

# KOMATSU FORKLIFT

## ASX series STANDARD SPECIFICATIONS

Cushion Tire Lift Trucks  
3,000–4,000 lbs. Capacity  
Electric, 36 volt



The Forklift With Proven Ability.™

# TRUCK DATA

| GENERAL  |                       | FS15S-1                              | FS18S-1                              | FS20S-1                              |
|--|-----------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Power Type   |                       | Electric (36V)                       | Electric (36V)                       | Electric (36V)                       |
| Operation Type   |                       | Stand-up                             | Stand-up                             | Stand-up                             |
| Capacity @ 24-in. (600 mm) load center *                                 | lbs. (kg)             | 3,000 (1,350)                        | 3,500 (1,580)                        | 4,000 (1,810)                        |
| Load distance from center axle (3-stage mast)                            | in. (mm)              | 11.5 (290)                           | 11.5 (290)                           | 11.5 (290)                           |
| Wheelbase  | in. (mm)              | 46.8 (1,190)                         | 46.8 (1,190)                         | 51.3 (1,300)                         |
| WEIGHT   |                       |                                      |                                      |                                      |
| Service weight (includes min. weight battery, 3-stage std. mast & forks) | lbs. (kg)             | 8,225 (3,730)                        | 8,705 (3,950)                        | 9,450 (4,290)                        |
| TIRE   |                       |                                      |                                      |                                      |
| Tire type  |                       | Cushion Solid                        | Cushion Solid                        | Cushion Solid                        |
| Tire size, front   |                       | 16 x 6 x 10 1/2                      | 16 x 6 x 10 1/2                      | 16 x 6 x 10 1/2                      |
| Tire size, rear  |                       | 10 1/2 x 7 x 6 1/2                   | 10 1/2 x 7 x 6 1/2                   | 10 1/2 x 7 x 6 1/2                   |
| Number of wheel, front / rear  | x = driven            | 2x / 1                               | 2x / 1                               | 2x / 1                               |
| Tread (center of tires), front / rear                                    | in. (mm)              | 34.0 (860) / 0.0 (0)                 | 34.0 (860) / 0.0 (0)                 | 34.0 (860) / 0.0 (0)                 |
| DIMENSIONS   |                       |                                      |                                      |                                      |
| Tilting angle, 3-stage masts, forward / backward                         | deg.                  | 3 / 5                                | 3 / 5                                | 3 / 5                                |
| Mast height, lowered (3-stage std. mast)                                 | in. (mm)              | 83.0 (2,110)                         | 83.0 (2,110)                         | 83.0 (2,110)                         |
| Mast height, extended (3-stage std. mast) †                              | in. (mm)              | 237.8 (6,030)                        | 237.8 (6,030)                        | 237.8 (6,030)                        |
| Maximum fork height (3-stage std. mast) **                               | in. (mm)              | 189.8 (4,820)                        | 189.8 (4,820)                        | 189.8 (4,820)                        |
| Free lift height (3-stage std. mast)                                     | in. (mm)              | 35.0 (890)                           | 35.0 (890)                           | 35.0 (890)                           |
| Height overhead guard  | in. (mm)              | 85.0 (2,160)                         | 85.0 (2,160)                         | 85.0 (2,160)                         |
| Drive In Rack OHG width  | in. (mm)              | 23.8 (605)                           | 23.8 (605)                           | 23.8 (605)                           |
| Length to fork face (3-stage mast)                                       | in. (mm)              | 66.0 (1,675)                         | 66.0 (1,675)                         | 70.5 (1,790)                         |
| Overall width, at drive tires  | in. (mm)              | 41.5 (1,055)                         | 41.5 (1,055)                         | 41.5 (1,055)                         |
| Forks, thickness x width x length  | in. (mm)              | 1.5 x 4.0 x 42.0 (38 x 100 x 1,070)  | 1.5 x 4.0 x 42.0 (38 x 100 x 1,070)  | 1.5 x 4.0 x 42.0 (38 x 100 x 1,070)  |
| Carriage width / ITA Class   | in. (mm)              | 37.5 (950) / II                      | 37.5 (950) / II                      | 37.5 (950) / II                      |
| Ground clearance, under mast   | in. (mm)              | 3.0 (75)                             | 3.0 (75)                             | 3.0 (75)                             |
| Ground clearance, center of wheelbase                                    | in. (mm)              | 4.0 (100)                            | 4.0 (100)                            | 4.0 (100)                            |
| Right angle stacking aisle (3-stage mast) ††                             | in. (mm)              | 66.5 (1,690)                         | 66.5 (1,690)                         | 70.9 (1,800)                         |
| Turning radius, outside  | in. (mm)              | 54.6 (1,390)                         | 54.6 (1,390)                         | 59.0 (1,500)                         |
| Battery compartment: width x length x height                             | in. (mm)              | 16.1 x 38.7 x 31.5 (405 x 980 x 800) | 16.1 x 38.7 x 31.5 (405 x 980 x 800) | 20.7 x 38.8 x 31.5 (525 x 985 x 800) |
| PERFORMANCE  |                       |                                      |                                      |                                      |
| Travel speed, forward, loaded / unloaded                                 | mph (km/h)            | 6.2 (10.0) / 6.5 (10.5)              | 6.2 (10.0) / 6.5 (10.5)              | 6.2 (10.0) / 6.5 (10.5)              |
| Lifting speed, loaded / unloaded (3-stage mast)                          | fpm (mm/s)            | 57 (290) / 85 (430)                  | 55 (280) / 85 (430)                  | 52 (265) / 85 (430)                  |
| Lowering speed, loaded / unloaded (3-stage mast)                         | fpm (mm/s)            | 90 (460) / 55 (280)                  | 90 (460) / 55 (280)                  | 90 (460) / 55 (280)                  |
| Maximum drawbar pull, loaded   | lbs. (N)              | 2,100 (9,300)                        | 2,100 (9,300)                        | 2,100 (9,300)                        |
| Maximum gradeability, loaded / unloaded at 1 mph                         | %                     | 10 / 10                              | 10 / 10                              | 10 / 10                              |
| Service brake, operation / control                                       |                       | Hand / Electronically Applied        | Hand / Electronically Applied        | Hand / Electronically Applied        |
| Parking brake, operation / control                                       |                       | Foot / Mechanical                    | Foot / Mechanical                    | Foot / Mechanical                    |
| Steering type  |                       | Hydraulic                            | Hydraulic                            | Hydraulic                            |
| DRIVE  |                       |                                      |                                      |                                      |
| Drive motor, 60 minute rating  | HP (kW)               | 5.5 (4.1) x 2 motors                 | 5.5 (4.1) x 2 motors                 | 5.5 (4.1) x 2 motors                 |
| Pump motor, 5 minute rating  | HP (kW)               | 10.9 (8.1)                           | 10.9 (8.1)                           | 10.9 (8.1)                           |
| PS motor, 60 minute rating   | HP (kW)               | 0.75 (0.56)                          | 0.75 (0.56)                          | 0.75 (0.56)                          |
| Battery voltage  | volts                 | 36                                   | 36                                   | 36                                   |
| Battery capacity, minimum  | Ah/6 hr. rate         | 726                                  | 726                                  | 880                                  |
| Battery capacity, maximum  | Ah/6 hr. rate         | 930                                  | 930                                  | 1,240                                |
| Battery weight, minimum  | lbs. (kg)             | 1,925 (880)                          | 1,925 (880)                          | 2,700 (1,230)                        |
| Battery weight, maximum  | lbs. (kg)             | 2,260 (1,025)                        | 2,260 (1,025)                        | 2,900 (1,315)                        |
| OTHER  |                       |                                      |                                      |                                      |
| Drive motor control  |                       | Transistor MOSFET                    | Transistor MOSFET                    | Transistor MOSFET                    |
| Relief pressure, maximum   | psi (bar)             | 2,400 (165)                          | 2,600 (180)                          | 2,850 (195)                          |
| Hydraulic tank capacity  | U.S. gallons (liters) | 11.0 (42)                            | 11.0 (42)                            | 11.0 (42)                            |

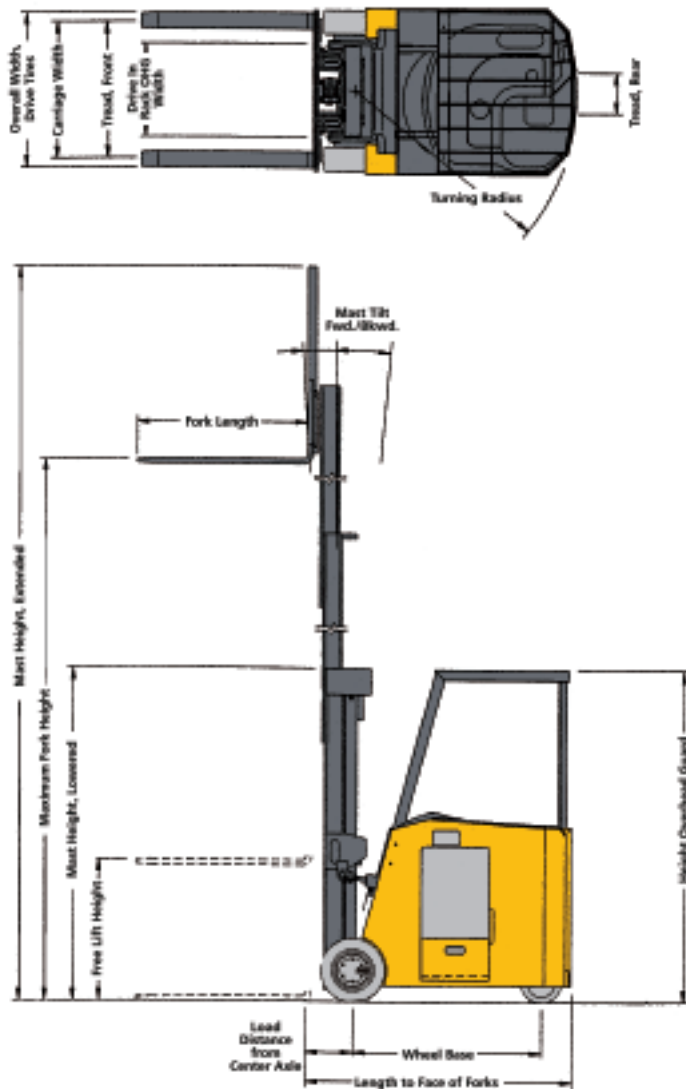
NOTE: Most values shown in this publication are rounded. Therefore, direct conversion between metric and English or Imperial may be slightly different from those shown. The performance of machines is affected by the condition of the vehicle and how it is equipped as well as the nature and condition of the operating area. If these specifications are critical or if your needs exceed the specifications shown here, discuss the proposed application with your authorized dealer.

\* Optional masts, attachments, longer load dimensions, and higher lifting heights may result in derating of the capacity. Contact your authorized dealer.

\*\* Other mast heights available. See MAST DATA chart for other standard mast heights. Contact your authorized dealer.

† Includes 48-inch (1,220 mm) high load backrest. Contact your authorized dealer.

†† Add load length and clearance. Contact your authorized dealer.



CALL YOUR LOCAL KOMATSU FORKLIFT DEALER FOR MAST & ATTACHMENT OPTIONS.



## Komatsu "Proven Ability"

is Komatsu's ability to eclipse the competition by taking the complicated and making it simple. We strive to provide innovative solutions using the technologies of tomorrow—today.

### SPECIAL FEATURES

- Powerful 6.7" or 7.2" drive motor with MOSFET Controller Contactless Technology for top level performance and low maintenance.
- Dual-front, continuous drive differential.
- The hand controls feature contoured grips for effortless control of lift, speed, and steering functions.
- Low 7" step for easier on and off.
- Convenient, lightweight cover provides fast access to power steering and hydraulic motors and pumps.

### STANDARD EQUIPMENT

- Overhead Guard
- MOSFET Controller
- Self Diagnostic Start-Up
- Idle Timer Auto Power Down
- Field Weakening
- Three-Way Hydraulic Control Valve
- Full Hydrostatic Power Steering (FHPS)
- Single Function Hydraulic / Drive Control Handle
- Dual Disc Parking Brake
- Headlights OHG Mounted
- Horn
- Cushion Floor Pad
- Operator Hip Cushioning

- Battery Restraint and Roller System
- Battery Discharge Indicator (BDI) with Lift Interrupt

### OPTIONAL EQUIPMENT

- Additional Height OHGs
- Additional Length Forks
- Attachments
- Auxiliary Hydraulic Valve
- Cold/Freezer Protection
- Internal Hydraulic Hosing
- Warning Devices – Audible
- Warning Devices – Visual

Contact your authorized dealer for other options.

## MOTORS

**Drive Motors:** Dual 36 volt, separately-excited DC motors provide individual drive tire control for exceptional traction and turning and optimal performance.

Vertically mounted, 6.7" diameter, 5.5 HP (4.1 kW) motors on the 3,000 - 3,500 lb. models and 7.2" diameter 5.5 HP (4.1 kW) motors on the 4,000 lb. model.

These drive motors have overheat protection for the highest level of thermal protection available, further increasing the motor life. Armature shafts are mounted on dual tapered roller bearings to support the weight and maintain proper pinion gear alignment further extending motor life and reducing maintenance requirements.

**Hydraulic Pump Motor:** 36 volt, 6.6" diameter, series wound DC motor with easy to replace brushes and springs.

**Power Steering Motor:** 36 volt, 4.6" diameter, permanent magnet DC motor.

## ELECTRICAL SYSTEM

Independent MOSFET (Metal Oxide Semi-conductor, Field-Effect Transistor) drive motor controllers provide maximum control of the separately-excited motors. Feedback monitors regulate motor control through all operations giving precise control to the operator. During turns, the inside motor is reduced in speed or reversed, as necessary, for precise traction control.

- 36 volt system with an automatic power-on, self-test of all major electrical system components.
- Proportional solenoid valves in the hydraulic system regulate lift and lower speeds.
- Programmable auto-shutdown timeout function helps prevent accidental activation of the truck.
- Console mounted battery state-of-charge indicator and low voltage lift lockout.
- Quick disconnect lever mechanically separates battery connector with easy, low effort action. SB-350 gray battery connector.
- Static discharge grounding strap reduces static charge build-up on truck chassis while driving, keeping the truck frame at neutral electrical potential.
- Password protected access to programming, calibration and diagnostics without the need for external equipment.
- Programmable performance and options: reverse steering, lift interrupt, lift/lower speed.

## HYDRAULIC SYSTEM

The hydraulic system features a fully filtered hydraulic reservoir with return oil filter and filtered breather cap.

- High-capacity gear pump mounted directly to series wound motor.
- Pressure check port; proportional solenoid valve controls, velocity fuse flow control devices.

- Hydraulically cushioned lift cylinders to provide smooth transition from freelif to staging during lifting and lowering.
- Fully hydrostatic power steering.

## FRAME

Rear entry chassis of welded steel construction for exceptional rigidity and durability.

- Low, 7" step height with 1.0" lip around floor edge to help prevent operator's foot from slipping out.
- Tapered right sidewall for added protection and security.
- Side rollout battery compartment with lift out gates and zinc dichromate plated steel battery rollers for increased corrosion resistance and long life. Battery roller level is 6.8" above floor level.

## DRIVE TRAIN

Dual front, independent drive units with double-reduction gear system. All shafts are mounted on tapered roller bearings. The drive train offers exceptional torque and low speed control for optimum traction on uneven floors with individual wheel traction control during cornering for a confident feel and reduced tire wear.

- Large diameter drive tires for a smoother ride, better traction and load cushioning.

## BRAKES

Normal travel braking is accomplished through the drive system with electronic plugging control by reversing the travel control.

The parking brake, which may also be used as an emergency brake, consists of a disc brake system mounted on each drive motor for durability and superior performance. Dual braking plates engage mechanically when the operator lifts their foot from the brake pedal.

- Minimum effort required to depress brake release pedal and activate electrical brake release.
- Easy to service with minimal maintenance requirements.
- Floor-mounted brake release pedal is covered with non-slip rubber pad.

## POWER STEERING

Fully hydrostatic power steering with 180 degrees steering range for precise control with quiet, responsive operation.

## MAST, CARRIAGE, LBR AND FORKS

The high-visibility design, three-stage mast is equipped with sealed bearing rollers for extended life. Rollers are mounted at an angle and are shim adjustable to provide side thrust control. The high-visibility mast is designed to provide the operator with the clearest unobstructed view possible.

The standard Class II carriage has four load rollers with sealed side thrust rollers; the optional available integral sideshift carriage has six load rollers. A 48" high load backrest is standard to help stabilize the load.

Single and double hydraulic functions with internal hose reeving is available for operating the optional integral sideshifter and other attachments.

## OPERATOR COMPARTMENT

The stand up rider compartment is ergonomically designed to give the operator maximum visibility in order to optimize productivity and improve safe operation.

The comfortably contoured operator compartment with spacious foot room and standing area features a non-slip rubber cushioned floor mat and rubber padded brake release pedal.

The instrument display is easy to read and informs the operator of battery state of charge, steer wheel position, total hours on the brake release pedal, overheat and maintenance indicators, and real-time fault codes.

The single handle, simultaneous multifunction control has been logically formatted for intuitive operation and continuous ease of use.

- Low effort emergency battery disconnect.
- Low, 7" step height.
- 1.5" thick cushion floor mat for reduced standing fatigue and exceptional shock and vibration dampening.
- High visibility, three-stage full freelif mast.
- 3-post overhead guard design with drive-in rack capabilities and slotted design for improved visibility.

## SERVICEABILITY

A startup diagnostic system with power on, self test checks all major electrical components prior to allowing the unit to be operated.

The electronic control system with built-in analyzer, self-diagnostics and programmability is engineered with input/output control feedback for specific fault detection and superior diagnostics. No external instrumentation is required.

Easily removed, lift-off panels provide clear access to the lift pump and motor, drive motors, power steering assembly and all electronic components.

## COMPLIANCE AND APPROVALS

Meets or exceeds American National Standards Institute, ASME B56.1 – Part III Safety Standards for Powered Industrial Trucks.

Classified by Underwriter's Laboratories. Contact your authorized Dealer for application specifics.

# KOMATSU®

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