

Kohler

Service, Operator's,
& Parts Manual

**K160, K160R,
K160P, K160S**

and K160C

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KO-SOP-K160+

Service, Operator's, & Parts Manual

K160

3.7 H.P. at 1800 R.P.M.

5.1 H.P. at 2400 R.P.M.

6.3 H.P. at 3000 R.P.M.

6.6 H.P. at 3600 R.P.M.

Specifications

Bore: $2\frac{7}{8}$ inches.

Stroke: $2\frac{1}{2}$ inches.

Piston Displacement: 16.22 cubic inches.

Weight: 67 pounds.

Type: 4-cycle, single cylinder, air-cooled.

Air-Cooled: Blower and housing designed with baffles directing a large volume of cool air around finned cylinder and head area maintaining correct temperatures under all operating conditions.

Ignition: High voltage crankshaft magneto for instant starting. Spark plug 14 mm. medium heat range.

Breaker Points: Readily accessible, dustproof and moistureproof assembly externally mounted for quick service.

Stop Button: Conveniently mounted on breaker point cover.

Lubrication: Splash type thoroughly lubricating all internal working parts.

Oil Filler: Located on crankcase shoulder with integral oil level gauge.

Oil Capacity: $2\frac{1}{2}$ pints.

Governor: Precision, oil-bathed, flyweight type, with external adjustment.

Main Bearings: Anti-friction ball bearing on both ends of crankshaft.

Crankshaft: Heat treated alloy steel forging with integral counterweights and induction hardened crank-pin.

Connecting Rod: Aluminum alloy with large bearing area.

Piston: Low expansion aluminum alloy.

Piston Rings: Two compression and one oil control.



Valves: Forged steel alloy intake, heat resistant steel alloy exhaust.

Exhaust Valve Seat: Stellite insert.

Valve Tappets: Hardened and precision ground.

Cylinder and Crankcase: Metallurgically controlled close grained cylinder iron. Cast in our foundries.

Cylinder Head: Aluminum alloy with deep fins closely spaced for efficient cooling.

Carburetor: Float feed, adjustable type, suitable for angle operation.

Fuel Filter: Glass sediment bowl with handy fuel shut-off valve.

Fuel Tank: $1\frac{1}{4}$ gallon capacity.

Air Cleaner: Oil bath.

Direction of Rotation: Counterclockwise viewed from power take-off side.

**KOHLER
ENGINES**

INSTRUCTIONS FOR STORING

If your engine is to be out of service for a considerable length of time the following procedure is recommended:

1. Drain fuel tank.
2. Drain carburetor by loosening nut on bottom of carburetor bowl, and retighten.
3. Remove, clean, and replace sediment bowl.
4. Drain oil from crankcase while engine is still hot and flush with fresh, light oil.
5. Clean exterior of engine.
6. Spread a film of light oil over any exposed surfaces of engine subject to corrosion.
7. Pour a tablespoon full of SAE 30 oil into spark plug hole and crank engine slowly by hand. Replace spark plug.
8. Store in dry place.

TROUBLE SHOOTING

Following is a list of troubles which may occur from average use and normal wear. With the exception of cleaning, minor adjustments, and routine maintenance outlined on the preceding pages, we suggest that only

an authorized Kohler Service outlet service your engine. His training and experience will assure you quick and reliable service at a minimum cost.

Hard Starting

1. Fuel tank empty.
2. Slow cranking.
3. Moisture on spark plug.
4. Loose spark plug connection.
5. Spark plug gap too wide or dirty.
6. Improper timing.
7. Carburetor needs cleaning or adjusting.

Overheating

1. Dirty air intake screen, shroud or cooling fins.
2. Improper fuel.
3. Fuel mixture too lean.
4. Improper ignition timing.
5. Too much oil in crankcase.

Backfiring

1. Fuel mixture too lean.
2. Sticky intake valve.
3. Improper timing.

Occasional Missing at High Speed

1. Spark plug gap too wide.
2. Improper carburetor setting or lack of fuel.
3. Wrong type spark plug. Use manufacturer's recommended spark plug.
4. Improper timing.

Missing Under Slow Hard Pull

1. Spark plug gap too wide.
2. Pitted breaker points.
3. Partially fouled spark plug.
4. Defective ignition cable.

Knocking

1. Fuel octane rating too low.
2. Fuel mixture too lean.
3. Overheated engine.
4. Spark plug overheated.
5. Improper timing.
6. Loose connecting rod.
7. Excessive carbon.

Operating Erratically

1. Clogged fuel line.
2. Water in fuel.
3. Faulty choke control.
4. Improper fuel mixture.
5. Loose ignition system connections.
6. Air leaks in manifold or carburetor connections.

Engine Will Not Idle

1. Improper carburetor idling adjustment.
2. Carburetor jets clogged.
3. Spark plug gap too small.
4. Leaking carburetor or manifold gaskets.
5. Sticking or leaking valves.
6. Weak coil or condenser.

See the Kohler Dealer or Distributor for overhaul and other maintenance work.

Remote Throttle Control Installation

The following procedure for installing a remote throttle control on your engine is recommended:

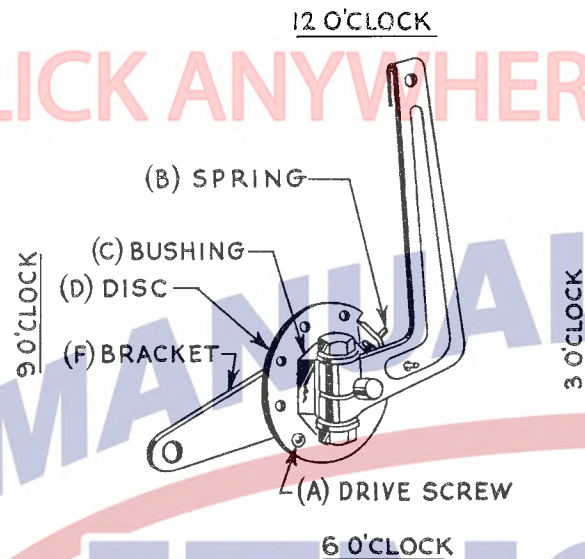


Figure 3

Loosen bushing (C) and point bracket (F) in a direction between 6 and 10 o'clock best suited for your application. Tighten bushing (C) to lock bracket. *Position of the disc and spring should not be changed.*

Figure 4
Pry out drive screw (A) with a screw driver.

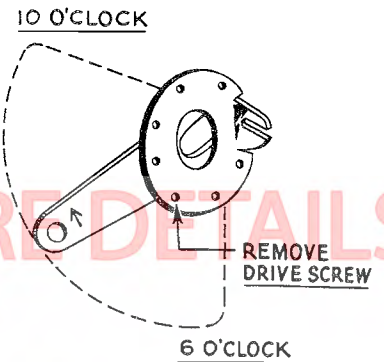
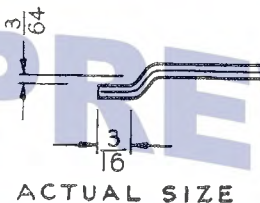


Figure 5

Bend the end of your throttle cable, as shown in Figure 5, to obtain the best results in rotating the disc.



THROTTLE CONTROL
LEVER (J)

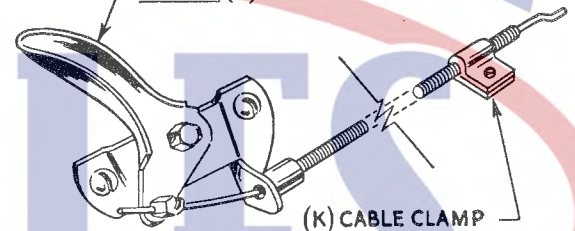


Figure 6

Move the throttle control lever (J) to an open position as shown in Figure 6. Cable clamp (K) remains loose until the end of the cable is inserted in disc (D).

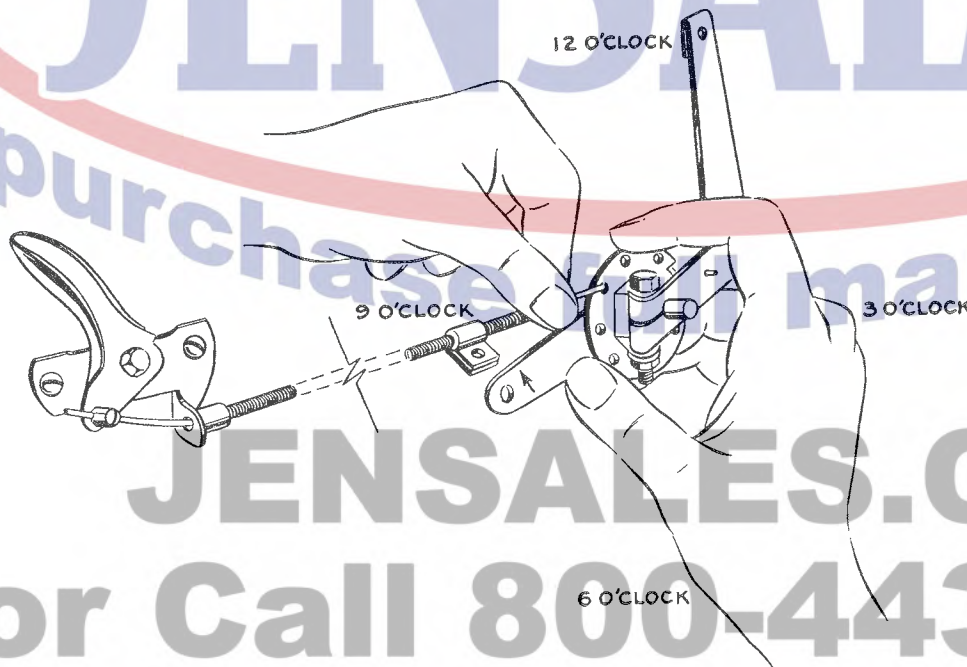


Figure 7

Hold disc (D) with spring (B) in 2 o'clock position regardless of the location of the bracket. Bring throttle cable parallel to the bracket on the side indicated by an arrow and insert cable in the hole as indicated. Tighten cable clamp bolt.

Operate control handle from open to closed positions to check that disc (D) rotates spring (B) between 2 and 5 o'clock.

DECREASE

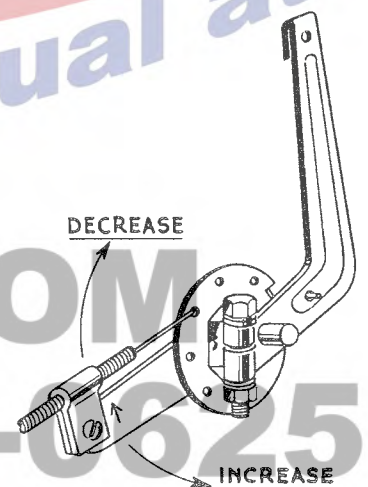


Figure 8

If you want to adjust the engine speed after your throttle cable is attached, move bracket as shown in Figure 8. *Bushing should not be loosened to make this adjustment.*

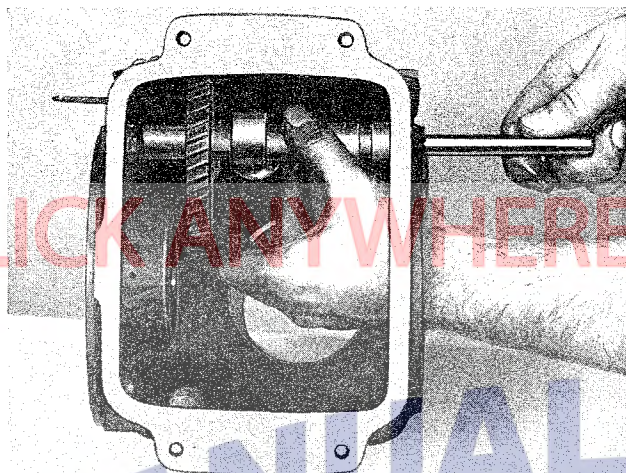


Figure 14

Installation of Valve Tappets and Camshaft Assembly

The cylinder block should be turned upside down and valve tappets placed in the tappet guides.

Figure 14 illustrates the installation of the camshaft assembly and camshaft pin.

Hold the camshaft assembly in position shown, and slide the camshaft pin through from the bearing plate side and press into the power take-off side of the block.

Camshaft end clearance should be .003 to .020". Should the end play exceed this amount a washer can be used to decrease it. Washer .005 thick is part No. 230293. Washer .010 thick is part No. 230294.

Installation of Crankshaft in Cylinder Block

The installation of the crankshaft in the cylinder block is illustrated in Figure 15.

Timing marks are provided on crankshaft and camshaft gears to correctly time the engine. The mark on a tooth of the camshaft must line up with mark on the shoulder of the crankshaft after the crankshaft is in place. Chalk may be used to show up timing marks more clearly.

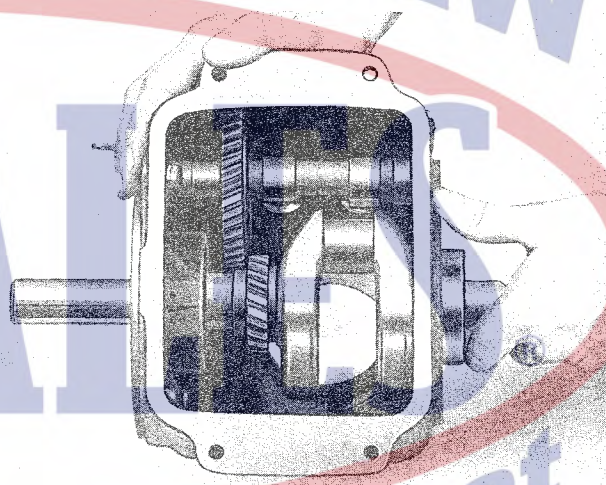


Figure 15



Figure 16

Installation of Bearing Plate

Press the front main ball bearing into the plate with the same tool used to press the rear ball bearing into the cylinder block. See Figure 16.

Assemble the bearing plate to the cylinder block as illustrated in Figure 17.

Press the bearing plate, gasket, and ball bearing on the crankshaft and into the block carefully to prevent bending the crankshaft.

Even pressure around the entire plate prevents distortion.



Figure 17

Installation of Connecting Rod, Piston and Ring Assembly

After the crankshaft has been installed in the cylinder block, the piston and connecting rod assembly are installed in the cylinder. See Figure 18.

The piston ring gaps should be equally distributed around the piston and must not be in line. A ring compressor should be used when possible to prevent breaking piston rings when the piston enters the cylinder.

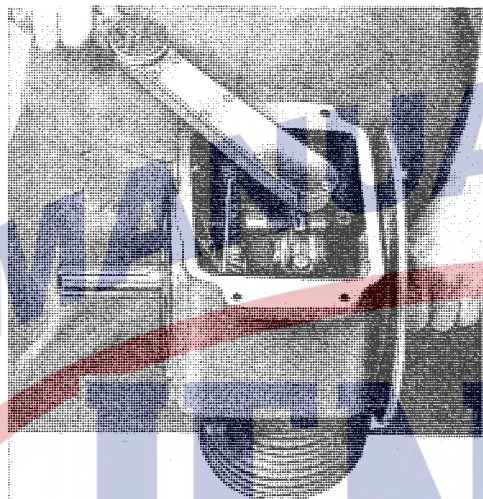


Figure 19

Tightening Connecting Rod Cap Screws

The cylinder block is placed upside down as shown in Figure 19 and the large end of the connecting rod bolted to the crankpin. The connecting rod cap, screw lock and cap screws are then assembled. It is important that the marks on the cap and rod line up, facing the flywheel end of the engine. Cap screws must be tightened with a torque wrench to a tension of 180 inch pounds. After tightening cap screws bend tang of screw lock against screw head with a pliers.



Figure 18



Figure 20

Installation of Oil Seals on Crankshaft

Figure 20 shows the two oil seals on the crankshaft. A tapered tool is used on both ends of the crankshaft to guide the seals into position without damaging the lip of the seals. This is very important, as any foreign matter on this knife-like edge, or bending of the seal, may damage it and cause an oil leak. After the seals are started on the shaft, the block may be placed on its side and the seals driven squarely into the bearing plate and cylinder block.

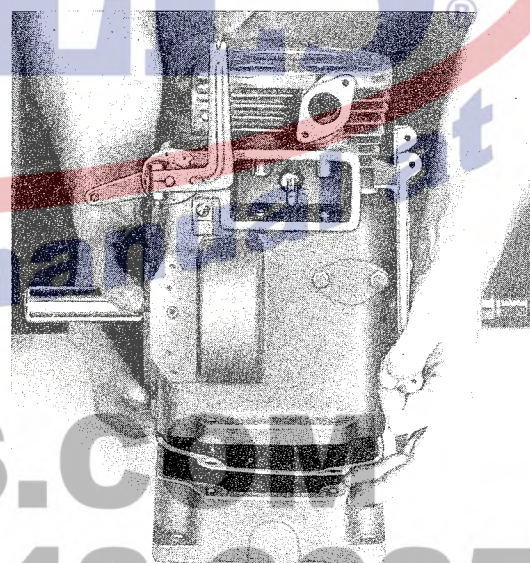


Figure 21

Installation of Cylinder Block on Oil Base

The oil base gasket is placed in position and the cylinder block assembled to the base as shown in Figure 21. The gasket surface must be kept clean to prevent oil leaks. Install the oil filler plug and gauge.