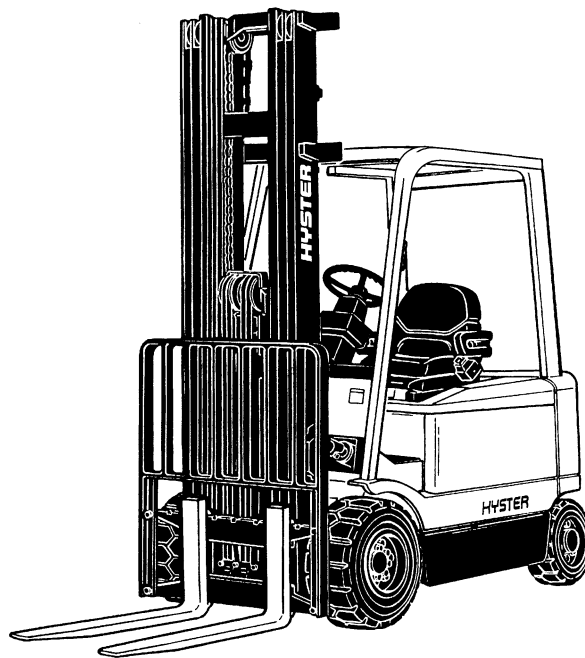


# **CAPACITIES AND SPECIFICATIONS**

**J2.00-3.20XM (J40-60Z) [A416]**



# ***HYSTER***

# TABLE OF CONTENTS

Counterweights ..... 1

Hydraulic System..... 1

Wheels and Tires..... 1

Battery Specifications..... 2

Capacities ..... 2

Movement Rates (Maximum) for Tilt Cylinders ..... 3

Mast Speeds ..... 3

    Mast Speeds - J2.00-3.20XM (72 or 80 Volt) Europe ..... 3

    Mast Speeds - J40-60Z (72 or 80 Volt) Americas ..... 4

    Mast Speeds - J2.00-3.20XM (72 or 80 Volt) Europe ..... 5

    Mast Speeds - J40-60Z (72 or 80 Volt) Americas ..... 6

Torque Specifications ..... 7

    Frame ..... 7

    Drive Axle, Speed Reducer, and Differential ..... 7

    Masts ..... 8

Adhesives and Sealants ..... 8

This section is for the following models:

J2.00-3.20XM (J40-60Z) [A416]

(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)

**[Click Here](#)**

**Get all the content  
after purchase**

**Thank you very  
much.**

## Counterweights

Model	* mm (* in.)	Weight +50 kg (110 lb) -0 kg (0 lb)
J2.00-3.20XM (J40-60Z)	717 mm (28.2 in.)	685 kg (1510 lb)
J2.50-3.00XM (J50Z)	861 mm (34.0 in.)	685 kg (1510 lb)
J3.20XM (J60Z)	861 mm (34.0 in.)	750 kg (1650 lb)
*Approximate battery compartment lengths (identifies frame size).		

## Hydraulic System

Item	Specification
Relief Pressure, Lift System	21.0 ±0.7 MPa (3000 ±100 psi)
Relief Pressure, Tilt System	
With Auxiliary Relief Valve	15.75 ±0.7 MPa (2250 ±100 psi)
Without Auxiliary Relief Valve	21.7 ±0.7 MPa (3100 ±100 psi)
Relief Pressure, Auxiliary	15.75 ±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).	

## Wheels and Tires

Item	Specification
Torque - Drive Wheel Nuts	237 to 305 N•m (175 to 225 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 Sit Solid Tires	23 × 10-12/8.0
Steering Tires, Size Sit 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. Compartment Size Length × Width	Battery Size Minimum/ Maximum		Weight	
		Length	Width	Minimum	Maximum
<b>J2.00-2.50XM (J40-50Z)</b>	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)	1879 kg (4142 lb)
<b>J2.50-3.20XM (J50-60Z)</b>	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
Hydraulic System (Full Mark on Dipstick)*	27.4 liter (7.25 gal)
Differential/Speed Reducer	3.9 liter (8.2 pt)
Brake Fluid	0.20 liter (0.4 pt)
Hydraulic Pump Capacities**	
Large Lift Pump	19 cc/rev. (1.16 in. <sup>3</sup> /rev.)
Small Lift Pumps	12 cc/rev. (0.73 in. <sup>3</sup> /rev.)
Steering Pump	4.23 cc/rev. (0.26 in. <sup>3</sup> /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

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

LFL = Limited Free Lift

FFL = Full Free Lift

\*Standard 19 cc (1.16 in.<sup>3</sup>) 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.

DC Motor With Standard Pump*						
Model	Mast	V	Lifting		Lowering	
			Rated Load	No Load	Rated Load	No Load
			m/sec	m/sec	m/sec	m/sec
<b>J3.20XM</b>	Two-Stage LFL	72	0.295	0.488	0.570	0.457
		80	0.330	0.544		
	Two-Stage FFL	72	0.300	0.503	0.533	0.366
		80	0.335	0.564		
	Three-Stage FFL	72	0.300	0.503	0.543	0.396
		80	0.335	0.559		

LFL = Limited Free Lift  
 FFL = Full Free Lift  
 \*Standard 19 cc (1.16 in.<sup>3</sup>) 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 - J40-60Z (72 OR 80 VOLT) AMERICAS**

DC Motor With Standard Pump*						
Model	Mast	V	Lifting		Lowering	
			Rated Load	No Load	Rated Load	No Load
			ft/min	ft/min	ft/min	ft/min
<b>J40Z</b>	Two-Stage LFL	72	74	107	112	100
		80	83	119		
	Two-Stage FFL	72	78	112	103	90
		80	87	125		
	Three-Stage FFL	72	76	110	106	92
		80	85	123		
<b>J50Z</b>	Two-Stage LFL	72	68	107	115	100
		80	77	119		
	Two-Stage FFL	72	72	112	109	90
		80	81	125		
	Three-Stage FFL	72	70	110	110	92
		80	79	123		

LFL = Limited Free Lift  
 FFL = Full Free Lift  
 \*Standard 19 cc (1.16 in.<sup>3</sup>) 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.

DC Motor With Standard Pump*						
Model	Mast	V	Lifting		Lowering	
			Rated Load	No Load	Rated Load	No Load
			ft/min	ft/min	ft/min	ft/min
J60Z	Two-Stage LFL	72	58	96	112	90
		80	65	107		
	Two-Stage FFL	72	59	99	105	72
		80	66	111		
	Three-Stage FFL	72	59	99	107	78
		80	66	110		

LFL = Limited Free Lift  
 FFL = Full Free Lift  
 \*Standard 19 cc (1.16 in.<sup>3</sup>) 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 - J2.00-3.20XM (72 OR 80 VOLT) EUROPE

AC Motor With Low Noise Pump*						
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	0.376	0.544	0.559	0.508
		80	0.422	0.605		
	Two-Stage FFL	72	0.396	0.569	0.524	0.457
		80	0.442	0.635		
	Three-Stage FFL	72	0.386	0.559	0.539	0.467
		80	0.432	0.625		
J2.50XM	Two-Stage LFL	72	0.345	0.544	0.585	0.508
		80	0.391	0.605		
	Two-Stage FFL	72	0.366	0.569	0.555	0.457
		80	0.411	0.635		
	Three-Stage FFL	72	0.356	0.559	0.555	0.467
		80	0.401	0.625		

LFL = Limited Free Lift  
 FFL = Full Free Lift  
 \*Standard 19 cc (1.16 in.<sup>3</sup>) 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.



AC Motor With Low Noise Pump*						
Model	Mast	V	Lifting		Lowering	
			Rated Load	No Load	Rated Load	No Load
			m/sec	m/sec	m/sec	m/sec
<b>J3.00XM</b>	Two-Stage LFL	72	0.300	0.488	0.557	0.457
		80	0.335	0.544		
	Two-Stage FFL	72	0.310	0.503	0.524	0.366
80		0.345	0.564			
<b>J3.20XM</b>	Two-Stage LFL	72	0.295	0.488	0.570	0.457
		80	0.330	0.544		
	Two-Stage FFL	72	0.300	0.503	0.533	0.366
80		0.335	0.564			
	Three-Stage FFL	72	0.310	0.503	0.533	0.396
		80	0.345	0.559		
	Three-Stage FFL	72	0.300	0.503	0.543	0.396
80		0.335	0.559			

LFL = Limited Free Lift  
 FFL = Full Free Lift  
 \*Standard 19 cc (1.16 in.<sup>3</sup>) 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 - J40-60Z (72 OR 80 VOLT) AMERICAS**

AC Motor With Low Noise Pump*						
Model	Mast	V	Lifting		Lowering	
			Rated Load	No Load	Rated Load	No Load
			ft/min	ft/min	ft/min	ft/min
<b>J40Z</b>	Two-Stage LFL	72	74	107	112	100
		80	83	119		
	Two-Stage FFL	72	78	112	103	90
80		87	125			
	Three-Stage FFL	72	76	110	106	92
		80	85	123		
	Three-Stage FFL	72	76	110	106	92
80		85	123			

LFL = Limited Free Lift  
 FFL = Full Free Lift  
 \*Standard 19 cc (1.16 in.<sup>3</sup>) 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.

AC Motor With Low Noise Pump*						
Model	Mast	V	Lifting		Lowering	
			Rated Load	No Load	Rated Load	No Load
			ft/min	ft/min	ft/min	ft/min
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	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.<sup>3</sup>) 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)**  
 52 N•m (38 lbf ft)

### DRIVE AXLE, SPEED REDUCER, AND DIFFERENTIAL

#### Axle Mounts to Frame

Torque Wrench on Head of Bolt 780 N•m  
 (575 lbf ft)

Torque Wrench on Nut of Bolt 715 N•m (528 lbf ft)

#### Axle Housing to Differential Housing

38 N•m (28 lbf ft)

#### Axle Shaft Capscrews

98 N•m (72 lbf ft)

#### Back Plate to Axle Mount Capscrews

5/8 in. Capscrews 245 N•m (180 lbf ft)

1/2 in. Capscrews 125 N•m (92 lbf ft)

#### Bearing Cap Capscrews for Differential Bearings

95 to 110 N•m (70 to 81 lbf ft)

**Bearing Cap Capscrews for Speed Reducer**

19 N•m (14 lbf ft)

**Differential Case Halves**

50 N•m (37 lbf ft)

**Drive Gear to Differential Case**

111 N•m (82 lbf ft)

**Retainer Capscrews for Adjustment Nuts**

19 N•m (14 lbf ft)

**Speed Reducer Housing to Differential Housing**

52 N•m (38 lbf ft)

**Traction Motor to Speed Reducer Housing**

38 N•m (28 lbf ft)

**Wheel Cylinder Capscrews**

7/16 in. Capscrews 78 to 91 N•m (58 to 67 lbf ft)

1/2 in. Capscrews 91 to 102 N•m (67 to 75 lbf ft)

**Wheel Nuts**

237 to 305 N•m (175 to 225 lbf ft)

**MASTS**

**Capscrews, Hanger Caps**

M12 x 1.75 x 100 (4) 90 N•m (66 lbf ft)

Mast to Mount Pivot Pins 130 N•m (96 lbf ft)

**Tilt Rod End M12 x 1.75 x 55 (2)**

90 N•m (66 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.

