SNALL ENGINES



ENGINE PARTS

SNALL ENGINES

An engine is a device which converts energy into mechanical motion to do work.



Small engines are described as internal combustion engines rated up to 25 horsepower.

Internal Combustion Engine

- Internal: To happen inside
- Combustion: Burning of some sort of fuel and air.
- Engine: Converts heat energy into a useful mechanical energy.

PARTS OF THE ENGINE



Engine Block

2. Cylinder Block

1. Crankcase

Crankcase

Cylinder Block

1. Cylinder Bore

2. Valves

Head gasket goes here

3. Cooling Fins



Cooling Fins-Cooling fins keep heat away from the cylinder block by increasing the surface area of the cylinder block and contacting the already existing cooler air for cooling efficiency.

Spark Plug

PARTS OF THE ENGINE

≻PISTON

A cylindrical engine component that slides back and forth in the > CONNECTIVE ROP by forces produced during the combustion process. **Engine component that** ► cransfers motion from the ► cranksHAFT the crankshaft and fanctigin a conferententhat converts linear (reciprocating) >FLYWHEEtion-of the piston into-rot motion. A cast iron disk that is mounted at one end of the > COUNTERWEIGHTS provide inertia forput winding mass cast into the crankshaft which partially balances the forces of a reciprocating piston.



0

Flywheel Nut





Crankshaft

Crankshaft-converts the linear motion of the piston into rotary motion. Throw-measurement from the center of the crankshaft to the center of the crankpin journal. Determines the stroke of an engine. Throw = ½ stroke.



Crankgear-interlocks with the cam gear to turn the crankshaft Counterweights-balances the forces of the reciprocating piston and reduces the load on crankshaft bearing journals.

Crankshaft

Crankpin Journal-attaches the connecting rod to the crankshaft

PTO Journal

Magneto Journal

Bearing Journal

Piston Pin

Connecting Rod-transfers motion from the piston to the crankshaft and functions as a lever arm

Piston

Piston pin Bearing Surface

Crankpin Journal Bearing Surface

PARTS OF THE ENGINE

PISTON

PISTON: A cylindrical engine component that slides back and forth in the cylinder bore by forces produced during the combustion process.



PARTS OF THE ENGINE

PISTON

PISTON:

DIFFERENT PISTON TYPES:

FLAT



DOMED



IRREGULAR







Piston

Rings

Piston Head

Skirt

Piston Pin Bore

PARTS OF THE ENGINE

PISTON

PISTON RINGS:

An expandable split ring used to provide a seal between the piston and the cylinder wall

Three types:

- 1. COMPRESSION RING
- 2. WIPER RING
- 3. OIL RING







1. Compression Ring-sealsthe combustion chamber from any leakage during the combustion process.

2. Wiper Ring- used to further seal the combustion chamber and to wipe the cylinder wall clean of excess oil.

3. Oil Ring-Wipes excess oil from the cylinder wall during piston movement. Openings in the ring returns the excess oil to the engine block.

Piston Rings



Valve Tappets

Valve Tappets-Rides on the camshaft and pushes the bottom of the valve stem to open the valve Cam Shaft- includes cam gear and cam lobes; driven by the crankgear

1. Cam Gearportion of the camsha that that interlocks with the crankgear

Timing Mark

2. Cam Lobes- egg-shaped protrusion on the camshaft that moves a tappet to open a valve; controls the lift and duration of the opening and closing of the valves Valve Retainer

Valve Spring

Valve

Stem

Valve Head

Exhaust Valve- allows exhaust valves to flow out of the cylinder Intake Valve- allows the air-fuel mixture to flow into the cylinder

Spark Plug Wire

Armature

A CONTRACTOR OF A CONTRACTOR OF

and the second second

0

ST. AND

Magneto – electrical generator used in ignition system

and the second second

Air Filter

-

Descrit Chemistr's Assaults' Teaconics of a straining Last is manual districtions instantic action of a straining of space instantic description instantic operated Marintagen assault back is from teaches and a straining operated Marintagen assault back is from teaches and a straining operated Marintagen assault back is from teaches and a straining operated Marintagen assault back from teaches and a straining operated with a straining from teaches and a straining operated with a straining from teaches and a straining operated with a straining from teaches and a straining operated with a straining from teaches and a straining operated with a straining from teaches and a straining operated with a straining operation from teaches and a straining operated with a straining operation from teaches and a straining operated with a straining operation from teaches and a straining operated with a straining operation from teaches and a straining operated with a straining operation from teaches and a straining operation operation operation operation from teaches and a straining operation operation operation operation operation operation operation operation operation from teaches and a straining operation operat

Carburetor

Carburetor- provides the proper mixture of air and fuel to the intake valve







Starter Housing



1

. .

Blower Housing Cover

11

HORSEPOWER

