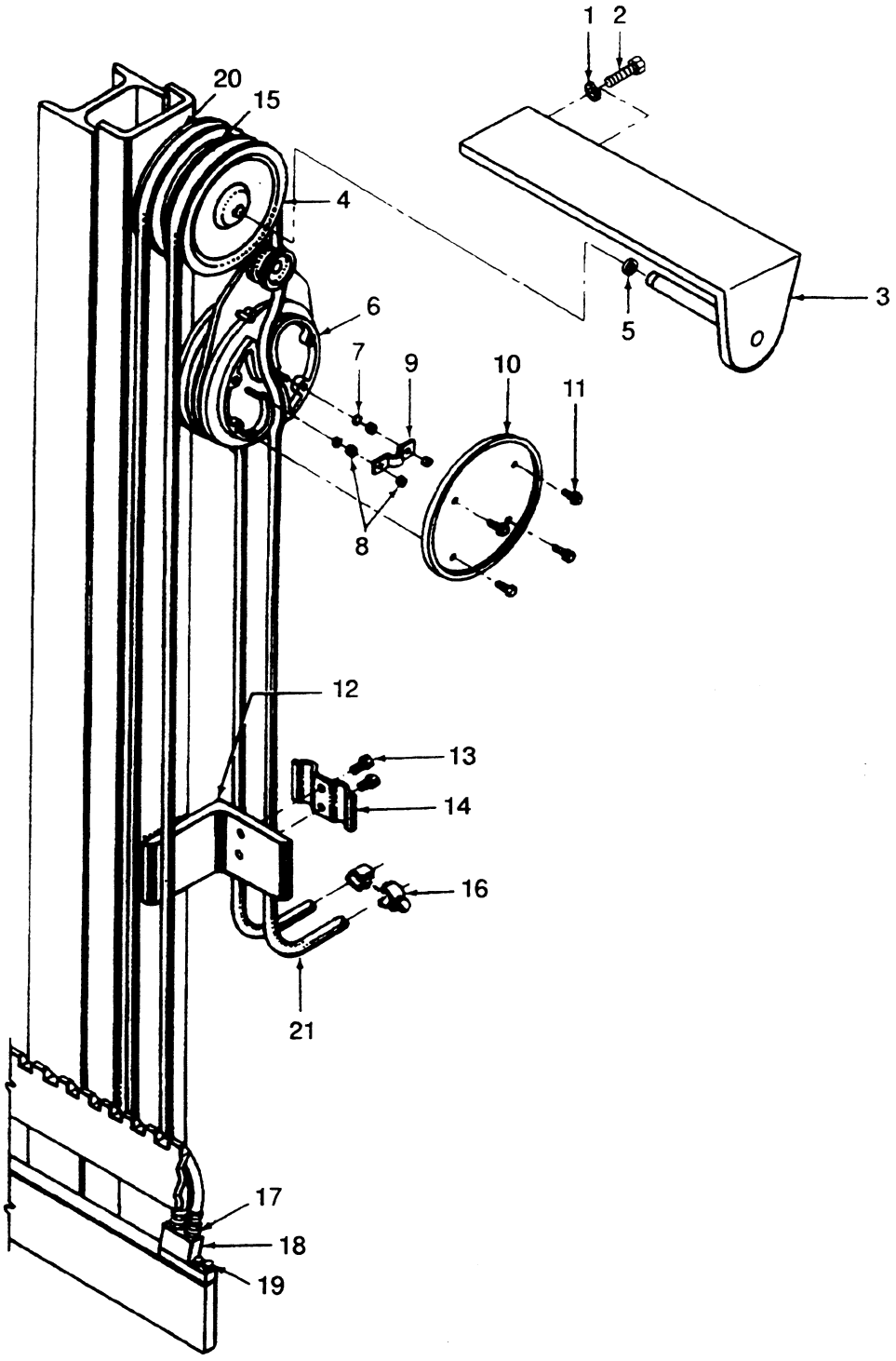
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NOTES

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HEADER HOSE
EXTERNAL
INTERMEDIATE FREE-LIFT MAST
(Figure 158)



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HEADER HOSE
EXTERNAL
INTERMEDIATE FREE-LIFT MAST

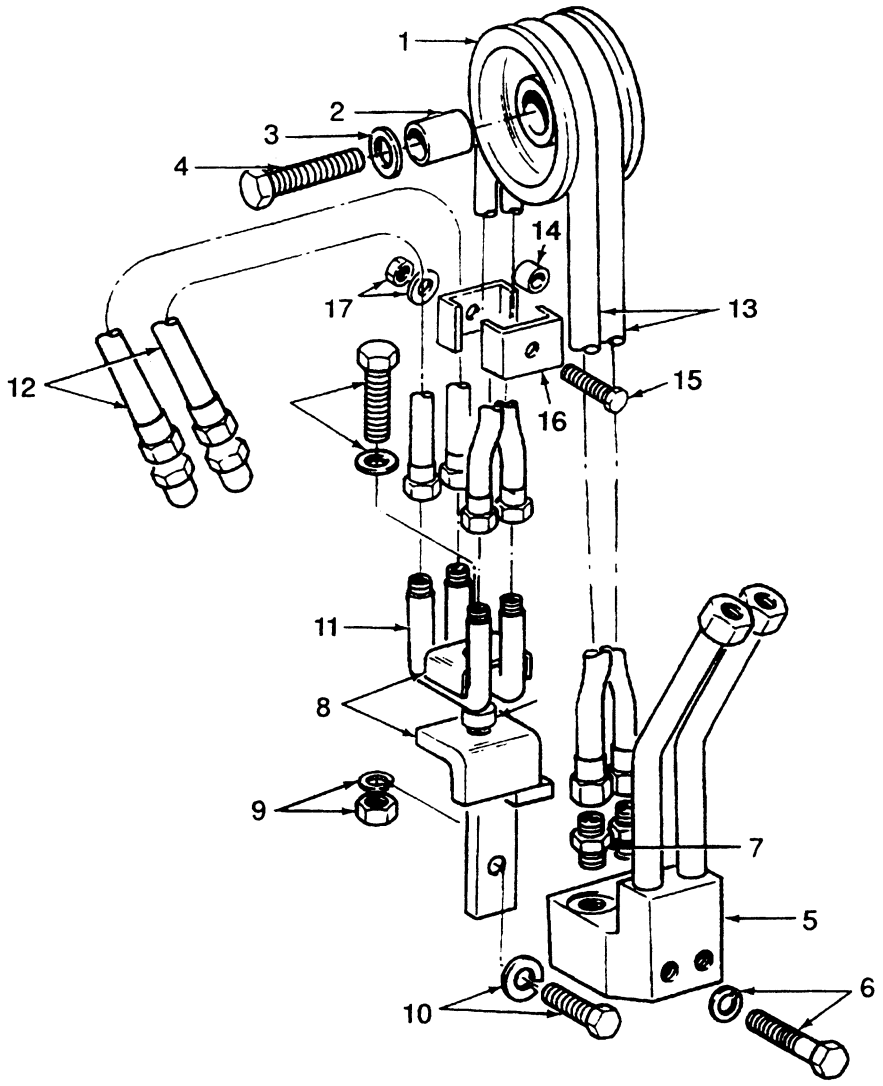
KEY
A: Three Function Valve
B: Four Function Valve

REF		PART NO.	NAME OF PART	QTY A	QTY B
1		15158	Lockwasher	2	4
2		16820	Capscrew	2	4
3	a	189447	Bracket (RH)	1	1
3	b	189458	Bracket (LH)	..	1
4		189451	Sheave	2	4
5		58903	Snap Ring	1	2
6		660424	Midline Reel	1	2
7		15154	Lockwasher	2	2
8		15054	Nut	4	4
9		637130	Clamp	1	1
10		637129	Flange	2	2
11		391263	Capscrew	8	8
12		189445	Bracket	1	2
13		16817	Capscrew	2	4
14		189464	Clamp	1	2
15		189452	Spacer	1	2
16		184641	Strap-Black	2	4
17		16541	Fitting	2	4
18	a	192929	Junction Block	1	1
18	b	192939	Junction Block	..	1
19		18452	Capscrew	2	4
20		189453	Spacer	1	2
21	c	189472	Hose	1	2
21	d	202913	Hose	1	2
21	e	189439	Hose	1	2
21	f	189473	Hose	1	2

[a] Right Hand
[b] Left Hand
[c] 98.5 (2502 mm) And 104.5 inch (2654 mm) Lift Height
[d] 110.5 (2807 mm) And 116.5 inch 2959 mm) Lift Height
[e] 122.5 (3112 mm) And 128.5 inch (3264 mm) Lift Height
[f] 142.5 (3620 mm) And 148.5 inch (3772 mm) Lift Height

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HEADER HOSE
INTERNAL
INTERMEDIATE FREE-LIFT MAST
(Figure 159)



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HEADER HOSE
INTERNAL
INTERMEDIATE FREE-LIFT MAST

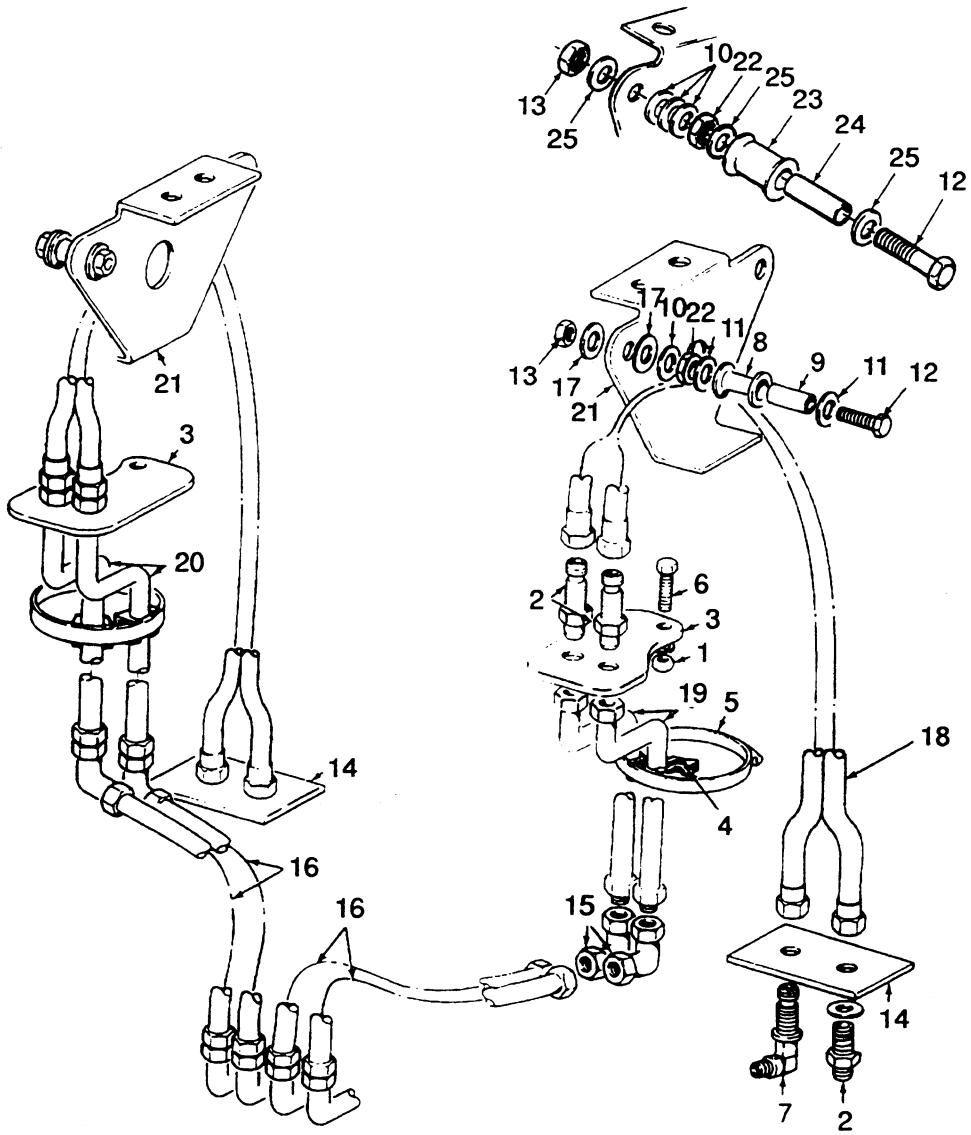
KEY
A: Three Function Valve
B: Four Function Valve

REF	PART NO.	NAME OF PART	QTY A	QTY B
1	332329	Sheave	1	2
1	104518	Bushing	1	2
2	277709	Spacer	1	2
3	15125	Washer	1	2
4	16644	Capscrew	1	2
5	[a] 276346	Junction Block	1	1
5	[b] 279113	Junction Block	..	1
6	16815	Capscrew	1	2
6	15156	Lockwasher	1	2
7	16540	Fitting	2	4
8	279103	Bracket	1	2
8	282463	Clamp	1	2
9	16828	Capscrew	1	2
9	15176	Washer	1	2
9	15905	Washer	1	2
9	15056	Nut	1	2
10	16805	Capscrew	1	2
10	15905	Washer	1	2
11	277704	Tube	2	4
12	279119	Hose	2	4
13	[cd] 282455	Hose	1	2
13	[ce] 279115	Hose	1	2
13	[fd] 282456	Hose	1	2
13	[fe] 279116	Hose	1	2
13	[gd] 282457	Hose	1	2
13	[ge] 279117	Hose	1	2
13	[hd] 282458	Hose	1	2
13	[he] 279118	Hose	1	2
14	304655	Spacer	2	4
15	18462	Capscrew	1	2
16	304656	Clamp	2	4
17	15127	Washer	1	2
17	169874	Locknut	1	2

[a] Right Hand
[b] Left Hand
[c] 98.5 (2502 mm) And 104.5 inch (2654 mm) Lift Height
[d] S60ES
[e] S30-50E
[f] 110.5 (2807 mm) And 116.5 inch 2959 mm) Lift Height
[g] 122.5 (3112 mm) And 128.5 inch (3264 mm) Lift Height
[h] 142.5 (3620 mm) And 148.5 inch (3772 mm) Lift Height

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HEADER HOSES
VISTA TWO-STAGE MAST
328000 SERIES
(Figure 160)



HEADER HOSES
VISTA TWO-STAGE MAST
328000 SERIES

KEY
A: Three Function Valve
B: Four Function Valve

REF		PART NO.	NAME OF PART	QTY A	QTY B
1		15054	Nut	2	4
2		16447	Fitting	3	6
3		315256	Plate	1	2
4		340053	Spacer	3	6
5		115696	Clamp	3	6
6		18471	Capscrew	2	4
7		16457	Fitting	1	2
8	a	320344	Roller	2	4
9	a	340005	Tube	2	4
10		18515	Washer	AR	AR
11	a	18515	Washer	4	8
12		344502	Capscrew	2	4
13		145639	Locknut	2	4
14		315295	Plate	1	2
15		16999	Fitting	2	4
16		337171	Hose	2	4
17		15175	Washer	4	8
18	b	.....	Header Hose	1	2
19	b	.....	Tube	2	2
20	b	.....	Tube	..	2
21		328464	Guard Plate	2	2
22		15055	Nut	2	4
23	c	341673	Roller	4	8
24	c	365795	Tube	2	4
25	c	18515	Washer	6	12

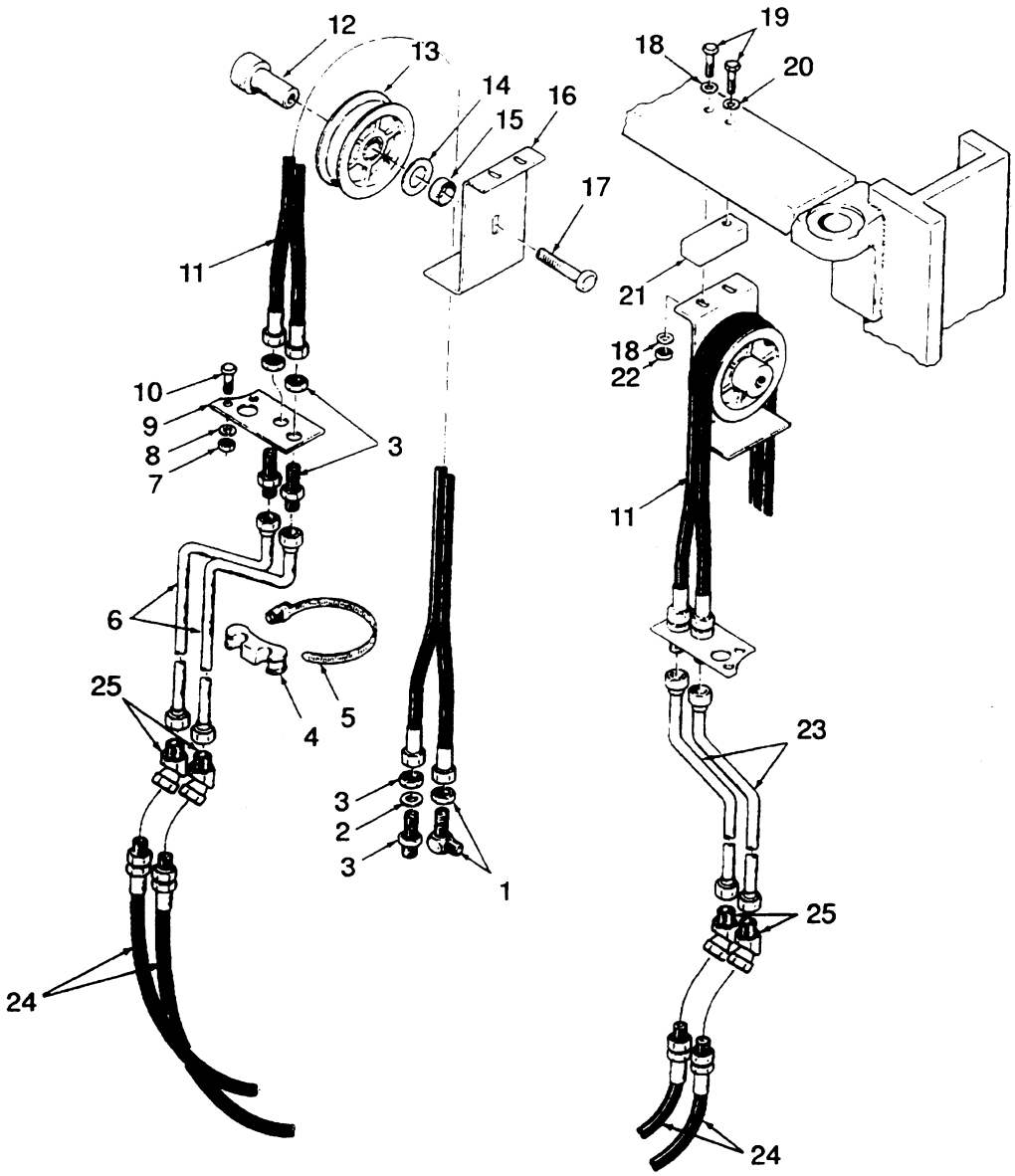
[a] 3/8 Inch Hose ID
[b] ☞ Chart Below
[c] 5/16 Inch Hose ID

REF NO		Lift Height To Bottom Of Forks							
	S30-50E	2960 mm	3260 mm	3760 mm	4260 mm	4560 mm	4860 mm	5160 mm	5460 mm
		116.5 inch	128.5 inch	148.0 inch	167.5 inch	179.5 inch	191.5 inch	203.0 inch	215.0 inch
	S60ES	2800 mm	3100 mm	3600 mm	4100 mm	4400 mm	4700 mm	5000 mm	.....
		110.0 inch	122.0 inch	141.5 inch	161.5 inch	173.0 inch	185.0 inch	197.0 inch	
18	Header Hose	[d] 315576 [e] 357404	[d] 315577 [e] 357405	[d] 315578 [e] 357406	[d] 315579 [e] 357407	[d] 315580 [e] 357408	[d] 315581 [e] 357409	[d] 315582 [e] 357410	[d] 315583 [e] 357411
19	Tube	342458	342459	342460	342461	342462	342453	342454	342455
20	Tube	342458	342459	342460	342461	342462	342466	342467	342468

[d] 3/8 Inch Hose ID
[e] 5/16 Inch Hose ID

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HEADER HOSES
VISTA TWO-STAGE MAST
372000 SERIES
(Figure 161)



HEADER HOSES
VISTA TWO-STAGE MAST
372000 SERIES

REF NO		Lift Height To Bottom Of Forks							
	S30-50E	2960 mm	3260 mm	3760 mm	4260 mm	4560 mm	4860 mm	5160 mm	5460 mm
		116.5 inch	128.5 inch	148.0 inch	167.5 inch	179.5 inch	191.5 inch	203.0 inch	215.0 inch
	S60ES	2800 mm	3100 mm	3600 mm	4100 mm	4400 mm	4700 mm	5000 mm	.....
		110.0 inch	122.0 inch	141.5 inch	161.5 inch	173.0 inch	185.0 inch	197.0 inch	
6	Tube	372443	372444	372445	372446	372447	372438	372439	372440
11	Hose	372508	372509	372510	372511	372512	372513	372514	372515
23	Tube	372443	372444	372445	372446	372447	372429	372430	372431

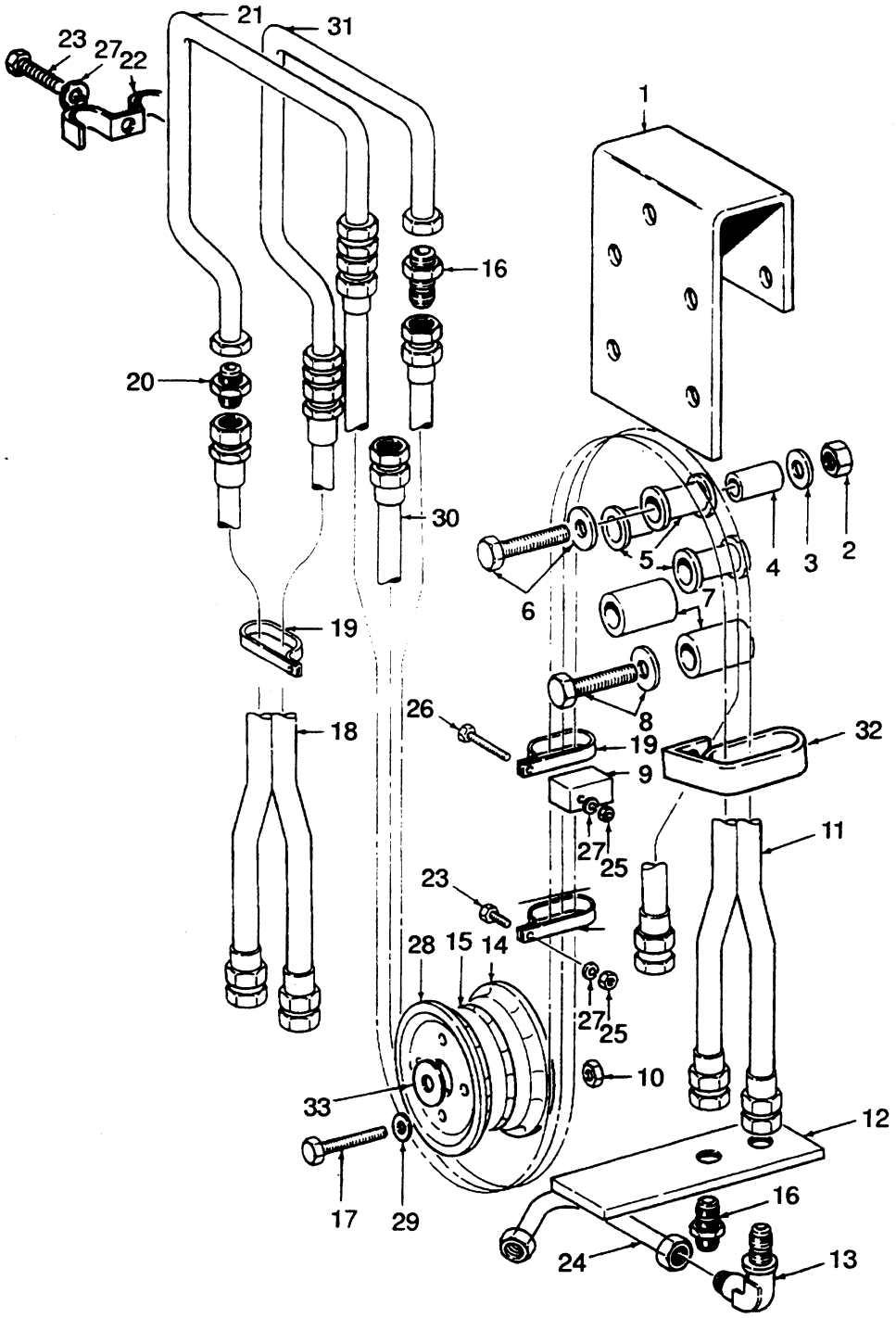
KEY
A: Three Function Valve
B: Four Function Valve

REF		PART NO.	NAME OF PART	QTY A	QTY B
1		16457	Fitting	1	2
1		14760	Adapter	1	1
2		15146	Washer	1	2
3		16447	Fitting	3	6
3		14760	Adapter	1	1
4		340053	Spacer	3	6
5		115696	Clamp	3	6
6	a	.....	Tube	2	2
7		15054	Nut	2	4
8		15154	Lockwasher	2	4
9		372450	Plate	1	2
10		18471	Capscrew	2	4
11	a	.....	Hose	1	2
12		318335	Shaft	1	2
13		309248	Sheave	1	2
14		15130	Washer	1	2
15		367279	Spacer	1	2
16		369272	Guard Plate	1	2
17		18538	Capscrew	1	2
18		296420	Washer	2	4
19		292519	Capscrew	2	4
20		292682	Lockwasher	1	2
21		369273	Guard Plate	1	2
22		136692	Nut	1	2
23	a	.....	Tube		2
24		337171	Hose	2	4
25		16999	Fitting	2	4

a ☞ Chart Above

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HEADER HOSES
VISTA THREE-STAGE MAST
THREE FUNCTION CONTROL VALVE
(Figure 162)



HEADER HOSES
VISTA THREE-STAGE MAST
THREE FUNCTION CONTROL VALVE

REF NO	S30-50E	Lift Height To Bottom Of Fork						
		3810 mm	4260 mm	4410 mm	4710 mm	5010 mm	.....	5460 mm
		150.0 inch	167.5 inch	173.5 inch	185.5 inch	197.0 inch		215.0 inch
	S60ES	3550 mm	4000 mm	4150 mm	4450 mm	4750 mm	5425 mm	.....
		140.0 inch	157.5 inch	163.5 inch	175.0 inch	187.0 inch	213.5 inch	
11	Header Hose	[a] 320547 [b] 360332	[a] 320548 [b] 360333	[a] 320549 [b] 360334	[a] 320550 [b] 360335	[a] 320551 [b] 360336	[a] 320554 [b] 360338	[a] 333390 [b] 360337
18	Hose	333353	333368	332164	333369	333371	332165	333372
30	Pilot Hose	358333	358334	320415	358336	358337	358339	358338

[a] Without Pilot Hose
[b] With Pilot Hose

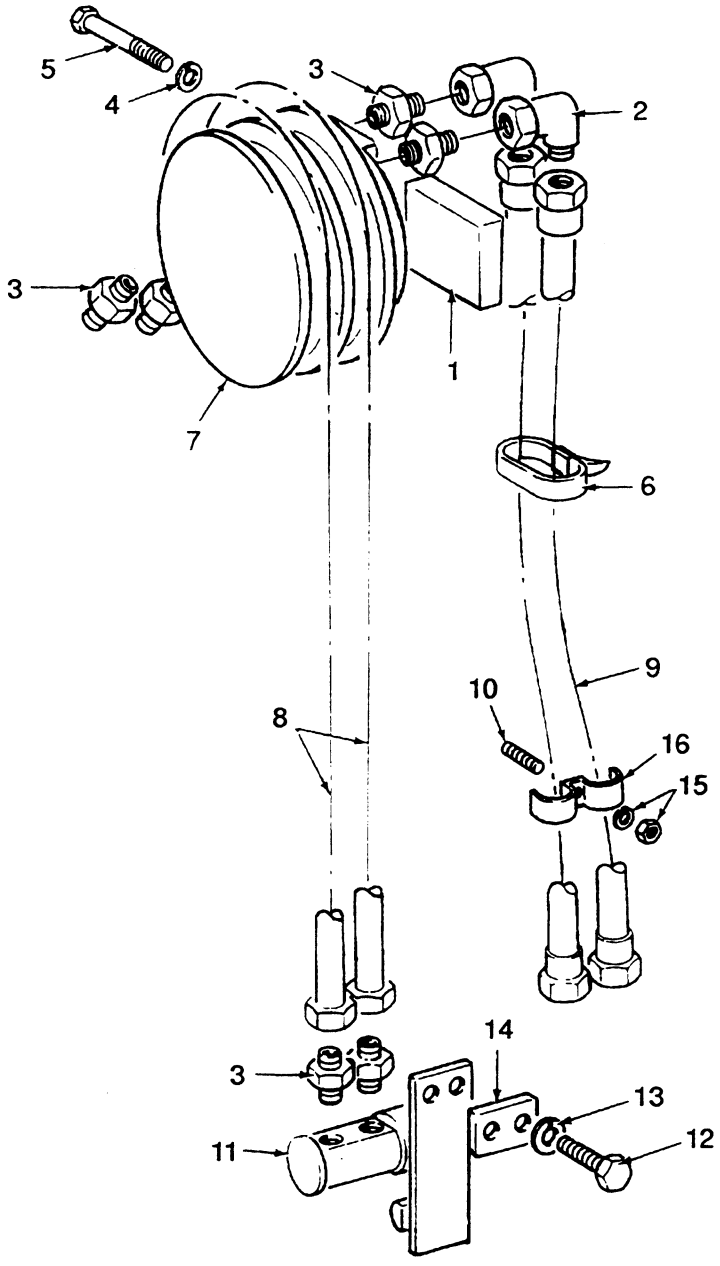
KEY
A: Without Pilot Hose
B: With Pilot Hose

REF		PART NO.	NAME OF PART	QTY A	QTY B
1		320346	Bracket	1	1
2		15055	Nut	3	3
3		86936	Flat Washer	AR	AR
4		320343	Tube	3	3
5		320344	Roller	3	3
6		18513	Capscrew	3	3
6		15155	Lockwasher	3	3
7		320342	Spacer	2	2
8		16816	Capscrew	2	2
8		15134	Washer	2	2
9		356095	Spacer	..	1
10		169874	Locknut	4	4
11	c	.....	Header Hose	1	1
12	d	320341	Plate	1	1
12	e	320684	Plate	1	1
12	f	320685	Plate	1	1
13		16457	Fitting	2	1
14	df	333394	Sheave Hub	1	..
14	e	347220	Hub	1	..
14		136045	Bushing	1	..
14		347220	Hub	..	1
14		136045	Bushing	..	1
15	df	280525	Ring	1	..
15	e	332173	Ring	1	..
15		332173	Ring	..	1
16		16447	Fitting	2	3
17		18343	Capscrew	4	4
18	c	.....	Hose	2	2
19		110322	Clamp	1	..
19		203230	Clamp	..	3
20		14691	Fitting	2	2
21		315728	Tube	1	..
21		356083	Tube	..	1
22		282463	Clamp	1	1
23		16805	Capscrew	1	2
24		348843	Tube	1	1
25		15056	Nut	..	2
26		18537	Capscrew	..	1
27		15156	Lockwasher	1	2
28	df	.....	Plate	1	..
28	e	347217	Plate	1	..
28		347217	Plate	..	1
29		15127	Washer	4	4
30	c	.....	Pilot Hose	..	1
31		315728	Tube	1	..
31		356084	Tube	..	1
32		79377	Clamp	1	..
33	e	333395	Washer	1	..

c ☞ Chart Above
d S30-50E Wide
e S30-50E Narrow
f S60ES

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HEADER HOSES
VISTA THREE-STAGE MAST NON-TWINLINE
FOUR FUNCTION CONTROL VALVE
(Figure 163)



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HEADER HOSE
VISTA THREE-STAGE NON-TWINLINE
FOUR FUNCTION CONTROL VALVE

REF	PART NO.	NAME OF PART	QTY
1	[a] 332154	Mount Block	1
1	[b] 189386	Mount Block	1
2	16989	Fitting	2
3	16541	Fitting	6
4	15158	Lockwasher	2
5	17114	Capscrew	2
6	129563	Strap	3
7	[c] 388165	Hose Reel (RH)	1
7	[d] 388167	Hose Reel (RH)	1
8	.....	Hose	2
		☞ Chart Below	
9	.....	Header Hose	2
		☞ Chart Below	
10	164506	Stud	1
11	[a] 388173	Junction Block	1
11	[b] 388172	Junction Block	1
12	16597	Capscrew	2
13	15156	Lockwasher	2
14	332155	Mount Block	1
15	15005	Nut	1
15	15155	Lockwasher	1
16	189359	Clamp	1

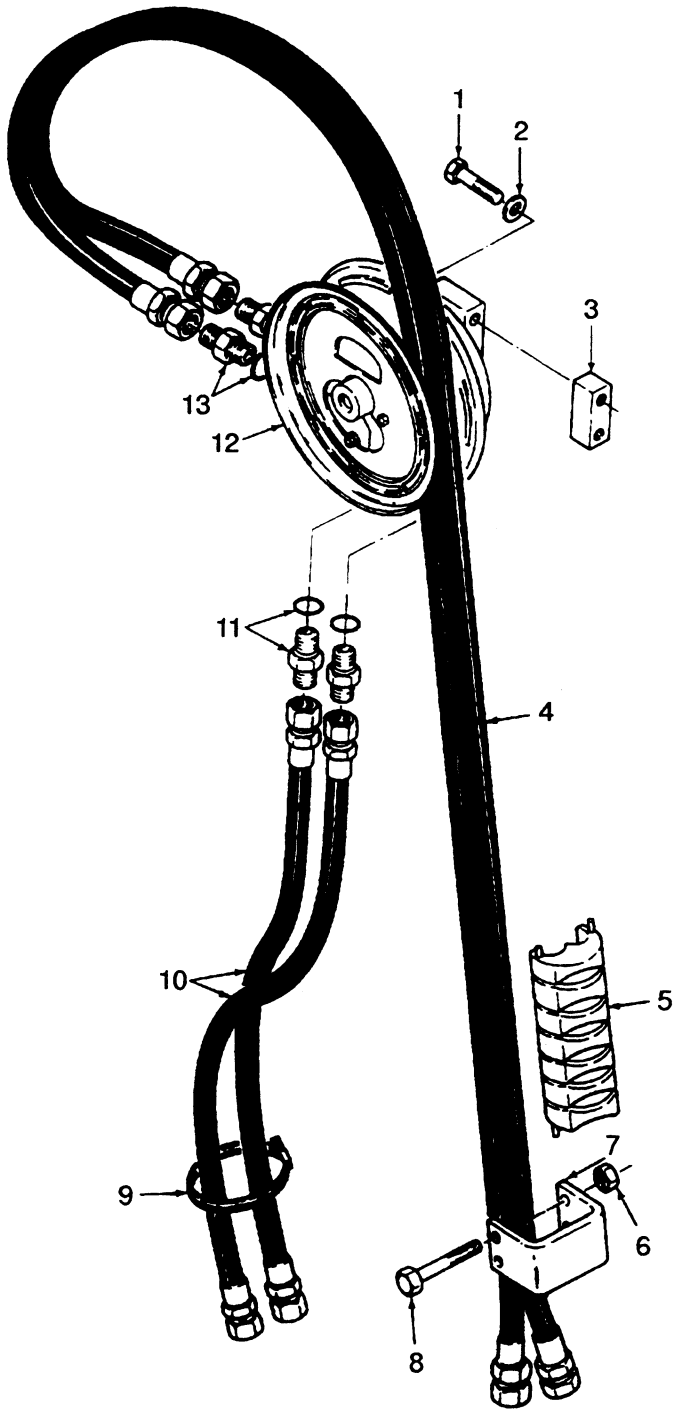
[a] S30-50E Narrow
[b] S30-50E Wide And S60ES
[c] 187 inch (4750 mm) And Below
[d] 197 inch (5010 mm) And Above

REF NO		Lift Height To Bottom Of Fork						
	S30-50E	3810 mm	4260 mm	4410 mm	4710 mm	5010 mm	.....	5460 mm
		150.0 inch	167.5 inch	173.5 inch	185.5 inch	197.0 inch		215.0 inch
	S60ES	3550 mm	4000 mm	4150 mm	4450 mm	4750 mm	5425 mm	.....
		140.0 inch	157.5 inch	163.5 inch	175.0 inch	187.0 inch	213.5 inch	
8	Header Hose	97962	229371	328963	252391	276637	252395	328964
9	Hose	111898	143891	99445	127842	274878	76230	276640

Note: Parts Shown In Figure 162 Are Also Required

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HEADER HOSES
VISTA THREE-STAGE TWINLINE
FOUR FUNCTION CONTROL VALVE
(Figure 164)



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HEADER HOSES
VISTA THREE-STAGE TWIN LINE
FOUR FUNCTION CONTROL VALVE

REF NO	S30-50E	Lift Height To Bottom Of Fork						
		3810 mm	4260 mm	4410 mm	4710 mm	5010 mm	.....	5460 mm
		150.0 inch	167.5 inch	173.5 inch	185.5 inch	197.0 inch		215.0 inch
	S60ES	3550 mm	4000 mm	4150 mm	4450 mm	4750 mm	5425 mm	.....
		140.0 inch	157.5 inch	163.5 inch	175.0 inch	187.0 inch	213.5 inch	
4	Header Hose	323190	323190	323190	323190	360337	360337	360337
10	Hose	111898	143891	99445	127842	274878	7623	276640

REF		PART NO.	NAME OF PART	QTY
1		292533	Capscrew	2
2		320161	Washer	2
3		354472	Plate-Mtg	1
4	a	.....	Header Hose	1
5		340047	Strain Relief	1
6		313805	Nut	2
7		337229	Bracket	1
8		337239	Capscrew	2
9		129563	Strap	3
10	a	.....	Hose	2

REF	PART NO.	NAME OF PART	QTY
11	131460	Fitting	2
11	16483	O-Ring	1
12	323187	Hose Reel	1
13	16540	Fitting	2
13	16483	O-Ring	1

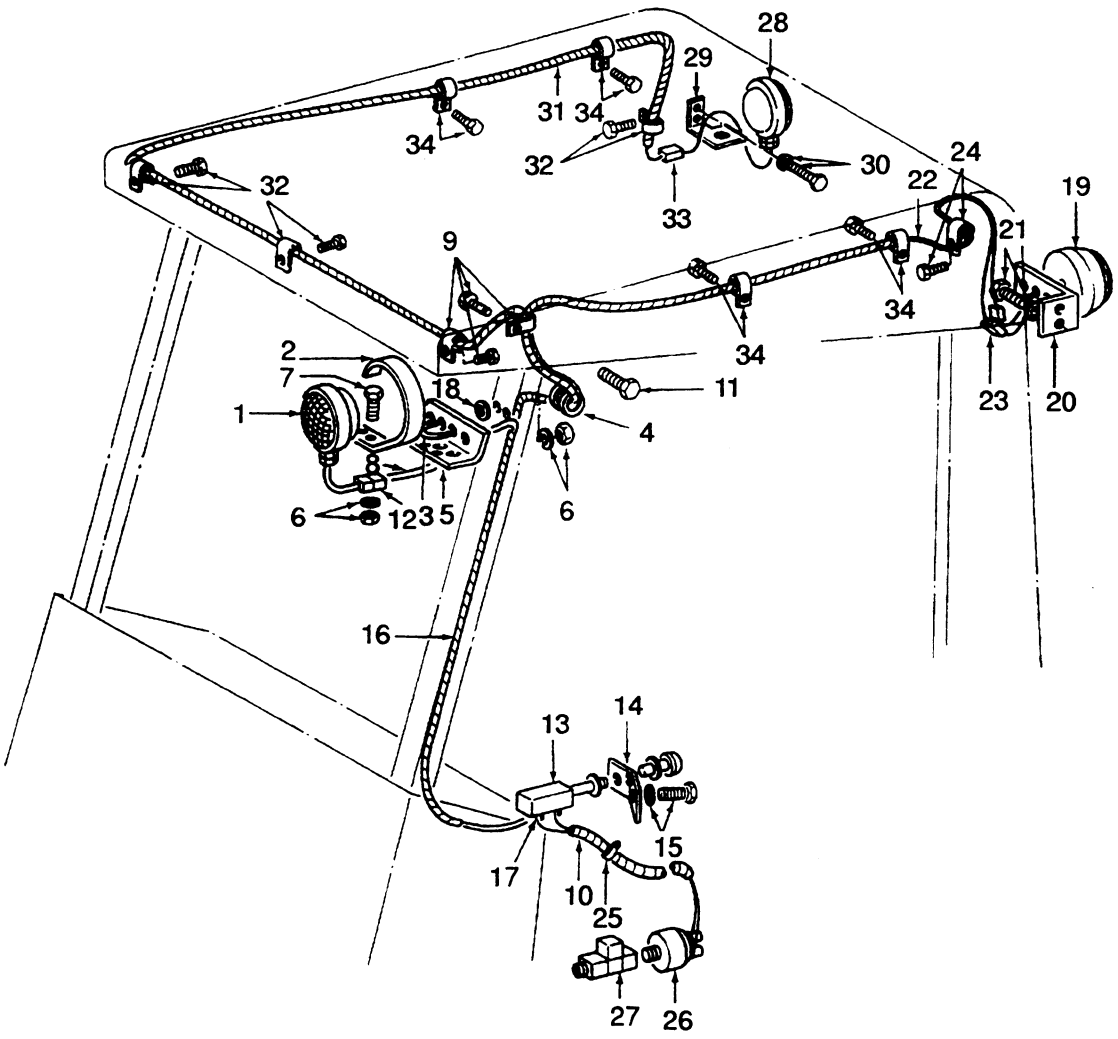
a ☞ Chart Above

Note: Parts Shown In Figure 162 Are Also Required

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LIGHTS

(Figure 165)



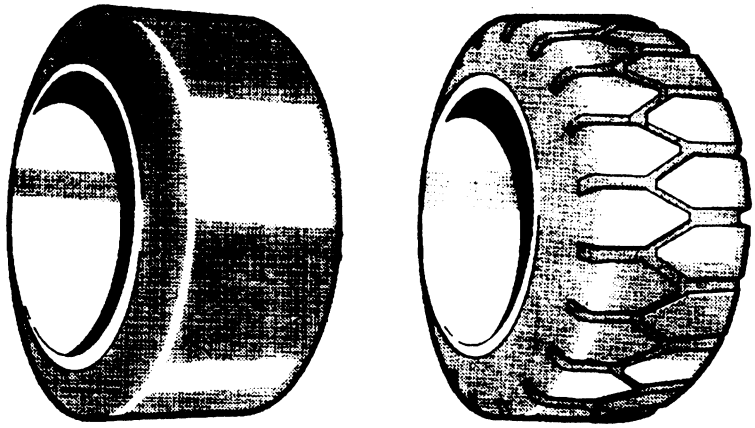
LIGHTS

REF	PART NO.	NAME OF PART	QTY
1	146843	Light	2
2	372141	Bracket	2
3	349683	U-Bolt	2
4	108464	Grommet	2
5	349684	Brace	2
6	15156	Lockwasher	6
6	15056	Nut	6
7	16805	Capscrew	2
8	241147	Wire	1
9	18903	Clamp	2
9	223029	Screw	4
10	241880	Wire	1
11	223029	Screw	1
12	134812	Connector	2
12	134810	Terminal	2
12	181046	Connector	2
12	181045	Connector	2
13	62886	Light Switch	1
14	241877	Bracket	1
15	187742	Capscrew	2
15	15155	Lockwasher	2
16	264117	Wire	1
17	148606	Plug Terminal	1
18	15908	Lockwasher	2
19	147946	Stop and Tail Light	1
20	241148	Bracket	1
21	15156	Lockwasher	2
21	227193	Screw	2
22	241142	Wire Harness	1
23	134812	Connector	2
23	181046	Connector	2
24	18903	Clamp	1
24	223029	Screw	1
25	137852	Strap	6
26	196506	Pressure Switch	1
27	16186	Fitting	1
28	146843	Light	1
29	319297	Bracket	1
30	15156	Lockwasher	2
30	227193	Screw	2
31	241147	Wire	1
32	60376	Clamp	5
32	223029	Screw	5
33	134812	Connector	1
33	134810	Terminal	1
33	181046	Connector	1
33	181045	Connector	1
34	18903	Clamp	6
34	223029	Screw	6

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TIRE AND WHEELS

(Figure 166)



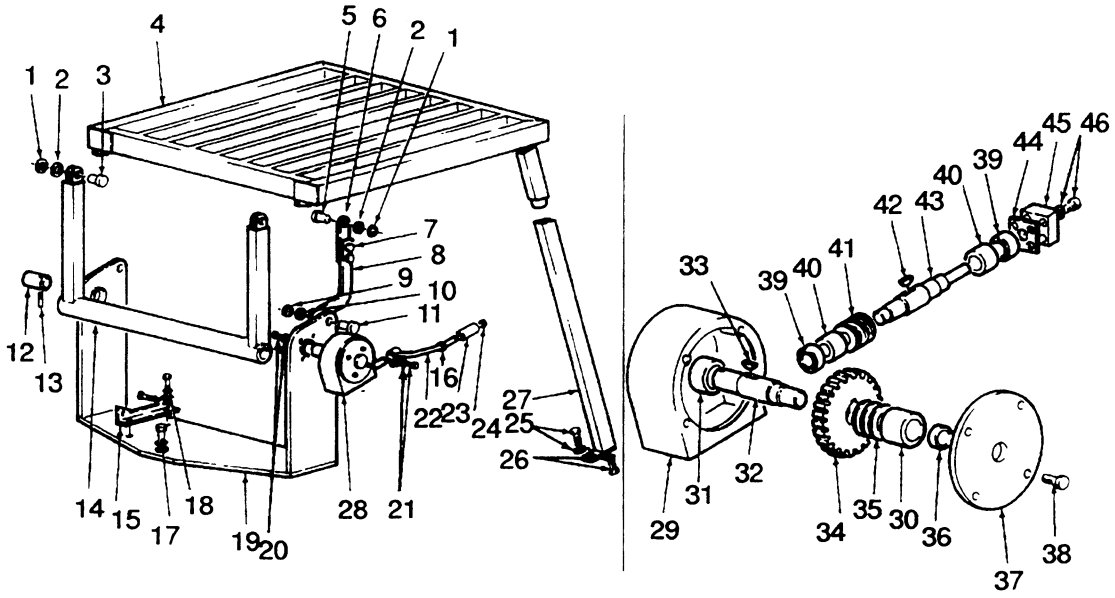
PLAIN TREAD					
DRIVE	RUBBER	POLY-URETHANE	NON MARKING	LUG TREAD	WHEEL
S30E 18 X 7 X 12 1/8	181481	.....	.....	.....	184155
S40E 18 X 8 X 12 1/8	181483	237198	237212	105905	184155
S50E 18 X 9 X 12 1/8	181485	237200	237214	113862	184155

DRIVE	LOW PROFILE	WHEEL	RIM
S30E-S40E 18 X 8 X 14	178590	184171	223943
S50E-S60ES 18 X 9 X 14	178591	184171	223943

PLAIN TREAD				
STEERING	RUBBER	POLY-URETHANE	NON MARKING	WHEEL
S30E-S40E 16 X 5 X 10 1/2	181477	.....	.....	184183
S50E-S60ES 16 X 6 X 10 1/2	181479	237194	237208	184183

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OVERHEAD GUARD
RETRACTABLE
(Figure 167)



REF		PART NO.	NAME OF PART	QTY
1		58929	Snap Ring	4
2		15136	Washer	4
3		215838	Anchor Pin	2
4		281627	Cover	1
5		119661	Pin	2
6		265434	Bar	2
7		16805	Capscrew	4
7		15176	Washer	4
8		265431	Plate	2
9		58933	Snap Ring	2
10		15133	Washer	2
11		126692	Pin	2
12		264656	Pin	1
13		226701	Groove Pin	2
14		281625	Power Arm	1
15	a	264632	Bracket	2
16		62786	Bushing	1
17		15162	Lockwasher	3
17		18624	Capscrew	3
17		15197	Washer	3
18	a	16805	Capscrew	4
18	a	15156	Lockwasher	4
18	a	15176	Washer	4
19		281626	Support	1
20		18508	Bolt	4
20		15155	Lockwasher	4
21		16815	Capscrew	1
21		15134	Washer	1
21		15056	Nut	1
22		275314	Handle	1
23		219971	Knob	1
24		58930	Snap Ring	1

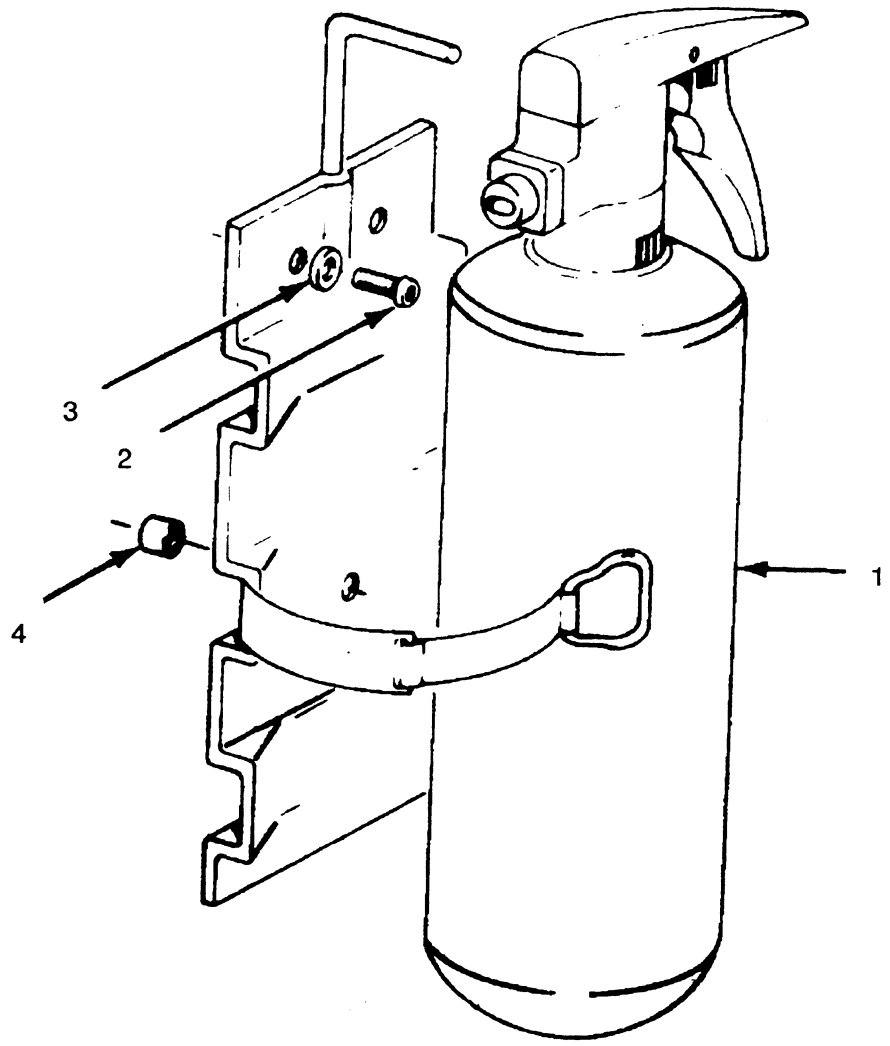
REF		PART NO.	NAME OF PART	QTY
25		15162	Lockwasher	2
25		18620	Capscrew	2
26		15178	Washer	2
26		18588	Capscrew	1
27		265545	Tube (RH)	1
27		265546	Tube (LH)	1
28		261086	Winch	1
29		261062	Housing	1
30		261073	Tube	1
31		261082	Bushing	1
32		261078	Shaft	1
33		40627	Woodruff Key	1
34		261074	Worm Gear	1
35		135173	Shim-.005 inch	AR
35		135172	Shim-.007 inch	AR
35		135171	Shim-.020 inch	AR
36		106223	Bushing	1
37		261067	Cover	1
38		18465	Capscrew	4
39		264605	Bearing Cup	2
39		264604	Bearing Cone	2
40		261069	Tube	2
41		261071	Worm	1
42		6647	Key	1
43		261070	Shaft	1
44		85499	Shim-.005 inch	AR
44		85500	Shim-.007 inch	AR
44		261093	Shim-.020 inch	AR
45		261068	Cover	1
46		18498	Capscrew	4
46		15155	Lockwasher	4

[a] LPG

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FIRE EXTINGUISHER

(Figure 168)



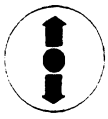
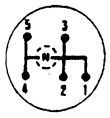
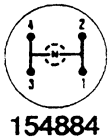
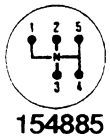
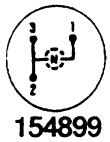
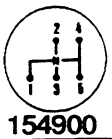
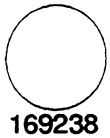
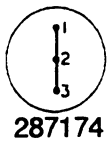
REF	PART NO.	NAME OF PART	QTY
1	146540	Extinguisher	1
2	227180	Screw	3
2	[a] 227182	Screw	3
3	15923	Washer	3
4	[a] 49309	Spacer	1

[a] Types GS, LPS, DS

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CONTROL KNOBS

(Figure 169)

POWER DISCONNECT PUSH  1141628	FORWARD-REVERSE  154878	LIFT/SWING  154879	SIDE-SHIFT LOAD GRAB  154881	FIVE SPEED  154882
FOUR SPEED  154884	FIVE SPEED  154885	LOW-HIGH  154886	LIFT/TILT  154887	THREE SPEED  154888
HIGH-LOW  154889	ROTATOR  154890	LOAD GRAB  154891	SIDE-SHIFT  154892	SIDE-SHIFT LOAD GRAB  154893
LOAD GRAB/ROTATOR  154894	LOAD PUSH-PULL SIDE-SHIFT  154895	LOAD GRAB SIDE-SHIFT  154896	ROTATOR/LOAD GRAB  154897	THREE SPEED  154899
FIVE SPEED  154900	SIDE-SHIFT/ROTATOR  154902	LIFT  154904	TILT  154905	LOAD PUSH-PULL  154906
TRIP-RESET  154907	ROTATE/TRIP-RESET  154908	THREE SPEED  158747	SIDE-SHIFT/LOAD PUSH PULL  161917	REVERSE-FORWARD  168597
FORK POSITION  169237	BLANK  169238	BRAKE OFF/ON-INCH  172744	REV-FWD BRAKE OFF/INCH  172747	THREE SPEED  175212
REACH-RETRACT  193725	SIDE-SHIFT/FORK POSITION  280491	FAST/SLOW  284077	THREE SPEED  287174	FIVE SPEED  316528

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NOTES

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	313	4		60	59	15026	115	14		148	12		5	15
	315	4	14385	21	1		124	7		149	2		89	42
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6647	345	42		57	28		147	27		157	27	15130	335	14
7623	341			59	44		214	39		179	19	15133	345	10
7882	22	42	14465	51	18		214	41		181	21	15134	155	47
	26	42	14466	214	24		45	27		19	45		157	26
	43	3	14479	179	57		69	31		271	19		19	24
12487	47	12		181	8	15027	125	8		287	13		269	12
12815	19	54		305	15		45	27		289	17		271	20
12838	151	34	14491	240	29	15028	132	13		307	7		337	8
	86	47		244	29		161	4		311	7		345	21
	86	56	14548	181	34	15039	152	11		331	9		57	18
12891	214	7	14591	137	19		96	25		337	25		5	42
	224	30	14594	179	27		99	20		343	6		60	54
	228	30		181	48	15049	113	31		345	21		79	21
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	214	35	14677	181	57		82	22		52	25		86	99
	217	9	14691	179	58		93	25		57	10		90	53
	224	29		181	13		93	26		59	11	15135	11	16
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14241	109	19	15004	55	27		114	6		111	6	15152	100	8
	111	17		81	4		179	49		125	12		103	16
14251	151	31	15005	339	15		181	19		125	4		103	9
14269	137	27		43	24		333	22		126	24		11	2
	139	31		73	27		337	2		126	5		11	62

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