IP SS

SPECIFICATION FOR PNEUMATICALLY OPERATED GRINDING MACHINE

IPSS : 1-07-008-77

BASED ON IS : 7157-1974

0. Foreword

0.1 Interplant standardization activity in steel industry is being pursued under the aegis of the Indian Standards Institution (ISI) and the Steel Authority of India Limited (SAIL). This Interplant Standard prepared by the Subcommittee on Portable Maintenance Equipment, IPSS 1 : 7, with the active participation of the representatives of all the steel plants and established manufacturers of pneumatic tools, was adopted by the Approval Committee on Consumable Stores and General Equipment, IPSS 1, on 25 June 1977.

0.2 Since the production facilities of the indigenous manufacturers have been oriented to the use of the fps units, it has not been possible to give rationalized metric dimensions in all cases. For guidance, therefore, dimensions in inch units have been given in parenthesis in this standard following the converted metric dimensions in millimetres. The IPSS Technical Committee responsible for the formulation of this standard hopes that the rationalized metric dimensions in those cases would be arrived at through revision of the corresponding national standard at a suitable date.

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1. Scope — This Interplant Standard, which covers the requirements of portable pneumatically operated grinding machine is generally based on IS : 7157-1974 'Specification for portable pneumatic grinding machines'. Hence, the stipulations of this Indian Standard regarding terminology, general requirements and load tests are applicable as such.

1.1 Other technical requirements for meeting the specific needs of the steel industry are covered by this Interplant Standard.

2. Requirements — The technical requirements of pneumatically operated grinding machine shall be as follows:

a)	Type	— straight
b)	Wheel size	— 150 mm diameter and 25 mm thick
c)	Speed of wheel	— 6 000 rpm
d)	Spindle diameter and its thread	— 16 mm and M16
e)	Overall length, *Max*	— 580 mm
f)	Mass, *Max*	— 5·5 kg
g)	Air inlet connection [*see* IS : 554-1975 'Dimensions for pipe threads where pressure tight joints are required on the threads (*second revision*)']	— $R\frac{1}{4}$
h)	Air consumption at 6 kgf/cm² (+10 percent), *Max*	— 1·91 m³/min when tested on fan brake for maximum power, and 1·44 m³/min when on load under actual operation

2.1 The exhauster shall be so provided that it can be adjusted to any direction, as required.

2.2 The flow of air to the machine shall be controlled by a valve with specific 'ON' and 'OFF' positions marked. The valve mechanism shall be so designed as to prevent any accidental starting of the machine and the valve shall be so positioned that the operator can actuate it with ease with one hand during normal working.

2.3 The grinding machine shall be provided with a governor or any other feature to prevent excessive speeds and air consumption and to maintain efficient speed under loads.

Amendments Issued (*to be filled up by the user department*):

No.	Date of Issue	No.	Date of Issue
1		3	
2		4	

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2.4 All rotating parts shall preferably be supported on anti-friction bearings with arrangements to lubricate the bearings and the gears.

2.5 The machine shall be provided with a suitable wheel guard.

2.6 The grinding machine shall be fitted with an air strainer or screen which shall be effective against ingress of solid particles and which shall be easy to clean.

2.7 The air inlet nipple shall be properly protected by a plastic cap or any other means to avoid damage to the thread and to prevent entry of dirt into the machine. Further, the lubricating parts shall be properly enclosed so as to prevent entrance of foreign particles and leakage of lubricants.

3. **Workmanship and Finish** — The grinding machine shall be of rugged construction so as to withstand the rough usage likely to be encountered in steel plants and shall be free from all imperfections which may affect the serviceability of the machine.

3.1 The handle shall be smooth, free from burrs, sharp edges or any other manufacturing defect. It shall be so designed that the operator gets a firm grip. The throttles shall work freely allowing smooth operation of the valve.

4. **Manufacturer's Responsibility** — The manufacturer shall supply the following with each grinding machine:

a) A pamphlet stating the type of lubricants to be used for various parts, and

b) A guarantee for a minimum period of six months from the date of receipt of the machine at the steel plant.

4.1 The Manufacturer shall rectify/replace the defective parts or components, if necessary, within the guarantee period, free of cost.

5. **Marking** — The grinding machine shall be fitted with a name-plate at a suitable place so that in the course of normal usage, it does not get damaged. The name-plate shall be legibly and indelibly marked with the following:

a) Manufacturer's name or trade-mark, and

b) Serial number of the machine.