INTERPLANT STANDARD - STEEL INDUSTRY

IP SS

SPECIFICATION FOR PNEUMATICALLY OPERATED DRILLING MACHINE

IPSS: 1-07-007-77

BASED ON IS: 5441-1969

HAN ICATED COPY

(ASHUE RUMAR) SR. DY. DR. & I/C (IPSS)

AUT

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 Interplant standards for steel industry primarily aim at achieving rationalization and unification of parts and sub-assemblies used in steel plant equipment and accessories, and provide guidance in indenting stores or equipment for existing or new installations by individual steel plants. For exercising effective control on the inventories, it is advisable to select a fewer number of sizes (or types) from among the products mentioned in this standard for the purpose of company standards of individual steel plants. It is not desirable to make deviations in technical requirements.
- 0.3 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 guldance, 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.
- 4. Scope This Interplant Standard, which covers the requirements of portable pneumatic drilling machines, is generally based on IS: 5441-1969 'Specification for pneumatic portable drilling machine'. Hence, the stipulations of this Indian Standard regarding terminology, material general requirements and acceptance 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 requirements of nominal size, maximum diameter of drill in each size, type, speed, maximum mass, spindle off-set, length of feed, maximum overall length, air inlet connection, air consumption and type of handle shall be as given in Table 1.
- 2.1 The exhauster shall be so provided that it can be adjusted to any direction, as required.
- 2.2 The drilling 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.
- 2.3 All rotating parts shall preferably be supported on anti-friction bearings with arrangements to lubricate the bearings and the gears.
- 2.4 The drilling 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.
- 2.5 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 drilling 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.

	Amendments Issued (to be filled up by the user department):				er i	4
L	No.	Date of Issue	No.	Date of Issue		
	1		3			
L		·	4			· ·
-						_

TABLE 1 REQUIREMENTS FOR PHEUMATIC PORTABLE DRILLING MACHINES (Clause 2)

Type of Handle (200 18 : 344;-	(11)	Pistol grip with trigger throttle	Double hand grip with twist (rolling) throttle	Double hand grip with twist (rolling) throtte		
Air Consumption at & kg/cm ¹ (+10 fercent), Mex (m'/min)	(10)	1.2	89	8.3		
Air Connection Size*	(6)	₹.	R	œ		
Coverall	(8)	295 mm (11) ³)	355 mm (14″)	355 mm (14°)		
Length of Feed. Mex	(7)	1	98 mm (3½°)	98 mm (31°)		
Spindle Off-set	(9)	31.75 mm (14°)	46 mm (1¦2°)	46 mm (173°)		
Mass of Machine, Max (kg)	(5)	3.75	œ	15:5		
Speed, Mex (rpm)	(+)	1 000	007	400		
Туре	(3)	Non- reversible	Reversible	Reversible		
Dia of Drill,	(2)	13 mm (½')	25:4 mm (1")	31.75 mm (11°)		
Nominal Size	(3)	C13 (with citiling chuck)	M2 (with scill-holding sockets)	His years or throiding colets)		

Contorning to IS :554-1975.* Dimensions for pipe threads where pressure tight joints are required on the threads (second revision.).

- 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 value.
- 4. Manufacturer's Responsibility The manufacturer shall supply the following with each drilling machine:
 - a) A chuck, a chuck key, a detachable handle and an air inlet nipple with the machine having drill diameter up to 13 mm;
 - b) A feed screw with star wheel, live air-throttle, a support (dead) handle and an air inlet nipple with machines having drill diameter up to 23 mm (nominal size M2) and up to 31.75 mm (nominal size M3);
 - c) A pamphlet stating the type of lubricants to be used for various parts; and
 - d) 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 drilling 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,
 - b) Serial number of the machine,
 - c) The maximum size of hole that can be drilled, and
 - d) The maximum speed in spm.