

Pionjar 120 Instructions

TO START MACHINE:

- 1) close air filter
- 2) open fuel needle completely
- 3) pull the starter cord slowly several times to allow fuel into cylinder(jug). When gas fumes combust and machine threatens to start; stop pulling on cord
- 4) open air filter
- 5) pull the starter cord rapidly several times to start. When machine begins running let it idle for 2-3 minutes to let it warm up and to allow all internal parts to become well lubricated.
- 6) now close fuel needle to about the half way point. Rotating speed of machine will rise gradually. If machine runs rough with smokey exhaust the engine is not getting enough fuel; open fuel needle (counter-clockwise) until engine smooths out and exhaust clears.

STARTING TIPS:

In order for the engine to start properly the correct amount of fuel must be introduced into the jug. Too much fuel and machine floods; too little and no ignition. The best method for judging fuel flow is to notice a splash of fuel emitting from exhaust pipe as you pull the starter cord(step 3 above). Opening the fuel needle all the way usually results in this correct method of starting. If fuel is not seen spashing out of exhaust pipe then open fuel needle completely. If fuel needle is already wide open then fuel system is blocked(clogged needle or gas filter) or there is an air leak in the gas line. When fuel is noticed in exhaust pipe continue to step 4 and so on.

If you are unfamiliar with the old fuel needle type of fuel delivery system then you must know that even though they are very simple and reliable, they are known to flood an engine in a blink of an eye. Fortunately clearing the flooded cylinder is easy. The machine should start running on the first or second pull in step 5 above. If machine does not start after the third or fourth pull; stop pulling; jug is flooded. To clear jug, close fuel needle and close air filter and pull on starter cord 3 or 4 times or until engine threatens to start(should be no more than 4-5 pulls). Jug is now cleared and you can repeat starting procedure, beginning with step 2 above. Give yourself a little time and soon you will be an expert at starting!

Warning! The pull starter cord is only about 2 ft long and is designed to start the engine with short quick pulls like a chainsaw or weedwacker. Do not attempt to start this machine like it is a 4-wheeler or snowmobile: the 2 ft starter cord will not pull 4 ft out of its housing! Repair work to replace the starter cord and/or cassette will be necessary if you try.

RUNNING:

Speed of engine is controlled by throttle only. Fuel needle only controls rough/inconsistent running of engine. The throttle speed is controlled by the throttle adjustment set screw set at a 45 degree angle at base of throttle.

WARNING! Throttle valve should not be adjusted for higher speeds for a brand new machine until it is broken in; then the adjusting screw can be reset(as shown in figure 68, page 50 of the overhaul manual).

STOPPING:

Simply press throttle completely or close air filter.

IMPORTANT NOTES! 1) fuel needle should always be closed completely every time engine is shut down to prevent fuel from syphoning into jug. 2) always keep gas tank empty when not in use to prevent spillage, staleness or separation of oil from mix, or fumes during transport.

DRILLING/ CHANGING DRILL RODS:

With machine running, press down on throttle with thumb and/or slightly shut down fuel needle to slow down engine. Insert shortest drill rod into collet and snap down the yoke with your foot. Select proper drilling spot and use instep of your foot to guide drill bit. After hole is collared release throttle so machine runs at full speed. If rotating speed is too slow open fuel needle to appropriate position. During drilling add proper pressure if machine begins to jump.

WARNING! Do not add too much pressure as this adds strain to drill rod.

To change from shorter rod to longer repeat above process and reduce engine speed, raise yoke with foot, lift machine up and set onto next drill rod, snap yoke down and release throttle to bring engine back up to speed. This is a simple and quick method if you have a depression, hole or bank for longer drill rods to set down into so that you do not have to raise machine too high to insert tool shank.

These are chinese instructions for YN27C (Pionjar 120 copy) but Atlas copco does not recommend this because machine is dry firing while rods are being changed out. If this method is okay for lower quality chinese copies then it should certainly work for higher quality Pionjars.

WARNING! If drill bit becomes stuck do not try removing rod with machine(see page 9 of Operators Manual).

WARNING! Do not run engine for long periods of time in extremely hot conditions. If machine becomes hot shut it down. If engine gets too hot it will shut down anyway. Excessive heat may damage internal parts.

MAINTENANCE:

In order to ensure peak performance, long life and reliable starting and running of this machine it is essential to keep the machine as clean as possible and heed all warnings and instructions on proper and improper use.

DAILY:

- 1) After every 4-8 hours of use remove air filter and wash it in gasoline.
- 2) Unscrew the gas duct valve and keep it absolutely clean making sure the ball bearing continues to rattle. Remove cleaning needle and clean the gas duct with it.

WEEKLY:

- 1) After every week of use inspect the engine jug and remove any dirt or oil that accumulates on the heat fins.
- 2) Check spark plug gap and carbon build-up.
- 3) Pull the starter cord until arrow on flywheel lines up with mark on flywheel cover. Engine piston is now at upper most part of jug which allows you to clean gas duct port in jug wall using the long needle in your tool kit.

STORAGE:

Avoid corrosion or rust by storing machine in dry areas for the winter(off) season. Do not store on concrete, stone or brick surfaces or rooms. Tip: carefully place machine into a large construction grade trash bag and tie it off tightly to keep out condensation.

LIFE-SPAN OF MACHINE:

It is important to know that most parts on this machine are throw away items. All internal moving parts will eventually wear out and need replacing but many will not need to be replaced in one persons lifetime.

The ratchet housing, ratchet wheel, needle bearings and engine piston are good examples of moving parts that can easily last 20-30 yrs. Other parts that need frequent replacing are all piston rings, hammer piston, collet and engine jug. For daily work environment use, all piston rings should be replaced once a year. The collet will wear out quicker in jackhammer mode but the hammer piston will wear out quicker in drill mode. Hammer piston is good for 1500 meters in drill mode; 2000m in hammer mode. With a new engine 'jug' you will have about 3 years of good compression(in a daily work environment) before jug wears down from ring wear and needs to be replaced due to poor compression.

Excellent compression, excellent air flow, and exceptional cleanliness are the keys to an efficiently running machine that will give you fewer problems. Overhauling the machine is recommended yearly if it sees working environment use.

Why overhaul(basically turning the machine into a pile of parts) if it is running and giving no problems? Mostly for cleaning purposes but also to tighten up anything loose. Let's face it: this machine is a jackhammer/rock drill that endures constant heavy vibrations and is used in one of the most dustiest dirtiest jobs known. Also, the engine is a 2-cycle so the gas/oil mix when combusted leaves behind a thick oily carbon build-up everywhere inside the machine. It is extremely important to remove this build-up because it will lead to poor air flow, poor compression, and poor cooling of a hot engine. For example; a very slight build-up of carbon around the edges where the exhaust pipe connects onto the jug will lead to poor performance because the same amount of air entering the jug must equal the amount of air leaving the jug. The carbon build-up restricts how much exhaust leaves so engine cannot intake the correct amount of air to run efficiently. It only takes a few minutes to remove the exhaust pipe and clean any carbon build-up on the exhaust port- just a small but very important part of the overhauling process.

DISASSEMBLY/ASSEMBLY:

Overhauling this machine is simple. You only need a few hand tools and a digital micro-gauge to overhaul it with and the overhaul manual is so simple that there are no words, only pictures. Please note, that there are some videos on yoo-tube and elsewhere online that actually show you how to operate & start/run this machine as well as replace the starter cassette and keep the machine clean.

It is common procedure for individuals or businesses who use these machines heavily to overhaul them once a year (usually in the winter or off season). Please use the follow guidelines to allow your repair work go as smooth as possible.

- 1) Follow overhaul manual instructions
- 2) All parts should be washed in kerosene or gasoline with a layer of lubricating oil applied before

assembly.

3) When repairing try to avoid disassembling any unnecessary parts wherever possible.

4) For complete disassembly use the following order (reverse the order for re-assembly):

Spark plug > drill housing > piston guide > hammer piston > blow & intake valves > jacket > flywheel cover > flywheel > starter assembly > clutch > jug > engine piston > magneto > crankshaft > control body(manifold) > gas line > gas tank housing > gas tank.

5) replace with new the following parts: all gaskets, O-rings, hammer piston & engine piston rings, hammer piston(if necessary), gas filter and starter cord.

IMPORTANT: Please use thread locker on all tightenings and make sure to follow torque specifications in overhaul manual.

IMPORTANT: Clutch is reverse threaded onto crankshaft- remove clockwise.

WARNING! Be very careful removing the starter spring. Make sure to remove starter cover, starter spring and starter cord pulley altogether as one unit to avoid uncoiling of spring. You must cut the starter

cord to remove starter assembly but make sure you know exact length of old cord so you can make the new one exactly same length.

WARNING! Starter cover is under tension so have a firm grip on it before removing from the 4 mounting

studs because it will want to spin counter-clockwise one complete turn with much force. Inspect starter spring and replace if rusted or if pull cord has developed poor return. Wind new starter cord onto pulley according to arrow on starter cover.

IMPORTANT: Check the seating of the check valves(bleeders) on underside of manifold. Make sure they are tight and not dirty or rusty.

IMPORTANT: Be careful in cleaning engine piston and removing/installing rings to avoid scratches and make sure notch on piston head lines up with spark plug hole.

IMPORTANT: When installing hammer piston, guide etc, including drill housing, please turn the machine upside down. If you drop all internal parts into drill housing and try setting the machine down onto hammer piston the piston rings will not enter engine jug because you do not have enough wiggle room to properly seat the hammer piston. Thus the reason for upside down installation. Make sure teeth on ratchet housing and drill chuck correctly mesh with operating shaft teeth.

TROUBLE SHOOTING:

If engine is difficult to start:

- 1) Clogged or poor sealing of fuel needle or gas line/filter
- 2) Use of wrong grade of gasoline or water in fuel
- 3) Poor sealing of leaf valves(bleeder valves) on the control body(manifold) leads to flooding or poor air flow regulation
- 4) Flooded cylinder(jug); too much fuel
- 5) Irregular spark plug gap or carbon build-up on plug
- 6) Flywheel has shifted from its original position(wrong angle for ignition). Align arrow on flywheel with mark on crankshaft

- 7) Carbon build-up in jug or on piston rings or excessive wear of the jug(worn beyond tolerance) will give low compression
- 8) Clogged porthole of gas duct in jug wall will give low compression
- 9) Irregular clearance of steel ball or carbon build-up on gas duct valve will give low compression
- 10) Carbon deposits in jug around the gasket of exhaust pipe will lead to insufficient air supply because used air cannot be completely exhausted

If engine runs erratically/poorly:

- 1) Poorly adjusted fuel needle, or clogged needle or gas filter, or gas line cracked and sucking air
- 2) Carbon deposits in gas duct, gas duct valve, around exhaust pipe, blow & intake valves, or hammer piston & engine piston rings.

Poor removal of cuttings:

- 1) Center hole of drill rod clogged
- 2) Damaged collet gasket
- 3) Damaged or clogged gas duct valve or blow & intake valves
- 4) Tool shank is worn out

Poor rotation of drill rod:

- 1) Damaged ratchet or ratchet housing teeth or olive spring
- 2) Excessive wear of any part in drill housing from drill chuck on up to and including the hammer piston
- 3) Poor running of engine(see above)

If engine races:

- 1) Seizure of hammer piston and/or drill rod
- 2) Flywheel has shifted from original position

If machine stops abruptly:

- 1) Air vent hole in gas cap is clogged resulting in vapor lock
- 2) Fuel system clogged
- 3) Failure of induction coil
- 4) Carbon build-up in important locations of machine
- 5) Engine becomes too hot

