

CAPACITIES AND SPECIFICATIONS

J2.00-3.20XM (J40-65Z) [B416]



HYSTER

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This section is for the following models:

J2.00-3.20XM (J40-65Z) [B416]

(More Content includes: Brake system, Capacities, and specifications, Frame, Hydraulic, System, Industrial battery, Main control, Valve, Mast repair, Fasteners, Schematics diagrams, Steering axle, Steering system, Wire harness repair And more)

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Counterweight

Model	* mm (* in.)	Weight +50 kg (110 lb) —0 kg (0 lb)
J2.00-2.50XM (J40-50Z)	717 mm (28.2 in.)	685 kg (1510 lb)
J2.50-3.00XM (J50-60Z)	861 mm (34.0 in.)	685 kg (1510 lb)
J3.20XM (J65Z)	861 mm (34.0 in.)	750 kg (1650 lb)
*Approximate battery compartment lengths (identifies frame size).		

Hydraulic System

Table 1. Manual Control Valve

Item	Specification
Relief Pressure, Lift System	20.7 ±0.7 MPa (3000 ±100 psi)
Relief Pressure, Tilt System	
With Auxiliary Relief Valve	15.5 ±0.7 MPa (2250 ±100 psi)
Without Auxiliary Relief Valve	21.4 ±0.7 MPa (3100 ±100 psi)
Relief Pressure, Auxiliary	15.5 ±0.7 MPa (2250 ±100 psi)
Relief Pressure, Steering System	8908 ±345 kPa (1292 ±50 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)	22.7 ±0.7 MPa (3300 ±100 psi)
Relief Pressure, Tilt System and Auxiliary Functions (Secondary Relief Valve)	15.5 ±0.7 MPa (2250 ±100 psi)
Relief Pressure, Steering System	8908 ±345 kPa (1292 ±50 psi)
Oil temperature 54 to 66°C (130 to 150°F).	

Steering System

Item	Specifications
Oil Temperatures	49 to 60°C (120 to 140°F)
Inside Steering Tire Angle	82°
Number of Turns to Lock	4.9
Steering Relief Pressure	8908 ±345 kPa (1292 ±50 psi)
Steering Relief Current (Approximate)	37 amps
Open Center Pressure	50 psi
Open Center Current	5 amps
Steering Time (Unloaded Static)	2.5 seconds
Steering Control Unit Displacement	80
Minimum Turning Radius (Truck With Load) ±2 in. (±50 mm) Acceptable	
717 mm Battery Compartment	
J2.00XM (J40Z)	1996 mm (78.58 in.)
J2.50XM (J50Z)	
861 mm Battery Compartment	
J2.50XM (J50Z)	2148 mm (84.57 in.)
J3.00XM (J60Z)	
J3.20XM (J65Z)	

Wheels and Tires

Item	Specification
Torque - Drive Wheel Nuts	155 to 175 N•m (114 to 166 lbf ft)
Torque - Steering Wheel Nuts	237 to 305 N•m (175 to 225 lbf ft)
Drive Tires, Size Pneumatic	23 × 10-12 16 Ply
Drive Tires, Size Pneumatic-Shaped Solid	23 × 10-12/8.0
Drive Tires, Size Snap-On Solid Tires	23 × 10-12/8.0
Steering Tires, Size Snap-On Solid Tires	18 × 7 × 8
Steering Tires, Size Pneumatic	18 × 7.00 × 8.00 16 Ply
Steering Tires, Size Pneumatic-Shaped Solid	18 × 7.00-8/4.33

Battery Specifications

Model	Min. Com- partment Size Width × Length	Battery Size Minimum/ Maximum		Weight	
		Length	Width	Minimum	Maximum
J2.00-2.50XM (J40-50Z)	712 × 1032 mm (28.0 × 40.6 in.)	1025/1028 mm (40.4/40.5 in.)	708/711 mm (27.9 to 28.0 in.)	1470 kg (3241 lb)	1625 kg (3582 lb)
J2.50-3.20XM (J50-60Z)	856 × 1032 mm (33.7 × 40.6 in.)	1025/1028 mm (40.4/40.5 in.)	852/855 mm (33.5 to 33.7 in.)	1780 kg (3924 lb)	1965 kg (4332 lb)

The 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.

The 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.) either direction.

Capacities

Item	Specification
Differential/Gearbox - Left-Hand Side	1.3 liter (2.75 pt)
Differential/Speed Sensor - Right-Hand Side	0.9 liter (1.9 pt)
Brake Oil (Master Cylinder)	ISO-VG32 0.25 liter (0.5 pt)
Disc Brake Chamber Oil (each side)	0.7 liter (1.5 pt)
Hydraulic System (Full Mark on Dipstick)*	27.4 liter (7.25 gal)
Hydraulic Pump Capacities**	
Large Lift Pump	19 cc/rev. (1.16 in. ³ /rev.)
Steering Pump	5.29 cc/rev. (0.32 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)	

Movement Rates (Maximum) for Tilt Cylinders

Hydraulic Oil Temperature/Mast Tilt Rate			
20°C (68°F)		60°C (140°F)	
mm/min	in/min	mm/min	in/min
0.8	0.03	5.0	0.20

Mast Speeds

MAST SPEEDS - J2.00-3.20XM (72 OR 80 VOLT) EUROPE

Model	Mast	V	Lifting		Lowering	
			Rated Load	No Load	Rated Load	No Load
			m/sec	m/sec	m/sec	m/sec
J2.00XM	Two-Stage LFL	72 80	0.376 0.422	0.544 0.605	0.567	0.508
	Two-Stage FFL	72 80	0.396 0.442	0.569 0.635	0.524	0.457
	Three-Stage FFL	72 80	0.386 0.432	0.559 0.625	0.539	0.467
J2.50XM	Two-Stage LFL	72 80	0.345 0.391	0.544 0.605	0.585	0.508
	Two-Stage FFL	72 80	0.366 0.411	0.569 0.635	0.555	0.457
	Three-Stage FFL	72 80	0.356 0.401	0.559 0.625	0.557	0.467
J3.00XM	Two-Stage LFL	72 80	0.300 0.335	0.488 0.544	0.557	0.457
	Two-Stage FFL	72 80	0.310 0.345	0.503 0.564	0.524	0.366
	Three-Stage FFL	72 80	0.310 0.345	0.503 0.559	0.533	0.396
J3.20XM	Two-Stage LFL	72 80	0.295 0.330	0.488 0.544	0.570	0.457
	Two-Stage FFL	72 80	0.300 0.335	0.503 0.564	0.533	0.366
	Three-Stage FFL	72 80	0.300 0.335	0.503 0.559	0.543	0.396

LFL = Limited Free Lift

FFL = Full Free Lift

*Standard 19 cc (1.16 in.³) displacement pump, 190 mm (7.5 in.) standard pump motor and 610 mm (24 in.) load center.

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.

MAST SPEEDS - J40-65Z (72 OR 80 VOLT) AMERICAS

Model	Mast	V	Lifting		Lowering	
			Rated Load	No Load	Rated Load	No Load
			ft/min	ft/min	ft/min	ft/min
J40Z	Two-Stage LFL	72 80	74 83	107 119	112	100
	Two-Stage FFL	72 80	78 87	112 125	103	90
	Three-Stage FFL	72 80	76 85	110 123	106	92
J50Z	Two-Stage LFL	72 80	68 77	107 119	115	100
	Two-Stage FFL	72 80	72 81	112 125	109	90
	Three-Stage FFL	72 80	70 79	110 123	110	92
J60Z	Two-Stage LFL	72 80	59 66	96 107	110	90
	Two-Stage FFL	72 80	61 68	99 111	103	72
	Three-Stage FFL	72 80	61 68	99 110	105	78
J65Z	Two-Stage LFL	72 80	58 65	96 107	112	90
	Two-Stage FFL	72 80	59 66	99 111	105	72
	Three-Stage FFL	72 80	59 66	99 110	107	78

LFL = Limited Free Lift

FFL = Full Free Lift

*Standard 19 cc (1.16 in.³) displacement pump, 190 mm (7.5 in.) standard pump motor and 610 mm (24 in.) load center.

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.

Torque Specifications

FRAME

**Overhead Guard - Front Leg M12 × 1.75
× 50 Capscrews (3)**
102 N•m (75 lbf ft)

**Overhead Guard - Rear Leg M12 × 1.75
× 50 Capscrews (2)**
102 N•m (75 lbf ft)

**Counterweight Capscrews - Upper
Capscrews (2)**
320 N•m (236 lbf ft)

**Counterweight Capscrews - Lower (tow pin)
M12 × 1.75 × 90 Capscrews (2)**
66 N•m (49 lbf ft)

**Counterweight Capscrews - Cover 3/8
UNC × 1-1/4 Capscrews (2)**
75 N•m (56 lbf ft)

DRIVE AXLE, SPEED REDUCER, AND DIFFERENTIAL

Axle Mounts to Frame
Torque Wrench on Head of Bolt 820-920 N•m
(604-665 lbf ft)

Axle Housing to Motor Housing
37 N•m (27 lbf ft)

Axle Gearbox to Axle Housing M12 Bolts
86 N•m (66 lbf ft)
M8 Bolts
37 N•m (27 lbf ft)

Differential Case Halves
8 N•m (6.1 lbf ft)

Steering Wheel Nuts
237 to 305 N•m (175 to 225 lbf ft)

Drive Wheel Nuts
155 to 175 N•m (114 to 166 lbf ft)

MASTS

Mast to Drive Axle Mounting Capscrews
M16 × 2 × 80 (4) 270 N•m (200 lbf ft)
Mast to Mount Pivot Pins 270 N•m (200 lbf ft)

Tilt Rod End M12 × 1.75 × 55 (2)
90 N•m (66 lbf ft)

E-HYDRAULIC CONTROL VALVE

Lift and Lowering Cartridge
Cartridge Torque 45 to 50 N•m (33 to 37 lbf ft)
Coli 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)
Coli 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)
Coli 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)	
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