

# Dry-mix shotcrete machine AC-2

Solutions for refractory application, mining, tunneling and slope protection, building, reconstruction



**TORNADO**  
shotcrete equipment



**Shotcrete** — is the construction technique, where concrete pneumatically conveyed through a hose and projected layer by layer at high velocity onto a surface



Dry mix shotcrete (gunite) is a versatile, flexible and economical method of construction and reconstruction. Properly chosen equipment allows to achieve good results in sprayed concrete application. TORNADO offers equipment, effective for the following types of work:

## Applications

- repair of concrete and reinforced concrete structures
- construction of tanks and containers
- slope protection in tunneling and mining construction
- application of refractory materials in metallurgy, chemical, glass, cement and other industries associated with high temperature processes
- soil stabilisation (pits and storage facilities, strengthening of the slopes at construction of interchanges, bridges and so on.)
- conveying of loose materials (sand, gravel, etc.)
- as a sandblasting equipment
- sprayable membranes application
- house building incl. EVG 3d panel

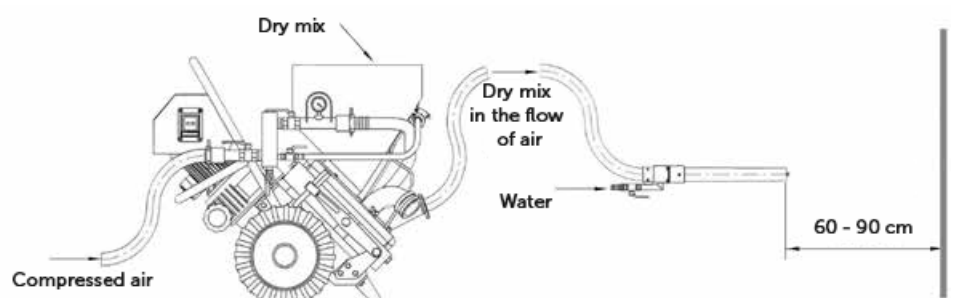
## Method advantages:

The advantages of dry shotcrete method leads to its versatility. Dry shotcrete is a traditional world-known method of applying sprayed concrete and characterized by:

- improved characteristics of mechanical strength, higher concrete density, better frost-resistance and water resistance
- high initial strength of sprayed concrete layer
- high level of adhesion to different surfaces
- possibility of conveying mixtures to long distances (up to 400 m.)
- ability to work in the "start-stop" mode
- pre-mixing is not necessary
- easy equipment cleaning
- rare hose blockage
- independence from concrete suppliers (the possibility of preparing dry mix on building site)

## Working principle

Dry mix (aggregates, additives, astringent e.g. cement) is loaded into a hopper, where it falls into the rotary dosing drum. Then followed by compressed air, dry mix is fed into the spraying nozzle. In the nozzle, the material is mixed with the water or with aqueous solution of additives and entrains on the surface by the compressed air. Upon impact with the surface, significant concrete consolidation is achieved



# Overview

TORNADO AC-2 dry-mix shotcrete machine uses classical rotary principle.

The machine is designed with the special attention to the rugged structure, high reliability level of all component parts as well as to the possibility of using shotcrete materials of any density, including refractory mixes with high slope angle. Machine is easily adapted to the most types of shotcrete works due to its operation flexibility.

AC-2 machines have been widely used at numerous objects in the CIS, European and Asian countries for 20 years and already proved their high reliability and maintainability level in the difficult operating conditions with not always highly qualified personnel.

## Features and benefits



**Mobility and compactness.** Pneumatic large-diameter wheels ensure easy movement and transportation. Small size allows closest to application site stationing. The machine can easily be moved by one person



**Simple and reliable modular design**, as well as installed world's leading drive gears (production of Germany and Italy), provides the long-term operation life of the equipment. Replacement of consumables and expendables does not require any special skills from the staff



**The disk variator** option allows smooth output changing in full range, and instantly adapt the machine to the building site needs



**Smooth work with fine-grain and ultra-dense mixes** is provided with through-type dosing rotor and a double air feed



- **Additional mixer** ensures complete batching cylinder cells fill-up even when using damp mixes

- **Sieve** prevents extra-large size pieces to get into the dosing rotor

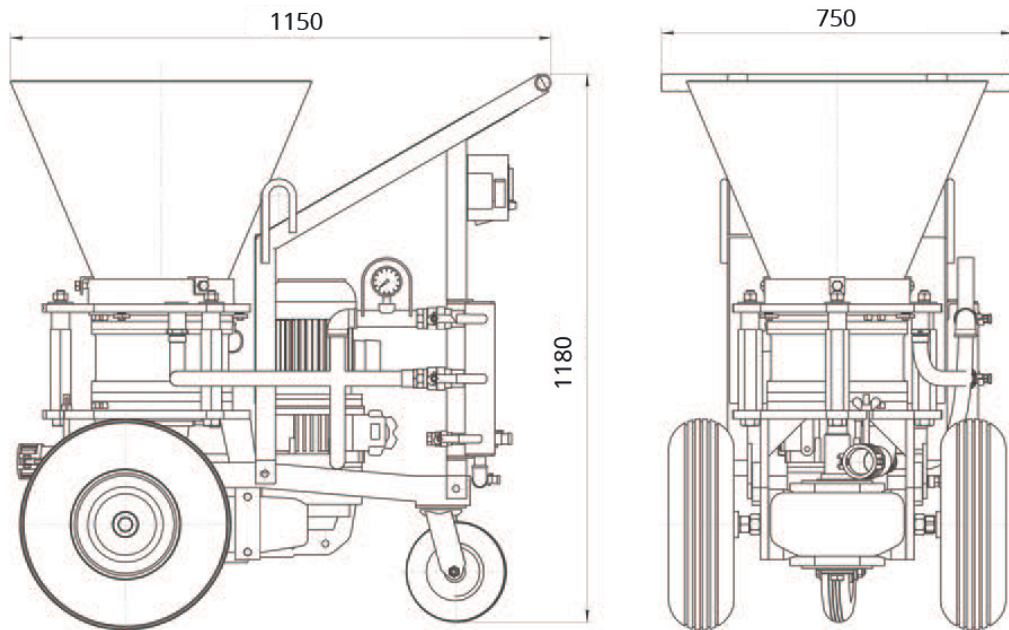
- **Simple and reliable vibrator** provides the necessary exertion to deliver the mix into the machine

**The protective apron** protects the elements of the machine from damage and contamination

**Quick connection couplings** are used. Construction site relocation takes a few minutes







## AC-2 DRY-MIX SHOTCRETE MACHINE

Technical data	unit	electric drive	explosion proof model	
			electric motor	air motor
Working temperature	°C	up +5°C to +50°C		
Dosing rotor volume	dm <sup>3</sup>	3,6 / 5,6		
Bunker volume	dm <sup>3</sup>	90		
Theoretical output*	m <sup>3</sup> /hour	1-2,5/2,0-4,0	1-2,5/2,0-4,0	1-2,5/2,0-4,0
Dosing rotor rotation speed	min <sup>-1</sup>	6-12	13	6-12
Air compressor pressure	mPa	0,5		
Air consumption total	m <sup>3</sup> /min	5,0-11		8,0-14
Air consumption for pneumatic vibrator	m <sup>3</sup> /min	0,5-0,7		
Drive power	kW	2,2		3,2 - 3,6
Drive type		3x380 B 50 Hz	3x380/660B 50Hz	air motor
Transport distance horizontally, dry method	m	to 200		
Transport distance vertically, dry method	m	to 100		
Transport distance horizontally, wet method	m	to 60		
Transport distance vertically, wet method	m	to 40		

### Machine dimensions

	mm	1128	1128	1150
Length	mm	765	765	750
Width	mm	1227	1227	1180
Height	kg	360	360	290
Weight with no accessories				

## Recommended assembly:

- AC-2 dry shotcrete machine (incl. feeding hopper, sieve, vibrator) on pneumatical tyres
- Abrasion resistant hose, 20 meters, diameter 32 mm
- Assembled nozzle, diameter 32 mm
- 1 spare nozzle tip
- 2 spare sealing plates
- Air hose, 20 meters
- Water hose, 20 meters

## Available for order:

- hoses of various diameters,
- remote control,
- nozzles for different materials,
- explosion-proof electric motor,
- skids,
- rail platform,
- automatic lubrication system.

## For the operation of the AC-2 machine required:

- the water supply pressure not less than 2 atm,
- the compressed air at least 5 m<sup>3</sup>/min,
- 3 kW electricity



TORNADO specialized in dry and wet shotcrete works and structures strengthening for more than 25 years. This unique work experience allows us to provide full-cycle services for shotcrete contractors. We strive to consider on-site conditions to get the best result for our Client.

Wearing parts are always available for shipment.

Free onsite nozzleman machine operator training for wet and dry processes.

Special equipment editions on demand: alternative versions of the drives, remote control, extra consumables, types of material hoses and nozzles

Full customer support

## Contact

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