

## Pipe Cleaning Machine TORNADO

Semi-automatic pipe cleaning machine up to 16,000 PSI (1100 bar)

Z71-1e

### Applications

Application: Cleaning of fully or partially blocked pipelines in various industries  
 Removing: Cement, plastics, bauxite, coke and much more from steel, plastic and concrete pipes, etc.

### Technical Data

Length:	40" (1016 mm)
Width:	13" (330 mm)
Height:	22" (560 mm)
Weight:	143 lbs. (65 kg)
Flow:	Max. 52.8 GPM (200 L/min)
Working Pressure:	Max. 16,000 PSI (1100 bar)
Speed:	6-350 rpm
Air Pressure:	87 PSI (6 bar)
Air Consumption:	99.9 CFM (2.83 m³/min)
HP Input:	M 24x1.5 DKO-S
HP Output:	M 24x1.5 DKO-S
Cleaning Pipe:	Diameters 1.57" - 59" - max length 984 ft. (Diameters 40-1500 mm - max length 300m)



Part No. 7010382

Units for cleaning pipes of other sizes and lengths available upon request.

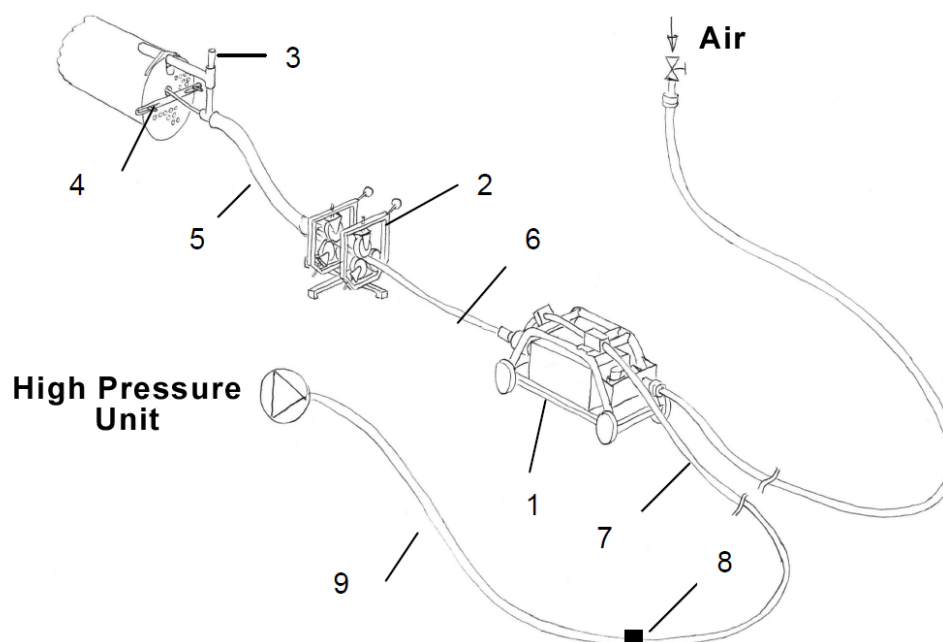


### Design

- Robust stainless steel tubular frame; mobile with 4 plastic wheels with rubber tires
- Infinitely variable two-step gearbox and automatic friction clutch
- High pressure rotating joint DN 12
- Maintenance unit for air supply and pneumatic motor
- High Pressure ball valve for shutting-off and pressure gauge
- Tachometer

### Ancillary Equipment

- Advance device PUSHER for direction changes of the hose lines
- Positioning hose guide with spray guard that fits protected hose DN 50 with quick release coupling; useable for a variety of pipes and heat exchanger sizes
- Protection hose DN 50 with quick release coupling
- HP hoses in various widths and lengths with connecting nipples and reducers
- Standard and special nozzles for various applications














Item	Description	Part No.
1	Tornado	7010382
2	Advance Device PUSHER	7010383
3	Positioning hose guide	7010801
4	Spray guard for pipe 11.8"-23.6" (300 - 600 mm)	7010802
5	Protected hose ID 50 x 32.8 ft (10 m) with quick release coupling	7010384
6	HP-Hose DN 12 - 16,000 PSI (1100 bar) - both ends with fitting M 24x1.5 DKO  32.8 ft (10 m) 65.6 ft (20 m) 131.2 ft (40 m)  Double nipple M 24x1.5 DKO (for hose connecting)	  7009339 7000495 7000496  1050671
7	HP-Hose DN 12 - 16,000 PSI (1100 bar) - both ends with fitting M 24x1.5 DKO	7000495
8	Reduction double nipple M 24x1.5 DKO -- M 36x2 DKO	1050673
9	HP-Hose ID 20 - 15,000 PSI (1000 bar) - both ends with fitting M 36x2 DKO  65.6 ft (20 m) 131.2 ft (40 m)  Double Nipple M 36x2 DKO (for hose connecting)	  7000519 7000520  1050672
Pipe cleaning nozzles and nozzle carriers available for various applicaitons - see Z71-3e		



It is not permitted to connect a number of hoses for cleaning pipe lines which have a number of bends in close succession.  
There is an increased accident risk due to the lengths of rigid sections if several hoses are connected to each other.




**Standard Nozzles  $\geq$  Pipe  $\varnothing$  1.6" (40 mm) for TORNADO**      **Z71-3e**

**Z71-3e**

	Description	Part No.	Application
 	<p>Step nozzle short with fixed bores M 24x1.5 male - 39.6 GPM - 16,000 PSI (150 L/min - 1100 bar)</p> <p>M 24x1.5 male - 49.7 GPM - 16,000 PSI (188 L/min - 1100 bar)</p> <p>Step nozzle short with fixed bores and built-in pusher at 45° M 24x1.5 male - 39.6 GPM - 16,000 PSI (150 L/min - 1100 bar)</p> <p>M 24x1.5 male - 49.7 GPM - 16,000 PSI (188 L/min - 1100 bar)</p>	<p>7011080</p> <p>7010745</p> <p>7011081</p> <p>7010385</p>	<p>General pipe cleaning for partially and fully blocked pipes of 1.6" (40 mm) inner diameter and larger.</p>
	<p>Pusher with 2x ceramic inserts M4 M 24x1.5 male - 7.9 GPM - 16,000 PSI (30 L/min - 1100 bar)</p> <p>Ceramic insert M4 - diameter 0.8 mm</p>	<p>7010746</p> <p>7002772</p>	<p>To be used in combination with all step nozzles short as driving nozzle "ALLCUT"</p>
   	<p>Step nozzle "ALLCUT" with fixed bores</p> <p>M 24x1.5 male - 39.6 GPM - 16,000 PSI (150 L/min - 1100 bar)</p> <p>M 24x1.5 male - 49.7 GPM - 16,000 PSI (188 L/min - 1100 bar)</p> <p><u>required accessories:</u> Plug 1/4" BSP male or Front jetting insert 1/4" BSP male or Guide roller brass 1.26" dia. (32mm) and Axle 1/4" BSP male</p>	<p>7011082</p> <p>7010387</p> <p>5040036</p> <p>7010903</p> <p>7010748</p> <p>7011192</p>	<p>General pipe cleaning for partially and fully blocked pipes of 1.6" (40 mm) inner diameter and larger.</p> <p>Used to guide step nozzle "ALLCUT"</p> <p>Used to guide roller brass</p>
    	<p>Nozzle carrier DT 2 - M 24x1.5 female for 2 nozzle inserts Form A + B</p> <p>Nozzle carrier DT 4 - M 24x1.5 female for 4 nozzle inserts Form A + B</p> <p><u>required accessories:</u> Nozzle holder for insert nozzle Insert nozzles O-Ring Screwdriver for nozzle holder</p> <p><u>additional with:</u> Plug 1/4" BSP male or Front jetting insert 1/4" BSP male or Guide roller brass 1.26" dia. (32mm) and Axle 1/4" BSP male</p>	<p>7010388</p> <p>7010389</p> <p>7010901</p> <p>Z41-1</p> <p>1060382</p> <p>7010902</p> <p>5040036</p> <p>7010903</p> <p>7010747</p> <p>7011083</p>	<p>General pipe cleaning for partially blocked pipes of 2.75" (70 mm) inner diameter and larger.</p> <p>Used to guide nozzle carrier DT</p> <p>Used to guide roller plastic</p>

## Special Nozzles ≤ Pipe ø 1.6" (40 mm) for TORNADO

Z71-3e

	Description	Part No.	Application
  	Step nozzle short with fixed bores All rated at 16,000 PSI (1100 bar)		General pipe cleaning for partially and fully blocked pipes.
	1/8" BSP female - 5.3 GPM (20 L/min)	7011085	Pipe ID > 0.63" (16 mm)
	1/8" BSP female - 7.9 GPM (30 L/min)	7011086	Pipe ID > 0.63" (16 mm)
	1/4" BSP female - 7.9 GPM (30 L/min)	7011087	Pipe ID > 0.79" (20 mm)
	1/4" BSP female - 13.2 GPM (50 L/min)	7011088	Pipe ID > 0.79" (20 mm)
	3/8" BSP female - 26.4 GPM (100 L/min)	7011089	Pipe ID > 1.20" (30 mm)
	3/8" BSP female - 31.7 GPM (120 L/min)	7011090	Pipe ID > 1.20" (30 mm)
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	Step nozzle long with fixed bores and built-in pusher at 45° All rated at 16,000 PSI (1100 bar)		
	3/8" BSP female - 26.4 GPM (100 L/min)	7011091	Pipe ID > 1.20" (30 mm)
	3/8" BSP female - 31.7 GPM (120 L/min)	7011092	Pipe ID > 1.20" (30 mm)
	Pusher with 2x ceramic inserts M4 Rated at 16,000 PSI (1100 bar)		To be used in combination with all step nozzles short.
	1/8" BSP female - 2.6 GPM (10 L/min)	7011093	Pipe ID > 0.63" (16 mm)
	1/4" BSP female - 5.3 GPM (20 L/min)	7011094	Pipe ID > 0.79" (20 mm)
	Pusher with 2x ceramic inserts M4 3/8" BSP female - 5.3 GPM (20 L/min)	7011095	Pipe ID > 1.20" (30 mm)
	Ceramic insert M4 - diameter 0.7 mm	7002771	

## Special Hoses ≤ Pipe ø 40 mm for TORNADO

Pipe cleaning hose			For cleaning heat exchangers
DN 5/2 max. 16,000 PSI (1100 bar) 1/4" BSP cap nut/ 1/8" BSP m. - 39.4 ft (12m)	7000558		Pipe ID > 0.63" (16 mm)
DN 6/2 max. 13,920 PSI (960 bar) 1/4" BSP cap nut/ 1/4" BSP m. - 39.4 ft (12m)	7000570		Pipe ID > 0.79" (20 mm)
DN 10 max. 10,875 PSI (750 bar) M 24 x 1.5 DKO / 3/8" BSP m. - 32.8 ft (10m)	7010986		Pipe ID > 1.20" (30 mm)
Reducing double nipple			
M 24 x 1.5 DKO - 1/4" BSP DKR	1051633		Connection DN 13 with
M 24 x 1.5 DKO - M 24 x 1.5 DKO	1050671		DN 5/6
			Connection DN 10 / 13

Pipe cleaning: max. 39.4 ft. (12 m) pipe length when using hose sizes DN 5 and DN 6

