

# Articulated Dump Truck



## Specifications

|                 |  |
|-----------------|--|
| Maximum Payload | 28 tonne (30.9 US Ton)                     |
| Heaped Capacity | 17.5m <sup>3</sup> (22.9 yd <sup>3</sup> ) |
| Gross Power     | 287kW (385 hp)                             |
| PLI             | A982 FEB 10                                |

## Features

- High powered, heavy-duty truck with powerful engine providing class leading performance and ability to go where others can't follow
- World class operator's environment
- One of the most fuel efficient trucks in the field
- Rigorously tested in extreme conditions for proven power, productivity and reliability
- Superior gradeability and higher top speeds increase production

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# SPECIFICATIONS

## Engine

|                     |  |
|---------------------|--|
| Engine              | Cummins QSM11  |
| Type                | 6 cylinder, in-line, four cycle, water cooled, turbocharged with air to air charge cooling, direct injection, electronic engine management |
| Piston Displacement | 10,8 litres (660 in <sup>3</sup> )   |
| Bore x Stroke       | 125 x 147 mm (4.92 x 5.97in)   |
| Gross Power         | 287 kW (385 hp) @ 1800 rpm   |
| Net Power           | 248 kW (333 hp) @ 2100 rpm   |
| Maximum Torque      | 1 775 Nm (1 309 lbf ft) @ 1400 rpm   |
| Gross Power rated   | SAE J1995 Jun 90   |
| Engine Emissions    | Meets USA EPA Tier 3/CARB MOH 40 CFR 89 Tier 3 and proposed EUNRMM (non-road mobile machinery directive) stage 3                           |
| Electrical          | 24 volt electric start. 70A alternator.<br>Two 12 volt 175 Ah batteries  |
| Air Cleaner         | Dry-type air cleaner with safety element, automatic dust ejector and restriction indicator   |
| Fan                 | Modulating fan reduces noise level and consumes engine power as required.<br>Note: Net hp with fan clutch disengaged                       |
| Altitude            | Electronic derate 3 048 m (10 000 ft)  |

## Transmission

|              |  |
|--------------|--|
| Transmission | ZF 6WG 310 RPC Fully automatic with manual over-ride |
|--------------|--|

Assembly  
Consists of a torque converter close-coupled to a countershaft type gearbox with integral output transfer gearing. Automatic shifting throughout the range, with kick-down feature. Lockup in all forward gears. A torque-proportioning output differential transmits drive permanently to front and rear axles. This differential may be locked by the driver for use in difficult traction conditions.

| Speeds<br>km/h (mph) | Gear | Forward     | Reverse     |
|----------------------|------|-------------|-------------|
|                      | 1    | 5.5 (3.4)   | 5.5 (3.4)   |
|                      | 2    | 8.6 (5.4)   | 13.4 (8.4)  |
|                      | 3    | 13.4 (8.4)  | 30.7 (19.0) |
|                      | 4    | 20.8 (12.9) |             |
|                      | 5    | 30.7 (19.0) |             |
|                      | 6    | 50.4 (31.3) |             |

## Axles

Heavy duty axles with fully floating axle shafts and outboard planetary reduction gearing. The three axles are in permanent all-wheel drive (6x6) with a differential coupling between the front and rear axles. All three axles also have hydraulically actuated multiplate transverse diff-lock differentials for 100% cross-axle lock up. The inter-axle and cross-axle diff locks are controlled by the operator, and can be actuated when required in poor traction conditions.

|                              |           |
|------------------------------|-----------|
| Differential ratio           | 3.875 : 1 |
| Planetary reduction          | 5.71 : 1  |
| Overall Drivetrain reduction | 22.12 : 1 |



## Suspension

|       |  |
|-------|--|
| Front | Fully independent suspension and wheel movement is provided by a Double wishbone design. This is coupled with 4 x hydraulic dampers/coil over springs.   |
| Rear  | Each axle is coupled to the frame by three rubber-bushed links with lateral restraint by a transverse link. Pivoting inter-axle balance beams equalise load on each rear axle. Suspension movement is cushioned by rubber/metal laminated compression units between each axle and underside of balance beam ends. Pivot points on leading and trailing links are rubber-bushed and maintenance-free. |

## Steering

Hydrostatic power steering by two double-acting cushioned steering cylinders with pressure supplied by a variable displacement / load sensing piston pump. An audible alarm and warning light indicates should the second system activate.

|                                    |                                      |
|------------------------------------|--------------------------------------|
| Steering angle to either side      | 45°                                  |
| Lock to lock turns, steering wheel | 4                                    |
| System pressure                    | 241 bar (3 500 lbf/in <sup>2</sup> ) |
| SAE Turning Radius                 | 8 470 mm (27-9 ft/ins)               |
| Clearing Radius                    | 8 950 mm (29-4 ft/ins)               |

## Frame

Front and rear frames are all-welded high grade steel fabrications with rectangular box-section beams forming the main side and cross members. Inter-frame oscillation is provided by a large diameter cylindrical coupling which houses nylon bushings. Frames articulated 45° to either side for steering by means of two widely-spaced pivot pins in back-to-back sealed taper roller bearings.

## Body

All-welded construction, fabricated from high hardness (min 360 BHN) 1 000 Mpa (145 000 lbf/in<sup>2</sup>) yield strength steel. Dual slope tailchute improves material ejection from body.

|                  |                     |   |
|------------------|---------------------|---|
| Plate thickness: | Floor and tailchute | 14.0 mm (0.55 in)                           |
|                  | Sides               | 12.0 mm (0.47 in)                           |
|                  | Front               | 8.0 mm (0.31 in)                            |
| Volume:          | Struck              | 13.8 m <sup>3</sup> (18.0 yd <sup>3</sup> ) |
|                  | Heaped 2:1 (SAE)    | 17.5 m <sup>3</sup> (22.9 yd <sup>3</sup> ) |

## Hoist

Two single-stage, double-acting hoist cylinders, cushioned at the base end. Variable displacement / load sensing piston pump driven from power take-off on transmission. Full flow return line filtration. Full electro-hydraulic hoist control, with electronic detent in power down.

|                       |                                      |                |             |
|-----------------------|--------------------------------------|----------------|-------------|
| System pressure       | 220 bar (3 200 lbf/in <sup>2</sup> ) | Raise (loaded) | 12 seconds  |
| Pump output flow rate | 4.9 liter/sec (77.6 gal/min)         | Lower          | 7.5 seconds |

# SPECIFICATIONS

# TA300

## Tyres and Wheels

|        |  |
|--------|--|
| Tyres  | Standard 23.5. Optional 750/65                 |
| Rims   | Standard 25x19.50. For optional tyre, 25x22.00 |
| Wheels | 3-piece earthmover rims with 12 stud fixing    |

## Brakes

All hydraulic braking systems with multiplate sealed and oil cooled brake packs at each wheel. Independent circuits for front and rear brake systems.

|           |   |
|-----------|---|
| Parking   | Spring-applied, hydraulic-released disc on rear driveline   |
| Secondary | Secondary brake control actuates service and parking brakes |
| Retarder  | Engine compression brake is standard.                       |

## Capacities

|                                       |                       |
|---------------------------------------|-----------------------|
| Fuel Tank                             | 390 liters (103 gal)  |
| Hydraulic System (Steering & Body)    | 202 liters (53.4 gal) |
| Engine Crankcase                      | 41 liters (10.8 gal)  |
| Cooling System                        | 54 liters (14.3 gal)  |
| Transmission (inc filters and cooler) | 60 liters (15.9 gal)  |
| Differential – Front & Rear (each)    | 21 liters (5.5 gal)   |
| Differential - Centre                 | 23 liters (6.0 gal)   |
| Planetaries – (each)                  | 7.5 liters (2.0 gal)  |

# STANDARD EQUIPMENT

## Cab and Operator

|   |   |
|---|---|
| Air Conditioning                                  | ROPS/FOPS Protection ISO 3471/3449 SAE J1040 Apr 88/J386                    |
| Air Filter Restriction Indicator                  | Seat Belts Retractable J386   |
| Auxillary power outlets 12V & 24V                 | Seat, Operator, air suspension, high back, headrest and adjustable armrests |
| CD/Radio Cassette                                 | Seat Passenger  |
| Coat Hook   | Steering Wheel, tilt/telescopic   |
| Engine/Transmission/Hydraulic Diagnostic Facility | Storage Compartment   |
| Heater and Demister                               | Sun Visor (Internal)  |
| Insulation, Thermal and Acoustic                  | Tinted Glass  |
| Interior Light                                    | Transmission Visual Display Unit  |
| Mirror Rear View (4)                              | Window Protection Grille, rear  |
| Mug Holder  | Wiper and Washer, front and rear windows                                    |
| Reversing Safety camera/monitor                   |   |

## Warning Lights & Audible Alarms

|                               |   |
|-------------------------------|---|
| Alternator Charging           | Engine 'CHECK'                                |
| Body Up                       | Engine 'STOP'                                 |
| Engine maintenance monitor    | Front Brake Accumulator Pressure              |
| Wait to start (not used)      | Headlight High Beam                           |
| Differential lock             | Transmission gear attained                    |
| Direction Indicators          | Low Fuel                                      |
| Dropbox high/low Oil Pressure | Parking Brake                                 |
| Dropbox high Oil Temperature  | Rear Brake Accumulator Pressure               |
| Dropbox high ratio selected   | Secondary Steering                            |
| Dropbox Low ratio selected    | Transmission check                            |
| Engine Air Filter Change      | Transmission high oil temperature             |
| Engine Brake                  | Transmission Retarder (when option is fitted) |

## General

|  |   |
|--|---|
| Articulation and Oscillation Lock                          | Modulating Cooling Fans                     |
| Battery Master Switch                                      | Mudflaps at Front and Centre                |
| Body Prop  | Neutral Start Interlock                     |
| Brakes Fully Hydraulic Dual Circuit System                 | Pivot Protection Guard                      |
| Diagnostic Pressure Test Points                            | Rear Light Guards                           |
| Inner axle and Cross axle Differential Locks               | Reverse Alarm Audible J994                  |
| Electronic Assisted Body Hoist Control                     | Secondary Steering                          |
| Engine/Transmission/Hydraulic electronic mangement systems | Security Kit                                |
| Engine Underguard  | Tilting Cab for Maintenance                 |
| Exhaust Muffler  | Tow Points, Front and Rear                  |
| Handrails on Fenders                                       | Transmission Downshift Inhibitor            |
| Headlamp Guards  | Transmission Oil Cooler with Modulating Fan |
| Horn, Electric 117db                                       | Transmission Sump Guard                     |
| Hydraulic Diagnostic Facility RS232                        | Tyre Inflation Nitrogen                     |
| Hydraulic Filter Restriction Indicator                     | 2 stage manual/automatic Engine Brake       |

## Gauges

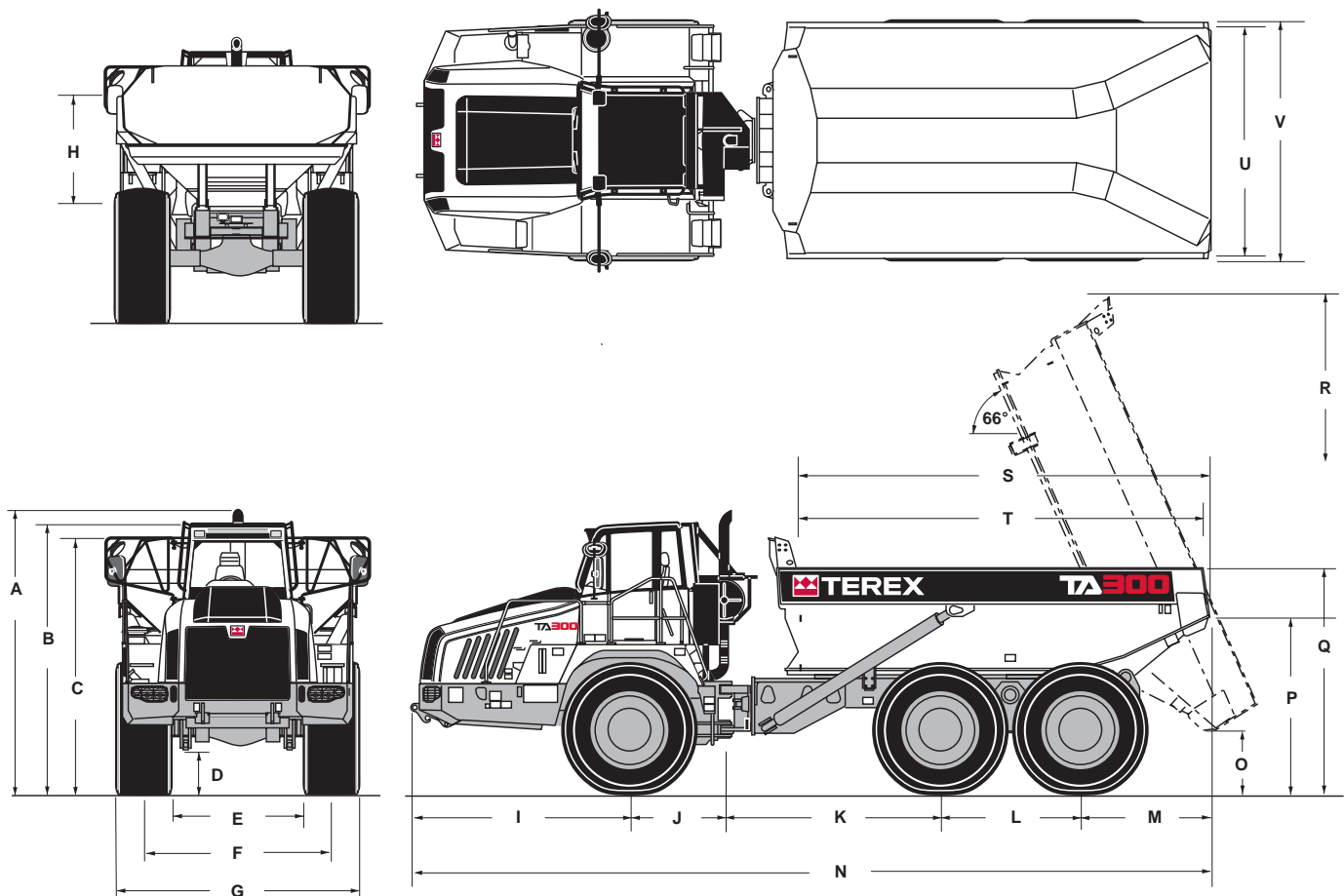
|                                   |  |
|-----------------------------------|--|
| Transmission Sump oil Temperature | Speedometer/Digital Odometer/Tripmeter |
| Engine Coolant Temperature        | System Voltage                         |
| Fuel Level                        | Tachometer                             |
| Hourmeter                         | Transmission Converter Oil Temp.       |

## Lights

|   |                                 |
|---|---------------------------------|
| Direction and Hazard Warning Indicators (LED on rear) | Side and Tail (LED)             |
| Front Working Lights, Roof Mounted                    | 2 halogen headlamps dipped beam |
| Reverse Warning                                       | 2 halogen headlamps main beam   |

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## Weights

### Net Distribution

|              |                          |            |                          |
|--------------|--------------------------|------------|--------------------------|
| Vehicle, Net | 22 485 kg<br>(49 573 lb) | Payload    | 28 000 kg<br>(61 730 lb) |
| Bogie Axle   |                          | Bogie Axle |                          |
| Leading      | 5 315 kg<br>(11 718 lb)  | Trailing   | 5 417 kg<br>(11 942 lb)  |
| Front Axle   | 11 753 kg<br>(25 913 lb) |            |                          |

### Gross Distribution

|               |                           |              |                          |
|---------------|---------------------------|--------------|--------------------------|
| Vehicle Gross | 50 485 kg<br>(111 303 lb) | Body         | 4 400 kg<br>(9 700 lb)   |
| Front Axle    | 16 821 kg<br>(37 086 lb)  | Hoists, pair | 530 kg<br>(1 170 lb)     |
| Bogie Axle    | 16 740 kg<br>(36 904 lb)  | Bare Chassis | 17 555 kg<br>(38 703 lb) |

## Ground Pressure

These figures are at 15% shrinkage of unloaded radius and specified weights using

Tires 23.5 R25

### Unloaded

|       |         |          |
|-------|---------|----------|
| Front | 119 kPa | 17.2 Psi |
| Rear  | 54 kPa  | 7.8 Psi  |

### Loaded

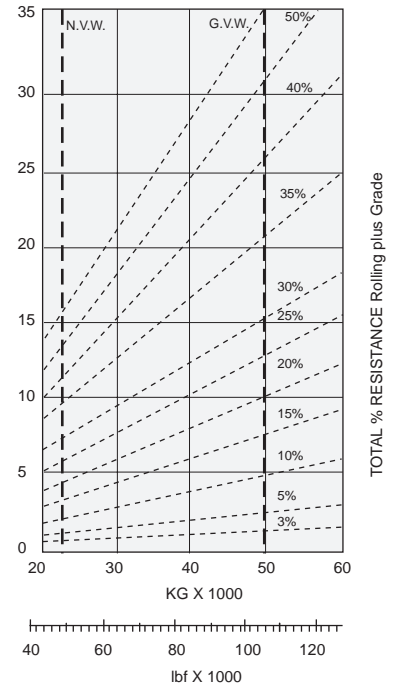
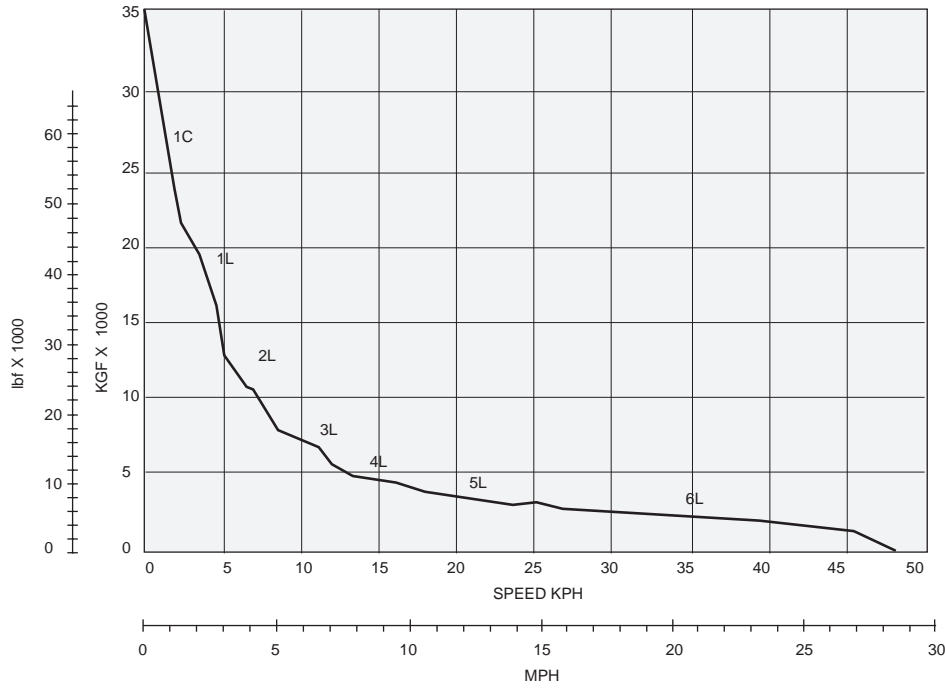
|       |         |          |
|-------|---------|----------|
| Front | 170 kPa | 24.6 Psi |
| Rear  | 170 kPa | 24.6 Psi |

## Dimensions

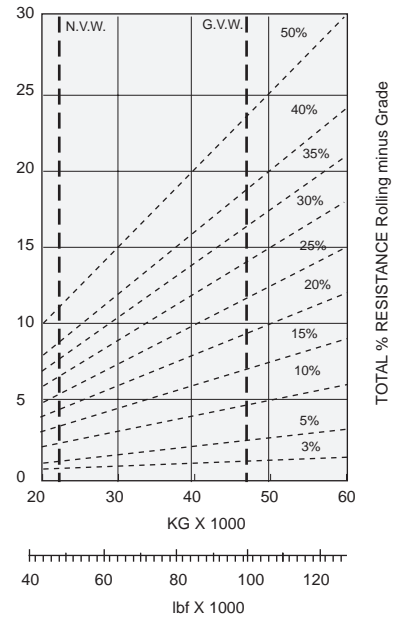
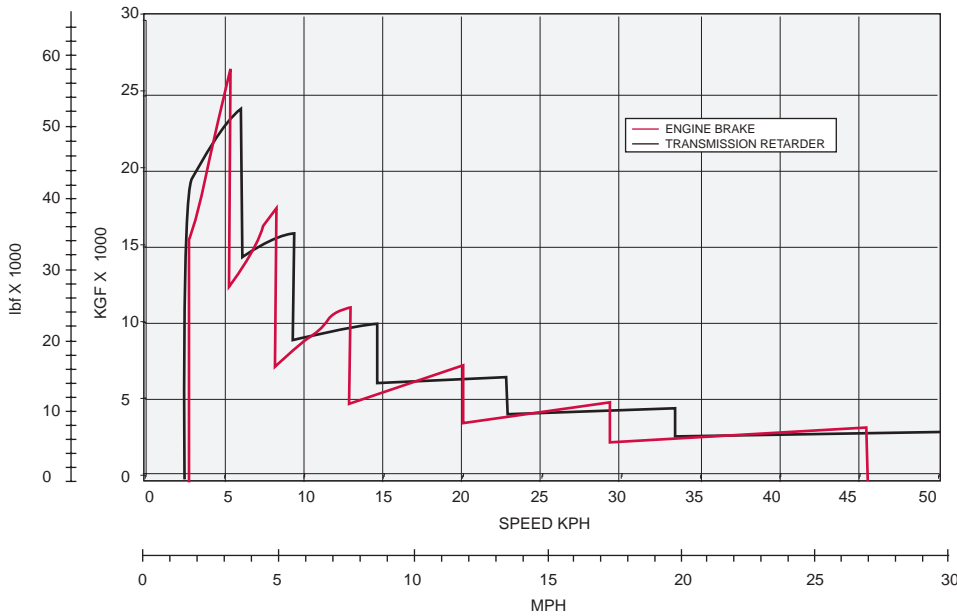
| Standard Unit | mm    | ft-in |
|---------------|-------|-------|
| A             | 3 450 | 11-3  |
| B             | 3 420 | 11-2  |
| C             | 3 325 | 10-10 |
| D             | 405   | 1-6   |
| E             | 1 580 | 5-3   |
| F             | 2 200 | 7-2   |
| G             | 2 895 | 9-6   |
| H             | 1 445 | 4-9   |
| I             | 2 400 | 7-9   |
| J             | 1 310 | 4-4   |
| K             | 2 945 | 9-8   |
| L             | 1 690 | 5-6   |
| M             | 1 490 | 4-9   |
| N             | 9 755 | 32-0  |
| O             | 725   | 2-3   |
| P             | 2 175 | 7-2   |
| Q             | 2 895 | 9-6   |
| R             | 6 110 | 20-0  |
| S             | 5 010 | 16-5  |
| T             | 4 920 | 16-2  |
| U             | 2 685 | 8-10  |
| V             | 2 895 | 9-6   |

## Gradeability

Unit equipped with 23.5 R25 tires. Graphs based on 2% Rolling Resistance.



## Retardation



Instructions: From intersection of vehicle weight with percentage resistance line read across to determine maximum gear attainable, and then downwards for speed.

## OPTIONAL EQUIPMENT

### Body Options

|                      |                      |
|----------------------|----------------------|
| Body Side Extensions | Spillguard Extension |
| Heated Body          | Top Tailgate         |
| Liner Plates         |                      |

### Lights

|                 |                                   |
|-----------------|-----------------------------------|
| Beacon Flashing | Rear Working Lights, Roof Mounted |
| Fog Rear        | Reverse Flashing                  |

### Mirrors

|                        |                |
|------------------------|----------------|
| Mirror Front Mounted   | Mirrors Heated |
| Mirror with Wide Angle |                |

### Other Options

|                        |                           |
|------------------------|---------------------------|
| Automatic Lubrication  | Payload Monitoring System |
| Fire Extinguisher      | Seat Heated               |
| First Aid Kit          | Transmission Retarder     |
| Independent Suspension | Tool Kit                  |
| Parking Brake Guard    |                           |

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