

PARTS MANUAL

CHALLENGER

H70-110XL

H90XLS

(H3.50-5.00XL)

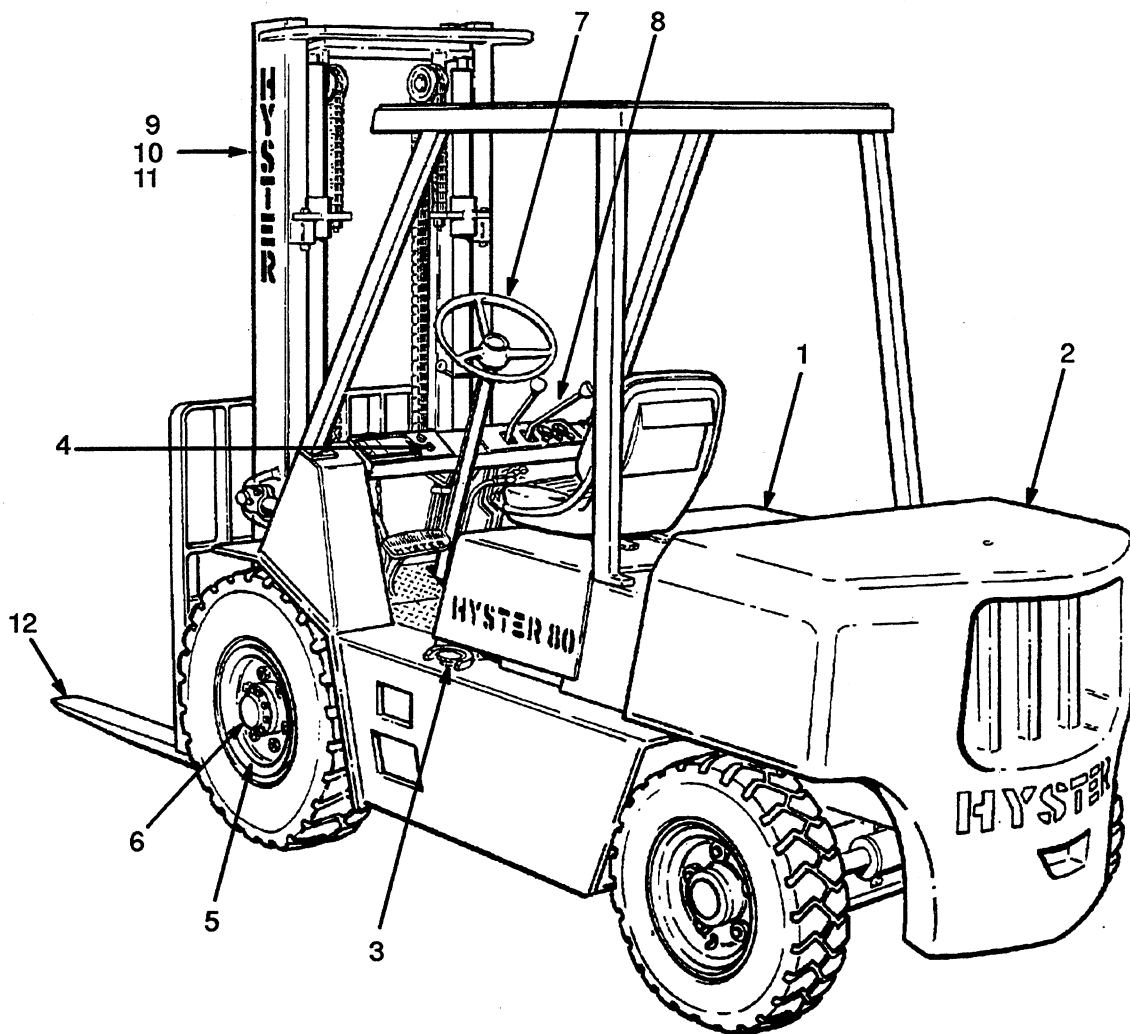
(H4.00XLS-6)

(F5)

CUSTOMER EDITION

HYSTER

ILLUSTRATED CONTENTS



REF	ITEM	PAGE
1	FRAME	5
2	ENGINE	17
3	FUEL	77
4	ELECTRICAL	129
5	TRANSMISSION	183
6	BRAKE	215
7	STEERING	229
8	HYDRAULIC	243
9	MAST-VISTA TWO-STAGE LIMITED FREE LIFT	265
10	MAST-VISTA THREE-STAGE FULL FREE LIFT	281
11	MAST-VISTA TWO-STAGE FULL FREE LIFT	304
12	OPTIONAL	321
13	NUMERICAL INDEX	381

TABLE OF CONTENTS

<u>DESCRIPTION</u>	<u>PAGE NO.</u>
A	
ALTERNATOR	156
ALTERNATOR	158
ALTERNATOR	160
AIR	124
AXLE-DRIVE	210
AXLE - STEERING	240
B	
BLOCK - CYLINDER	24
BLOCK - CYLINDER	26
BLOCK - CYLINDER	28
BLOCK - CYLINDER	50
BOOSTER - BRAKE	228
BRAKE	224
BRAKE	226
BRAKE - PARK	216
C	
CAMSHAFT/CRANKSHAFT/PAN - OIL	36
CAMSHAFT/CRANKSHAFT/PAN - OIL	38
CAMSHAFT/CRANKSHAFT/PAN - OIL	40
CARBURETOR	92
CARBURETOR	93
CARRIAGE - SIDE-SHIFT	330
CARRIAGE	276
CARRIAGE	278
CARRIAGE	299
CARRIAGE	301
CARRIAGE	317
CARRIAGE	319
CLUTCH	189
COLUMN - STEERING	234
COLUMN - STEERING	235
COLUMN - STEERING	236
CONVERTER - TORQUE	96
CONVERTER	96

TABLE OF CONTENTS

DESCRIPTION	PAGE NO.
C	
COOLING	20
COOLING	46
COUNTERWEIGHT	13
COVER - VALVE/SHAFT - ROCKER	66
CRANKSHAFT/PISTONS	54
CYLINDER - LIFT	272
CYLINDER - LIFT	295
CYLINDER - LIFT	297
CYLINDER - LIFT	313
CYLINDER - LIFT	315
CYLINDER - STEERING	242
CYLINDER - TILT	250
D	
DIFFERENTIAL	212
DISTRIBUTOR	140
DISTRIBUTOR	141
E	
ELECTRIC CHOKE	154
ELECTRICAL	130
ELECTRICAL	132
ELECTRICAL	136
ELECTRICAL	138
ELECTRICAL	142
EXHAUST	74
EXTENSION - LOAD BACKREST	16
F	
FILTER - AIR	114
FILTER - AIR	116
FILTER - AIR	118
FILTER - AIR	120
FILTER - AIR	122
FILTER - AIR	126
FILTER - LOCK-OFF	96
FILTER - WATER SEPARATOR	105

TABLE OF CONTENTS

DESCRIPTION	PAGE NO.
F	
FILTER-OIL	56
FLOORPLATES/FENDERS	10
FUEL - LOW PRESSURE	106
FUEL - LOW PRESSURE	108
FUEL TANK	78
FUEL	82
FUEL	84
FUEL	86
FUEL	88
G	
GAUGE-CLUSTER	52
GAUGE-CLUSTER	53
GEARS - TRANSMISSION	84
GEAR-TIMING	58
GEAR-TIMING	60
GUARD - OVERHEAD	12
H	
HEAD - CYLINDER	30
HEAD - CYLINDER	32
HEAD - CYLINDER	34
HEAD - CYLINDER	52
HOOD	8
HOUSING - FLYWHEEL	19
HOUSING - TRANSMISSION	186
HYDRAULIC - CHARGE PUMP	246
HYDRAULIC - STEERING	230
HYDRAULIC - STEERING	232
HYDRAULIC SYSTEM	244
I	
INJECTION - FUEL	110
INJECTION - FUEL	112
INJECTOR - THROTTLE BODY	94
J	
JOINT-UNIVERSAL	109

TABLE OF CONTENTS

<u>DESCRIPTION</u>	<u>PAGE NO.</u>
L	
LABELS/PAINT	14
LIFT	270
LIFT	288
LIFT	290
LIFT	309
LIFT	311
LINKAGE - BRAKE	218
LINKAGE - BRAKE	220
LINKAGE - BRAKE	222
LINKAGE - FORWARD/REVERSE SHIFT LEVER	202
LINKAGE - FORWARD/REVERSE SHIFT LEVER	204
LINKAGE - THROTTLE	101
LINKAGE - THROTTLE	98
LINKAGE-CONTROL	190
M	
MANIFOLDS	68
MAST	66
MAST	268
MAST	286
MAST	282
MAST	284
MAST	305
MAST	307
MOUNTS - ENGINE	18
P	
PACK - CLUTCH	198
PAN - OIL/PUMP - OIL	62
PAN - OIL/PUMP - OIL	64
PANEL - INSTRUMENT	50
PANEL-INSTRUMENT	146
PEDAL - CLUTCH	188
PEDAL - MONOTROL	208
PEDAL - THROTTLE	102
PEDAL - THROTTLE	103

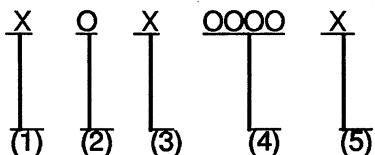
TABLE OF CONTENTS

DESCRIPTION	PAGE NO.
P	
PIPING - TRANSMISSION	207
PUMP - CHARGE	248
PUMP - HAND	238
PUMP - HYDRAULIC	249
PUMP - LIFT	104
PUMP - OIL	42
PUMP - OIL	43
PUMP - OIL	44
PUMP - WATER	70
PUMP - WATER	72
R	
REDUCER - SPEED	100
S	
SEAT	6
SERVICE REPAIR KITS	3
STARTER	162
STARTER	164
STARTER	166
SWITCH - FORWARD/REVERSE	206
T	
TANK - FUEL	80
TANK - FUEL	90
TRANSMISSION	194
V	
VALVE - TRANSMISSION CONTROL	192
VALVE/ATTACHING PARTS	252
VALVE/ATTACHING PARTS	256
VALVE/ATTACHING PARTS	260
VALVE	254
VALVE	258
VALVE	262
W	
WIRE HARNESS	168
WIRE HARNESS	170

TABLE OF CONTENTS

<u>DESCRIPTION</u>	<u>PAGE NO.</u>
W	
WIRE HARNESS	174
WIRE HARNESS	176
WIRE HARNESS	178
WIRE HARNESS	80
WIRE HARNESS	181

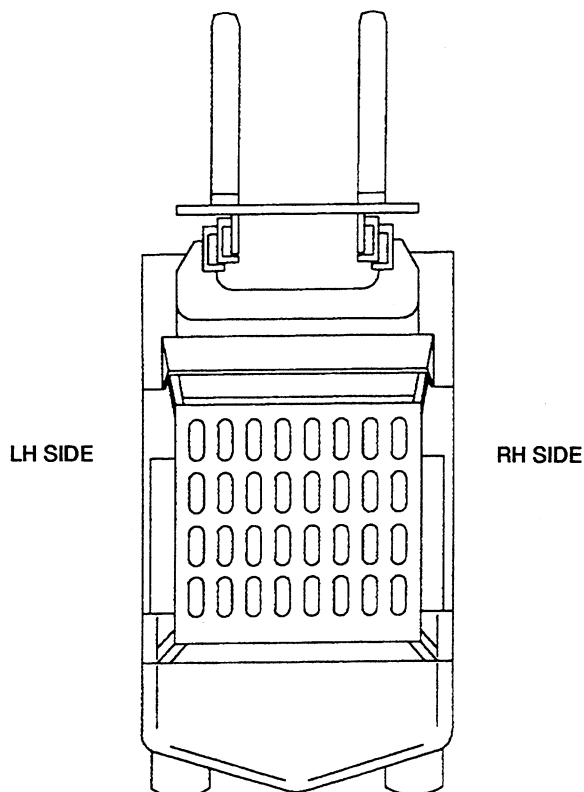
IDENTIFICATION - UNIT UNIT S/N



- (1) & (2) The first letter and number denote the design series and model of the unit
- (3) The second letter denotes the Plant at which the unit was manufactured
- (4) The number series denotes the serial number of the unit
- (5) The final letter denotes the year of manufacture starting with "A" in 1957 and 1980 The letters "I", "O", and "Q" will not be used

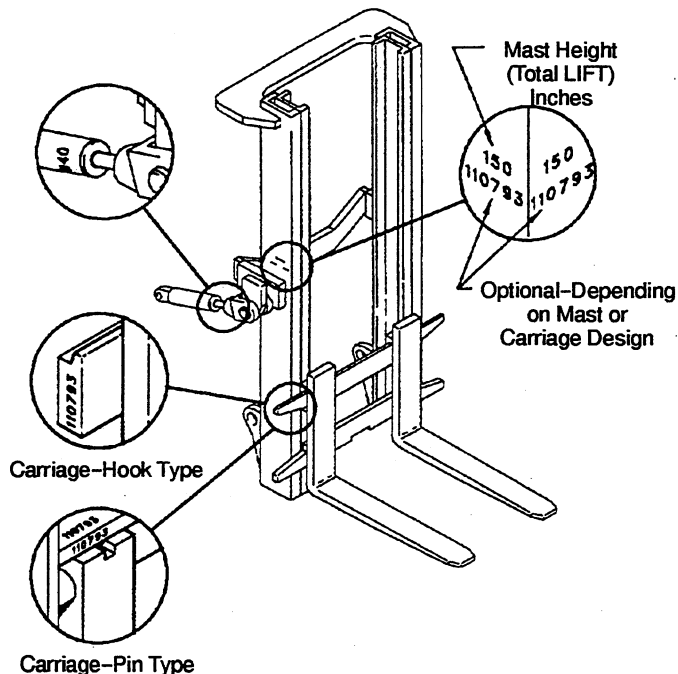
For pending serial numbers contact your local Hyster Dealer

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



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.



HOW TO USE THE ILLUSTRATED PARTS MANUAL

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

It also includes all parts peculiar to trucks built in overseas plants. These parts are indicated by keys, symbols and footnotes.

INDEX-MASTER

DESCRIPTION	PAGE
Accelerator	18-28
Accumulator	14-25
Asse-Drive	42-43
Asse-Steering	42-43
Brake	
Brake-Park, Lever Actuated	
Brake-Park, Seal Actuated	
Carriage Side-Drive	
Carriage Mast Two-Stage Full Free Lift	
Carriage Mast Two-Stage Limited Free Lift	

INDEX-NUMERICAL

PART NO.	FIGURE NO.	REF. NO.	PART NO.	FIGURE NO.	REF. NO.	PART NO.	FIGURE NO.	REF. NO.
368282	43	1	370128	42	11	373206	11	14
368288	46	1				373207	82	
368291	47	2				373211	70	1
368615	46	1	370251	43	11	373220	66	1
368616	54	1	370252	1		373221	66	1
368618	30	2	370253	1		373222	66	1
368619	47	2	370254	1		373223	66	1
368642	48	8	370255	1		373224	66	1
368643	42	8	370256	1		373225	66	1
368658	43	8	370257	1		373226	66	1
368659	36	2	370258	1		373227	66	1

ILLUSTRATED CONTENTS

REF.	ITEM	PAGE
1	FRAME	13
2	ENGINE	27
3	FUEL	83
4	ELECTRICAL	135
5	TRANSMISSION	189
6	BRAKE	219
7	STEERING	233
8	HYDRAULIC	247
9	MAST-VISTA TWO-STAGE LIMITED FREE LIFT	269
10	MAST-VISTA THREE-STAGE FULL FREE LIFT	285
11	MAST-VISTA TWO-STAGE FULL FREE LIFT	307
12	OPTIONAL	325
13	NUMERICAL INDEX	383

SEAT
LAST USED ON PENDING S/N PER ECN 96020

KEY

KEY	DESCRIPTION
A	Without Seat Actuated Park Brake And Without Operator Restraint
B	With Seat Actuated Park Brake And Without Operator Restraint
C	Without Seat Actuated Park Brake And With Operator Restraint
D	With Seat Actuated Park Brake And With Operator Restraint

REF. PART NO.	NAME OF PART	A	B	C	D	REF. PART NO.
1	364911 Chevrolet Seat	1	1	1	1	10
1	365276 Fabric Seat	1	1	1	1	11
2	365434 Suspension Seat	1	1	1	1	12
2	374371 Suspension Seat	1	1	1	1	13
2	1349227 Suspension Seat	1	1	1	1	14
2	1349227 Suspension Seat	1	1	1	1	14
3	325361 Cushion	1	1	1	1	15
4	325361 Cushion	2	2	2	2	15
4	325364 Spring-Tension	1	1	1	1	1
5	325363 Spring-Tension	1	1	1	1	1
6	325363 Spring-Tension	1	1	1	1	1
7	325376 Fan-Seat	1	1	1	1	1
8	325359 Splacke-Adj.	1	1	1	1	1
9	325352 Knob-Lever	1	1	1	1	1

HYSTER COMPANY
1/8/93

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

1. USE: Determine the function and application of the part required. Turn to the Illustrated Index page immediately behind the front cover, and select the most appropriate area.
2. Use the Division Index to determine the assembly which would normally contain the part required. Proceed then to 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 page immediately following the Illustrated Index.
4. Locate the assembly the required part is used on and turn to the page indicated for that assembly. Proceed then to locate the part on the assembly breakdown page.

WHEN THE PART NUMBER IS KNOWN;

5. Use the Numerical Index 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 similiar 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 subparts of assemblies. A major assembly is not indented. Parts under the first, second, or third indent are sub-parts of the major assembly shown above them.
8. Quantities shown are for one assembly. Note that two assemblies are shown, but the quantities of the subparts are indicated as three and three. This means three per 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.

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.

Figure 1. 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.

PUBLICATION	HYSTER PART NUMBER
Operating Manual	
English (U.S.)	897364
English (Non-U.S.)	897360
Spanish	853621
French	853619
German	853620
Dutch	853622
Italian	853623
Portugese	853625
Service Manual (complete)	897135
The Frame (100 SRM 345)	897126
GM Engine (600 SRM 104)	599805
The Perkins Engine 4.236, 4.2482 (600 SRM 105)	910150
Perkins Diesel Engines - 1000 Series (600 SRM 412)	897341
Gasoline Fuel System (900 SRM 347)	897128
The LPG System (900 SRM 348)	897129
The Oil Clutch System (1200 SRM 334)	897116
The Manual Transmission (1300 SRM 335)	897117
The Single-Speed Powershift Transmission - Description and Operation (1300 SRM 336)	897118
Repairs (1300 SRM 337)	897119
Speed Reducer and Differential (1300 SRM 346)	897127
The Drive Axle (1400 SRM 361)	897180
The Steering Control Unit (1600 SRM 54)	910076
The Steering Axle (1600 SRM 326)	897108
The Brake System (1800 SRM 338)	897120
Hydraulic System (1900 SRM 333)	897115
Hydraulic Gear Pumps (1900 SRM 97)	910091
The Hydraulic Pump Drive Assembly (1900 SRM 339)	897121
The Main Control Valve (2000 SRM 77)	899782
The Tilt Cylinders (2100 SRM 103)	910102
The Alternator (2200 SRM 2)	899784
The Starter (2200 SRM 106)	910110
The High Energy Ignition System (2200 SRM 107)	897122
Electronic Engine Control	
Description and Operation (2200 SRM 473)	897435
Troubleshooting and Repair (2200 SRM 468)	897420
Electrical Gauges, Meters and Senders (2200 SRM 143)	910110
The Mast (4000 SRM 340)	897123
Lift Cylinders (4000 SRM 135)	910119

CONTINUED ON NEXT PAGE

PUBLICATIONS

CONTINUED FROM PRIOR PAGE

Service Manual (complete), continued	897135
Periodic Maintenance (8000 SRM 341)	897123
Capacities and Specifications (8000 SRM 342)	897124
Diagrams (8000 SRM 343)	897084
Diagrams (with Electronic Engine Control) (8000 SRM 494)	897471
Inch (SAE) and Metric Fasteners (8000 SRM 231)	910442
Parts Manual	852111
Operator Training Program	
Operator Training Kit Complete	
Slide Format with Carry Case	582802
1/2" VHS Format with Carry Case	852165
"Safety is an Attitude" (1/2" VHS)	852690
"Safety Rules" Playing Cards	852695
Sold Alone Kit Catalog	852505
Guide For Users Of Industrial Lift Trucks	852930

Figure 2. SERVICE REPAIR KITS

Brake Overhaul Kit	996026
Cooling System Kit	996018
Steer Axle Repair Kit	996024
Tune-Up Kit (HEI)	996015
Tune-Up Kit (HEI)	996106

FRAME

COUNTERWEIGHT 13

EXTENSION-LOAD BACKREST 16

FLOORPLATES/FENDERS 10

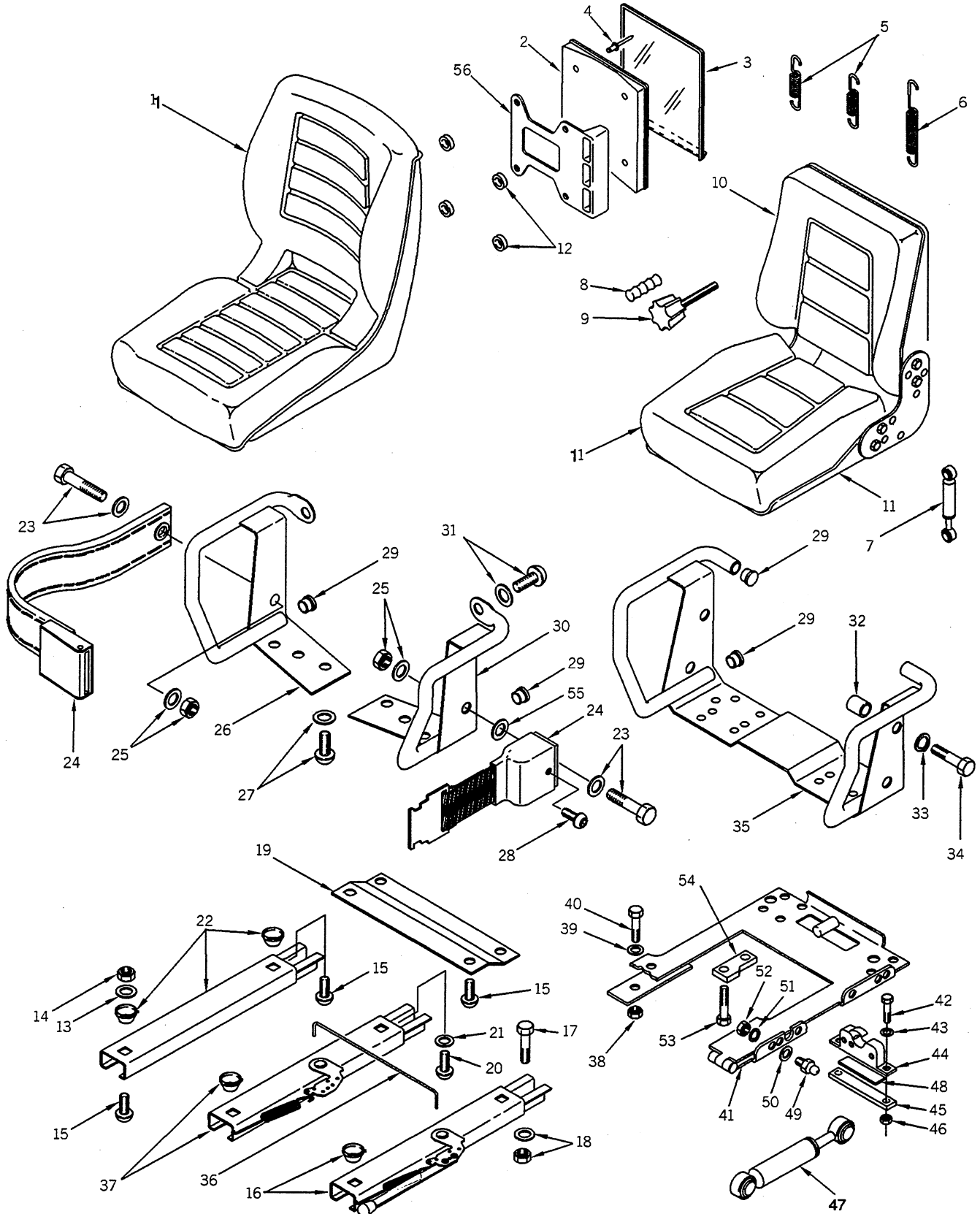
GUARD-OVERHEAD 12

HOOD/LINKAGE 8

LABELS/PAINT 14

SEAT 6

Figure 3. SEAT



SEAT

KEY
A: Standard
B: Suspension

REF	PART NO.	NAME OF PART	QTY		REF	PART NO.	NAME OF PART	QTY	
			A	B				A	B
1	377901	Seat	1	..	31	% 379198	Washer	2	..
1	1345826	Seat	1	..	32	% 364848	Spacer	2	..
2	335988	Base - Information	1	..	33	% 379675	Washer	2	..
2	335989	Base - Information	1	..	34	% 379674	Capscrew	2	..
3	335991	Cover - Information	1	1	35	% 364847	Restraint	1	..
4	187727	Rivet	4	..	36	+1300107	Rod	1	1
4	222030	Rivet	4	..	37	+ 383116	Rail	1	1
5	326364	Spring - Coil	2	..	37	\$\$1300108	Rail - Seat	1	1
6	326363	Spring - Tension	1	..	37@@@+204114	Spacer	4	..	
7	326978	Absorber - Shock	1	..	38	\$\$ 145639	Locknut	8	8
8	326362	Knob - Lever	1	..	39	\$\$ 15175	Washer	4	4
9	326365	Spindle - Adj	1	..	40	\$\$ 16836	Capscrew	4	4
10	326361	Cushion - Back	1	..	41	\$\$1314359	Kit - Seat Hinge	1	1
11	326360	Cushion - Seat	1	..	42@\$&	293603	Capscrew	4	4
12	335347	Bar	2	..	42&&&	221418	Capscrew	4	4
12	1326337	Spacer	1	..	43@\$&	320156	Washer	4	4
13	* 221733	Flatwasher	4	..	43&&&	15127	Washer	2	2
13	% 221733	Flatwasher	2	..	44	\$\$1304957	Latch	1	1
14	145639	Locknut	4	..	45	\$\$1346321	Plate	1	1
15	? 18731	Capscrew	4	..	46@\$&	313805	Nut	4	4
15	\$\$ 18728	Capscrew	4	..	46&&&	251099	Locknut	4	4
15	18727	Capscrew	4	..	47	\$\$ 364976	Spring - Gas	1	..
16	? 335553	Rail	1	1	47	\$\$ 380320	Spring - Gas	1	..
16	\$\$ 383116	Rail	1	1	48	\$\$ 364940	Shim
16@@	204114	Spacer	4	..	49	\$\$ 379190	Stud - Ball	2	2
17	16374	Capscrew	4	4	50	\$\$ 320157	Washer	2	2
18	? 15175	Washer	4	4	51	\$\$ 292681	Lockwasher	2	2
18	\$\$\$ 15175	Washer	4	4	52	\$\$ 329069	Nut	2	2
18	145639	Locknut	4	4	53	\$\$ 309637	Screw	2	2
19	353731	Plate	2	..	54	\$\$ 306187	Bumper	2	2
20	186261	Capscrew	4	..	55	\$\$* 379183	Spacer	2	..
21	15155	Lockwasher	4	..	55	\$\$ 379183	Spacer	4	..
22	# 335556	Rail - Seat	1	1	56	\$\$ 381954	Bumper	1	1
22@@#	204114	Spacer	4	..		&	LPG		
23	% 379199	Capscrew	2	2		\$\$	Gasoline Diesel		
23	% 379697	Washer	2	2		@@	Not Used On Suspension Seat		
24	% 364843	Belt	1	1		*	Without Operator Restraint		
25	% 379697	Washer	2	2		%	With Operator Restraint First Used On		
25	% 379698	Nut	2	2			S/N F5A-1731 & F5D-1501		
26	% 364807	Restraint - R.H.	1	..		#	Last Used On S/N F5A-7696		
27	% 18727	Capscrew	4	..		+	First Used On S/N F5A-7697 & F5D-1501		
27	% 18515	Washer	4	..		@	Last Used On S/N F5A-7171		
28	% 379650	Screw	1	1		&&	First Used On S/N F5A-7172 & F5D-1501		
29	% 364854	Plug	2	4		?	Last Used On S/N F5A-3604		
30	% 364808	Restraint - L.H.	1	..		\$	First Used On S/N F5A-3605 & F5D-1501		

Please Click Here To Download The Complete Manual
Download Other Manuals
If Having Any Questions Feel Free To Contact us

admin@servicemanualbit.com