**How does Hybrid-Wet Shotcrete® Technology BENEFIT you?**

- **SAFE Operation**
- **LOW Material Waste**
- **REDUCED Accelerator**
- **EASY Cleanup**
- **LOWER Rebound**
- **LOW Slump**
- **LOW Rebound**
- **LOW Setting**
- **BENEFIT Single Carrier**
- **AVAILABILITY 24/7**
- **NO Admixtures**
- **EASY Mixing**
- **LOWER Ramp**
- **EASY Maintenance**

- **INTEGRATES with our Support Solutions** including:
  - Bulk Shotcrete Handling Solutions
  - Shotcrete Transportation Solutions
  - Loading and Mixing Station Solutions

*See Multicrete’s Shotcrete Support Solutions Brochure*

## DATA SHEET: HW10H HYBRID-WET

### Aliva 302.1 Telescoping Spray Arm
- Maximum spraying reach:
  - Vertical: 26' / 8m
  - Horizontal: 32' / 10m

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum spraying reach vertical</td>
<td>26' / 8m</td>
</tr>
<tr>
<td>Maximum spraying reach horizontal</td>
<td>32' / 10m</td>
</tr>
<tr>
<td>Number of arm extensions</td>
<td>4 Sections (3 telescopic)</td>
</tr>
<tr>
<td>Telescopic stroke</td>
<td>13.25' (4m)</td>
</tr>
<tr>
<td>Maximum arm angle</td>
<td>+135° / -40°</td>
</tr>
</tbody>
</table>

### Spraying Head
- Rotation: 360°/zero
- Inclination: 240°/zero

### Nozzle
- DN40

### Lights
- 4 x 48w LED 2880 Lm spotlights

### Aliva Remote Control
- Electric
- 49' (15m)

### Aliva 257 Shotcrete Machine
- Type: Rotary Cylinder Wet/Dry
- Max. flow (theor.): 9.6 m³/hr (theor.)
- Maximum cylinder: 300 mm diameter
- Max. aggregate size: 2”-2.5” (50mm-65mm)
- Wear Plates: Steel wear plates
- Hopper: 10 ton

### Additive Pump Synchronization
- Adjustment range: 0.25-3.0 LPM
- Maximum pumping pressure: 175 psi
- Additive tank: 210 liters
- Control system: PLC controlled

### High Pressure Water Pump for Cleaning
- Maximum pressure: 2500 psi
- Flow: 1/2” @ 750 GPM

### Engine
- Make: Cummins QSB 4.5-160
- Engine power: 160 HP
- Engine Emissions: Tier 3
- Transmission: Funk R2000 6 speed forward/3 reverse
- Steering: Central articulating
- Gears: 13-13khp / 11khp

### Fire Suppression System
- Ansul 4 Nozzle Manual Fire Extinguisher System
- Full Wheels for Mining

### MITS-AIRV Articulated Vehicle
- Engine: Cummins QSB 4.5-160
- Transmission: Funk R2000 6 speed forward/3 reverse
- Steering: Central articulating
- Gears: 13-13khp / 11khp

### Engine
- Make: Cummins QSB 4.5-160
- Engine power: 160 HP
- Engine Emissions: Tier 3
- Transmission: Funk R2000 6 speed forward/3 reverse
- Steering: Central articulating
- Gears: 13-13khp / 11khp

### Fuel Tank
- 227 liters

### Engine Power
- Cummins QSB 4.5-160
- 160 HP

### Emissions
- Tier 3

### Transmission
- Funk R2000 6 speed forward/3 reverse

### Steering
- Central articulating

### Gears
- 13-13khp / 11khp

### Brake System
- Pedal activated hydraulic wet disc front/rear
- Brakes: Pedal activated hydraulic disc wet front/rear

### Oil Tank
- 227 liters

### Fuel Tank
- 227 liters

### Transmission
- Funk R2000 6 speed forward/3 reverse

### Steering
- Central articulating

### Gears
- 13-13khp / 11khp

### Braking System
- Pedal activated hydraulic disc wet front/rear

### Engine Power
- Cummins QSB 4.5-160
- 160 HP

### Emissions
- Tier 3

### Transmission
- Funk R2000 6 speed forward/3 reverse

### Steering
- Central articulating

### Gears
- 13-13khp / 11khp

### Fire Suppression System
- Ansul 4 Nozzle Manual Fire Extinguisher System
- Full Wheels for Mining

### Tires
- Cushion Type
- 12.00.24 12x24
- Non-air soft core (no air required)

### CO - 90%; HC - 80%; HCHO - 85%; PM - 30%

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*Support YOU can count on!*

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**TELESCOPIC SPRAYING ARM**

**REACH, MOBILITY AND ERGONOMIC DESIGN**

The Aliva 302.1 Spray Boom has a modular concept that is designed to provide manu-
verable handling of the boom with small size and weight requirements for ease of transport and operation. The Alvia 302.1 Spray Boom is supplied hydraulics from the carrier steering hydraulic system.

The Aliva 302.1 provides the operator with high speed reaction and precision in telescopic, turning, and raising movements. Pressure spraying equals to highest quality coverage in less time with less waste.

**SHOTCRETE SPRAYING MACHINE**

**DURABLE, RELIABLE AND LOW MAINTENANCE**

With its unbelievable output capacity range from 0.7 – 4 m³/h, the machine works on small concrete renovation work as efficiently as on slope protection or on mines. Low maintenance and wear cost makes it the ideal shotcrete machine for all applications.

With the newly developed, universal Alvia-257, dry, wet, and Hybrid-Wet Shotcrete® are equally possible. No changing is required on the machine from dry to wet shotcrete.

The machine is equipped with rotors made of high tech aluminium and is operating with steel on steel wear and steel plates.

Experience has shown up to 10 times less wear on the steel plates, depending on material, output capacity, hose diameter and compressed air supply. This again leads to less standstill time and wear cost and therefore the result is more economical spraying operation.

**ACCELERATOR DOSING SYSTEM**

**EASY TO USE, SAFE FOR PRECISION SPRAYING**

The ambient controlled (telescopic remote) electrically controls the spray boom, allowing for mobility during operation. Operators are free to position themselves inside a safe zone without relying on hand signals or two-way radios. The smooth proportionally allows operation precise control of the spray boom. Easy and simple options available.

**CONFIGURATION & INTEGRATION**

**FLEXIBLE DESIGN CONFIGURATION AND INTEGRATION**

The MW10H Hybrid-Wet Shotcrete® Carrier is offered to the customer with several options available for the flexibility of configuration to suit their work environment.

The carrier integrates nicely with several Multicrete-designed bulk handling transporta-
tions, loading and mixing solutions.
TELESCOPIC SPRAYING ARM

Reach, Mobility and Ergonomic Design

The Aliva 302.1 Spray Boom has a modular concept that is designed to provide manœuvrevability of the boom with a wide variety of control options for ease of transport and operation. The Aliva 302.1 Spray Boom is supplied hydraulics from the carrier steering hydraulic system.

The Aliva 302.1 provides the operator with high-speed reaction and precision in telescopic, turning and raising movements. Precision spraying equates to higher quality coverage in less time with less waste.

Precision spraying equates to higher quality coverage in less time with less waste.

SHOTCRETE SPRAYING MACHINE

Durable, Reliable and Low Maintenance

With its univaluable output capacity range from 0.7 – 4.6 m³/h, the machine works on small concrete renovation work as efficiently as on slope protection or in mines. Less maintenance and wear cost makes it the ideal shotcrete machine for all applications.

With the newly developed, universal Aliva 257, dry, wet and hybrid Wet Shotcrete® are equally possible. No changing is required on the machine from dry to wet shotcrete.

The machine is equipped with rotors made of high tech aluminium and is operating with steel on steel wear and rotor plates.

Experience has shown up to 10 times less wear on the steel plates, depending on material, output capacity, hose diameter and compressed air supply! This again leads to less standstill time for mobility during operation. Operators are free to position themselves inside a safe zone without relying on hand signals or two-way radios. The smooth proportionality allows operation precise control of the boom bores window options available.

ACCELERATOR DOSING SYSTEM

Output Twitchonizion, Less Waste

The Multicrete Hybrid Wet Shotcrete® Carrier is equipped with an accelerator pump and tank. The accelerator tank is contracted of stainless steel with a mild steel protective front-end frame. The tank has a volume of 210 litres max capacity and 160 litres at 60%. The accelerator pump is equipped with a built-in water booster pump, a pressure washer for easy cleanup, and an onboard form release system.

The Multicrete HYDRAULIC SHOTCRETE® carrier has been designed to meet the harshest attention to producing tough, reliable equipment that is designed to meet the harshest working conditions.

Central articulated turning, innovative state-of-the-art axles, four driving wheels, and four-wheel braking system allows excellent maneuverability in difficult terrain. Exceptional climbing capacity and good ground clearance facilitates operation in all types of locations.

ENGINE

Efficient and Power On Demand

The HW10H Hybrid-Wet Shotcrete® Carrier is equipped with a Cummins turbo-diesel power plant, capable of producing 160 HP.

The carrier permits the application of shotcrete according to a hybrid wet process, incorporating some elements from both the wet and dry shotcrete. However, it is designed to overcome some of the disadvantages associated with both dry methods.

Multicrete Systems has created a new technology for a shotcrete carrier based on simplicity.

Multicrete Systems has over 25 years in the underground mining and tunneling shotcrete application processes. Through ongoing dedicated research and development, Multicrete Systems has become a leader in these fields of application. Hybrid-Wet Shotcrete® technology is an example of revolutionary process ideology.

DIMENSIONS AND TURNING RADIUS

TELESCOPIC SPRAYING ARM

SPRAYING ARM REACH DIAGRAM

CHASSIS & AXLES

Heavy Duty, Durable and Dependable

The HW10H chassis is engineered by Wila Industries, a company renowned for their attention to producing tough, reliable equipment that is designed to meet the harshest working conditions.

Central articulated turning, innovative state-of-the-art axles, four driving wheels, and four-wheel braking system allows excellent maneuverability in difficult terrain. Exceptional climbing capacity and good ground clearance facilitates operation in all types of locations.

ENGINE

Efficient and Power On Demand

The HW10H Hybrid-Wet Shotcrete® Carrier is equipped with a Cummins turbo-diesel power plant, capable of producing 160 HP.

EASY TO USE, SAFE FOR PRECISION SPRAYING

The anti-bolted control hydraulic remote electrically controls the spray booms, allowing for mobility during operation. Operators are free to position themselves inside a safe zone without relying on hand signals or two-way radios. The smooth proportionality allows operation precise control of the boom bores window options available.

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DIMENSIONS AND TURNING RADIUS

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SPRAYING ARM REACH DIAGRAM

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ENGINE

Efficient and Power On Demand

The HW10H Hybrid-Wet Shotcrete® Carrier is equipped with a Cummins turbo-diesel power plant, capable of producing 160 HP.

EASY TO USE, SAFE FOR PRECISION SPRAYING

The anti-bolted control hydraulic remote electrically controls the spray booms, allowing for mobility during operation. Operators are free to position themselves inside a safe zone without relying on hand signals or two-way radios. The smooth proportionality allows operation precise control of the boom bores window options available.
The Aliva 302.1 Spray Boom has been designed especially for mines and small projects. The telescopic spraying arm AL-302 has been developed with a vertical spraying reach of 8m, ensuring maximum protection and easy maintenance care. All of the hydraulics driving the spraying arm are fitted externally and covered for maximum convenience.

Precision spraying equates to higher quality coverage in less time with less waste. The Aliva 302.1 Spray Boom has a modular concept that is designed to provide maximum handling of the boom with minimal weight requirements for ease of transport and operation. The Aliva 302.1 Spray Boom is supplied hydraulics from the carrier steering hydraulic system.

The Aliva 302.1 provides the operator with high-speed reaction and precision in telescopic, turning, and raising movements. Precision spraying equals to higher quality coverage in less time with less waste.

With its unbelievable output capacity range from 0.7 – 4 m³/h, the machine works on small concrete renovation work as efficiently as on slope protection or in mines. LOW maintenance and wear cost make it the ideal shotcrete machine for all applications.

With the newly developed, universal Aliva 257, dry, wet, and hybrid Wet Shotcrete® are equally possible. No change is required on the machine from dry to wet shotcrete.

The machine is equipped with rotors made of high-strength materials for enhanced durability. The Multicrete Hybrid-Wet Shotcrete® Carrier is designed to provide consistent feed rate and shooting rate of up to 9 m³/three.numerator per hour.

All of the hydraulics driving the spraying arm are fitted externally and covered for maximum protection and easy maintenance care.

The Multicrete Hybrid-Wet Shotcrete® Carrier is a self-contained shotcrete machine that carries its own supply of dry, premixed shotcrete which it converts into wet shotcrete and pumps it to the front mounted spray boom – all on a single carrier.

The carrier permits the application of shotcrete according to a hybrid wet process, incorporating elements from both the wet and dry processes. However, it is designed to overcome some of the drawbacks associated with both prior methods.

The Multicrete Hybrid-Wet Shotcrete® Carrier is offered to the customer with several options allowing for the flexibility of configuration to suit their work environment.

The carrier integrates neatly with several Multicrete-designed bulk handling transporters, loading and mixing solutions.
How does Hybrid-Wet Shotcrete Technology benefit you?

- **UNLIMITED** Pot-life
- **SINGLE** Carrier
- **REDUCED** Accelerator
- **LOW** Rebound
- **EASY** Cleanup
- **MINIMAL** Manpower
- **AVAILABLE 24/7** Support
- **LOW** Waste
- **EASY** Learning
- **LOW** Maintenance
- **LOW** Operating Costs
- **INTEGRATES with our Support Solutions**

### DATA SHEET: HW10H HYBRID-WET

#### Aliva 302.1 Telescoping Spray Arm
- Maximum spraying reach
  - Vertical: 26'/8m
  - Horizontal: 23'/8m
- Maximum spraying extension:
  - Vertical: 23'/8m
  - Horizontal: 11'/5m
- Standard of use extensions:
  - 3 sections (3 telescopic) 11'/5m
- Propulsion Hydraulic System:
  - Two sections
  - 15.25' (4.6m)
- Maximum arm angle:
  - 90° above / -30° below

#### Spraying Head
- Rotation: 360°
- Inclination: 240°

#### Nozzle
- **4 x 48w LED 2880 Lm** spotlights

#### Aliva Remote Control
- **Eirus**
- Control Panel: 39"

#### Aliva 237 Telescopic Machine
- Type: Rotary Cylinder Wet/Dry
- Max. Flow (l/min): 96 l/sec (34 gpm)
- Transport pressure: 1800 psi (125 bar)
- Power requirements: 2" x 3" (50mm x 75mm)
- Max. aggregate size:
  - Steel wear plates
  - 12-16 mm
- Hopper:
  - Full hopper capacity: 38 tons
  - Max. output: 1/2". per axle

#### Accelerator Pump Synchronization
- Adjustment range: 0-90° (0-5°)
- Maximum synchronization: 175 psi
- Adder tanks: 258 liters
- Control system: PLC controlled

#### High Pressure Water Pump for Cleaning
- Maximum pressure: 2500 psi
- Flow: 3.5 GPM US
- Flow rate: 7 GPM US

### HW10H Hybrid-Wet Shotcrete® Carrier

- **Engine:** Cummins ISB 6.7 L, 210 HP
- **Engine Emissions:** Tier 3
- **Transmission:** Funk R2000 6-speed forward/3 reverse
- **Steering:** Central articulating
- **Gross Vehicle Weight:** 17,500 lbs
- **Cylinder:** 30"-36"
- **Rotation:** 30"-36"

**Support YOU can count on!**

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**How does Hybrid-Wet Shotcrete® Technology BENEFIT you?**

- **SURE** Delivery
- **LOW** Retardation
- **UNLIMITED** Anchorages
- **AVAILABLE** Day & Night
- **FAST** Setting
- NO **Abrasion**
- **EASY** Cleanup
- **LOW** Maintenance
- **SAFETY** Operation
- **ISG** Material Waste

**DATA SHEET: HW10H HYBRID-WET**

**Aliva 2015 Telescoping Spray Arm**
- Maximum spraying reach
  - vertical: 24' 10" (8.0m)
  - horizontal: 23' 4" (7.1m)
- Maximum telescoping sections:
  - vertical: 8 sections (10.5m)
  - horizontal: 5 sections (15.3m)
- Standard of arm extensions: 4 sections (10.5m)
- Operational hydraulic area:
  - Telescopic stroke: 13.25' (4m)
- Maximum arm angle: +90° / -40°

**Spraying Head**
- Rotation: 360°
- Inclination: 240° / 0°

**Nozzle**
- DN40

**Lights**
- 4 x 48w LED 2880 Lm spotlights

**Aliva Remote-Control**
- Eines: Saveiros
- Cable length: 49' (15m)

**Aliva 237 Shotcrete Machine**
- Type: Rotary Cylinder Wet/Dry
- Max. flow (theor.): 9.6 m³/hr (34 ft³/hr)
- Transmission: 12L or 3L
- Hose requirements: 2" / 2.5" (50mm - 65mm)
- Max. aggregate size: 12-16 mm
- Steel wear plates: 12-16 mm
- Hopper: Fixed over pump
- Hopper capacity: 10 ton
- Fill material: Dry pre-mixed product
- Accelerator Pump Synchronization: 0.4-3.5 LPM
- Maximum working pressure: 175 psi
- Additive tank: 210 liters
- Control system: PLC controlled
- High Pressure Water Pump for Cleaning:
  - Maximum pressure: 2500 psi
  - Flow: 7.5 GPM US
  - Hose: 7/8"

**Engine**
- Engine: Cummins QSB 4.5-160
- Engine power: 160 HP
- Engine Emissions: Tier 3
- Transmission: Funk R2000 6 speed
  - Forward: 3 reverse
- Steering: Central articulating
- Speed:
  - 18 kph / 11 kph
- Braking system:
  - Pedal activated hydraulic wet disc front/rear
  - Failsafe spring applied, hyd. released int. wet disc in axle
  - Parking Brake Control: 2 position push/pull w/solenoid
  - ROPS / FOPS Certified
  - Parking:
    - 227 liters
  - Service:
    - 227 liters

**Fire Suppression System**
- Ansul 4 Nozzle Manual Fire Extinguisher System
- Full Wheels for Mining
  - Cushion Type: 12.00.24 12x24
- Fire suppression system:
  - Carbon dioxide (CO₂)
    - CO - 90%; HC - 80%; HCHO - 85%; PM - 30%
- Diesel Exhaust Muffler/Purifier
  - Maximum reduction: 50%

**Safety**
- Sustainable: 24/7
- Easy Maintenance
- Safe Operation
- Less Material Waste
- Integrates with our Support Solutions® including:
  - Bulk Shotcrete Handling Solutions
  - Shotcrete Transportation Solutions
  - Loading and Mixing Station Solutions

*See Multicrete’s Shotcrete Support Solutions Brochure

**Support YOU can count on!**

- Shotcrete Carrier & Spraying Machine
- The Latest in Shotcrete Technology
- Support YOU can count on!

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