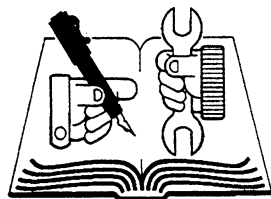


# PARTS MANUAL

**CHALLENGER  
H40-50-60XL  
H2.00-2.50-3.00XL**

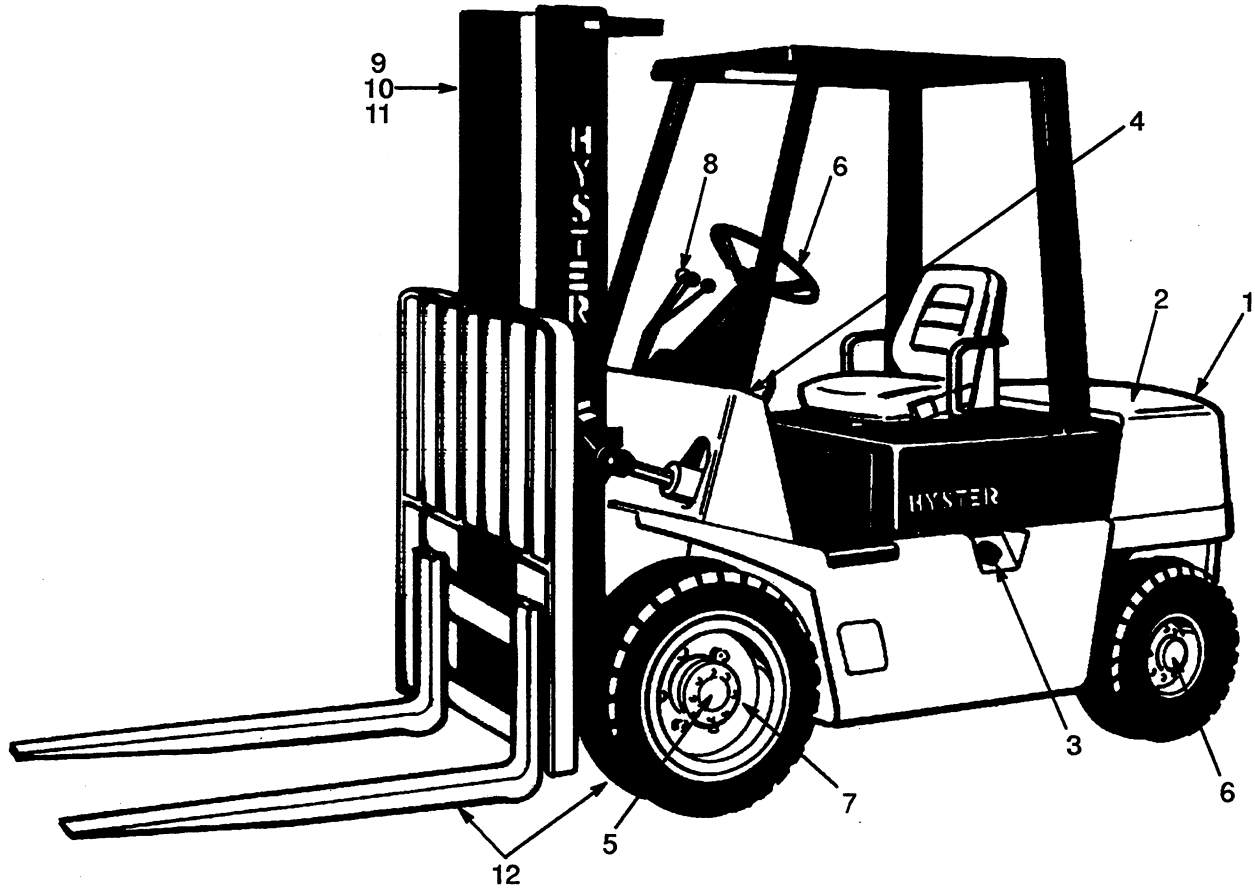
**(C177)**



Hyster Easy Language Program

# CUSTOMER EDITION

## ILLUSTRATED CONTENTS



REF	SECTION	PAGE
1	Frame .....	11
2	Engine .....	21
3	Fuel .....	87
4	Electrical .....	121
5	Transmission .....	155
6	Steering .....	173
7	Brake .....	185
8	Hydraulic .....	201
9	Mast-Vista Two-Stage Limited Free Lift .....	225
10	Mast-Vista Three-Stage Full Free Lift .....	235
11	Mast-Vista Two-Stage Full Free-Lift .....	251
12	Optional Equipment .....	265
13	Numerical Index .....	307



## TABLE OF CONTENTS

DESCRIPTION	PAGE
Alarm-Backup .....	300
Alternator .....	136-145
Axle-Drive .....	170-171
Axle-Steering .....	178
Block-Cylinder Diesel .....	34-35, 50-51
Block-Cylinder Gasoline LPG .....	66-67, 80-82
Brake .....	192-195
Brake-Park .....	196-197
Cab .....	276-277
Camshaft/Valves Diesel .....	39, 54
Camshaft/Valves Gasoline LPG .....	74
Carburetor Gasoline .....	96-99
Carburetor LPG .....	88, 100-101
Carriage Side-Shift .....	268
Carriage Vista Two-Stage Full Free Lift .....	264
Carriage Vista Three-Stage Full Free Lift .....	250
Carriage Vista Two-Stage Limited Free Lift .....	234
Clutch-Forward/Reverse .....	162-163
Control-Choke .....	106
Converter LPG .....	115
Converter-Torque .....	159
Cooling Diesel .....	32-33, 48-49
Cooling Gasoline LPG .....	64-65, 78-79
Counterweight .....	13
Cowl .....	11
Crankcase/Pan-Oil Diesel .....	38, 56
Crankcase/Pan-Oil Gasoline LPG .....	72-73
Crankshaft/Piston/Flywheel Diesel .....	40-41, 55
Crankshaft/Piston/Flywheel Gasoline LPG .....	70-71
Cylinder-Lift Vista Two-Stage Full Free Lift .....	260-263
Cylinder-Lift Vista Three-Stage Full Free Lift .....	246-249
Cylinder-Lift Vista Two-Stage Limited Free Lift .....	232-233
Cylinder-Master .....	198-200
Cylinder Side-Shift .....	269
Cylinder-Steering .....	184
Cylinder-Tilt .....	210-211
Differential .....	164-165
Distributor .....	132-134
Electrical .....	122-131
Exhaust Diesel .....	28-31
Exhaust Gasoline LPG .....	22-23, 28-31
Extension-Load Backrest .....	14
Extinguisher-Fire .....	267
Eye-Lift .....	266
Filter-Air .....	107, 109
Filter-Fuel .....	108
Filter-Lock-Off .....	114
Filter-Oil Diesel .....	45, 60
Filter-Oil Gasoline LPG .....	76
Flywheel Diesel 2.4L .....	40-41
Flywheel Gasoline LPG M4-121G .....	70-71
Flywheel/Drive-Pump Diesel 2.8L .....	62
Flywheel/Drive-Pump Gasoline LPG 4-181 .....	86
Fork .....	292-295
Fuel Diesel Gasoline .....	94-95
Fuel LPG .....	90-93
Gear-Timing .....	42, 57
Glass .....	306
Governor Gasoline LPG .....	89
Head-Cylinder Diesel .....	36-37, 52-53
Head-Cylinder Gasoline LPG .....	68-69, 82-83
Heater .....	278-279



## TABLE OF CONTENTS

DESCRIPTION	PAGE
Hood/Linkage .....	12
Hose-Header .....	270-275
Hydraulic .....	202-207
Injection-Fuel .....	110-113
Labels .....	18-19
Lift Vista Two-Stage Full Free Lift .....	256-259
Lift Vista Three-Stage Full Free Lift .....	242-245
Lift Vista Two-Stage Limited Free Lift .....	230-231
Light-Strobe .....	296-299
Lights .....	302-305
Liner-Sound .....	281
Linkage-Brake .....	186-189
Linkage-Forward/Reverse .....	156-157
Linkage Hood .....	11
Linkage Pedal .....	188-189
Linkage-Throttle .....	116-119
Manifold Diesel .....	43, 58
Manifold Gasoline LPG .....	75
Mast Vista Two-Stage Full Free Lift .....	252-255
Mast Vista Three-Stage Full Free Lift .....	236-241
Mast Vista Two-Stage Limited Free Lift .....	226-229
Mount-Engine .....	24-26
Numerical Index .....	307
Paint .....	18-19
Pan-Oil Diesel .....	38, 56
Pan-Oil Gasoline LPG .....	72-73
Panel-Instrument .....	146-147
Pedal/Linkage .....	190-191
Pedal-Monotrol .....	120
Piston Diesel .....	40-41, 55
Piston Gasoline LPG .....	70-71
Plates-Floor .....	11
Publications .....	9-10
Pump-Fuel 2.8L .....	104-105
Pump-Fuel M4-121G .....	102-103
Pump-Hand .....	180-183
Pump-Hydraulic .....	208-209
Pump-Oil Diesel .....	46, 61
Pump-Oil/Filter-Oil Gasoline LPG .....	76, 83
Pump-Water Diesel .....	44, 59
Pump-Water Gasoline LPG .....	77
Service Repair Kits .....	8
Seat .....	16-17
Starter .....	148-153
Steering .....	174-177
Switch-Forward/Reverse .....	158
Tires .....	282-291
Transmission .....	160-161
Valve Transmission .....	166-169
Valve-Flow .....	224
Valve Four Function .....	222-213
Valve Three Function .....	218-219
Valve Two Function .....	214-215
Valve/Attaching Parts Four Function .....	220-221
Valve/Attaching Parts Three Function .....	216-217
Valve/Attaching Parts Two Function .....	212-213
Valves Diesel .....	39, 54
Valves Gasoline LPG .....	74
Wheel .....	282-291
Wiper .....	280

# 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**

ACTUATOR \_\_\_\_\_ 2E04

ALTERNATOR \_\_\_\_\_ 1P12

AXLE-DRIVE \_\_\_\_\_ 2B04

AXLE-STEERING \_\_\_\_\_ 1909

BLOCK-CYLINDER DIESEL \_\_\_\_\_ 1C01

BLOCK-CYLINDER GASOLINE LPG \_\_\_\_\_ 2C07

BRAKE \_\_\_\_\_ 2C03

BRAKE-PARK \_\_\_\_\_ 3003-3004

CAM SHAFT/CLAMP SHAFT/PAN-OIL GASOLINE LPG \_\_\_\_\_ 3003-3004

COMBINATION \_\_\_\_\_

HYDRAULIC \_\_\_\_\_ 2E03-2E06

INDEX-NUMERICAL \_\_\_\_\_ 1E02

INJECTION-PUEL DIESEL \_\_\_\_\_ 1E06

\_\_\_\_\_ 2907

**INDEX-NUMERICAL**

PART NO	PAGE	REF NO	PART NO	PAGE	REF NO	PART NO	PAGE	REF NO	PART NO	PAGE	REF NO	PART NO	PAGE	REF NO
126	1D12	2	19004	1C03	29	15127	1008	9	15154	1C03	29	15183	1A12	3
138	2808	14		1E05	6	19008	1908	2		1C04	24	15200	1D12	4
				2B01	12					1C04	21		1D15	10
				2B01	26					1C04	22		1D14	8
				2C04	33					1E04	41		1E04	21
										1C09	15			
139	2803	12		3F32	45					1C09	16		2C03	12
				2B01	25	19007	1C08	5	15135	2807	33		2909	7
				2C04	25	19008	2A06	26	15152	1004	13		2E12	7
142	1D14	17		19010	1B14	20				1E04	1		2F02	7
										1E04	5	15211	2408	13
				2C04	4	19015	2A10	12		1F10	11		2B01	14
							1D12	18		3D07	7		2B01	24
										1E04	28		2C04	31
										1E04	42		2A08	16
										1F04	32	15212	1D12	11

**MOTOR**

LAST USED ON PENDING 5/11 PER ECH 94020 (SEE PAGE A031)

**KEY**

KEY	VOLT	REF NO	PART NO	NAME OF PART	REF NO	PAGE
9-12	WOLT					
9-12	WOLT					
C-24	WOLT					
REF						
HYSTER						
NO						
1			313402	MOTOR		
2			313403	MOTOR		
3			296789	MOTOR		
4			317483	HEAD		
5			314484	SET-SPRING		
6			1100953	SET-SPRING		
7			117934	HOLDER		
8			317714	SET-ATHER		
9			2100953	BEARING		
10			1199362	SET-BRUSH		
11			280144	SET-BRUSH		

**INDEX-ILLUSTRATED**

REF	ITEM	PAGE
1	FRAME/BODY	1404
2	ENGINE	1802
3	FUEL	1002
4	ELECTRICAL	1E02
5	TRANSMISSION	2A06
6	STEERING	2B01
7	BRAKE	2C03
8	HYDRAULIC	2E02
9	UPRIGHT-VISTA TWO-STAGE	2B02
10	UPRIGHT-VISTA THREE-STAGE	2E02
11	UPRIGHT-VISTA PRE-LIFT	2F02
12	OPTIONAL	3A04
13	INDEX-NUMERICAL	FOZ

**USE HYSTER APPROVED PARTS... it pays**

© 1988 HYSTER COMPANY

See Service Manual for service procedures

**HYSTER COMPANY**  
©1993 HYSTER COMPANY

5/1/93



**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.

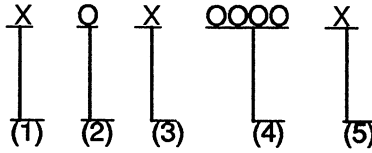
6. Keys are used to show effective serial numbers for two or more similar assemblies, RH and LH assembly parts, etc. Select the appropriate key, "A", "B", "C", or "D" and the corresponding quantity column to find the required parts.
7. Indented descriptions under "Name of Part" are used to indicate subparts 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.

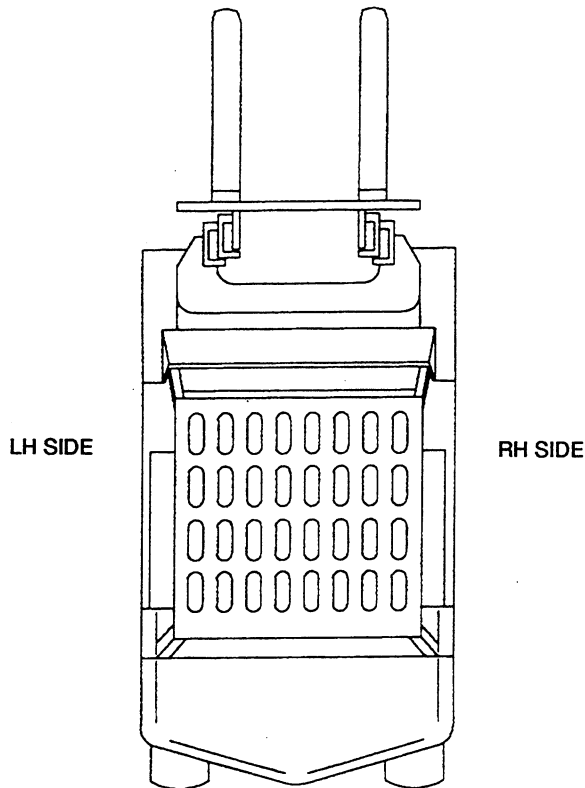
## IDENTIFICATION-UNIT UNIT S/N



- (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

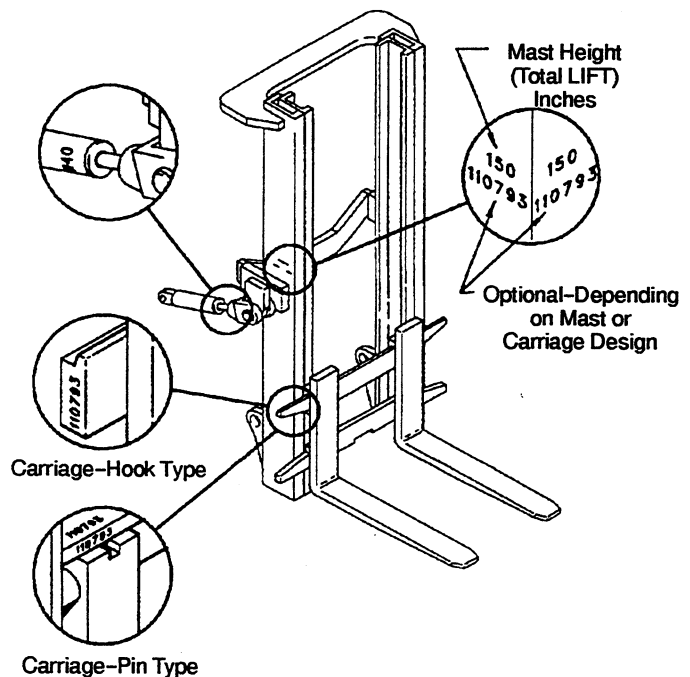
For pending serial numbers contact your local Hyster Dealer

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.





---

## FRAME

Counterweight .....	13
Cowl/Plates-Floor .....	11
Extension-Load Backrest .....	14
Hood/Linkage .....	12
Labels/Paint .....	18-19
Publications .....	9-10
Seat .....	16-17
Service Repair Kits .....	8





## Figure 1. SERVICE REPAIR KITS

Major Tune-Up Kit Mazda M4-121G .....	996103
Cooling System Kit Mazda M4-121G .....	996001
Hyster Care Kit Mazda M4-121G .....	996125
Minor Tune-Up Kit GM 4-181 .....	996031
Major Tune-Up Kit GM 4-181 .....	996104
Major Tune-Up and Service Kit GM 4-181 .....	996030
Cooling Repair Kit-GM 4-181 Engine .....	996034
Hyster Care Kit GM 4-181 .....	996128
Steer Axle Repair Kit .....	996005
Transmission Overhaul Kit .....	996036
Brake Overhaul Kit-Power Brakes (External Park Brake Lever) .....	996049
Major Brake Job Kit-Power Brakes (External Park Brake Lever) .....	996050
Minor Brake Job Kit (External Park Brake Lever) .....	996051
Brake Overhaul Kit-Non Power Brakes (External Park Brake Lever) .....	996052
Major Brake Job Kit-Non Power Brakes (External Park Brake Lever) .....	996053



## PUBLICATIONS (Figure 2)

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.

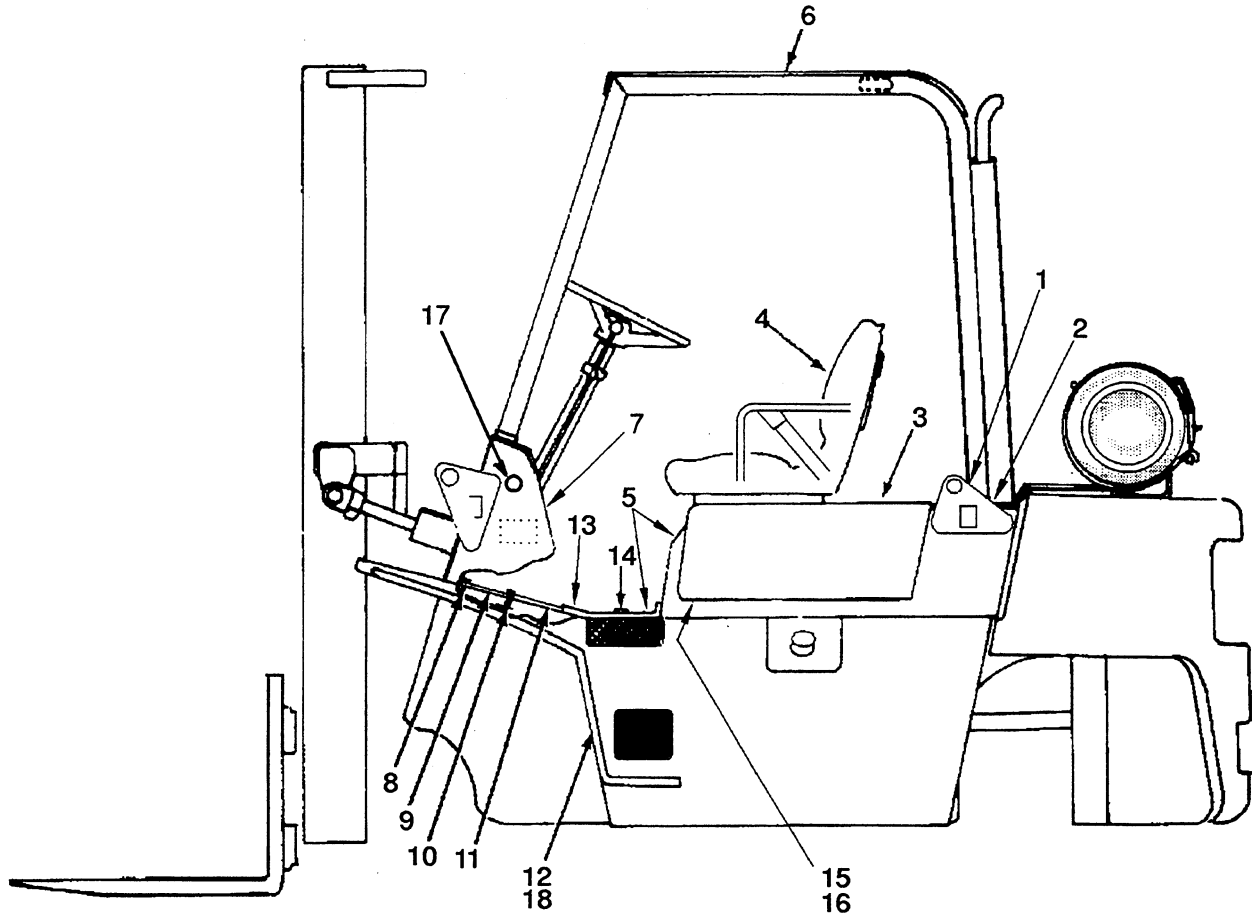
PUBLICATION	HYSTER PART NUMBER
<b>Operating Manual</b>	
English (U.S.) .....	897413
English (Non-U.S.) .....	897147
Spanish .....	853441
French .....	853428
German .....	853440
Dutch .....	853427
Swedish .....	853493
Danish .....	853617
Italian .....	853616
Portugese .....	853618
<b>Service Manual (complete) .....</b>	<b>897414</b>
The Frame (100 SRM 137) .....	910165
The Isuzu C240 Engine (600 SRM 70) .....	899768
The Mazda M4-121G Engine (600 SRM 66) .....	899767
The Gm Engine (600 SRM 3) .....	899766
The Rochester Carburetor (900 SRM 11) .....	910057
The Gasoline Carburetor (900 SRM 129) .....	910168
The LPG System (900 SRM 15) .....	899772
The Single-Speed Powershift Transmission -	
Description and Operation (1300 SRM 255) .....	899323
Repairs (1300 SRM 256) .....	899324
The Drive Axle (1400 SRM 85) .....	910171
The Steering System (1600 SRM 459) .....	897407
The Steering Control Unit (1600 SRM 257) .....	910458
The Steering Axle (1600 SRM 10) .....	899775
The Brake System (1800 SRM 458) .....	897405
The Hydraulic System and Gear Pump Assembly (1900 SRM 130) .....	899780
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 Electrical System, Mazda (2200 SRM 132) .....	899791
The Electrical System, Isuzu (2200 SRM 134) .....	899792
Microprocessor Spark Timing System (2200 SRM 463) .....	897412
The Alternator (2200 SRM 2) .....	899784
The Starter (2200 SRM 106) .....	910107
Electrical Gauges, Meters and Senders (2200 SRM 143) .....	910110
Electrical Warning Devices (2200 SRM 144) .....	910111
Vista Masts - Description (4000 SRM 222) .....	899237
Vista Masts - Repair (4000 SRM 223) .....	910435
Lift Cylinders (4000 SRM 135) .....	910119
Periodic Maintenance (8000 SRM 259) .....	910757
Capacities and Specifications (8000 SRM 48) .....	899803
Diagrams (8000 SRM 461) .....	897410
Inch (SAE) and Metric Fasteners (8000 SRM 231) .....	910442



## PUBLICATIONS

<b>Parts Manual</b> .....	852670
<b>Operator Training Program</b>	
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
<b>Sold Alone Kit Catalog</b> .....	852505

### COWL/PLATES-FLOOR (Figure 3)

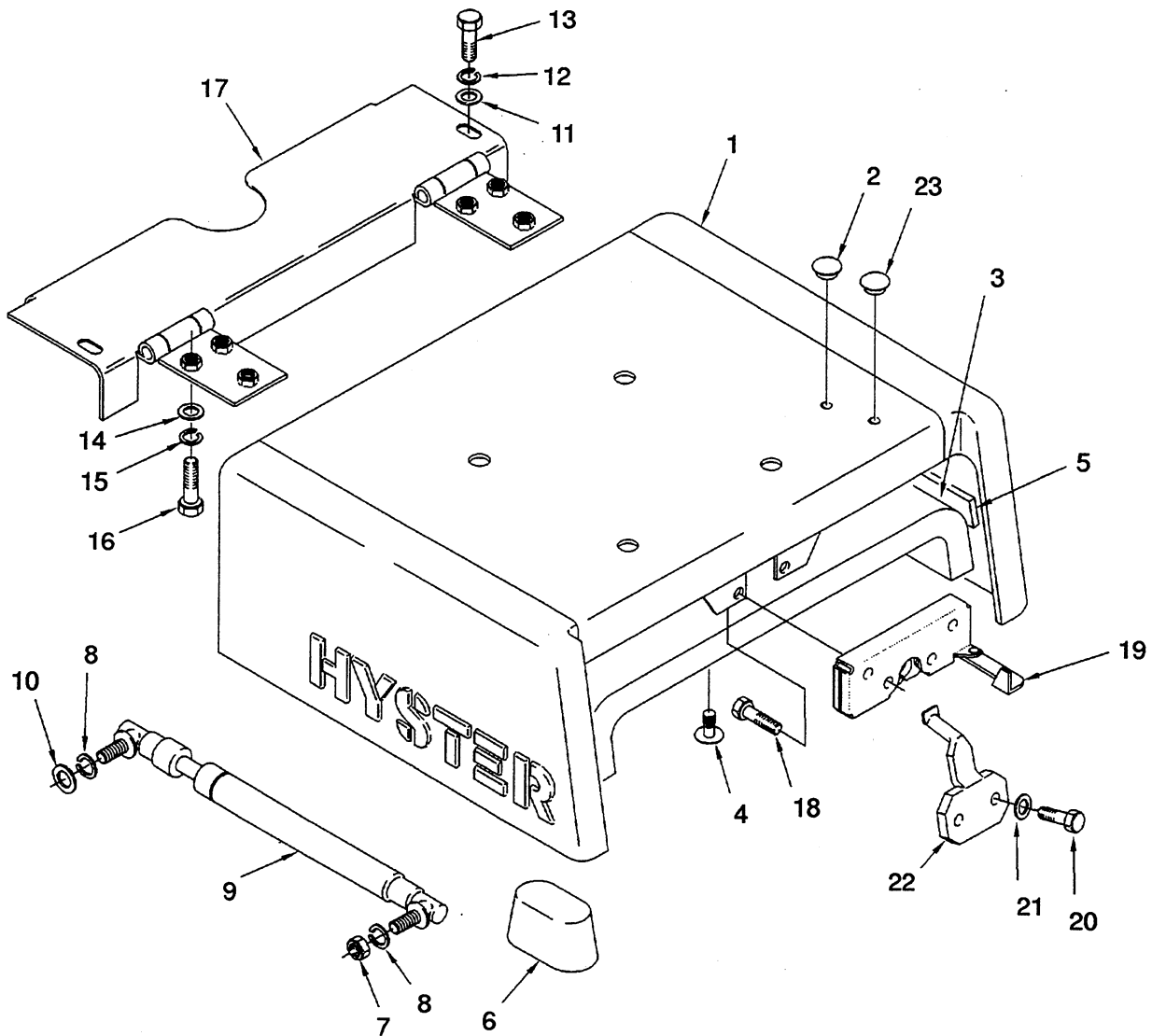


REF	PART NO.	NAME OF PART	QTY
1	\$1303637	Grommet	11
2	292528	Capscrew	4
2	292683	Lockwasher	4
2	216877	Nut	2
3	.....	Hood	1
		See Figure 4	
4	.....	Seat	1
		See Figure 7	
5	1320917	Plate-Floor	1
5	*1324253	Plate-Floor	2
6	%1320619	Guard-Overhead	1
6	+1343423	Guard-Overhead	1
7	308112	Anchor-Tilt LH	1
7	308111	Anchor-Tilt RH	1
8	1339779	Screw	4
9	1324510	Plate-Floor	1
9	*1335906	Plate-Floor	1
9	*1335903	Barrier	1
10	177590	Pin	1
10	320157	Washer	2
10	137122	Spring	1
10	15212	Pin	3

REF	PART NO.	NAME OF PART	QTY
11	313815	Plate	1
12	& 329051	Fender-RH	1
12	& 329052	Fender-LH	1
12	@ 377309	Fender-RH	1
12	@ 377305	Fender-LH	1
13	*1320724	Mat-Floor	1
14	329067	Screw	4
15	* 364926	Liner	1
16	* 246788	Washer	6
17	339528	Grommet	8
18	&@ 377308	Bar	6
18	&@ 292527	Capscrew 30 mm	2
18	&@ 246001	Capscrew 40 mm	4
18	&@ 292683	Washer	6
18	&@ 216877	Nut	4

- \* Low Noise
- \$ Standard Exhaust
- & Wide Tread Drive Wheel
- & Dual Drive Wheel
- % Last Used On S/N C177B-5053
- + First Used On S/N C177B-5054
- # Without Lifting Eyes

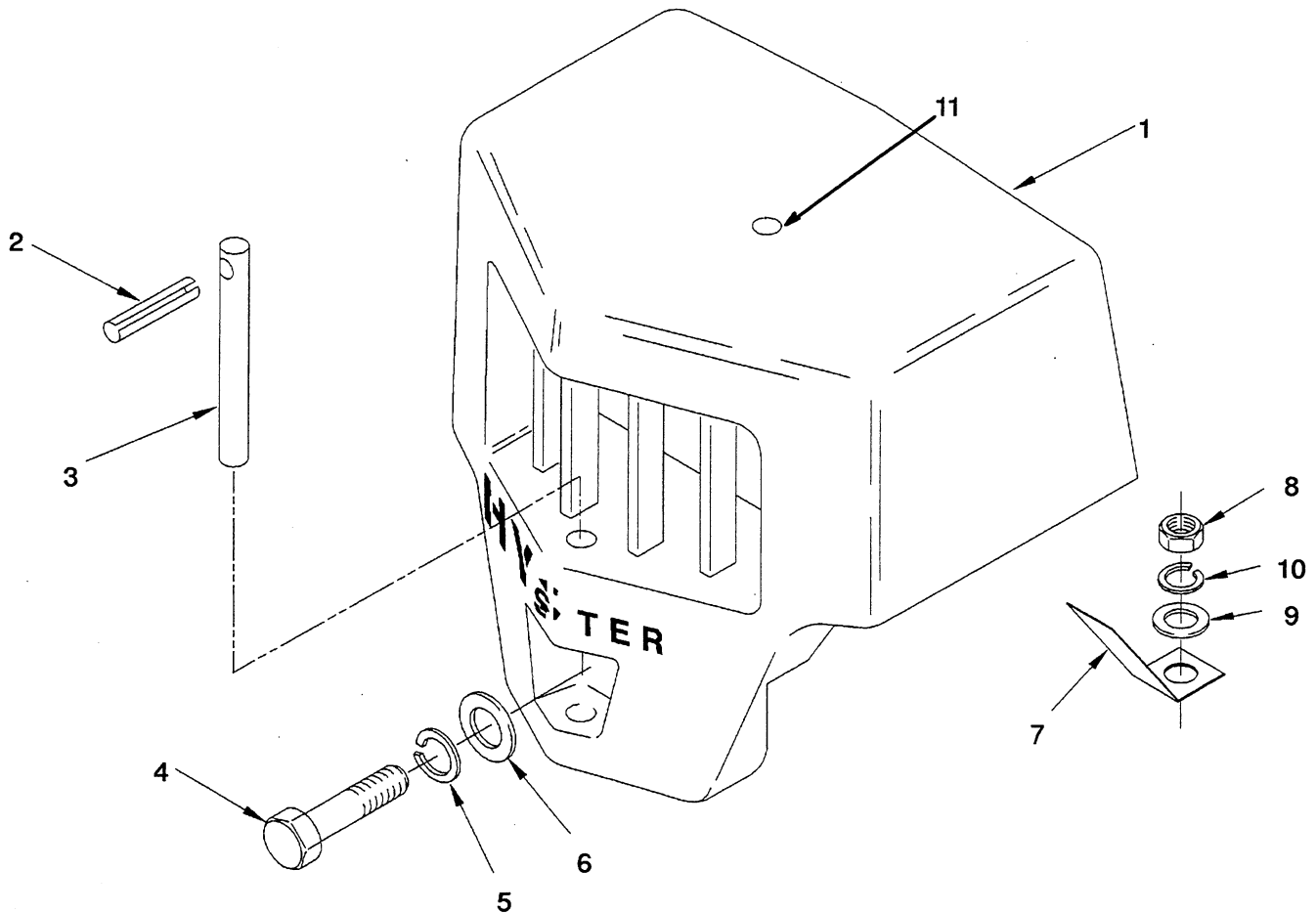
### HOOD/LINKAGE (Figure 4)



REF	PART NO.	NAME OF PART	QTY	REF	PART NO.	NAME OF PART	QTY
1	1329267	Hood	1	15	292681	Lockwasher	6
2	1307737	Fastener	4	16	136681	Capscrew	6
3	*1329266	Liner	1	17	% 371068	Hinge	1
4	*1304971	Fastener	13	17	\$1330820	Hinge	1
5	* 353204	Tape Per Foot	AR	18	199563	Capscrew	4
6	1320610	Bumper	2	19	364857	Latch	1
7	303117	Nut	1	20	302334	Capscrew	2
8	292681	Lockwasher	2	21	320160	Washer	2
9	353021	Spring-Gas	1	22	364861	Striker	1
10	320157	Washer	2	23	1338175	Plug	4
11	292682	Lockwasher	4				
12	320159	Washer	4				
13	292514	Capscrew	4				
14	1300117	Washer	6				

\* Low Noise Package  
% Mazda And Isuzu  
\$ GM

# COUNTERWEIGHT (Figure 5)



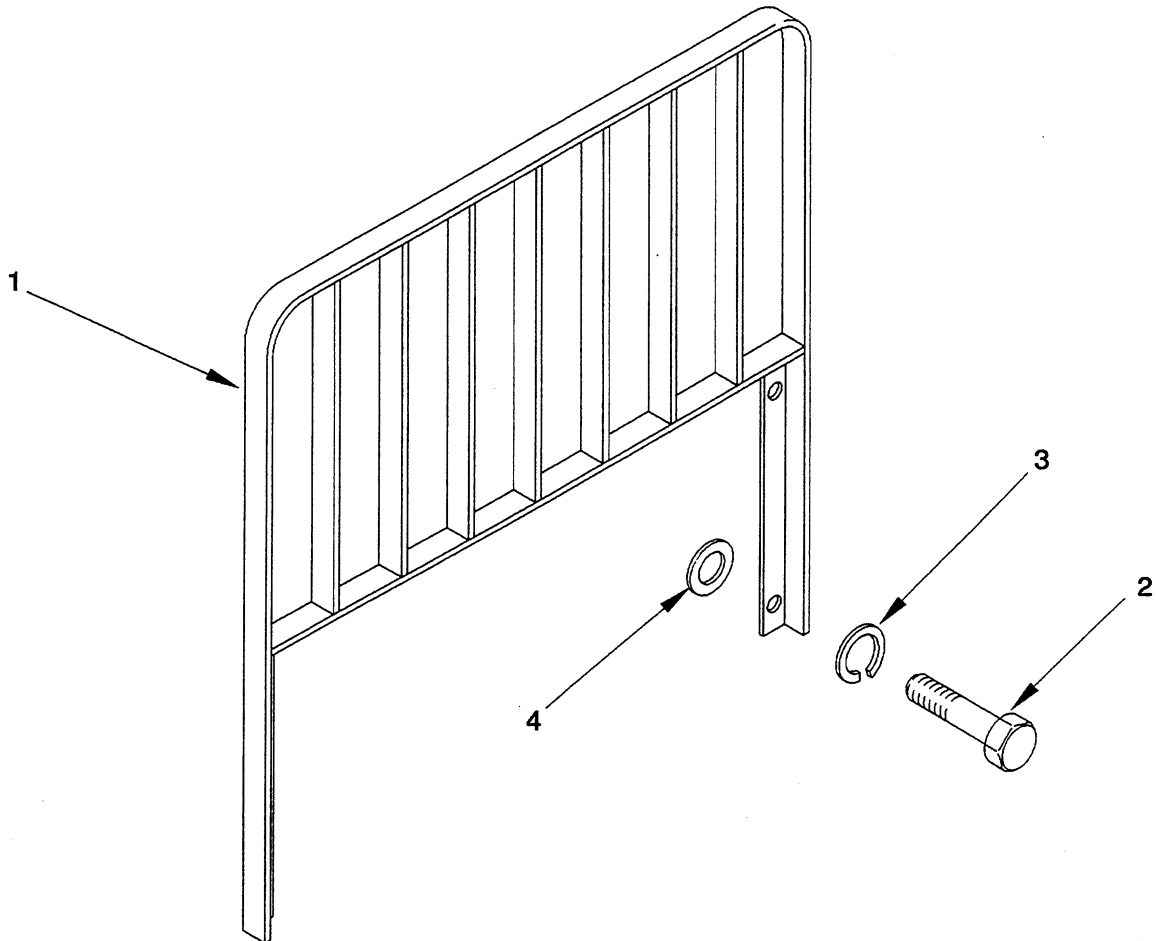
**KEY**

A-H40XL (2.00XL)  
B-H50XL (2.50XL)  
C-H60XL (3.00XL)

REF	PART NO.	NAME OF PART	QTY			REF	PART NO.	NAME OF PART	QTY		
			A	B	C				A	B	C
1	1320686	Counterweight	1	..	..	5	292687	Lockwasher	2	2	2
1	1320687	Counterweight	..	1	..	6	300750	Washer	2	2	2
1	1320688	Counterweight	..	..	1	7	1320704	Shim	AR	AR	AR
2	302492	Pin	1	1	1	7	*1300153	Shim	AR	AR	AR
3	1320708	Rod	1	1	1	8	239503	Nut	2	2	2
3	* 387473	Pin	1	1	1	9	320158	Washer	2	2	2
4	309707	Capscrew	..	..	2	10	292681	Lockwasher	2	2	2
4	292593	Capscrew	2	2	..	11	*1337734	Plug	1	1	1

\* Optional

## EXTENSION-LOAD BACKREST (Figure 6)



**KEY**

A-H40-50XL (H2.00-2.50XL)

B-H60XL (H3.00XL)

REF	PART NO.	NAME OF PART	QTY		REF	PART NO.	NAME OF PART	QTY	
			A	B				A	B
1	300990	Extension-42 Inch .....	1	..	3	292683	Lockwasher .....	4	4
1	315620	Extension-42 Inch .....	1		3	296423	Washer .....	4	4
2	292528	Capscrew .....	4	4	4	221771	Washer .....		4

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

**[admin@servicemanualbit.com](mailto:admin@servicemanualbit.com)**