The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
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SURFACE VEHICLE RECOMMENDED PRACTICE

An American National Standard

SAE J618

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(R) FLYWHEELS FOR SINGLE-PLATE SPRING-LOADED CLUTCHES

1. ***Scope—***This SAE Recommended Practice applies to flywheels for dry spring-loaded clutches used on internal combustion engines. Figure 1 and Tables 1, 2, and 3 report information currently used in the industry. Clutches requiring other dimensions are also manufactured. Dimensions given are primarily for single-plate clutches. Flywheels for two plate clutches have the same dimensions if an adaptor for the intermediate plate and second driven disc is supplied with the clutch. If instead the flywheel is to be extended to adapt the intermediate plate and second driven member, consult the clutch manufacturer for the required J dimension and drive arrangements for the intermediate plate. See SAE J1806 for flywheels for size 14 and 15.5 two plate pull-type clutches.

1.1 **Purpose—**This document is intended to promote standardization of flywheels for dry spring-loaded clutches.

2. ***References***

2.1 **Applicable Publications—**The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated the lastest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J1033—Procedure for Measuring Bore and Face Runout of Flywheels, Flywheel Housings, and Flywheel Housings Adapters
SAE J1806—Clutch Dimensions for Truck and Bus Applications

2.1.2 ANSI AND ISO PUBLICATIONS—Available from ANSI, 1430 Broadway, New York, NY 10018.

ANSI/ASME B.1-1989—Unified Inch Screw Threads (UN & UNR Thread Form)
ISO 965-3:1980—General purpose metric screw threads—Tolerances—Part 3: Deviations for constructional threads

3. ***Tolerances—***Maximum runout of pilot bearing bore or clutch piloting bore is 0.13 mm (0.005 in) FIM. Maximum face runout of clutch mounting surface and friction surface is 0.013 mm (0.0005 in) FIM per 25.4 mm (1 in) of measured diameter. The procedure for measuring bore and face runouts is described in SAE J1033.

4. ***Tapped Holes—***Tapped holes shall be threaded in accordance with coarse pitch series thread class fit 6H per ISO 965111 or UNC class 2B thread per ANSI B.I.I. Minimum thread engagement shall be 1.5 times nominal bolt diameter for gray iron flywheels, 1.0 times nominal bolt diameter for ductile iron flywheels.

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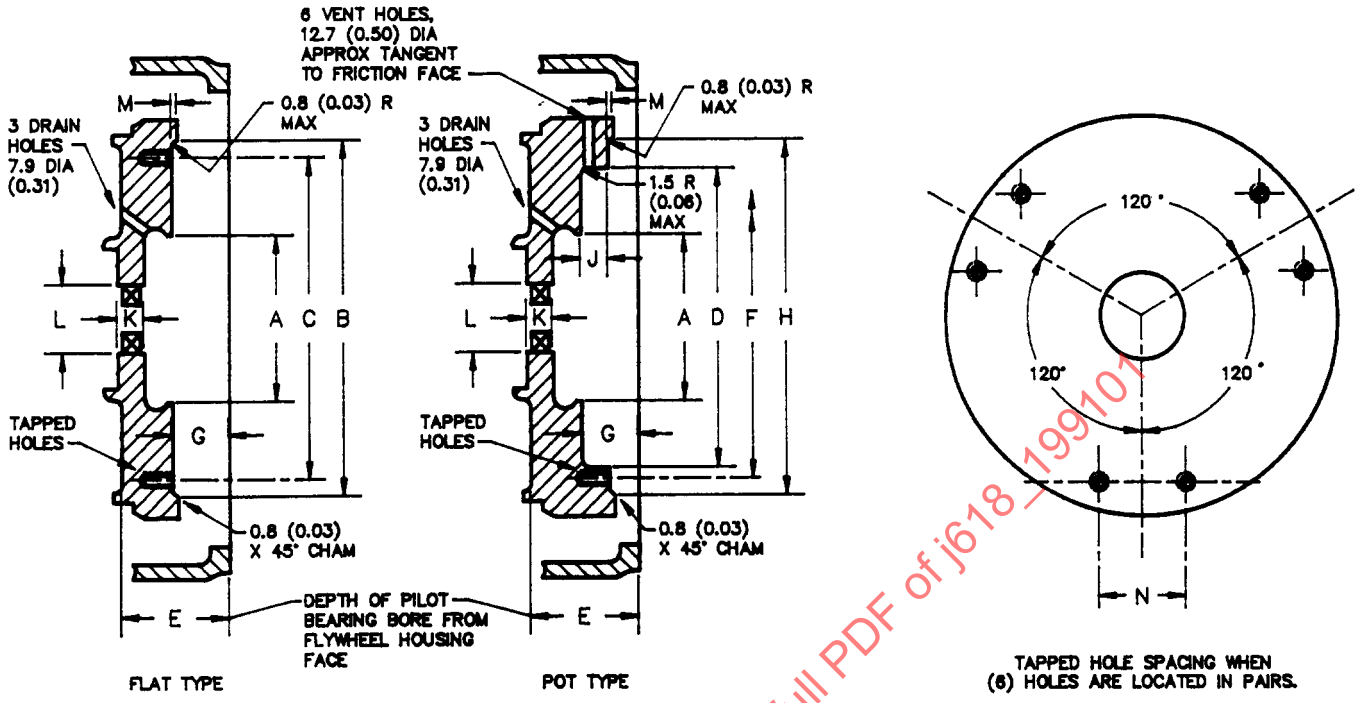

FIGURE 1—

TABLE 1—STANDARD DIMENSIONS FOR FLAT OR POT-TYPE FLYWHEELS MM (IN)

Nominal Clutch Size	A	D (1)	E	G	K (2)	L 2	M (3)
140 (5.5)	85.9 (3.38)	142.7 (5.62)	71.4 (2.81)	41.1 (1.62)	14.2 (0.56)	40.00 (1.5748)	3.0 (0.12)
150 (6.0)	91.9 (3.62)	155.4 (6.12)	71.4 (2.81)	41.1 (1.62)	14.2 (0.56)	40.00 (1.5748)	3.0 (0.12)
165 (6.5)	104.6 (4.12)	168.1 (6.62)	71.4 (2.81)	41.1 (1.62)	14.2 (0.56)	40.00 (1.5748)	3.0 (0.12)
215 (8.5)	127.0 (5.00)	218.9 (8.62)	71.4 (2.81)	41.1 (1.62)	14.2 (0.56)	40.00 (1.5748)	3.0 (0.12)
230 (9.0)	136.7 (5.38)	231.6 (9.12)	71.4 (2.81)	41.1 (1.62)	17.3 (0.68)	47.00 (1.8504)	3.0 (0.12)
255 (10.0)	149.4 (5.88)	257.0 (10.12)	100.1 (3.94)	66.5 (2.62)	17.3 (0.68)	47.00 (1.8504)	3.0 (0.12)
280 (11.0)	155.4 (6.12)	282.4 (11.12)	100.1 (3.94)	66.5 (2.62)	17.3 (0.68)	52.00 (2.0472)	3.0 (0.12)
305 (12.0)	165.1 (6.50)	307.8 (12.12)	100.1 (3.94)	66.5 (2.62)	17.3 (0.68)	52.00 (2.0472)	3.0 (0.12)
330 (13.0)	184.1 (7.25)	333.2 (13.12)	100.1 (3.94)	66.5 (2.62)	17.3 (0.68)	62.00 (2.4409)	4.6 (0.18)
355 (14.0)	187.4 (7.38)	358.6 (14.12)	100.1 (3.94)	66.5 (2.62)	17.3 (0.68)	62.00 (2.4409)	4.6 (0.18)
380 (15.0)	203.2 (8.00)	384.0 (15.12)	100.1 (3.94)	63.5 (2.50)	19.0 (0.75)	72.00 (2.8346)	4.6 (0.18)

1. Pot-type clutches may not be commercially available in all sizes.
2. K is length of bore for pilot bearing. L is nominal diameter of bearing. Diameter and fit are to suit installation.
3. Most flat-type clutches are piloted by the mounting bolts and a piloting diameter is not used.

TABLE 2—CLUTCH MOUNTING DIMENSIONS OF FLAT-TYPE FLYWHEELS mm (in)

Nominal Clutch Size	B [1]	C	Tapped Holes	Tapped Holes	Tapped Holes		Tapped Holes
			No.	Spacing	N		Size
140 (5.5)	185.4 (7.30)	163.07 (6.420)	6	Pairs	70.10	(2.760)	5/16-18
150 (6.0)	197.1 (7.76)	174.62 (6.875)	6	Pairs	70.10	(2.760)	5/16-18
165 (6.5)	219.1 (8.63)	203.20 (8.000)	6	Pairs	50.80	(2.000)	5/16-18
165 (6.5)	228.6 (9.00)	186.33 (7.336)	6	Pairs	70.10	(2.760)	5/16-18
215 (8.5)	266.7 (10.50)	244.46 (9.625)	6	Pairs	50.80	(2.000)	5/16-18
230 (9.0)	279.4 (11.00)	263.52 (10.375)	6	Pairs	72.64	(2.860)	5/16-18
230 (9.0)	288.3 (11.35)	268.00 (10.551)	6	Equal	—	—	5/16-18
255 (10.0)	304.8 (12.00)	288.92 (11.375)	6	Pairs	79.63	(3.135)	5/16-18
255 (10.0)	314.3 (12.38)	295.28 (11.625)	6	Equal	—	—	3/8 -16
280 (11.0)	330.2 (13.00)	314.32 (12.375)	6	Pairs	86.61	(3.410)	3/8 -16 [2]
280 (11.0)	340.0 (13.43)	320.68 (12.625)	6	Equal	—	—	3/8 -16
305 (12.0)	373.1 (14.69)	342.90 (13.500)	6	Pairs	88.75	(3.494)	3/8-16
330 (13.0)	390.5 (15.38)	358.78 (14.125)	12	Equal	—	—	3/8 -16
330 (13.0)	390.5 (15.38)	371.48 (14.625)	12	Equal	—	—	3/8 -16
355 (14.0)	417.8 (16.45)	393.70 (15.500)	12	Equal	—	—	3/8 -16
355 (14.0)	414.7 (16.32)	386.08 (15.200)	12	Equal	—	—	3/8 -16

The first flywheel listed in any size is the preferred design for that size. Subsequent listings for the size are also in use.

1. Most flat-type clutches are piloted by the mounting bolts and do not use a piloting diameter. Dimension given is the minimum diameter required for clutch clearance.
2. 5/16-18 is also used.

TABLE 3—CLUTCH MOUNTING DIMENSIONS OF POT-TYPE FLYWHEELS mm (in)

Nominal Clutch Size	F	H [1]	J	Tapped Holes	Tapped Holes	Tapped Holes		Tapped Holes
				No.	Spacing	N		Size
225 (10)	269.88 (10.625)	288.92 (11.375)	30.15 (1.187) [2]	6	Pairs	50.80	(2.000)	5/16-18
255 (10)	269.88 (10.625)	284.15 (11.187)	30.15 (1.187)	6	Equal	—	—	5/16-18
280 (11)	298.45 (11.750)	315.90 (12.437)	36.58 (1.440)	6	Equal	—	—	3/8-16
280 (11)	303.23 (11.938)	323.85 (12.750)	34.11 (1.343)	3	Equal	—	—	5/16-18
305 (12)	330.20 (13.000)	355.60 (14.000)	35.81 (1.410)	6	Equal	—	—	1/2 -13
355 (14)	374.65 (14.750)	393.70 (15.500)	30.23 (1.190)	12	Equal	—	—	3/8-16
355 (14)	374.65 (14.750)	393.70 (15.500)	51.82 (2.040)	12	Equal	—	—	3/8-16
380 (15)	403.22 (15.875)	422.28 (16.625)	44.45 (1.750)	12	Equal	—	—	3/8-16

Flat-type flywheels are generally preferred over pot-type flywheels.

1. Diameter tolerance of clutch pilot bore is +0.08 mm (0.003 in) –0.00.
2. Also available with 37.59 (1.480) pot depth.

5. Notes

5.1 Marginal Indicia—The change bar (l) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE CLUTCH, FLYWHEEL, AND HOUSING STANDARDS COMMITTEE