

# ADROIT 420 H/W

## 4x4 Hydrostatic and Powershift Shotcrete Pumps



### Features

Adroit 420 is the smallest self-propelled, wet shotcrete machine within the 4x4 group. Adroit 420, can easily reach points in tunnels and mines that large machines fail to reach. Adroit 420 fully designed according to site conditions with a quite simple designs ensures the benefit of being maintained at the work site through the user. The rigid chassis has 4 wheel drive and 4 wheel steering. According to road and land conditions, gear options can be chosen as fast or slow. Hydrostatic system allows user to have max. speed - max. torque by variable flow pump and hydromotor. Ideal choice for yards where serial performance is required and construction areas, which have difficult ground conditions. Powershift option provides more movement ability in long distance and semi-rough fields. Machines are fully equipped with lifting, telescopic boom system, rotation group, admixture pump and tank, energy cable reel, compressor on the platform. Machinery is designed to pump 22m<sup>3</sup>/h shotcrete. It is user's decision to select hydrostatic or powershift drive systems.

### Applications

Commonly used for narrow section tunnels, mines, chamfers on highways, slopes, and high-topped bevels, construction and floor applications, swimming pools, seismic retrofits and concrete lining applications on any type of coves.

### Standard Components

- > 22 m<sup>3</sup>/h Capacity of Pumping Shotcrete
- > 4x4 Hydrostatic or 4x4 Powershift Transmission
- > Four Wheel Steering (4WS)
- > Open and Closed Circuit Hydraulic Pumps and System
- > Special Design Hopper
- > Dosing Pump and Tank
- > Proportional Boom Control Valve Group with Load Sensing
- > Stabilizer Cylinder and Valve Group
- > Concrete Unit Cleaning System with Diesel Engine
- > Cable Control Unit
- > Central Grease Lubrication Block
- > Led Lights
- > Energy Cable Reel (Length 50 m)
- > Waterproof Control Panel
- > Compressor
- > Additive Flow Range Control System
- > S.A.H.R. Internal Park Break

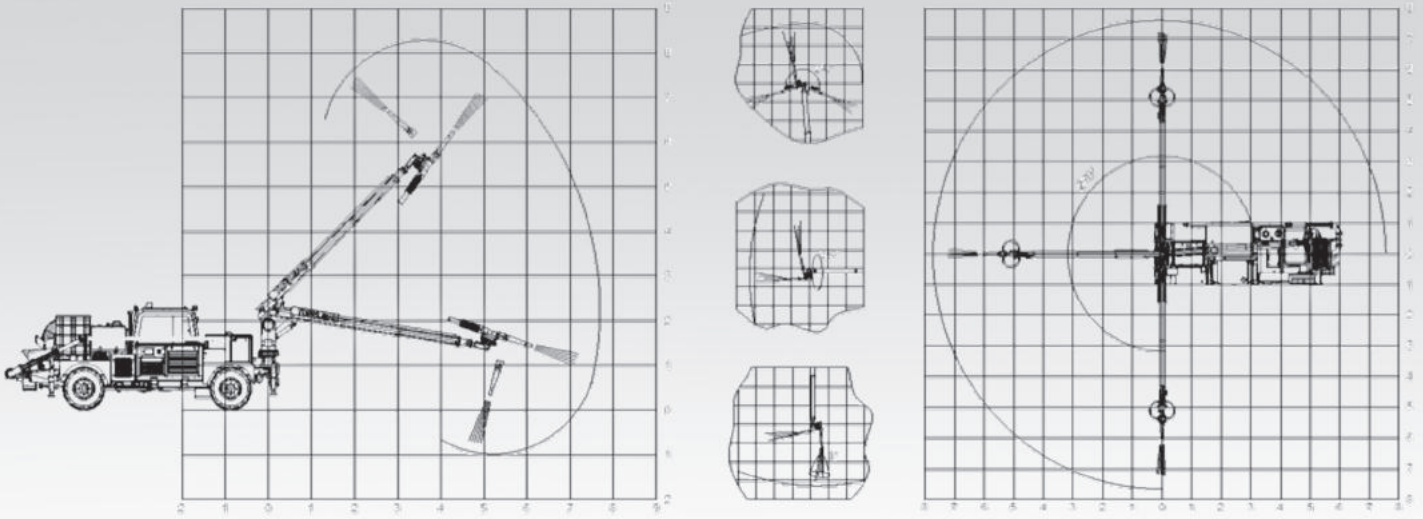
### Optional Components

- > Concrete Flow Range Control System
- > Radio Remote Control
- > Heated Additive Tank
- > Automatic Lubrication Unit
- > Catalytic Converter
- > Fogmaker Automatic Fire Extinguishing System

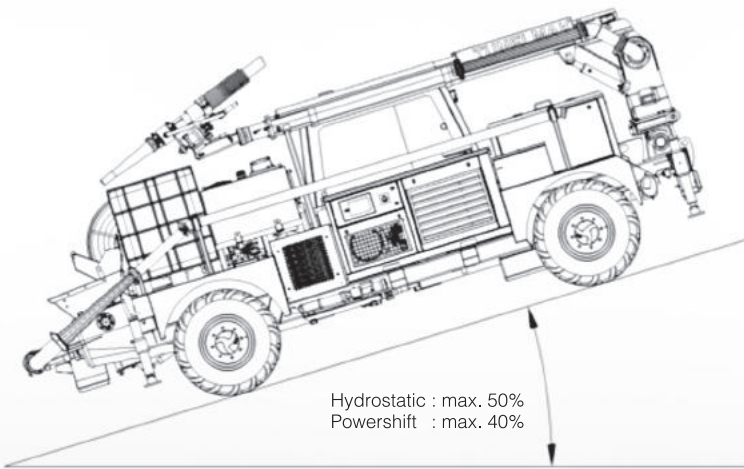
## 420 H/W Technical Specifications

| Components                            | Explanation                             | Unit                         | 420             |
|---------------------------------------|-----------------------------------------|------------------------------|-----------------|
| Machine Dimensions                    | Length                                  | mm                           | 6350            |
|                                       | Width                                   |                              | 2100            |
|                                       | Height                                  |                              | 2375            |
| General Features                      | Weight                                  | kg                           | 8750            |
|                                       | Wheel Dimensions                        | inch                         | 12.5/80-18      |
|                                       | Capacity of Fuel Tank                   | L                            | 120             |
|                                       | Climbing                                | max. 50%                     |                 |
|                                       | Way of Transportation                   | Transport by truck           |                 |
| Concrete Output                       | Pumping Capacity                        | m <sup>3</sup> /h            | 22              |
| Concrete Pressure                     | Pumping Pressure                        | Bar                          | 60              |
| Spraying Range of Robojet Manipulator | Max. Height                             | m                            | 8.20            |
|                                       | Max. Width                              |                              | 16              |
| Diesel Engine                         | Engine Model                            | Perkins 1104D - 44T / Tier 3 |                 |
|                                       | Number of Cyl                           | 4 Vertical In - Line         |                 |
|                                       | Cylinder Diameter - Stroke              | mm                           | 105 - 127       |
|                                       | Engine Displacement                     | L                            | 4.4             |
|                                       | Injection System                        | Direct Injection             |                 |
|                                       | Gross Motor Power                       | kW (hp)@rpm                  | 74.5(99.5)@2200 |
|                                       | Engine Torque                           | Nm@rpm                       | 392@1400        |
| Electrical                            | Input Supply Voltage                    | V/Hz                         | 3x380/50        |
|                                       | Electrical Motor Power                  | kW                           | 37              |
|                                       | Energy Cable Length                     | m                            | 50              |
|                                       | Energy Cable Section                    | mm <sup>2</sup>              | 3x30+15         |
| Drive System                          | Hydrostatic                             | 4 Forward, 4 Reverse Gear    |                 |
| Axle and Brake System                 | Planet Type Axle With Mud Reinforcement |                              |                 |
|                                       | Front Axle                              | Oscillation                  | ± 8°            |
|                                       | Disk Brakes in Axle                     |                              |                 |
|                                       | Internal Park Brake                     | S.A.H.R.                     |                 |
| Steering System                       | Front Wheel Control                     |                              |                 |
|                                       | Crab Crawling Steering                  |                              |                 |
|                                       | Articulated Steering                    |                              |                 |
| Hydraulic Pumps                       | Open Circuit Pump Pressure              | Bar                          | 250             |
|                                       | Open Circuit Oil Tank                   | L                            | 200             |
|                                       | Closed Circuit Pump Pressure            | Bar                          | 350             |
| Concrete Dosing Pump                  | Pump Capacity                           | L/min                        | 0 - 20          |
|                                       | Tank Capacity                           | L                            | 600             |
| Compressor                            | Compressor Capacity                     | m <sup>3</sup> /min          | 6               |
|                                       | Compressor Electrical Motor Capacity    | kW                           | 37              |

# 420 H/W Operation Diagram



## Steering and Drive System

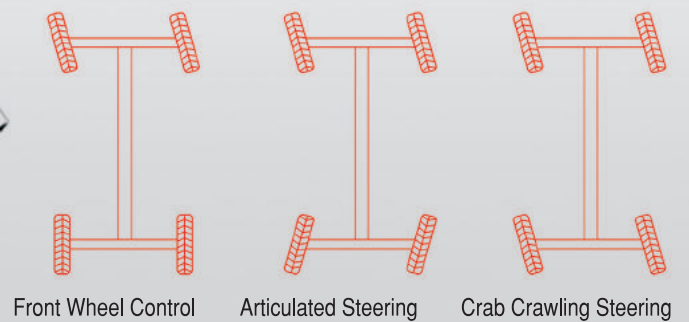
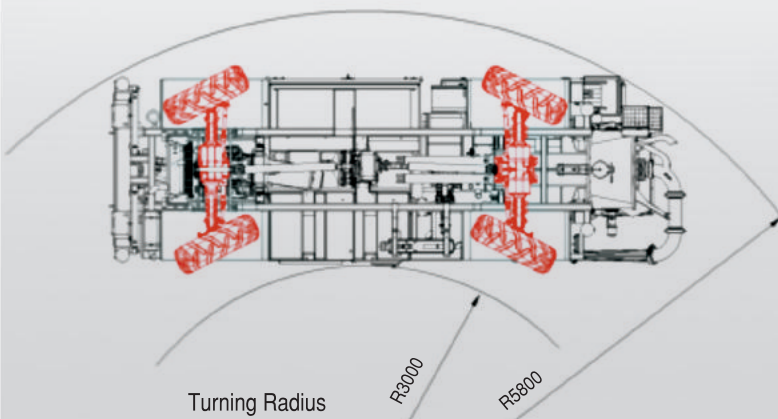


### Max. Speed - Max. Power of Climbing

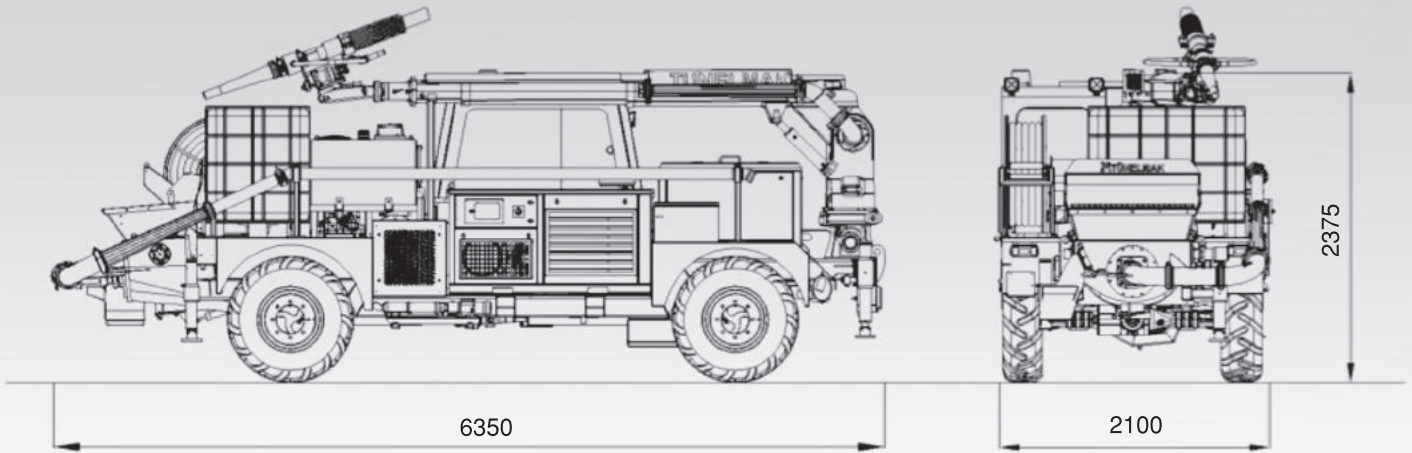
Adroits with 4x4 hydrostatic system have the feature of fast movement in straight roads and capacity of 50% gradient climbing.

Adroits with 4x4 powershift system offers long distance drives on flat terrains and have capacity of 40% gradient climbing.

Front axle oscillates  $\pm 8^\circ$  and able to move on rough terrain conveniently.



**420 H/W**  
**Dimensions of Vehicle**



**Spraying Dimensions**

