



SKYPOWER
INTERNATIONAL



MADE
IN GERMANY



**Two-stroke and
Wankel engines**

ABOUT SKY POWER INTERNATIONAL

Sky Power International is a leading manufacturer of 2-stroke combustion- and Wankel engines for UAS (Unmanned Aerial Systems) and hybrid applications. Besides in-house development and manufacturing, Sky Power International produces all engines in Germany. Custom adaptations, new developments and continuous performance improvements of the combustion engines are ongoing company objectives.

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SP-28 series

The 2-stroke single cylinder Sky Power International SP-28 CR with 28 ccm is the longest standing engine in our lineup and well known by industry veterans for its robustness and longevity for many years. The Sky Power International SP-28 CR is still our most requested system and particularly suited for fixed wing aircraft on the upper end of the "below 55 lb" or "up to 25 kg" class UASs. The Sky Power International SP-28 CR engine is equipped in the standard configuration with one spark plug and a single ignition unit. The carburetor is rear (CR) mounted.

SP-28 CR

SKU: PP 10.028.001

Type	1-Cylinder Gas Engine
Capacity	28 ccm / 1.71 cu in
Power	2.2 HP / 1.6 KW
Speed Range	2500 – 10000 RPM
Weight	incl. ignition 2.95 lbs (1.34 kg)
Crankshaft	3 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	6 – 8.4 V DC
Bore diameter	1.42 inch (36.00 mm)
Stroke	1.10 inch (28.00 mm)
Torque	2.3 Nm @ 6600 RPM





SP-55 series

The 2-stroke single cylinder SP-55 TS ROS with 55 ccm is the largest single cylinder engine in our lineup and well known by industry veterans for its robustness and longevity for many years. The Sky Power SP-55 TS ROS is equipped in the standard configuration with 2 sparkplugs per cylinder as well as a rear output shaft (ROS) for additional equipment mounting. The engine is used by customers for fixed wing, heli and VTOL aircraft on the upper end of the "below 55 lb" or "up to 25 kg" class UASs as well as hybrid configurations to produce electricity. The Sky Power SP-55 TS ROS engine is equipped in the standard configuration with a twin ignition unit.

The cylinder is casted aluminum and have been manufactured in it's current form for over a decade. The Crankcase is CNC machined in order to be able to adjust customer specific parts to it.

SP-55 TS ROS

SKU: PP 10.055.001

Type	1-Cylinder Gas Engine
Capacity	55 ccm / 3.35 cu in
Power	3.9 HP / 2.9 KW @ 6500 RPM
Speed Range	2200 – 10000 RPM
Weight	incl. ignition 5.68 lbs (2.58 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	6 – 8.4 V DC
Bore diameter	1.77 inch (45.00 mm)
Stroke	1.38 inch (35.00 mm)
Torque	4.7 Nm @ 5500 RPM





SP-55 FITS ROS

SKU: PP 20.055.021

Type	1-Cylinder Gas Engine
Capacity	55 ccm / 3.35 cu in
Power	4.1 HP / 3.0 KW @ 7000 RPM
Speed Range	2200 – 8000 RPM
Weight	without subcomponents 6.08 lbs (2.76 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	12 – 15 V DC
Bore diameter	1.77 inch (45.00 mm)
Stroke	1.38 inch (35.00 mm)
Torque	4.8 Nm @ 5500 RPM



SP-55 FITS Generator application

SKU: PP 20.055.900

Dimensions	31.6 × 26.1 × 25.2 cm
Type	1-Cylinder Gas Engine
Capacity	55 ccm / 3.35 cu in
Power	2 KW pure electrical
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Bore diameter	1.77 inch (45.00 mm)
Stroke	1.37 inch (35.00 mm)





SP-56 series

The 2-stroke single cylinder Sky Power International SP-56 TS ROS with 56 ccm and rear output shaft is the smallest dual cylinder engine in the Sky Power portfolio. It is also the newest, forged from using the proven SP-28 parts. The Sky Power International SP-56 TS ROS is equipped in the standard configuration with 1 sparkplug per cylinder due to the compact size. The dual cylinder boxer style offers a low vibration power dense two stroke for the below '77lbs or up to 35kg'. The engine is used by customers in small heli config UAS as well as fixed wing platforms.

The cylinder is casted aluminum and the crankcase is CNC machined in order to be able to adjust to customer specific requirements or mounting plate.



SP-56 ROS

SKU: PP. 10.056.001

SKU SP-56 (exhaust at the top): PP. 10.056.002

Type	2-Cylinder Gas Engine
Capacity	56 ccm / 3.42 cu in
Power	4.6 HP / 3.4 KW @ 7000 RPM
Speed Range	2200 – 10000 RPM
Weight	incl. ignition 5.54 lbs (2.52 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	6 – 8.4 V DC
Bore diameter	1.42 inch (36.00 mm)
Stroke	1.10 inch (28.00 mm)
Torque	4.6 Nm @ 6500 RPM



SP-110 series

This 2-stroke dual cylinder Sky Power International SP-110 TS ROS (rear output shaft) with 110ccm is a common engine system on UAV programs. Designed and built from the same proven core architecture as other dual cylinder engines in the portfolio, this engine system offers power density and reliability in all operational scenarios. The SP-110 is equipped with dual spark plugs per cylinder, the crankcase is CNC machined and the cylinder is casted aluminium. The ROS feature allows for greater operational diversity, to include a starter generator which can be configured into a hybrid or power generation capability.

The SP-110 TS ROS has achieved 10000 hrs globally in all environmental conditions, with a key user flying in desert conditions with high continuous ambient temperature and sand particulates.

SP-110 TS ROS

SKU: PP 10.110.001

Type	2-Cylinder Gas Engine
Capacity	110 ccm / 6.7 cu in
Power	9.4 HP / 6.9 KW @ 6000 RPM
Speed Range	1500 – 10000 RPM
Weight	incl. ignition 8.80 lbs (4.00 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	6 – 8.4 V DC
Bore diameter	1.77 inch (45.00 mm)
Stroke	1.37 inch (35.00 mm)
Torque	11 Nm @ 5750 RPM





SP-110 TS ROS (exhaust at the top)

SKU: PP 10.110.002

Type	2-Cylinder Gas Engine
Capacity	110 ccm / 6.7 cu in
Power	7.48 HP / 5.5 KW @ 6000 RPM
Speed Range	2200 – 10000 RPM
Weight	incl. ignition 8.80 lbs (4.0 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	6 – 8.4 V DC
Bore diameter	1.77 inch (45.00 mm)
Stroke	1.37 inch (35.00 mm)
Torque	10 Nm @ 5000 RPM



SP-110 FI TS ROS

SKU: PP 20.110.021

Type	2-Cylinder Gas Engine
Capacity	110 ccm / 6.7 cu in
Power	9.8 HP / 7.2 KW @ 6000 RPM
Speed Range	1800 – 7000 RPM
Weight	without components 9.66 lbs (4.39 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	12 – 15 V DC
Bore diameter	1.77 inch (45.00 mm)
Stroke	1.37 inch (35.00 mm)
Torque	12.4 Nm @ 5250 RPM



SP-170 series

The Sky Power International SP-170 2-stroke dual cylinder with 170ccm is the mid range propulsion system designed for aircraft from 60-80kg MTOW. This engine size has successfully completed 100s of hours of maritime operations for EMSA and proved itself in all associated operating conditions. The SP-170 TS ROS is equipped with dual spark plugs per cylinder for redundancy and a rear output shaft for user adaptability. Optional starter generator can be included, allowing for hybrid functionality increasing the operational capacity for this engine.

SP-170 TS ROS

SKU: PP 10.170.001

Type	2-Cylinder Gas Engine
Capacity	170 ccm / 10.37 cu in
Power	12.6 HP / 9.3 KW @ 5250 RPM
Speed Range	1500 – 10000 RPM
Weight	incl. ignition 10.03 lbs (4.56 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	6 – 8.4 V DC
Bore diameter	2.00 inch (51.00 mm)
Stroke	1.60 inch (41.00 mm)
Torque	18.1 Nm @ 4750 RPM



SP-170 TS ROS (exhaust on top)

SKU: PP 10.170.002

Type	2-Cylinder Gas Engine
Capacity	170 ccm / 10.37 cu in
Power	12.6 HP / 9.3 KW @ 5250 RPM
Speed Range	1500 – 10000 RPM
Weight	incl. ignition 10.03 lbs (4.56 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	6 – 8.4 V DC
Bore diameter	2.00 inch (51.00 mm)
Stroke	1.60 inch (41.00 mm)
Torque	18.1 Nm @ 4750 RPM

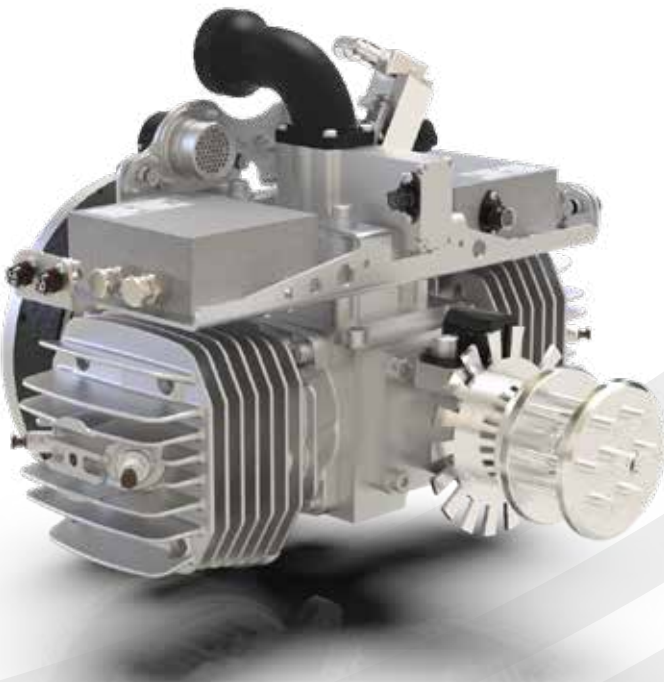




SP-170 FI TS ROS

SKU: PP 20.170.021

Type	2-Cylinder Gas Engine
Capacity	170 ccm / 10.37 cu in
Power	13.60 HP / 10.0 KW @ 5500 RPM
Speed Range	1500 – 8000 RPM
Weight	without subcomponents 10.89 lbs (4.95 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Bore diameter	2.00 inch (51.00 mm)
Stroke	1.60 inch (41.00 mm)
Torque	18.40 Nm @ 5000 RPM



SP-170 HF FI TS ROS

SKU: PP 35.170.221

Type	2-Cylinder Gas Engine
Capacity	170 ccm / 10.37 cu in
Speed Range	2000 – 7000 RPM
Weight	without subcomponents 20.24 lbs (9.2 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	12.5 – 16 V DC
Bore diameter	2.01 inch (51.00 mm)
Stroke	1.61 inch (41.00 mm)
Torque	18.19 Nm @ 4750 RPM



SP-210 series

This 2-stroke dual cylinder Sky Power International SP-210 with 210ccm is the most popular dual in the propulsion portfolio, positioned in the 60~100kg UAS tier. Current operational conditions include maritime and desert environments with 1000s hours achieved to date. The SP-210 comes with dual spark for redundancy and a rear output shaft for user flexibility.

SP-210 TS ROS

SKU: PP 10.210.001

Type	2-Cylinder Gas Engine
Capacity	210 ccm / 12.81 cu in
Power	17.1 HP / 12.6 KW @ 6000 RPM
Speed Range	1500 – 10000 RPM
Weight	incl. ignition 14.43 lbs (6.56 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	6 – 8.4 V DC
Bore diameter	2.16 inch (55.00 mm)
Stroke	1.77 inch (45.00 mm)
Torque	22.5 Nm @ 5000 RPM



SP-210 TS ROS (exhaust on top)

SKU: PP 10.210.002

Type	2-Cylinder Gas Engine
Capacity	210 ccm / 12.81 cu in
Power	17.1 HP / 12.6 KW @ 6000 RPM
Speed Range	1500 – 10000 RPM
Weight	incl. ignition 14.43 lbs (6.56 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	6 – 8.4 V DC
Bore diameter	2.16 inch (55.00 mm)
Stroke	1.77 inch (45.00 mm)
Torque	22.5 Nm @ 5000 RPM

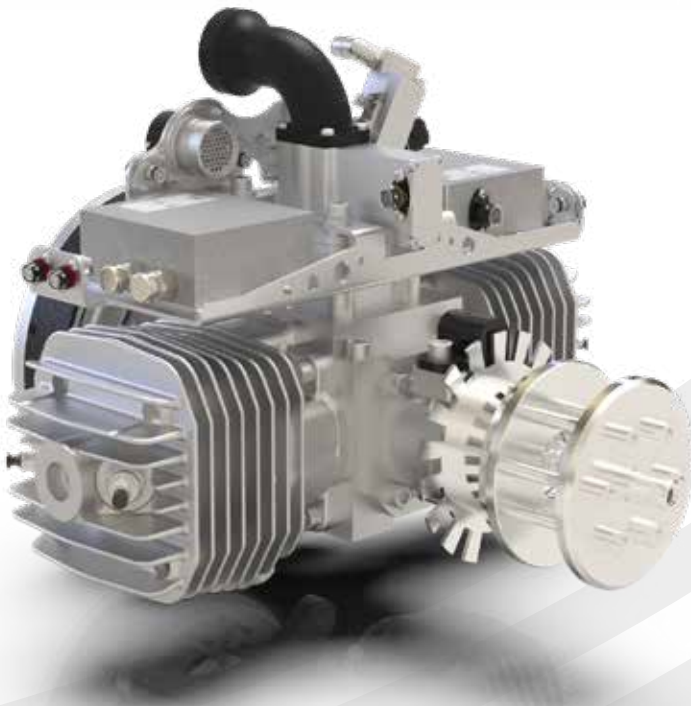




SP-210 FI TS ROS

SKU: PP 20.210.021

Type	2-Cylinder Gas Engine
Capacity	210 ccm / 12.81 cu in
Power	14.9 HP / 11.0 KW @ 5500 RPM
Speed Range	1500 – 7000 RPM
Weight	without subcomponents 20.7 lbs (9.4 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	12 – 15 V DC
Bore diameter	2.16 inch (55.00 mm)
Stroke	1.77 inch (45.00 mm)
Torque	21.00 Nm @ 4500 RPM



SP-210 HF FI TS ROS

SKU: PP 35.210.221

Type	2-Cylinder Gas Engine
Capacity	210 ccm / 12.81 cu in
Speed Range	2200 – 7000 RPM
Weight	without subcomponents 21.65 lbs (9.84 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix Jet-A, Jet-A1, JP-8
Operating Voltage	12.5 – 16 V DC
Bore diameter	2.16 inch (55.00 mm)
Stroke	1.77 inch (45.00 mm)
Torque	17.3 Nm @ 5500 RPM



SP-275 series

The Sky Power International SP-275 2-stroke dual cylinder with 275ccm is the largest and most powerful dual cylinder, making it the most versatile 2 stroke engine in our portfolio. This power dense propulsion system is most suited to programs from 100-150kg MTOW due to its dimensions and power output. This engine size has been manufactured for over a decade and accrued more than 10,000 operational hours. Internal development and testing has accumulated over 800hrs on dynamometer simulating various mission profiles and conditions. With over 1000 engine systems produced to date, the robustness and durability of the SP-275 TS ROS has been proven in all global scenarios, from extreme cold to heat, humid and salty conditions to dust.

Many customers fly over 12 hours continuously and BVLOS, due to this engines target market system. With the starter generator mounted on the ROS, the SP-275 is a dynamic propulsion system capable of several different configurations:

SP-275 TS ROS

SKU: PP 10.275.001

Type	2-Cylinder Gas Engine
Capacity	275 ccm / 16.78 cu in
Power	21.7 HP / 16.0 KW @ 6000 RPM
Speed Range	1500 – 10000 RPM
Weight	without ignition 17.29 lbs (7.86 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	6 – 8.4 V DC
Bore diameter	2.32 inch (59.00 mm)
Stroke	1.97 inch (50.00 mm)
Torque	27.9 Nm @ 4750 RPM





SP-275 TS ROS (exhaust at the top)

SKU: PP 10.275.002

Type	2-Cylinder Gas Engine
Capacity	275 ccm / 16.78 cu in
Power	21.7 HP / 16.0 KW @ 6000 RPM
Speed Range	1500 – 10000 RPM
Weight	without subcomponents 17.29 lbs (7.86 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	6 – 8.4 V DC
Bore diameter	2.32 inch (59.00 mm)
Stroke	1.97 inch (50.00 mm)
Torque	27.9 Nm @ 4750 RPM



SP-275 FI TS ROS

SKU: PP 20.275.022

Type	2-Cylinder Gas Engine
Capacity	275 ccm / 16.78 cu in
Power	21.5 HP / 15.8 KW @ 6000 RPM
Speed Range	1500 – 8000 RPM
Weight	without subcomponents 20.35 lbs (9.25 kg)
Crankshaft	4 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	12 – 15 V DC
Bore diameter	2.32 inch (59.00 mm)
Stroke	1.97 inch (50.00 mm)
Torque	28.3 Nm @ 3250 RPM



SP-275 series

SP-275 TS CR

SKU: PP 10.275.001

Type	2-Cylinder Gas Engine
Capacity	275 ccm / 16.78 cu in
Power	21.4 HP / 15.7 KW @ 6000 RPM
Speed Range	1500 – 10000 RPM
Weight	excl. ignition 17.16 lbs (7.8 kg)
Crankshaft	3 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	6 – 8.4 V DC
Bore diameter	2.32 inch (59.00 mm)
Stroke	1.97 inch (50.00 mm)
Torque	27.8 Nm @ 4750 RPM



SP-275 TS CR Ø3

SKU: PP 10.275.003

Type	2-Cylinder Gas Engine
Capacity	275 ccm / 16.78 cu in
Power	21.7 HP / 15.9 KW @ 6000 RPM
Speed Range	1500 – 10000 RPM
Weight	excl. ignition 16.1 lbs (7.3 kg)
Crankshaft	3 ball bearings
Oil/Gasoline ratio	1:50 / 2% mix
Operating Voltage	6 – 8.4 V DC
Bore diameter	2.32 inch (59.00 mm)
Stroke	1.97 inch (50.00 mm)
Torque	27.6 Nm @ 5000 RPM



Test stands

Sky Power International offers mobile test stands for all engine types. Especially for customers who maintain and run-in a high number of engines themselves, an on-site test stand makes sense, as these can be subjected to a final quality control on our test stand. The same tests are carried out as at our headquarters in Germany.

We are happy to advise you on the configuration of the test stands



SP-180 series

The SP-180 hybrid wankel is the flagship of the Sky Power International propulsion portfolio. This wankel propulsion system has class leading performance figures that are achieved through a complex patented internal clean sheet design, centered around the single cylinder 180ccm configuration. Due to the nature of wankel, this propulsion system is exceptionally light and has a much smaller space envelope than the comparative two stroke equivalent. Minimal radial or torsional vibrations make this engine specifically compatible with high powered optics or sensors. The ability to mount this engine at 90 degrees (vertically) adds to the user flexibility – suited to heli applications. The engine has an integrated starter generator, which allows the wankel to have several different operating functions:

Mechanical only: up to 22kW mechanical shaft power as primary form of propulsion

Mechanical and electrical (hybrid): combination of both electrical and mechanical propulsion.

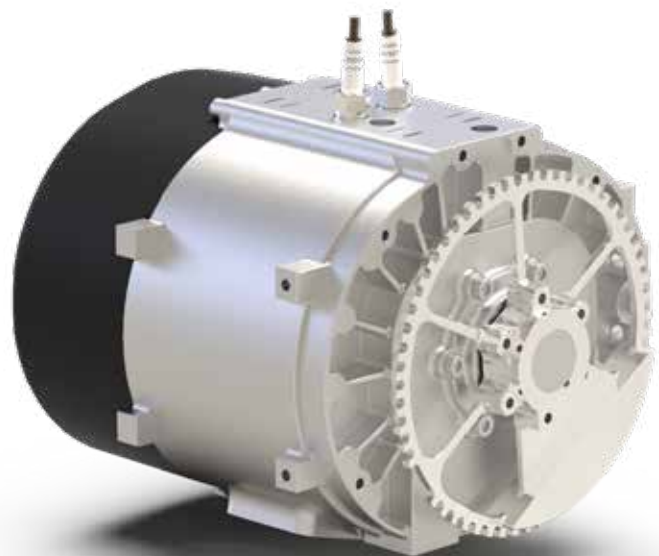
Power generation (onboard battery pack required): The wankel is providing power to the generator system and it is the electrical output that is used as the primary form of propulsion.

Hybrid boost mode: Combination of both mechanical and electrical simultaneously for maximum performance

SP-180 HF SRE

SKU: PP 35.180.009

Type	Rotary engine
Capacity	180 ccm / 10.98 cu in
Power	23 HP / 17.1 KW @ 6000 RPM Combustion power up to 20.1 HP / 15 KW Electrical power *power is depending on cooling concept
Speed Range	2000 – 6000 RPM
Weight	without subcomponents 24.25 lbs (11.0 kg)
Oil/Gasoline ratio	1:200 / 2% mix
Cooling	water cooled housing & oil rotor cooling (active cooling)
Torque	27.5 Nm @ 5500 RPM





SP-180 SRE hybrid

SKU: PP 10.180.001

Type	Wankel rotary
Capacity	180 ccm / 10.99 cu in
Power	29 HP / 22 KW @ 6000 RPM *power is depending on the cooling
Speed Range	1500 – 10000 RPM
Weight	without subcontinents 20.9 lbs (9.5 kg)
Oil/Gasoline ratio	1:50 / 2% mix
Cooling	Water and oil
Torque	36.8 Nm @ 5,500 RPM



SP-180 SRE hybrid Demonstrator

SKU: PP 10.180.001-1

Type	Rotary engine
Capacity	180 ccm / 10.98 cu in
Power	29 HP / 22 KW @ 6000 RPM Combustion power up to 20.1 HP / 15 KW Electrical power *power is depending on cooling concept
Speed Range	2000 – 7000 RPM
Weight	excluding accessories 20.94 lbs (9.5 kg)
Oil/Gasoline ratio	1:50 / 2% mix
Bore diameter	2.01 inch (51.00 mm)
Torque	36 Nm @ 6000 RPM



Accessories

Sky Power International offers a wide range of accessories for your engines. These accessories are matched to the Sky Power engines and guarantee a reliable running performance.



2-stroke Oil (1 liter)

The 2-stroke oil is a fully-synthetic engine oil for all types of air-cooled two stroke engines, for mixing with petrol when more than 2% oil is required. It is designed especially for demanding 2-stroke engines and offers a wide range of benefits:

- less smoke
- minimal ash content reduces residual deposits
- for fuel injection engines
- improved corrosion protection
- fulfils specifications of ISO-L-EGD and JASO FD



Mejzlik Propeller

Sky Power is cooperating with Mejzlik Propeller. All propellers are manufactured from carbon fiber and can be adapted in a variety of features, forms and designs of the customer application and the outputs to be achieved. Besides the size and the pitch, the number of blades, the weight, the carbon fiber material as well as the surface can also be adapted. Various propeller tests are carried out before delivery. Besides a balance tests, an inner structure tests, an optional RPM tests and a visual quality inspection are performed.



Blue foam air filter



Spark Plug

For more accessories and spare parts please visit our website:



Engine Kit + Project Development

Customers are at various stages of product development, enabling interaction with Sky Power to align with customer expectations. Some customers already know exactly what kind of propulsion performance is required. Either way, both sides must work together to specify the next steps of the project, whether a single engine or complex propulsion development.



Workshops

Customers are at various stages of product development, enabling interaction with Sky Power to align with customer expectations. Some customers already know exactly what kind of propulsion performance is required. Either way, both sides must work together to specify the next steps of the project, whether a single engine or complex propulsion development.

Sky Power is flexible, agile and proactive to each customer project conditions, allowing for complete understanding and customer co-operation.

Consulting

If the objectives and expectations of our customers is not yet clearly defined, Sky Power's consultation service is the next logical step. This may include program development as well as system integration services. The aim of the project consulting is to support the customer with technical knowledge, experience, and Sky Power's professional opinion, to determine the project and the level of support to the customer.

Management

Sky Power undertakes the complete project management lifecycle, from initial conceptual TRL stage through to serial production. Technical parameters, schedules and budgets must be clearly defined in advance to allow for Sky Power's agile management of the complete UAS/ project development. The earlier the cooperation starts means the more comprehensive service received from Sky Power.





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