

# O.S. ENGINE

The First Choice for Quality, Dependability and Performance.



# 2-Stroke Airplane Engines

## LA & LA-S Series

**Easy to run, maintain — and afford.**

LA engines for R/C applications offer the tuning finesse of a dual-needle carb. Designed for control-line use, LA-S engines deliver consistent, all-out power.

### All include:

- Reinforced 1-piece crankcase
- Squared heat sink head and crankcase fins
- High-speed needle with ratchet spring and O-ring seal
- Bronze bushings
- Glow plug
- Flat prop washer and long crankshaft thread
- Vibration-resistant nylon backplate (metal backplate bracket on OSMG0065 and OSMG1446 allows fuel inlet to be positioned horizontally or vertically)



25LA

## AX, FX & RX Series

**"X"-tra power for sport and competition.**

"X" Series engines offer a displacement from the 25FX for small planes to the pumped 140RX-P for F3A competitors. The AX engines offer FX performance in a more compact design, making them ideal upgrades for airplanes with cramped cowls.

### All include:

- Side exhaust design
- Extra-long, balanced crankshaft with generous thread
- Dual bearings, with an enlarged front bearing
- Cooling fins extending from the top of the head to the top of the one-piece crankcase (on most engines)
- Remote high-speed needle valve with O-ring seal, ratchet springs and horizontal or vertical mounting options (on most engines)



140RX-P



91FX



55AX

| Description            | Construction | Practical RPM  | Output (hp @ rpm) | Weight w/o Muffler (oz/g) | Muffler | Carb    | Break-in Prop | Stock Number |
|------------------------|--------------|----------------|-------------------|---------------------------|---------|---------|---------------|--------------|
| 10LA                   | ABN          | 2,500 – 18,000 | 0.27 @ 17,000     | 3.9/112                   | 871     | 10H     | 7x4           | OSMG0011+    |
| 15CV-A                 | ABN          | 2,500 – 19,000 | 0.5 @ 18,000      | 6.0/170                   | 871     | 10K     | 7x5-6         | OSMG0715+    |
| 15LA                   | ABN          | 2,500 – 18,000 | 0.41 @ 17,000     | 4.9/138                   | 871     | 10G     | 8x4           | OSMG0016+    |
| 25LA                   | ABN          | 2,000 – 16,000 | 0.6 @ 15,000      | 6.9/197                   | E-3020  | 20H     | 9x5           | OSMG0026+    |
| 25LA-S                 | ABN          | 2,000 – 16,000 | 0.6 @ 16,000      | 6.5/186                   | E-2030  | venturi | 11x6          | OSMG1426+    |
| 25FX                   | ABL          | 2,500 – 19,000 | 0.84 @ 18,000     | 8.7/248                   | 892     | 20D     | 9x6           | OSMG0525+    |
| 30 Rotary 49-P1 Wankel | —            | 2,500 – 18,000 | 1.1 @ 17,000      | 14.9/421                  | RE-2010 | 21G     | 10x5          | OSMG1401+    |
| 35AX                   | ABL          | 2,500 – 17,000 | 1.3 @ 16,000      | 9.8/280                   | E-3080  | 21K     | 10x6          | OSMG0545+    |
| 46LA                   | ABN          | 2,000 – 16,000 | 1.2 @ 15,000      | 9.6/272                   | E-3030  | 40D     | 11x6          | OSMG0047+    |
| 46LA-S                 | ABN          | 2,000 – 16,000 | 1.2 @ 15,000      | 9.3/264                   | E-3030  | venturi | 11x6          | OSMG1447+    |
| 46AX                   | ABL          | 2,000 – 17,000 | 1.7 @ 16,000      | 13.2/375                  | E-3070  | 40G     | 10x6          | OSMG0547+    |

Legend: ABC = Aluminum, Brass and Chrome; ABL = Advanced Bimetallic Liner; ABN = Aluminum, Brass and Nickel; DF = Ducted Fan; P = Pump; RE = Rear Exhaust; Ring = Ringed Piston; + = Covered by O.S. 2-year limited warranty



Many "X" Series engines — and VG/12TG engines found on pp. 8-9 — feature layered ABL (Advanced Bimetallic Liner) technology. The top layer offers extra protection against wear, while the bottom forms an unbreakable bond between the top and the brass sleeve below. Both are exclusive O.S.-developed alloys!

# 2-Stroke Airplane Engines

## Ducted Fan Jet

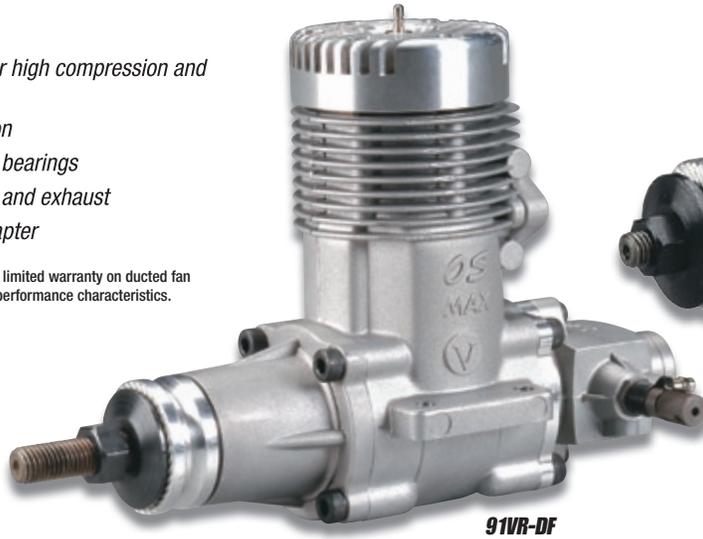
### O.S. power for the jet set.

For pilots of medium-sized jets, the 46VX-DF makes optimal use of crankcase webbing to minimize distortion. A high-performance carburetor adds dependable fuel metering. For larger applications, choose the 91VR-DF. Both are ideal for tractor- and pusher-style applications and will fit most popular ducted fan units. Glow plug, tuned pipe and fan unit are required.

### All include:

- ABC construction for high compression and superior output
- Drum valve induction
- Two crankshaft ball bearings
- Rear-mounted carb and exhaust
- Bolt-on exhaust adapter

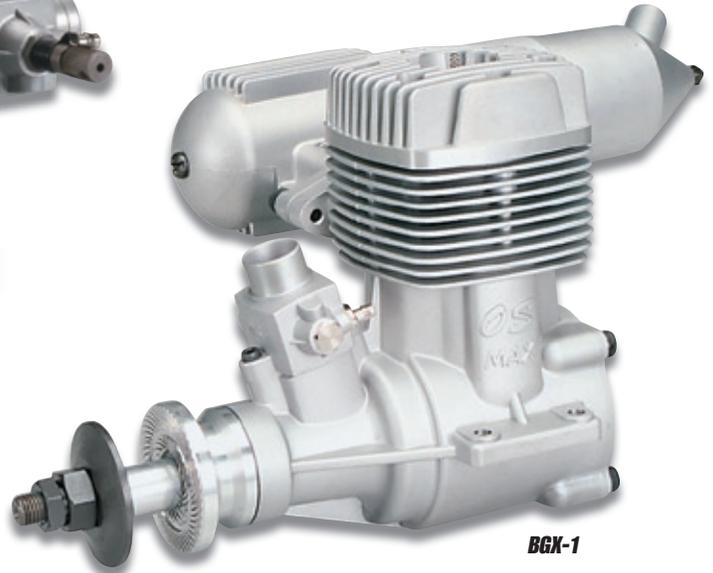
Note: O.S. does not offer a 2-year limited warranty on ducted fan engines due to their high-speed performance characteristics.



91VR-DF



46VX-DF



BGX-1

## Specialty

### Exceptional engines for extraordinary applications.

Check out this powerhouse trio for proof of O.S. Engines' versatility. Small combat and racing models move like lightning with the 15CV-A installed. The unique 49-PI Wankel uses the rotary design's inherent smoothness to provide a quiet, virtually vibration-free option in mid-size muscle. Like living large? The high-output BGX-1 3500 offers 35cc's of better-than-gasoline brute performance — with glow engine ease!

| Description | Construction | Practical RPM  | Output (hp @ rpm) | Weight w/o Muffler (oz/g) | Muffler | Carb   | Break-in Prop | Stock Number |
|-------------|--------------|----------------|-------------------|---------------------------|---------|--------|---------------|--------------|
| 46VX-DF RE  | ABC          | 2,500 – 28,000 | 2.5 @ 23,000      | 16.6/470                  | —       | 40A    | —             | OSMG1847     |
| 55AX        | ABL          | 2,000 – 17,000 | 1.7 @ 16,000      | 15.3/404                  | E-3070  | 40J    | 12x8          | OSMG0556+    |
| 61FX        | ABL          | 2,000 – 17,000 | 1.9 @ 16,000      | 19.4/550                  | E-4010  | 60C    | 11x7          | OSMG0561+    |
| 65LA        | ABN          | 2,000 – 16,000 | 1.7 @ 16,000      | 18.9/535                  | E-4010  | 60J    | 12x6          | OSMG0066+    |
| 75AX        | ABL          | 2,000 – 16,000 | 2.4 @ 15,000      | 20.4/578                  | E-4040  | 61A    | 13x8          | OSMG0575+    |
| 91FX        | Ring         | 2,000 – 16,000 | 2.8 @ 15,000      | 19.4/550                  | E-4020  | 60F    | 16x14         | OSMG0591+    |
| 91VR-DF RE  | ABN          | 2,500 – 25,000 | 4.8 @ 22,000      | 23.4/662                  | —       | 9B     | —             | OSMG1891     |
| 120AX       | Ring         | 1,800 – 9,500  | 3.1 @ 9,000       | 22.8/647                  | E-5020  | 70D    | 15x10         | OSMG0650+    |
| 120AX       | Ring         | 1,800 – 9,500  | 3.1 @ 9,000       | 22.8/647                  | —       | 70D    | 15x10         | OSMG0651+    |
| 140RX-P     | Ring         | 1,800 – 10,000 | 3.5 @ 9,000       | 29.3/830                  | —       | 70A    | 15x14         | OSMG0678+    |
| 160FX       | Ring         | 1,800 – 10,000 | 3.7 @ 9,000       | 32.6/925                  | E-5010  | 60F    | 17x10         | OSMG0660+    |
| 160FX       | Ring         | 1,800 – 10,000 | 3.7 @ 9,000       | 32.6/925                  | —       | 60F    | 17x10         | OSMG0661+    |
| BGX-1       | Ring         | 1,500 – 10,000 | 4.1 @ 10,000      | 47.3/1,340                | E-5010  | 8AA-RN | 18x8          | OSMG0352+    |

Legend: ABC = Aluminum, Brass and Chrome; ABL = Advanced Bimetallic Liner; ABN = Aluminum, Brass and Nickel; DF = Ducted Fan; P = Pump; RE = Rear Exhaust; Ring = Ringed Piston; + = Covered by O.S. 2-year limited warranty

# Heli Engines

## Making the best even better: an O.S. Tradition.

Some pilots thought no engine could ever replace the 91SZ-H. But O.S. engineers did. They believe that the success of one engine is the perfect time to start designing its successor. And that's why top U.S. pilots flying the 91HZ proclaim it the smoothest and most powerful O.S. 91 ever.

However, moving heli engine design ahead doesn't mean that you leave the past behind. It means that you carry the best of the past into the present, to make tomorrow's engines better than ever.

### All engines include:

- Durable ringed construction
- Dual ball bearings
- Screwdriver-adjustable carbs and push-pull throttle arms
- Squared, heat-sink heads and crankcase cooling fins
- Bolt-through muffler mounts
- Lightened pistons and conrods
- Optimized crankshafts improve balance and reduce vibration
- Glow plug and 2-year limited warranty
- All require: header and muffler or tuned pipe



Innovative 91HZ design uses exhaust gases to tighten the seal between the piston ring and liner, which reduces blow-by and sends more power to the crank!



91HZ-PS 3D

### 91HZ & 91HZ-PS

- Narrowed heat sink head fits completely inside most shrouds without cutting or compromising cooling power
- Carb Insulating ring and O-ring seals prevent air leaks and power fluctuations
- Optimized intake and exhaust timing
- The 91HZ excels in F3C events
- The pumped 91HZ-PS ensures consistency and superior 3D performance
- Both include machined-in crankcase heat sink, lightened piston and factory-balanced crankshaft. 91HZ also includes in-flight adjustment arm



37SZ-H

### 37SZ-H

- The easy-installing upgrade for .30 helis
- Mounts in a .30-size space, but delivers more 16% power and smoother operation throughout the rpm range

### 50SX-H Hyper

- The "stump puller" that delivers 1.9 hp of extreme power from a .30-size footprint
- Big bore (10 mm) 60LH carb and Hyper (High Performance) combustion chamber combine for over-the-top power

### 70SZ-H

- Offers the compact size of a .60
- Extra lugs along the crankcase offer more support, less stress and greater stability during extreme maneuvers

| Description  | Construction | Practical RPM  | Output (hp @ rpm) | Weight w/o Muffler (oz/g) | Carb  | Stock Number |
|--------------|--------------|----------------|-------------------|---------------------------|-------|--------------|
| 37SZ-H       | Ring         | 2,000 - 21,000 | 1.4 @ 18,000      | 10.3/293                  | 20M   | OSMG1945+    |
| 50SX-H Hyper | Ring         | 2,000 - 20,000 | 1.9 @ 17,000      | 14.3/406                  | 60LH  | OSMG1951+    |
| 70SX-H       | Ring         | 2,000 - 18,000 | 2.5 @ 16,000      | 19.5/554                  | 60K   | OSMG1972+    |
| 91HZ         | Ring         | 2,000 - 16,000 | 3.4 @ 15,000      | 21.8/618                  | 61B   | OSMG1975+    |
| 91HZ-PS      | Ring         | 2,500 - 25,000 | 3.4 @ 15,000      | 22.3/635                  | 61B-P | OSMG1976+    |
| 91RZ-H       | Ring         | 2,000 - 16,000 | 3.3 @ 15,000      | 21.8/618                  | 60-MC | OSMG1978+    |
| 91RZ-H DH    | Ring         | 2,000 - 16,000 | 3.3 @ 15,000      | 22.0/623                  | 60-MC | OSMG1979+    |

Legend: DH = Die-Cast Head; H/-H = Heli; -PS = Pumped; Ring = Ringed Piston; Z = High-Performance; + = Covered by O.S. 2-year limited warranty

### ROTARY CARB KEY

| Description   | Model                  |
|---------------|------------------------|
| Single-needle | 20M, 60LH              |
| Triple-needle | 60K, 60MC, 61B & 61B-P |



# Marine Engines

## Leave the competition in your wake!

To excel in the world of nitro boat racing, you need an engine with equal parts power AND endurance. O.S. Marine engines deliver on both counts, with dual bearings and compact, water-cooled heads. All (except the 21XM) require mount, header and muffler or tuned pipe.

### 18CVR-MX

- A great upgrade for many ready-to-run nitro boats
- 11% more power than most .15s, yet mounts in the same space
- 3-port liner
- Sealed front bearings and larger, thicker rear bearings
- Double-bushed aluminum conrod
- Adjustable 6.5 mm bore 11J rotary carb
- Included glow plug



Russ Williamson, winner of the .21 Sport Divis the 2008 World Outboard Tunnel Hull Championships, is shown with his AquaCraft™ Top Speed™ Tunnel Hull. It's powered by an O.S. 21XM Outboard engine and controlled by a Futaba® 2.4GHz FASST™ radio system.

### 46VX-M

- A long-time favorite for scale and sport boats
- One-piece crankcase
- Rear rotor intake
- Includes 40A carb
- Requires glow plug, flywheel, joint, mount, header and muffler or tuned pipe



18CVR-MX



46VX-M

### 21XM Outboard

- The hottest outboard available
- Flex-shaft drive with built-in lubrication system for the bearings
- Carbon prop
- Built-in, detachable muffler
- Integral mount with adjustable prop angle
- Includes steering bracket, starter cone and glow plug



21XM Outboard



21VZ-M

| Description   | Construction | Practical RPM  | Output (hp @ rpm) | Weight w/o Muffler (oz/g) | Muffler | Carb | Exhaust Type | Stock Number |
|---------------|--------------|----------------|-------------------|---------------------------|---------|------|--------------|--------------|
| 18CV-R-MX     | ABC          | 3,000 – 32,000 | 1.4 @ 28,000      | 8.2/233                   | —       | 11J  | SE           | OSMG1611+    |
| 21VZ-M T      | ABC          | 3,000 – 40,000 | 2.5 @ 33,000      | 12.0/340                  | —       | 21D  | RE           | OSMG1627+    |
| 21XM Outboard | ABN          | 3,000 – 25,000 | 1.3 @ 25,000      | 23.6/670                  | E-2050  | 20J  | RE           | OSMG1721     |
| 46VX-M        | ABC          | 2,500 – 28,000 | 2.5 @ 23,000      | 15.7/445                  | —       | 40A  | FE           | OSMG1647     |

Legend: ABC = Aluminum, Brass and Chrome; ABN = Aluminum, Brass and Nickel; FE = Front Exhaust; -M = Marine; R = Racing Version; RE = Rear Exhaust; SE = Side Exhaust; T = Turbo Head; X = Recoil Started; + = Covered by the O.S. 2-year limited warranty.

# 4-Stroke Engines

## “Sound” investments in superior air power

With an O.S. 4-stroke, performance isn't just something you see; it's a sound you *hear*. It's deeper, richer and more realistic, created by engines engineered for perfection. Each engine is produced by today's most advanced CNC machinery, to today's most demanding over 70 years of engineering innovations. It's an invitation to swing larger, more aggressive props and to climb harder, longer and stronger than you ever have before. Add in the best 4-stroke fuel economy in the industry, and O.S. 4-strokes stack up as the perfect choice for sport power and scale masterpieces.

**All engines include the O.S. F glow plug — the world's best for 4-strokes!**

### All 4-strokes feature:

- Rugged, ringed piston construction
- Corrosion-resistant plating on the piston, camshaft and crankshaft
- Stainless steel camshaft bearings
- Dual bearing-supported camshafts and crankshafts
- Camshaft with helical gears
- Die-cast header(s)
- Muffler (except for multi-cylinders)
- Prop locknut
- 2-year limited warranty
- F glow plug and Woodruff key



FS-200S-P

### FS-a Series: Enhancing Surpass™ Science...

O.S. engineers designed FS-a engines to work performance magic. They put bigger displacements on Surpass-size footprints, to offer added power with no-mod installation ease. The FS81-a features the same mounting bolt pattern as the FS-70SII, but gives you 20% more power to work with. And with a 110FS-a in the nose, spectacular 3D performance is a reality. But they also transformed vented engine oil into lubrication for moving parts, eliminating crankcase vents, oily cowls and clean-up work at the same time. And by extending venturi length, they not only reduced blowback, but improved fuel/air mixing and economy. For engines that offer more power — get an O.S. FS-a.

- Precision-machined, bar stock piston, crankshaft, camshaft, conrod and rocker arms
- Durable, heat-treated parts
- Stronger wrist pin, conrod and valve assembly designs to minimize wear and extend life.
- Dual bearings, factory-set valves and idle for shorter setup and break-in
- Reversible carb and narrower camshaft for installation ease
- Compact mufflers can be moved in or out and rotated 360°, for more in-cowl options with fewer mods
- Tighter tolerances and ratchet springs help hold settings longer
- O-ring seals on carbs eliminate fuel/air leaks



110FS-a

### Surpass Series: Performance Classics

With the introduction of the FS-60 in 1976, O.S. offered the world the first production 4-stroke it had ever seen. Engines such as the FS-26S helped set the first 4-stroke performance standards — a tradition the FS-200S-P continues today. It mounts in the same space as the FS-120S-P, but delivers 43% more power. And like other pumped versions (-P in chart), it offers unparalleled performance consistency and a pressure regulator for creating pressurized fuel systems.



FS-40S

# 4-Stroke Engines

## Multi-Cylinders: Reality Shows

When authentic appearance is as important as powerful performance, there's one name that really stands out: O.S. The mastery of detail, manufacturing and metallurgy is impressive and evident in every engine in the line. There's a pair of compact flat twins and an impressive flat quad. There's an authentic 5-cylinder radial that looks like it was taken from a WWI aircraft and a vertical, in-line four that would look at home in turn-of-the-century flying machine.

### Multi-Cylinders feature:

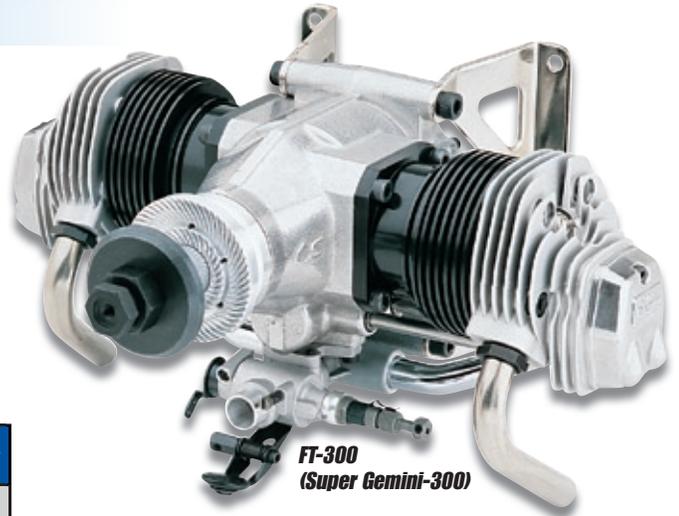
- Overhead pushrod valves
- Gear-driven camshaft

### Accessory package with:

- Remote starting cables
- Engine mount & hardware
- Choke valve extension rod
- Valve gauge/tool set (see below)

| Description   | Construction | Practical RPM  | Output (hp @ rpm) | Weight w/o Muffler (oz/g) | Muffler | Carb    | Stock Number |
|---------------|--------------|----------------|-------------------|---------------------------|---------|---------|--------------|
| FS-30S        | Ring         | 2,500 – 13,000 | 0.5 @ 10,000      | 9.8 / 279                 | F-2010  | 20N     | OSMG0830+    |
| FS-40S        | Ring         | 2,200 – 12,000 | 0.65 @ 12,000     | 12.5 / 355                | FS-40S  | FS-40S  | OSMG0845+    |
| 56FS-a        | Ring         | 2,400 – 13,000 | 1.0 @ 10,000      | 14.8 / 419                | F-4040  | 40NA    | OSMG0956+    |
| 72FS-a        | Ring         | 2,400 – 12,500 | 1.2 @ 11,000      | 16.8 / 476                | F-5030  | 61N     | OSMG0877+    |
| 81FS-a        | Ring         | 2,200 – 12,000 | 1.3 @ 11,000      | 19.6 / 556                | F-5030  | 60RA    | OSMG0981+    |
| FS-91S II-P   | Ring         | 2,000 – 12,000 | 1.6 @ 11,000      | 22.9 / 650                | F-4020  | 60N     | OSMG0890+    |
| FS-91S II     | Ring         | 2,000 – 12,000 | 1.6 @ 11,000      | 22.6 / 640                | F-4020  | 60P     | OSMG0896+    |
| 110FS-a       | Ring         | 2,000 – 11,000 | 1.8 @ 10,000      | 21.2 / 600                | F-5040  | 60Y     | OSMG0990+    |
| FS-120S-E     | Ring         | 2,000 – 11,000 | 1.9 @ 11,000      | 30.5 / 864                | F-5020  | FS-120  | OSMG0930+    |
| FS-120 III-P  | Ring         | 2,000 – 12,000 | 2.1 @ 12,000      | 28.8 / 815                | F-5020  | 70N     | OSMG0935+    |
| FT-160        | Ring         | 2,000 – 10,000 | —                 | 38.8 / 1,100              | —       | 120/160 | OSMG1160+    |
| FS-200S       | Ring         | 1,800 – 10,000 | 2.9 @ 9,000       | 30.1 / 853                | F-6010  | 80N     | OSMG0980+    |
| FS-200S-P     | Ring         | 1,800 – 10,000 | 3.0 @ 9,000       | 30.9 / 876                | F-6010  | 80R     | OSMG0979+    |
| FT-300        | Ring         | 1,800 – 9,000  | —                 | 64.5 / 1,828              | —       | 240/300 | OSMG1250+    |
| FR5-300       | Ring         | 1,800 – 8,500  | —                 | 94.2 / 2,670              | —       | FR5-300 | OSMG1300+    |
| IL-300 InLine | Ring         | 1,800 – 8,000  | —                 | 82.9 / 2,350              | —       | 80P     | OSMG1330+    |
| FF-320        | Ring         | 1,800 – 8,500  | —                 | 77.2 / 2,190              | —       | FF-240  | OSMG1320+    |

Legend: -a = Alpha Series; FS = Four-Stroke; -P = Pumped; Ring = Ringed Piston; S= Surpass; + = Covered by O.S. 2-year limited warranty.



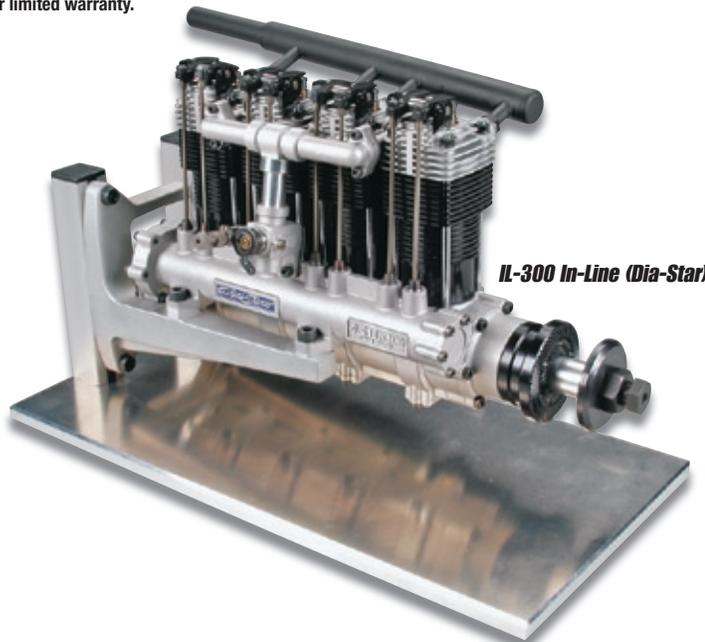
**FT-300**  
**(Super Gemini-300)**



**FR5-300 (Sirius)**



**FF-320 (Pegasus)**



**IL-300 In-Line (Dia-Star)**

# Car, Truck & Buggy Engines

## Stay a lap ahead of the competition...

...with the durability and power of O.S. Engines! Each engine endures *two years* of rigorous testing and fine-tuning before it's considered chassis-ready. All are built to last and packed with power – and there are lots of options available: side or rear exhaust, pull or electric starting, slide valve or rotary carbs...the list goes on and on. With over 70 years of engine expertise, it's no surprise that O.S. is always a lap ahead of the competition!

### All 2-stroke engines include:

- Lightweight aluminum piston
- Oversized, machined aluminum heat sink head
- Rubber-sealed front and enlarged rear bearings
- Turbo engines include turbo glow plug
- All others include standard glow plug

All require header and muffler or tuned pipe

### TG Series

- ROAR-legal rear exhaust power for 1/10 scale!
- Designed to deliver almost 14 minutes of run time per tank
- Drop in the pilot shaft-equipped 12TG (P) to your competition-level stadium truck!

### 12TZ Turbo

- Ideal for IFMAR/ROAR-legal racing
- Includes 11M carb w/5.5 mm insert

### 18CV-R

- Dual-needle carb w/"Outlaw" 6.5 mm bore

### 18TZ Turbo

- The first small-block to break the 2 hp barrier!



18TZ (P)



12TG (P)



12TZ (P)-T3

| Description | Construction | Practical RPM  | Output (hp @ rpm) | Weight w/o Muffler (oz/g) | Carb | Stock Number |
|-------------|--------------|----------------|-------------------|---------------------------|------|--------------|
| 12TG (P)    | ABL          | 5,000 – 30,000 | 0.7 @ 28,000      | 7.5/213                   | 12E  | OSMG1985+    |
| 12TG (P)    | ABL          | 5,000 – 30,000 | 0.7 @ 28,000      | 7.5/212                   | 12D  | OSMG1986+    |
| 12TG (P) X  | ABL          | 5,000 – 30,000 | 0.7 @ 28,000      | 8.8/250                   | 12D  | OSMG1987+    |
| 12TG-X      | ABL          | 5,000 – 30,000 | 0.7 @ 28,000      | 8.9/252                   | 12E  | OSMG1989+    |
| 12TZ (P) T3 | ABC          | 5,000 – 40,000 | 1.5 @ 33,500      | 7.9/225                   | 11M  | OSMG2019     |
| 15CV-X      | ABL          | 3,000 – 30,000 | 0.68 @ 29,000     | 9.4/266                   | 10E  | OSMG2034+    |
| 18CV-RX     | ABC          | 3,000 – 32,000 | 1.4 @ 28,000      | 10.4/296                  | 11G  | OSMG2102+    |
| 18CV-RX     | ABC          | 3,000 – 32,000 | 1.4 @ 28,000      | 10.4/296                  | 11J  | OSMG2104+    |
| 18CV-RX (S) | ABC          | 3,000 – 32,000 | 1.4 @ 28,000      | 10.4/296                  | 11J  | OSMG2105+    |
| 18TZ (P) T5 | ABC          | 3,000 – 34,000 | 1.8 @ 29,000      | 8.0/226                   | 11K  | OSMG2110     |
| 18TZ-X (5)  | ABC          | 3,000 – 34,000 | 1.8 @ 29,000      | 9.3/264                   | 11L  | OSMG2113     |

Legend: ABC = Aluminum, Brass and Chrome; ABL = Advanced Bi-metallic Liner; ES = Electric Start; (P) = SG Crank; R = Race; S = Short Shaft; T = Turbo Head; T3/T5 = 3-/5-Port Turbo Head; X/-X = Recoil Start; (5) = 5-port; + = Covered by the O.S. 2-year limited warranty.

### CARB KEY

| Description                | Model                                    |
|----------------------------|--|
| Rotary, Single-Needle      | 11J, 20P                                 |
| Rotary, Dual-Needle        | 10E, 11L, 11M, 12E                       |
| Slide Valve, Dual-Needle   | 10C, 11G, 12D, 21F                       |
| Slide Valve, Triple-Needle | 11H, 11K, 11K-R, 20K, 21C, 21J, 21F, 21E |

# Car, Truck & Buggy Engines

## TM Series

- Easy, no-mod retrofits for Traxxas® T-Maxx® and Revo®
  - Mounts on the original clutch assembly and EZ-Start® system
  - Includes LC3 long-reach plug and direct-fit manifold
- T-Maxx® and Revo® are registered trademarks of Traxxas®

## 21VZ-B V-Spec

- O.S.' best off-road option
- Hardened chrome liner w/integral exhaust port
- 8 mm & 9 mm carb inserts

## 21VZ-R Version 2

- Best for 1/8 scale on-road
- Hardened, 7-port chrome liner w/integral exhaust port

## VG Series

- VGs are direct drop-in replacements for scale RTR big blocks
- Available w/ES (Electric Start)

## 28XZ

- Delivers low-end torque to your truggies!
- 6-port hardened chrome liner
- 3-needle carb
- 8 mm & 9 mm carb inserts



21TM Revo



28XZ



21VG (P) ES



21VZ-B V-Spec-T (P)

| Description             | Construction | Practical RPM  | Output (hp @ rpm) | Weight w/o Muffler (oz/g) | Carb  | Stock Number |
|-------------------------|--------------|----------------|-------------------|---------------------------|-------|--------------|
| 21VZ-B V-Spec-T (P)     | ABC          | 3,000 – 40,000 | 2.5 @ 33,000      | 12.7/360                  | 21J   | OSMG2068     |
| 21VZ-R (P) Ver. 2       | ABC          | 3,000 – 42,000 | 2.5 @ 34,000      | 11.1/316                  | 20K   | OSMG2072+    |
| 21VG (P) ES             | ABL          | 3,000 – 36,000 | 2.0 @ 30,000      | 15.3/433                  | 21F   | OSMG2073+    |
| 21TM Revo®              | ABC          | 3,000 – 35,000 | 1.8 @ 29,000      | 8.6/243                   | 11K-R | OSMG2082+    |
| 21TM T-Maxx®            | ABC          | 3,000 – 35,000 | 1.8 @ 29,000      | 8.6/243                   | 11K   | OSMG2083+    |
| FS-26S-C Ver 2 4-Stroke | Ring         | 2,000 – 22,000 | 0.5 @ 17,000      | 8.6/243                   | 20P   | OSMG2091+    |
| 28XZ                    | ABC          | 4,000 – 38,000 | 3.3 @ 32,000      | 13.2/375                  | 21J   | OSMG2074     |
| 30VG (P)                | ABL          | 4,000 – 36,000 | 3.0 @ 28,000      | 12.7/360                  | 21E   | OSMG2075+    |
| 30VG (P) ES             | ABL          | 4,000 – 36,000 | 3.0 @ 28,000      | 15.4/436                  | 21E   | OSMG2078+    |
| 21VG (P)                | ABL          | 3,000 – 36,000 | 2.0 @ 30,000      | 12.2/347                  | 21F   | OSMG2058+    |

Legend: ABC = Aluminum, Brass and Chrome; ABL = Advanced Bi-metallic Liner; ES = Electric Start; (P) = SG Crank; R = Race; T = Turbo Head; Ver. 2 = Version 2; + = Covered by the O.S. 2-year limited warranty.

# Speed Tuned Engines

## 21VZ-B V-Spec II World Champion Edition

**The newest version of a popular powerhouse.**

Bolt in the 21VZ-B V-Spec II and enjoy performance so advanced, it's almost unfair! In addition to special factory tuning, this engine also boasts several other "tweaks" that took it to the 2008 World Championships. If you're serious about winning, get the engine that's designed to dominate 1/8 scale: the Speed Tuned 21VZ-B V-Spec II World Championship Edition. It's your secret weapon for all-out assaults on track records!



- 18 holes machined in the heat sink head to increase cooling and lighten weight by 14 grams
- Hardened, chrome-plated 4-port cylinder and liner
- Machined aluminum piston with parallel rings
- Specially coated crankshaft with a ceramic rear bearing, tungsten weighting and silicone filling that reduces turbulence and smoothes the fuel/air flow
- Reshaped crankcase core
- 21JS three-needle slide-valve carb with 6 mm, 6.5 mm & 7 mm carb restrictors
- P3 Ultra Hot Turbo plug included
- "World Champion" engraved into the head and crankcase



21VZ-B V-Spec II World Champion Edition

## 12XZ

**IFMAR-approved 1/10 scale supremacy.**

On-roaders rejoice: the 12XZ is here to provide your ride with title-taking performance. Overall weight has been trimmed to the bare minimum, while special modifications deliver awesome power and rock-solid dependability.

- Crankcase and liner port are newly designed to increase torque at low- to mid-speed
- Special crankshaft coating reduces friction and wear; silicone filling means smoother induction of the air/fuel mixture
- Tungsten weights offer added/better balance at high rpms
- New stronger con rod
- Holes machined into the aluminum outer head for lighter weight and better cooling
- 12F(B) carb is designed to match the engine's power characteristics
- RP6 plug and dust caps are included



12XZ

| Description                                       | Construction | Practical RPM  | Output (hp @ rpm) | Weight w/o Muffler (oz/g) | Carb   | Exhaust Type | Stock Number |
|---|--------------|----------------|-------------------|---------------------------|--------|--------------|--------------|
| Speed Tuned 21VZ-B V-Spec II AL World Edition (P) | ABC          | 3,000 – 40,000 | 2.5 @ 34,000      | 12.3/349                  | 21JS   | RE           | OSMG2070     |
| 12XZ (P)  | ABC          | 5,000 – 44,000 | 1.75 @ 35,000     | 8.1/230                   | 12F(B) | RE           | OSMG1990     |

Legend: ABC = Aluminum, Brass and Chrome; (P) = SG Crank; RE = Rear Exhaust

# Aircraft Accessories

## Mufflers

| Stock Number | Part Number | Description                 |
|--------------|-------------|-----------------------------|
| OSMG2260     | 21225030    | 871 Blue 10-15LA            |
| OSMG2261     | 22325060    | E2030 Blue 20-25LA          |
| OSMG2263     | 26028040    | E-4010 Blue 65LA            |
| OSMG2814     | 21225000    | 871 10-15FP/LA              |
| OSMG2825     | 22628000    | 892 25SF/FX 32F             |
| OSMG2835     | 25425000    | 873 40-46SF/FX 50SX         |
| OSMG2838     | 26028000    | E-4010 60FP 61FX 65LA       |
| OSMG2840     | 29525000    | E-4020 91FX                 |
| OSMG2844     | 27425000    | E-4040 75AX                 |
| OSMG2845     | 29122500    | E-5020 120AX                |
| OSMG2846     | 29325000    | E-5010 BGX-1 160FX          |
| OSMG2851     | 45225000    | Assy FS-40S                 |
| OSMG2859     | 45525030    | Assy F-5020 FS-120          |
| OSMG2861     | 45525001    | Assy FS-120S                |
| OSMG2869     | 22325020    | E-2030 20/25FP 25LA         |
| OSMG2871     | 23875000    | E-2050 21XM                 |
| OSMG2872     | 44225000    | Assy F-3020 FS-52S          |
| OSMG2873     | 23325020    | E-3030 35/40FP 32SX 40/46LA |
| OSMG2874     | 45925010    | Assy F-4020 FS-70/91SII     |
| OSMG2876     | 29025000    | 855 108FSR                  |
| OSMG2942     | 44525000    | Assy F-6010 FS-200S/S-P     |
| OSMG2950     | 44625000    | Assy F-4040 56FS-a          |
| OSMG2951     | 44425000    | Assy F-4030 FL-70           |
| OSMG2955     | 23325030    | E-3030S 40/46LA 32SX        |
| OSMG2958     | 25425020    | 873S 40-46FX 50SX 46AX      |
| OSMG2959     | 26028010    | E-4010S 61FX/65LA           |
| OSMG6773     | 43025100    | F-2010 FS-30S               |
| OSMG6775     | 43025000    | Assy F-2010 FS-30S          |
| OSMG6777     | 23125000    | E-3080 35AX                 |
| OSMG6778     | 44825000    | Assy F-5030 72/81FS-a       |
| OSMG6779     | 24625200    | E-3070 46/55AX              |
| OSMG6784     | 45925100    | F-4020 FS-70/91             |
| OSMG6791     | 44925000    | Assy F-5040 110FS-a         |
| OSMG6972     | 44925100    | F-5040 110FS-a              |

## Tuned Pipes

| Stock Number | Part Number | Description  |
|--------------|-------------|--------------|
| OSMG2943     | 72101120    | 61Hanno      |
| OSMG2945     | 72104300    | T-6010 140RX |

## Exhaust Systems

| Stock Number | Part Number | Description         |
|--------------|-------------|---------------------|
| OSMG2726     | 47069010    | Exhaust Ring In FR5 |
| OSMG5695     | 46569000    | IL-300 Exhaust Pipe |

## Remote Needle Assemblies

| Stock Number | Part Number | Description |
|--------------|-------------|-------------|
| OSMG7258     | 28282000    | 9B Carb     |
| OSMG8336     | 23882900    | 20G Carb    |

## Flex Pipes

| Stock Number | Part Number | Description             |
|--------------|-------------|-------------------------|
| OSMG2672     | 72108110    | FS-70-91 240 mm 1111B   |
| OSMG2674     | 72108300    | FS-40-56 120 mm 1010A   |
| OSMG2675     | 72108310    | FS-40-56 240 mm 1010B   |
| OSMG2678     | 72108510    | FS-120SIII 120 mm 1414A |
| OSMG2679     | 72108520    | FS-120SIII 240 mm 1414B |
| OSMG2680     | 72108000    | FR5-300 120 mm 1011A    |
| OSMG2682     | 72108201    | FS-120S 120 mm          |
| OSMG2683     | 72108211    | FS-120S 240 mm          |
| OSMG2684     | 72108100    | FS70-91 120 mm 1111A    |
| OSMG2685     | 72108200    | FT-300 120 mm 1114A     |
| OSMG2686     | 72108210    | FT-300 240 mm 1114B     |
| OSMG2687     | 72108120    | FS-70-91 170 mm 1111C   |
| OSMG2689     | 72108130    | FS-70-91 330 mm 1111D   |

## Radial Engine Mounts

| Stock Number | Part Number | Description                |
|--------------|-------------|----------------------------|
| OSMG2750     | 71908410    | 25FX 35AX                  |
| OSMG2751     | 71920000    | 160FX/FI                   |
| OSMG2753     | 71909410    | 15CV-A 10LA                |
| OSMG2754     | 71909310    | 15LA                       |
| OSMG2757     | 71910100    | IL-300                     |
| OSMG2762     | 71901100    | FS-91S/II-P 110FS-a        |
| OSMG2765     | 71904200    | FS-120SIII-E 120AX FS-200S |
| OSMG2768     | 71905000    | FS-70S II/81FS-a           |
| OSMG2772     | 71906000    | FS-40S                     |
| OSMG2774     | 71913100    | 40/46FX 50SX 46/55AX       |
| OSMG2776     | 71907000    | 108FSR (BX-1)              |
| OSMG2780     | 71905200    | 65LA 61/91FX 75AX          |
| OSMG2784     | 71908100    | 25LA                       |
| OSMG2790     | 71908300    | FS-30S                     |
| OSMG2800     | 71906200    | 40/46LA                    |
| OSMG2804     | 71910000    | FT-120/160                 |
| OSMG2808     | 71911000    | FT-240/300                 |
| OSMG2811     | 71913000    | FS-52S 56FS-a              |
| OSMG6760     | 41633000    | 49PI Wankel                |

## Muffler Extensions

| Stock Number | Part Number | Description                  |
|--------------|-------------|------------------------------|
| OSMG2576     | 22625103    | 762 892 E-3080 (12.5 mm)     |
| OSMG2578     | 25425600    | 873 E-3010/-3020 (11.5 mm)   |
| OSMG2582     | 26625340    | E-4010/-4020/-4040 (14.5 mm) |
| OSMG2584     | 21125108    | 761/871 (11.5 mm)            |
| OSMG2586     | 26625500    | E-4010/-4020/-4040 (35 mm)   |
| OSMG2612     | 22325100    | 842 E-2030 (12.5 mm)         |
| OSMG2616     | 23325100    | E-3030 843 762S (17.5 mm)    |
| OSMG6788     | 29122600    | E-5020 (46.2 mm)             |

## Air Headers

| Stock Number | Part Number | Description |
|--------------|-------------|-------------|
| OSMG2710     | 72101230    | 61-91FX     |
| OSMG2727     | 72102100    | 140RX/FI    |
| OSMG5700     | 72102200    | BGX-1       |

## Crankshaft Clamps

| Stock Number | Part Number | Description               |
|--------------|-------------|---------------------------|
| OSMR1001     | 71530100    | 1012 10FP 12-15CV         |
| OSMR1002     | 71530200    | 1521 21RZ/RG/NZ 15RX      |
| OSMR1003     | 71530300    | 3261 32-61SXH/RXH/IXH/SFH |
| OSMR1004     | 71530400    | 3246 32-50SXH 46FXH       |
| OSMR1005     | 71530500    | 7091 70SZH/91SXH          |
| OSMR1006     | 71530510    | 91SZH/RZH/HZH/HZPS        |

## 90° Muffler Adapters

| Stock Number | Part Number | Description    |
|--------------|-------------|----------------|
| OSMG2588     | 22625508    | 762/892/E-3030 |
| OSMG2590     | 25425500    | 873/E-3010     |
| OSMG2596     | 21125502    | 761/871        |
| OSMG2598     | 26625410    | 744B/E-4010    |
| OSMG6789     | 29122700    | E-5020         |

## Tools

| Stock Number | Part Number | Description                   |
|--------------|-------------|-------------------------------|
| OSMG6334     | 72200060    | 4-Stroke Valve Adjustment Kit |
| OSMR2976     | 71521000    | Glow Plug Wrench              |

## Accessories

| Stock Number | Part Number | Description                      |
|--------------|-------------|----------------------------------|
| OSMG7290     | 72200080    | Needle Extension Cable 10LA-BGX1 |
| OSMG0165     | 29081910    | 60M Return Needle                |
| OSMG5870     | 71531000    | Bubbleless Clunk                 |
| OSMG5871     | 72403051    | Super Can Filter Small           |
| OSMG5872     | 72403050    | Super Can Filter Large           |
| OSMG2402     | 72200111    | Booster Cable Single             |
| OSMG2403     | 72200091    | Booster Cable Twin               |
| OSMG2399     | 72200130    | Booster Terminal Kit             |

## Spinner Nuts

| Stock Number | Part Number | Description                  |
|--------------|-------------|------------------------------|
| OSMG2916     | 20824005    | 10FP/LA 15LA (5 mm)          |
| OSMG2924     | 23024008    | 25LA/FX 35AX (1/4-28)        |
| OSMG2925     | 23024009    | .20-.50 46/55AX (1/4-28)     |
| OSMG2932     | 45024000    | .60FP 65LA 61-91FX (5/16-24) |

## In-flight Control Needles

| Stock Number | Part Number | Description                       |
|--------------|-------------|-----------------------------------|
| OSMG6462     | 71705000    | 40E 60B/G/K/KC/LH/M/MC/MP         |
| OSMG6460     | 71703009    | 9B 40A 60C/U/R/N/P 70A/C FS-120SE |

# Car & Truck Accessories

## Tuned Pipes



| Stock Number | Description                        | Part Number |
|--------------|------------------------------------|-------------|
| OSMG2839     | T-2040 - 21VZR                     | (72106040)  |
| OSMG2841     | T-2040 Set - 21VZR                 | (72106050)  |
| OSMG2843     | T-2070 - 30VG                      | (72106120)  |
| OSMG2938     | T-2060SC WN Set - 21VZ-B/VG-P/28XZ | (72106135)  |
| OSMG2939     | T-2060SC WN - 21VZ-B/VG-P/28XZ     | (72106130)  |
| OSMG2940     | T-2060 WN - 21VZ-B/VG-P/28XZ       | (72106090)  |
| OSMG2952     | T-1010 - 15RX                      | (72103010)  |

| Stock Number | Description                            | Part Number |
|--------------|--|-------------|
| OSMG2969     | T-2050SC WN MP Set - 21VZ-B/VG-P/28Z   | (72106071)  |
| OSMG2970     | T-1040 L52 - 12/15CV, 12TG/TZ          | (72103051)  |
| OSMG2972     | T-1040 R52 - 12/15CV, 12TG/TZ          | (72103056)  |
| OSMG2982     | T-1040SC R52 - 12/15CV, 12TG/TZ        | (72106320)  |
| OSMG2988     | T-1040SC R52 SC Set - 12/15CV, 12TG/TZ | (72106510)  |
| OSMG2987     | T-1050SC L52 Set - 12/15CV, 12TG/TZ    | (72106700)  |

\*Sets\* include header. All other tuned pipes require a header.

## Exhaust Headers



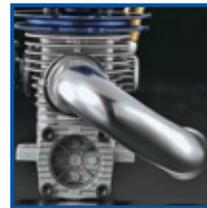
**OSMG2605**  
M1003 - 12TG/TZ  
(72106450)



**OSMG2606**  
M1003SC - 12TG/TZ  
(72106460)



**OSMG2609**  
M1011SC - 12TG/TZ  
(72106410)



**OSMG2639**  
M1010 12TG/TZ  
(72103180)



**OSMG2701**  
M2000 - 21VZ-B, 21VG,  
28XZ, T-2060  
(72106430)



**OSMG2702**  
M2000SC - 21VZ-B, 21VG,  
28XZ, T-2060  
(72106440)



**OSMG2617**  
M1001 - 12TG/TZ  
(72106420)



**OSMG2634**  
CV Series  
(72103150)



**OSMG2632**  
180° - CV Series  
(72103160)



**OSMG2724**  
180° - CV Series  
(72103140)



**OSMG2729**  
CV Series  
(72103130)



**OSMG2720**  
90° - CV Series  
(72103110)



**OSMG2728**  
CV Series  
(72103120)



**OSMG2732**  
T-2040 - 21VZR, 21VG  
(72106140)

### Not Pictured

| Stock Number | Part Number | Description                      |
|--------------|-------------|----------------------------------|
| OSMG2608     | 72106400    | T-1040SC L-52 - 12TG/TZ          |
| OSMG2619     | 72103810    | Revo 18TM                        |
| OSMG2627     | 72103510    | 180° - 21RG-BX+                  |
| OSMG2631     | 72106170    | 12TR*/TZ/TG                      |
| OSMG2705     | 44126000    | FS-26S-C                         |
| OSMG2707     | 72101270    | 180° - 21RZ                      |
| OSMG2731     | 44126010    | Set FS-26S-C                     |
| OSMG2964     | 72106141    | 90° - 21VZ-R                     |
| OSMG5750     | 45226200    | HPR Set FS-40S-C                 |
| OSMG8875     | 72103310    | Coupler 12-15 - T-1010/1020/1040 |
| OSMG8876     | 72106300    | Coupler .21 - T-2060/2070        |

# Car & Truck Accessories

## Carbs

| Stock Number | Part Number | Description                 |
|--------------|-------------|-----------------------------|
| OSMG2406     | 27081000    | 60K - 70SZ-H                |
| OSMG2408     | 21884110    | 11L - 18TZ-TX               |
| OSMG2412     | 22681030    | 20D - 25FX                  |
| OSMG2414     | 23618030    | 21F Slide - 21VG-P/PX       |
| OSMG2419     | 21783000    | 10G - 15LA                  |
| OSMG2421     | 24081000    | 40D - 40/46LA               |
| OSMG2424     | 27482010    | 61A - 75AX                  |
| OSMG2432     | 45984000    | 60P - FS-91SII              |
| OSMG2440     | 21481020    | 10ER - 12/15 CV             |
| OSMG2442     | 21581000    | 10K - 15CV-A                |
| OSMG2443     | 29381010    | 9B - 61-81VR-M 65-91 VR DF  |
| OSMG2445     | 21081000    | 10H - 10LA                  |
| OSMG2448     | 23818070    | 21JS Slide - 21VZB/28ZX     |
| OSMG2449     | 23981010    | 21E Slide - 30VG Series     |
| OSMG2451     | 21286000    | 10C Slide - 12/15 CV Series |
| OSMG2452     | 25681010    | 40B - 40-46FX 50SX          |
| OSMG2453     | 23781000    | 20K Slide - 21VZR VII       |
| OSMG2454     | 24681000    | 40G - 46AX                  |
| OSMG2457     | 22848010    | 21J Slide - 28XZ            |
| OSMG2459     | 23481000    | 20C - 32SX-H/HX             |
| OSMG2460     | 23181000    | 21K - 35AX                  |
| OSMG2461     | 23483000    | 20M - 37SZ-H                |
| OSMG2462     | 23482000    | 20F - 32SX                  |
| OSMG2464     | 22581000    | 20H - 25LA                  |
| OSMG2466     | 25382000    | 20J - 21XM/21RG-M           |
| OSMG2467     | 43081000    | 20N - FS-30S                |
| OSMG2469     | 29083020    | 60LH - 50SX-H Hyper         |
| OSMG2470     | 29084000    | 60M - 91SXH-PS              |
| OSMG2473     | 21538000    | 11H Slide - 12TZ(P)-T3      |
| OSMG2474     | 21538010    | 11H(B) Slide - 12TZ(P)-T5   |
| OSMG2479     | 23882000    | 21D - 21VZ-M                |
| OSMG2480     | 21418000    | 12D Slide - 12TG-P/PX       |
| OSMG2481     | 21428000    | 12E - 12TG/TG-X             |
| OSMG2485     | 44681000    | 40NA - 56FS-a               |
| OSMG2490     | 45281020    | FS-40S                      |
| OSMG2492     | 44281000    | 40N - FS-52S                |
| OSMG2504     | 29085020    | 61B-P - 91HZ-PS             |
| OSMG2508     | 45581000    | FS-120SE                    |
| OSMG2509     | 29581000    | 60F - 91/160FX              |
| OSMG2513     | 44082000    | 60R - FS-70SII              |
| OSMG2514     | 27081010    | 60K - 70SZ-H                |
| OSMG2516     | 29183000    | 60M-C - 91SZ/RZ-H/OH        |
| OSMG2517     | 29183010    | 60M-P - 91SZH-PS            |
| OSMG2518     | 25781000    | 40J - 55AX                  |
| OSMG2523     | 44981000    | 60Y - 110FS-a               |
| OSMG2524     | 44381000    | 61N - 72FS-a                |
| OSMG2525     | 44582000    | 80R - FS-200S-P             |

## Carbs cont'd

| Stock Number | Part Number | Description           |
|--------------|-------------|-----------------------|
| OSMG2527     | 44781010    | 60U Slide - FS-70U    |
| OSMG2529     | 44481000    | 60W - FL-70           |
| OSMG2533     | 45983000    | 60N - FS-91SIIP       |
| OSMG2534     | 26581000    | 60J - 65LA            |
| OSMG2537     | 45582000    | 70N - FS-120SIII      |
| OSMG2538     | 46481000    | FT-160/FF-320         |
| OSMG2539     | 27783000    | 60C - 61FX            |
| OSMG2540     | 46281000    | FT-300                |
| OSMG2545     | 25581000    | 40A - 46VX-M/DF       |
| OSMG2547     | 29481000    | 70A - 140RX           |
| OSMG2549     | 29182000    | 70D - 120AX           |
| OSMG3665     | 21982000    | 11K Slide - 18TZ/21TM |
| OSMG3669     | 44581000    | 80N - FS-200S         |
| OSMG3750     | 44881000    | 60RA - 81FS-a         |
| OSMG3818     | 21883000    | 11G Slide - 18CVR     |

## Carb Restrictors

| Stock Number | Part Number | Description                       |
|--------------|-------------|-----------------------------------|
| OSMG2471     | 71533000    | 8 mm Plastic (Red) - 21J          |
| OSMG2472     | 71533010    | 9 mm Plastic (Blue) - 21J         |
| OSMG2476     | 71533055    | 5.5 mm Plastic (Black) - 11H/11HB |
| OSMG2477     | 71533065    | 6.5 mm Plastic (Grey) - 11H/11HB  |
| OSMG2482     | 71533270    | 7 mm Metal (Red) - 21JS           |
| OSMG2483     | 71533280    | 8 mm Metal (Red) - 21JS           |
| OSMG2484     | 71533290    | 9 mm Metal (Red) - 21JS           |
| OSMG2486     | 71533260    | 6 mm Metal (Red) - 21JS           |
| OSMG2487     | 71533265    | 6.5 mm Metal (Red) - 21JS         |

## Air Filters & Elements

| Stock Number | Part Number | Description                   |
|--------------|-------------|-------------------------------|
| OSMG2360     | 72413000    | 203 Assy - 28XZ/30VG/21VZ-B   |
| OSMG2380     | 72411000    | 201 Assy - 28XZ/30VG/21VZ-B   |
| OSMG2381     | 72403300    | 103 Assy - 12TR/TZ/15RX       |
| OSMG2383     | 72403200    | 102 Assy - CV Series          |
| OSMG2384     | 72412000    | 202 Assy - 12TZ/TG/21 On-Road |
| OSMG2385     | 72403120    | 101/102 Elements (6)          |
| OSMG2386     | 72403110    | 101 Body                      |
| OSMG2389     | 72412200    | 202 Elements (4)              |
| OSMG2390     | 72403212    | 102S Body                     |
| OSMG2391     | 72403310    | 103 Body                      |
| OSMG2392     | 72403202    | 102S Assy - FS-26/40SC        |
| OSMG2393     | 72413200    | 203 Elements (4)              |
| OSMG3022     | 72411020    | 201 Elements (2)              |
| OSMG3023     | 72403420    | 104 Elements LD (3)           |
| OSMG3032     | 72403320    | 103 Elements (4)              |

\*Assemblies\* include a body and foam elements.

## Header/Joint Springs

| Stock Number | Part Number | Description                       |
|--------------|-------------|-----------------------------------|
| OSMG2633     | 72106172    | Header (2) 77 mm                  |
| OSMG2961     | 72106042    | Joint T-2040/-2050/2060/-1040 (3) |
| OSMG2965     | 72106142    | Header 21VZ-R (2) 40 mm           |

## Ceramic Bearings

| Stock Number | Part Number | Description                |
|--------------|-------------|----------------------------|
| OSMG3081     | 23730050    | Crankshaft Bearing Rear 21 |
| OSMG3082     | 21931100    | Crankshaft Bearing Rear 12 |

## Exhaust Seals

| Stock Number | Part Number | Description         |
|--------------|-------------|---------------------|
| OSMG6673     | 22826140    | 21VZ-B/NZ-R/28XZ    |
| OSMG6869     | 21826100    | O-Ring - 15RX       |
| OSMG6871     | 21427200    | O-Ring - 12TR/TZ/TG |

## Flywheel Sets

| Stock Number | Part Number | Description                |
|--------------|-------------|----------------------------|
| OSMG2648     | 71812000    | Hyper Flywheel Set Mugen®  |
| OSMG2649     | 71813000    | Hyper Flywheel Set Kyosho® |

## Dust Cap Sets

| Stock Number | Part Number | Description                     |
|--------------|-------------|---------------------------------|
| OSMG5644     | 22884250    | 3, 16 & 18 mm (1 ea.)           |
| OSMG5874     | 73300305    | 3 mm - Carb Nipple (5)          |
| OSMG5877     | 73300712    | 7 mm - T-1010/1020 (3)          |
| OSMG5878     | 73300812    | 8 mm - T-2030 (3)               |
| OSMG5880     | 73301012    | 10 mm - 10A/E Carb (3)          |
| OSMG5882     | 73301212    | 12 mm - 10D Carb (3)            |
| OSMG5886     | 73301612    | 16 mm - 20A/B Carb/15RX Exh (3) |
| OSMG5888     | 73301812    | 18 mm - 21RZ Exh (3)            |

## Marine Accessories

| Stock Number | Part Number | Description                        |
|--------------|-------------|------------------------------------|
| OSMG2344     | 71802100    | 2J Flywheel 21XM                   |
| OSMG2637     | 71801040    | 1D Flywheel 15CV-M/MX              |
| OSMG2640     | 71802005    | 2B Flywheel 20FP-M                 |
| OSMG2642     | 71802020    | 2D Flywheel 32SX-MX                |
| OSMG2643     | 71802030    | 2E Flywheel 21EX-M                 |
| OSMG2645     | 7181050     | 1E Flywheel 18CV-RM/RMX            |
| OSMG2646     | 71804020    | 4C Flywheel 46VX-M                 |
| OSMG2647     | 71802200    | 2K Flywheel 21VZ-M                 |
| OSMG2723     | 72101260    | Exhaust Header 180° 46-VXM         |
| OSMG2944     | 22442009    | 4 mm Joint Assembly 21VZ-M/21RX-M  |
| OSMG2968     | 27126400    | Exhaust Adapter - Cool (61-77VR)   |
| OSMG6626     | 21342000    | 3.5 mm Joint Assembly 15CV/18CV-RM |

# Dimensions

## Airplane Engines: 2-Stroke, Single-Cylinder

| Description | A    | B    | C     | D    | E     | F    | G    | H     | J    | S       | Page # |
|-------------|------|------|-------|------|-------|------|------|-------|------|---------|--------|
| 10LA        | 31.4 | 11   | 61.5  | 38.6 | 55.8  | 38.7 | 23   | 33.2  | 42.8 | M5      | 2-3    |
| 15CV-A      | 31.4 | 11   | 65.5  | 39   | 62.5  | 41   | 25   | 35.5  | 49   | M5      | 2-3    |
| 15LA        | 33   | 14.4 | 63.7  | 40   | 61    | 39.5 | 24.8 | 30.8  | 48.5 | M5      | 2-3    |
| 25LA/LA-S   | 36   | 14   | 72.8  | 44   | 74.5  | 46.5 | 29   | 39    | 60   | 1/4-28  | 2-3    |
| 25FX        | 38   | 15   | 77.8  | 46   | 75.5  | 53   | 30   | 45.5  | 60   | 1/4-28  | 2-3    |
| 35AX        | 38   | 15   | 75.5  | 45   | 77.4  | 53   | 30.6 | 45.5  | 61.5 | 1/4-28  | 2-3    |
| 46AX        | 44   | 17.5 | 85.2  | 51   | 85.2  | 60.4 | 35   | 51.65 | 67.4 | 1/4-28  | 2-3    |
| 46LA/LA-S   | 40.5 | 17.5 | 81.5  | 48   | 85    | 51.2 | 32   | 42.5  | 69   | 1/4-28  | 2-3    |
| 46VX-DF     | 45   | 21   | 115.5 | 53   | 90.5  | 55.6 | 37   | 45.1  | 72.3 | 1/4-28  | 2-3    |
| 55AX        | 44   | 17.5 | 85.3  | 51   | 90.5  | 60.4 | 36   | 52    | 72   | 1/4-28  | 2-3    |
| 61FX        | 52   | 25   | 106.6 | 61   | 100.5 | 66.5 | 43   | 54    | 79   | 5/16-24 | 2-3    |
| 65LA        | 52   | 25   | 99.8  | 62   | 107   | 61.2 | 42   | 48.7  | 85.4 | 5/16-24 | 2-3    |
| 75AX        | 52   | 25   | 94.5  | 61   | 103.4 | 66.6 | 42.6 | 54.1  | 81.4 | 5/16-24 | 2-3    |
| 91FX        | 52   | 25   | 103.3 | 61   | 103   | 66.5 | 43   | 54    | 81.5 | 5/16-24 | 2-3    |
| 91VR-DF     | 52   | 25   | 133.5 | 61   | 109.5 | 66   | 43.5 | 53.5  | 87.5 | 5/16-24 | 2-3    |
| 120AX       | 58   | 25   | 100.2 | 67   | 109.1 | 70   | 46.5 | 57.5  | 85.5 | 5/16-24 | 2-3    |
| 140RX -P    | 58   | 25   | 117.2 | 70   | 118   | 78   | 48.4 | 65    | 94   | 5/16-24 | 2-3    |
| 160FX       | 64   | 30   | 115.5 | 74   | 123.2 | 80   | 51.5 | 65    | 96.7 | 3/8-24  | 2-3    |
| BGX-1       | 74   | 32   | 129.5 | 85   | 142.5 | 99   | 60.5 | 83    | 111  | 3/8-24  | 2-3    |

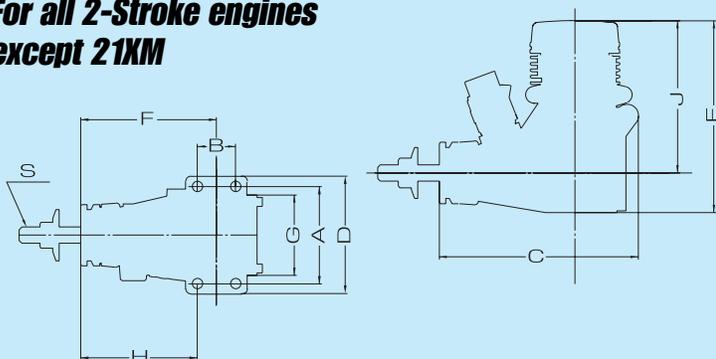
## Airplane Engines: 4-Stroke, Single-Cylinder

| Description    | A  | B    | C     | D  | E     | F    | G    | H    | J     | S       | Page # |
|----------------|----|------|-------|----|-------|------|------|------|-------|---------|--------|
| FS-30S         | 36 | 14   | 82    | 44 | 86.5  | 48.5 | 29   | 40   | 70    | 1/4-28  | 6-7    |
| FS-40S         | 42 | 17.5 | 92.5  | 49 | 98    | 57   | 32.5 | 48.1 | 80.5  | 1/4-28  | 6-7    |
| 56FS-a         | 44 | 17.5 | 102.3 | 51 | 101.7 | 59   | 34   | 49.3 | 84    | 1/4-28  | 6-7    |
| 72FS-a         | 45 | 20   | 103.6 | 54 | 108   | 59.5 | 36   | 49.5 | 90    | 1/4-28  | 6-7    |
| 81FS-a         | 50 | 21   | 112   | 57 | 117.5 | 66   | 40   | 55.5 | 97    | 5/16-24 | 6-7    |
| FS-91S II -P   | 52 | 25   | 122   | 60 | 123   | 66.5 | 42.6 | 54   | 101   | 5/16-24 | 6-7    |
| FS-91S II      | 52 | 25   | 114.5 | 60 | 123   | 66.5 | 42.6 | 54   | 101   | 5/16-24 | 6-7    |
| 110FS-a        | 52 | 25   | 114.5 | 61 | 125.4 | 66.5 | 42.6 | 54   | 103.8 | 5/16-24 | 6-7    |
| FS-120S III -P | 58 | 25   | 134.5 | 67 | 139.5 | 77   | 47   | 64.5 | 116   | 5/16-24 | 6-7    |
| FS-120S-E      | 58 | 25   | 134   | 67 | 138.5 | 77   | 47   | 64.5 | 115   | 5/16-24 | 6-7    |
| FS-200S        | 58 | 25   | 136   | 67 | 145   | 77   | 48   | 64.5 | 119   | 5/16-24 | 6-7    |
| FS-200S-P      | 58 | 25   | 142   | 67 | 145   | 77   | 48   | 64.5 | 119   | 5/16-24 | 6-7    |

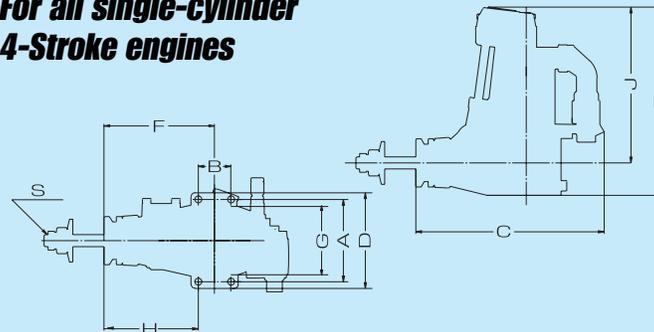
## Marine Engines (2-Stroke)

| Description | A    | B  | C | D  | E    | F | G  | H | J    | S      | Page # |
|-------------|------|----|---|----|------|---|----|---|------|--------|--------|
| 18CV-R-MX   | 31.4 | 11 | — | 39 | 63.3 | — | 25 | — | 50.5 | M5     | 5      |
| 21VZ-M      | 37   | 21 | — | 45 | 89.1 | — | 25 | — | 73.8 | 1/4-28 | 5      |
| 46VX-M      | 45   | 21 | — | 53 | 87   | — | 37 | — | 68   | 1/4-28 | 5      |

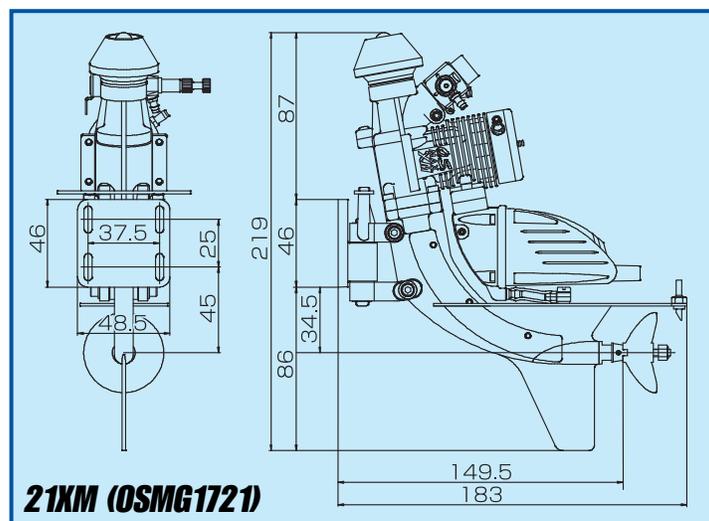
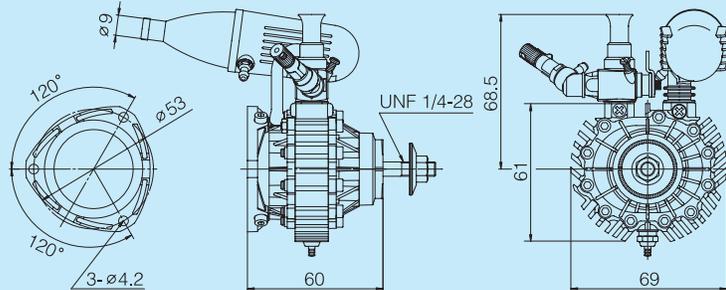
For all 2-Stroke engines  
except 21KM



For all single-cylinder  
4-Stroke engines



49-P1 Type II (OSMG1401)



21KM (OSMG1721)

# Dimensions

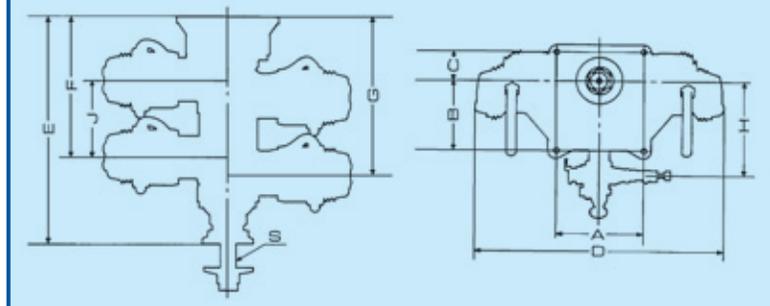
## Helicopter Engines

| Description  | A  | B    | C    | D  | E     | F    | G    | H    | J    | S       | Page # |
|--------------|----|------|------|----|-------|------|------|------|------|---------|--------|
| 37SZ-H       | 38 | 15   | 75   | 45 | 76.5  | 53   | 30.6 | 45.5 | 61   | ¼-28    | 4      |
| 50SX-H Hyper | 44 | 17.5 | 85.8 | 52 | 92.5  | 61   | 36   | 52.3 | 74   | ¼-28    | 4      |
| 70SZ-H       | 52 | 25   | 82.3 | 61 | 99    | 55.3 | 42.6 | 42.8 | 77.5 | 5/16-24 | 4      |
| 91RZ-H/ DH   | 52 | 25   | 83.5 | 61 | 109   | 56.4 | 43   | 43.9 | 87.4 | 5/16-24 | 4      |
| 91HZ         | 52 | 25   | 92.5 | 61 | 102.7 | 56.4 | 43   | 43.9 | 81.2 | 5/16-24 | 4      |
| 91HZ-P       | 52 | 25   | 98   | 61 | 102.7 | 56.4 | 43   | 43.9 | 81.2 | 5/16-24 | 4      |

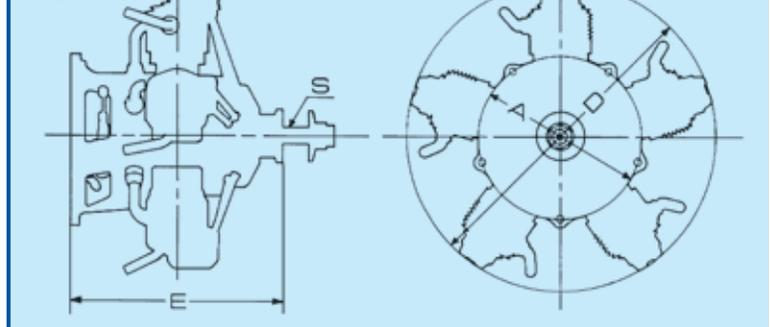
## Car Engines (2-Stroke)

| Description       | A    | B  | D  | F    | G      | J    | S    | Page # |
|-------------------|------|----|----|------|--------|------|------|--------|
| 12TG-P/ -PX       | 31.4 | 11 | 39 | 34.9 | 25.4   | 77   | ¼-28 | 8-9    |
| 12TG / X          | 31.4 | 11 | 39 | 40.9 | 25.4   | 77   | M5   | 8-9    |
| 12TZ (P)-T3       | 31.4 | 11 | 39 | 34.9 | 25.4   | 77.2 | ¼-28 | 8-9    |
| 12XZ (P)          | 31.4 | 11 | 39 | 34.9 | 25.4   | 76.6 | ¼-28 | 8-9    |
| 15CV/ -X          | 31.4 | 11 | 39 | 41   | 25 / — | 74.5 | M5   | 8-9    |
| 18CV-R / RX       | 31.4 | 11 | 39 | 41   | 25 / — | 80.9 | M5   | 8-9    |
| 18TZ-TX           | 31.4 | 11 | 39 | 40.9 | 25.4   | 79.5 | M5   | 8-9    |
| 18TZ-X (P) T      | 31.4 | 11 | 39 | 34.9 | 25.4   | 79.5 | ¼-28 | 8-9    |
| 21TM-T / -R       | 31.4 | 11 | 39 | 41   | 25     | 85.3 | M7X1 | 8-9    |
| 21VG (P) / ES     | 37   | 21 | 45 | 44   | 30.8   | 87.4 | ¼-28 | 8-9    |
| 21VZ-R (P) Ver 2. | 37   | 21 | 45 | 44   | 30.8   | 83.7 | ¼-28 | 8-9    |
| 21VZ-B V-Spec     | 37   | 21 | 45 | 44   | 30.8   | 95.3 | ¼-28 | 8-9    |
| 28XZ              | 37   | 21 | 45 | 44   | 31.6   | 95.9 | ¼-28 | 8-9    |
| 30VG (P) / ES     | 37   | 21 | 45 | 44   | 30.8   | 97.7 | ¼-28 | 8-9    |

### FF-320



### FR5-300



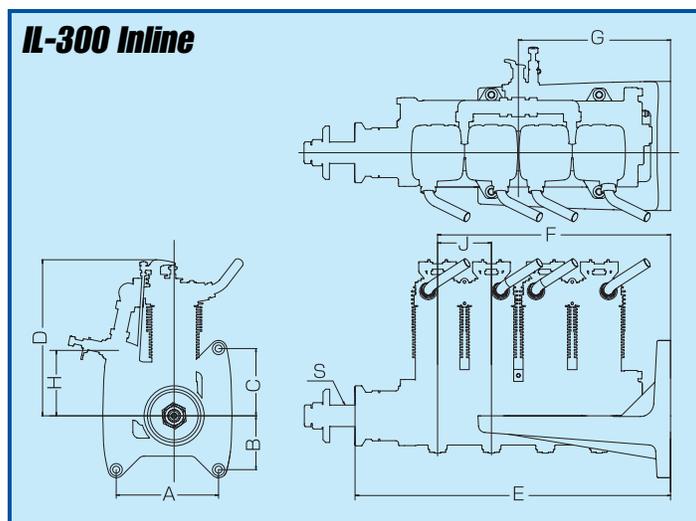
## 4-Stroke, Multi-Cylinder

| Description | A   | B    | C    | D   | E     | F     | G     | H    | J  | S       | Page # |
|-------------|-----|------|------|-----|-------|-------|-------|------|----|---------|--------|
| FT-160      | 68  | 56.5 | 23.5 | 196 | 120   | 50.5  | 63.5  | 54   | —  | 5/16-24 | 6-7    |
| FR5-300     | 122 | —    | —    | 234 | 158.5 | —     | —     | —    | —  | 3/8-24  | 6-7    |
| FT-300      | 90  | 55   | 35   | 240 | 148   | 62    | 80    | 56   | 10 | 3/8-24  | 6-7    |
| IL-300      | 76  | 40   | 50   | 116 | 234.3 | 173   | 113   | 48.6 | 40 | 3/8-24  | 6-7    |
| FF-320      | 68  | 56.5 | 23.5 | 196 | 181.5 | 112.5 | 125.5 | 76   | 62 | 5/16-24 | 6-7    |

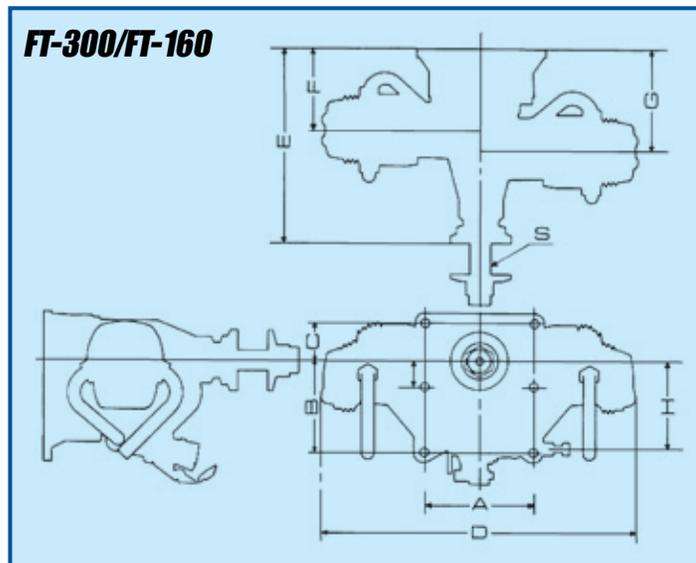
## Car Engines (4-Stroke)

| Description     | A  | B  | D  | F    | G  | J    | S    | Page # |
|-----------------|----|----|----|------|----|------|------|--------|
| FS-26S-C Ver II | 36 | 14 | 43 | 39.8 | 29 | 70.4 | ¼-28 | 8-9    |

### IL-300 Inline



### FT-300/FT-160



# Glow Plugs



## Tough Enough to Take the Heat™

Getting the best engine performance means choosing the right glow plug, which depends on a number of different factors — the engine type, air-fuel mix, nitro percentage, and even air temperature.

What's more, the right glow plug will change as conditions change. Keeping a range of glow plugs on hand will help you fine-tune glow heat and enjoy maximum performance under all conditions.

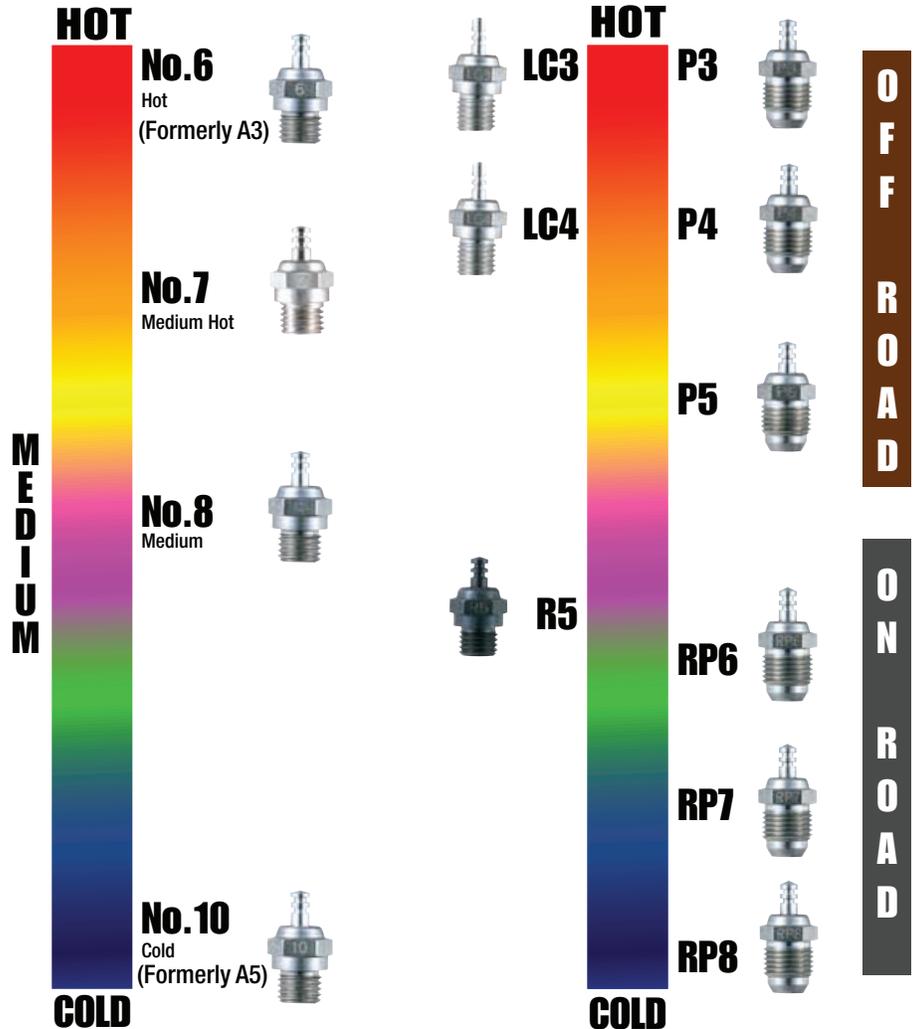
Generally, hot plugs provide better idle and acceleration than cold plugs. Cold plugs will produce more power but may idle more roughly and be harder to tune.

Especially designed for 4-stroke engines



**Type F**

|            |            |            |  |
|------------|------------|------------|--|
| <b>#6</b>  | Hot        | (OSMG2690) | A long-lasting plug for most .10-.60 2-strokes   |
| <b>P-3</b> | Ultra Hot  | (OSMG2699) | For 21VZ-B V-Spec and most .18-.28 off-road racing Turbo head engines  |
| <b>P-4</b> | Super Hot  | (OSMG2697) | For 21VZ-B V-Spec and most .18-.28 off-road racing Turbo head engines  |
| <b>P-5</b> | Very Hot   | (OSMG2711) | For 21VZ-B V-Spec and most .18-.28 off-road racing Turbo head engines, especially when the temperature is high or for leaner needle settings and high-nitro/high-rpm running |
| <b>LC3</b> | Hot        | (OSMG2700) | Long reach, for 1/10 scale off-road engines such as O.S. 21TMs and Traxxas® TRX2.5 & 3.3™ engines  |
| <b>#7</b>  | Medium Hot | (OSMG2713) | For 2-stroke airplane, helicopter and car (except Turbo head) engines. Offers stable idling, broad peak needle settings and punchy throttle response                         |
| <b>RP6</b> | Medium     | (OSMG2703) | For most .12-.21 on-road racing Turbo head engines   |
| <b>LC4</b> | Medium     | (OSMG2708) | Long reach, for 1/10 scale off-road engines such as O.S. 21TMs and the Traxxas TRX2.5 & 3.3™ engines   |
| <b>#8</b>  | Medium     | (OSMG2691) | A favorite for most 2-stroke engines   |
| <b>RP7</b> | Cold       | (OSMG2704) | For most .12-.21 on-road racing Turbo head engines   |
| <b>P-8</b> | Cold       | (OSMG2698) | Outlast the hottest heats with Turbo head engines  |
| <b>#10</b> | Cold       | (OSMG2693) | Ideal for aircraft engines .60-size and up   |
| <b>R5</b>  | Cold       | (OSMG2694) | For leaner needle settings and high-nitro/high-rpm scale racing  |
| <b>F</b>   | 4-Stroke   | (OSMG2692) | Long reach and long life for 4-stroke engines  |



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Web site: [hobbyservices.com](http://hobbyservices.com)

General questions about service and products:  
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