FH40/FH45/FH50

DIESEL POWERED, PNEUMATIC TIRES, HYDROSTATIC DRIVE

Features and Specifications

9,000 / 10,000 / 11,000 lb Capacity

Komatsu Forklift U.S.A.
Walk-Around

High Productivity & Low Fuel Consumption
• Built upon Komatsu’s unique hydraulic and control technologies
• Superior fuel economy in high cycle operations
• Reduced CO₂ emissions
• Electronically-controlled Hydro-Static Transmission (HST)
• Variable displacement pump with Closed-center Load Sensing System (CLSS)
• Variable engine output control function
• Auto engine shutdown function
• Low exhaust emission engine

Controllability & Risk Management
• Shock-free shifting
• Full auto shifting without releasing the accelerator pedal allowing the operator to focus on load handling
• “Neutral-Start” requires the shift lever to be in neutral and the brake pedal to be depressed before starting
• Speed limit settings for various work areas
• Easy operation with reduced inching pedal use required
• Simple and dependable starts on inclines
Dependability & Reliability
- Highly reliable, high quality Komatsu designed & manufactured components
- Reliability is greatly enhanced by the combination of Komatsu’s hydrostatic drive and wet multi-disc brake systems
- 24 volt electrical components improve engine starting in cold regions

Easy Maintenance
- Dependable HST and wet multi-disc brake systems only require periodic checks and fluid changes for virtually the life of the truck
- Easy access for radiator checks and cleaning
- Extended service intervals reduce overall costs of ownership

KOMTRAX®
- Utilizes GPRS cellular technology to communicate critical truck data for optimized fleet management
- Provides daily details of truck usage and fuel consumption to better manage and reduce truck operational costs
- Can provide monthly and annual operation reports to make informed fleet management decisions
High Productivity and Low Fuel Consumption

New FH Series Developed Using Komatsu’s Unique Hydraulic and Control Technologies

The FH Series was designed to utilize highly reliable, field-proven drive and control components that have been used for many years in Komatsu construction equipment. The FH drive system is “Electronically-controlled Hydro-Static” or HST. These drive-line components have earned high marks for their quality and reliability in years of use in Komatsu construction wheel loaders and tracked machines.

The forklift’s hydraulic system uses a variable displacement pump with “Closed-center Load Sensing” or CLSS that is a highly efficient hydraulic system used in Komatsu’s hydraulic excavators.

All FH Series models are powered by a Komatsu designed and manufactured diesel engine that features advanced engine technologies to achieve superior fuel economy, reduced environmental impact, and outstanding controllability.

HST – Hydro-Static Transmission
CLSS – Closed-center Load Sensing System

Reduced Fuel Consumption in High-Cycle Operations

Komatsu’s HST / CLSS / and SAA4D95LE-5 Diesel Engine work in harmony to achieve significant fuel economy, especially in tough, high-cycle operations where fast-paced loading, unloading, and directional changes are prevalent.

Reduced CO₂ Emissions for the Environment

Komatsu’s advanced engine technologies reduce environmental impact with reduced CO₂ emissions.

Komatsu’s Unique HST Drive System

Komatsu’s electronically controlled HST drive system replaces the torque converter and manual transmission found on conventional forklifts. With HST, the engine powers a hydraulic pump that then supplies oil flow to the hydraulic motor which drives the front wheels. With HST, you experience less power loss since both engine speed and pump delivery are controlled electronically to the optimum level for the work load. This means that you can achieve optimal performance without wasting engine power and fuel.

CLSS With Variable Displacement Pump

Komatsu’s CLSS hydraulic system has been utilized in our hydraulic excavators for many years. The load sensing capability automatically senses loading and the variable displacement pump then supplies only the amount of hydraulic fluid needed to do the job. This provides for much greater efficiency than conventional fixed displacement gear pumps, making good use of engine power to reduce overall fuel consumption.

Engine Power Controlled By Load Weight

The load sensing capability designed into Komatsu’s electronically controlled system automatically controls engine power by sensing the weight of the load to reduce needless fuel consumption.

Auto Engine Shutdown Prevents Needless Idling

If the operator leaves the truck, applies the parking brake and sets the travel control lever to neutral, but leaves the engine running, the FH Series auto engine shutdown system will stop the engine after a set time period to prevent unnecessary fuel consumption caused by needless idling.
Electronically Controlled HST

In the HST system, the diesel powered engine drives the pump and the oil supplied from the pump then rotates the motor that drives the forklift. The power losses over the entire engine speed range are minimal. Since the HST system does not have a clutch, which is a vital component in some torque converter forklifts, there is no possibility of heat loss or slippage which could be caused by the inching pedal during inching operations. Thus the power transmission losses are minimized which reduces fuel consumption.

Variable Displacement Pump with CLSS

Since the variable displacement pump supplies just the amount of oil needed to do specific work, there are no pressure losses. The system makes very efficient use of engine power, resulting in reduced fuel consumption. With CLSS the operator can lift the load with the engine running at slow speeds, further reducing fuel consumption.

Fixed Displacement Gear Pumps

Fixed displacement gear pumps on competitive equipment deliver a specific amount of oil per rotation, many times delivering excessive amounts of oil and leading to added loading on the engine, pressure losses, and added fuel consumption.

Low Exhaust Emission Engine

Komatsu’s SAA4D95LE-5, turbo-charged 4-cylinder diesel engine is Interim Tier 4 and EU Stage 3A emissions certified, without sacrificing power or productivity.

Rated Output:
50.8 kW 68HP @2150 rpm (Net)
Controllability and Operation

Directional Changes Can Be Accomplished Smoothly Without Releasing the Accelerator Pedal Enhancing Ease of Operation

The engine is not connected to the drive system mechanically, but rather is connected hydraulically to transmit power to the drive system. This makes it possible for the FH series forklift to make directional shifts smoothly without the need to release the accelerator pedal. This greatly enhances ease of operation.

Reduced Roll-Back on Ramps

With HST drive, the oil flow to the hydraulic motor is stopped when the accelerator pedal is released, so even if the forklift is stopped on a ramp and the operator releases the brake pedal, downhill creep is reduced. This also facilitates easier ramp-start.

Shock-free Shifting with Variable Speed Drive

Komatsu's HST system has a variable speed transmission which transmits power from the hydraulic motor to drive the tires. Since travel speeds are controlled hydraulically, the acceleration and shifting are smooth and without shock.

Four Travel Speed Limit Settings Provide Speed Control

With the HST system, travel speeds can be set in four stages, and activated with the turtle switch. This functionality can be used to reduce speeds in tight spaces or to keep the forklift within specific in-plant speed limitations, thereby maintaining speed control.

<table>
<thead>
<tr>
<th>Four travel speed settings</th>
<th>km/h</th>
<th>5.0</th>
<th>8.0</th>
<th>15.0</th>
<th>23.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>mph</td>
<td>3.1</td>
<td>5.0</td>
<td>9.3</td>
<td>14.6</td>
<td></td>
</tr>
</tbody>
</table>

Neutral Start-Ups

The FH engine can only start when the shift lever is set to the neutral position, the brake pedal is depressed, and the operator is in the seat. This eliminates inadvertent start-ups.

Less Inching Pedal Use Means Reduced Operator Fatigue

This HST forklift can adjust travel speed simply through the use of the accelerator pedal, reducing the need for frequent use of the inching pedal, thereby reducing operator fatigue.

Reduced Creeping Provides More Controllable Operation

The excellent controllability of the HST system allows the operator better control when maneuvering in tight quarters, lifting, or load handling.
Durability and Reliability

Highly Reliable, High Quality Komatsu Designed & Manufactured Components

All of the FH Series main components, such as the engine, hydraulic pump, hydraulic motor, axle, and controller are designed, developed and manufactured by Komatsu ensuring high quality and reliability that comes from exacting Komatsu engineering standards.

Improved Engine Starting Performance

Komatsu’s FH forklift uses 24 volt electrical components in order to improve the engine starting performance. Even in cold regions, you can depend on the FH to deliver smooth, consistent starting performance.

Heavy-Duty Sealed Wet Multi-Disc Brakes

With many years of field-proven performance in Komatsu construction equipment, the FH’s sealed wet multi-disc brake system provides excellent braking performance in all operating conditions. The sealed system provides protection from dust, dirt and debris, thus providing higher reliability, fade and water resistance. Unlike a drum brake system, there is no need to replace the brake shoes resulting in lower maintenance costs and downtime.

HST Combines With Wet Multi-Disc Brakes For Greatly Enhanced Reliability

With HST reduced oil flow to the hydraulic motor helps to decelerate the forklift, so loading on the brake system is reduced which improves the reliability of both systems.
Komtrax Wireless Equipment Monitoring System Enhances Fleet Management

KOMTRAX, a standard feature on the FH Series, is Komatsu’s remote equipment and fleet monitoring system. Leading-edge wireless technology and a secure, user-friendly, web-based application provide critical information... anytime, anywhere. KOMTRAX tells you where your machines are, what they are doing, and how they are doing it, providing total fleet management capabilities for improved fleet utilization, reduced downtime, and lower owning and operating costs. KOMTRAX can help keep your machines operating at peak performance and provides useful information on operator habits and abilities. KOMTRAX also provides the information you need to maximize output through increased efficiencies, just-in-time maintenance, and preventative maintenance.

Machine Operation Information

Getting details of machine operation on a daily basis allows owners to analyze costs and take measures to reduce those costs as needed to improve their operations bottom line.

Operation Reports

Daily, monthly, and annual reports provide summaries of all critical data to help with fleet utilization analysis, scheduling, and overall fleet management decisions.

The KOMTRAX User-friendly, Web-Based System

The KOMTRAX application is web-based and provides a wealth of information in a user-friendly format. A variety of charts and graphs, as well as useful search and filter parameters, make finding the information you need fast and easy.

Machine Location Information

KOMTRAX uses a network of global positioning satellites to tell you where your machines are at all times. This can discourage or eliminate the possibility of theft or unapproved usage as well as providing necessary information for scheduling maintenance and operational management.
Equipment

Standard Equipment

- Komatsu EPA Tier 4 Interim and EU stage 3A compliant diesel engine SAA4D95LE-5
  - Heavy duty high pressure common rail system
  - Air-to-air charge air cooling system
  - Sedimenters with priming pump
  - Electronic engine control system
  - Overheat prevention function
  - Auto engine warm-up function
- Adjustable auto engine shutdown function
- Variable displacement pump with Closed-center Load Sensing System (CLSS)
- Electronically-controlled Hydro-Static Transmission (HST)
- Wet multi-disc brakes
- Parking brake with release button
- Overhead guard with front / rear conduits
- Rear view mirror (center)
- Neutral start function
- Speed limiter "Turtle" function
- Key-off lift lock
- Back-up buzzer
- Full suspension seat
- Fully hydrostatic power steering
- Tiltable steering column
- Small diameter steering wheel with spinner knob
- Steering knob synchronizer function
- Directional control lever
- Combination switch (turn signal lamp & lamp switch)
- Dash mounted display panel
- Engine coolant temperature gauge
- Fuel gauge
- Hour meter (service meter)
- Neutral pilot lamp
- Preheating pilot lamp
- Speed limiter pilot lamp
- Parking brake pilot lamp
- Paper binder at engine hood
- Rubber floor mat
- Assist grip
- Halogen headlamps & rear combination lamps with bulbs
- Sealed DT type wiring harness connectors
- Flat face-to-face O-ring seals on critical hydraulic connections
- Fuel cap with key
- KOMTRAX®

Tires:
- 42" (1070 mm) standard on FH40-1/FH45-1
- 48" (1220 mm) standard on FH50-1

Forks:
- Optional fork lengths available

Optional Equipment

- Air cleaner with pre-cleaner, outside fitting type
- Spark-arrester
- Vertical exhaust (left side)
- Tilt cylinder boots
- Power steering cylinder protector plate
- Removable radiator screen & chassis under carriage protection (screen)
- Pressure reducing valve
- Steel cab
- Steel cab with heater & defroster
- Steel cab with air conditioner
- Canvas cab
- Front glass with wiper
- Rear view mirror (pair)
- Headlamps & rear combination lamps with LED
- Two front working lamps with LED, overhead guard mounted
- Two front working lamps with LED, fender mounted
- One rear working lamp with LED, overhead guard mounted
- Rotating lamp with LED (yellow), overhead guard mounted
- Speedometer with alarm
- Load checker with over load alarm
- Rear assist grip with horn button
- Tool kit

Tires:
- Solid pneumatic
- Dual front drive

Forks:
- Optional fork lengths available

- 24 months / 3,000 hour complimentary maintenance program
## Specifications

### Characteristic

<table>
<thead>
<tr>
<th>Model</th>
<th>Manufacturer's Designation</th>
<th>FH45-1</th>
<th>FH45-1</th>
<th>FH50-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 Engine Type</td>
<td>Electric, Diesel, Gasoline, LPG</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1.3 Engine Type</td>
<td>Diesel</td>
<td></td>
<td></td>
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<td>1.4 Operation Type</td>
<td>Sit-Down</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1.5 Rated Capacity</td>
<td>3 lbs. (kg)</td>
<td>9,000</td>
<td>10,000</td>
<td>11,000</td>
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<tr>
<td>1.6 Load Center</td>
<td>23.6 (600)</td>
<td>23.6</td>
<td>23.6</td>
<td>23.6</td>
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<tr>
<td>1.7 Load Distance</td>
<td>23.2 (590)</td>
<td>23.2</td>
<td>22.8</td>
<td>22.8</td>
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<tr>
<td>1.8 Wheelbase</td>
<td>78.7 (2000)</td>
<td>78.7</td>
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<td>2.1 Service Weight</td>
<td>7 lbs. (kg)</td>
<td>13,867</td>
<td>15,256</td>
<td>16,270</td>
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<td>2.2 Axle Loading</td>
<td>Front</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2.2.1 Axle Loading</td>
<td>8 lbs. (kg)</td>
<td>13,228</td>
<td>21,958</td>
<td>24,086</td>
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<tr>
<td>2.3 Tires</td>
<td>Front</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3.1 Tires</td>
<td>10 lbs. (kg)</td>
<td>5,710</td>
<td>6,063</td>
<td>6,393</td>
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<tr>
<td>3.1 Tire Type</td>
<td>Front</td>
<td></td>
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<tr>
<td>3.2 Tire Size</td>
<td>12 Pneumatic</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3.3 Number of Wheel</td>
<td>15 x-driven</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3.5 Tread, Front</td>
<td>16 in. (mm)</td>
<td>48.2</td>
<td>48.2</td>
<td>48.2</td>
</tr>
<tr>
<td>3.6 Tread, Rear</td>
<td>17 in. (mm)</td>
<td>44.1</td>
<td>44.1</td>
<td>44.1</td>
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<tr>
<td>3.7 Tilt Angle</td>
<td>18 deg.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.8 Fork carriage height</td>
<td>24 in. (mm)</td>
<td>59.8</td>
<td>59.8</td>
<td>59.8</td>
</tr>
<tr>
<td>3.9 Lifting Speed</td>
<td>24 in. (mm)</td>
<td>59.8</td>
<td>59.8</td>
<td>59.8</td>
</tr>
<tr>
<td>3.10 Fork carriage width</td>
<td>24 in. (mm)</td>
<td>59.8</td>
<td>59.8</td>
<td>59.8</td>
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<tr>
<td>3.11 Axle Length</td>
<td>14 in. (mm)</td>
<td>59.8</td>
<td>59.8</td>
<td>59.8</td>
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<tr>
<td>3.12 Turning Radius</td>
<td>34 in. (mm)</td>
<td>112</td>
<td>114</td>
<td>115</td>
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<tr>
<td>3.13 Travel Speed (FWD)</td>
<td>Loaded</td>
<td>35 mph (km/h)</td>
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<tr>
<td>3.14 Lifting Speed</td>
<td>Unloaded</td>
<td>36 mph (km/h)</td>
<td>14.6</td>
<td>14.6</td>
</tr>
<tr>
<td>3.15 Fork carriage height</td>
<td>Loaded</td>
<td>38 fpm (mm/s)</td>
<td>99.4</td>
<td>98.4</td>
</tr>
<tr>
<td>3.16 Lifting Speed</td>
<td>Unloaded</td>
<td>39 fpm (mm/s)</td>
<td>98.4</td>
<td>98.4</td>
</tr>
<tr>
<td>3.17 Max. Drawbar Pull</td>
<td>Loaded</td>
<td>41 lbs. (kg)</td>
<td>7.644</td>
<td>7.644</td>
</tr>
<tr>
<td>3.18 Max. Drawbar Pull</td>
<td>Unloaded</td>
<td>42 lbs. (kg)</td>
<td>7.644</td>
<td>7.644</td>
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<tr>
<td>3.19 Fuel Tank Capacity</td>
<td>53 U.S. gallons (liters)</td>
<td>21.9</td>
<td>21.9</td>
<td>21.9</td>
</tr>
<tr>
<td>3.20 Relief Pressure for Attachment</td>
<td>54 psi (bar)</td>
<td>2988 (206)</td>
<td>2988 (206)</td>
<td>2988 (206)</td>
</tr>
<tr>
<td>3.21 Hydraulics tank capacity</td>
<td>U.S. gallons (liters)</td>
<td>21.9 (83)</td>
<td>21.9 (83)</td>
<td>21.9 (83)</td>
</tr>
</tbody>
</table>

### Performance

- VDI 2198 includes 200 mm 7.87" clearance
- EPA Interim Tier 4 and EU Stage 3A Emission Certified

### Load Capacity Curve
Specifications

**Engine**

- Dimensions: 4.32 m² at Center of Wheelbase
- Weight: 31 in. (mm) 8.3 (210)
- Fork Carriage: Width, Fork Carriage b3 29 in. (mm) 46.9 (1190)
- Fork Carriage Class: ISO 2328, Type A/B/no
- Forks: s/e/l Thickness x Width x Length 27 in. 2.2 x 5.9 x 42.1
- Width, at Tire b1 Single 26 in. (mm) 59.8 (1520)
- Length, to Fork Face L2 25 in. (mm) 124 (3150)
- Length, with Std. Forks L1 24 in. (mm) 166.1 (4220)
- Height, Overhead Guard h6 23 in. (mm) 88.2 (2240)

**Characteristics**

- Tread, Rear b11 17 in. (mm) 44.1 (1120)
- Tread, Front b10 16 in. (mm) 48.2 (1225)
- Std. Lift Height h3 2-stage Std. Mast, from Ground 21 in. (mm) 118.1 (3000)
- Std. Free Lift h2 2-stage Std. Mast, from Ground 20 in. (mm) 5.9 (150)
- Mast Height, Lowered h1 2-stage Mast 19 in. (mm) 82.9 (2105)
- Free Lift h1 2-stage Mast 19 in. (mm) 82.9 (2105)
- Free Lift h2 2-stage Std. Mast, from Ground 20 in. (mm) 5.9 (150)
- Free Lift h3 2-stage Std. Mast, from Ground 21 in. (mm) 118.1 (3000)
- Fork Lift Height h4 2-stage Std. Mast, from Ground 28 in. (mm) 711.5 (1805)
- Mast Height, Lowered h1 2-stage Mast 19 in. (mm) 82.9 (2105)

**Weight**

- Rated Capacity Q: 3 lbs. (kg) 9,000 (4000)
- Max. Gradeability Loaded 1.5 km/h, 3 min rating: 42 %
- Max. Drawbar Pull Loaded 1.5 km/h, 3 min rating: 41 lbs. (kN) 7,644 (34)

**Brakes**

- Service Brake Operation/Type: 43 Foot/Hydraulic

**Transmission**

- Rated Speed: 50 rpm (min⁻¹) 2150
- Relief Pressure for Attachment: 54 psi (bar) 2988 (206)

**Torque**

- Max. Torque, net SAEJ1349: 51 lb-ft (Nm) @ rpm 212 (287) @ 1400

**Fuel**

- Fuel Tank Capacity: 53 U.S. gallons (liters) 27.7 (105)

**Dimensions**

**Mast Specifications**

### 2-stage free view mast

<table>
<thead>
<tr>
<th>Maximum fork height</th>
<th>Overall height</th>
<th>Free lift</th>
<th>Tilting angle F / B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lowered height</td>
<td>Extended height</td>
<td>with STD load backrest</td>
</tr>
<tr>
<td>mm</td>
<td>in</td>
<td>mm</td>
<td>in</td>
</tr>
<tr>
<td>FH40-1 9,000 lb</td>
<td>300</td>
<td>119</td>
<td>2350</td>
</tr>
<tr>
<td>FH45-1 10,000 lb</td>
<td>300</td>
<td>119</td>
<td>2350</td>
</tr>
<tr>
<td>FH50-1 11,000 lb</td>
<td>300</td>
<td>119</td>
<td>2350</td>
</tr>
</tbody>
</table>

### 3-stage full free view mast

<table>
<thead>
<tr>
<th>Maximum fork height</th>
<th>Overall height</th>
<th>Free lift</th>
<th>Tilting angle F / B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lowered height</td>
<td>Extended height</td>
<td>with STD load backrest</td>
</tr>
<tr>
<td>mm</td>
<td>in</td>
<td>mm</td>
<td>in</td>
</tr>
<tr>
<td>FH40-1 9,000 lb</td>
<td>300</td>
<td>119</td>
<td>2350</td>
</tr>
<tr>
<td>FH45-1 10,000 lb</td>
<td>300</td>
<td>119</td>
<td>2350</td>
</tr>
<tr>
<td>FH50-1 11,000 lb</td>
<td>300</td>
<td>119</td>
<td>2350</td>
</tr>
</tbody>
</table>
STRONG CUSTOMER SATISFACTION
Komatsu Forklift has a strong corporate commitment to produce, deliver and support quality products, and we have always made customer satisfaction our top priority. We will work to the best of our ability to help you maximize your operation’s productivity while minimizing costs.

QUALITY PRODUCTS & SERVICES
Komatsu Forklift offers an expanding product line of over 120 electric and internal combustion engine forklift models with capacities from 2,000 to 35,000 pounds. We back them with a complete warranty program, superior service, and genuine OEM parts.

CONTACT YOUR DEALER TODAY
Your nearby Komatsu Forklift dealer is ready to assist you. Ask about financing and leasing programs that can be tailored to your business plan. Forklifts for your specific applications and workplace are waiting for you now.

THE KOMATSU HERITAGE
As part of the Komatsu family, we have a proud heritage of excellence in equipment design and manufacturing. Since 1921 Komatsu has been a global leader in the construction and mining equipment industry. And since 1945, we have built upon that heritage by producing innovative, high-quality, durable forklifts to meet and exceed the needs of our customers.