

# Drain, Fill, and Level Plugs for Earthmoving Machinery—SAE J371a

SAE Recommended Practice  
Completely revised March 1978

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## SAE Recommended Practice

Report of Tube, Pipe, Hose, and Lubrication Fittings Committee and Construction and Industrial Machinery Committee approved November 1968 and completely revised by Off-Road Machinery Technical Committee March 1978. Rationale statement available.

1. **Scope**—Plugs are extensively used in earthmoving machinery for maintenance purposes. Loss of these plugs, stripping of the threads, or difficulty in finding the right tool, can result in serious damage and/or increased down time.

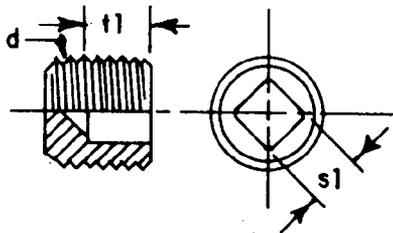
2. **Purpose**—This SAE Recommended Practice specifies preferred sizes, head, and thread type for drain, fill, and level plugs for earth moving machinery. This practice is also intended to improve the ease of removal and installation of these type drain, fill, and level plugs by standardization of types and sizes which can be removed and installed through use of commercially available hand tools.

3. **Application**—It is recommended that the plugs listed in Table 1, types A, B, C, and D be used as follows:

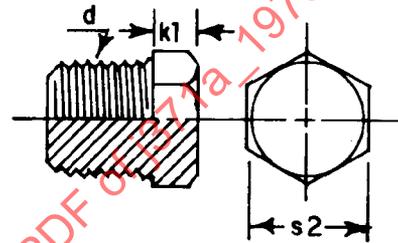
TABLE 1

Application	Use Type
Physical damage likely	A, C (C preferred)
Clearance problems	A, C (C preferred)
Periodic removal and reassembly	D
Minimum removal and reassembly	B

3.1 Below are listed the type and principal dimensions of the recommended plugs which are suggested to ease maintenance. Standard tools can be used, a minimum number of tools is needed and the plugs are easily distinguished.



TYPE A  
SQUARE COUNTERSUNK HEADLESS PLUGS



TYPE B  
HEXAGON OUTSIDE HEAD PLUGS

DIMENSION IN MM (IN)

Taper pipe thread d	TYPE A		TYPE B	
	Socket width s1	Socket depth t1 (min)	Head width s2	Head height k1
1/8 (1/8-27 NPTF)			12 (7/16)	5 (3/16)
1/4 (1/4-18 NPTF)			14 (9/16)	5 (3/16)
3/8 (3/8-18 NPTF)			19 (11/16)	6 (7/32)
1/2 (1/2-14 NPTF)			22 (7/8)	6 (7/32)
3/4 (3/4-14 NPTF)	12.5 (1/2)	8 (5/16)	27 (1 1/8)	8 (5/16)
1 (1-11 1/2 NPTF)	12.5 (1/2)	10 (3/8)	36 (1 5/16)	8 (5/16)
1 1/4 (1 1/4-11 1/2 NPTF)	20 (3/4)	12 (1/2)	46 (1 7/8)	10 (3/8)
1 1/2 (1 1/2-11 1/2 NPTF)			50 (1 7/8)	10 (3/8)
Hand tools to use	handles, socket wrench		commercially available hand tools	

The φ symbol is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. If the symbol is next to the report title, it indicates a complete revision of the report.