

Engines with US Exhaust Emission Control, Model Year 1970/71

Type	Com- pression Ratio ε	Ignition Distributor BOSCH Order No.	Adjusting Value 5) of Ignition Distributor at 800 rpm with Vacuum after TDC	Test Data when Measuring 2) with Stroboscope at					Ignition Timing Vacuum Control toward
				Starting 4) Speed and Spark Plugs Installed	Engine Speed in rpm with No Load				
					1,500	3,000	4,500	4,500	
					Vacuum Control				
without	with	with	without	with					
280 S/8	9.0 : 1	0 231 142 003 0 231 142 004	4 ° 6)	6 ° BTDC	1–9 °	31–39 °	33–37 °	41–49 °	retard 6) 9–15° and advance 7–13°
280 SE/8 280 SEL/8 300 SEL/8	9.5 : 1	0 231 116 061 0 231 116 066	8 °	10 ° BTDC	0–5 °	25–30 °	—	—	retard 7) 17–23°
280 SL/8		0 231 116 062							
300 SEL/8 6.3	9.0 : 1	0 231 128 003 0 231 128 004	refer to n = 3000 rpm	2 ° ATDC	6–13 °	32 ° cyl. 1	—	—	none
				—		58° ± 2 ATDC cyl. 5	—	—	
280 SE/9 3.5 300 SEL/9 3.5	9.5 : 1	0 231 302 002 0 231 401 002	6 °	10 ° BTDC	TDC± 1°	30–38 °	—	—	retard 7) 12–18°

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280 SE/8	8.0 : 1	0 231 116 068	6 °	14 ° BTDC	3 ° ATDC- 1 ° BTDC	36–44 °	—	40–48 °	retard 7) 18–22°
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- 1) If fuel with an RON below 98 (min. 88 MON) is used for normally compressed engines and below 91 RON (min. 83 MON) for engines with low compression, adjust firing point toward "Retard" to adapt it to the octane rating of the fuel used. Suggested adjustment: retard firing point by approximately 1–2° crank angle per 1 RON. But do not retard firing point for more than max. 6° crank angle.

Caution! The retardation of the firing point is to be considered as an "emergency measure". Output loss and increased fuel consumption are the result. In addition, full load must not be imposed on the engine. **As soon as fuel with the prescribed octane rating is again available reset to full advance.** (This paragraph does not apply to US version vehicles.)

- 2) In the event of complaints concerning the combustion or ignition cycle check centrifugal adjustment at idling speed, at 1,500 and 3,000 rpm. On ignition distributors with vacuum control toward "Advance" measure total adjustment at 4,500 rpm without and with vacuum.
In addition, measure firing point **both on cylinder 1 and on cylinder 5** on 8-cylinder engines of type 600 and 300 SEL/8 6.3 with double contact breaker to determine the specified ignition spacing of 90° ± 2 between contact breaker 1 and 2. If the firing distance is beyond 88–92° it must be corrected.
At correct adjusting values and deviations from the control data named in the tables, correct pertinent deviation or take ignition distributor to the Bosch service for correction or replace.
- 3) On engines with vacuum retard control be sure to measure firing point also at idling speed with vacuum. The vacuum control (retard control) is effective only when the throttle valve rests against the idling speed stop.
- 4) The adjusting value **for installation of ignition distributor** with test lamp at breaker point disconnect is retarded by approximately 1–2° than the control value at starting speed with stroboscope lamp.
- 5) **On engines with US exhaust emission control, model year 1970 only the adjusting value at a speed of 800 rpm with vacuum control and no load is decisive for measuring the firing point – except for engines of types 300 SEL/8 6.3 and 600.** Be sure to complete an additional test on these engines at a speed of n = 4,500 rpm or for 8-cylinder engines at a speed of n = 3,000 rpm **without** vacuum control.
Note: Engines with exhaust emission control are identified by a reference plate (in English) on cylinder head cover or cross strut in front of radiator.
- 6) For additional jobs refer to Job No. 00–7, Ignition Timing, Section 1.
The carburetor engines of the US version 1970 are provided with electronically controlled throttle valve lift for deceleration and a changeover switch for vacuum control of ignition distributor. (For details refer to Job No. 00–72).
- 7) Injection engines of these types are provided with an electronic fuel cutout and a cutout switch for vacuum control of ignition distributor. (Refer to Job No. 00–74 to 00–80).