



Test Monitoring Center

203 Armstrong Drive, Freeport, PA 16229, USA

www.astmtmc.org
412-365-1000

Sequence X Information Letter 22-1
Sequence Number 6
April 21, 2022

TO: Sequence X Surveillance Panel
SUBJECT: Updates to Test Method D 8279

As a result of recent conference calls and an electronic ballot, the Sequence X Surveillance Panel agreed to the following changes to Test Method D8279:

1. The panel agreed to remove duplicate items in section 6.8.2 and move its content to section 8.21.5.2, description of driveline components and new section 8.21.5.3 has been added to include a suitable driveshaft supplier for this application
2. The panel agreed to remove sections 8.24.3.2 and 8.24.3.3 which contained conflicting and redundant information regarding MAP measurement device.
3. The panel also agreed to revise section 8.22.1.1 to remove the specification for intake air humidity as it is detailed in Table 2. In addition, the panel agreed to add requirements to conduct humidity calibrations prior to a reference test and added a procedure defining how to calibrate the humidity measurement system. New sections 8.22.2.3 and 8.22.2.4 have been added to include the procedure for conducting humidity calibrations.
4. The panel agreed to consolidate the schematic and details of the blowby flow and measurement system into one figure and updated the current figure 2 to include the details contained in other descriptive figures. A new figure 2 has been included and Figures 3, 4 and annex A9.10 have all been deleted. Sections 8.26.1 and 8.26.1.1 have been updated to remove figures 3 and 4 respectively. Section 10.5.1.2 has also been updated to remove reference to figure 3.
5. The panel agreed to only use a sharp-edged orifice for blowby measurements. Sections 8.26.1, 8.26.1.1, 8.26.2 and 8.26.2.2 have been updated to remove the J-Tec meter.
6. Finally, the panel agreed to include requirements to calibrate speed, blowby flowrate and load measurement devices prior to a reference test. Section 9.6 has been added to delineate calibration of speed and load devices prior to a reference test.

The revised text has been highlighted in red and blue and is included in the attached. These changes are effective with the issuance of this letter.

/s/ M. D. Deegan

Michael Deegan
FCSD, Service Product Development, SEO
Ford Motor Company

Frank M Farber

Frank M. Farber
Director
ASTM Test Monitoring Center

Attachment

[c:https://www.astmtmc.org/ftp/docs/gas/sequencex/procedure_and_ils/il22-1_x.pdf](https://www.astmtmc.org/ftp/docs/gas/sequencex/procedure_and_ils/il22-1_x.pdf)

Distribution: Email

Revises D8279-21 as modified by Information Letter 21-1

6.8.2 *Driveshaft*—Configure the driveshaft as per the specifications in 8.21.5.1. Grease the driveshaft every test. ~~The driveshaft specifications are as follows:~~

- (1) ~~Driveshaft angle degree: $1.5^{\circ} \pm 0.5^{\circ}$;~~
- (2) ~~Installed length from flange to flange: 450 mm to 790 mm;~~
- (3) ~~1410 series flanges; 1550 joints;~~
- (4) ~~Driveshaft stiffness: 0.1° to $0.3^{\circ}/136 \text{ N}\cdot\text{m}$ (100 ft·lbf).~~

6.8.2.1 P/M MSI 41/55S-22 from Machine Services Inc.⁸ (see ~~Table A5.7 and X1.33~~) has been found to be a suitable driveshaft.

8.21.5.1 General—Use 1410 series flanges and 1550 joints ~~grease the driveline before every test.~~

8.21.5.2 Driveline Specifications—These are as follows:

- (1) driveline angle: $1.5^{\circ} \pm 0.5^{\circ}$;
- (2) installed length from flange to flange: ~~$595 \text{ mm} \pm 13$~~ 450 mm to 790 mm;
- (3) pilot: 69.9 mm (2.75 in.);
- (4) bolt circle: 95.25 mm (3.7 in.);
- (5) stub and slip: 88.9 mm (3.50 in.) by 2.11 mm (0.083 in.);
- (6) Driveshaft stiffness: 0.1° to $0.3^{\circ}/136 \text{ N}\cdot\text{m}$ (100 ft·lbf).

8.21.5.3 P/N MSI-41/55S-22 from Machine Services Inc.⁸ (see Table A5.7 and X1.33) has been found to be a suitable driveshaft.

8.22.1.1 Ensure the supply system is capable of delivering 110 L/s of conditioned air, while maintaining the intake/air quantities detailed in Table 2. ~~Condition the intake air to $32^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$, 11.4 g/kg $\pm 0.8 \text{ g/kg}$ humidity, and pressurized to $0.05 \text{ kPa} \pm 0.02 \text{ kPa}$.~~ The test stand intake air duct system is not specified.

8.22.2.3 10.3.4.1 Calibrate the primary laboratory measurement system at each test stand every six months using a hygrometer with a minimum dew point accuracy of $\pm 0.55^{\circ}\text{C}$ at 16°C . The calibration consists of a series of paired humidity measurements comparing the laboratory system with the calibration hygrometer. The comparison period lasts from 20 min to 2 h with measurements taken at intervals of 1 min to 6 min, for a total of 20 paired measurements. The measurement interval shall be appropriate for the time constant of the humidity measurement instruments.

8.22.2.4 Verify that the flow rate is within the equipment manufacturer's specification and that the sample lines are non-hygroscopic. Correct dew point hygrometer measurements to standard conditions (101.12 kPa) using the appropriate equation. Compute the difference between each pair of readings and calculate the mean and standard deviation of the twenty-paired readings. The absolute value of the mean difference shall not exceed 1.43 g/kg , and the standard deviation shall not be greater than 0.714 g/kg . If these conditions are not met, investigate the cause, make repairs, and recalibrate.

~~**8.24.3.2** The MAP pressure measurement system shall indicate within 0.1 kPa of the laboratory calibration standard.~~

~~**8.24.3.3** All other pressure measurement systems shall conform to the guidelines in ASTM Research Report.³⁹~~

8.24.3.24 The calibration standard shall be traceable to NIST.³⁷

8.26.1 Measure the blowby flowrate using either the blowby cart apparatus shown in Fig. 2 ~~or the J-TEC flowmeter setup shown in Fig. 3~~ (the blowby procedures are given in 10.5.2).

8.26.1.1 Details of the crankcase ventilation system are shown in Fig. 4.2. The critical dimensions are detailed below

8.26.2 The measurement system routes the blowby into the atmosphere through an external, sharp-edged orifice. ~~in the case of the cart apparatus or through a J-TEC flowmeter VF563AA.42,7~~

8.26.2.2 Mount the orifice plate ~~or the J-TEC flowmeter~~ in a vertical position.

9.6 Calibrate the speed, load and blowby flow measurement devices prior to conducting a reference oil test.

10.5.1.2 The installation of the blowby flowrate measurement apparatus is described in Figs. 2 ~~and 3~~.

10.5.2 ~~Blowby~~ *Cart Measurement Procedure:*

~~10.5.3 J-TEC Flowmeter Procedure:~~

~~10.5.3.1 General—This procedure assumes that the JTEC flowmeter is hard plumbed into the blowby system (see Fig. 3):~~

~~10.5.3.2 Position the 3-way valve to divert the blowby gas from the engine PCV valve to the J-TEC flowmeter. This can be done manually or automatically.~~

~~10.5.3.3 Allow 1 min for the flow to stabilize before recording blowby flowrate.~~

~~10.5.3.4 Measure and record blowby flowrate for a period to allow for an accurate average flowrate to be obtained. This can be up to the full 15-min measurement period.~~

~~10.5.3.5 After completing the measurements, position the 3-way valve to divert the blowby gas back to the engine PCV valve.~~

~~10.5.3.6 Calculate the average blowby flowrate and correct the value to standard conditions (38 °C, 100.3 kPa).~~

Delete Existing figures 3 and 4

Delete Footnote 42 and renumber exist footnote 43 as 42

Delete Fig A9.10 and renumber A9.11 through A9.30 as A9.10 through A9.29

New Figure 2

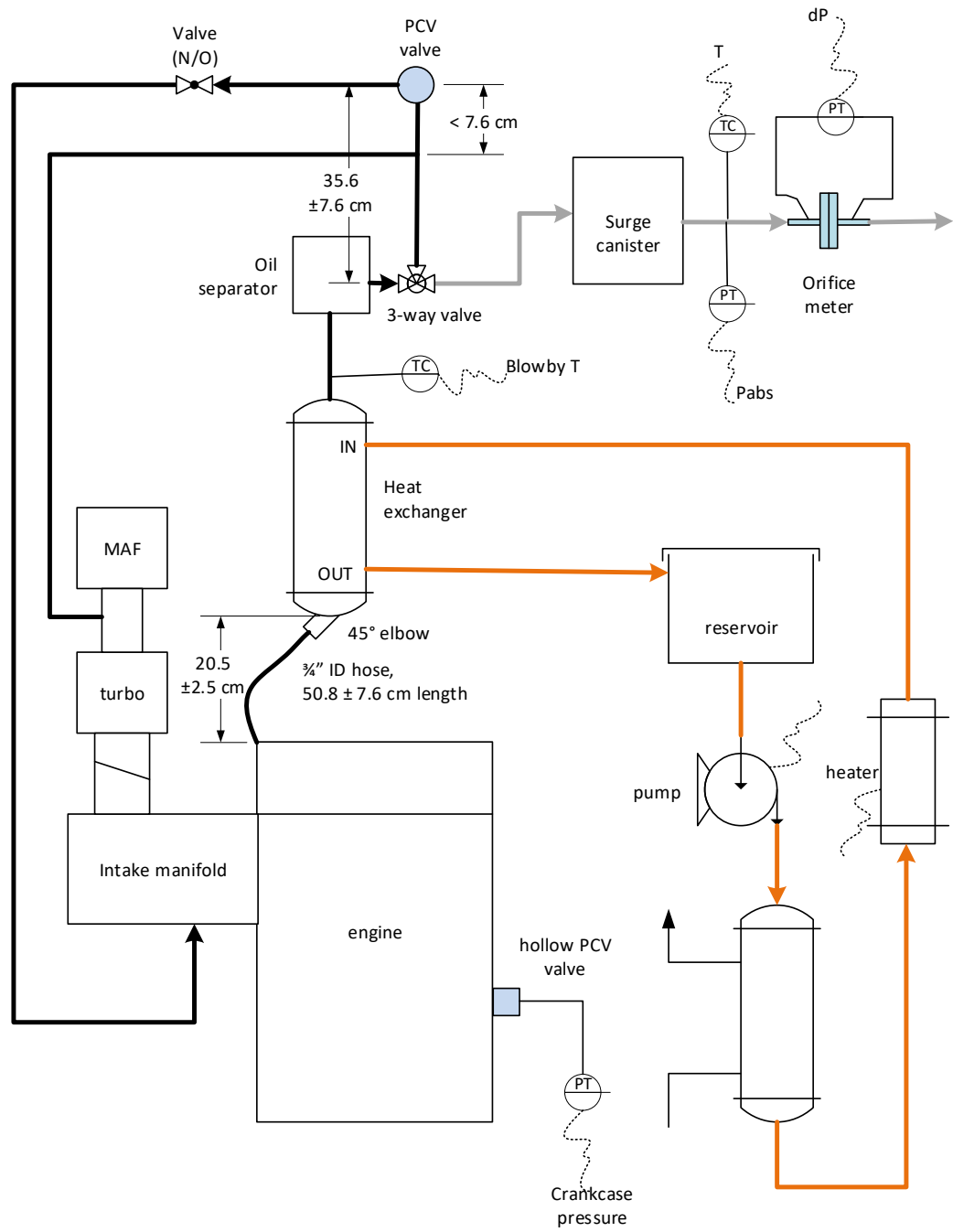


Figure 2 Blowby System Configuration and Measurement Routing.