CAPACITIES AND SPECIFICATIONS

E1.50-2.00XM (E25-35Z) [E114/F114]; E2.00XMS (E40ZS) [E114/F114]

HYSTER

PART NO. 1565454

8000 SRM 1113

TABLE OF CONTENTS

This section is for the following models:

E1.50-2.00XM (E25-35Z) [E114/F114];
E2.00XMS (E40ZS) [E114/F114]

Wheels and Tires

Item	Specification
Torque Value of Drive Wheel Bolts	330 N•m (243 lbf ft)
Torque Value of Steer Wheel Nuts (Pneumatic)	155 N•m (114 lbf ft)
Torque Value of Spindle Nut for Steer Wheels	68 N•m (50 lbf ft), loosen, then 3 N•m (2 lbf ft)
Size of Standard Drive Tires	18 × 5 × 12-1/8*
Size of Optional Drive Tires	18 × 5 × 12-1/8*
Size of Standard Steer Tires	14 × 4-1/2 × 8*
Size of Optional Steer Tires	15 × 5 × 11-1/4*
*Electric Compound Tires are available in smooth or lug tread. Polyurethane and nonmarking compounds are only available on smooth tread. NEVER mix types of tread or tire compound on the same truck.	

Counterweights

Model	Weight **+30 kg (66 lb) −0 kg (0 lb)**
E25Z	337 kg (743 lb)
E1.50XM, (E30Z)	514 kg (1133 lb)
E1.75XM (E35Z)	626 kg (1380 lb)
E2.00XMS (E40ZS)	739 kg (1629 lb)

Hydraulic System

Table 1. Manual Control Valve

Item	Specification
Relief Pressure, Lift System	17.9 ±0.7 MPa (2600 ±100 psi)
Relief Pressure, Tilt System	15.75 ±0.7 MPa (2250 ±100 psi)
Relief Pressure, Auxiliary	15.75 ±0.7 MPa (2250 ±100 psi)
Relief Pressure, Steering System	5709 ±248 kPa (828 ±36 psi)
*Oil temperature 54 to 66°C (130 to 150°F).	

Table 2. E-Hydraulic Control Valve

Item	Specification
Relief Pressure, Lift System (Primary Relief Valve)	17.9 ±0.7 MPa (2600 ±100 psi)
Relief Pressure, Tilt System and Auxiliary Functions (Secondary Relief Valve)	15.5 ±0.7 MPa (2250 ±100 psi)
Relief Pressure, Steering System	5709 ±248 kPa (828 ±36 psi)
Oil temperature 54 to 66°C (130 to 150°F).	

Capacities

Item	Specification
Hydraulic System (Full Mark On Dipstick)*	11.3 liter (3.0 gal)
Differential/Speed Reducer	2.9 liter (3.1 qt)
Brake Fluid	0.24 liter (0.5 pt)
Hydraulic Pump Capacities**	
Large Lift Pump	19 cc/rev. (1.16 in^3/rev.)
Steering Pump	4.23 cc/rev. (0.26 in^3/rev.)
*Check after all air is removed from the system and with the mast fully lowered. **Oil temperature at 54 to 66°C (130 to 150°F).	

Battery Specifications

Model	Min. Compartment Size Length × Width	Battery Size Minimum/ Maximum*		Weight	
		Length	Width	Mini-mum	Maxi-mum
E25Z	695 × 879 mm (27.4 × 34.6 in.)	784/876 mm (30.9/34.5 in.)	654/692 mm (25.8/ 27.2 in.)	794 kg (1750 lb)	1132 kg (2496 lb)
E1.50XM (E30Z)				839 kg (1850 lb)	
E1.75XM (E35Z)				839 kg (1850 lb)	
E2.00XM (E40ZS)				839 kg (1850 lb)	
E25Z	695 × 909 mm (27.4 × 35.8 in.)	784/907 mm (30.9/35.7 in.)		794 kg (1750 lb)	
E1.50XM (E30Z)				839 kg (1850 lb)	
E1.75XM (E35Z)				839 kg (1850 lb)	
E2.00XM (E40ZS)				839 kg (1850 lb)	

617 mm (24.3 in.) = maximum height for all batteries. This dimension is 31.75 mm (1.25 in.) less with optional battery rollers.

Tolerances of the battery compartment are +3 and −0 mm (+0.12 and −0 in.). The battery size column shows the size range that will permit the battery to still fit into a battery compartment.

Battery compartment length is front to back. Width is side to side. The length dimension of the battery must fit within the battery compartment side-to-side dimension with a clearance of 0 to 13 mm (0 to 0.5 in.) maximum. Battery width must fit within the battery compartment front-to-back dimension.

WARNING

The battery must fit the battery compartment so that the battery restraint system will operate correctly. Use only batteries with the correct length shown in this table. Adjust the spacer plate and side spacers to prevent the battery from moving more than 13 mm (0.5 in.) forward or backward.

BATTERY HEIGHT SPECIFICATIONS (HOODS AND BATTERY TYPES)

Model	Battery Type	Maximum Height - Standard Hood			
		With Battery Tray*	With Cell Cap**	Cell Connectors and Terminals	
				Electrically Insulated***	Not Electrically Insulated**
E1.50-1.75XM (E25-35Z), E2.00XMS (E40ZS)	**I**	607 mm (23.9 in.)	594 mm (23.4 in.)	594 mm (23.4 in.)	574 mm (22.6 in.)
E1.50-1.75XM (E25-35Z)), E2.00XMS (E40ZS)	**II, III**		NA	NA	NA

NA = Not Applicable

BATTERY TYPES

TYPE I - Battery without a cover as part of the battery.

TYPE II - Battery with a cover that is flat and is fastened to case of battery. Cover opens from FRONT OR REAR when installed in lift truck.

TYPE III - Battery with a cover that is flat and is fastened to case of battery. Cover opens from SIDE when installed in lift truck.

*Battery Types II and III bottom of battery to highest point (top of cover or top of hinge).

**Minimum height below top of battery tray is 4 mm (0.16 in.).

***Minimum height below top of battery tray is 0.5 mm (0.02 in.).

WARNING

The battery must fit the battery compartment so that the battery restraint system will operate correctly. Use only batteries with the correct length shown in the table above. Adjust the spacer plate and side spacers to prevent the battery from moving more than 13 mm (0.5 in.) forward, backward, or to the side.

Model	Battery Type	Maximum Height - Raised Hood			
		With Battery Tray*	With Cell Cap**	Cell Connectors and Terminals	
				Electrically Insulated***	Not Electrically Insulated**
E1.50-1.75XM (E25-35Z)), E2.00XMS (E40ZS)	**I**	640 mm (25.2 in.)	625 mm (24.6 in.)	627 mm (24.7 in.)	607 mm (23.9 in.)
E1.50-1.75XM (E25-35Z)), E2.00XMS (E40ZS)	**II, III**		NA	NA	NA

NA = Not Applicable

BATTERY TYPES

TYPE I - Battery without a cover as part of the battery.

TYPE II - Battery with a cover that is flat and is fastened to case of battery. Cover opens from FRONT OR REAR when installed in lift truck.

TYPE III - Battery with a cover that is flat and is fastened to case of battery. Cover opens from SIDE when installed in lift truck.

*Battery Types II and III bottom of battery to highest point (top of cover or top of hinge).

**Minimum height below top of battery tray is 4 mm (0.16 in.).

***Minimum height below top of battery tray is 0.5 mm (0.02 in.).

WARNING

The battery must fit the battery compartment so that the battery restraint system will operate correctly. Use only batteries with the correct length shown in the table above. Adjust the spacer plate and side spacers to prevent the battery from moving more than 13 mm (0.5 in.) forward, backward, or to the side.

Maximum Carriage and Tilt Creep Rates

Hydraulic Oil Temperature	Vertical Creep at Carriage		Tilt Creep at Cylinder Rod		
	mm/Min	in./Min	°/Min	mm/Min	in./Min
20°C (68°F)	2.2 mm	0.09 in.	0.10°	0.63 mm	0.03 in.
30°C (86°F)	3.3 mm	0.13 in.	0.15°	0.95 mm	0.04 in.
40°C (104°F)	6.3 mm	0.25 in.	0.29°	1.83 mm	0.07 in.
50°C (122°F)	10.0 mm	0.39 in.	0.47°	2.97 mm	0.12 in.
60°C (140°F)	14.6 mm	0.57 in.	0.68°	4.30 mm	0.17 in.

Mast Speeds

E25-35Z, E40ZS MAST SPEEDS (36 AND 48 VOLT) AMERICAS

AC or DC Motor and 19 cc (1.16 in.^{3}) Lift Pump*									
Model	Mast	V	Lifting				Lowering			
			Rated Load		No Load		Rated Load		No Load	
			m/sec	ft/min	m/sec	ft/min	m/sec	ft/min	m/sec	ft/min
E25Z	Two-Stage LFL	36 48	0.396 0.508	78 100	0.544 0.681	107 134	0.508	100	0.472	93
	Two-Stage FFL	36 48	0.396 0.508	78 100	0.538 0.671	106 132	0.462	91	0.371	73
	Three-Stage FFL	36 48	0.386 0.498	76 98	0.518 0.650	102 128	0.478	94	0.411	81
E30Z	Two-Stage LFL	36 48	0.381 0.488	75 96	0.544 0.681	107 134	0.508	100	0.472	93
	Two-Stage FFL	36 48	0.376 0.483	74 95	0.538 0.671	106 132	0.462	91	0.371	73
	Three-Stage FFL	36 48	0.366 0.478	72 94	0.518 0.650	102 128	0.478	94	0.411	81

LFL = Limited Free Lift
FFL = Full Free Lift
*Oil temperature 54 to 66°C (130 to 150°F). Lifting speeds (valve fully open) ±10% acceptable. No Load lowering speeds are minimum values. Rated Load lowering speeds are maximum values. Load center is 610 mm (24 in.).

AC or DC Motor and 19 cc (1.16 in.^{3}) Lift Pump*										
Model	Mast	V	Lifting				Lowering			
			Rated Load		No Load		Rated Load		No Load	
			m/sec	ft/min	m/sec	ft/min	m/sec	ft/min	m/sec	ft/min
E35Z	Two-Stage LFL	36 48	0.361 0.467	71 92	0.544 0.681	107 134	0.508	100	0.472	93
	Two-Stage FFL	36 48	0.356 0.467	70 92	0.538 0.671	106 132	0.462	91	0.371	73
	Three-Stage FFL	36 48	0.351 0.457	69 90	0.518 0.650	102 128	0.478	94	0.411	81
E40ZS	Two-Stage LFL	36 48	0.340 0.447	67 88	0.544 0.681	107 134	0.508	100	0.472	93
	Two-Stage FFL	36 48	0.335 0.447	66 88	0.538 0.671	106 132	0.462	91	0.371	73
	Three-Stage FFL	36 48	0.330 0.437	65 86	0.518 0.650	102 128	0.478	94	0.411	81

LFL = Limited Free Lift
FFL = Full Free Lift
*Oil temperature 54 to 66°C (130 to 150°F). Lifting speeds (valve fully open) ±10% acceptable. No Load lowering speeds are minimum values. Rated Load lowering speeds are maximum values. Load center is 610 mm (24 in.).

E1.50-2.00XM MAST SPEEDS (48 VOLT) EUROPE

AC or DC Motor and 19 cc (1.16 in.^{3}) Lift Pump*										
Model	Mast	V	Lifting				Lowering			
			Rated Load		No Load		Rated Load		No Load	
			m/sec	ft/min	m/sec	ft/min	m/sec	ft/min	m/sec	ft/min
E1.50XM	Two-Stage LFL	48	0.478	94	0.681	134	0.508	100	0.472	93
	Two-Stage FFL	48	0.478	94	0.671	132	0.462	91	0.371	73
	Three-Stage FFL	48	0.467	92	0.650	128	0.478	94	0.411	81
E1.75XM	Two-Stage LFL	48	0.452	89	0.681	134	0.508	100	0.472	93
	Two-Stage FFL	48	0.452	89	0.671	132	0.462	91	0.371	73
	Three-Stage FFL	48	0.442	87	0.650	128	0.478	94	0.411	81
E2.00XMS	Two-Stage LFL	48	0.432	85	0.681	134	0.508	100	0.472	93
	Two-Stage FFL	48	0.432	85	0.671	132	0.462	91	0.371	73
	Three-Stage FFL	48	0.422	83	0.650	128	0.478	94	0.411	81

LFL = Limited Free Lift
FFL = Full Free Lift
*Oil temperature 54 to 66°C (130 to 150°F). Lifting speeds (valve fully open) ±10% acceptable. No Load lowering speeds are minimum values. Rated Load lowering speeds are maximum values. Load center is 500 mm (19.7 in.).

Torque Specifications

FRAME

Overhead Guard
Front leg M12 x 1.75 x 40 or 50 capscrews 66 N•m (49 lbf ft)
Rear leg M12 x 1.75 x 60 capscrews with nuts 72 N•m (53 lbf ft)

Counterweight Capscrews
upper 380 N•m (260 lbf ft)
lower (tow pin area) 66 N•m (50 lbf ft)

Traction Motor to Speed Reducer Housing M12 × 1.75 × 35 hex head screws (7)
71 to 83 N•m (52 to 61 lbf ft)

MAST

Capscrews for Mast Assembly Mounts at Drive Axle
90 N•m (66 lbf ft)

Capscrews for Sideshift Carriage Mount
435 N•m (320 lbf ft)

Bolts for Lift Cylinder Mounts
53 N•m (39 lbf ft)

Nuts for Lowering Control Valve
18 N•m (13 lbf ft)

Setscrews for Chain Sheave
8 N•m (71 lbf in)

Nuts for Free-Lift Cylinder Brackets
38 N•m (28 lbf ft)

Bolts for Free-Lift Cylinder Brackets
53 N•m (39 lbf ft)

Capscrew for Free-Lift Cylinder Hose Sheave
41 N•m (30 lbf ft)

Capscrews for Chain Guards on Crosshead Assembly
66 N•m (49 lbf ft)

Capscrews for Hose Guards on Crosshead Assembly
66 N•m (49 lbf ft)

Capscrews for Stub Shaft
53 N•m (39 lbf ft)

Capscrews for Hose Brackets and Clamps
8 N•m (71 lbf in)

Capscrews for Hose Guides at Lower Crossmember
33 N•m (24 lbf ft)

Nut for Piston Rod on Tilt Cylinder
163 to 190 N•m (120 to 140 lbf ft)

Retainer for Piston and Rod Assembly on Tilt Cylinder
163 to 176 N•m (120 to 130 lbf ft)

DRIVE AXLE, SPEED REDUCER, AND DIFFERENTIAL

Capscrews for Axle Trunnion Caps
71 to 83 N•m (52 to 61 lbf ft)

Traction Motor Mount Capscrews
71 to 83 N•m (52 to 61 lbf ft)

Speed Reducer Support Capscrews
216 N•m (159 lbf ft)

Speed Reducer-to-Axle Capscrews
41 to 49 N•m (30 to 36 lbf ft)

Speed Reducer Cover Capscrews
21 to 25 N•m (15 to 18 lbf ft)

Pinion Lock Nut (Rotating Torque)
5.4 to 5.9 N•m (4 to 4.6 lbf ft)

Differential Bearing Nuts (Rotating Torque)
2.9 to 3.4 N•m (2.2 to 2.5 lbf ft)
Bearing Cap Capscrews 263 to 315 N•m (194 to 233 lbf ft)

Ring Gear Capscrews
152 to 167 N•m (112 to 123 lbf ft)

Mount Bolts for Brake Assembly (Back Plate)
152 to 167 N•m (112 to 123 lbf ft)

Hub Castle Nuts
Initial: 200 N•m (148 lbf ft) while rotating hub
Final: 3.4 N•m (30 lbf in)

Wheel Bolts
330 N•m (244 lbf ft)

STEERING AXLE

Plate Bolts of Rubber Mounts
41 to 49 N•m (30 to 36 lbf ft)

Mount Bolts of Steering Cylinder
41 to 49 N•m (30 to 36 lbf ft)

Wheel Castle Nut
Initial: 68 N•m (50 lbf ft) while rotating wheel. Loosen, then
3 N•m (2 lbf ft)

Wheel Nut (Pneumatic)
155 N•m (114 lbf ft)

Cylinder Guides
117.7 ±15 N•m (86.8 ±11 lbf ft)

BRAKE

Back Plate to Axle Mount Bolts
152 to 167 N•m (112 to 123 lbf ft)

Seat Brake
Brake Assembly Capscrew (at Motor Armature) 66 N•m (49 lbf ft)
Pivot Nut for Brake Lever 40 N•m (30 lbf ft)

E-HYDRAULIC CONTROL VALVE

Lift and Lowering Cartridge
Cartridge Torque 45 to 50 N•m (33 to 37 lbf ft)
Coil Nut Torque 6.8 to 9.5 N•m (60 to 84 lbf in)

Tilt Cartridge
Cartridge Torque 32.6 to 35.4 N•m (24 to 26 lbf ft)
Coil Nut Torque 6.8 to 9.5 N•m (60 to 84 lbf in)

Low Flow Auxiliary Cartridge
Cartridge Torque 32.6 to 35.4 N•m (24 to 26 lbf ft)
Coil Nut Torque 6.8 to 9.5 N•m (60 to 84 lbf in)

High Flow Auxiliary Cartridge
Cartridge Torque 45 to 50 N•m (33 to 37 lbf ft)

Compensator Cartridge
Cartridge Torque 45 to 50 N•m (33 to 37 lbf ft)

High Flow Auxiliary Solenoids
3 to 4 N•m (26.5 to 34.5 lbf in)

Check Valve
45 to 50 N•m (33 to 37 lbf ft)

Counterbalance Valve
41 to 47 N•m (30 to 35 lbf ft)

Relief Valves
33 to 35 N•m (24 to 26 lbf ft)

Flow Regulator
24.5 to 27.2 N•m (18 to 20 lbf ft)

Adhesives and Sealants

Hyster Part No.	Loctite® Part No.	Description	Size
360387	222	Small Screw Threadlock (Purple)	50 ml (1.7 oz)
318702*	242	Removable Threadlock (Blue)	10 ml (0.34 oz)
226414*	271	High Strength Threadlock (Red)	10 ml (0.34 oz)
318996	277	High Viscosity Threadlock (Red)	50 ml (1.7 oz)
318650	290	Low Viscosity Threadlock (Green)	0.6 ml (0.02 oz)
251099	290	Low Viscosity Threadlock (Green)	50 ml (1.7 oz)
355844*	422	SuperBonder® Adhesive	3 ml (0.1 oz)
350830	515	Gasket Eliminator (Purple)	6 ml (0.2 oz)
313022*	515	Gasket Eliminator (Purple)	50 ml (1.7 oz)
273338*	567	Pipe Sealant with Teflon® (White)	50 ml (1.7 oz)
318705	595	Super Flex® Silicone	100 ml (3.4 oz)
318701	609	Retaining Compound	10 ml (0.34 oz)
341959	680	Retaining Compound	50 ml (1.7 oz)
226415		Primer T - Aerosol	177 ml (6 oz)
316865		Antiseize Compound	476 ml (16 oz)
360053		Chisel Gasket Remover (10 Aerosol cans per case)	536 ml (18 oz)
318700*		Adhesive & Sealant Kit (Contains one each of * items)	

Loctite®, Super Flex®, and SuperBonder® are registered trademarks of the Loctite Corporation.
Teflon® is a registered trademark of Du Pont de Nemours Co. Inc.

NOTES