

6-4.9.2. Spark Plug Maintenance

Procedure

1. Remove the ignition harness leads from all spark plugs.
2. Remove the top and bottom spark plug from each cylinder. Mark each plug's installed location during removal.

NOTE: Many spark plug manufacturer's offer erosion (go/no-go) gauges to determine spark plug serviceability. If the spark plug meets the "go" criteria, it may remain in use, if no performance issues are noted.

3. Inspect plug condition using Figure 6-32 as a guide to spark plug serviceability. Discard spark plugs that fail to meet the "normal electrode condition" characteristics depicted in Figure 6-32.
4. Remove and discard the copper gaskets from all reusable spark plugs.

WARNING

Do not install any spark plug that has dropped or exhibits physical damage.

5. If a new spark plug is required, select one from the list in Table 6-9.

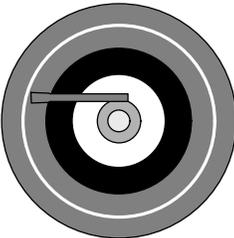
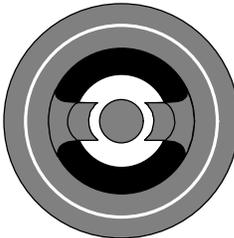
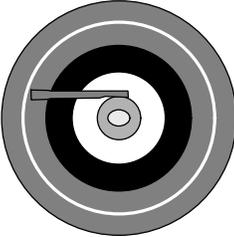
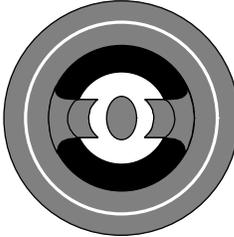
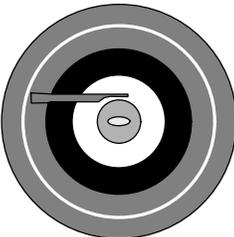
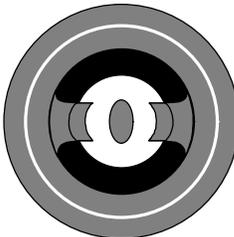
	FINE WIRE ELECTRODE	MASSIVE ELECTRODE
<p>NORMAL ELECTRODE CONDITION</p> <ul style="list-style-type: none"> •INSULATOR TIP GRAY, TAN OR LIGHT BROWN •FEW COMBUSTION DEPOSITS •ELECTRODES NOT BURNED OR ERODED •PROPER TYPE AND HEAT RANGE PLUG FOR ENGINE AND SERVICE. •SPARK PLUG SHOULD BE CLEANED, REGAPPED AND TESTED BEFORE REINSTALLTION 		
<p>NORMAL WORN-OUT CONDITION</p> <ul style="list-style-type: none"> •ELECTRODES ERODED BY HIGH VOLTAGE SPARKING AND BY CORROSIVE GASES FORMED DURING COMBUSTION TO LESS THAN 1/2 ORIGINAL THICKNESS •MORE VOLTAGE NEEDED TO FIRE SPARK PLUGS - OFTEN MORE THAN IGNITION SYSTEM CAN PRODUCE. •REPLACE WITH NEW APPROVED AVIATION SPARK PLUGS. 		
<p>SEVERE WORN-OUT CONDITION</p> <ul style="list-style-type: none"> •EXCESSIVELY ERODED CENTER AND GROUND ELECTRODES PLUS EXTENSIVE NECKING OF FINE WIRE GROUND ELECTRODES INDICATE ABNORMAL ENGINE POWER OR PLUGS LONG OVERDUE FOR REPLACEMENT. •DISCARD SPARK PLUGS AND CHECK HEAT RANGE BEFORE INSTALLING NEW ONES. •REPLACE WITH NEW APPROVED AVIATION SPARK PLUGS IN APPROPRIATE HEAT RANGE. 		

Figure 6-32. Spark Plug Inspection Criteria

6. Clean the spark plugs (new or re-used) according to the manufacturer's recommendations. Set the spark plug gap to the spark plug manufacturer's recommended setting for the spark plug part number. If the manufacturer's recommended spark plug gap cannot be located, use the gap specified in Table 6-9.

Table 6-9. Spark Plug Application Chart

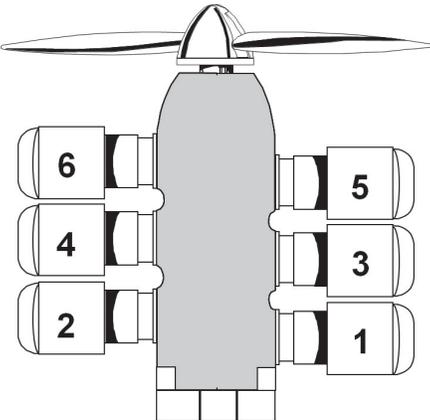
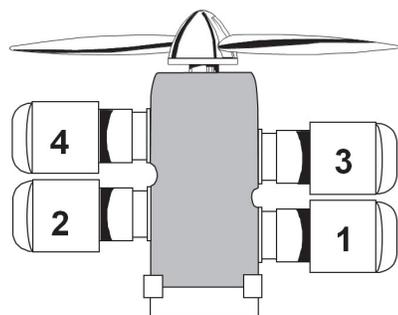
Engine Model	Electrode Gap (recommended)		Barrel Size/Reach ¹	Continental Part Number	Manufacturer Part Number	Tempest Aviation								Champion Aerospace												
						UREM37BY	UREM38E	UREM40E	URHM38E	URHM38EL	URHM38S	URHM40E	URHB32S	URHB32E	M41E	REM37BY	REM38E	REM38S	REM40E	RHM38E	RHM38S	RHM40E	RHB32E	RHB32S	RHB36S	RHU27E
A-40; A-50	X					X	X			X			X	X			X									
A-65; A-75	X					X	X			X	X			X	X			X	X							
A-80	X					X	X			X	X			X			X									
A-100													X													
C-75; C-85; C-90	X	X				X	X	X	X	X	X			X	X			X	X							
O-200-A,B,C,D,X	X	X				X	X	X	X	X	X			X	X			X	X							
C-115; C-125	X					X	X			X	X			X	X			X	X							
C-145; O-300-A,B,C,D						X	X	X	X	X	X			X	X			X	X							
GO-300-A,B,C,D,E,F	X	X				X	X	X	X	X	X			X	X			X	X							
IO-240-A,B						X		X						X				X								
IOF-240-B									X																	
IO-346-A						X	X	X	X	X				X	X			X	X	X	X					
IO-360-A,AB,C,CB,D,DB,ES,G,GB,H,HB,J,JB,K,KB						X		X	X					X	X			X	X							
IO-360-AF	X																									
L/TSIO-360-A,AB,B,BB,C,CB,D,DB,E,EB,F,FB,G,GB,H,HB,JB,KB,LB,MB,RB,SB						X		X	X					X	X			X	X							
E-165; E-185	X	X				X	X	X	X	X				X	X			X	X	X	X					
E-225	X	X				X	X	X	X	X				X	X			X	X							
O-470-2						X		X	X					X	X			X	X							

CAUTION: Failure to install a new spark plug gasket on each spark plug may result in incomplete sealing of the combustion chamber, loss of spark plug heat transfer, spark plug overheating, possible pre-ignition / detonation and internal engine damage

NOTE: For engines using spark plug thermocouples to report cylinder head temperature, copper gaskets are not required.

7. Install new copper gaskets on all spark plugs.
8. Refer to the spark plug rotation chart (Table 6-10); mark serviceable spark plugs with the respective “TO” cylinder number. For all remaining locations, replace with a new spark plug.

Table 6-10. Spark Plug Rotation Chart

																																													
Six Cylinder Spark Plug Rotation	Four Cylinder Spark Plug Rotation																																												
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9. Sparingly apply the spark plug manufacturer’s recommended thread lubricant to all except the first row of threads on the spark plug.
10. Thread each spark plug by hand into the engine cylinder head within one to two threads of the gasket. If the spark plug cannot be easily turned, clean the cylinder or spark plug threads.
11. Torque the spark plugs to 300-360 in. lbs. (ref: Appendix B) using a calibrated torque wrench and six-point deep well socket.