



SURFACE VEHICLE STANDARD

SAE

J617 MAY2012

Issued 1916-03
Stabilized 2012-05

Superseding J617 MAY1992

Engine Flywheel Housing and Mating Transmission Housing Flanges

RATIONALE

The technical report covers technology, products, or processes which are mature and not likely to change in the foreseeable future.

STABILIZED NOTICE

This document has been declared "Stabilized" by the SAE IC Powertrain Steering Committee and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

SAENORM.COM : Click to view the full PDF of J617-201205

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2012 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
http://www.sae.org

SAE WEB ADDRESS:

**SAE values your input. To provide feedback
on this Technical Report, please visit
http://www.sae.org/technical/standards/J617_201205**

Foreword—This Document has also changed to comply with the new SAE Technical Standards Board format.

1. **Scope**—This SAE Standard specifies the major dimensions and tolerances for Engine Flywheel Housings and the Mating Transmission Housing Flanges. It also locates the crankshaft flange face or the transmission pilot bore (or pilot bearing bore) stop face in relation to housing SAE flange face.

This document is not intended to cover the design of the flywheel housing face mating with the engine crankcase rear face or the design of housing walls and ribs. Housing strength analysis and the selection of housing materials are also excluded.

This document applies to any internal combustion engine which can utilize SAE No. 6 through SAE No. 00 size flywheel housing for mounting a transmission.

- 1.1 **Purpose**—This document is intended to achieve standardization in the design of "Engine Flywheel Housings" and the "Mating Transmission Housing" flanges to assure compatibility.

2. References

- 2.1 **Applicable Publications**—The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply.

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

- SAE J542—Starting Motor Mounting (For Starter Mounting Pads on Flywheel Housing and Ring Gear Face Location on Flywheels)
- SAE J543—Starting Motor Pinions and Ring Gears (For Starting Motor Mounting Center Distance)
- SAE J615—Engine Mountings (Side Pad and Arm Type)
- SAE J616—Engine Foot Mountings
- SAE J621—Industrial Power Takeoffs with Driving Ring-Type Overcenter Clutches
- SAE J1033—Procedure for Measuring Bore and Face Runout of Flywheels, Flywheel Housings, and Flywheel Housing Adapter
- SAE J1172—Engine Flywheel Housing with Sealed Flanges

2.1.2 ANSI AND ISO PUBLICATIONS—Available from ANSI, 11 West 42nd Street, New York, NY 10036-8002.

ANSI B1.1—Unified Inch Screw Threads (UN and UNR Thread Form)

ANSI Y14.5—Dimensioning and Tolerancing

ISO 7648—Flywheel housings for reciprocating internal combustion engines

ISO 7649—Road vehicles—Clutch housings for reciprocating internal combustion engines

3. **Dimensions and Tolerances**—Dimensions and tolerances shown are millimeter (inch). Geometric symbols used conform to ANSI Y14.5.

4. **Engine Flywheel Housings**—Figures and tables listed as follows furnish the dimensions and the hole patterns for dry type engine flywheel housing:

Figure 1—Flywheel Housing Dimension and Hole Pattern (for 8, 12, 16, and 24 bolt hole patterns).

Figure 2—Flywheel Housing Flange Dimensions

Figure 3—Depth of Pilot Bore (Dimensions E)

Table 1 and 2—Flywheel Housing Dimension

For dimensions of "Engine Flywheels Housing with Sealed Flanges" (wet type housing), see SAE J1172.

When designing the "Engine Flywheel Housing," refer to SAE J542, SAE J543, SAE J615, SAE J616, SAE J1033, SAE J1172, ISO 7648, and ISO 7649.

5. **Mating Transmission Housing Flanges**—Only the "SAE" flange area of the mating dry type transmission housing is covered by this document.

The nominal male pilot diameter of the mating transmission housing flange shall be the same as the nominal diameter "A" of the flywheel housing, Figure 1.

For mating transmission housing flange dimensions, tolerances, hole sizes, and runout requirements, see Figure 4 and Table 1, Table 2, and Table 3.

SAENORM.COM : Click to view the full PDF of J617_201205

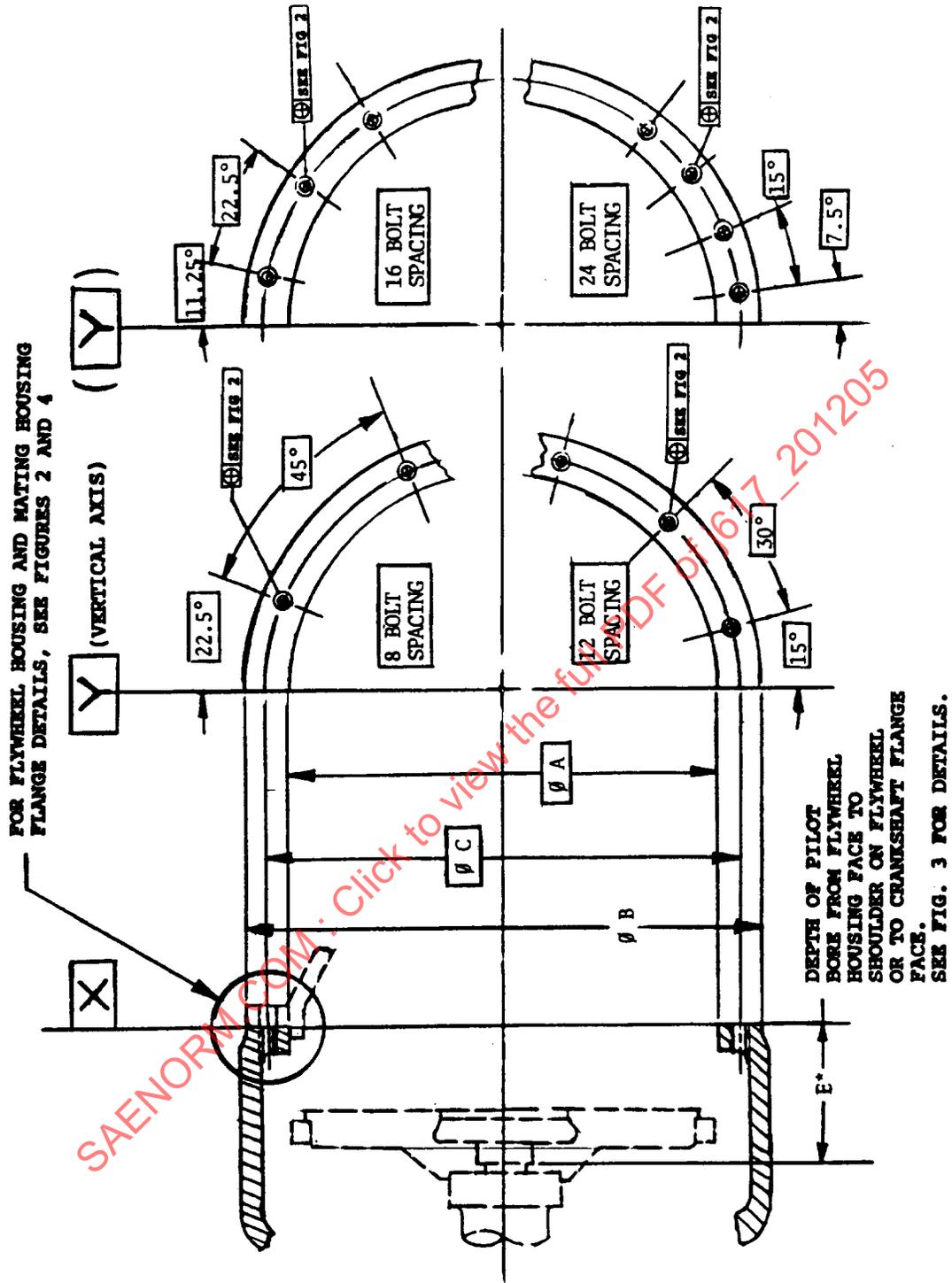
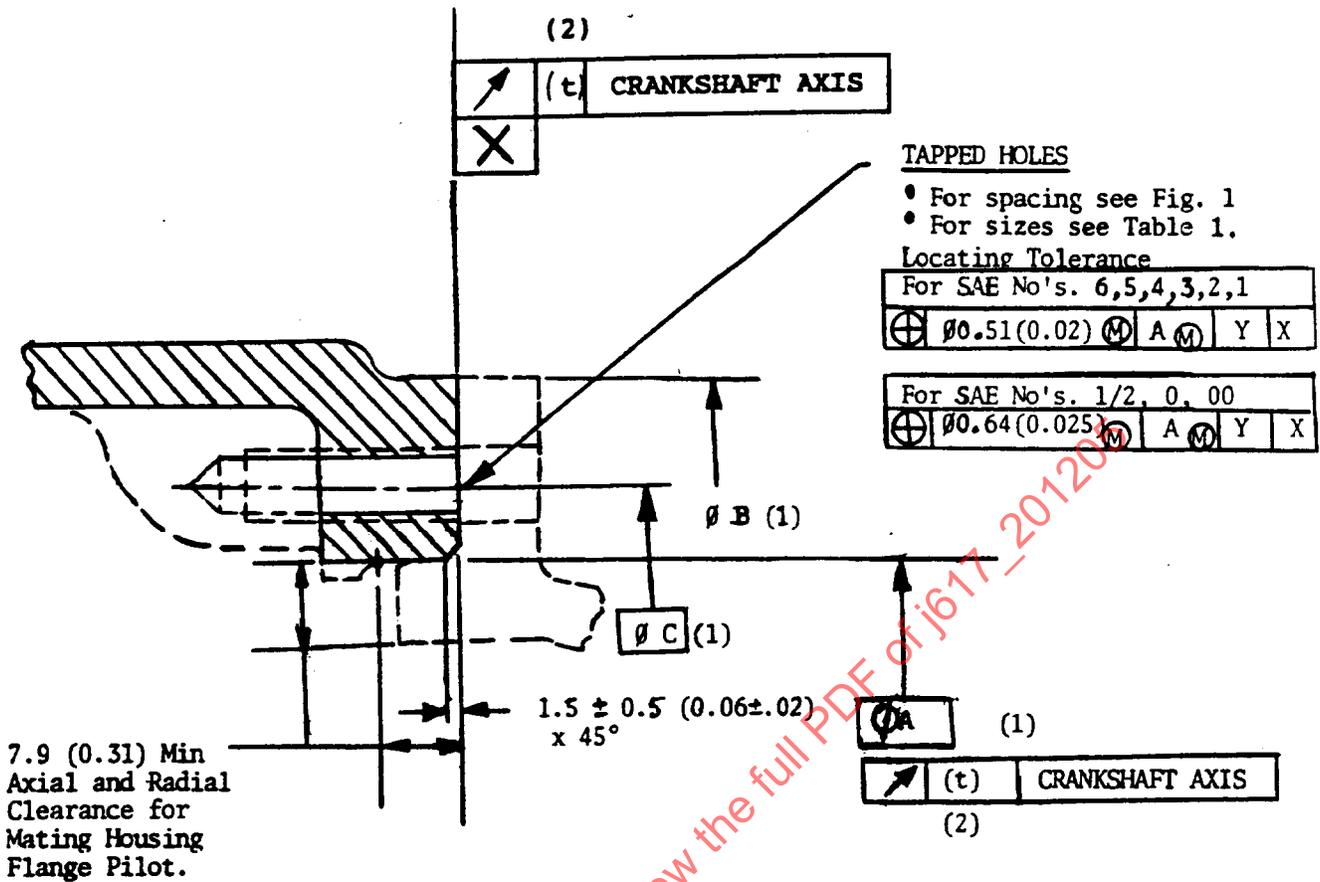
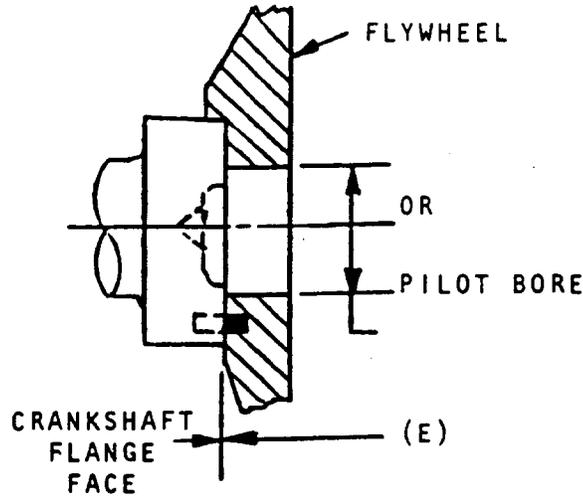


FIGURE 1—FLYWHEEL HOUSING DIMENSIONS AND HOLE PATTERN, mm (in)

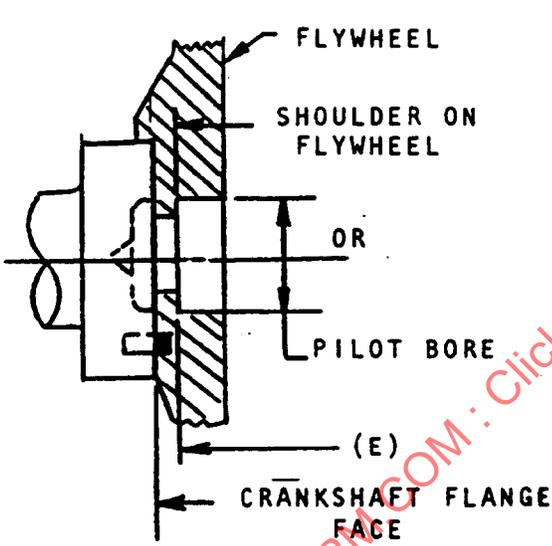


NOTES: 1. For A, B, and C Diameter Values See Table 1.
 2. For (t) Runout Tolerance Values See Table 1.

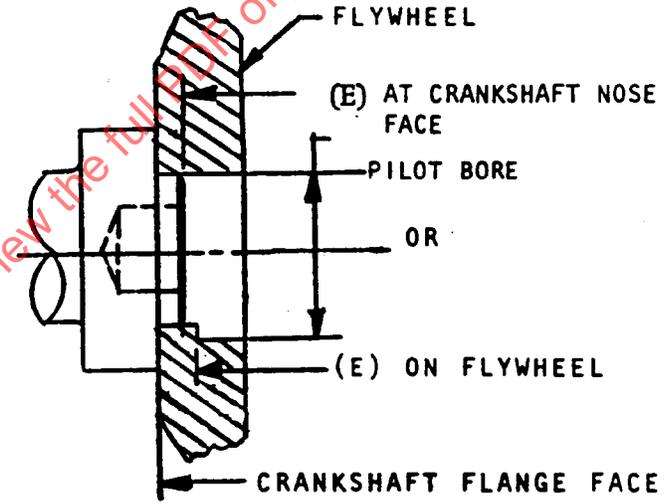
FIGURE 2—FLYWHEEL HOUSING FLANGE DIMENSIONS, mm (in)



¹ 3A—When Pilot Bore Stop Face is Located at Crankshaft Flange Face



¹ 3B—When Pilot Bore Shoulder is located on the Flywheel



¹ 3C—When Pilot Bore Stop Face is Located at Crankshaft Nose Face or on the Flywheel

NOTES—¹ Figures 3A and 3B are for Flywheels Piloted From Crankshaft Flange Outside Diameter (Upper Half) or Piloted Using Dowel Pins (Lower Half)

² Figure 3C is for Flywheels Piloted From Crankshaft Nose

FIGURE 3—DEPTH OF PILOT BORE (DIMENSION "E"—REFERENCE FIGURE 1) FOR VARIOUS CRANKSHAFT—FLYWHEEL MOUNTING SYSTEMS

TABLE 1—FLYWHEEL HOUSING DIMENSIONS, MM (IN)—FIGURE 1 AND FIGURE 2

SAE No. ⁽¹⁾	A (Pilot Dia) Nominal Dimension	A (Pilot Dia) Tolerance −0.000 FIM	Pilot Bore "A" and Face "X" Runout Tolerance (t) ⁽²⁾	B	C (Bolt Circle)
6	266.70 (10.500)	+0.13 (0.005)	0.18 (0.007)	307.8 (12.12)	285.75 (11.250)
5	314.32 (12.375)	+0.13 (0.005)	0.20 (0.008)	355.6 (14.00)	333.38 (13.125)
4	361.95 (14.250)	+0.13 (0.005)	0.23 (0.009)	403.4 (15.88)	381.00 (15.000)
3	409.58 (16.125)	+0.13 (0.005)	0.25 (0.010)	450.8 (17.75)	428.62 (16.875)
2	447.68 (17.625)	+0.13 (0.005)	0.28 (0.011)	489.0 (19.25)	466.72 (18.375)
1	511.18 (20.125)	+0.20 (0.008)	0.30 (0.012)	552.4 (21.75)	530.22 (20.875)
1/2	584.2 (23.000)	+0.20 (0.008)	0.36 (0.014)	647.7 (25.50)	619.12 (24.375)
0	647.70 (25.500)	+0.25 (0.010)	0.41 (0.016)	711.2 (28.00)	679.45 (26.750)
00	784.4 (31.000)	+0.25 (0.010)	0.48 (0.019)	882.6 (34.75)	850.90 (33.50)

1. For differentiating housings using metric tapped holes, add ("M") designation to the housing size: Example: SAE 2M indicating SAE 2 flywheel housing with metric tapped holes.
2. Figures shown for bore and face runout are full indicator readings (FIM). Runout to be measured on assembled engine mounted on its supports and held in its normal operating position. For measuring procedure see SAE J1033.

SAENORM.COM : Click to view the full PDF of J617-201205