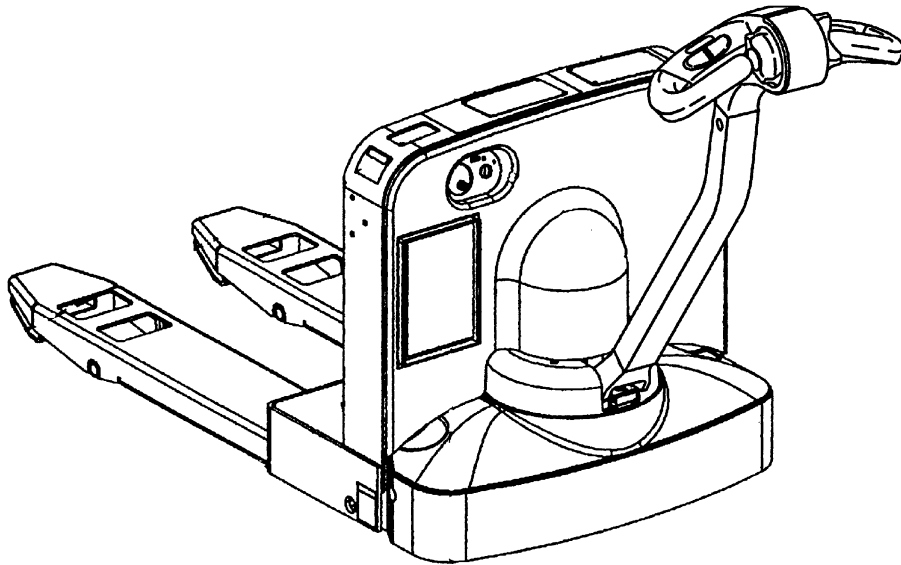


CAPACITIES AND SPECIFICATIONS

**W40Z [B218]; W45Z [C215];
W50Z [D215]**



HYSTER

SAFETY PRECAUTIONS MAINTENANCE AND REPAIR

- When lifting parts or assemblies, make sure all slings, chains, or cables are correctly fastened, and that the load being lifted is balanced. Make sure the crane, cables, and chains have the capacity to support the weight of the load.
- Do not lift heavy parts by hand, use a lifting mechanism.
- Wear safety glasses.
- **DISCONNECT THE BATTERY CONNECTOR** before doing any maintenance or repair on electric lift trucks. Disconnect the battery ground cable on internal combustion lift trucks.
- Always use correct blocks to prevent the unit from rolling or falling. See **HOW TO PUT THE LIFT TRUCK ON BLOCKS** in the **Operating Manual** or the **Periodic Maintenance** section.
- Keep the unit clean and the working area clean and orderly.
- Use the correct tools for the job.
- Keep the tools clean and in good condition.
- Always use **HYSTER APPROVED** parts when making repairs. Replacement parts must meet or exceed the specifications of the original equipment manufacturer.
- Make sure all nuts, bolts, snap rings, and other fastening devices are removed before using force to remove parts.
- Always fasten a **DO NOT OPERATE** tag to the controls of the unit when making repairs, or if the unit needs repairs.
- Be sure to follow the **WARNING** and **CAUTION** notes in the instructions.
- Gasoline, Liquid Petroleum Gas (LPG), Compressed Natural Gas (CNG), and Diesel fuel are flammable. Be sure to follow the necessary safety precautions when handling these fuels and when working on these fuel systems.
- Batteries generate flammable gas when they are being charged. Keep fire and sparks away from the area. Make sure the area is well ventilated.

NOTE: The following symbols and words indicate safety information in this manual:



WARNING

Indicates a condition that can cause immediate death or injury!



CAUTION

Indicates a condition that can cause property damage!

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This section is for the following models:

W40Z [B218];
W45Z [C215];
W50Z [D215]

**"THE
QUALITY
KEEPERS"**

**HYSTER
APPROVED
PARTS**

Hydraulic Oils

W40/45Z (and W50Z Standard Construction Only)		
Type	For All Hydraulically Actuated Equipment	
Ambient Air Temp. Condition	Normal	Cold Storage
Anticipated Ambient Air Temperature Range	0° to +43°C (+32° to +109°F)	0° to -32°C (+32° to -26°F)
Actual Useable Operation Oil Temperature Range	-28° to +64°C (+18° to +147°F)	-40° to +50°C (-40° to +122°F)
ASTM Viscosity Grade Number/Index (Ref.)	S-215/92 Minimum	S-376 Minimum
Pour Point	-29°C (-20°F)	-60°C (-76°F)
Approved Sources		
American (Amoco)	Rykon Number 21	No Product
Atlantic Richfield (Arco)	Duro AW-46	No Product
Burmah-Castrol	Hyspin AWH-46	No Product
Chevron Oil Company	Chevron AW Hyd. Oil 46	No Product
Cities Service (Citco)	Pacemaker XD-20	No Product
Exxon	Nuto H 46	Univis® HVI 26
Fiske Brothers	Lubriplate HO-1	No Product
Gulf	Harmony 48AW	No Product
Houghton & Company	Hydro Drive HP 200	No Product
Keystone (Pennwalt)	KLC Number 5	No Product
Mobil Oil Co. (Mobil)	DTE 25	No Product
Pennzoil Oil Co.	Pennzoil AW 46	No Product
Phillips Petroleum	Magnus A-215	No Product
Shell	Tellus 46	No Product
Solene Ind. Lubricant	H-205-B	No Product
Sun Oil Co. (Sunoco)	Sunvis 821 WR	No Product
Texaco	Rando HD-46	No Product
Valvoline Oil Co.	Antiwear Number 20	No Product
Field Personnel Note: The hydraulic oils, as listed herein, are approved sources that meet or exceed the specifications annotated. The use of hydraulic oils other than the suppliers and products listed is unauthorized.		

W50Z (Cold Storage/Arctic Package)	
Type	For All Hydraulically Actuated Equipment
Ambient Air Temp. Condition	Cold Storage/Arctic Package
Anticipated Ambient Air Temperature Range	-32° to 0°C (-26° to +32°F)

W50Z (Cold Storage/Arctic Package)	
Actual Useable Operation Oil Temperature Range	−40° to +50°C (−40° to +122°F)
Viscosity /Index (Ref.) ASTM D 2270	376
Pour Point	−60°C (−76°F)
Approved Sources	
Exxon	Univis® HVI 26
Field Personnel Note: The hydraulic oils, as listed herein, are approved sources that meet or exceed the specifications annotated. The use of hydraulic oils other than the suppliers and products listed is unauthorized.	

Gear Oils

Operating Condition	Standard/CS/Freezer/Food Processing	Arctic
SAE Grade	80W-90	75W-90
Type	Multipurpose EP	Multipurpose EP
Base Oil	Conventional Petroleum	Synthetic
MIL-Specification No.	MIL-L-2105C	MIL-L-2105C
API Service Classification	GL-5	GL-5
Anticipated Ambient Temperature	−26 to +38°C (−15 to +100°F) Most HYSTER lift truck operations will fall within this temperature range.	As low as −51°C (−60°F) Primarily intended for cold storage and/or Arctic conditions; can be used as high as +32°C (+90°F).
Approved Sources		
Chevron	Chevron Universal Gear Lube 80W/90	No Product
Exxon	Exxon Gear Oil GX 80W/90	No Product
Mobil	Mobilube HD 80W/90	Mobilube SHC 75W/90
Pennzoil	Pennzoil MP 4092	No Product
Phillips 66	Philube SMP Gear Oil 80W/90	No Product
Solene Lub. Inc.	Solene Gear Oil #905	No Product
Sun	Sunfleet GL-5 Gear Lube 80W/90	No Product
Union 76	Unocal MP Gear Lube LS 80W/90	No Product
Field Personnel Note: The products listed above are the approved sources that meet or exceed HYSTER specifications. The use of products other than that listed above is unauthorized.		

Grease

Fittings and Bearings			
Application	Standard/CS/Freezer	Arctic/Food Processing	Steer Bearings
Approved Vendor	Mobilgrease® 28	Amsoil GHD®	Amsoil GHD®
Oil	Synthetic	Synthetic	Synthetic
Thickener	Clay	Lithium Complex	Lithium Complex
Grade NGLI	1.5	2.0	2.0
Moly-Fortified	No	Yes	Yes
Dropping Pt.	310°C (590°F)	288°C (550°F)	288°C (550°F)
Field Personnel Note: The product listed above is the approved source that meets or exceeds HYSTER specifications. The use of products other than that listed above is unauthorized.			

Required for W50Z - Cold Storage/Arctic Packages	
Application	Cold Storage/Arctic Package
Oil	Synthetic
Thickener	Lithium Complex
Dropping Point Approximately	+288°C (+550°F)
Base Oil Viscosity (SUS)	151 @ +40°C (+104°F)
Nominal Operating Temperature Range	-40 to +122°C (-40 to +250°F)
Identification	Container must be plainly marked with supplier's product identification.
Approved Sources	
AMSOIL	GHD Synthetic NGLI #2 GC-LB
Field Personnel Note: The product listed above is the ONLY approved source that meets or exceeds HYSTER specifications. The use of products other than that listed above is unauthorized.	

Hydraulic System

Truck Size	Volts	Operating Pressure ¹		Ampere Draw ²		Relief Setting	
		No Load	Rated Load	No Load	Rated Load	Pressure ³	Amp Draw
4000lb	24	2.1 MPa (300 psi)	7.7 MPa (1800 psi)	25	70	17.15 MPa (2450 psi)	85
4500lb	12	3.85 MPa (550 psi)	12.6 MPa (1800 psi)	60	100	19.6 MPa (2800 psi)	150
4500lb	24	3.08 MPa (440 psi)	11.9 MPa (1700 psi)	30	75	18.9 MPa (2700 psi)	110
5000lb	24	2.62 MPa (380 psi)	14.8 MPa (2152 psi)	24	98	20.0 MPa (2900 psi)	120
Standard Specifications Hydraulic Tank Capacity - 0.75 liter (25.4 oz) Pump Displacement (24 Volts) - 1.25 cm ³ /rev (0.076 in. ³ /rev) Pump Displacement (12 Volts) - 1.25 cm ³ /rev (0.076 in. ³ /rev) Creep Rate - 6.4 mm (0.25 in.) Maximum In 10 Minutes @ 21°C (70°F) Oil Temperature							
Footnotes ¹ ±0.35 MPa (±51 psi) @ 21°C (70°F) Oil Temperature ² ±10 Amps @ 1.270 Battery Specific Gravity ³ +0.6 to 0.0 MPa (+87 to 0 psi) @ 21°C (70°F) Oil Temperature Full Flow							

Weight

BASIC TRUCK WITHOUT BATTERY

Weight	Battery Compartment Inside Di- mension	Fork Length 900 mm (35.4 in.) Weight	Fork Length 1050 mm (41.3 in.) Weight	Fork Length 1200 mm (47.2 in.) Weight	Fork Length 1400 mm (55.1 in.) Weight	Fork Length 1500 mm (59.0 in.) Weight
4000 lb	193 × 700 mm (7.6 × 27.5 in.)	243 kg (536 lb)	258 kg (568 lb)	272 kg (600 lb)	N/A	301 kg (665 lb)
4500 lb 12V	193 × 780 mm (7.6 × 30.7 in.)	238 kg (525 lb)	253 kg (557 lb)	267 kg (589 lb)	N/A	297 kg (654 lb)
4500 lb 24V	218 × 700 mm (8.6 × 27.5 in.)	249 kg (548 lb)	263 kg (580 lb)	278 kg (612 lb)	N/A	307 kg (677 lb)
5000 lb	218 × 700 mm (8.6 × 27.5 in.)	237 kg (522 lb)	245 kg (540 lb)	251 kg (553 lb)	260 kg (573 lb)	266 kg (586 lb)

Tires

Weight and Voltage	Drive Tire	Load Wheel
4000 lb	9 × 4 in.	3.25 × 4.5 in.
4500 lb, 12 Volts	9 × 4 in.	3.25 × 4.5 in.
4500 lb, 24 Volts	9 × 4 in.	3.25 × 4.5 in.
5000 lb	9 × 4 in.	3.25 × 4.5 in.

Torque Specifications

CASTER ASSEMBLY

Mounting Capscrews (3 each)
57 N•m (42 lbf ft)

MASTER DRIVE UNIT

Motor Mount Studs (3 each)
20 N•m (15 lbf ft)

Transmission to Frame Mounting Bolts (4 each)
Torque to 54 N•m (40 lbf ft)
Then loosen, and torque to 34 N•m (25 lbf ft)

Drain Plug
41 N•m (30 lbf ft)

Fill-Level Plug
41 N•m (20 lbf ft)
27 N•m (20 lbf ft)

STEERING

Steer Handle to Tiller Bracket Screws (2 each)
115 N•m (85 lbf ft)

Butterfly Throttle Control to Handle Screws (2 each)
1 N•m (8.9 lbf in)

Gas Springs Mounting Stud (1 each)
25 N•m (18.5 lbf ft)

Control Arm Support Bracket Pivot Pins (2 each)
142 ±7 N•m (105 ±5 lbf ft)

BRAKE

Mounting Capscrews (3 each)
11 N•m (25 lbf in)

Traction Motor Power Wire Nuts (4 each)
5 N•m (44 lbf in)

Controller Hardware Connections
M5 metric screw 3 N•m (26.5 lbf in)
M5 metric nut 4.5 N•m (40 lbf in)
M5 metric screw and nut 88 N•m (115 lbf in)

LIFT MECHANISM

Hydraulic Power Unit Mounting Capscrews (3 each)
24 N•m (18 lbf ft)

Battery Specifications and Adjustments

4000 LB - 24 VOLT

Battery Compartment is shown in Figure 1.

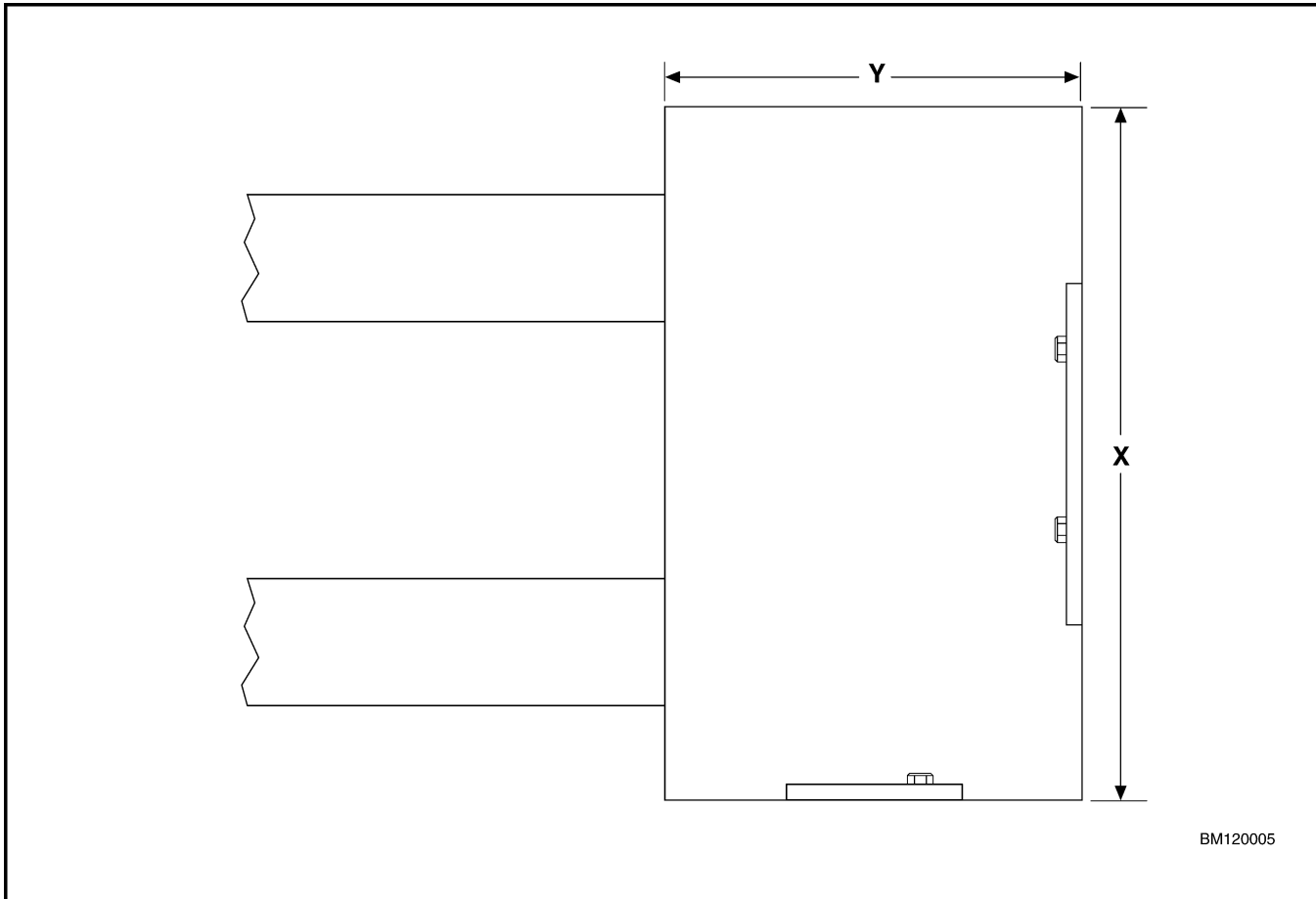


Figure 1. Battery Compartment

Number of Cells	Cell Size	Ampere Hours (Max)	Kilowatt Hours (Max)	Com-partment Length (X)	Com-partment Width (Y) (Max)	Recom-mended Height (Max)	Weight (Max)
Standard Battery Pack with 25 amp charger		158	3.8	721.4 mm (28.4 in.)	200.7 mm (7.9 in.)	607 mm (23.9 in.)	141 kg (310 lb)
GNB PalletPro™ Battery Pack with 25 amp charger		195	4.4	693.4 mm (27.3 in.)	190.5 mm (7.5 in.)	670.6 mm (26.4 in.)	170 kg (375 lb)
Industrial Battery, with 12 cells	85	170	4.0	635 mm (25 in.)	167.6 mm (6.6 in.)	591.8 mm (23.3 in.)	183 kg (403 lb)

4500 - 12 VOLT

Number of Cells	Cell Size	Ampere Hours (Max)	Kilowatt Hours (Max)	Com-partment Length (X)	Com-partment Width (Y) (Max)	Recom-mended Height (Max)	Weight (Max)
6	85	425	5.0	662.3 mm (26.1 in.)	195.6 mm (7.7 in.)	591.8 mm (23.3 in.)	198 kg (436 lb)

8000 SRM 1010

Battery Specifications and Adjustments

Number of Cells	Cell Size	Ampere Hours (Max)	Kilowatt Hours (Max)	Com-partment Length (X)	Com-partment Width (Y) (Max)	Recom-mended Height (Max)	Weight (Max)
6	85	425	5.0	792.5 mm (31.2 in.)	198 mm (7.8 in.)	591.8 mm (23.3 in.)	232 kg (512 lb)
6	85	510	6.0	777.3 mm (30.6 in.) a	195.6 mm (7.7 in.) c	591.8 mm (23.3 in.)	231 kg (510 lb)
Note: If Y is less than 184 mm (7.25 in.), A supplemental spacer is required. a – Use 6.35 mm (1.26 in.) spacer. b – Use 25.4 mm (1 in.) spacer. c – Use 16 mm (0.63 in.) spacer. d – Use 32 mm (1.26 in.) spacer. e – Use 16 mm (0.63 in.) spacer.							

4500 AND 5000 LB - 24 VOLT

Number of Cells	Cell Size	Ampere Hours (Max)	Kilowatt Hours (Max)	Com-partment Length (X)	Com-partment Width (Y) (Max)	Recom-mended Height (Max)	Weight (Max)
GNB PalletPro™ Battery Pack with 25 amp charger		195	4.4	693.4 mm (27.3 in.)	190.5 mm (7.5 in.)	670.6 mm (26.4 in.)	163 kg (360 lb)
12	75	150	3.5	642.6 mm (25.3 in.) b	162.6 mm (6.4 in.) e	591.8 mm (23.3 in.)	186 kg (410 lb)
12	85	170	3.9	642.6 mm (25.3 in.) b	162.6 mm (6.4 in.) e	591.8 mm (23.3 in.)	193 kg (425 lb)
12	100	200	4.6	642.6 mm (25.3 in.) b	162.6 mm (6.4 in.) e	668 mm (26.3 in.)	213 kg (470 lb)
12	75	225	5.2	652.8 mm (25.7 in.) b	223.5 mm (8.8 in.)	591.8 mm (23.3 in.)	245 kg (540 lb)
12	85	255	6.0	652.8 mm (25.7 in.) b	223.5 mm (8.8 in.)	591.8 mm (23.3 in.)	245 kg (540 lb)
Note: If Y is less than 210 mm (8.25 in.), a supplemental spacer is required. a – Use 6.35 mm (1.26 in.) spacer. b – Use 25.4 mm (1 in.) spacer. c – Use 16 mm (0.63 in.) spacer. d – Use 32 mm (1.26 in.) spacer. e – Use 16 mm (0.63 in.) spacer.							

