

**KOMATSU**

# EX20

S E R I E S

**10 - 16 ton**

***Diesel Pneumatic-Tyre Trucks***  
*EPA Tier 2/EU Stage II Emission Compliant*



**KOMATSU FORKLIFT**

# Even Tougher and Faster Komatsu EX20 Series Makes a Superb Debut

Incomparable power that assures easy operation.

Proven throughput and durability for efficient and reliable work.

Developed with Komatsu's industry-leading technologies, ranging from dependable engine to each and every switch, the EX20 series represents a creative evolution of forklift design.



Photographs in this catalog may contain optional equipment.

**10t / 11.5t / 13.5t / 15t / 16t**

*Diesel Pneumatic Tyre Trucks*

**EX20** SERIES

# EX20's Outstanding Power and Speed Maximize Your Working Efficiency



## POWER

**A clean, quiet, direct-injection diesel engine that boosts the highest power and torque in its class**

The EX20 series uses a 6BGIT direct-injection diesel engine, compliant with strict "EPA Tier 2/EU Stage II" engine emission regulations, to produce a top-of-class rated output of 119 kW [160 HP].



Rated Output

**119** <sup>(SAE gross)</sup> kW [160HP] @ 2200 min<sup>-1</sup>

Maximum Torque

**540** <sup>(SAE gross)</sup> N-m [398 lb.ft.] @ 1600 min<sup>-1</sup>

Acceleration Performance

**6.2** <sup>(FD100)</sup> s [0 to 20 meters (0-65.6ft)]

Top Travel Speed

**32** <sup>(Unloaded in 3rd Gear/FD100)</sup> km/h [20mph]

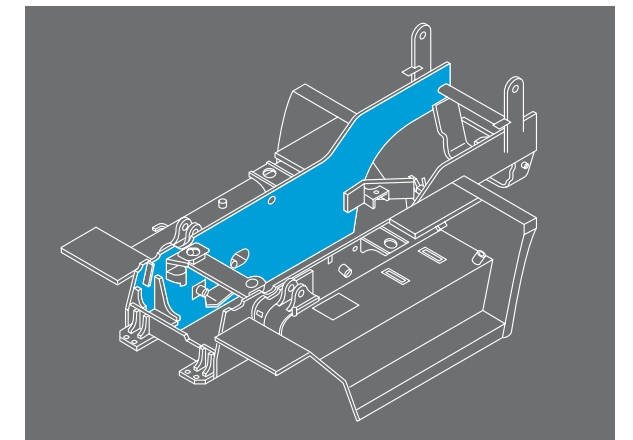
Maximum Gradability

**38** % <sup>(loaded/FD100)</sup>

## STRENGTH

**A high-rigidity frame for enhanced durability and load-handling performance**

Use of a mainframe structure comprising a single, thick steel plate provides high rigidity against twisting caused by static steering, turning, or unevenness of the road surface, thus achieving excellent vehicle durability and load-handling performance.



**Highly rigid mast construction to ensure reliability**

Use of an outer mast of rolled steel rails as well as parts of sufficient strength at every portion of the forklift ensures high strength and durability.



## MANEUVERABILITY

**Exceptionally high travel speed achieved through use of electrically controlled forward/reverse lever and 3-speed transmission (or optional automatic transmission)**

A best-of-breed combination of high-power new engine and powershift 3-speed transmission (or optional automatic transmission) with forward/reverse lever ensures excellent maneuverability and the optimum high-performance combination of travel speed, acceleration, lift speed, and gradability.

**Fully hydraulic braking, responsive to pedal depress force**

A fully hydraulic braking system ensures safe and reliable operation under any working condition. The accumulator provides ample braking performance even if the engine stops.

**Top-of-class rated lift speed ensures speedy and efficient work**

A top-of-class lift speed can be achieved in both loaded and unloaded states through optimization of the oil-level efficiency of the large-capacity tandem hydraulic pump (common to 10-ton to 16-ton models) as well as use of the new hydraulic circuit (load-sensing valve).

Lifting Speed

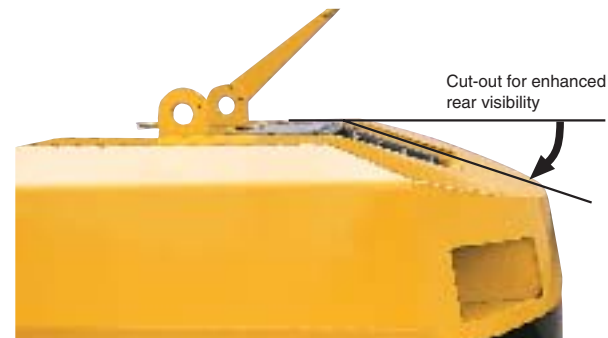
**470** <sup>(Loaded/FD100)</sup> mm/s [93fpm]

# Komatsu's Operator-Friendly Design Provides Optimum Visibility, Maximum Operator Comfort, and Excellent Maneuverability



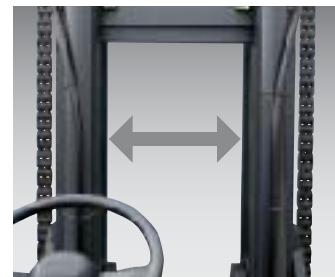
## VISIBILITY

Greatly enhanced front/rear visibility achieved by improved top of the counter weight shape and expanded inner width of the mast



Cut-out for enhanced rear visibility

Improvement in the shape of the back portion of the rear weight enhances rearward visibility, which has been a blind spot for the operator. Moreover, arrangement of the chains outside of the inner width of the mast allows the inner width of the mast to be expanded to 642 mm [25.3 inches] (FD100), ensure the good frontward visibility essential for safe operation.



Inner width of the mast  
**642** FD100 2-stage view mast  
mm[25.3in]

## SERVICEABILITY

Large-capacity fuel tank for less frequent fueling; easy-to-see windows for fuel and oil tank inspection

A large-capacity tank reduces fueling frequency and enables extended non-stop operation. Easy-to-see inspection windows, mounted on both the fuel and oil tanks, permit reliable checking of oil and fuel levels as well as the degree of oil contamination.



For oil



For fuel

Fuel Tank  
**260**L  
FD100 - FD115  
[68.7 USgal]  
**280**L  
FD135 - FD150E - FD160E  
[74.0 USgal]

High serviceability: non-bolted floor plates and side covers and quick-open/close engine hood



## COMFORT

Komatsu's original Hydraulic Suspension Cab (HSC) mount provides the ultimate in operator comfort even during extended operation

Komatsu's original HSC mount system raises the operator's cab from the vehicle body with a hydraulic suspension that absorbs most travel vibration, thereby helping to reduce operator fatigue.



Hydraulic  
Suspension  
Cab  
Mount

Ambient - and operator-friendly low-noise design; complete sound-insulating measures

**72** (during low idle)  
dB(A)

New operator's suspension seat

The new-design seat features a high-support structure that always balances and securely holds the operator's body, thus reducing fatigue during extended operation. It also provides retractable seat belt that provides the operator when an inclination of or shock to the forklift is detected.



Integrated, easy-to-Read meter panel to ensure safe operation



Combination switch headlamp and directional Indicator(Auto-return)



Tiltable Steering wheel for operator comfort



Air cleaner with automatic dust ejector to prolong replacement cycle

This air cleaner automatically exhausts air-borne dust to reduce clogging of the filter element, thus enhancing suction efficiency and prolonging the element's replacement cycle.



Reserve tank for maintaining Engine coolant at a constant level (thus eliminating troublesome refilling)

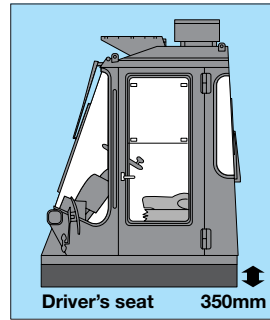


# Wide Variety of Attachment & Options to Meet All Your Work application & Environment Needs

## Steel Cabin



Air conditioner



Driver's seat 350mm

Wide visibility even under severe working conditions for a comfortable and quiet working environment

- Front and rear corners of glass for maximum visibility
- Quick-release door lock lever
- Cabin ceiling-mounted air conditioner for expanded operation space
- A high-mount cabin can be selected for an elevated view depending on the load

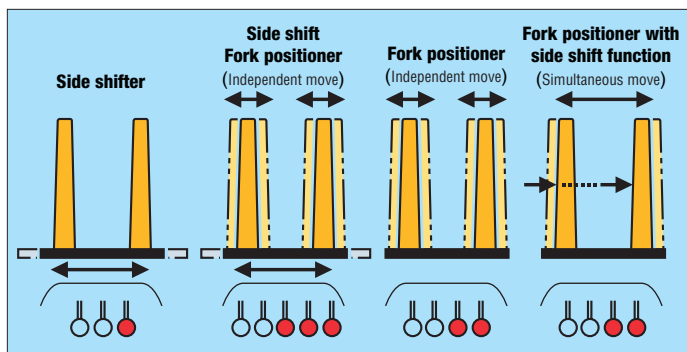
\*Extra front working light and air conditioner are optional.

High-mount cabin

## Side shifter · Fork positioner



Enhancing forward visibility for smooth fork positioning



## Options

- UL specification
- Cold climate specification(-30 degree)
- Rear working light
- Load indicator
- Special length forks
- Extension forks
- Air cleaner with pre-cleaner
- Spark arrester
- Back up buzzer
- Rear view mirror
- Rear under mirror
- Steel cabin
- High mount steel cabin
- Air conditioner
- Heater
- Rotating seat
- Reclining seat, with seat height adjuster
- Air brake
- Wet disc brake

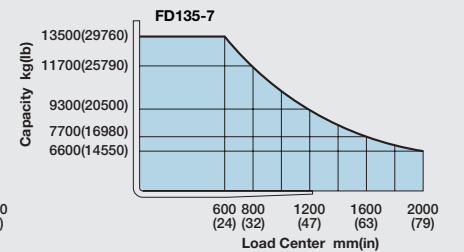
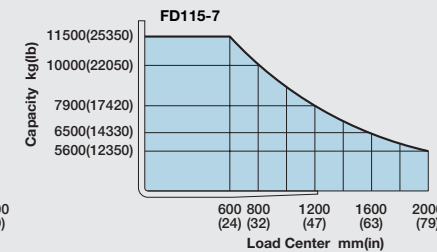
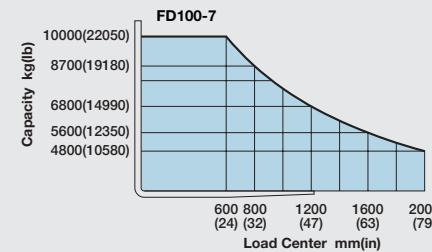
## Attachments

- Side shifter
- Side shift fork positioner(Independent move)
- Fork positioner(Independent move)
- Fork positioner with side shift function(Simultaneous move)
- Manipulator
- Hinged fork
- Ram
- Crane
- Pole carrier fork
- Furnace charger
- Tyre handler

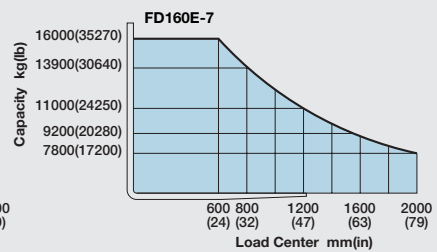
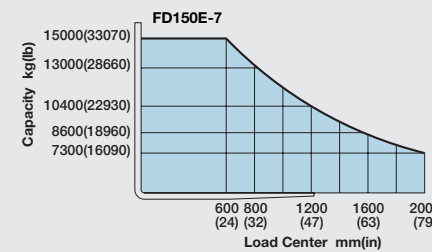
# CAPACITY CHART

## Maximum Load and Overall Height of Mast by Lifting Height (Double mast, load center: 600mm)

Model	FD100-7				FD115-7				FD135-7			
2-stage view mast												
Maximum fork height mm(in)	Overall height mm(in) Lowered/Extended	Load capacity* kg(lb)	Free lift mm(in)	Back tilt restriction	Overall height mm(in) Lowered/Extended	Load capacity* kg(lb)	Free lift mm(in)	Back tilt restriction	Overall height mm(in) Lowered/Extended	Load capacity* kg(lb)	Free lift mm(in)	Back tilt restriction
3000 (118)	2890/4400 (113.8/173.2)	10000 (22,000)	0 (0)	12'	3160/4670 (124.4/183.9)	11500 (25,000)	0 (0)	12'	3170/4680 (124.8/184.3)	13500 (30,000)	0 (0)	12'
3300 (130)	3040/4700 (119.7/185.0)	10000 (22,000)			3310/4970 (130.3/195.7)	11500 (25,000)			3320/4980 (130.7/196.1)	13500 (30,000)		
3500 (138)	3140/4900 (123.6/192.9)	10000 (22,000)			3410/5170 (134.3/203.5)	11500 (25,000)			3420/5180 (134.6/203.9)	13500 (30,000)		
3700 (146)	3240/5100 (127.6/200.8)	10000 (22,000)			3510/5370 (138.2/211.4)	11500 (25,000)			3520/5380 (138.6/211.8)	13500 (30,000)		
4000 (157)	3390/5400 (133.5/212.6)	10000 (22,000)			3760/5770 (148.0/219.3)	11500 (25,000)			3770/5780 (148.4/227.6)	13500 (30,000)		
4500 (177)	3740/6000 (147.2/236.2)	10000 (22,000)			4010/6270 (157.9/246.8)	11500 (25,000)			4020/6280 (158.3/247.2)	13500 (30,000)		
5000 (197)	4140/6650 (163.0/261.8)	10000 (22,000)			4460/6970 (175.6/274.4)	11500 (25,000)			4470/6980 (176.0/274.8)	13500 (30,000)		
5500 (217)	4440/7200 (174.8/283.5)	9000 (19,800)			4710/7470 (185.4/294.1)	10000 (22,000)			4720/7480 (185.8/294.5)	12000 (26,500)		
6000 (236)	4690/7700 (184.6/303.1)	8000 (17,600)			4960/7970 (195.3/313.8)	9000 (19,800)			4970/7980 (195.7/314.2)	11000 (24,300)		



Model	FD150E-7				FD160E-7			
2-stage view mast								
Maximum fork height mm(in)	Overall height mm(in) Lowered/Extended	Load capacity* kg(lb)	Free lift mm(in)	Back tilt restriction	Overall height mm(in) Lowered/Extended	Load capacity* kg(lb)	Free lift mm(in)	Back tilt restriction
3000 (118)	3270/4780 (128.7/188.2)	15000 (33,000)	0 (0)	12'	3290/4800 (129.5/189.0)	16000 (35,300)	0 (0)	12'
3300 (130)	3420/5080 (134.6/200.0)	15000 (33,000)			3440/5100 (135.4/200.8)	16000 (35,300)		
3500 (138)	3520/5280 (138.6/207.9)	15000 (33,000)			3540/5300 (139.4/208.7)	16000 (35,300)		
3700 (146)	3620/5480 (142.5/215.7)	15000 (33,000)			3640/5500 (143.3/216.5)	16000 (35,300)		
4000 (157)	3770/5780 (148.4/227.6)	15000 (33,000)			3790/5800 (149.2/228.3)	16000 (35,300)		
4500 (177)	4020/6280 (158.3/247.2)	15000 (33,000)			4040/6300 (159.1/248.0)	16000 (35,300)		
5000 (197)	4470/6980 (176.0/274.8)	15000 (33,000)			4490/7000 (176.8/275.6)	16000 (35,300)		
5500 (217)	4720/7480 (185.3/294.5)	13500 (29,800)			4740/7500 (186.6/295.3)	14500 (32,000)		
6000 (236)	4970/7980 (195.7/314.2)	12000 (26,500)			4990/8000 (196.5/315.0)	13000 (28,700)		



Standard mast is shown in broad frame.  
\*Load capacity at 600mm(24in.) load center.

Capacities shown are for trucks equipped with 2-stage view mast up through 5000mm(197in.) maximum fork

Performance specifications are affected by the conditions of the vehicle and how it is equipped as well as the nature and conditions of the operating area. If these specifications are critical, please discuss the proposed application with your distributor or dealer.

## Specifications

Characteristics		Manufacturer's Designations		FD100-7	FD115-7	FD135-7	FD150E-7	FD160E-7		
1.2	Model	Manufacturer's Designations		FD100-7	FD115-7	FD135-7	FD150E-7	FD160E-7	1.2	
1.3	Power Type	Electric, Diesel, Gasoline, LPG, Cable		Diesel	Diesel	Diesel	Diesel	Diesel	1.3	
1.4	Operation Type	Pedestrian, Drive Standing, Sitting, Order Picking		Sitting	Sitting	Sitting	Sitting	Sitting	1.4	
1.5	Rated Capacity	Q	Rated Capacity	kg(lb)	10000(22,000)	11500(25,000)	13500(30,000)	15000(33,000)	16000(35,000)	1.5
1.6	Load Center	c	Rated Load Center	mm(in)	600(24)	600(24)	600(24)	600(24)	600(24)	1.6
1.8	Load Distance	x	Front Axle Center to Fork Face	mm(in)	695(27.4)	715(28.1)	740(29.1)	750(29.5)	750(29.5)	1.8
1.9	Wheelbase	y		mm(in)	2800(110.2)	2800(110.2)	3100(122.0)	3100(122.0)	3100(122.0)	1.9
2.1	Service Weight			kg(lb)	12800(28,220)	14200(31,310)	15400(33,950)	16500(36,380)	17050(37,590)	2.1
2.2	Axle Loading	Loaded	Front	kg(lb)	20720(45,680)	23430(51,655)	26450(58,312)	28755(63,390)	30120(66,400)	2.2
2.2.1			Rear	kg(lb)	2080(4,586)	2270(5,004)	2450(5,401)	2745(6,052)	2930(6,460)	2.2.1
2.3		Unloaded	Front	kg(lb)	6095(13,440)	6530(14,400)	7115(15,686)	7225(15,930)	7155(15,770)	2.3
2.3.2			Rear	kg(lb)	6705(14,780)	7670(16,910)	8285(18,265)	9275(20,450)	9895(21,810)	2.3.2
3.1	Tyre Type			Pneumatic	Pneumatic	Pneumatic	Pneumatic	Pneumatic	3.1	
3.2	Tyre Size	Front			9.00-20-14PR(I)	10.00-20-14PR(I)	11.00-20-14PR(I)	11.00-20-16PR(I)	12.00-20-16PR(I)	3.2
3.3			Rear			9.00-20-14PR(I)	10.00-20-14PR(I)	11.00-20-14PR(I)	11.00-20-16PR(I)	12.00-20-16PR(I)
3.5	Number of Wheel	Front/Rear(x=driven)			4x/2	4x/2	4x/2	4x/2	4x/2	3.5
3.6	Tread, Front	b10		mm(in)	1700(66.9)	1700(66.9)	1770(69.7)	1770(69.7)	1770(69.7)	3.6
3.7	Tread, Rear	b11		mm(in)	1900(74.8)	1890(74.4)	1890(74.4)	1890(74.4)	1870(73.6)	3.7
4.1	Tilting Angle	$\alpha/\beta$	Forward/Backward	degree	6/12	6/12	6/12	6/12	6/12	4.1
4.2	Mast Height, Lowered	h1	with Std. Mast	mm(in)	2890(113.8)	3160(124.4)	3170(124.8)	3270(128.7)	3290(129.5)	4.2
4.3	Std. Free Lift	h2	with Std. Mast from Ground	mm(in)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	4.3
4.4	Std. Lift Height	h3	with Std. Mast from Ground	mm(in)	3000(118)	3000(118)	3000(118)	3000(118)	3000(118)	4.4
4.5	Mast Height, Extended	h4	with Std. Mast	mm(in)	4400(173.2)	4670(183.9)	4680(184.3)	4780(188.2)	4800(189.0)	4.5
4.7	Height, Overhead Guard	h6		mm(in)	2780(109.4)	2800(110.2)	2810(110.6)	2810(110.6)	2830(111.4)	4.7
4.19	Length, with Std. Forks	l1		mm(in)	5465(215.2)	5485(215.9)	5860(230.7)	5920(233)	6020(237)	4.19
4.20	Length, to fork face	l2		mm(in)	4245(167.1)	4265(167.9)	4640(182.7)	4700(185)	4800(189)	4.20
4.21	Width, at tyre	b1		mm(in)	2280(89.8)	2310(90.9)	2410(94.9)	2410(94.9)	2480(97.6)	4.21
4.22	Forks	s/e/l	Thickness/Width/Lengh	mm(in)	75x170x1220(3.0x6.7x48.0)	75x185x1220(3.0x7.3x48.0)	80x185x1220(3.1x7.3x48.0)	85x190x1220(3.3x7.5x48.0)	85x210x1220(3.3x8.3x48.0)	4.22
4.23	Fork Carriage Class	ISO 2328, Type A/B/no			Pin Mount	Pin Mount	Pin Mount	Pin Mount	Pin Mount	4.23
4.24	Width, Fork Carriage	b3		mm(in)	2140(84.3)	2140(84.3)	2200(86.0)	2200(86.0)	2200(86.0)	4.24
4.31	Ground Clearance	m1	Under the Mast	mm(in)	250(9.8)	250(9.8)	260(10.2)	250(9.8)	270(10.6)	4.31
4.32		m2	at the center of wheelbase	mm(in)	325(12.8)	345(13.6)	350(13.8)	350(13.8)	370(14.6)	4.32
4.33	Right Angle Stacking Aisle	Ast		mm(in)	6115(240.7)	6135(241.5)	6460(254.3)	6520(256.7)	6670(262.6)	4.33
4.35	Turning Radius	Wa		mm(in)	4000(157.5)	4000(157.5)	4300(169.3)	4350(171.3)	4500(177.2)	4.35
5.1	Travel Speed(FWD)	Loaded, 1st/2nd/3rd	km/h(mph)	8.5/18/28(5.3/11.2/17.4)	8.5/19/28(5.3/11.8/17.4)	9/19.5/27.5(5.6/12.1/17.1)	9/19.5/27.5(5.6/12.1/17.1)	9.5/20/28(5.9/12.4/17.4)	5.1	
5.1.1		Unloaded, 1st/2nd/3rd	km/h(mph)	9/20/32(5.6/12.4/19.9)	9/21/32(5.6/13.0/19.9)	9.5/21/32.5(5.9/13.0/20.2)	9.5/21/32.5(5.9/13.0/20.2)	10/21.5/33(6.2/13.4/20.5)	5.1.1	
5.2	Lifting Speed	Loaded/Unloaded	mm/s(fpm)	470/500(93/98)	430/450(85/89)	350/375(69/74)	330/350(65/69)	320/345(63/68)	5.2	
5.3	Lowering Speed	Loaded/Unloaded	mm/s(fpm)	400/500(78.7/98.4)	400/500(78.7/98.4)	400/500(78.7/98.4)	450/450(88.6/88.6)	450/450(88.6/88.6)	5.3	
5.6	Max. Drawbar Pull	Loaded	kN(lb)	112(25,132)	108(24,339)	105(23,677)	105(23,677)	100(22,487)	5.6	
5.8	Max. Gradeability	Loaded 1.6km/h, 3min rating	%	38	32	28	25	23	5.8	
5.10	Service Brake	Operation/Control		Foot/Hydraulic, Powered	Foot/Hydraulic, Powered	Foot/Hydraulic, Powered	Foot/Hydraulic, Powered	Foot/Hydraulic, Powered	5.10	
5.11	Parking Brake	Operation/Control		Hand/Mechanical	Hand/Mechanical	Hand/Mechanical	Hand/Mechanical	Hand/Mechanical	5.11	
5.12	Steering	Type		Hydraulic Power Steering	Hydraulic Power Steering	Hydraulic Power Steering	Hydraulic Power Steering	Hydraulic Power Steering	5.12	
6.4	Battery	Voltage/Capacity at 5-hour rating		V/Ah	24/100	24/100	24/100	24/100	24/100	6.4
7.1	Maker/Model			ISUZU 6BG1T	ISUZU 6BG1T	ISUZU 6BG1T	ISUZU 6BG1T	ISUZU 6BG1T	7.1	
7.2	Rated Output, SAE gross			kW(HP)	119(160)	119(160)	119(160)	119(160)	119(160)	7.2
7.3	Rated Speed			min <sup>-1</sup>	2200	2200	2200	2200	2200	7.3
7.3.1	Max Torque, SAE gross			N-m(lbft)@min <sup>-1</sup>	540(398)@1600	540(398)@1600	540(398)@1600	540(398)@1600	540(398)@1600	7.3.1
7.4	No. of Cylinder/Displacement			cm <sup>3</sup> (cu.in)	6/6494(396)	6/6494(396)	6/6494(396)	6/6494(396)	6/6494(396)	7.4
7.6	Fuel Tank Capacity			Ltr(US gal)	260(68.7)	260(68.7)	280(74.0)	280(74.0)	280(74.0)	7.6
8.2	Relief Pressure for Attachment			bar(psi)	215(3,118)	215(3,118)	215(3,118)	215(3,118)	215(3,118)	8.2
8.2.1	Hydraulic Tank Capacity			Ltr(US gal)	150(39.6)	150(39.6)	180(47.6)	180(47.6)	180(47.6)	8.2.1
8.6	Clutch				Torque Converter	Torque Converter	Torque Converter	Torque Converter	Torque Converter	8.6
8.7	Transmission				TORQFLOW	TORQFLOW	TORQFLOW	TORQFLOW	TORQFLOW	8.7

Specifications are subject to change without notice.  
The performance values indicated herein represent nominal values obtained under typical operating conditions.

## Standard Equipment

Headlights  
Turn signal lamps  
Charge warning lamps  
Safety checker  
Hourmeter  
Fuel gauge  
Torque converter oil temperature gauge  
Water temperature gauge  
Neutral safety switch  
Brake oil pressure warning buzzer  
Engine key stop  
Torque converter oil cooler  
Tiltable steering column  
Hydraulic power brake  
Horn  
Overhead guard  
Drawbar pin  
Cyclonic air cleaner  
Notch-release parking brake



Full-open steps



Notch-release parking brake

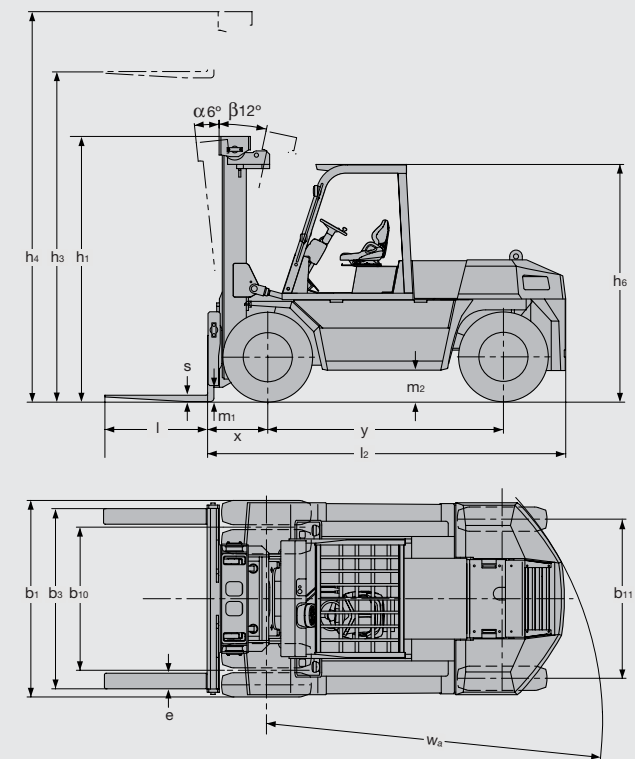


Head guard with front/rear gutters



Gas-spring type bonnet stay

## Dimensional Drawing



The illustrations do not necessarily show the standard version and features of the equipment. Features and specifications may vary by country and region. Products and specifications are subject to change without prior notice. Please contact your Komatsu dealer for detail information.

ISO 9001 Quality Management System  
(for Komatsu Forklift Tochigi Plant)



ISO 14001 Environmental Management System  
(for Komatsu Forklift Tochigi Plant)



Certified by Lloyd's Register Quality Assurance Limited.

## Komatsu Forklift Co., Ltd.

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