

Description

This machine is a kind of piston and ball controlling pump, and the conveying line, piston and cylinder is specially designed and processed, so this machine is workable for high pressure grouting/spraying mortar (the mixture of sand: cement:water). And is successfully used in sealing, strengthening, stabilizing of rock and soil, tunneling, building hydro-power project, etc, and also used for spraying mortar in construction and 3D Panel, etc.

The GP50/40 is available in the following versions.

- BASIC Electric drive
- DIESEL Diesel drive

Technical Data

Working Pressure	4MPa/580psi
Conveying distance horizontal	120m; vertical 50m
Hopper capacity	160L
Frequency of piston	95 min
Working Cylinder ID	φ 90 mm
Piston Stroke	85mm
Outlet ID	φ 50 mm
Inlet Hose ID	φ 75 mm
Overall dimension(LxWxH)	1610x1024x900mm
Weight	300kg

Drive

Electric (BASIC)

Motor output	5.5 kW/7.5hp
Speed range	1450 rpm
Voltages	380V 50 Hz 440V 50/60Hz 220V 50/60Hz

Diesel (DIESEL)

Motor output	7 kW/10hp
Speed range	2200 rpm

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Theoretical conveying date

Hose Φ (mm)	Conveying output ¹⁾ (L/min)	Max. grain (mm)	Max. aggregate ratio (cement/sand)
50	50	6	1/3

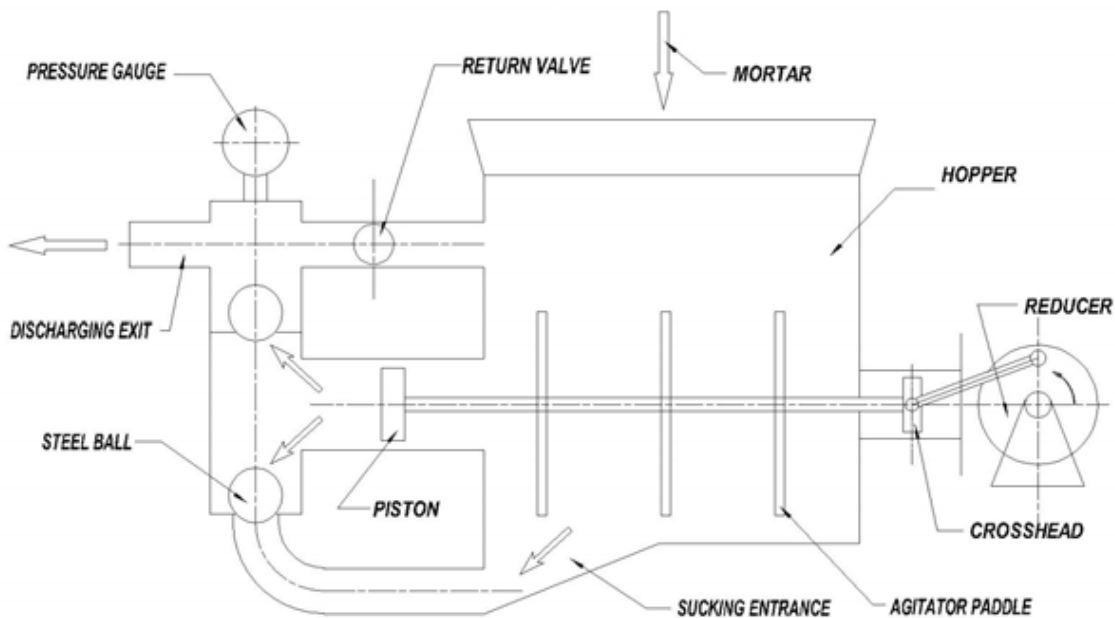
1) If motor with 60 Hz =20% higher conveying capacity

Working Principle

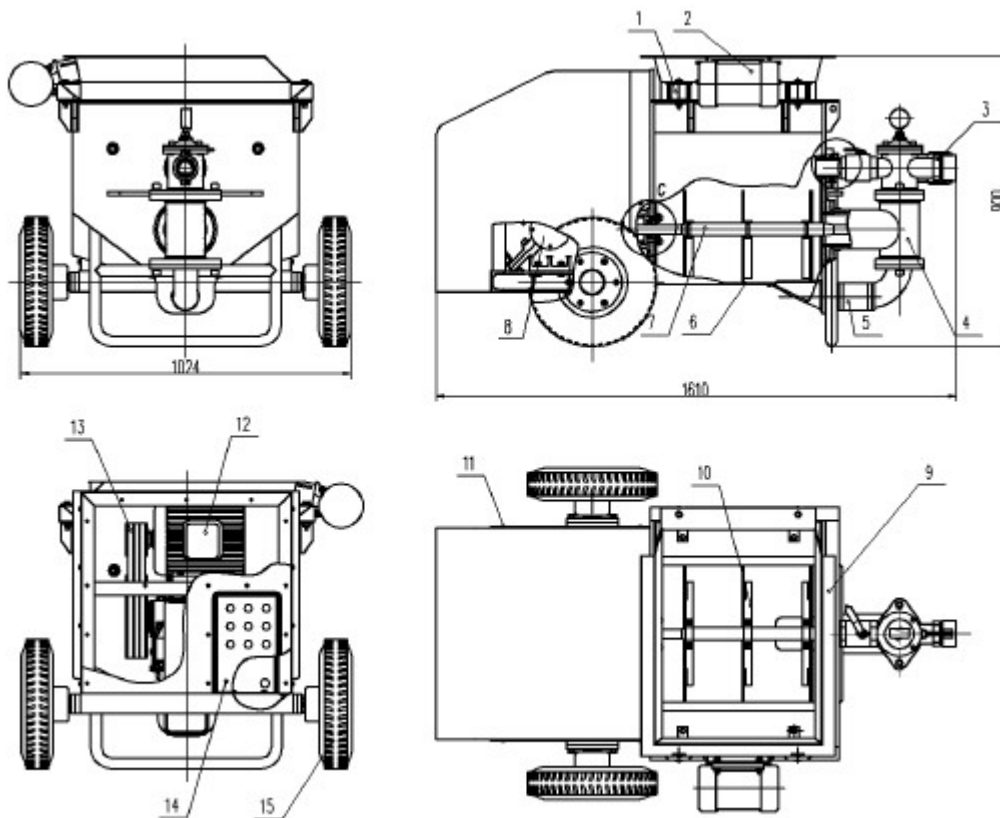
The mixed materials complying with the required ratio are filled into hopper, piston reciprocate driven by reducer and the connecting rod, and with this action, the mortar in the hopper is sucked in the cylinder through the sucking entrance, and is dischaGPeD through the dischaGPeing exit.

- ◆Return Valve — Open it and make the materials return to the hopper when the block happens momentarily.

- ◆Agitator Paddle—It reciprocate in the horizontal direction driven by reducer and the connecting rod, and agitate the material to prevent eduction and deposition happening.



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|--------------------|-------------------------|-----------------------------|
| 1.Vibrating Spring | 2.Vibrating Motor | 3.Quick joint |
| 4.Pump Head | 5.Sucking Hose | 6.Hopper |
| 7.Piston Rod | 8.Reducer | 9.Vibrating Hopper |
| 10.Agitator Paddle | 11.Cover | 12.Electric Motor or diesel |
| 13. V Belt | 14.Electric Control Box | 15.Solid Tyre |

Spraying	Mortar	Description
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A. Request Compressor Air

The request compressor air should be 4-7bar(87-100psi), and the output is 0.3m³/min(11CFM). When spraying, the operator should adjust air pressure and output in order to make the spraying layer uniformity and reducing rebound.

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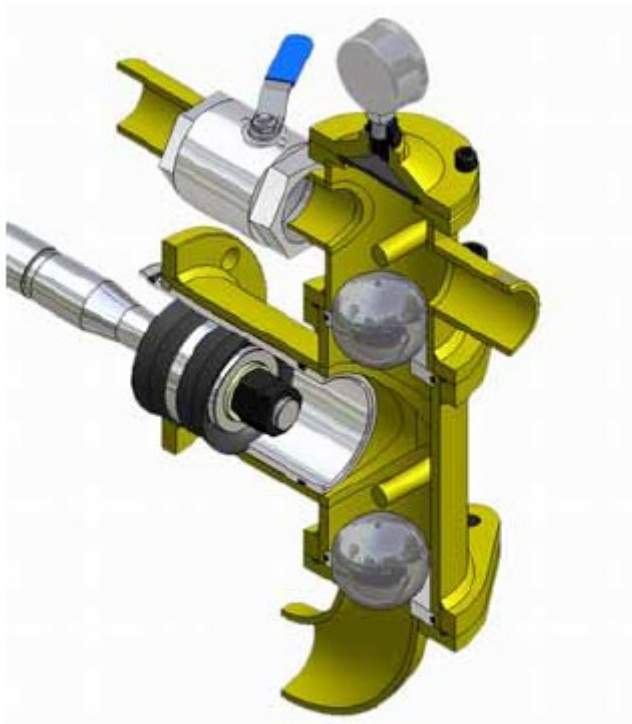
B. Spraying Description

- 1, Spraying Thickness every time: the recommending spraying thickness every time is 3 to 5 mm.
- 2, Spraying distance: The recommending spraying distance is 350mm.
- 3, Spraying angle: The recommending spraying angle is that nozzle is vertical to the wall surface.
- 4, Spraying route: The recommending spraying route is from lower to upper with “s”shape.

C. Mortar Ratio

The workable mortar should select middle sand, which the quantity of 1mm sand by weight is 60 percent of the total sand. And max. sand grain is less than 5mm with fineness modulus >2.3. For the workable mortar, please refer to the following table:

Ratio	1: 2.5 (volume) 或 1: 3.24: 0.97 (weight)	
Name	Volume m3	Weight (T)
Cement	0.3664	0.4376
Dry Sand	0.916	1.4198
Water	0.347	0.347

GP50/40**Pump Head Assemble**

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