



Refer to Parts Microfiche Gr. 54 to identify control modules.

**Engine 104.942/992 starting 09/92 until 02/94, Engine 104.991 starting 06/93 until 02/94,  
Engine 104.994 starting 08/93 until 02/94, Engine 104.941 starting 02/93 until 02/94**

Engine	104.941/942	104.991/992/994
Models	124.028, 202.028	124.032/052/066/092 129.063 140.032/033
HFM-SFI system designation	3.4	3.4
<b>Closed throttle position (CTP), check, adjust</b> (07-2053 or 07-2056) <sup>9)</sup>		
Selector lever position .....	P/N	P/N
ECT .....	>80 °C approx.	>80
Engine speed .....	rpm 600 – 800	600 – 800
Ignition timing with premium unleaded fuel (91 posted/95 RON) .....	°CKA 6 – 10 <sup>1)</sup>	6 – 10 <sup>1)</sup>
On-off ratio .....	% 0±10 <sup>2)</sup>	0±10 <sup>2)</sup>
Closed throttle contact (accelerator pedal not depressed) .....	HHT display <b>ON</b>	<b>ON</b>

- 1) The ignition timing is also used for idle speed stabilization. In extreme cases the timing can briefly vary by ±10° from specification.
- 2) In case of complaint, on-off ratio must be measured at idle speed and at 2500 rpm with purge line to engine disconnected and plugged.
- 9) Time Guide operation no. and/or SMS job no.

**Engine 104.942/992 starting 09/92 until 02/94, Engine 104.991 starting 06/93 until 02/94,  
Engine 104.994 starting 08/93 until 02/94, Engine 104.941 starting 02/93 until 02/94**

Engine	104.941/942/943/944	104.991/992/994
Models	124.028 202.028	129.063 124.032/052/066/092 140.032/033
HFM-SFI system designation	3.4	3.4
<b>Engine, check, adjust</b> (07-1100) <sup>9)</sup>		
ECT	° C approx. >80	>80
Engine speed (selector lever in P/N position)	rpm 600 – 800	600 – 800
Injection duration	ms 2.5 – 3.8	2.5 – 3.8
Air mass	kg/h 16 – 18	16 – 18
O2S 1 voltage (oscillates around 300mV after 2 min.)	mV –200 to +1000	–200 to +1000
O2S 2 voltage (oscillates around 300mV after 2 min.)	mV –200 to +1000	–200 to +1000
On-off ratio	% 0±10 <sup>2)</sup>	0±10 <sup>2)</sup>
Self adaptation idle air	kg/h ±2 <sup>3)</sup>	±2 <sup>3)</sup>
Self adaptation idle air	% ±15 <sup>3)</sup>	±15 <sup>3)</sup>
Self adaptation factor lower/upper range of part load	0.85 – 1.15 <sup>4)</sup>	0.85 – 1.15 <sup>4)</sup>
Ignition timing with premium unleaded fuel (91 posted/95 RON)	°CKA 6 – 10 <sup>1)</sup>	6 – 10 <sup>1)</sup>
Throttle valve angle	° 1.0 – 1.8	1.0 – 1.8
AIR pump after start, maximum of 20 seconds	<40° C <b>ON</b>	<b>ON</b>
Resonance flap >4000 rpm	HHT display <b>ON</b>	<b>ON</b>
Resonance flap idle	HHT display <b>OFF</b>	<b>OFF</b>
CTP contact (accelerator pedal not depressed)	HHT display <b>ON</b>	<b>ON</b>
WOT contact (accelerator pedal in WOT)	HHT display <b>ON</b>	<b>ON</b>

- 1) The ignition timing is also used for idle speed stabilization. In extreme cases the timing can briefly vary by ±10° from specification.
- 2) In case of complaint, on-off ratio must be measured at idle speed and at 2500 rpm with purge line to engine disconnected and plugged.
- 3) Base setting idle, 0.0 kg/h (Bosch) or 0.0% (VDO), mixture tendency **rich** < 0.0 kg/h or 0.0%, mixture tendency **lean** > 0.0 kg/h or 0.0%.
- 4) Base setting part load = 1.0, mixture tendency **rich** <1.0 mixture tendency **lean** > 1.0.
- 9) Time Guide operation no. and/or SMS job no.

**Engine 104.942/992 starting 09/92 until 02/94, Engine 104.991 starting 06/93 until 02/94,  
 Engine 104.994 starting 08/93 until 02/94, Engine 104.941 starting 02/93 until 02/94**

Engine	104.941/942/943/944		104.991/992/994	
Models	124.028 202.028		124.032/052/066/092 129.063 140.032/033	
HFM-SFI system designation	3.4		3.4	
<b>Cold start</b>				
ECT ..... ° C approx.	5)		5)	
Engine rpm .....	5)		5)	
Starter signal circuit 50, during cranking ..... HHT display	<b>ON</b>		<b>ON</b>	
After start enrichment < 70° C maximum of 20 seconds ..... HHT display	<b>ON</b>		<b>ON</b>	
CTP contact ..... HHT display	<b>ON</b>		<b>ON</b>	
<b>Warmup</b>				
Transmission selector lever position .....	P/N	D	P/N	D
Warmup speed (raised idle speed) time dependent				
ECT <+20° C for approximately 20 seconds after start ..... rpm	1150±100		1150±100	
Warmup speed (raised idle speed) temperature dependent				
ECT <0° C ..... rpm	1000±50		1000±50	
ECT 0 – 30° C ..... rpm	950±50	850±50	950±50	850±50
ECT 30 – 40° C ..... rpm	750±50	650±50	750±50	650±50
ECT >40° C ..... rpm	700±50	600±50	700±50	600±50
Warmup ..... HHT display	<80° C <b>ON</b> >80° C <b>OFF</b>		<80° C <b>ON</b> >80° C <b>OFF</b>	
CTP contact (accelerator pedal not depressed) ..... HHT display	<b>ON</b>		<b>ON</b>	
AIR pump after >20 seconds ..... HHT display	<b>OFF</b>		<b>OFF</b>	
Selector lever ..... HHT display	<b>ON</b>		<b>ON</b>	
A/C compressor (not engaged) ..... HHT display	<b>OFF</b>		<b>OFF</b>	
IAT ..... ° C	>20		>20	

5) Temperature at which complaint occurs.

**Engine 104.942/992 starting 09/92 until 02/94,  
Model 124**

Engine	104.942	104.992
Models	124.028	124.032/052/066/092
HFM-SFI system designation	3.4	3.4
<b>Engine performance</b> <sup>6)</sup> (07-1203 or 07-1206) <sup>9)</sup>		
Engine speed . . . . .	rpm 5500	5500
Ignition timing with premium unleaded gasoline (91 posted/95 RON) . . . . .	°CKA 20 – 24	20 – 24
Injection duration . . . . .	ms 11 – 14	14 – 17
Air mass . . . . .	kg/h 520 – 580	580 – 620
WOT recognition . . . . .	HHT display <b>ON</b>	<b>ON</b>
Camshaft timing adjustment >2000 rpm . . . . .	HHT display <b>OFF</b>	<b>OFF</b>
Intake manifold resonance flap . . . . .	HHT display <b>ON</b>	<b>ON</b>
VSS . . . . .	mph (km/h) > 62 (100)	> 62 (100)
Deceleration shut-off >2100 rpm . . . . .	HHT display <b>ON</b>	<b>ON</b>
Output, 4-speed AT, TR 3 . . . . .	hp 141 <sup>7)</sup>	160

<sup>6)</sup> These are minimum performance values. Do not exceed speed of 80 mph. It is not possible to simulate coolant and intake air temperature as these are determined by the HFM-SFI system. Provide adequate cooling using external fan when checking wide open throttle performance.

<sup>7)</sup> As of 01/93, output at wide open throttle has been reduced by 4 hp.

<sup>9)</sup> Time Guide operation no. and/or SMS job no.

**Engine 104.941 starting 02/93 until 02/94  
Model 202**

Engine	104.941
Models	202.028
HFM-SFI system designation	3.4
<b>Engine performance</b> <sup>6)</sup> (07-1203 or 07-1206) <sup>9)</sup>	
Engine speed . . . . .	rpm 5400
Ignition timing with premium unleaded gasoline (91 posted/95 RON) . . . . .	°CKA 22 – 26
Injection duration . . . . .	ms 11 – 14
Air mass . . . . .	kg/h 520 – 580
WOT recognition . . . . .	HHT display <b>ON</b>
Camshaft timing adjustment >2000 rpm . . . . .	HHT display <b>OFF</b>
Intake manifold resonance flap . . . . .	HHT display <b>ON</b>
VSS . . . . .	mph (km/h) > 62 (100)
Deceleration shut-off >2100 rpm <sup>8)</sup> . . . . .	HHT display <b>ON</b>
Output, 4-speed AT, TR 3 . . . . .	hp 141

- <sup>6)</sup> These are minimum performance values. Do not exceed speed of 80 mph. It is not possible to simulate coolant and intake air temperature as these are determined by the HFM-SFI system. Provide adequate cooling using external fan when checking wide open throttle performance.
- <sup>8)</sup> On model 202, deceleration fuel shut off cannot be checked on a chassis dynamometer.
- <sup>9)</sup> Time Guide operation no. and/or SMS job no.

**Engine 104.991 starting 06/93 until 02/94,  
Model 129**

Engine	104.991
Models	129.063
HFM-SFI system designation	3.4
<b>Engine performance</b> <sup>6)</sup> (07-1203 or 07-1206) <sup>9)</sup>	
Engine speed . . . . .	rpm 5500
Ignition timing with premium unleaded gasoline (91 posted/95 RON) . . . . .	°CKA 20 – 24
Injection duration . . . . .	ms 14 – 17
Air mass . . . . .	kg/h 580 – 620
WOT recognition . . . . .	HHT display <b>ON</b>
Camshaft timing adjustment >2000 rpm . . . . .	HHT display <b>OFF</b>
Intake manifold resonance flap . . . . .	HHT display <b>ON</b>
VSS . . . . .	mph (km/h) > 62 (100)
Deceleration shut off >2100 rpm . . . . .	HHT display <b>ON</b>
Output, 5-speed AT, TR 3 . . . . .	hp 168

<sup>6)</sup> These are minimum performance values. Do not exceed speed of 80 mph. It is not possible to simulate coolant and intake air temperature as these are determined by the HFM-SFI system. Provide adequate cooling using external fan when check wide open throttle performance.

<sup>9)</sup> Time Guide operation no. and/or SMS job no.

**Engine 104.994 starting 08/93 until 02/94,  
Model 140**

Engine	104.994
Models	140.032
HFM-SFI system designation	3.4
<b>Engine performance</b> <sup>6)</sup> (07-1203 or 07-1206) <sup>9)</sup>	
Engine speed .....	rpm 5500
Ignition timing with premium unleaded gasoline (91 posted/95 RON) .....	°CKA 20 – 24
Injection duration .....	ms 14 – 17
Air mass .....	kg/h 580 – 620
WOT recognition .....	HHT display <b>ON</b>
Camshaft timing adjustment >2000 rpm .....	HHT display <b>OFF</b>
Intake manifold resonance flap .....	HHT display <b>ON</b>
VSS .....	mph (km/h) > 62 (100)
Deceleration shut off >2100 rpm .....	HHT display <b>ON</b>
Output, 5-speed AT, TR 3 .....	hp 165

<sup>6)</sup> These are minimum performance values. Do not exceed speed of 80 mph. It is not possible to simulate coolant and intake air temperature as these are determined by the HFM-SFI system. Provide adequate cooling using external fan when check wide open throttle performance.

<sup>9)</sup> Time Guide operation no. and/or SMS job no.

**Engine 104.942/992 starting 09/92 until 02/94, Engine 104.991 starting 06/93 until 02/94,  
 Engine 104.994 starting 08/93 until 02/94, Engine 104.941 starting 02/93 until 02/94**

Engine	104.941/942	104.991/992/994
Models	124.028, 202.028	124.032/052/066/092 129.063 140.032/033
HFM-SFI system designation	3.4	3.4
<b>On-off ratio</b>		
Engine speed at idle .....	rpm 600 – 800	600 – 800
Engine speed .....	rpm 3500	3500
On-off ratio at WOT and TR 3 .....	% 0 ± 10 constant	0 ± 10 constant
On-off ratio at upper partial load and TR “D”, 75 mph (120 km/h), 32 hp (24 kW) .....	% ±10 oscillates	±10 oscillates
On-off ratio at upper partial load and TR “D”, 31 mph (50 km/h), 9 hp (7 kW) .....	% ±10 oscillates	±10 oscillates
Exhaust gas back pressure .....	mbar < 600	< 700