

# BWS70

**WATER SPRINKLER**

## Salient Features :

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



Flywheel Power(net) : 669 kW (897HP) @ 2100 rpm

Capacity : 70,000 Litres

# BWS70

## WATER SPRINKLER

### Salient Features :

#### Top Performance :

High power engine & well matched with mechanical type transmission offers ample reserve power, high hp to weight ratio. Pressurised discharged 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 :

Oil cooled multiple disc rear breaks are free from fading even during repeated & continuous operations. Due to the ample capacity the rear brakes also act as retarder break.

#### Excellent Serviceability :

Low maintainability and repairability index, make easy servicing & increase availability.

#### 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. Pneumatically operated water valves reduces operators effort.

#### Improved Safety :

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



### ENGINE

Make	Cummins (India)
Model	QST30
Type	IC-Diesel, 4stroke, turbo charged, after cooled, direct injection, water cooled, meets EPA Tier 2 emission norms
Number of cylinders	12, inline
Bore & Stroke (mm)	ø140 x 165 mm
Displacement	30.47 ℓ
Fly wheel power	669 kW (897 HP) @ 2100 rpm
Maximum net torque	4189 N-m @1300rpm
Meets SAE J 1349	
Electricals	
Starting motor	24V DC, 9 kW (2 nos)
Battery	4 x 12V, 200Ah
Alternator	24 V, 75A



### POWER TRAIN

<b>Transmission</b>					
Model	BEML				
Type	Power shift with automatic Lock up clutch				
Drive axle	Full floating				
<b>Differential</b>					
Type	Standard differential				
Ratio	3.07 : 1				
<b>Final Drive</b>					
Type	Planetary reduction type				
Ratio	7.938:1				
Total reduction	24.36:1				
<b>Travel speeds (km/h)</b>					
Range	1st	2nd	3rd	4th	5th
Forward	8.6	12.1	16.3	21.9	29.5
Reverse	10.2				



### HYDRAULIC SYSTEM

<b>Hydraulic Pump</b>	
Type	Two no. tandem gear pump for hoist, steering and brake oil cooling
<b>Capacity</b>	
160ℓ/min@2100 rpm (Steering)	
1044ℓ/min@2100 rpm (BOC)	
245ℓ/min@2100 rpm (Hydraulic Motor)	
50ℓ/min@2100 rpm (Parking Brake Pump)	
<b>Relief pressure</b>	
Motor	14.7 Mpa ( hydraulic motor);
<b>Hydraulic Motor</b>	
Type	Vane Type
Power (Max.)	60kW(80 hp)@14.7 MPa(150 kg/cm²)
Speed	2900 rpm@245ℓ /min
Control Valve	Spool type



### TANK

<b>Construction</b>	
All welded reinforced, 12 mm thick steel plates, at the base 10 mm plate at the sides and 8mm on top, Cross baffles to avoid heavy surging.	
<b>Interior Coating</b>	
Coated with special anti-corrosive paint	

### STANDARD EQUIPMENT

**GENERAL :** Rear View mirror (left & right), Head lights, Tail lamp, Back Up light, Roof lamp, Wind shield, wiper, Tilttable & telescopic steering, Rock Ejectors, cabin floor mat, Emergency Brake, Emergency Steering, Sun visor, Asst. Operator seat, Tool Kit, Under view mirror, Engine over speed protection, Vandalism protection System, (Radiator, Fuel tank, Hyd. Tank), Front & rear turn signal lamp, (left & right), portable fire extinguisher, ROPS cabin, Front brake cut-off switch, auto fire suppression system Air conditioner and heater. SAHR wet multiple disc integral parking brake.

**INDICATORS/GAUGES :** 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 convertor oil temperature, Electronic water level indicator for water tank.

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

**Guards:** Cab guard, Cab step & safety guard cat walk, Engine & trans. Belly guard, Drive shaft guard (front & rear).

### OPTIONAL ACCESSORIES

Tyre inflation kit, Suspension charging kit, full fledged fire fighting through monitor, Mist system, ABS/ASR, Injector bank monitoring system, auto dipping system, rear view camera, electronic type proximity avoidance system, Radio FM/AM.







## SUSPENSION

Type-front	Wheel mounted, hydropneumatic integral rebound control	
Rear	Axle mounted, inverted hydropneumatic, Integral rebound control	
<b>Cylinder</b>	<b>Front</b>	<b>Rear</b>
Quantity	2 nos	2 nos
Bore x Stroke	∅ 250 x 376mm	∅ 250 x 190mm
Charging pressure	2.8MPa (31.7 kg/cm <sup>2</sup> )	1.9MPa (20.4kg/cm <sup>2</sup> )
<b>Load/deflection Rate</b>		
Empty	906 N/mm	978N/mm
Loaded	3507 N/mm	20046N/mm



## STEERING SYSTEM

Type	Orbitrol, full time power steering
<b>Cylinder</b>	
Type	Double acting, piston type
Quantity	Two
Bore x Stroke	∅ 110 x 430mm
Relief pressure	20.6 MPa(210 kg/cm <sup>2</sup> )
<b>Emergency Steering</b>	Electrically driven hydraulic Pump and motor
<b>Performance</b>	
Turning radius	10.7m
Vehicle clearance Dia	23 m



## BRAKES

<b>Service Brakes</b>	
Front	Air-over-hydraulic, dry caliper disc
Rear	Air-over-hydraulic, wet multiple disc
Emergency	Air-over-hydraulic, automatic application through relay emergency valves
<b>Parking brake</b>	Spring actuated hydraulically released
<b>Retarder brakes</b>	Rear brake serves as retarder brake
Meets ISO 3450 performance requirements	



## TYRES

Size (Front& Rear)	24.00x49, 48PR (E-4) tubeless standard
Rim size	17.00 x 49
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	270
Fuel tank	1240
Engine lub. oil	60
Transmission	110
Differential	40
Final drive (each side)	180
Hydraulic tank	490
Air tanks	175
Suspension - Front	24 (each)
- Rear	16 (each)
Water tank	70,000



## GUARDS

Engine & Transmission belly guard, cab spill guard, drive line protector, radiator fan guard and hand rails (Meets ISO 3457 requirements)



## CABIN

**Type:** Integral ROPS cabin with tinted safety glass and electronic display dash board



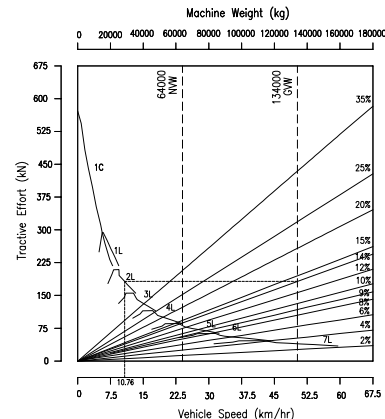
## MASS

Net vehicle mass	64,000 kg	
Rated payload	70,000 kg	
Gross vehicle mass	1,34,000 kg	
<b>Mass distribution</b>	<b>Empty</b>	<b>Loaded</b>
Front axle, kg	28,800	42,210
Rear axle, kg	35,200	91,790



## PERFORMANCE CHART

Engine : QST30C  
Axle Ratio : 7.94:1  
Total Reduction Ratio : 24.37:1



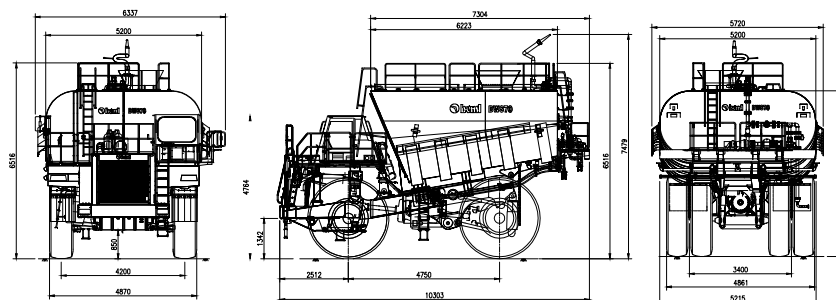
**How to use this chart :** Draw a straight line from gross vehicle mass to percent of total resistance (total resistance = grade resistance + rolling resistance) and extend the same line upto tractive effort. From this point draw horizontally to the curve with the highest obtainable gear, then vertically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



## WATER SYSTEM

<b>Water Pump</b>	
Type	Centrifugal Pump
Capacity	180 m <sup>3</sup> /hr. @2900 rpm & 85 m head
Drive	Hydraulic motor through flexible coupling
<b>Piping</b>	
Suction	100mm
Discharge	80mm
Valves	Butterfly type
<b>Sprinkling</b>	
Pressurised Sprinkling	Constant Sprinkling velocity Maintained by a Centrifugal pump
Spreading width	21 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.
Mist system (Optional):	192 Nos. Cluster nozzles, 300-400 Mic. Spray Size & 1.5- 2m spray distance.

Dimensions in mm



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

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