

WS28-2

WATER SPRINKLER

- Top Performance
- Enhanced Productivity
- Increased Reliability
- Excellent Serviceability
- Exceptional Manoeuvrability
- Superior Operating Comfort
- Improved Safety



Flywheel power (net) : 280 kW (375 hp) @ 2100 rpm

Capacity : 28,000 Litres

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WATER SPRINKLER

Salient Features :

Top Performance :

High power engine, rugged AVTEC CLT 754 /BEML ATGEMS transmission with automatic lock - up clutch and heavy duty planetary axle provide optimum combination of speed and tractive effort. Pressurised discharge through sprinkling nozzles & higher spreading width for effective dust settling is assisted by hyd. Motor & centrifugal pump.

Enhanced Productivity :

High power to weight ratio gives ample reserve power for faster cycle time. Larger tank capacity ensures high productivity.

Increased Reliability :

Adjustment-free wet multiple disc brakes for rear axle and dry caliper disc brakes for front axle offer longer life.

Excellent Serviceability :

Low maintainability and repairability index, evaluated through SAEJ817A, compared to any other dumper in its class.

Exceptional Manoeuvrability :

Orbitrol full time Power steering with a good combination of steering angle, shorter turning radius, wheel tread and wheel base provide high degree of manoeuvrability.

Superior Operating Comfort :

Human-engineered cabin with ergonomically designed operator's compartment & controls offer maximum comfort and operational ease.

Improved Safety :

Features include Integral ROPS cabin, emergency steering, dual braking system to meet relevant safety standards.



ENGINE

Make	BEML BSA6D140-1
Type	IC-Diesel, 4-stroke turbo charged, direct injection, water cooled.
Number of cylinders	6, inline
Bore & Stroke (mm)	ø 140 x 165 mm
Displacement	15.2 l
Fly wheel power	280 kW (375 hp) @ 2100 rpm
Maximum net torque	1627 N-m (166 kgm) @ 1400 rpm
Meets ISO 9249	
Electricals	
Starting motor	24V DC, 7.5 kW
Battery	2 x 12V, 200 Ah
Alternator	24 V 45 A



POWER TRAIN

Transmission	
Model	AVTEC CLT 754 / BEML ATGEMS
Type	Power shift with automatic Lock up clutch
Drive axle	Full floating
Differential	
Type	Traction sensing, automatic
Ratio	3.23 : 1
Final Drive	
Type	Planetary reduction type
Ratio	4.58 : 1
Total reduction	14.787 : 1
Travel speeds (km/h) - AVTEC CLT 754	
Range	1st 2nd 3rd 4th 5th
Forward	7.74 12.57 19.85 29.06 40.11
Reverse	3.94
Travel speeds (km/h) - BEML ATGEMS	
Range	1st 2nd 3rd 4th 5th 6th 7th
Forward	7.79 10.84 15.09 20.97 29.16 40.36 56.13
Reverse	8.13



HYDRAULIC SYSTEM

Hydraulic pump	
Type	One no. tandem gear pump for hoist, steering and brake oil cooling
Capacity	213 l/min @ 2100 rpm (Hoist & Steering) 70 l/min @ 2100 rpm (Brake oil cooler)
Relief pressure	
Motor	12.7 MPa (130 kg/cm ²)
Brake oil cooler	0.54 MPa (5.5 kg/cm ²)
Hydraulic Motor	
Type	Vane Type
Power (Max.)	27 kW (36 hp) @ 12.7 MPa (130 kg/cm ²)
Speed	2900 rpm @ 128 l/min

STANDARD EQUIPMENT

GENERAL : ROPS cabin, Electric Diagnostic system, Vandalism Protection Cap (Fuel tank), Head and tail lights, Air horn, Turn signal lights, Alternator, Electric starter, Key-switch, Wiper motor, Manual emergency steering, Windshield washer, Right & Left Hand mirror, Portable fire extinguisher, Tool kit, Parking brake valve, Tilttable steering wheel and column, Exhaust muffler, Central warning lamp & buzzer, Battery relay, Backup Alarm with flasher, Catwalk, Mudflaps, Rock ejectors, Cabin floor mat, Safety seat belt, Co-operator seat, Air dryer, Front brake cut-off switch, Emergency brake, Engine shut-off switch, Twin fresh air fans, Fog lights, Dial gauge on fuel tank, Auto retarder, Blind spot mirror & steering locking, Reflective stickers on all sides.

GUGAGES : Ammeter, Voltmeter, Air pressure, Engine oil pressure, Water temperature, Transmission oil temperature & pressure, Brake oil temperature, Air cleaner restriction, Speedometer, Tacho-meter, Electrical hour meter, Fuel level.

INDICATORS : Hi-beam, Reverse, Turn signal, Lube oil pressure, Water temperature, Parking brake and emergency steering "ON", Alternator warning, Transmission oil temperature and pressure, Fuel level, Transmission filter clogging, Air pressure and hydraulic oil temperature, Electronic water level indicator for water tank.

ALARMS : Air pressure, Water temperature, Transmission oil temperature & pressure, Lube oil pressure, Hydraulic oil temperature, Transmission filter clogging and parking brake "ON", Low fuel level.

OPTIONAL ACCESSORIES

Tyre inflation kit, Suspension charging kit, Auto emergency steering, Air conditioner and Heater unit, Fast fill system for fuel, Automatic centralised lubrication system, Parking brake interlock, Radial tyres, Auto fire suppression system, front pressurised sprinkling, full fledged fire fighting through monitor, Mist system.

SUSPENSION

Type-front	Frame mounted, hydropneumatic integral rebound control	
Rear	Axle mounted, inverted hydropneumatic, Integral rebound control	
Cylinder	Front	Rear
Quantity	2 nos	2 nos
Bore x Stroke	∅ 216 x 365 mm	∅ 216 x 170 mm
Charging pressure	2.8 MPa (28.12 kg/cm ²)	1.9 MPa (19.5 kg/cm ²)
Load/deflection Rate		
Empty	482 kg/cm ²	408 kg/cm ²
Loaded	1132 kg/cm ²	5504 kg/cm ²

STEERING SYSTEM

Type	Orbitrol, full time power steering	
Cylinder		
Type	Double acting, piston type	
Quantity	Two	
Bore x Stroke	∅ 110 x 435 mm	
Relief pressure	12.4 Mpa (126 kg/cm ²)	
Emergency Steering Performance	Electrically driven hydraulic Pump and motor	
Turning radius	8.75 m	
Vehicle clearance dia	18.18 m	

BRAKES

Service Brakes	
Front	Air-over-hydraulic, dry caliper disc
Rear	Air-over-hydraulic, wet multiple disc
Emergency	Air-over-hydraulic, automatic application through relay emergency valves
Parking brake	Spring actuated, air released, dry caliper disc on axle input flange
Retarder brakes	Rear brake serves as retarder brake
Meets ISO 3450 performance requirements	

TYRES

Size	18.00 x 25, 32PR (E-4) tubeless - standard
(Front & Rear)	18.00 x 25, 36 PR (E-4) tubeless - optional
	18.00 x 25, 40 PR (E-4) tubeless - optional
Rim size	13.00 x 25
BEML recommends the user to evaluate all job conditions and consult the tyre manufacturer to make proper tyre selection.	

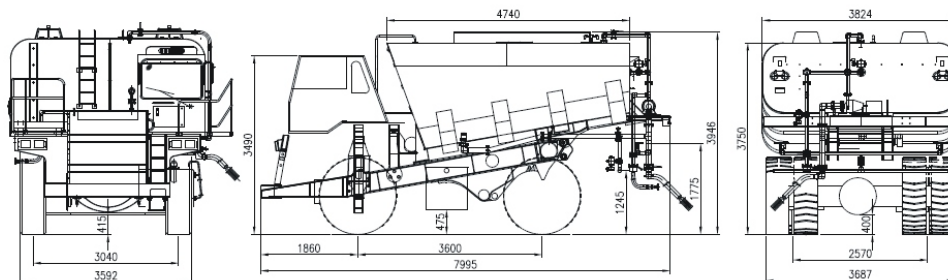
SYSTEM REFILL CAPACITIES

Systems	Capacity (ℓ)
Cooling system	120
Fuel tank	540
Engine lub. oil	26
Transmission	36
Differential	45
Final drive (each side)	18
Hydraulic tank	225
Air tanks	150
Water tank	28,000
Suspension	- Front 17
	- Rear 8.8

FRAME

Type	Box section construction made of high tensile strength steel
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All dimensions are in mm



NOTE: Material and specifications are subject to change without notice, Illustrations may include optional equipment & accessories

TANK

Construction: All welded reinforced, 6mm thick steel plates.
Cross baffles to avoid heavy surging.

Interior Coating: Coated with Special Anti Corrosive paint.

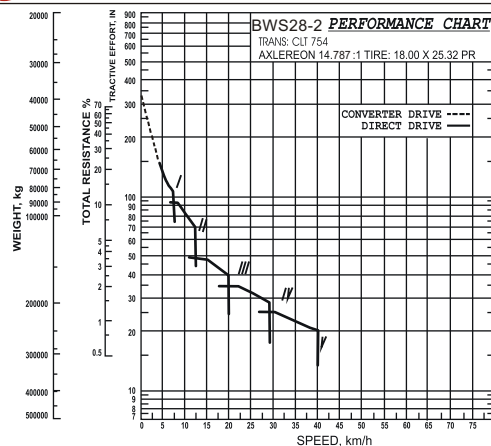
CABIN

Type Sound suppressed, Integral ROPS cabin with electronic Diagnostic system
Meets ROPS performance criteria as per ISO 3471

MASS

Net vehicle mass	25,700 kg	
Water Weight	28,000 kg	
Gross vehicle mass	53,700 kg	
Mass distribution	Empty	Loaded
Front axle, kg	12,079(47%)	17,721(33%)
Rear axle, kg	13,621(53%)	35,979(67%)

PERFORMANCE CHART



How to use this chart : Draw a straight line from gross vehicle mass to percent of total resistance (total resistance = grade resistance + rolling resistance) and extend the same line upto tractive effort. From this point draw horizontally to the curve with the highest obtainable gear, then vertically down to obtain maximum speed.

WATER SYSTEM

Water Pump	
Type	Centrifugal Pump
Capacity	110 m ³ /hr@2900 rpm & 55 m Head
Drive	Hydraulic motor through flexible coupling
Piping	
Suction	80mm
Discharge	50mm
Valves	Butterfly type
Sprinkling	
Pressurised Sprinkling	Constant Sprinkling velocity Maintained by a Centrifugal pump
Spreading width	14 m
Gravity Sprinkling	Through perforated manifold connected to Tank Bottom
Nozzles	Fish tail type
Self filling	By connecting the pump suction to out side reservoir or pond through armoured hose with foot valve unit.
Fire fighting Unit	Quick connecting adaptor provided for fire fighting with canvas hose & triple purpose nozzle.

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