

# Adroit 420H

## 4x4 Shotcrete Machine



Adroit 420H is the smallest self-propelled wet shotcrete machine within the 4x4 group. Adroit 420H, can easily reach points in tunnels and mines that large machines fail to reach. Adroit 420H 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. Machines are fully equipped with telescopic boom system, rotation group, water & admixture pumps and tanks, energy cable reel, compressor on the platform. Standard pumping capacity is 22 m<sup>3</sup>/h.

Hydrostatic system allows user to have max. speed - max. torque by variable flow pump and hydromotor. Gear options can be chosen as fast or slow according to road and land conditions. Ideal choice for work sites where high speed performance is required and construction areas, which have difficult ground conditions.

### GENERAL SPECIFICATIONS

- > Led control panel showing fault, warning and driving info
- > Stabilizer cylinder and valve group
- > Cable remote control
- > Reversing audible and visual warning system
- > Handheld fire extinguisher
- > Eyebolts and towing hooks to use in loading and transporting the machine
- > Rear view camera
- > Anti-rust coating

### DIMENSIONS AND WEIGHT

- > Length 6550 mm
- > Width 2100 mm
- > Height 2600 mm
- > Weight 7800 kg

### CONCRETE PUMP

- > Theoretical max. capacity of pumping shotcrete : 22 m<sup>3</sup>/h
- > Shotcrete flow control system
- > Pumping pressure : max. 60 bar
- > Hydraulic pressure : max. 250 bar
- > Aggregate size : max. 16 mm
- > Adroit Shotcrete machines are able to pump all type of fibers
- > Diesel engine driven concrete unit cleaning system
- > Hydraulically driven hopper vibrator
- > Hydraulically controlled hopper drain cover
- > Concrete line diameter 76 mm

### ACCELERATOR SYSTEM

- > Electrically driven accelerator peristaltic pump
- > Dosing rate : max. 0 to 20 L/min
- > Pumping pressure : max. 15 bar
- > Accelerator tank : 600 L
- > Dosing rate can be controlled manually, flow rate (L/min) and dosing percentage (%) readable on the display

**BOOM SYSTEM**

- > Lateral : 8.4 m
- > Vertical : 9.3 m
- > Lifting and telescopic boom system

**COMPRESSOR**

- > Electrically operated screw compressor
- > Capacity : 6 m<sup>3</sup>/min.
- > Pressure : 8 bar
- > Electric motor : 37 kW

**OPERATOR CABIN**

- > FOPS - ROPS level 2 certified closed operator cabin
- > Tempered glasses
- > Suspended and 180° pivoting seat
- > Retractable lap seat belt

**ENGINE**

- > Perkins 1104D - 44T 74.5 kW / 2200 rpm  
Diesel engine EU Stage 3A

**TRANSMISSION**

- > Hydrostatic system : Dana 357 dropbox
- > 4 speed forward and 4 speed reverse
- > 4 wheel drive

**AXLE SYSTEM**

- > Planetary type Dana 211
- > Oscillating rear axle ±8°

**TIRES**

- > 12.5 / 80 - 18 size heavy duty tires, suitable for underground work

**PERFORMANCE**

- > Max. speed 29 km/h
- > Max. climb gradient 50%

**BRAKE SYSTEM**

- > Service brake: Hydraulically powered two circuit oil immersed multidisc brake in both axles
- > Parking brake: S.A.H.R fail safe brake
- > Brake systems test set-up in cabin

**STEERING**

- > Four wheel steering, crab steering, front wheel steering

**FUEL SYSTEM**

- > Tank capacity 135 L
- > Fuel hose securely fixed and isolated from the hot surfaces

**HYDRAULIC SYSTEM**

- > Tank capacity 200 L
- > Hydraulic filtration, fluid temperature and tank fluid level sensing and warning system

**HIGH PRESSURE WATER WASHER**

- > Water pump 14 L/min.
- > Max. water pressure 200 bar
- > Hose length 10 m
- > Tank capacity 300 L

**24VDC ELECTRICAL SYSTEM**

- > Electrical components : IP65 and above protection grade
- > Battery 2 x 135 Ah
- > Led lighting lamps illuminating the movement direction
- > Led flashing beacon in amber colour

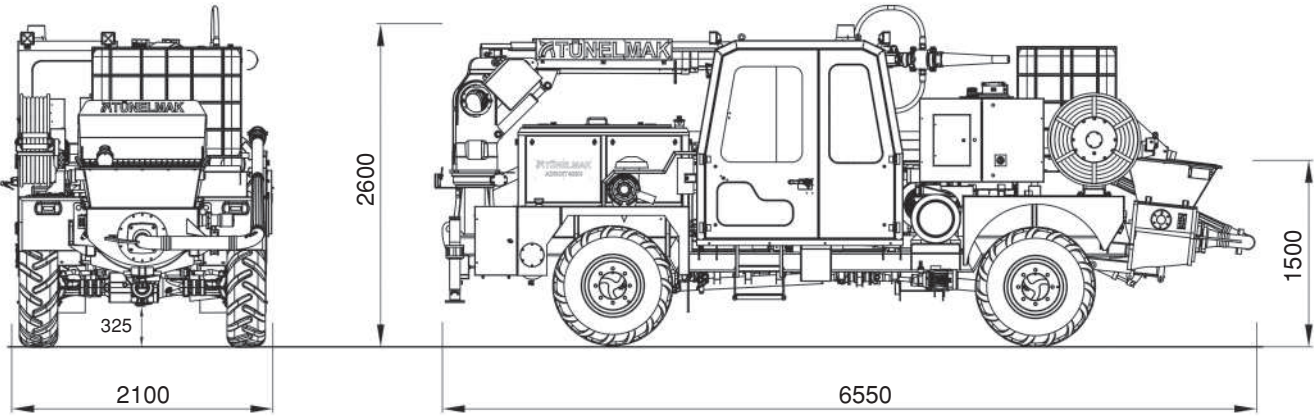
**HIGH VOLTAGE ELECTRICAL SYSTEM**

- > 380 V, 50 Hz. cable type 3 x 35 mm<sup>2</sup> + 16 mm<sup>2</sup>
- > Power pack : 37 kW electrical motor
- > Hydraulically driven cable reel
- > Cable length 50 m

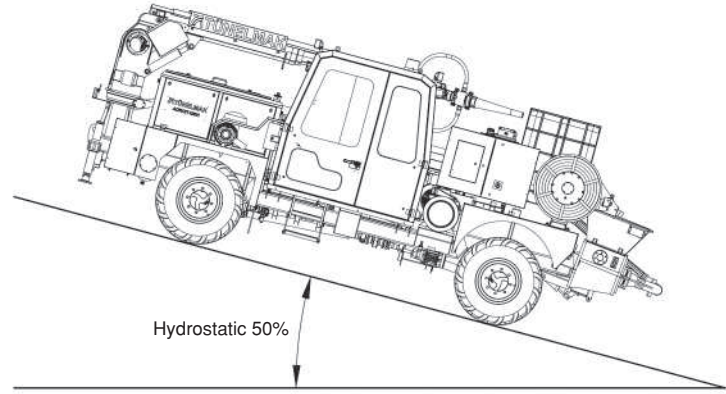
**OPTIONAL COMPONENTS**

- > Perkins 904J - E36TA 74.5 kW@2200 rpm  
EU Stage 5 diesel engine
- > Diesel engine fire suppression system
- > Catalytic converter with diesel particle filter
- > Radio remote control
- > Automatic lubrication system
- > Air conditioner inside the cabin
- > Electrically driven hopper vibrator
- > Heated glasses and side-view mirrors
- > Form oil system
- > Water reel

**Adroit 420H 4x4 Shotcrete Machine**  
Dimensions of Vehicle



**Climbing Capacity**

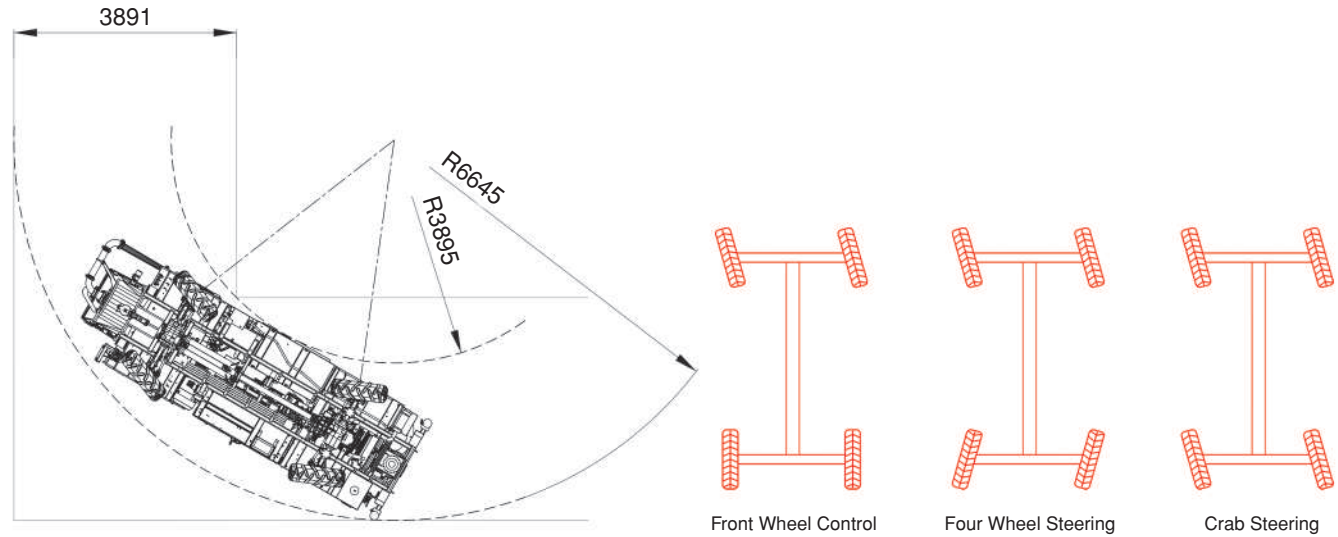


**Max. Speed - Max. Power of Climbing**

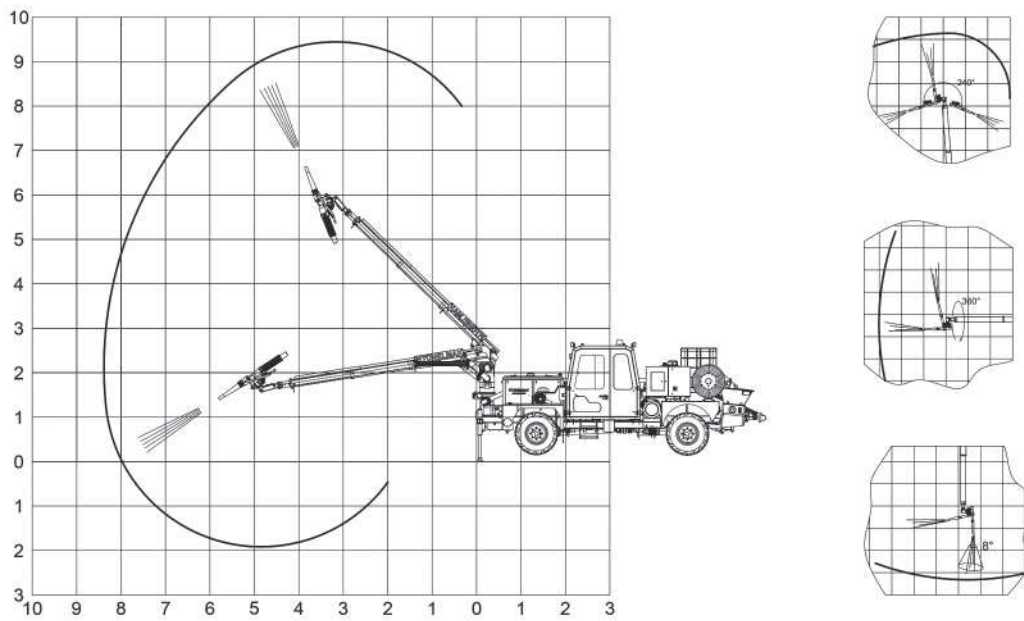
Adroit with 4x4 hydrostatic system ensures reliable performance on challenging terrain and 50% gradient climbing.

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

**Turning Radius**



# Adroit 420H 4x4 Shotcrete Machine Operation Diagram



## Spraying Dimensions

