

OWNER'S MANUAL

JD 15HP 4 Stroke Petrol Engine



OWNER'S MANUAL

Assembly & Operating Instructions

JD 15HP ELECTRIC START ENGINE

MODEL NO. BBT-JD420



To the Owner

Thank you for purchasing our BBT JD 15HP Electric Start Engine. It was carefully engineered to provide excellent performance when properly operated and maintained.

Please read this entire manual prior to operating the equipment. It instructs you how to safely and easily set up, operate and maintain your machine. Please be sure that you and any other persons who will operate the machine carefully follow the recommended safety practices at all times. Failure to do so could result in personal injury or property damage.

All information in this manual is relative to the most recent product information available at the time of printing. Review this manual frequently to familiarise yourself with the machine, its features and operation. Please be aware that this Owner's Manual may cover a range of product specifications for various models. Characteristics and features discussed and/or illustrated in this manual may not be applicable to all models. We reserve the right to change product specifications, designs and equipment without notice and without incurring obligation.

All the power testing information used to establish the power rating of the engine equipped on this machine can be found in the engine manufacturer's manual or website. If you have any problems or questions concerning the machine, please contact our Customer Support Department.

Throughout this manual, all references to right and left side of the machine are observed from the operating position. The engine manufacturer is responsible for all engine-related issues with regards to performance, power-rating, specifications, warranty and service. Please refer to the engine manufacturer's Owner's Manual packed separately with your machine for more information.

Customer Support

Please do NOT return the machine without first contacting the Customer Support Department at bbt@bbta.com.au.

If you have difficulty assembling this product or have any questions regarding the controls, operation, or maintenance of this machine, please contact our Customer Support Department.

SAVE THESE INSTRUCTIONS

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IMPORTANT SAFETY INFORMATION



WARNING: Read and thoroughly understand all instructions in this manual and on the safety decals before assembling or operating this JD 15HP Electric start engine. Failure to do so may cause serious injury or death. Do not allow anyone to operate this engine who has not read this manual. Do not operate this engine if you have any questions concerning its safe operation. To get answers to any questions, call our Customer Support Department.



This SAFETY ALERT SYMBOL identifies important safety messages in this manual. Failure to follow this important safety information may result in serious injury or death.

The following signals, words and meanings are intended to explain the levels of risk associated with this product.



DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in serious injury or death.



WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in serious injury or death.



CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is important information about the proper use of your Lawn Mower. Failure to follow this instruction could result in damage to your Lawn Mower or property.

Additional Information and Potential Changes

We reserve the right to discontinue, change, and improve our products at any time without notice or obligation to the purchaser. The descriptions and sections contained in this manual were in effect at the time of printing. Equipment described within this manual may be optional. Some illustrations may not be applicable to your machine.

WARNING! Your Responsibility—Restrict the use of this power machine to persons who have read, understood and will follow the warnings and instructions in this manual and on the machine.

SAVE THESE INSTRUCTIONS!



IMPORTANT SAFETY INFORMATION

Key to Symbols

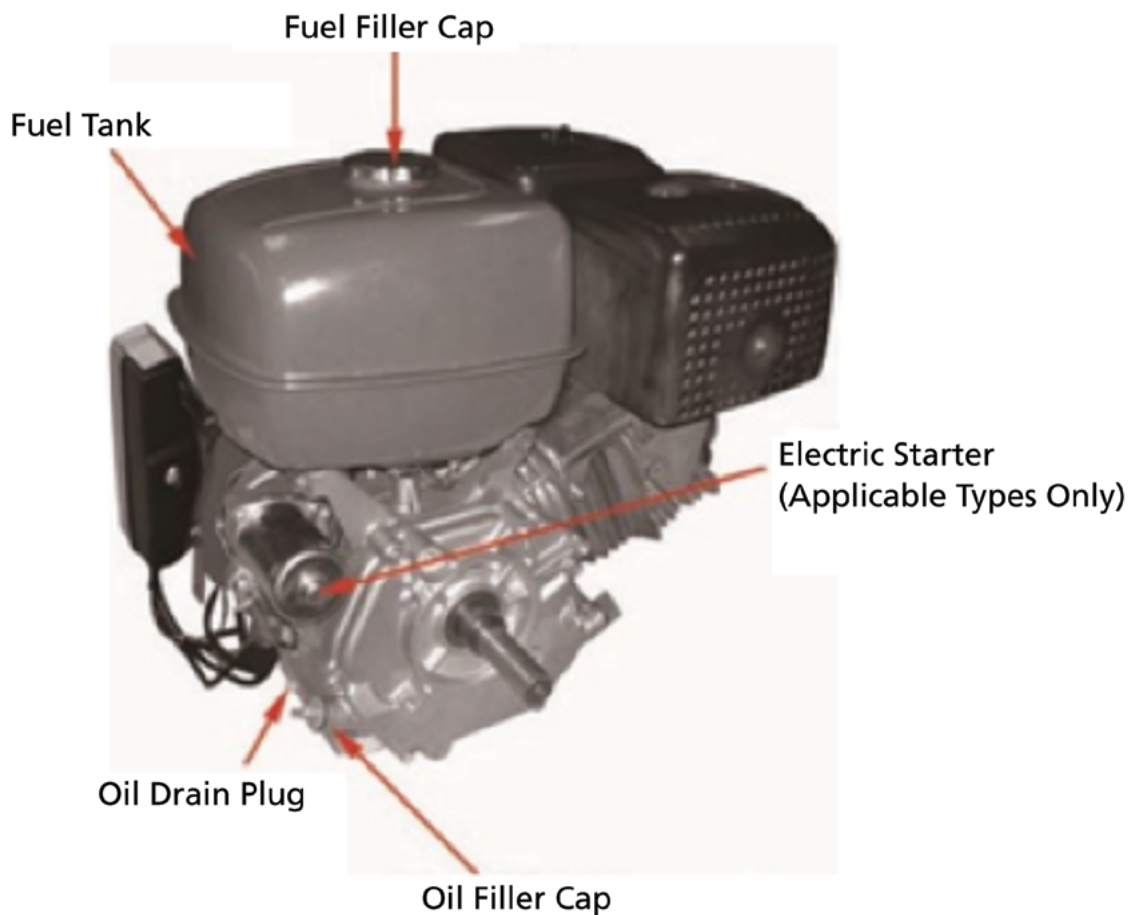
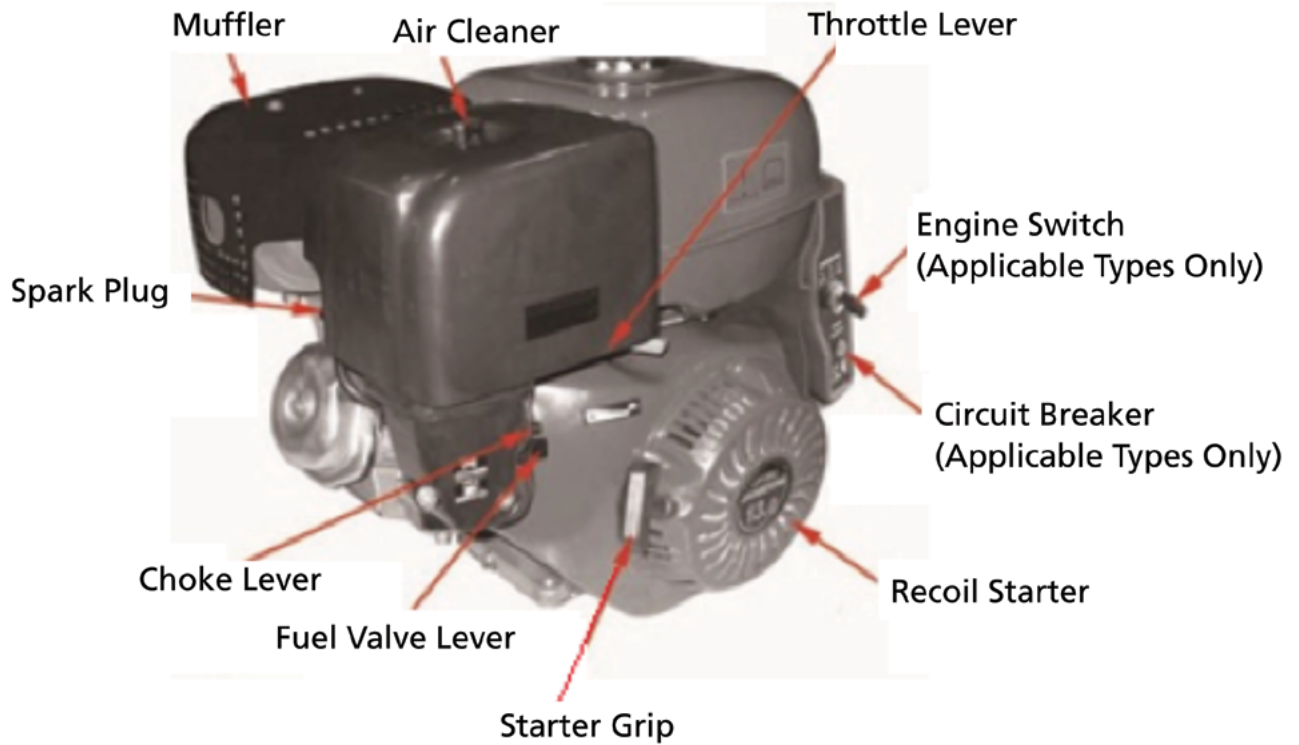
Symbol	Description
	READ THE OWNER'S MANUAL(S) Read, understand and follow all instructions in the manual(s) before attempting to assemble and operate.
	BYSTANDERS Keep bystanders, helpers, pets, and children at least 1 metres from the machine while it is in operation. Stop machine if anyone enters the area.
	PETROL IS FLAMMABLE Petrol is extremely flammable. Allow the engine to cool for at least ten minutes before refuelling.
	CAUTION! Tool surfaces can be hot.

ENGINE SAFETY

WARNING

- The engines are designed to give safe and dependable service if operated according to instructions. Read and understand this Owner's Manual before operating the engine. Failure to do so could result in personal injury or equipment damage.
- To prevent fire hazards and to provide adequate ventilation, keep the engine at least 1 metre (3 feet) away from buildings and other equipment during operation. **DO NOT** place flammable objects close to the engine.
- Children and pets must be kept away from the area of operation due to a possibility of burns from hot components or injury from any equipment the engine may use to operate.
- Know how to stop the engine quickly and understand the operation of all controls. **NEVER** permit anyone to operate the engine without proper instruction.
- Petrol is extremely flammable and is explosive under certain conditions.
- Refuel in a well-ventilated area with the engine stopped. **DO NOT** smoke or allow flames or sparks in the refuelling area or where fuel is.
- **NEVER** overfill the fuel tank. After refuelling, make sure the fuel tank cap is closed properly and securely.
- Be careful not to spill petrol when refuelling. Fuel vapour or spilled petrol may ignite. If any petrol is spilled, wipe it off the engine and equipment and move machine to another area before starting the engine.
- **NEVER** run the engine in an enclosed or confined area. Exhaust fumes contain carbon monoxide which can be deadly when inhaled.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot.
- To avoid severe burns or fire hazards, let the engine cool before transporting it or storing it indoors. Battery Connections for Electric Starter (applicable types only)
- Use a 12-volt battery with an ampere-hour rating of at least 18 Ah.

PARTS LOCATION



TECHNICAL INFORMATION

- Be careful not to connect the battery in reverse polarity, as this will short circuit the battery charging system. Always connect the positive (+) battery cable to the battery terminal before connecting the negative (-) battery cable. Your tools do not cause a short circuit if they touch a grounded part while tightening the positive (+) battery cable end.
1. Connect the battery positive (+) cable to the starter solenoid terminal as shown.

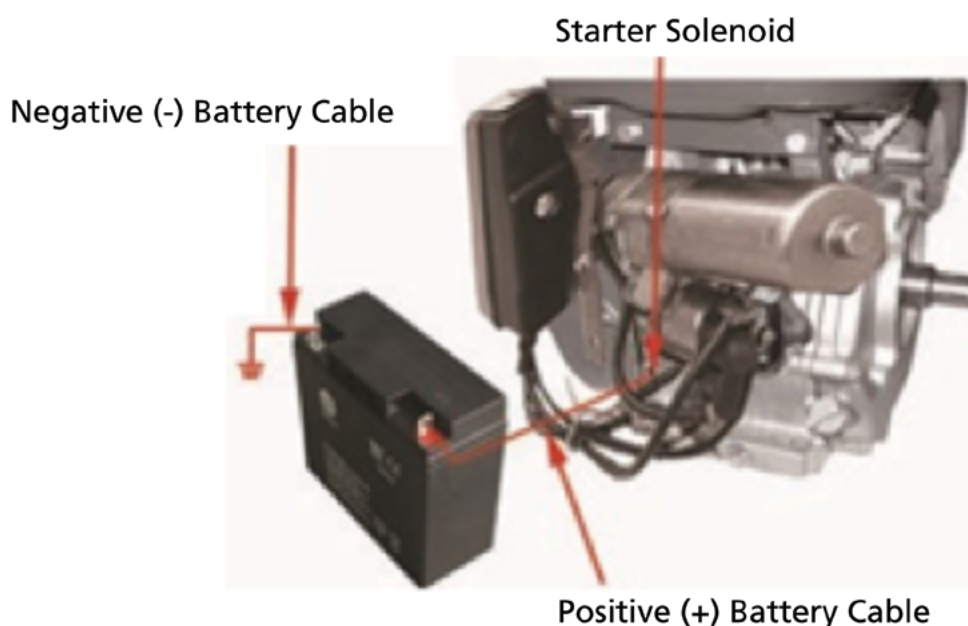
⚠ WARNING

- A battery can explode and cause serious injury to bystanders if you do not follow the correct procedures.
- Keep all sparks, open flames, and smoking materials away from the battery.

⚠ WARNING

Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.

2. Connect the battery negative (-) cable to an engine mounting bolt, frame bolt, or other good engine ground connection.
3. Connect the battery positive (+) cable to the battery positive (+) starter solenoid terminal as shown.
4. Connect the battery negative cable (-) to the battery negative terminal as shown.
5. Coat the terminals and cable ends with grease



PRE-OPERATION CHECK

Engine Oil Level Check

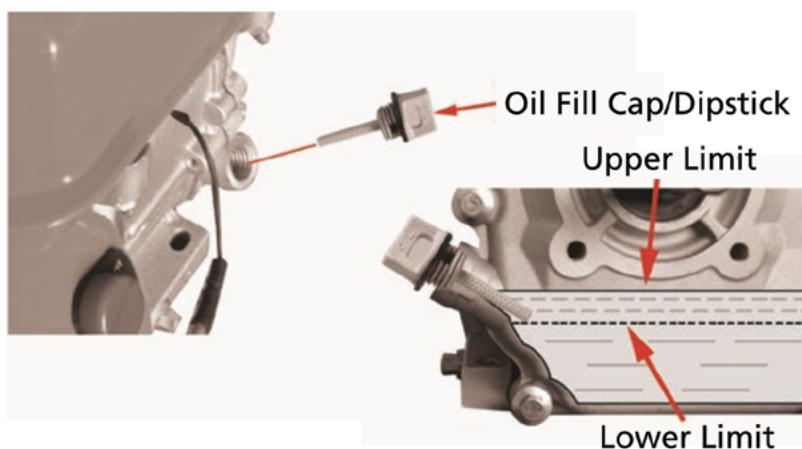
Stop the engine, disconnect the spark plug and place engine in a level position before checking the engine oil level. Remove the filler cap/dipstick and wipe it clean.

1. Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick.
2. If the oil level is low, fill to the edge of the oil filler hole with the recommended oil.
3. Screw in the filler cap/dipstick securely.

NOTICE

Running the engine with a low oil level can cause engine damage.

The oil sensor will automatically stop the engine before the oil level falls below safe limit. However, to avoid the inconvenience of an unexpected shutdown, always check the engine oil level before start-up.



Engine Oil Change

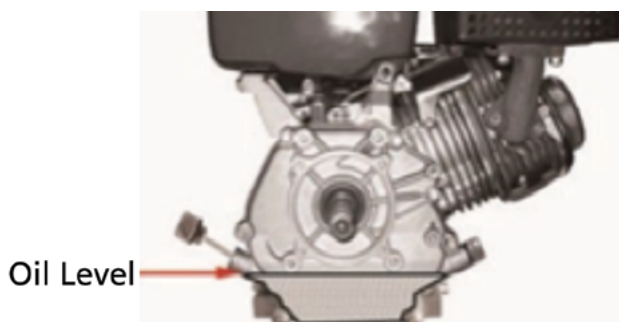
Drain the used oil while the engine is warm. Warm oil drains quickly and completely.

1. Place a suitable container below the engine to catch the used oil, then remove the filler cap/dipstick, drain plug, and washer.
2. Allow the used oil to drain completely, then reinstall the drain plug, washer, and tighten drain plug securely.
3. Always dispose of any used motor oil in a sealed container at approved recycling centres only. **DO NOT** throw it in the trash, pour it on the ground, or down a drain.
4. With the engine in a level position, fill to the outer edge of the oil filler hole with the recommended oil.
5. Screw in the filler cap/dipstick securely.

NOTICE

Running the engine with a low oil level can cause engine damage.

The oil sensor will automatically stop the engine before the oil level falls below the safe limit. However, to avoid the inconvenience of an unexpected shutdown, fill to the upper limit, and check the oil level regularly.

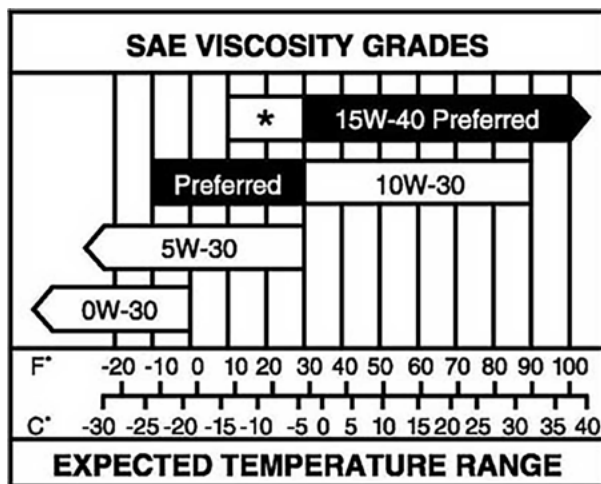


PRE-OPERATION CHECK

Engine Oil Recommendations

Oil is a major factor affecting performance and service life. Use 4-stroke automotive engine oil.

SAE 30 is recommended for general use. Other viscosities shown in the chart may be used when the average temperature in your area is within the recommended range.



The SAE oil viscosity and service classification are in the API label on the oil container.

The expert recommends that you use API SERVICE category SJ or SL oil.

Refuelling

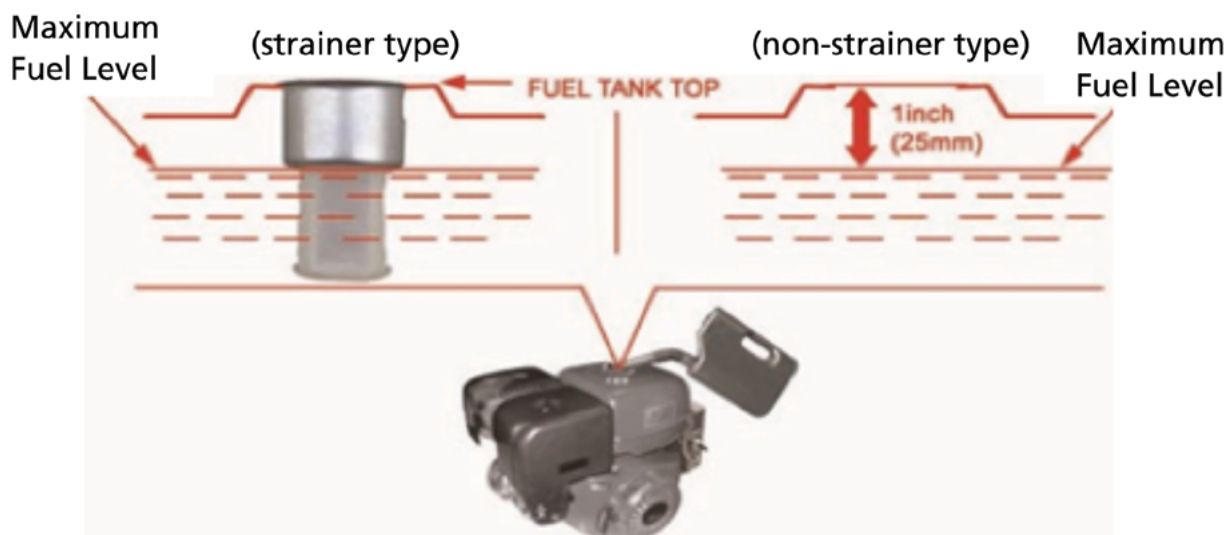
Stop the engine, disconnect the spark plug and place engine in a level position before checking the fuel level. Refill the tank if the fuel level is low.

! WARNING

Petrol is highly flammable and explosive.

You can be burned or seriously injured when handling fuel.

- Stop the engine and keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.



PRE-OPERATION CHECK

Refuel in a well-ventilated area before starting the engine. If the engine has been running, allow it to cool. Refuel carefully to avoid spilling fuel. **DO NOT** fill the fuel tank completely.

Fill tank to approximately 1 inch (25 mm) below the top of the fuel tank to allow for fuel expansion. It may be necessary to lower the fuel level depending on operating conditions.

After refuelling, tighten the fuel tank cap securely.

NEVER refuel the engine inside a building where petrol fumes may reach flames or sparks.

Keep petrol away from pilot lights, barbecues, electric appliances, power tools, etc.

Spilled fuel is not only a fire hazard, it causes environmental damage. Wipe up spills immediately.

NOTICE

Fuel can damage paint and plastic. Be careful not to spill fuel when filling your fuel tank.

Damage caused by spilled fuel is not covered under warranty.

Fuel Recommendations

Use unleaded petrol with an octane rating of 95 or higher.

These engines are certified to operate on unleaded petrol. Unleaded petrol produces fewer engine and spark plug deposits and extends the exhaust system life.

NEVER use stale or contaminated fuel or an oil/fuel mixture. Avoid getting dirt or water in the fuel tank.

Occasionally you may hear a light "spark knock" or "pinging" (metallic rapping noise) while operating under heavy loads. This is no cause for concern.

If spark knock or pinging occurs at a steady engine speed, under normal load, change brands of petrol.

NOTICE

Running the engine with persistent spark knock or pinging can cause engine damage.

Running the engine with persistent spark knock or pinging is considered misuse, and the Distributor's Limited Warranty does not cover parts damaged by misuse.

OPERATION

Safe Operating Precautions

Before operating the engine for the first time, please review the IMPORTANT SAFETY INFORMATION.

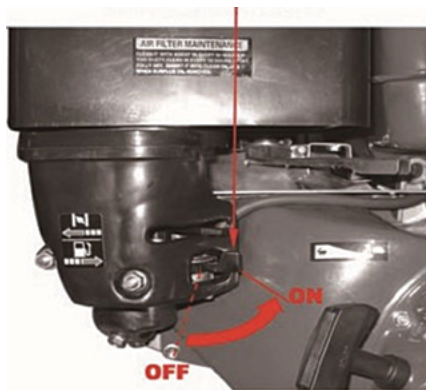
⚠ WARNING

- Engine exhaust contains carbon monoxide, an odourless and deadly gas.
- Avoid any areas or actions that expose you to carbon monoxide.

Review the instructions provided with the equipment powered by this engine for any safety precautions that should be observed in conjunction with engine start-up, shutdown, or operation.

Starting The Engine

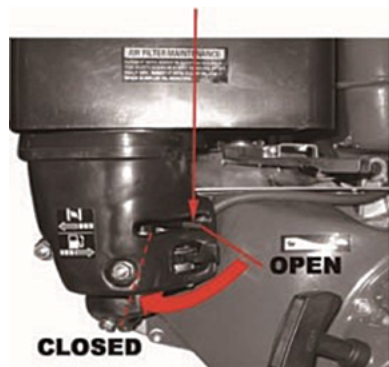
1. Move the fuel valve lever to the ON position. Fuel Valve Lever



2. To start a cold engine, move the choke lever or choke rod (applicable types) to the CLOSED position.

To restart a warm engine, leave the choke lever in the OPEN position. Some engine applications use a remote-mounted choke control rather than the engine-mounted choke lever shown here.

Choke Lever



Choke Rod (Applicable Types)



3. Move the throttle lever away from the SLOW position, about 1/3 of the way toward the FAST position.

Some engine applications use a remote-mounted throttle control rather than the engine-mounted throttle lever shown here.



Slow Throttle Lever

OPERATIONS

4. Turn the engine switch to the ON position.

All Engines Except
Electric Starter Types

Engine Switch

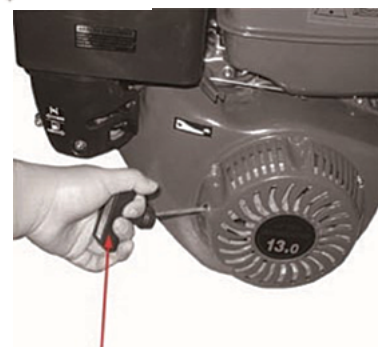
Electric Starter Types



5. Operate the starter.

- a. **RECOIL STARTER (all engine types):**

Pull the starter grip lightly until you feel resistance, then pull briskly. Return the starter grip gently.



Starter Grip

- b. **ELECTRIC STARTER (applicable types only):**

Turn the key to the START position, and hold it there until the engine starts.

If the engine fails to start within 5 seconds, release the key, and wait at least 10 seconds before operating the starter again.

NOTICE

Using the electric starter for more than 5 seconds at a time will overheat the starter motor and can damage it.

When the engine starts, release the key, allowing it to return to the ON position.



Engine Switch
(Applicable Types Only)

6. If the choke lever or choke rod (applicable types) has been moved to the CLOSED position to start the engine, gradually move it to the OPEN position as the engine warms up.

Choke Lever

Choke Rod (Applicable Types)



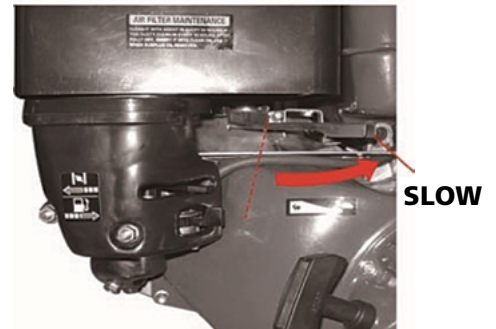
OPERATIONS

Stopping The Engine

To stop the engine in an emergency, simply turn the engine switch to the OFF position. Under normal conditions, use the following procedure.

1. Move the throttle lever to the SLOW position.

Some engine applications use a remote-mounted throttle control rather than the engine-mounted throttle lever shown here.

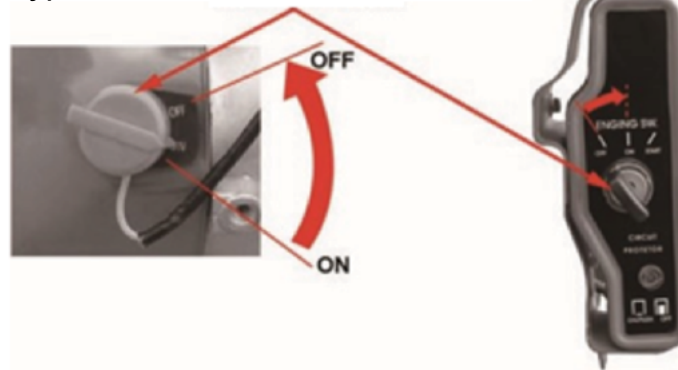


2. Turn the engine switch to the OFF position.

All Engines Except
Electric Starter Types

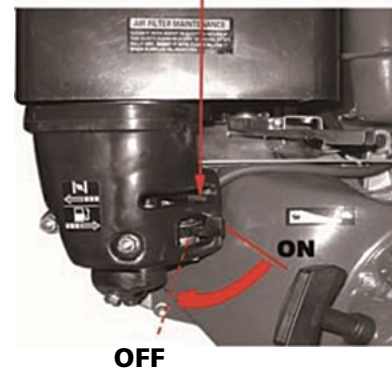
Engine Switch

Electric Starter Types



3. Turn the fuel valve lever to the OFF position.

Fuel Valve Lever



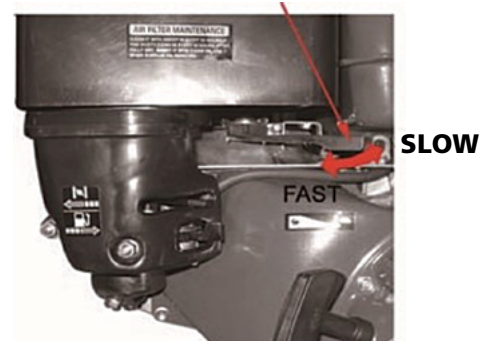
Setting Engine Speed

Position the throttle lever for the desired engine speed.

Some engine applications use a remote-mounted throttle control rather than the engine-mounted throttle lever shown here.

For engine speed recommendations, refer to the instructions provided with the equipment powered by this engine.

Throttle Lever



SERVICE & MAINTENANCE

Maintenance Safety

Some of the most important safety precautions are as follows. However, we cannot warn you of every conceivable hazard that can arise in performing maintenance. Only you can decide whether or not you should perform a given task.

WARNING

- Failure to properly follow maintenance instructions and precautions can cause serious injury or death.
- Always follow the procedures and precautions in the owner's manual.

Safety Precautions

Make sure the engine is **OFF** before you begin any maintenance or repairs. This will eliminate several potential hazards:

- Carbon monoxide poisoning from engine exhaust. Be sure there is adequate ventilation whenever you operate the engine.
- Burns from hot parts. Let the engine and exhaust system cool before touching.
- Injury from moving parts. **DO NOT** run the engine unless instructed to do so.
- Read, understand, and follow all instructions in this manual before attempting to assemble and operate.
- To reduce the possibility of fire or explosion, be careful when working around petrol. Use only a non-flammable solvent, not petrol, to clean parts. Keep cigarettes, sparks and flames away from all fuel-related parts.

To ensure the best quality and reliability, use only new, genuine JD parts or their equivalents for repair and replacement.

Maintenance Schedule

		Each use	First month / 20 hours	Every 3 months / 50 hours	Every 6 months / 100 hours	Every year / 300 hours
●	Engine oil	Check level	○			
		Change		○	○	
●	Reduction gear oil (applicable types)	Check level	○			
		Change		○	○	
●	Air filter	Check	○			
		Clean		○ (1)	○ *(1)	
		Replace				○**
●	Sediment cup	Clean			○	
	Spark plug	Check and adjust			○	
		Replace				○
	Spark arrester (optional parts)	Clean			○	
●	Idle speed	Check and adjust				○ (2)
●	Valve clearance	Check and adjust				○ (2)
●	Combustion chamber	Clean	After every 500 hours (2)			
●	Fuel tank & filter	Clean			○ (2)	
●	Fuel tube	Check	Every 2 years (Replace if necessary) (2)			

- Emission-related items.
 - Internal vent carburettor with dual element type only.
 - *Replace paper element type only. Cyclone type every 2 years or 600 hours.
1. Service more frequently when used in dusty areas.
 2. These items should be serviced by your servicing dealer, unless you have the proper tools and are mechanically proficient.
 3. For commercial use, log hours of operation to determine proper maintenance intervals.

SERVICE & MAINTENANCE

Air Cleaner Service

A dirty air filter will restrict air flow to the carburettor, reducing engine performance. If you operate the engine in very dusty areas, clean the air filter more often than specified in the MAINTENANCE SCHEDULE.

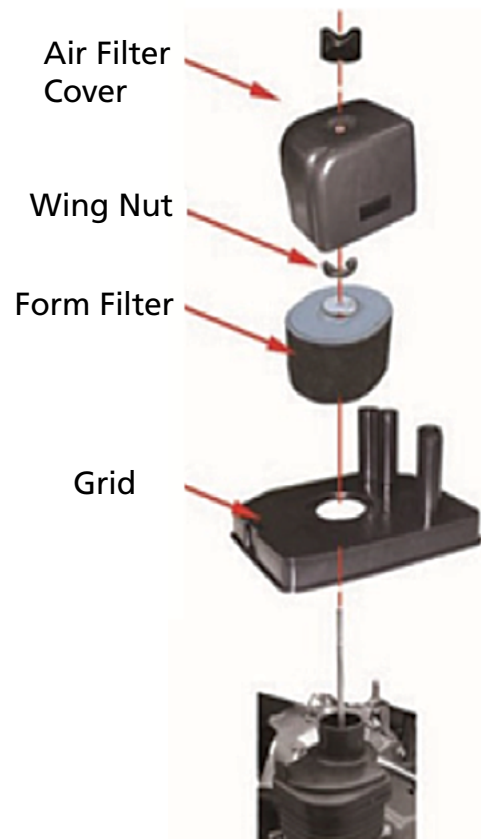
NOTICE

Operating the engine without an air filter, or with a damaged air filter, will allow dirt to enter the engine, causing rapid engine wear. This type of damage is not covered by the Warranty.

Dual-filter-Element Type

Remove the wing nut from the air cleaner cover, and remove the cover.

1. Remove the wing nut from the air filter, and remove the filter.
2. Remove the foam filter from the paper filter.
3. Inspect both air filter elements, and replace them if they are damaged. Always replace the paper air filter element at the scheduled interval.
4. Clean the air filter elements if they are to be reused.
5. Wipe dirt from the inside of the air cleaner base and cover, using a moist rag. Be careful to prevent dirt from entering the air duct that leads to the carburettor.
6. Place the foam air filter element over the paper element, and reinstall the assembled air filter. Be sure the gasket is in place beneath the air filter. Tighten the air filter wing nut securely.
7. Install the air cleaner cover, and tighten the cover wing nut securely.



Sediment Cup Cleaning

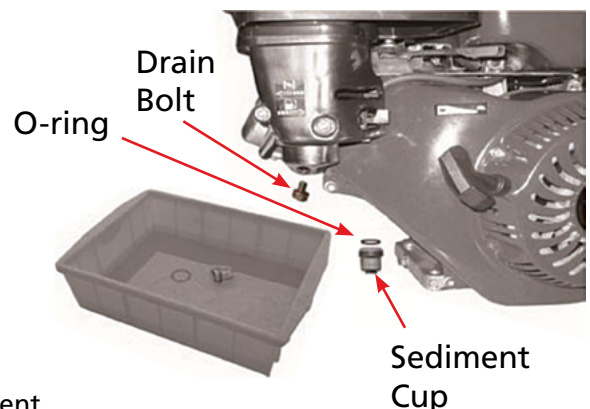
1. Move the fuel valve to the OFF position, then remove the fuel sediment cup and O-ring.

! WARNING

Petrol is highly flammable and explosive.

You can be burned or seriously injured when handling fuel.

- Keep heat, sparks and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.



2. Wash the sediment cup and O-ring in non-flammable solvent, and dry them thoroughly.
3. Place the O-ring in the fuel valve, and install the sediment cup. Tighten the sediment cup securely.
4. Move the fuel valve to the ON position, and check for leaks. Replace the O-ring if there is any leakage.

SERVICE & MAINTENANCE

Spark Plug Service

Recommended spark plugs: **BPR6ES (NGK)**, **W20EPR-U (DENSO)**

NOTICE

An incorrect spark plug can cause engine damage.

1. Disconnect the spark plug cap, and remove any dirt from around the spark plug area.
2. Remove the spark plug with a 13/16-inch spark plug wrench.
3. Inspect the spark plug. Replace it if the electrodes are worn or heavy carbon build-up is found, or if the insulator is cracked or chipped.
4. Measure the spark plug electrode gap with a suitable gauge. The gap should be 0.028-0.031 in (0.70-0.80 mm). Correct the gap, if necessary, by carefully bending the side electrode.
5. Install the spark plug carefully, by hand, to avoid cross-threading.
6. After the spark plug seats, tighten with a 13/16-inch spark plug wrench to compress the sealing washer.

If reinstalling the used spark plug, tighten 1/8—1/4 turn after the spark plug seats.

If installing a new spark plug, tighten 1/2 turn after the spark plug seats.

NOTICE

A loose spark plug can overheat and damage the engine.

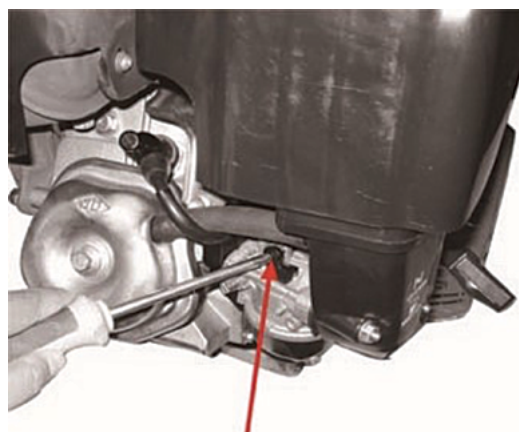
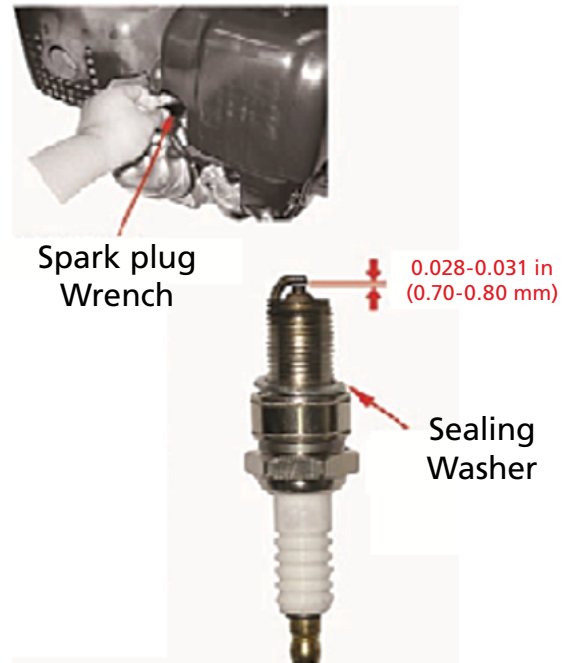
Over tightening the spark plug can damage the threads in the cylinder head.

7. Attach the spark plug cap.

Idle Speed Adjustment

1. Start the engine outdoors, and allow it to warm up to operating temperature.
2. Move the throttle lever to its slowest position.
3. Turn the throttle stop screw to obtain the standard idle speed.

Standard idle speed: 1,400 ± 150 rpm



Throttle stop screw

TROUBLESHOOTING

Maintenance Schedule

Engine will not start	Possible cause	Correction
1. Electric starting (applicable types): Check battery and fuse	Discharged	Recharge battery
	Fuse burnt out	Replace fuse
2. Check control positions	Fuel valve OFF	Move lever to ON
	Choke OPEN	Move lever to CLOSED unless engine is warm
	Engine switch OFF	Turn engine switch to ON
3. Check fuel	Out of fuel	Refuel
	Bad fuel; engine stored without treating or draining petrol, or refuelled with bad petrol.	Drain fuel tank and carburettor Refuel with fresh petrol
4. Remove and inspect spark plug.	Spark plug faulty, fouled, or improperly gapped	Gap, or replace spark plug
	Spark plug wet with fuel (flooded engine).	Dry and reinstall spark plug. Start engine with throttle lever in FAST position.
5. Take engine to an authorized JD servicing dealer, or refer to shop manual.	Fuel filter clogged, carburettor malfunction, ignition malfunction, valves stuck etc.	Replace or repair faulty components as necessary.
Engine lacks power	Possible cause	Correction
1. Check air filter	Filter element(s) clogged.	Clean or replace filter elements
2. Check fuel	Bad fuel; engine stored without treating or draining petrol, or refuelled with bad petrol.	Drain fuel tank and carburettor Refuel with fresh petrol.
3. Take engine to an authorized JD servicing dealer, or refer to shop manual.	Fuel filter clogged, carburettor malfunction, ignition malfunction, valves stuck, etc.	Replace or repair faulty components as necessary.

STORAGE

Storing Your Engine

Storage Preparation

Proper storage preparation is essential for keeping your engines trouble free and looking good. The following steps will help to keep rust and corrosion from impairing your engine's function and appearance, and will make the engine easier to start after storage.

Cleaning

If the engine has been running, allow it to cool for at least half an hour before cleaning. Clean all exterior surfaces, touch up any damaged paint, and coat other areas that may rust with a light film of oil.

NOTICE

- Using a garden hose or pressure washing equipment can force water into the air cleaner or muffler opening. Water in the air cleaner will soak the air filter, and water that passes through the air filter or muffler can enter the cylinder, causing damage.
- Water contacting a hot engine can cause damage. If the engine has been running, allow it to cool for at least half an hour before washing.

Petrol will oxidise and deteriorate in storage. Old petrol will cause hard starting, and it leaves gum deposits that clog the fuel system. If the fuel in your engine deteriorates during storage, you may need to have the carburettor and other fuel system components serviced or replaced.

The length of time that petrol can be left in your fuel tank and carburettor without causing functional problems will vary with such factors as fuel blend, your storage temperatures, and whether the fuel tank is partially or completely filled. The air in a partially filled fuel tank promotes fuel deterioration. Very warm storage/temperatures accelerate fuel deterioration. Fuel deterioration problems may occur within a few months, or even less if the petrol was not fresh when you filled the fuel tank.

The Distributor's Limited Warranty does not cover fuel system damage or engine performance problems resulting from neglected storage preparation.

You can extend fuel storage life by adding a fuel stabilizer that is formulated for that purpose, or you can avoid fuel deterioration problems by draining the fuel tank and carburettor.

Adding A Fuel Stabilizer To Extend Fuel Storage Life

When adding a fuel stabilizer, fill the fuel tank with fresh petrol. If only partially filled, air in the tank will promote fuel deterioration during storage. If you keep a container of petrol for refuelling, be sure that it contains only fresh petrol.

1. Add fuel stabilizer following the manufacturer's instructions.
2. After adding a fuel stabilizer, run the engine outdoors for 10 minutes to be sure that treated petrol has replaced the untreated petrol in the carburettor.
3. Stop the engine, and move the fuel valve lever to the OFF position.

Draining The Fuel Tank And Carburettor

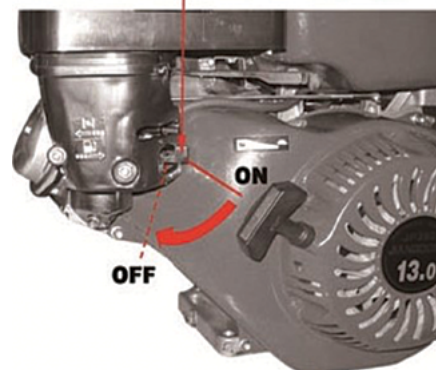
1. Place an approved fuel container below the carburettor, and use a funnel to avoid spilling fuel.
2. Remove the carburettor drain bolt and sediment cup, then move the fuel valve lever to the ON position.
3. After all the fuel has drained into the container, reinstall the drain bolt and sediment cup. Tighten them securely.

⚠ WARNING

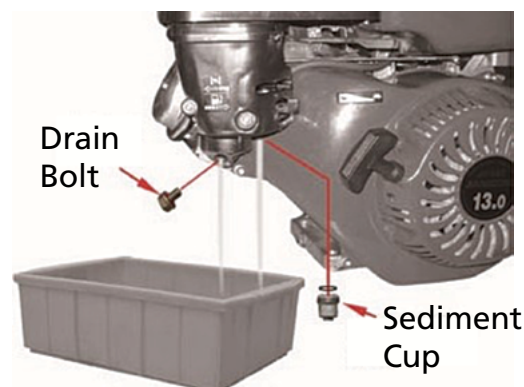
Petrol is highly flammable and explosive. You can be burned or seriously injured when handling fuel.

- Keep heat, sparks and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

Fuel Valve Lever



Drain Bolt



Sediment Cup

STORAGE

Engine Oil

1. Change the engine oil

Engine Cylinder

2. Remove the spark plug
3. Pour a tablespoon (5 - 10 cc) of clean engine oil into the cylinder.
4. Pull the starter rope several times to distribute the oil in the cylinder.
5. Reinstall the spark plug.
6. Pull the starter rope slowly until resistance is felt and the notch on the starter pulley aligns with the hole at the top of the recoil starter cover. This will close the valves so moisture cannot enter the engine cylinder. Return the starter rope gently.

Storage Precautions

If your engine is being stored with petrol in the fuel tank and carburettor, it is important to reduce the hazard of fuel vapour ignition. Select a well-ventilated storage area away from any appliance that operates with a flame, such as a furnace, water heater, or clothes dryer. Also avoid any area with a spark producing electric motor, or where power tools are operated.

If possible, avoid storage areas with high humidity, because that promotes rust and corrosion.

Unless all fuel has been drained from the fuel tank, leave the fuel valve lever in the OFF position to reduce the possibility of fuel leakage.

Position the equipment so the engine is level. Tilting can cause fuel or oil leakage.

With the engine and exhaust system cool, cover the engine to keep out dust. A hot engine and exhaust system can ignite or melt some materials. Do not use sheet plastic as a dust cover. A nonporous cover will trap moisture around the engine, promoting rust and corrosion.

If equipped with a battery for electric starter types, recharge the battery once a month while the engine is in storage. This will help to extend the service life of the battery.

Removal from Storage

Check your engine as described in the BEFORE OPERATION/ON chapter of this manual.

If the fuel was drained during storage preparation, fill the tank with fresh petrol.

If you keep a container of petrol for refuelling, be sure that it contains only fresh petrol. Petrol oxidises and deteriorates over time, causing hard starting with engine.

If the cylinder was coated with oil during storage preparation, the engine may smoke briefly at start-up. This is normal.

Transporting

If the engine has been running, allow it to cool for at least 15 minutes before loading the engine-powered equipment on the transport vehicle. A hot engine and exhaust system can burn you and can ignite some materials.

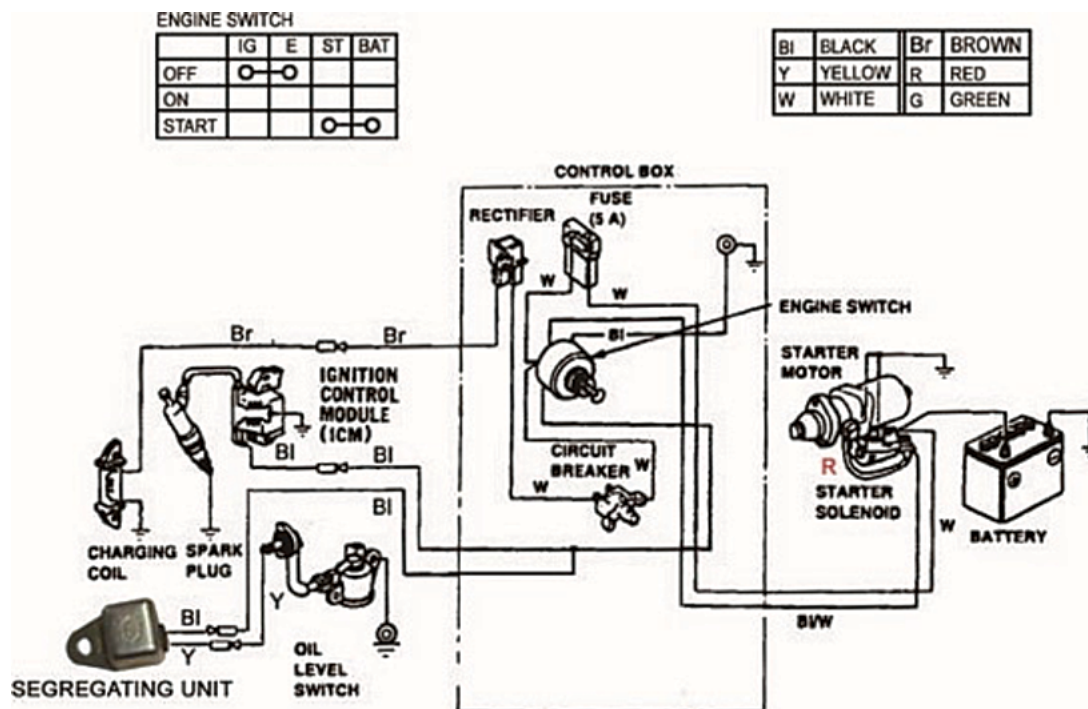
Keep the engine level when transporting to reduce the possibility of fuel leakage.

Turn the fuel valve lever to the **OFF** position.

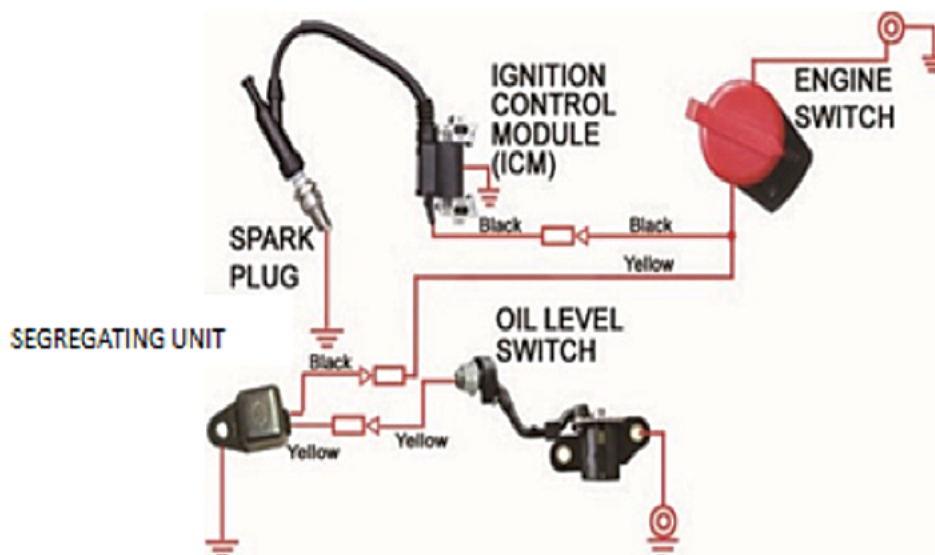
TECHNICAL INFORMATION

Wiring Diagrams

Oil Sensor and Electric Starter Types



Engine Types With Oil sensor and Without Electric Starter



SPECIFICATIONS

Model	BBT-JD420
Length x Width x Height	485 x 410 x 485 mm
Dry weight	25kg
Engine type	4-stroke, 25°inclined, single cylinder Air-cooled
Displacement [Bore x Stroke]	90 x 66
Max. Output (HP/rpm)	15.0/3600
Max. Torque (N.m/rpm)	29.3/2500
Engine oil capacity	1.1 Litres
Fuel tank capacity	6.5 Litres
Fuel consumption (g/HP-hour)	290
Cooling system	Forced air
Ignition system	Non-contact transistorized ignition (T.C.I.)

Tune-up

ITEM	SPECIFICATION
Spark plug gap	0.028—0.031in (0.70—0.80mm)
Idle speed	1400±150rpm
Valve clearance	IN: 0.15±0.02mm cold, EX:0.20±0.02mm cold
Other Specifications	No other adjustments needed

NOTE: Specifications may vary according to the types and are subject to change without notice.

WARRANTY & SERVICE

Warranties

Bigger Boyz Toyz offer a 1-year parts warranty on all products used for domestic use from the date of purchase. For all commercial use, a 3-month parts warranty period applies, unless specified in the item listing. All conditions below are based upon the product being faulty or not performing as described. In the instance where a return is required, the purchaser is liable for any shipping cost. Warranties will only be determined by a Bigger Boyz Toyz Technician upon inspection.

Warranties do not cover accidents, misuse, neglect, natural disaster or act of God or other external causes, or damage caused by operating the equipment in a manner that is not described in the instructions.

Our products come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Parts purchases, consumable components and accessories such as chains, carry bags, batteries, hoses, grinding discs, covers, belts, cable, wheels and blades are not covered by standard warranty.

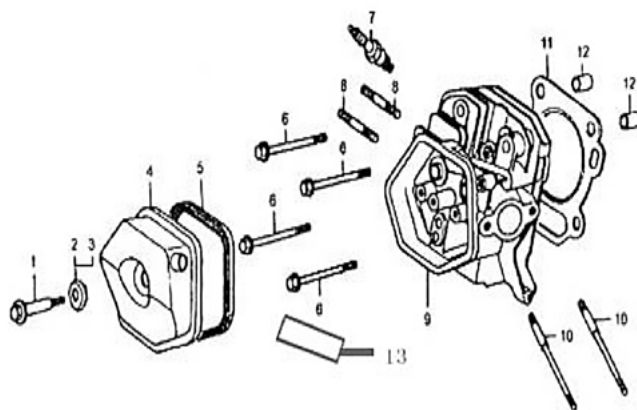
Spare Parts

Spare parts are available. Please see our website (www.bbta.com.au) or contact us at bbt@bbta.com.au for more details.

EXPLODED DIAGRAM & PARTS LIST

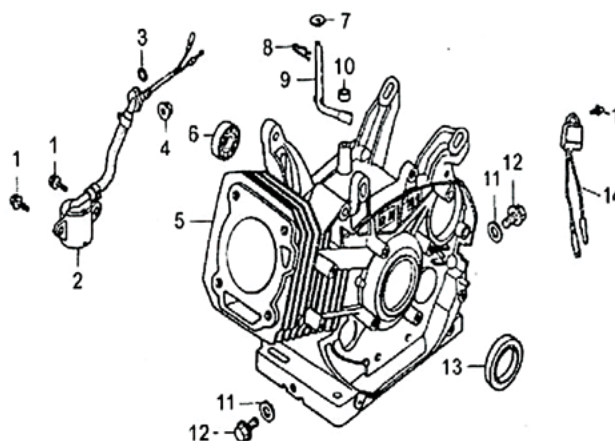
CYLINDER HEAD SYSTEM ASSEMBLY. 1

NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.1	HEAD COMP BOLT	1
2	SP-JD420-002.1	HEAD COVER WASHER COMP	1
3	SP-JD420-003.1	WASHER COVER PACKING	1
4	SP-JD420-004.1	HEAD COVER COMP	1
5	SP-JD420-005.1	HEAD COVER PACKING	1
6	SP-JD420-006.1	FLANGE BOLT 10x80	4
7	SP-JD420-007.1	SPARK PLUG	1
8	SP-JD420-008.1	EXHAUST BOLT STUD	2
9	SP-JD420-009.1	HEAD COMP., CYLINDER	1
10	SP-JD420-010.1	INTAKE BOLT STUD	2
11	SP-JD420-011.1	CYLINDER SEALING PAD	1
12	SP-JD420-012.1	PIN DOWEL $\Phi 10 \times \Phi 12 \times 20$	2
13	SP-JD420-013.1	BREATHER TUBE	1



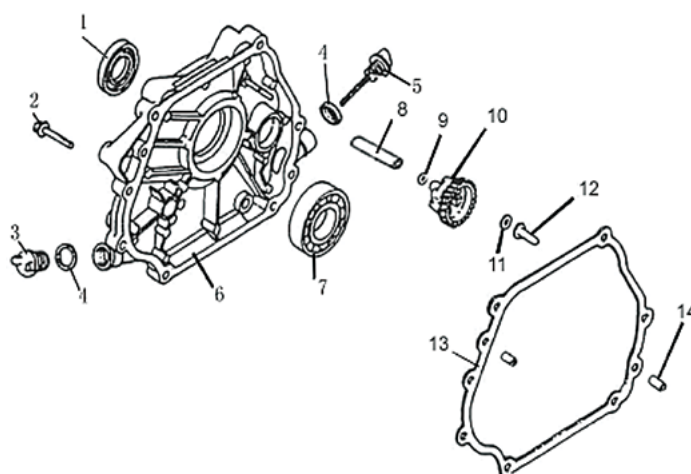
CYLINDER BARREL. 2

NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.2	FLANGE BOLT 6x14	3
2	SP-JD420-002.2	OIL LEVEL SWITCH ASSY.	1
3	SP-JD420-003.2	O-RING, 14mm	1
4	SP-JD420-004.2	FLANGE NUT 10 mm	1
5	SP-JD420-005.2	CRANK CASE	1
6	SP-JD420-006.2	RADIAL BALL BEARING 6202	1
7	SP-JD420-007.2	WASHER $\Phi 8.3 \times \Phi 17 \times 1$	1
8	SP-JD420-008.2	LOCK PIN 10 mm	1
9	SP-JD420-009.2	GOVERNOR ARM SHAFT	1
10	SP-JD420-010.2	OIL SEAL $\Phi 8 \times \Phi 14 \times 5$	1
11	SP-JD420-011.2	DRAIN PLUG WASHER 12 mm	2
12	SP-JD420-012.2	DRAIN PLUG BOLT	2
13	SP-JD420-013.2	OIL SEAL $\Phi 30 \times \Phi 46 \times 7$	1
14	SP-JD420-014.2	OIL PROTECTOR	1
15	SP-JD420-015.2	BALL BEARING	1



CRANKCASE COVER SYSTEM ASSEMBLY. 3

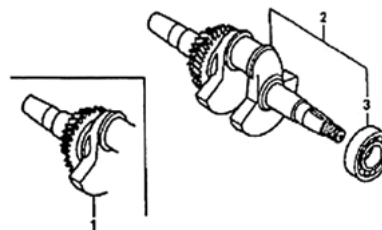
NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.3	OIL SEAL $\Phi 30 \times \Phi 46 \times 8$	1
2	SP-JD420-002.3	FLANGE BOLT 8x35	7
3	SP-JD420-003.3	CRANKCASE COVER ASSY	1
4	SP-JD420-004.3	OIL FILTER SEAL RING	1
5	SP-JD420-005.3	OIL FILTER CAP	1
6	SP-JD420-006.3	CRANKCASE COVER	1
7	SP-JD420-007.3	RADIAL BALL BEARING 6206	1
8	SP-JD420-008.3	ADJUSTING GEAR	1
9	SP-JD420-009.3	GOVERNOR HOLDER CLIP	1
10	SP-JD420-010.3	GOVERNOR WEIGHT HOLDER	1
11	SP-JD420-011.3	PLAIN WASHER 6 mm	1
12	SP-JD420-012.3	SLIDER GOVERNOR	1
13	SP-JD420-013.3	DRAIN PLUG BOLT	2
14	SP-JD420-014.3	PACKING GOVERNOR	1
15	SP-JD420-015.3	DOWEL PIN 8x12	1



EXPLODED DIAGRAM & PARTS LIST

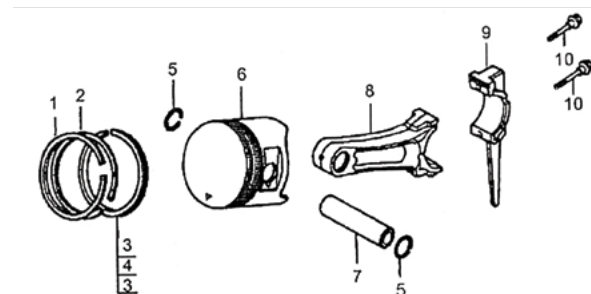
CRANKSHAFT SYSTEM ASSEMBLE. 4

NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.4	CRANKSHAFT COMP	1
2	SP-JD420-002.4	RADIAL BALL BEARING 6206	1



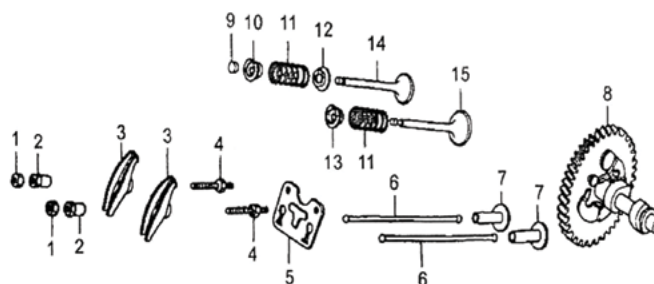
PISTON SYSTEM ASSEMBLE. 5

NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.5	PISTON RING A	1
2	SP-JD420-002.5	PISTON RING B	1
3	SP-JD420-003.5	OIL RING A	1
4	SP-JD420-004.5	OIL RING B	1
5	SP-JD420-005.5	PISTON PIN CLIP 20 mm	2
6	SP-JD420-006.5	PISTON	1
7	SP-JD420-007.5	PIN PISTON	1
8	SP-JD420-008.5	CONNECTING ROD	1
9	SP-JD420-009.5	CONNECTING COVER	1
10	SP-JD420-010.5	CONNECTING ROD BOLT	2



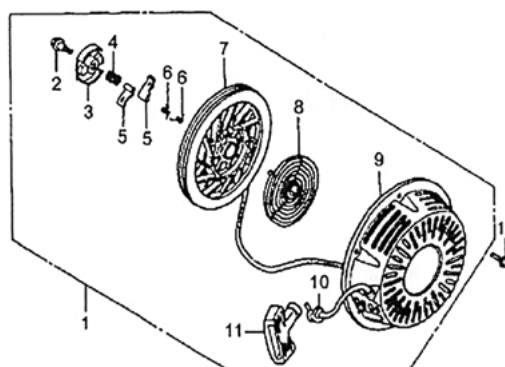
CAMSHAFT SYSTEM ASSEMBLE. 6

NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.6	PIVOT ADJUSTING NUT	2
2	SP-JD420-002.6	POCKET ARM PIVOT	2
3	SP-JD420-003.6	VALVE ROCKER ARM	2
4	SP-JD420-004.6	PIVOT BOLT (8 mm)	2
5	SP-JD420-005.6	PUSH ROD GUIDE PLATE	1
6	SP-JD420-006.6	ROD PUSH	2
7	SP-JD420-007.6	VALVE LIFTER	2
8	SP-JD420-008.6	CAMSHAFT	1
9	SP-JD420-009.6	VALVE ROTATOR	1
10	SP-JD420-010.6	EX. VALVE SPRING RETAINER	1
11	SP-JD420-011.6	VALVE SPRING	2
12	SP-JD420-012.6	VALVE SPRING SEAT	2
13	SP-JD420-013.6	IN. VALVE SPRING RETAINER	1
14	SP-JD420-014.6	EX.(STELITE) VALVE	1
15	SP-JD420-015.6	IN. VALVE	1



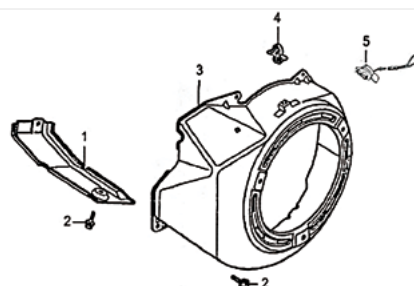
REDCOIL STARTER. 7

NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.7	RECOIL STARTER ASSY.	1
2	SP-JD420-002.7	CENTRE SCREW	1
3	SP-JD420-003.7	SPRING RETAINER	1
4	SP-JD420-004.7	FRICTION SPRING	1
5	SP-JD420-005.7	STARTER RATCHET	2
6	SP-JD420-006.7	RATCHET SPRING	2
7	SP-JD420-007.7	RECOIL STARTER PULLEY	1
8	SP-JD420-008.7	START RETURN SPRING	1
9	SP-JD420-009.7	RECOIL STARTER CASE COMP.	1
10	SP-JD420-010.7	RECOIL STARTER ROPE	1
11	SP-JD420-011.7	STARTER GRIP	1
12	SP-JD420-012.7	FLANGE BOLT 6x8	3



FAN COVER SYSTEM ASSEMBLE. 8

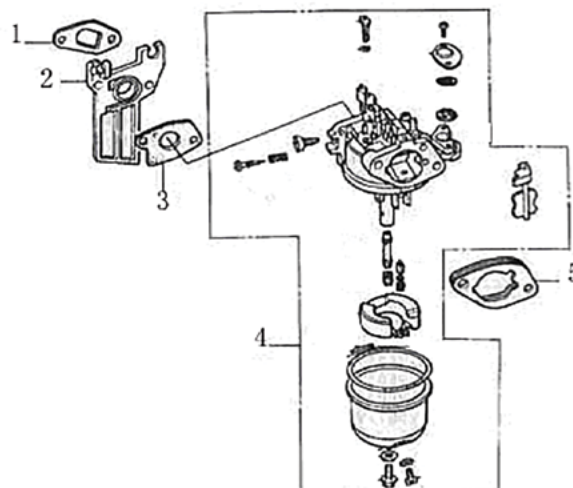
NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.8	SHROUD	1
2	SP-JD420-002.8	FLANGE BOLT 6x14	6
3	SP-JD420-003.8	FAN COVER COMP.	1
4	SP-JD420-004.8	CLIP WIRE HARNESS	1
5	SP-JD420-005.8	ENGINE STOP SWITCH ASSY.	1



EXPLODED DIAGRAM & PARTS LIST

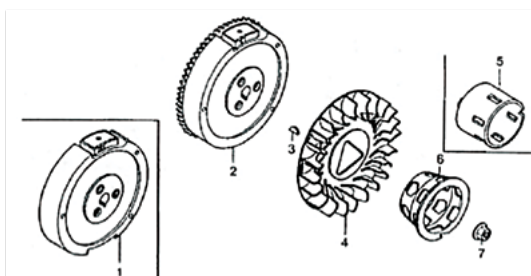
CARBURETTOR SYSTEM ASSEMBLE. 9

NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.9	CARBURETTOR PACKING A	1
2	SP-JD420-002.9	INSULTING PLATE, CARBURETTOR	1
3	SP-JD420-003.9	CARBURETTOR PACKING B	1
4	SP-JD420-004.9	CARBURETTOR ASSY.	1
5	SP-JD420-005.9	CARBURETTOR SPACER COMP	1



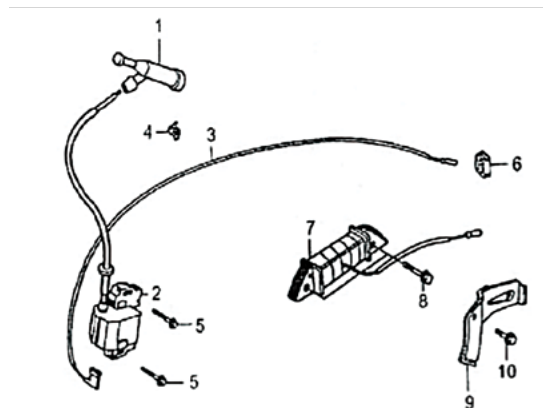
FLYWHEEL SYSTEM ASSEMBLE. 10

NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.10	FLYWHEEL A	1
2	SP-JD420-002.10	FLYWHEEL B	1
3	SP-JD420-003.10	SPECIAL WOODRUFF KEY	1
4	SP-JD420-004.10	COOLING FAN	1
5	SP-JD420-005.10	STARTER PULLEY A	1
6	SP-JD420-006.10	STARTER PULLEY B	1
7	SP-JD420-007.10	SPECIAL NUT 16 mm	1



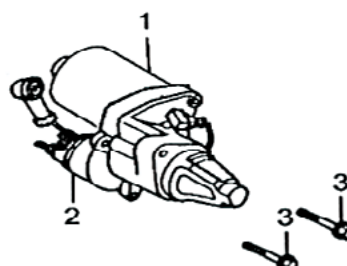
IGNITION SYSTEM ASSEMBLE. 11

NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.11	NOISE SUPPRESSOR CAP ASSY.	1
2	SP-JD420-002.11	IGNITION COIL ASSY.	1
3	SP-JD420-003.11	STOP SWITCH CORD	1
4	SP-JD420-004.11	STOP SWITCH CORD HOLDER A	1
5	SP-JD420-005.11	FLANGE BOLT 6x25	2
6	SP-JD420-006.11	CORD GROMMET	1
7	SP-JD420-007.11	CHARGE COIL ASSY.	1
8	SP-JD420-008.11	FLANGE BOLT 6x40	2
9	SP-JD420-009.11	CORD CLAMPER	1
10	SP-JD420-010.11	FLANGE BOLT 6x20	1



STARTER MOTOR SYSTEM ASSEMBLE. 12

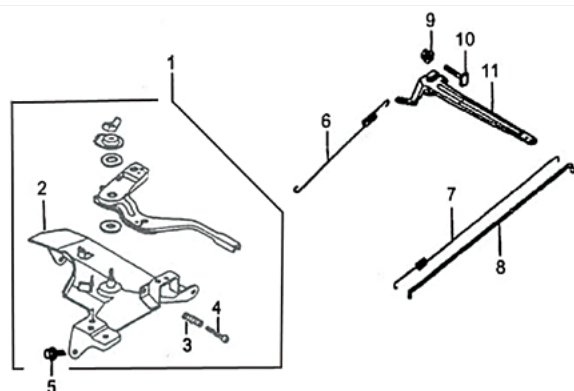
NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.12	UNIT STARTER MOTOR	1
2	SP-JD420-002.12	CONTACTOR ASSY.	1
3	SP-JD420-003.12	FLANGE BOLT 8x35	2



EXPLODED DIAGRAM & PARTS LIST

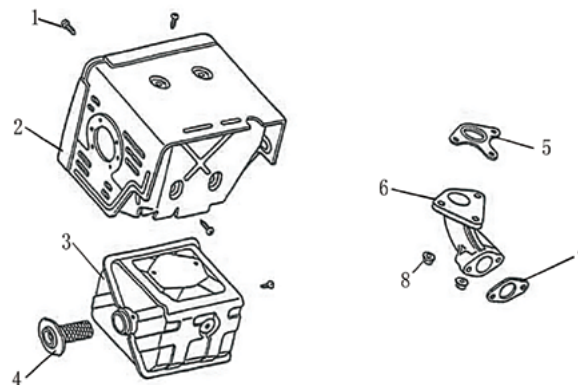
CONTROL SYSTEM ASSEMBLY. 13

NO	SKU	DESCRIPTION	QTY
1	SP-JD420-000.13	CONTROL ASSY.	1
2	SP-JD420-002.13	CONTROL BASE COMP.	1
3	SP-JD420-003.13	CONTROL ADJUSTING SPRING	1
4	SP-JD420-004.13	PAN SCREW 5x34	1
5	SP-JD420-005.13	FLANGE BOLT 6x14	1
6	SP-JD420-006.13	GOVERNOR SPRING A	1
7	SP-JD420-007.13	GOVERNOR SPRING B	1
8	SP-JD420-008.13	GOVERNOR ROD	1
9	SP-JD420-009.13	FLANGE NUT 6 mm	1
10	SP-JD420-010.13	GOVERNOR ARM BOLT	1
11	SP-JD420-011.13	GOVERNOR ARM	1



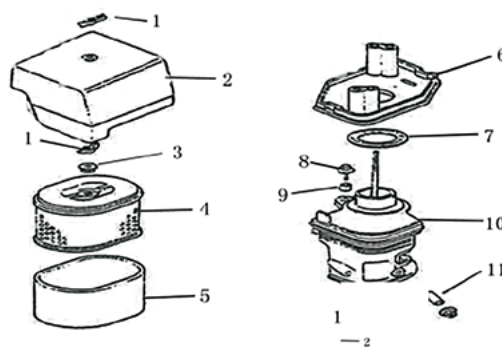
MUFFLER SYSTEM ASSEMBLY. 14

NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.14	TAPPING SCREW 5X8	4
2	SP-JD420-002.11	MUFFLER PROTECTOR COMP.	1
3	SP-JD420-003.11	MUFFLER COMP	1
4	SP-JD420-004.11	SPARK ARRESTER (SILENT)	1
5	SP-JD420-005.11	EX. PIPE GASKET	1
6	SP-JD420-006.11	EX. PIPE COMP.	1
7	SP-JD420-007.11	MUFFLER GASKET	1
8	SP-JD420-008.11	FLANGE NUT 8 mm	2



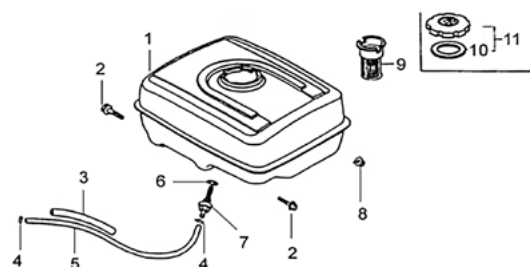
AIR CLEANER. 15

NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.15	AIR CLEANER COVER NUT	2
2	SP-JD420-002.15	AIR CLEANER COVER	1
3	SP-JD420-003.15	AIR CLEANER GROMMET	1
4	SP-JD420-004.15	AIR CLEANER ELEMENT	1
5	SP-JD420-005.15	OUTER FILTER	1
6	SP-JD420-006.15	SILENCER NOSE	1
7	SP-JD420-007.15	ELBOW PACKING	1
8	SP-JD420-008.15	FLANGE BOLT 6x20	1
9	SP-JD420-009.15	AIR CLEANER COLLAR B	1
10	SP-JD420-010.15	AIR CLEANER ELBOW COMP	1
11	SP-JD420-011.15	AIR CLEANER COLLAR A	1
12	SP-JD420-012.15	FLANGE NUT 8 mm	2



FUEL TANK SYSTEM ASSEMBLY. 16

NO	SKU	DESCRIPTION	QTY
1	SP-JD420-001.16	FUEL TANK ASSY.	1
2	SP-JD420-002.16	FLANGE BOLT	1
3	SP-JD420-003.16	SUPPORTER RUBBER	1
4	SP-JD420-004.16	TUBE CLIP	1
5	SP-JD420-005.16	FUEL TUBE	1
6	SP-JD420-006.16	O-RING, 14MM	1
7	SP-JD420-007.16	FUEL TANK JOINT	1
8	SP-JD420-008.16	FLANGE NUT 6MM	1
9	SP-JD420-009.16	FUEL FILTER	1
10	SP-JD420-010.16	FUEL FILLER CAP PACKING	1
11	SP-JD420-011.06	FUEL FILLER CAP COMP	1



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