

KOMATSU®

FH35-2
FH40-2
FH45-2
FH50-2

Tier 4 Final Engine

DIESEL FORKLIFT TRUCK



Photos may include optional equipment.

FH50

www.komatsu.com

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KOMATSU®

CEN00649-00

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HORSEPOWER

Gross: 53 kW 71 HP/2150 min⁻¹
Net: 49.5 kW 66.4 HP/2150 min⁻¹

RATED CAPACITY

3500 - 5000 kg

LOAD CENTER

600 mm

FH35-2 / FH40-2 / FH45-2 / FH50-2

WALK-AROUND

FH35-2 / FH40-2 / FH45-2 / FH50-2



FH50-2

Ecology & Economy

- Komatsu's new engine meets the EPA TIER IV final standard **NEW**
- The fuel consumption is reduced in at most 30 % in heavy duty cycle operation (Compared to the same class machine with the torque converter method)

Workability & Durability

- Gathering the technologies proven in construction machinery, called "Electronically - controlled Hydro-Static Transmission (HST)" and "Variable displacement pump with Closed-center Load Sensing System (CLSS)"
- The exceptional operability of the HST provides exceptional work efficiency
- Higher durability and reliability with Komatsu original components

IGT & KOMTRAX

- Realizing machine condition at a glance with the large multiple function display
- KOMTRAX can visualize the machine condition daily, which enables remote fleet management and support your improvement plan **NEW**

Safety & Comfort

- Operator friendly safety accessories go into details
- Comfortable cockpit reduce operator's fatigue



HORSEPOWER

Gross: 53 kW 71 HP/2150 min⁻¹
 Net: 49.5 kW 66.4 HP/2150 min⁻¹

RATED CAPACITY

FH35-2 : 3500 kg
 FH40-2 : 4000 kg
 FH45-2 : 4500 kg
 FH50-2 : 5000 kg

LOAD CENTER

FH35-2 : 600 mm
 FH40-2 : 600 mm
 FH45-2 : 600 mm
 FH50-2 : 600 mm



FH35-2

FH40-2

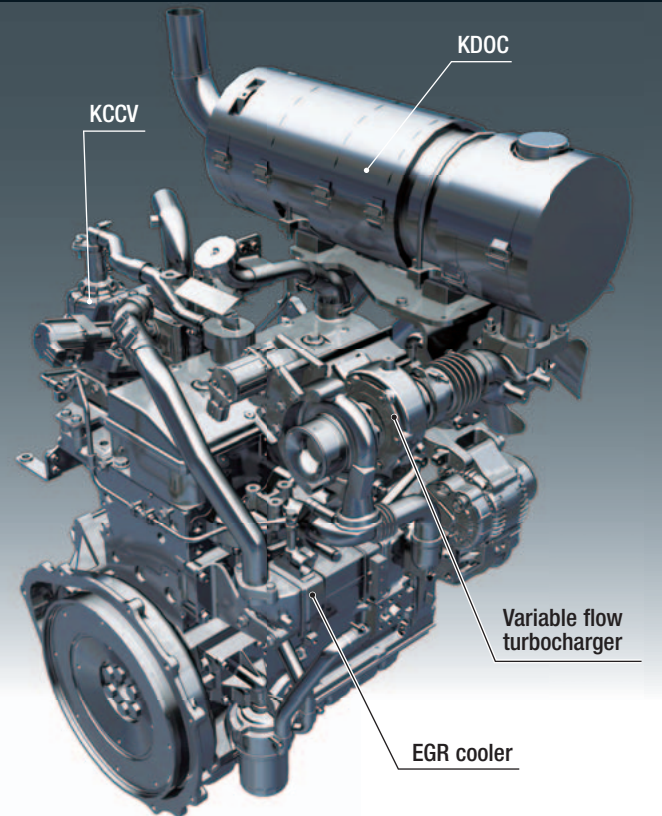
FH45-2

ECOLOGY & ECONOMY

KOMATSU NEW ENGINE TECHNOLOGIES

Komatsu's new engine meets the EPA TIER IV final standard **NEW**

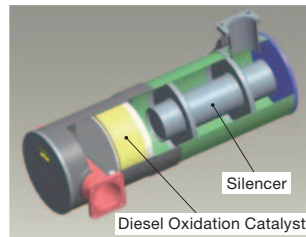
The Komatsu SAA4D95LE-6 engine is EPA Tier 4 Final and EU Stage 3B emissions certified, provides exceptional performance while reducing fuel consumption thanks to Heavy-duty High-Pressure Common Rail fuel injection system and electronic control system. Based on Komatsu proprietary technologies developed over many years, this new diesel engine reduces exhaust gas particulate matter (PM) by more than 90% as compared to Tier 4 Interim levels. Engines, electronics and hydraulic components are all developed Komatsu in-house and are designed to work together. Komatsu has achieved great advancements in technology, providing high levels of performance and efficiency in virtually all applications.



Technologies Applied to New Engine

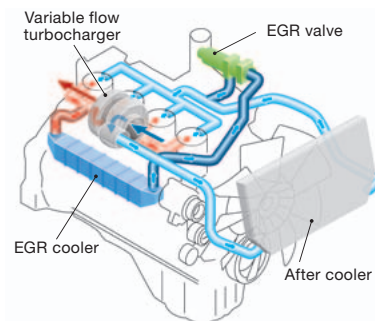
Komatsu Diesel Oxidation Catalyst (KDOC) **NEW**

Komatsu has developed a simple and highly efficient diesel oxidation catalyst, which reduces PM and results in cleaner exhaust gas. Unlike diesel particulate filter system, need for regeneration is eliminated, thus there is no excess maintenance required and there is no downtime for regeneration. High performance silencer is also integrated and it contributes the engine noise reduction.



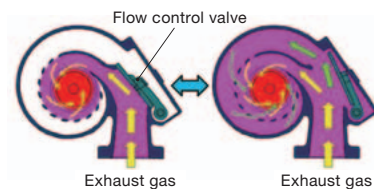
Cooled Exhaust Gas Recirculation (EGR) **NEW**

Cooled EGR system recirculates portion of exhaust gas for combustion and reduces NOx (Nitrogen oxide) emission, results in cleaner exhaust gas.



Variable flow turbocharger **NEW**

A newly designed variable flow turbocharger enables delivery of an optimal volume of air to the engine combustion chamber under all speed and load conditions. Exhaust turbine wheel speed is controlled by flow control valve to control air flow amount. The result is cleaner exhaust gas while maintaining power and performance.



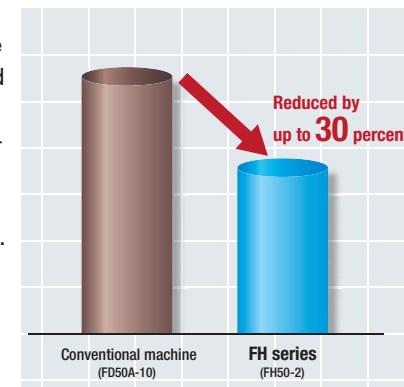
Komatsu Closed Crankcase Ventilation (KCCV) **NEW**

Crankcase emissions (Blowby gas) are passed through a KCCV filter, traps oil mist which is returned back to the crankcase for combustion. NOx emission is reduced and results in cleaner exhaust gas.



Komatsu's Technologies Achieve an Outstanding Low Fuel Consumption and CO₂ Exhaust.

The combination of the high efficiency engine, CLSS and HST technology proven in construction machinery can provide powerful performance with at most 30% reduction on fuel consumption. There are no clutches which generate a loss in our HST, so engine output can be used effectively. Heavier duty operation provides bigger fuel saving benefit with Komatsu FH series.



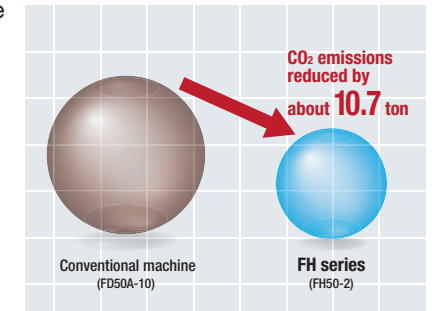
Fuel consumption

30% reduction (FH50-2)

* Compared to our same class machine with the torque converter method and when tested at our test course. In actual work, results inferior to the above may be obtained, depending on the kind of work.

Reduced CO₂ emission during high load work

The reduced fuel consumption enables reducing CO₂ emissions. In case of high load work, 10.7 ton/year CO₂ emission is reduced.



* Compared to our same class machine with the torque converter method and when tested at our test course. Operation time: 5 hours/day, 300 days/year. The CO₂ emissions coefficient is calculated according to the guidelines (April 2006) shared by the Ministry of Economy, Trade and Industry and the Ministry of Land, Infrastructure, Transport and Tourism of Japan. In actual work, results inferior to the above may be obtained, depending on the kind of work.

Variable engine output control function

The HST controller senses weight of the load, automatically sends signal to engine ECM to control engine output to balance necessary power and reduce fuel consumption.

Average fuel consumption and indicator of instant fuel consumption **NEW**

Support fuel-saving driving. (See page 8)

Auto engine shut down function

Auto engine shut down function is equipped as standard. If the operator applies the parking brake, sets the directional lever in the neutral position and leaves the forklift truck but without stopping the engine, the engine is automatically shut down after a preset time. This feature contributes to prevent unnecessary fuel consumption caused by needless idling. (Engine shutdown time can be set from one minute to five minutes)



WORKABILITY & DURABILITY

Gathering the Technologies Proven in Construction Machinery, Called "Electronically - controlled Hydro-Static Transmission (HST)" and "Variable Displacement Pump with Closed-center Load Sensing System (CLSS)"

The travel system is "Electronically-controlled HST", Komatsu's unique hydraulic drive system that has been employed for Komatsu wheel loaders and bulldozers. The lift hydraulic system uses "Variable displacement pump with CLSS", a highly efficient hydraulic system employed in Komatsu hydraulic excavators. All the components contribute the fuel saving, reduction of burden on the environment and outstanding maneuverability.



The Exceptional Operability of the HST Provides Exceptional Work Efficiency

Shock-free shifting

The HST drive system is continuously variable speed transmission and provides smooth acceleration and step-less ratio changes, thus there are less shock and worries for load shifting.



Controlled rolling back on a ramp

The HST drive system has a self-braking feature which hydraulic flow of fluid is stopped by releasing the accelerator pedal. This feature prevents uncontrolled rolling back and holds the truck on a ramp while the operator releases the brake pedal for a ramp-start.



Smooth directional changes without releasing accelerator pedal

The engine is not mechanically connected to the drive system, but rather connected hydraulically to transmit tractive force, making it possible for the FH series forklift trucks to make directional changes smoothly without the need to releasing the accelerator pedal. This greatly enhances ease of operation.

* For safety operation, slow down before directional changes.



Precise and secure slow speed travel control UPGRADE

Approaching and stopping at the cargo and shelves at a very slow speed can be smoothly carried out by simply operating the accelerator pedal, resulting in less fatigue. Furthermore, this machine does not creep like conventional torque converter trucks even if the operator releases the brake pedal while the directional lever is in F or R position. This feature contributes to reduced risks in confined areas and when approaching to pick up a load.

* For safe operation, be sure to apply the parking brake on when parking the forklift truck.



Higher Durability and Reliability with Komatsu Original Components

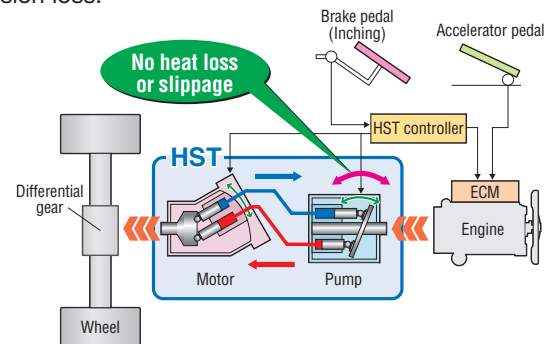
All of the main components such as engine, hydraulic pumps, hydraulic motor and the controller that sophisticatedly controls these components are designed, developed and manufactured by Komatsu.

Enhanced brake reliability

With Komatsu HST, reducing oil flow amount to the hydraulic motor helps to decelerate the forklift truck. This feature eases load on the brakes, thus, reliability of the brakes are enhanced.

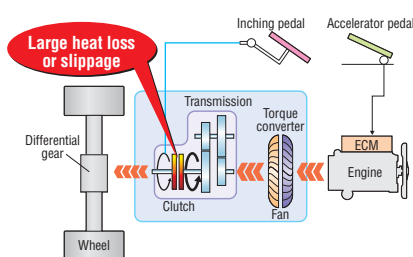
Electronically - controlled HST

Because the driving power is transmitted by pump and motor, HST creates almost no power transmission loss.



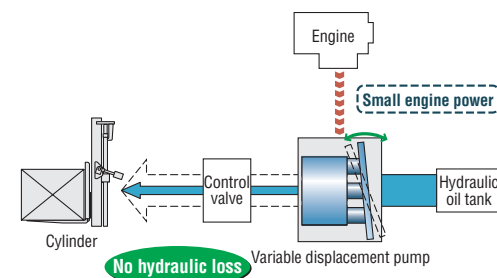
Conventional torque converter-drive forklift truck

The transmission loss is created in torque converter and in the clutch respectively. Therefore a significant amount of transmission loss is occurred in the transmission.



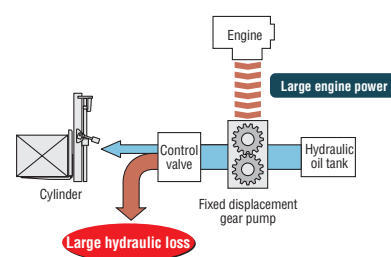
Variable displacement pump with CLSS

The pump supplies just the required amount of oil by sensing the lift load. No hydraulic loss in the circuit contributes reduction of fuel consumption.



Conventional fixed displacement gear pump

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



ICT & KOMTRAX

LARGE HIGH RESOLUTION LCD MONITOR

Realizing machine condition at a glance with the large multiple function display **NEW**

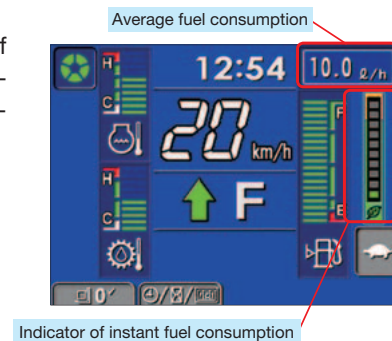
A large high resolution LCD monitor is installed. Machine information such as the truck speed and fuel economy can be understood with one view. Furthermore, the machine speed limit can easily be set. Detailed information on the operation time, fuel consumption and more can be called out by function buttons.



- 1 Hour meter (SMR) integration state
- 2 Parking brake indication
- 3 Load handling interlock indication
- 4 Travel interlock indication
- 5 KOMTRAX message
- 6 Engine coolant temperature indication
- 7 HST oil temperature indication
- 8 Seat Belt Caution Indicator
- 9 Parking brake reminder caution lamp
- 10 Clock / Hour meter (SMR) / Travel distance (Odometer) indication / Caution symbol
- 11 Current Travel speed / Over speed caution / Travel Speed (Tortoise) Set indication
- 12 Directional lever position
- 13 Preheating pilot indication
- 14 Fuel consumption gauge / Load checker
- 15 Fuel gauge
- 16 Indicator of instant fuel consumption
- 17 Guidance icon
- 18 Function button

Average fuel consumption and indicator of instant fuel consumption

The display shows the numerical data of the average fuel consumption and indicator of instant fuel consumption.



Operation information display

Operation information can be checked by pressing function buttons.

- Working Hours
- Average Fuel Consumption
- Actual Working Hours
- Actual Fuel Consumption
- Fuel Consumption

Average fuel consumption record

The average fuel consumption history can be checked for the last twelve hours or last week.



Maintenance history

The machine can remember the maintenance history such as changing the engine oil.



Machine setting

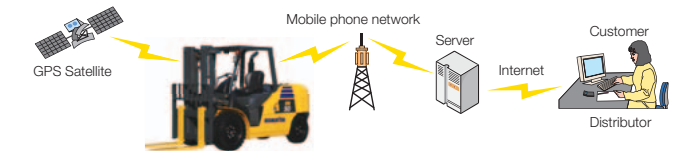
The machine performance can be set on the monitor screen to match the work site.



KOMTRAX can Visualize the Machine Condition Daily, which Enables Remote Fleet Management and Support Your Improvement Plan

KOMTRAX can provide various machine information including location information, operation information and fuel consumption information to the customer. Machine information accumulated in monitor and controllers are transmitted via mobile phone network and stored in server, thus the machine condition can be checked from the office. In addition, to offer "Ease" and "Dependability" to the customer, Komatsu supports our customers so that they can use their Komatsu machines in best conditions at all times by using KOMTRAX information and through its services network.

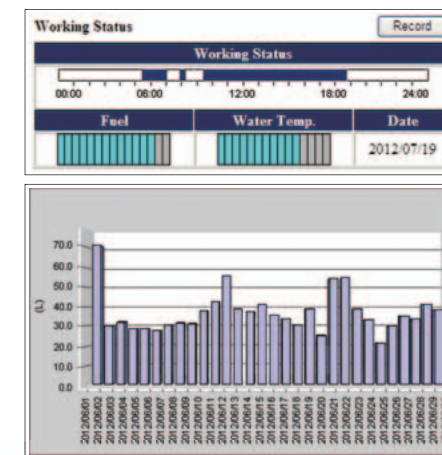
KOMTRAX



* KOMTRAX is using the mobile phone network. It may be able to be used at the place which an electric wave does not reach, or the weak place of an electric wave.

Machine operation information

Grasping details of machine operation information on a daily basis allows grasping running costs and taking measures to reduce the costs.

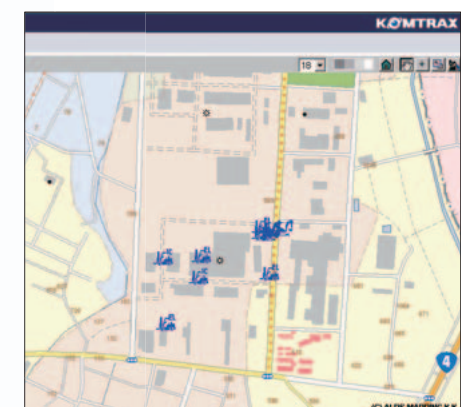


Operation report

Monthly and annual operation records provided by KOMTRAX are useful information for the customer.

Machine location information

Grasping machine location information allows machine operation management.



SAFETY & COMFORT

Operator Friendly Safety Accessories Go Into Details

Seat belt caution indicator NEW

This warning calls the driver's attention when the seat belt is not fastened, thus supports safe operation. Furthermore, the seat belt color is bright orange, makes it sure that the seat belt is fastened.



Operator Presence Sensing system

The Operator Presence Sensing system incorporates a Lifting/Traveling interlocking function. This is a safety function for disabling traveling and lifting mechanisms when the operator is not correctly occupying the seat. An alarm buzzer sounds if the operator leaves the seat while traveling.

* The traveling interlocking function only disengages traction and does not automatically apply the brakes.



Neutral start function

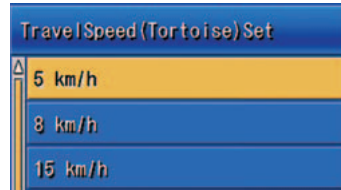
The FH series engine is only permitted to start when the operator is in the seat, the directional lever is in the neutral position and the brake pedal is kept depressed. This function prevents sudden starting of the forklift truck, thus supports safe operation.



Travel speed limiter

Travel speeds can be set in 4 stages. This function is useful to reduce speeds in tight spaces or to keep the forklift within specific in-plant speed limitations.

(Set travel speed: 5, 8, 15, 23.5 km/h)

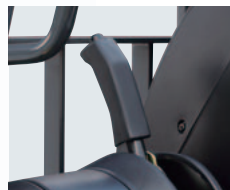


Prevention of the lift operation when turning off the key

When the key switch is off, lift function is locked and assures that the fork and mast will not operate if the control lever is touched by accident, thus supports safe operation.

Parking brake warning

If the driver gets off the machine without setting the parking brake, a warning light flashes and the buzzer intermittently sounds to prevent the parking brake from being forgotten. Furthermore, if the driver steps on the acceleration pedal with the parking brake on, the buzzer sounds to prevent running with the parking brake on.



Load checker (equipped with a buzzer) NEW

A simple load meter that allows the cargo weight to be measured in 10 kg steps is standard. If the load exceeds the set weight, the load meter sounds the buzzer to diminish the risk of exceeding the weight limit.

* This system is a reference for operator, therefore cannot be used for commerce purpose.



Key cylinder cover

A key cylinder cover is equipped as standard. This cover protects the key from trash and dust, thus the truck is optimum for operating in dusty environment and without anxiety.



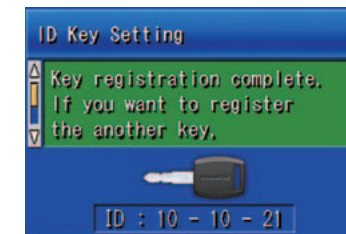
Rear assist grip with horn button (option)

When moving in reverse, a stable posture can be kept by grasping the rear assist grip. The horn can be operated with the finger tips while grasping the grip. This improves comfort in a site accompanied by long reverse running.



ID key enables identification of the operating record (option)

ID key is available as an option to enable individual tracking of operation. Since the truck can only be operated using a registered ID key, it also serves as an effective means of theft prevention.



LED lights (option)

Speedometer and Overspeed warning buzzer NEW

The speedometer and the over speed warning buzzer is equipped as standard. If the speed exceeds the set speed, the buzzer sounds to inform the operator. (The warning buzzer can be set at intervals of 1 km/hour.)

Fuel cap with key

Prevents fuel from being stolen or contaminated by foreign matter.



SAFETY & COMFORT

Comfortable Cockpit Reduce Operator's Fatigue

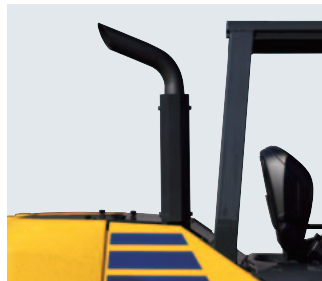
New suspension seat NEW

This seat is wide, offers waist support and thus enables the operator to sit in a relaxed state. An assist grip is mounted on the left side for easy getting on and off. Thus, provides comfortable work space and reduces operator's fatigue.



Upward exhaust muffler NEW

An upward exhaust muffler prevents dust on the road surface from being blown up into working area.



Standard equipment

Plastic overhead guard cover



Small diameter steering wheel (300 mm)



Large assist grip



Rear view mirror (center)



Tilttable steering column



Parking brake lever (double action type)



Head lamp (with guard)



Paper binder at engine hood



Wide step



Hang down pedal and wide floor space



EQUIPMENT

STANDARD EQUIPMENT

- 3-way control valve with port relief
- Cyclone air cleaner (double element)
- Front single tire, pneumatic
- Headlamps & rear combination lamps with LED
- KOMTRAX
- Overhead guard with front / rear conduits
- Rear tire, pneumatic
- Standard directional lever
- Upward exhaust pipe (Right side)

OPTIONAL EQUIPMENT

- Air cleaner with pre-cleaner, inner fitting type
- Back-up buzzer
- Front single tire, elastic cushion
- Front double tire, pneumatic
- Front double tire, elastic cushion
- Heater
- ID key
- One rear working lamp with LED, overhead guard mounted
- One rear working lamp with LED (backward when interlocked), overhead guard mounted
- Power steering cylinder boots
- Rear tire, elastic cushion
- Rear view mirror (center)
- Rear view mirror (pair)
- Removable radiator screen & chassis under carriage protection (screen)
- Rotating lamp with LED (yellow), overhead guard mounted
- Tilt cylinder boots
- Tool kit
- Two front working lamps with LED, fender mounted
- Two front working lamps with LED, overhead guard mounted



