



# DUMP TRUCK

# HD465-3

MAX. PAYLOAD: 46000 kg (51 U.S. tons)  
CAPACITY (HEAPED): 34.2 m<sup>3</sup> (44.7 cu. yd.)  
FLYWHEEL HORSEPOWER: 702 HP (524 kW) / 2100 RPM



Photo shown may include optional equipment.

- **Powerful Cummins VTA28-C diesel engine** delivers a huge 702 FHP (524 kw) and offers a powerful horsepower to weight ratio.
- **TORQFLOW transmission** with torque converter lockup system assures responsive control regardless of load and road conditions.
- **Oil-cooled multiple-disc brakes** are fully sealed and also act as retarder brakes that automatically actuate when travel speed exceeds the rated speed.
- **The exceptionally small turning radius** makes the HD465 just as easy to maneuver as dump trucks one class smaller.
- **Low loading height** makes it easier for smaller loaders to load the HD465-3.
- **Long wheelbase, wide tread and low center of gravity** assure excellent travel stability.
- **Hydropneumatic suspension** on all four wheels absorbs shock and provides greater comfort and extended durability.
- **Cartridge type filters** concentrated on the left side assure quick and easy maintenance.

 **KOMATSU**

# HD465 SPECIFICATIONS



## ENGINE

Cummins VTA28-C, 4-cycle, water-cooled/ turbocharged diesel engine with aftercooler, 12 cylinders with 140 mm (5.5") bore x 152 mm 6" stroke and 28 ltr. (1,710 cu.in) piston displacement. Gross horsepower. . . . . 730 HP (544 kw)/2100 RPM Flywheel horsepower:

702 HP (524 kw)/2100 RPM (SAE J1349)  
712 PS (524 kw)/2100 RPM (DIN 6270 NET)

Max. torque. . . . . 302 kg-m (2,184 lb-ft) at 1400/RPM Direct injection for fuel economy. Mechanical, all speed control governor. Gear-pump-driven forced lubrication with full-flow and bypass filters. Dry and horizontal type air cleaner. 24V/15 kw (7.5 kw x2) electrical starter motors. 24 V/50 A alternator. 24V/170 Ah x 4 batteries.



## TORQFLOW TRANSMISSION

Komatsu's unique TORQFLOW transmission consists of a water-cooled, 3-element, single-stage, 2-phase torque converter and planetary-gear, multiple-disc clutch transmission which is hydraulically actuated and force-lubricated for optimum heat dissipation. 7 forward and 1 reverse speeds. A lockup system consisting of a wet, single-disc clutch is automatically actuated in F1 - F7 gears for higher fuel savings. Neutral safety switch prevents accidental machine starts.

Max. travel speed. . . . . 65 km/h (40.4 MPH)



## AXLES AND FINAL DRIVE

Independent suspension type front axle and full-floating type rear axle. Hydropneumatic suspensions are installed on the lateral ends of these axles. Planetary gear type final drive.

Reduction ratio:  
Differential. . . . . 3.125:1  
Final. . . . . 5.84:1

Foot pedal operated wet multiple disc type differential lock is provided for positive traction and stable travel performance.



## TIRES

24.00-35-30 PR tires (front and rear) are standard equipment. Inflation pressure. . . . . 3.9 kg/cm<sup>2</sup> (55.5 psi)



## STEERING SYSTEM

Separate, full-hydraulic power steering. Tandem gear pumps power the steering/hoisting circuits. A demand valve between these two circuits assures the optimum oil-flow supply to the steering circuit regardless of engine revolution for light-touch steering. Komatsu's exclusive A-frame offers a large wheel turning angle, assuring a small turning radius. Should an engine or pump malfunction occur, push the emergency steering button and the electric motor actuates the pump, supplying hydraulic oil into the steering circuits, and keeping your vehicle safely on course. Min. turning radius. . . . . 9.5m (31'2")



## BRAKES

**Front:** Air-over-hydraulic, internal-expanding type.  
**Rear:** Air-over-hydraulic, oil-cooled multiple-disc type.

Sealed from water and abrasive materials and maintenance-free between overhauls. Two, independent brake lines are installed on all brakes.

**Retarder:** The rear brakes also act as retarders. The retarders have their own cooling system for ample braking performance. They automatically actuate when the travel speed exceeds the rated standard to prevent the engine from overrunning.

**Emergency:** Automatically applied to service brake should pressure in the air tank drop below the rated standard.

**Parking:** Spring-loaded and internal-expanding type parking brake. This brake is automatically actuated when pressure in the air tank drops below the rated standard.



## MAIN FRAME

Ladder type, box-sectioned construction for maximum rigidity. In addition, the main frame is made of high-tensile-strength steel.



## BODY

Employment of 130 kg/cm<sup>2</sup> (184,900 psi) high-tensile strength steel and rib reinforcement for body sides provides maximum body strength. Target area 6450mm x 3825 mm (21'2" x 12'7")  
Max. body depth. . . . . 1510 mm (4'11")  
Max. payload. . . . . 46000 kg (51 U.S. tons)  
Capacity: Struck. . . . . 24 m<sup>3</sup> (31.4 cu.yd.)  
Heaped (2:1). . . . . 34.2 m<sup>3</sup> (44.7 cu.yd.)



## HYDRAULIC SYSTEM

Independently designed tandem gear pumps for steering/hoisting and retarder cooling. Single gear pump for torque converter charging.

Steering/hoisting pumps. . . . . 392 ltr. (103.6 U.S. gal.)/min.  
Retarder cooling. . . . . 392 ltr. (103.6 U.S. gal.)/min.  
Torque converter charging. . . . . 244 ltr. (64.5 U.S. gal.)/min.  
Relief valve setting. . . . . 210 kg/cm<sup>3</sup> (2990 psi)

Control Valve:  
A spool type control valve for hoisting

Hydraulic cylinders	Number of cylinders		Bore	Stroke
Hoisting	2	1st	185mm (7.3")	870mm (34.3")
		2nd	150mm (5.9")	850mm (33.5")
Steering	2		90mm (3.5")	362mm (14.3")



## SERVICE REFILL CAPACITIES

Coolant. . . . . 190 ltr. ( 50.2 U.S. gal.)  
Fuel tank. . . . . 780 ltr. ( 206.1 U.S. gal.)  
Engine oil. . . . . 65 ltr. ( 17.2 U.S. gal.)  
Torque converter,  
transmission and retarder. . . . . 150 ltr. ( 39.6 U.S. gal.)  
Differential. . . . . 45 ltr. ( 11.9 U.S. gal.)  
Final drive (each side). . . . . 435 ltr. ( 11.5 U.S. gal.)  
Hydraulic system. . . . . 180 ltr. ( 47.6 U.S. gal.)  
Front suspensions. . . . . 33 ltr. ( 8.7 U.S. gal.)  
Rear suspensions. . . . . 26 ltr. ( 6.9 U.S. gal.)





## OPERATING WEIGHT

Net weight (unloaded) . . . . .	38980 kg ( 85,935 lb)
Weight distribution:	
Front axle . . . . .	18710 kg ( 41,250 lb)
Rear axle . . . . .	20270 kg ( 44,685 lb)
Gross weight (including full load and an operator of 80 kg) . . . . .	85060 kg ( 187,525 lb)
Weight distribution:	
Front axle . . . . .	27220 kg ( 60,010 lb)
Rear axle . . . . .	57840 kg ( 127,515 lb)

## STANDARD EQUIPMENT

Body spill guard. Cab guard (left), platform guard (right). Body heater. Quick engine starter. Headlights. Turn indicators. Side marker lamps. Brake lamps. Tail lamps. Backup light and room lamp. Engine oil pressure gauge. Engine coolant temperature gauge. Tachometer. Ammeter. Air pressure gauge. Speedometer. Service meter. Retarder oil temperature gauge. Dust indicator. Torque converter oil gauge. Horn. Backup alarm. Centralized war-

ning lamp and buzzer (for engine coolant level, air pressure, retarder oil temperature, gearshifts with parking brake, dumping caution). Pilot lamps (for parking brake, winker, headlight high beam). Emergency brake. Emergency steering. Engine overrunning protection. Rock ejector. Reclinable operator seat. Seat belt. Windshield washer and wiper. Side mirrors (left and right). Sun visor. Cab floor mat. Vandalism protection kit. Car heater. Under-view mirrors. Transmission underguard. Automatic transmission control. Gas spring for engine hood. Engine underguard. 24.00-35-30 PR E4 tires. Catwalk. Ladders (LH & RH). Hand rails. Wet multiple disc differential lock.

## OPTIONAL EQUIPMENT

Body wear plate. 8" Body side extension. Radiator curtain. Yellow rotating lamp. Tachograph. Rev/tachograph. Electronic display panel. Air conditioner. Tinted glass windows. Fuel quick change. ROPS cab. Mud guard. Body positioner. Tilttable steering wheel. Exhaust muffler. Spare tire and rim. 24.00-35-42 PR E4 tires, 24.00-35 XRBT E3 radial tires, 24.00-35-42 PR E4 tires, 24.00-35 XRBT E3 radial tires, 24.00-35 XHDIBT E4 radial tires. Tool kit. Differential lock.



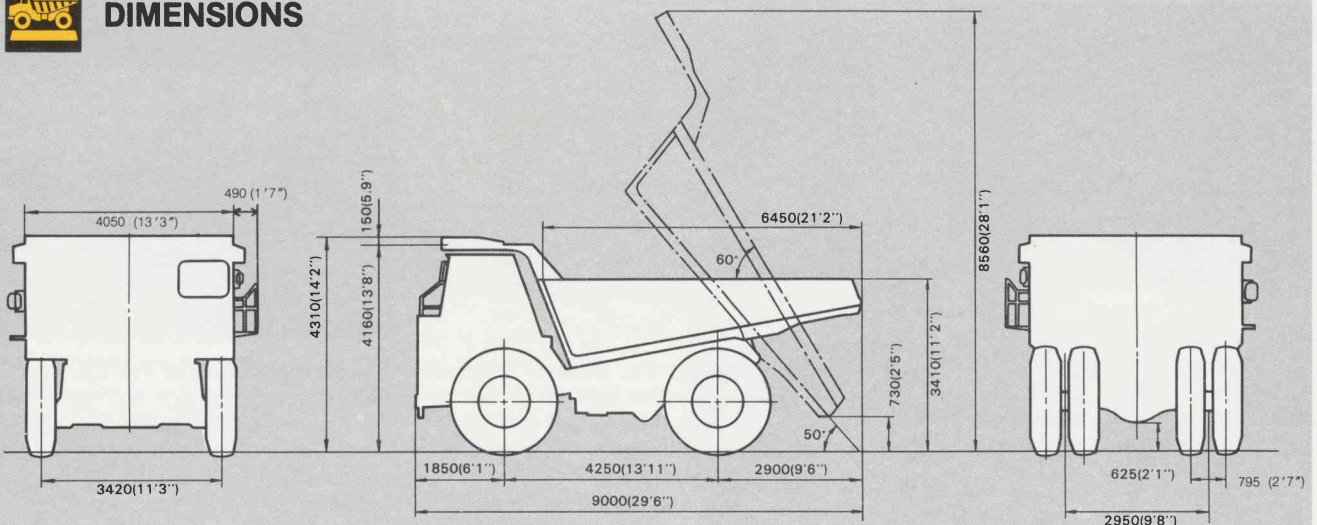
## CONTROLS

Cab guard protects the cab from falling objects. Short nose engine room assures increased front underview. Operator oriented layout of instrument panel for smooth, easy control. All meters and gauges are illuminated by back-lighting for easy reading. Centralized warning lamp and pilot lamps warn the operator of abnormalities. Engine starts only when the shift lever is positioned in neutral, to prevent accidental machine starts. Tilttable steering wheel can be telescoped in both an extending or retracting motion (optional). Its tilt angle is also adjustable. Operator seat with a reclinable backrest is fore/aft and up/down adjustable.



## DIMENSIONS

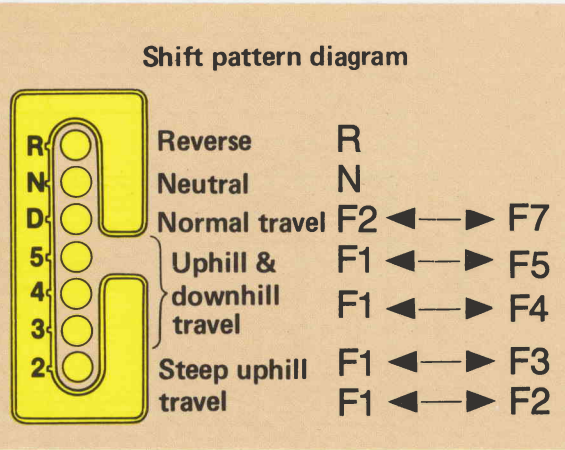
Unit: mm (ft. in.)



Ground Clearance . . . . 625 mm (2' 1")



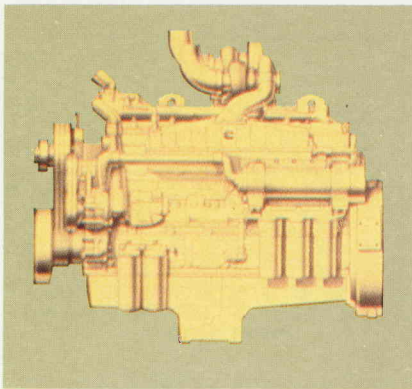
## Easy control features



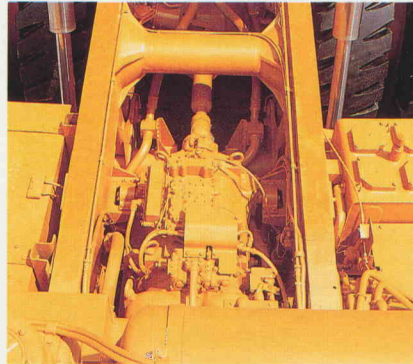
**Dump control lever:** Body movements are completed with a single lever. By placing the control lever in the "RAISE" position, the optional body positioner mechanism activates to lift the body to its preset dumping angle. A push-button type safety lock provided on this lever prevents misoperation.

**Full-automatic transmission:** The planetary-gear multiple-disc clutch transmission offers a wide speed range to match all travel conditions. A microcomputer built into the shift controller selects the optimum gear for the load, road and travel conditions. As a result, operator shifting is minimized, thereby reducing operator fatigue and shortening cycle times. A lockup clutch is automatically engaged whenever the vehicle reaches the rated travel speeds.

## High maneuverability features



**Ample power in reserve:** The Cummins VTA28-C725 diesel engine delivers 702 FHP (524 kw) which is well matched with machine weight for maneuverable ascending performance and low fuel consumption.

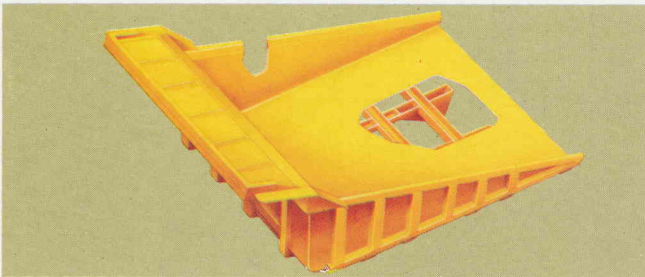


**Smooth, efficient transmission:** Komatsu's unique TORQFLOW transmission consists of a water-cooled, 3-element, single-stage, 2-phase torque converter and a planetary-gear, multiple-disc clutch transmission. An automatic lockup system provides efficient power flow.

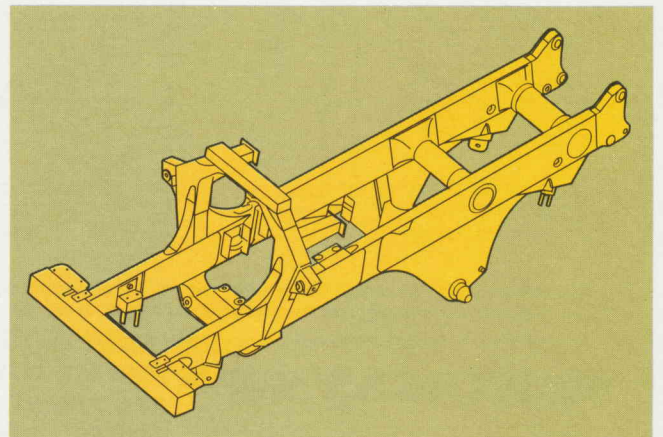


**Exclusive Komatsu A-frame:** Each Komatsu hauler has a one-class-lower turning radius when compared to other trucks. The secret of the shorter turning radius lies in the unique design of the front wheel assembly. The A-frame positioned between the main frame and front wheel assures a wider wheel-to-main frame clearance, resulting in a larger front wheel turning angle and a shorter turning radius.

## Sturdiness for tough hauling



**Tough body construction:** The Komatsu body is made of 130 kg/cm<sup>2</sup> (184,900 psi) high-tensile-strength steel for outstanding sturdiness. This, plus the rounded corner design, box-sectioned rib reinforcement for body sides, and welded steel top rails enable the Komatsu body to withstand excessive stress and shock. V-shaped body design and flat bottom floor assure smooth dumping. In addition, body exhaust heating prevents soil from sticking to body. The body is rubber-pad-mounted on the main frame to absorb shock and stress during loading.



**Sturdy main frame:** Since the main frame is the backbone of the machine, it must be especially rugged. Ladder-type box-sectioned construction and the use of high-tensile-strength steel provide maximum frame strength.

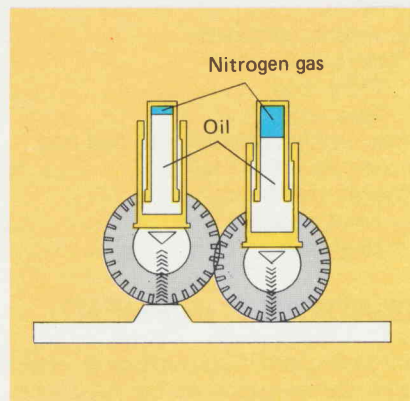


## Hydropneumatic suspension for stable operation

**Employed on four wheels:** As the load from the body and the ground increases the displacement difference gets greater. When heavy loads are added, the hydropneumatic system oscillates with longer strokes to absorb the extra shock. This efficient cushioning function contributes to greater comfort, higher stability and extended durability.

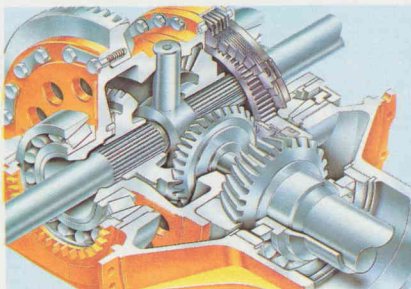
Wide treads, long wheelbase and low center of gravity assure further stable operation on rough terrain. Lower loading height in this class enables the smaller loaders to load onto the HD465.

**Operation:** Each hydropneumatic suspension has a sealed chamber containing a quantity of nitrogen gas under high pressure. A lower displacement chamber is filled with fluid. When the wheel hits a bump, the fluid is pushed upward, compressing the gas. This change of gas displacement acts as a cushion.

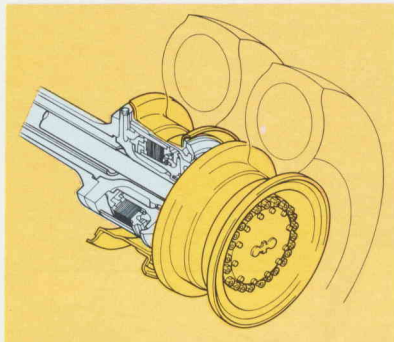


## Other remarkable features

**Tandem hydraulic pumps:** Steering/hoisting circuits are independent from the retarder cooling circuit for safer operation. Since gear-type tandem pumps are used, even if one should fail, the other supplies sufficient oil for sure steering control. To ensure smooth, constant light-touch steering control, a demand valve is provided. It adjusts oil flows from pumps to the steering and hoisting circuits. When engine revolutions are low, all the oil from these pumps flows into the steering circuit to prevent starvation.

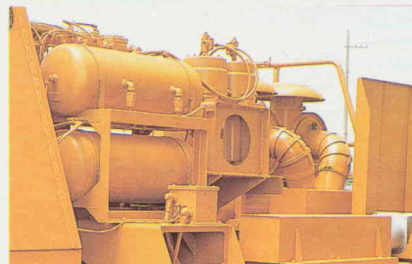


**Lockable differential:** On the go foot pedal controlled wet multiple disc type differential lock provides equal rear wheel traction in sandy or muddy soil conditions.



**Oil-cooled, multiple-disc brakes:** Rear brakes are air-over-hydraulic multiple-disc type. They are sealed for longer service and are adjustment-free to minimize maintenance. A slack adjuster maintains the optimum clearance of the rear brake discs to reduce time lag. The brakes also act as retarders. Due to an independent

cooling system and ample braking capacity, braking is always positive to maintain continuous traveling on the descent. The retarders automatically actuate when the travel speed exceeds the rated standard for each shift range to prevent the engine from overrunning.



**Simple maintenance:** Full-flow and fuel filters are cartridge type and gathered on the machine's left side for easy replacement. Low location of fuel and hydraulic tanks for easy refilling. Grease fittings are gathered behind the rear axle housing to enable remote grease refilling and easy maintenance and service.

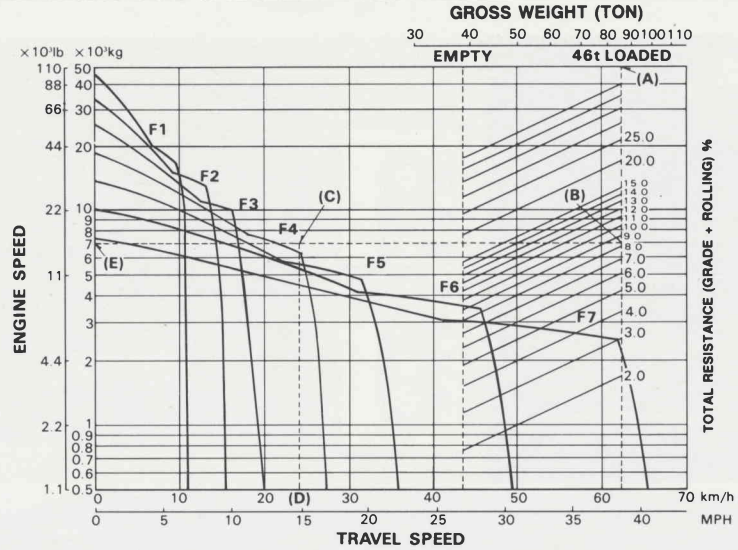


**Centralized warning lamp:** Warns the operator when the air pressure falls below the rated value, when the brake oil temperature surpasses the limit, when the truck is started with the parking brake on, when the machine is started with the dump lever in the "raise" or "lower" position, and when the radiator coolant level lowers abnormally.



# Travel performance curve

For assessing a vehicle's gradeability, travel speed, rimpull, etc. First, draw a vertical line according to the vehicle's weight (A) and mark the point (B) corresponding to total resistance (the sum of rolling resistance and grade resistance). Next, draw a horizontal line from (B), then mark (C) where the line intersects the rimpull curve and read (E) for the rimpull. For travel speed (D), draw a vertical line downward from (C). For instance, when traveling 6% gradient and encountering a 2% rolling resistance, a vehicle with a 51 U.S. ton payload should have a rimpull of 7 tons (15,430 lb) and travel at a speed of 24 km/h (14.9 MPH) in forward 4th gear.

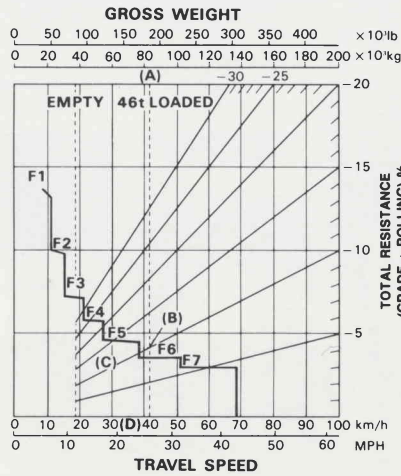


# Brake performance curve (with oil cooler)

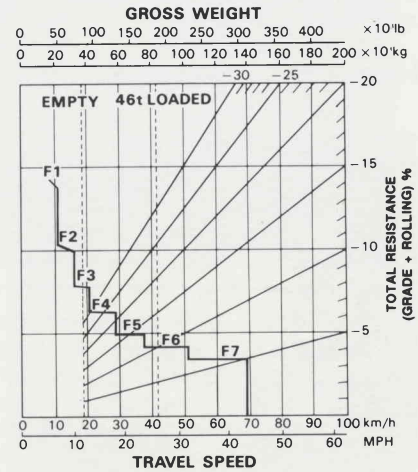
These curves establish the maximum speed and gearshift position for safe descent on a road with a given gradient at a given distance.

For example, let's assume that total resistance is -10% (gradient resistance -12% plus rolling resistance +2%) on the 1500 m (4,920 ft) graph. First, draw a vertical line from the total vehicle weight (A) so that it crosses the slanted line of 10% total resistance (B). From (B), draw a horizontal line to the left and it will cross the stair curve (C). Finally, draw a vertical line from (C) and read (D) the maximum speed for driving safely down the slope. In this case, a vehicle with a 51-U.S. ton payload should travel at approximately 36 km/h (22.3 MPH) in forward 5th gear.

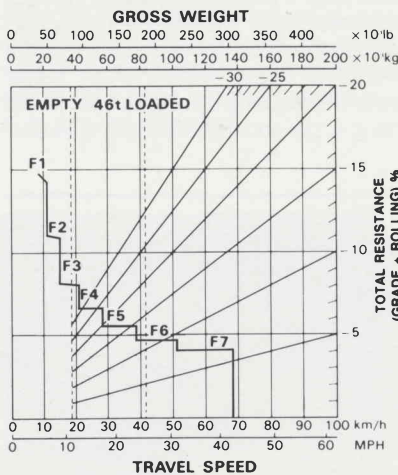
Grade distance: 1500 m (4,920 ft.)



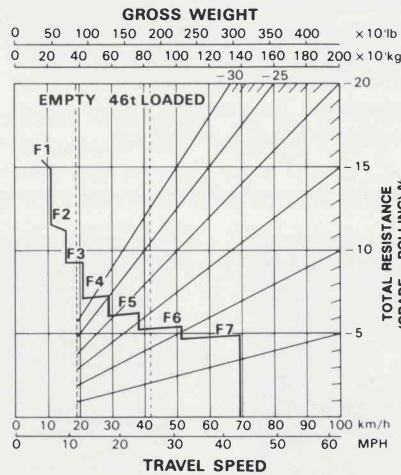
Grade distance: 900 m (2,950 ft.)



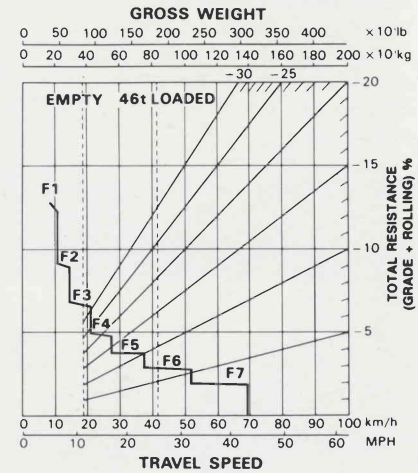
Grade distance: 600 m (1,970 ft.)



Grade distance: 450 m (1,480 ft.)



Grade distance: Continuous descent



This specification sheet may contain attachments and optional equipment that are not available in your area. Please consult your local Komatsu distributor for those items you may require. Materials and specifications are subject to change without notice.

**KOMATSU**

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1 - OCT. 1993