



A Textron Company

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SERVICE INSTRUCTION

DATE: May 8, 2009

Service Instruction No. 1042Z
(Supersedes Service Instruction No. 1042Y)
Engineering Aspects are
FAA Approved

SUBJECT: Approved Spark Plugs

This publication lists spark plugs that are approved and not approved by Lycoming for its piston aircraft engines. Lycoming advises that only those spark plugs listed as approved be used.



DO NOT DEPEND ON ENGINE MODEL DESIGNATION FOR SPARK PLUG APPLICATION. THE SAME ENGINE MODEL MAY USE SHORT OR LONG REACH SPARK PLUGS. ENGINES WITH LONG REACH SPARK PLUGS ARE IDENTIFIED BY YELLOW PAINT ON THE CYLINDER FINS BETWEEN THE SPARK PLUG HOLE AND THE ROCKER COVERS. ENGINES WITH SHORT REACH SPARK PLUGS HAVE NO IDENTIFYING COLOR. SEE LATEST REVISION OF SERVICE INSTRUCTION NO. 1181. THE REACH CAN ALSO BE DETERMINED BY MEASURING THE DEPTH OF THE THREADED INSERT. LONG REACH THREADED DEPTH IS APPROXIMATELY 5/8 IN., SHORT REACH THREADED DEPTH IS APPROXIMATELY 3/8 IN.

To use the charts on the following pages, first determine the spark plug reach and connector-wire size of your engine. The table below provides a quick reference for locating a chart that lists a specific spark plug reach/connector-wire configuration.

- CHART I, Page 2 – Short reach, 5/8-24 wire end
- CHART II, Page 3 – Short reach, 3/4-20 wire end
- CHART III, Page 3 – Long reach, 5/8-24 wire end
- CHART IV, Page 4 – Long reach, 3/4-20 wire end

The letter “A” indicates spark plugs approved for models shown. A dash (-) signifies that spark plugs are neither recommended nor approved by Lycoming for the model.

NOTE

Spark plug gage must be set at .016-.022 inch. Installation torque for all spark plugs is 420 inch-pounds (35 foot-pounds). Installation torque for 5/8-24 lead nuts is 80-90 inch-pounds and 110-120 inch-pounds for 3/4-20 lead nuts. Always use new gaskets (P/N STD-295) when reinstalling spark plugs.

Lycoming reserves the right to substitute an equivalent plug whenever the plug ordered is not available.

Unison Industries, Inc. has acquired Autolite aircraft spark plug line. This publication lists the new Unison part numbers.



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CHART I

| SHORT REACH 5/8-24 ENGINE MODEL | MASSIVE | | | | | | | | | FINE WIRE | | | |
|---|------------|------------|-------------|-----------|------|------|-------------|-------------|--------------|---------------|--------------|-------|-------------|
| | CHAMPION | | | SL AUBURN | | | UNISON | | | CHAM- PION | SL AUBURN | | UNISON |
| | REM 40E | REM 38E | REM 37BY | SR88 | SR87 | SR86 | UREM 40E | UREM 38E | UREM 37BY | REM38S | SR93 | SR93P | UREM 38S |
| O-235-C,-E,-H | A | A | A | A | A | - | A | A | A | A | A | A | A |
| O-235-N,-P | A | A | A | - | A | - | A | A | A | A | A | A | A |
| O-235-K,-L,-M | A | A | A | - | A | - | A | A | A | A | A | A | A |
| O-235-F,-G,-J | - | - | - | - | - | A | - | A | - | A | A | A | A |
| O-290 | A | A | A | A | A | - | A | - | A | A | A | A | A |
| O-320-A,-E | A | A | A | A | A | - | A | A | A | A | A | A | A |
| O-320-C | A | A | A | A | A | - | A | - | A | A | A | A | A |
| O-320-B,-D | A | A | A | - | A | A | A | A | A | A | A | A | A |
| O-320-H* | A | A | A | A | A | - | A | A | - | A | - | A | A |
| IO-320-A | A | A | A | A | A | - | A | - | A | A | A | A | A |
| IO-320-E | A | A | A | A | A | - | A | A | A | A | A | A | A |
| IO-320-B,-C,-D,-F | A | A | A | - | A | A | A | A | A | A | A | A | A |
| LIO-320-B | A | A | A | - | A | A | A | A | A | A | A | A | A |
| AEIO-320-A,-D | A | A | A | - | A | A | A | A | A | A | A | A | A |
| AEIO-320-E | A | A | A | A | A | - | A | A | A | A | A | A | A |
| *O-360-A,-C,-F,-J | A | A | A | - | A | A | A | A | A | A | A | A | A |
| O-360-B,-D | A | A | A | A | A | - | A | - | A | A | A | A | A |
| *IO-360-A,-C,-D,-J | - | A | A | - | A | A | A | A | A | A | A | A | A |
| *IO-360-B,-E,-F,-L,-M | A | A | A | - | A | A | A | A | A | A | A | A | A |
| HO-360-A,-B,-C | A | A | A | - | A | A | A | A | A | A | A | A | A |
| *LO-360-A | A | A | A | - | A | A | A | A | A | A | A | A | A |
| HIO-360-A,-B,-G | A | A | A | - | A | A | A | A | A | A | A | A | A |
| HIO-360-C,-D | - | A | - | - | A | A | - | A | - | A | A | A | A |
| LIO-360-C | - | A | A | - | A | A | A | A | A | A | A | A | A |
| LIO-360-M | A | A | A | - | A | A | A | A | A | A | A | A | A |
| LHIO-360-C | - | A | - | - | A | A | - | A | - | A | A | A | A |
| AIO-360-A,-B | - | A | A | - | A | A | A | A | A | A | A | A | A |
| *AEIO-360-A | - | A | A | - | A | A | A | A | A | A | A | A | A |
| AEIO-360-B,-H | A | A | A | - | A | A | A | A | A | A | A | A | A |
| VO-360-A,-B | A | A | A | - | A | A | A | A | A | A | A | A | A |
| *GO-435-C | A | A | - | - | A | A | A | A | - | A | A | A | A |
| VO-435-A | A | A | - | - | A | A | A | A | - | A | A | A | A |
| *GO-480-B,-D,-F | A | A | - | - | A | A | A | A | - | A | A | A | A |
| GSO-480-A,-B | A | A | - | - | A | A | A | A | - | A | A | A | A |
| IGSO-480 | A | A | - | - | A | A | A | A | - | A | A | A | A |
| *O-540-A | A | A | - | A | A | A | A | A | - | A | A | A | A |
| *O-540-B | A | A | - | A | A | - | A | A | - | A | A | A | A |
| *O-540-E,-F,-G,-H | A | A | - | - | A | A | A | A | - | A | A | A | A |
| O-540-J | A | A | - | - | A | - | A | A | - | A | - | A | A |
| *IO-540-A,-B,-E,-G, -K,-L,-AB,-AE | - | A | - | - | A | A | A | A | - | A | A | A | A |
| *IO-540-C | A | A | - | A | A | A | A | A | - | A | A | A | A |
| *IO-540,-J | A | A | - | A | A | A | A | - | - | A | A | A | A |
| *IO-540-D,-N,-T | A | A | - | - | A | A | A | A | - | A | A | A | A |
| IO-540-R | - | A | - | - | A | A | - | A | - | - | - | - | - |
| *IO-540-V | A | A | - | - | A | A | A | A | - | A | - | A | A |
| IO-540-W | - | A | - | - | A | A | A | A | - | - | - | - | - |

* - May also have 3/4-20 wire end.

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CHART I (CONT.)

| SHORT REACH 5/8-24 | MASSIVE | | | | | | | | | FINE WIRE | | | |
|-----------------------|------------|------------|-------------|-----------|------|------|-------------|-------------|--------------|---------------|--------------|-------|-------------|
| | CHAMPION | | | SL AUBURN | | | UNISON | | | CHAM- PION | SL AUBURN | | UNISON |
| | REM 40E | REM 38E | REM 37BY | SR88 | SR87 | SR86 | UREM 40E | UREM 38E | UREM 37BY | REM38S | SR93 | SR93P | UREM 38S |
| AEIO-540-D | A | A | - | - | A | A | A | A | - | A | A | A | A |
| *AEIO-540-L | - | A | - | - | A | A | A | A | - | A | A | A | A |
| VO-540-C2A | - | A | - | - | A | - | - | A | - | - | - | - | A |
| IO-580; AEIO-580 | - | A | - | - | - | - | - | A | - | - | - | - | - |

* - May also have 3/4-20 wire end.

CHART II

| SHORT REACH 3/4-20 | MASSIVE | | | | | | | FINE WIRE | | | | |
|--------------------------|------------|------------|-----------|-------|-------|-------------|-------------|---------------|-----------|--------|-------------|---|
| | CHAMPION | | SL AUBURN | | | UNISON | | CHAM- PION | SL AUBURN | | UNISON | |
| | RHM 40E | RHM 38E | HSR88 | HSR87 | HSR86 | URHM 40E | URHM 38E | RHM38S | HSR93 | HSR83P | URHM 38S | |
| O-320-H | A | A | - | A | A | A | A | A | A | A | A | A |
| *O-360-A,-F | A | A | - | A | A | A | A | A | A | A | A | A |
| O-360-E | A | A | - | A | A | A | A | A | A | A | A | A |
| *IO-360-A,-J | - | A | - | - | A | - | A | A | A | A | A | A |
| *IO-360-B | A | A | - | A | A | A | A | A | A | A | A | A |
| *LO-360-A | A | A | - | A | A | A | A | A | A | A | A | A |
| LO-360-E | A | A | - | A | A | A | A | A | A | A | A | A |
| LIO-360-A | - | A | - | - | A | - | A | A | A | A | A | A |
| *AEIO-360-A | - | A | - | - | A | - | A | A | A | A | A | A |
| *GO-435-C | A | A | - | A | A | A | A | A | A | A | A | A |
| *GO-480-B,-D,-F | A | A | - | A | A | A | A | A | A | A | A | A |
| *O-540-B | A | - | A | A | - | A | - | A | A | A | A | A |
| *O-540-E,-G,-H,-J | A | A | - | A | A | A | A | A | A | A | A | A |
| *IO-540-A,-B,-G-K,-L,-AE | - | A | - | A | A | A | A | A | | A | A | A |
| IO-540-AF | - | A | - | - | - | - | A | - | - | - | - | - |
| *IO-540-C,-N,-T,-V,-W | A | A | - | A | A | A | A | A | A | A | A | A |
| *AEIO-540-L | - | A | - | A | A | A | A | A | A | A | A | A |
| IO-720-A,-B,-C,-D | - | A | - | - | A | - | A | A | A | A | A | A |

* - May also have 5/8-24 wire end.

CHART III

| LONG REACH 5/8-24 | MASSIVE | | | | FINE WIRE |
|---------------------------|----------|--------|-----------|---------|-----------|
| | CHAMPION | | SL AUBURN | UNISON | SL AUBURN |
| | REB37E | REB32E | 171 | UREB37E | 181 |
| IO-320-C1A,-C1B,-F1A | A | - | A | A | A |
| LIO-320-C1A | A | - | A | A | A |
| *IO-360-A1B6,-C1A,-C1F | A | - | A | A | A |
| IO-360-F1A | A | - | A | A | A |
| IO-390-A | A | - | A | A | - |
| *IO-540-E,-J,-K,-P,-R,-AE | A | A | A | A | A |
| IO-540-M | A | - | A | A | - |
| *IO-540-R | A | A | A | A | A |
| *AEIO-540-L | A | A | A | A | A |
| *TIO-540-C1A,-E,-H | A | A | A | A | A |
| *IO-580; AEIO-580 | A | - | A | A | - |

* - May also have 3/4-20 wire end.

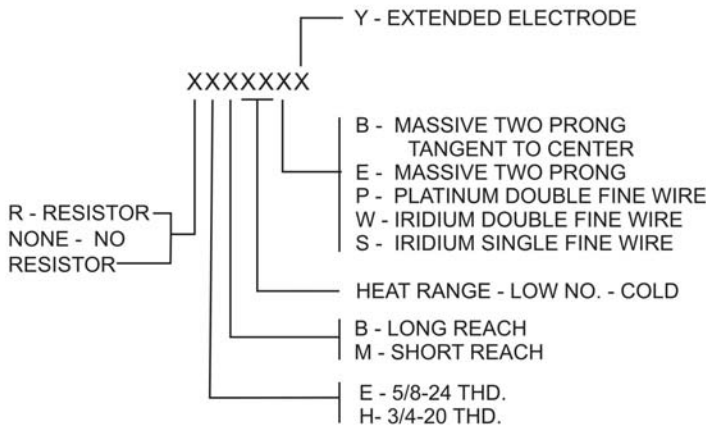
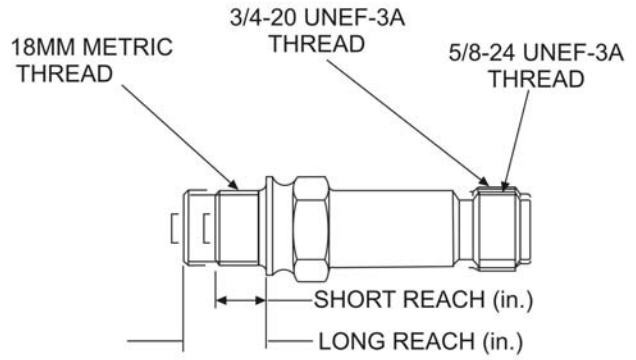
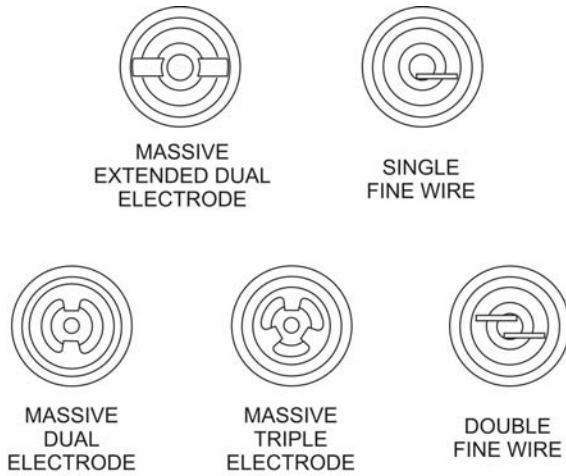
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CHART IV

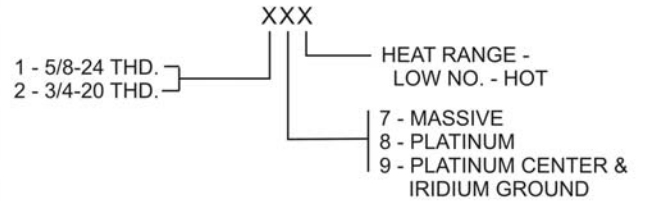
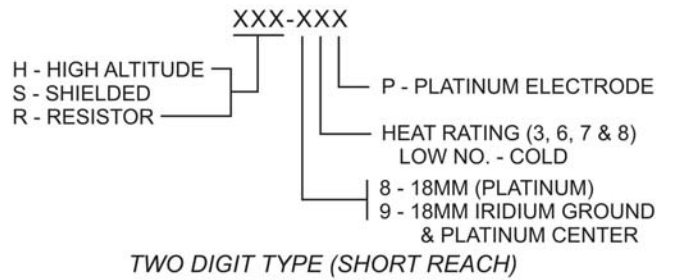
| LONG REACH 3/4-20 ENGINE MODEL | MASSIVE | | | | | | FINE WIRE | | | | | | |
|--|------------|------------|-----------|-----|-------------|-------------|------------|------------|-----------|-----|-----|-------------|-------------|
| | CHAMPION | | SL AUBURN | | UNISON | | CHAMPION | | SL AUBURN | | | UNISON | |
| | RHB 37E | RHB 32E | 271 | 273 | URHB 37E | URHB 32E | RHB 36S | RHB 32S | 281 | 291 | 283 | URHB 32S | URHB 36S |
| *IO-360-A,-C | A | A | A | A | A | A | A | A | A | A | A | - | A |
| IYO-360 | A | - | A | A | A | - | A | - | A | A | - | A | A |
| HIO-360-E,-F | A | A | - | A | A | A | - | A | - | - | A | A | A |
| LHIO-360-F | A | A | - | A | A | A | - | A | - | - | A | A | A |
| TO-360-C,-F | A | A | - | A | A | A | A | A | A | A | A | A | A |
| TO-360-E | A | A | A | A | A | - | A | - | A | A | - | A | A |
| LTO-360-E | A | A | A | A | A | - | A | - | A | A | - | A | A |
| *TIO-360-A | A | A | - | A | A | A | A | A | A | A | A | - | A |
| TIO-360-C | A | A | - | A | A | A | A | A | A | A | A | A | A |
| TVO-435-A,-B,-C,-D,-E,-G | A | A | A | A | A | A | A | A | A | A | A | A | A |
| TVO-435-F | A | A | A | A | A | - | A | A | A | A | A | A | A |
| VO-435-A,-B | A | A | A | A | A | - | A | A | A | A | A | A | A |
| GO-480-G1,-G2 | A | A | - | A | A | - | A | A | A | A | A | A | A |
| IGO-480-A | A | A | - | A | A | - | A | A | A | A | A | A | A |
| GSO-480 | A | A | - | A | A | - | A | A | A | A | A | - | A |
| IGSO-480 | A | A | - | A | A | - | A | A | A | A | A | - | A |
| O-540-9 | A | - | A | A | A | - | A | A | A | A | A | - | A |
| O-540-L | A | A | A | A | A | - | A | A | A | A | A | - | A |
| *IO-540-E,-G, K,-M,-P,-S | A | A | A | A | A | A | A | A | A | A | A | A | A |
| *IO-540-J,-R | A | A | A | A | A | - | A | A | A | A | A | A | A |
| *IO-540-AA,-AC | A | A | - | A | A | A | A | A | A | A | A | A | A |
| IGO-540-A,-B | A | A | A | A | A | A | A | A | A | A | A | A | A |
| IGSO-540-A,-B | A | A | - | A | A | A | A | A | A | A | A | A | A |
| IYO-540-A | A | - | A | A | A | - | A | A | A | A | A | - | A |
| AEIO-540-L | A | A | A | A | A | A | A | A | A | A | A | A | A |
| TIO-540-A | A | A | - | A | A | A | A | A | A | A | A | A | A |
| *TIO-540-C,-K,-W,-AA,-AB,-AF,-AG,-AH,-AJ,-AK | A | A | A | A | A | - | A | A | A | A | A | A | A |
| *TIO-540-E | A | A | A | A | A | A | A | A | A | A | A | A | A |
| TIO,LTIO-540-F | A | A | - | A | A | A | A | A | A | A | A | A | A |
| TIO-540-G,-AE | A | A | - | A | A | - | A | A | A | A | A | A | A |
| *TIO-540-H | A | A | A | A | A | A | A | A | A | A | A | A | A |
| TIO,LTIO-540-J,-N,-R | A | A | - | A | A | A | A | A | A | A | A | A | A |
| TIO-540-S | A | A | A | A | A | A | A | A | A | A | A | A | A |
| TIO-540-T | A | A | - | A | A | A | A | A | A | A | A | A | A |
| TIO,LTIO-540-U,-V | A | A | - | A | A | A | A | A | A | A | A | A | A |
| TIVO-540-A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| VO-540-A,-B,-C | A | - | A | A | A | - | A | A | A | A | A | - | A |
| TIO-541-A,-E | A | A | - | A | A | A | A | A | A | A | A | - | A |
| TIGO-541-E | A | A | - | A | A | A | A | A | A | A | A | - | A |
| *IO-580; AEIO-580 | A | - | A | A | A | - | A | - | A | - | - | A | - |
| IO-720-A,-B,-D | A | A | - | A | A | A | A | A | A | A | A | A | A |

* - May also have 5/8-24 wire end.

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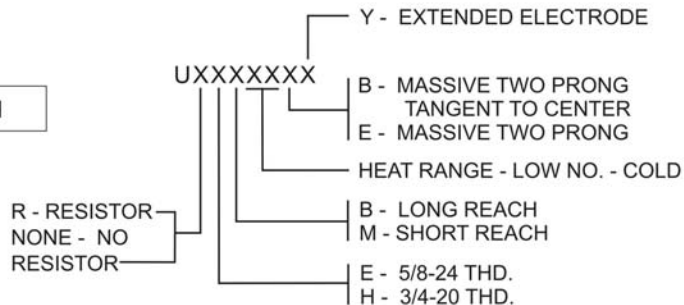
CHAMPION PART NO. DESIGNATION



SL AUBURN PART NO. DESIGNATION

NOTE: SL AUBURN "SPITFIRE" DESIGNATES MASSIVE DUAL ELECTRODE AND "CLASSIC" DESIGNATES MASSIVE TRIPLE ELECTRODE

UNISON PART NO. DESIGNATION



NOTE: Revision "Z" adds engine models, and adds spark plug models at top of page 3.

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