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भारतीय मानक

स्नेहन उपकरण — ग्रीस के लिए बैरल अन्तरण पंप — विशिष्टि

(पहला पुनरीक्षण)

Indian Standard

Lubricating Equipment — Barrel Transfer Pumps for Grease — Specification

(First Revision)

Lubrication Equipment Sectional Committee, PGD 19

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Lubrication Equipment Sectional Committee had been approved by the Production and General Engineering Division Council.

This standard was first published in 1995 by taking assistance from IPSS l-02-011-81 ‘Specification for grease transfer pumps’ issued by the Inter-plant Standard for Steel Industry (IPSS). This revision has been taken up due to the experience gained in implementation of the standard and includes following major changes:

a) Performance requirements for Type A motorized grease pumps has been modified;
b) Requirements for motors used in the motorized pumps has been modified; and
c) Requirements for motors in flame proof applications have been included.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Draft Indian Standard

Lubricating Equipment — Barrel Transfer Pumps for Grease — Specification

(First Revision)

1 SCOPE

This standard covers the requirements for motorized and hand operated barrel transfer pumps for transfer of grease of self-collapsible Grade 2 of National Lubricating Grease Institute (NLGI) [worked penetration range (60 double strokes) = 265 to 295] from 180 kg capacity grease drums [*see* IS 1783(Part 2)] to any container without allowing any contamination.

2 REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

IS No.	*Title*
210 : 2009	Grey iron castings — Specification (*fifth revision*)
507 : 1993	General purpose grease for defence applications — Specification(*third revision*)
1239 (Part 1) : 2004	Steel tubes, tubulars and other wrought steel fittings— Specification: Part 1 Steel tubes(*sixth revision*)
1503 : 1988	Specification for wooden packing cases (*third revision*)
1573 : 1986	Specification for electroplated coatings of zinc on iron and steel (*second revision*)
1783 (Part 2) : 2004	Drums large, fixed ends— Specification: Part 2 Grade B drums (*fourth revision*)
2253 : 1974	Designations for types of construction and mounting arrangements of rotating electrical machines (*first revision*)
3624 : 1987	Specification for pressure and vacuum gauges (*second revision*)
6194 (Part 4) : 2009	Rotary Shaft Lip-Type Seals Incorporating Elastomeric Sealing Elements Part 4 Performance Test Procedures
6362 : 1995	Designation of methods of cooling of rotating electrical machines (*first revision*)
6528 : 1995	Stainless steel wire— Specification (*first revision*)
12615 : 2018	Line operated three phase AC motors (IE Code) "Efficiency classes and performance specification" (Third Revision)
IS/IEC 60034-5 : 2000	Rotating electrical machines: Part 5 Degrees of protection provided by the integral design of rotating electrical machines (IP code)—

	Classification (*second revision*)
IS/IEC 60079-1: 2014	Explosive atmospheres: Part 1 Equipment protection by flameproof enclosures “d”

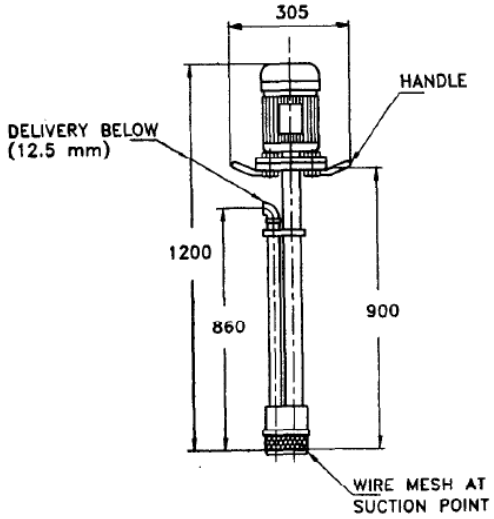
3 TYPES

3.1 Type A —Motorized Grease Transfer Gear Pump

A pump which is mounted at the bottom of the long barrel and is driven by flanged mounted motor placed at the top. The pump is maneuvered by the two holding brackets projecting on either side from the flanges joining the motor and pump (*see* Fig. 1).

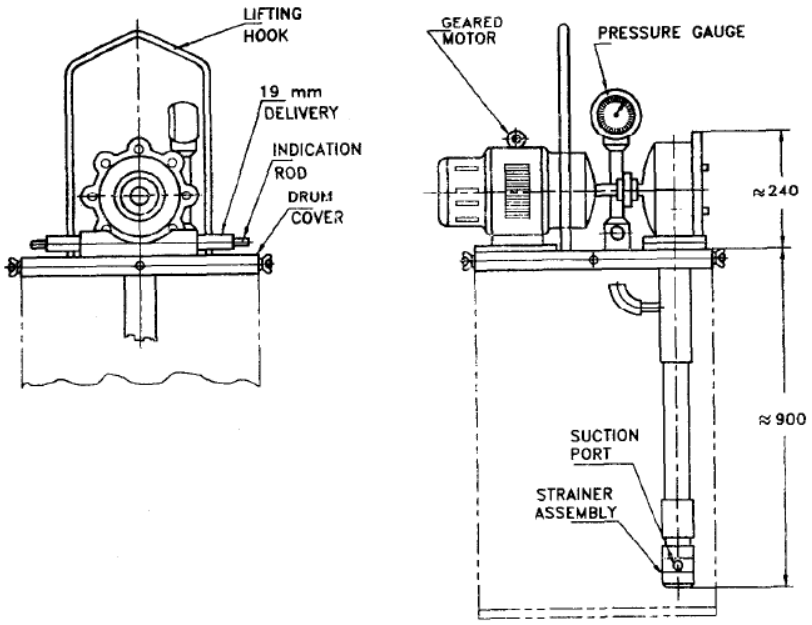
3.2 Type B — Motorized Grease Transfer Plunger Pump

The pump is driven by a geared motor. The whole assembly is mounted on the drum cover (*see* Fig. 2).



TYPE A

Fig. 1 Motorized grease transfer gear pump

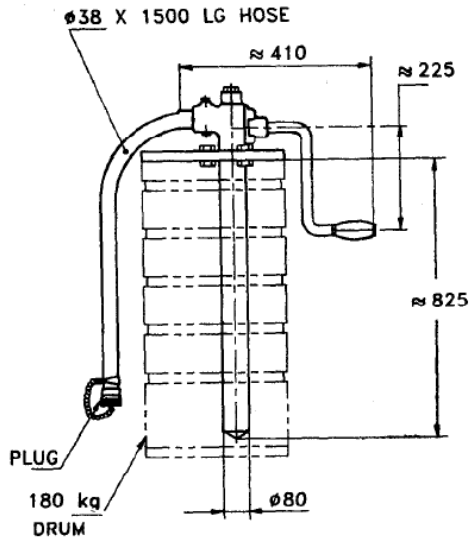


TYPE B

Fig. 2 Motorized grease transfer plunger pump

3.3 Type C — Hand Operated Barrel Transfer Grease Pump

The hand operated barrel transfer pump is operated by a rotating handle which actuates the piston at the bottom of the barrel (*see* Fig. 3).



TYPE C

Fig. 3 Hand operated barrel transfer grease pump

4 MATERIAL

4.1 The material for the pump shall be homogenous, free from manufacturing defects and of robust construction for rugged handling.

4.2 The pump body of the barrel transfer grease pump may be manufactured from grey cast iron conforming to grade FG 150 of IS 210 or machined carbon steel. The suction/delivery pipe of the pump may be manufactured from the mild steel tube conforming to IS 1239 (Part 1). Other material may also be used if agreed to between the purchaser and the manufacturer.

4.3 The material for strainer shall be stainless steel wire conforming to IS 6528.

5 DIMENSIONS

5.1 The main dimensions for the different types of barrel transfer pumps are given in Fig. l, Fig. 2 and Fig. 3.

5.2 In addition, the following dimensions shall be maintained.

5.2.1 The hose shall be of minimum1.5 m length.

5.2.2 The drum cover shall be capable of being screwed on the barrel.

5.2.3 The suction tube should be of adequate length so that it can empty the barrel completely.

6 DESIGNATION

Pump conforming to this shall be designated by the name of the pump with type motorized/hand operated and IS 14279. For example, for barrel transfer pump Type A, conforming to this standard shall be designated as:

Barrel Transfer Pump A Motorized IS 14279

7 DESIGN AND CONSTRUCTIONALFEATURES

7.1 The barrel transfer pumps shall be robust in construction and easy for operation.

7.2 The seals shall be of adequate design and compatible with grease and shall conform to IS 6194 (Part 4).

7.3 The hoses shall be suitable to withstand the operating pressure (*see* IS 3624) given in Table 1 and other details shall be as agreed to between the purchaser and the supplier.

7.4 The barrel transfer pumps shall have a strainer of stainless steel wire mesh of 1.7 mm aperture at the suction point.

7.5 The motor for the different types of motorized pumps shall be 4-pole suitable for 415 V,3 phase, 50 Hz with IP 55 protection (*see* IS/IEC 60034-5), with method of cooling IC 0141 (*see* IS 6362) and with Class F insulation shall conform to IS 12615 with the following ratings:

a) *For Type A Pumps* —1.1 kW, vertical flange mounted (Type VI) as specified in IS 2253.

b) *For Type B Pumps* —0.37kW, horizontal flange mounted (Type B5) as specified in IS 2253.

7.5.1 Motors for flame proof applications shall be 4-pole suitable for 415 V, 3 phase, 50 Hz with IP54 or higher protection (s*ee* IS/IEC 60034-5), with method of cooling IC 0141 (s*ee* IS 6362) with class B Insulation and shall conform to IS/IEC 60079-1.

7.6 For motorized barrel transfer pumps, suitable cover shall be supplied along with the pump to fit 180 kg grease drum. The relief arrangement shall be provided 10 percent above the rated pressure (*see* IS 3624).

7.7 For Type B motorized plunger pumps, built in adjustable pressure relief arrangement shall be provided. The relief valve shall be set at 5 kgf/cm^2 (*see* IS 3624) higher than pump pressure rating declared by the manufacturer.

8 WORKMANSHIP AND FINISH

8.1 The barrel transfer pump shall be finished smooth and shall be free from burrs, cracks and other manufacturing defects.

8.2 Exposed surfaces of the barrel transfer pumps that come in contact with grease shall be suitably zinc plated (*see* IS 1573).

8.3 Parts of barrel transfer pump which do not come in contact with grease shall be suitably painted against corrosion.

8.4 Fasteners shall be zinc/cadmium plated.

9 PERFORMANCE REQUIREMENTS

9.1 The performance requirements of the barrel transfer pumps is given in Table 1.

Table 1 Performance Requirements for barrel Transfer Pumps
(*Clause* 9.1 *and* 9.3)

Type	**Delivery** *Min*	**Operating Pressure**, MN/m^2 *Min*
A, Low pressure high volume A, High pressure low volume	200 kg/h 100 kg/h	3 8
B	120 kg/h	3
C	50 g/rotation of handle	0.7

9.2 The pump shall be able to transfer grease conforming to IS 507 at a distance of 15 m.

9.3 The barrel transfer pump when fitted on a drum of 180 kg capacity shall be able to deliver grease at discharge pressure and discharge rate given in Table 1 for continuous half hour duration, without any leakage at any of the sealing joint. With fully closed delivery line, full delivery of pump shall be discharged to drum at pre-set pressure rating of the relief valve.

10 MARKING

10.1 The barrel transfer pumps shall be marked with direction of rotation and provided with a name plate giving the following information:

a) Manufacturers name and trade-mark,
b) Serial number and batch number,
c) Designation of the pump, and
d) Capacity of the pump

10.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

11 PACKING

11.1 The barrel transfer pumps shall be packed in wooden boxes conforming to IS 1503 or as agreed to between the purchaser and the supplier.

11.2 For identification, the package shall always carry suitable tag or label.

11.3 Package shall be made in such a way that they are protected against mechanical damage in transit.