

If you have questions or comments, contact us.

1-800-4-DEWALT • www.dewalt.com

INSTRUCTION MANUAL

DEWALT®

**DW168F, DW177F, DW188F
Engines**

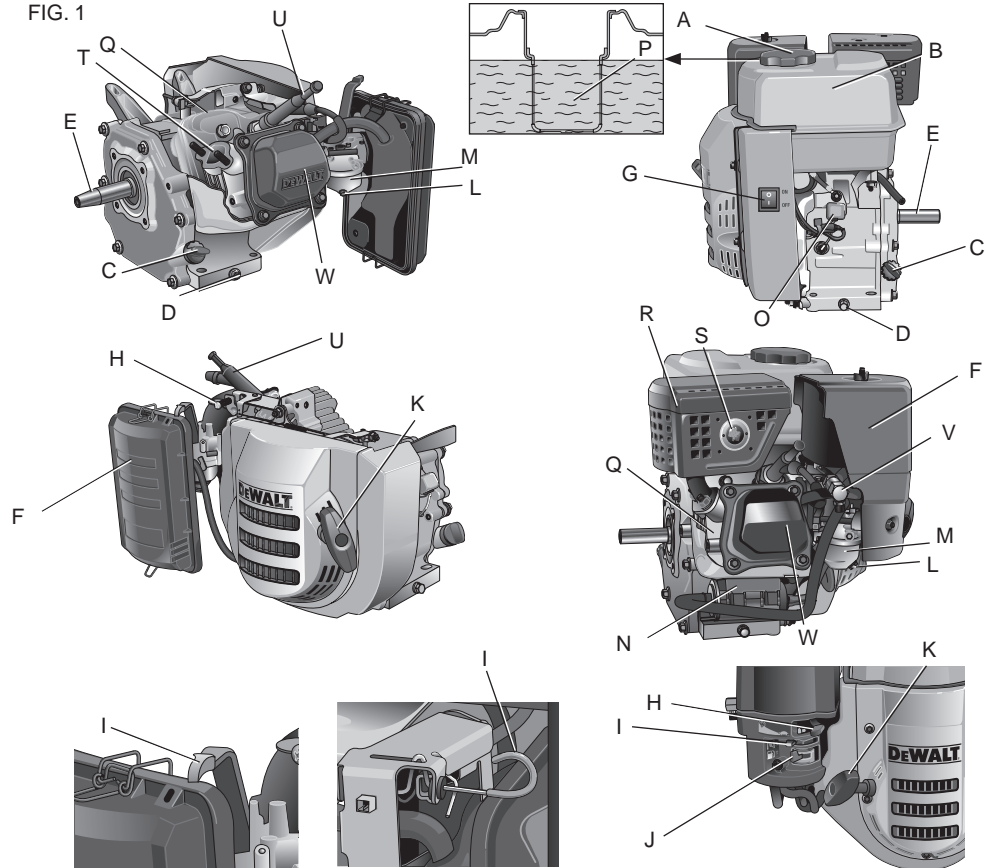
Components (Fig. 1)

- A. Fuel cap (if equipped)
- B. Fuel tank (if equipped)
- C. Oil fill/dipstick
- D. Oil drain
- E. Crank shaft PTO
- F. Air filter
- G. On/Off switch (if equipped)
- H. Set throttle control
- I. Choke lever
- J. Fuel valve (if equipped)
- K. Recoil pull starter
- L. Carburetor bowl drain
- M. Carburetor bowl
- N. Carbon canister (if equipped)
- O. Low oil shutdown sensor
- P. Debris Screen (if equipped)

Hot Surfaces (Fig. 1)

- Q. Cylinder head
- R. Muffler (if equipped)
- S. Spark Arrestor (if equipped)
- T. Exhaust (muffler not supplied)
- U. Spark plug
- V. Pilot valve connection (if equipped)
- W. Valve cover

FIG. 1



Definitions: Safety Guidelines

The definitions below describe the level of severity for each signal word. Please read the manual and pay attention to these symbols.

⚠DANGER: Indicates an imminently hazardous situation which, if not avoided, **will** result in **death or serious injury**.

⚠WARNING: Indicates a potentially hazardous situation which, if not avoided, **could** result in **death or serious injury**.

⚠CAUTION: Indicates a potentially hazardous situation which, if not avoided, **may** result in **minor or moderate injury**.

CAUTION: Used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, **may** result in **property damage**.

IF YOU HAVE ANY QUESTIONS OR COMMENTS ABOUT THIS OR ANY DEWALT TOOL, CALL US TOLL FREE AT: 1-800-4-DEWALT (1-800-433-9258)

Important Safety Instructions

SAVE THESE INSTRUCTIONS – This manual contains important instructions for models DW168F, DW177F and DW188F that should be followed during installation and maintenance of the engine.

⚠DANGER: Carbon Monoxide. Using an engine indoors will kill you in minutes. Engine exhaust contains high levels of carbon monoxide (CO), a poisonous gas you cannot see or smell. You may be breathing CO even if you DO NOT smell engine exhaust.

- **NEVER** use an engine inside homes, garages, crawlspaces, or other partly enclosed areas. Deadly levels of carbon monoxide can build up in these areas. Using a fan or opening windows and doors does **NOT** supply enough fresh air.
- **ONLY** use outdoors and far away from open windows, doors and vents. These openings can pull in engine exhaust.
- Even when the engine is used correctly, CO may leak into your home. **ALWAYS** use a battery-powered or battery backup CO alarm (not supplied) in the home. **Read and follow all directions for CO alarm before using.** If you start to feel sick, dizzy or weak at anytime, move to fresh air immediately. See a doctor. You could have carbon monoxide poisoning.

⚠WARNING: Do not operate this unit until you read and understand this instruction manual and the tool instruction manual for safety, operation and maintenance instructions.

⚠WARNING: The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

IMPORTANT: These products are equipped with spark-arresting mufflers. It is legally required in the state of California. It is a violation of California statutes section 130050 and/or sections 4442 and 4443 of the California Public Resources Code, unless the engine is equipped with a spark arrester, as defined in section 4442, and maintained in effective working order. Spark arresters are also required on some U.S. Forest Service land and may also be legally required under other statutes and ordinances.

SAVE THESE INSTRUCTIONS



⚠ DANGER: RISK OF EXPLOSION OR FIRE

WHAT CAN HAPPEN

- Spilled gasoline and its vapors can become ignited from sparks from smoking products, electrical arcing, exhaust, flame, gases and hot engine components such as the muffler.
- Heat will expand fuel in the tank which could result in spillage and possible fire explosion.
- Non-functioning or missing spark-arresting muffler may cause fire.

HOW TO PREVENT IT

- Shut off engine and allow it to cool before removing cap and adding fuel to the tank.
- Use care in filling tank to avoid spilling fuel. Make sure the cap is secure and move unit away from fueling area before starting engine.
- Keep maximum fuel level below the shoulders on the debris screen to allow for expansion.
- Make sure spark-arresting muffler is in place and not damaged.
- Replace spark-arresting muffler if damaged or missing.

- **Combustible materials which come into contact with hot engine parts can become ignited.**
- Add fuel outdoors in a well ventilated area. Make sure there are no sources of ignition, such as smoking products near refueling location.
- Operate engine in a clean, dry, well ventilated area a minimum of 48" (1.2 m) from any building, object or wall. Do not operate unit indoors or in any confined area.
- Operate engine in an open area away from dry brush, weeds or other combustible materials.
- Improperly stored fuel could lead to accidental ignition. Fuel improperly secured could get into the hands of children or other unqualified persons.
- Store fuel in an OSHA-approved container, in a secure location away from work area.
- **Unattended operation of this product could result in personal injury or property damage. To reduce the risk of fire, do not allow the engine to operate unattended.**
- Always remain in attendance with the engine when it is operating.



⚠ DANGER: RISK TO BREATHING (ASPHYXIATION)

WHAT CAN HAPPEN

- Breathing exhaust fumes will cause serious injury or death! Engine exhaust contains high levels of carbon monoxide (CO), a poisonous gas you cannot see or smell. You may be breathing CO even if you **do not** smell engine exhaust.

HOW TO PREVENT IT

- **NEVER** use an engine inside homes, garages, crawlspaces or other partly enclosed areas. Deadly levels of carbon monoxide can build up in these areas. Using a fan or opening windows and doors does **NOT** supply enough fresh air.
- **Only** use outdoors and far away from open windows, doors and vents. These openings can pull in engine exhaust.
- Keep children, pets and others away from area of operation.
- Always keep the exhaust pipe free of foreign object



⚠ DANGER: RISK OF INJURY OR PROPERTY DAMAGE WHEN TRANSPORTING OR STORING

WHAT CAN HAPPEN

- Oil and fuel can leak or spill and could result in fire or breathing hazard; serious injury or death can result. Oil and fuel leaks will damage carpet, paint or other surfaces in vehicles or trailers. Spilled oil and fuel increases risk of injury.

HOW TO PREVENT IT

- Never transport engine with fuel in the fuel system, fuel valve open, or while engine is in operation.
- Always place engine on a protective mat when transporting to protect against damage to vehicle from leaks. Remove engine from vehicle immediately upon arrival at your destination. Always keep engine level and never lie on its side.
- Transport fuel only in an OSHA approved container.



⚠ WARNING: RISK OF HOT SURFACES

WHAT CAN HAPPEN

- Touching exposed metal (muffler and other engine parts) can result in serious burns.

HOW TO PREVENT IT

- Never touch any exposed metal parts on engine during or immediately after operation. The engine will remain hot for several minutes after operation.
- Do not reach around protective shrouds or attempt maintenance until engine has been allowed to cool.



⚠ WARNING: RISK FROM MOVING PARTS

WHAT CAN HAPPEN

- The engine can start accidentally if the flywheel is turned by hand or moved by pulling on the pull starter.

HOW TO PREVENT IT

- Always disconnect the spark plug before performing maintenance.

- Moving parts such as the pulley, flywheel, and belt can cause serious injury if they come into contact with you or your clothing.
- Never operate the engine with guards or covers which are damaged or removed.
- Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts.
- Air vents may cover moving parts and should be avoided as well.
- Any repairs required on this product should be performed by a DEWALT factory service center or a DEWALT authorized service center.
- Attempting to operate engine with damaged or missing parts or attempting to repair engine with protective shrouds removed can expose you to moving parts and can result in serious injury.



⚠️ **WARNING: RISK OF UNSAFE OPERATION**

WHAT CAN HAPPEN

- Unsafe operation of your engine could lead to serious injury or death to you or others.

HOW TO PREVENT IT

- Review and understand all instructions and warnings in this manual.
- Become familiar with the operation and controls of the engine.
- Keep operating area clear of all persons, pets, and obstacles.
- Keep children away from the engine at all times.
- Do not operate the engine when fatigued or under the influence of alcohol or drugs. Stay alert at all times.
- Never defeat the safety features of this product.
- Equip area of operation with a fire extinguisher.
- Do not operate engine with missing, broken, or unauthorized parts.
- Never stand on the engine.



⚠️ **CAUTION: RISK FROM NOISE**

WHAT CAN HAPPEN

- Under some conditions, applications and duration of use, noise from this product may contribute to hearing loss.

HOW TO PREVENT IT

- **ALWAYS** wear certified safety equipment: ANSI S12.6 (S3.19) hearing protection.

SAVE THESE INSTRUCTIONS

ASSEMBLY

⚠️ WARNING: Do not operate this unit until you read and understand this instruction manual as well as the product instruction manual for safety, operation and maintenance instructions.

This engine is only for use in DEWALT approved applications. If used in unapproved applications, DEWALT is not responsible for repairs or damage and the warranty is void. Call 1-800-4-DEWALT (1-800-433-9258) for more information.

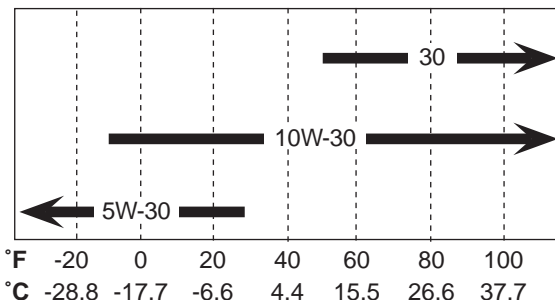
To mount engine correctly, refer to set-up instructions in shop manual.

⚠️ CAUTION: The engine **IS NOT** filled with oil from the factory. Oil must be added to the engine before operating or damage to engine may occur.

Oil Recommendations

SAE 10W-30 is recommended for general use. Refer to the Viscosity-Ambient Temperature Chart for recommended oil within your local area's average temperature range. **NOTE:** Synthetic oil is NOT recommended.

VISCOSITY-AMBIENT TEMPERATURE CHART

**TO ADD OIL (FIG. 1)**

1. Refer to Viscosity-Ambient Temperature Chart above for correct viscosity.
2. Remove dipstick.
3. Slowly add recommended oil, see specifications for oil capacity.
NOTE: If the oil is added too quickly, it will overflow and appear to be full.

See **To Check Oil** under *Maintenance* for instructions.

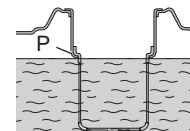
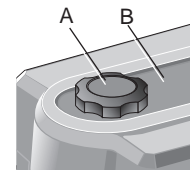
TO ADD FUEL

⚠WARNING: Risk of explosion or fire. Gasoline vapor is highly flammable. Refuel outdoors only in well-ventilated areas. Do not refuel or check gasoline level while the engine is running. Do not store, spill or use gasoline near an open flame, a source of sparks (such as welding) or near operating electrical equipment.

1. Remove fuel cap (A).
2. Add fresh, clean, regular unleaded gasoline with a minimum of 86 octane to the fuel tank (B). Do not fill above the shoulders on the debris screen (P) as shown. **NOTE:** The debris screen protects the engine from dirt and debris, only remove screen when cleaning. See **Cleaning Debris Screen** under *Maintenance* for instructions.

NOTE: Do not mix oil with gasoline.

3. Replace the fuel cap on the tank. Turn the cap clockwise until it stops.

**OXYGENATED FUELS**

Some conventional gasolines are blended with alcohol or an ether compound. These gasolines are collectively referred to as oxygenated fuels. To meet clean air standards, some areas of the United States and Canada use oxygenated fuels to help reduce emissions.

If you use an oxygenated fuel, be sure it is unleaded and meets the 86 minimum octane rating requirements. Before using an oxygenated fuel, try to confirm the fuel's contents. Some states/provinces required this information to be posted on the pump. The following are the EPA approved percentages of oxygenates:

Ethanol (ethyl or grain alcohol) 10% by volume. You may use gasoline containing up to 10% ethanol by volume. Gasoline containing ethanol may be marketed under the name gasohol.

CAUTION: Risk of property damage. **DO NOT use E85 fuel.**

MTBE (methyl tertiary butyl ether) 15% by volume. You may use gasoline containing up to 15% MTBE by volume.

Methanol (methyl or wood alcohol) 5% by volume. You may use gasoline containing up to 5% methanol by volume as long as it also

contains solvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber and plastic parts of the engine or your fuel system.

If you notice any undesirable operating symptoms, try another service station or switch to another brand of gasoline.

NOTE: Fuel system damage or performance problems resulting from the use of an oxygenated fuel containing more than the percentages of oxygenates mentioned above are not covered under warranty.

Location

⚠DANGER: Risk of breathing. Exhaust from the gasoline engine contains deadly carbon monoxide, which is odorless and toxic. Operate engine only outside in clean, dry, well-ventilated areas.

NOISE CONSIDERATIONS

Consult local officials for information regarding acceptable noise levels in your area.

Preparation For Use

1. Place unit on level surface.
2. Check engine oil. See **To Check Oil** under *Maintenance*.

CAUTION: Do not operate engine without oil or with inadequate oil. DEWALT is not responsible for engine failure caused by inadequate oil.

3. Check fuel level.
4. See product manual for specific starting procedures.

NOTE: If any unusual noise or vibration is noticed, stop the engine and refer to the troubleshooting section as well as the shop manual.

High Altitude Operating

At high altitude, the standard carburetor air-fuel mixture will be too rich. Performance will decrease and fuel consumption will increase. A very rich mixture will also foul the spark plug and cause hard starting.

High altitude performance can be improved by specific modifications to the carburetor. If you always operate your engine at altitudes above 1,524 meters (5,000 feet), have your authorized service center perform a carburetor modification.

Even with a carburetor modification, engine horsepower will decrease about 3.5% for each 300 meter (1,000 feet) increase in altitude. The effect of altitude on horsepower will be greater than this if no carburetor modification is made. A decrease in engine horsepower will decrease the power output of the engine.

NOTE: When the carburetor has been modified for high altitude operation, the air-fuel mixture will be too lean for low altitude use. If the engine is used at low altitudes after a carburetor modification, the carburetor may cause the engine to overheat and result in serious engine damage. For use at low altitudes, have your authorized service center return the carburetor to original factory specifications.

MAINTENANCE

⚠ WARNING: When cleaning, use only mild soap and a damp cloth on plastic parts. Many household cleaners contain chemicals which could seriously damage plastic. Also, do not use gasoline, turpentine, lacquer or paint thinner, dry cleaning fluids or similar products which may seriously damage plastic parts. Never let any liquid get inside the engine; never immerse engine into a liquid.

The following procedures must be followed when maintenance or service is performed on the engine.

Any service operations not included in this section should be performed by a DEWALT factory service center or a DEWALT authorized service center.

This engine is only for use in DEWALT approved applications. If used in unapproved applications, DEWALT is not responsible for repairs or damage and the warranty is void. Call 1-800-4-DEWALT (1-800-433-9258) for more information.

Maintenance Chart

PROCEDURE	Daily	100 hours	50 hours or weekly (whichever comes first)	150 hours or monthly (whichever comes first)	500 hours
Clean air filter (3)				X	
Check oil level	X				
Change oil (1,2,3)				X	
Clean spark plug					X
Clean engine's exterior			X		
Check and adjust valve clearance (.15 mm intake, .2 mm exhaust) (2)				X	
Clean spark arrester (if equipped)		X			
Clean debris screen (if equipped)				X	
1. The engine oil must be changed after the first 20 hours of operation. Thereafter change oil every 150 hours of operation or monthly, whichever comes first.					
2. See DEWALT shop manual for detail instructions. To order a shop manual call 1-800-4-DEWALT.					
3. Perform more frequently in dusty or humid conditions					

Cleaning Air Filter Element (Fig. 1)

⚠WARNING: Hot surfaces. Risk of burn. Engine and surrounding parts are very hot, do not touch (see the Hot Surfaces identified in Figure 1). Allow engine to cool prior to servicing.

A dirty air cleaner will restrict airflow to the carburetor. To prevent carburetor malfunction, service the air filter regularly. Service more frequently when operating the engine in extremely dusty areas.

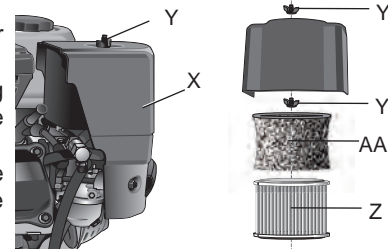
⚠WARNING: Using gasoline or flammable solvent to clean the filter element can cause a fire or explosion.

⚠WARNING: Risk of fire. Do not operate without air filter.

TO CLEAN THE ELEMENTS

DW168F-2E, DW177F-E, DW168F-2H, DW177F-H

1. Remove the wing nut (Y) and the air filter cover (X).
2. Remove the second wing nut (Y) and remove the filter (Z).
3. Remove the foam-type pre-filter (AA) from the filter (Z).
4. Inspect foam and paper elements. Replace them if damaged.



TO CLEAN THE ELEMENTS

Foam element: Wash element in warm, soapy water. Then saturate it in clean engine oil. Squeeze the element to remove excess oil.

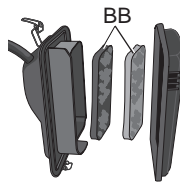
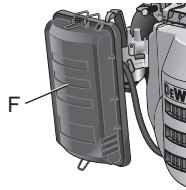
Paper element: Clean element by tapping gently to remove dust. Use compressed air to blow off dust.

⚠WARNING: When using compressed air, user always must wear eye protection that conforms to ANSI Z87.1. (CAN/CSA Z94.3).

Never use oil. Always blow the element from the inside. If using compressed air keep the air pressure less than 30 psi. Place the foam pre-filter over the paper element and reinstall it onto the engine.

DW168F-2F, DW177F-F, DW188F

1. Unsnap the air filter cover clips and remove the air cleaner cover.
2. Remove the element from air filter.
3. Wash element (BB) in a solution of household detergent and warm water, then rinse thoroughly, or wash in nonflammable or high flash point solvent. Allow the element to dry thoroughly.
4. Soak the element in clean engine oil and squeeze out the excess oil. **NOTE:** The engine will smoke during initial start-up if too much oil is left in the element.
5. Reinstall the air filter element and snap air filter cover in place.



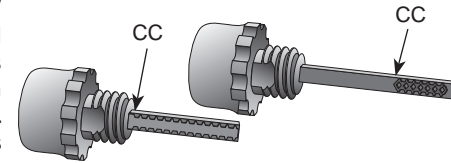
Oil

⚠Warning: Hot surfaces. Risk of burn. Engine and surrounding parts are very hot, do not touch (see the Hot Surfaces identified in Figure 1). Allow engine to cool prior to servicing.

TO CHECK OIL (FIG. 1)

1. Place unit on a flat level surface.
2. Remove oil fill/dipstick (C) and wipe clean.
3. Reinsert oil fill/dipstick fully into oil fill port and tighten. Allow oil to collect on the dipstick for a few seconds.

4. Remove oil fill/dipstick to read oil level. If oil falls below top of pattern on dipstick, add oil. **NOTE:** Patterns (CC) may differ according to engine.



NOTE: When filling the crankcase, allow the oil to flow very slowly. If the oil is added too quickly, it will overflow and appear to be full.

5. Replace dipstick and tighten securely.

TO CHANGE OIL (FIG. 1)

NOTE: Engine oil contains substances that are regulated and must be disposed of in accordance with local, state, provincial and federal laws and regulations.

1. Disconnect spark plug wire.
2. Locate a suitable container under oil drain plug (D).
3. Remove the oil fill/dipstick (C) from crankcase.
4. Remove the oil drain plug (D).
5. Allow ample time for all oil to drain out.
6. Install the oil drain plug.
7. Fill with recommended oil, refer to **Oil Recommendations** under *Assembly*.
8. Replace dipstick and tighten securely.
9. Reconnect spark plug wire.
10. Dispose of oil according to local, state and federal laws and regulations.

Spark Plug

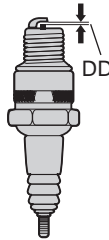
Use recommended spark plugs, see specifications for correct spark plug. To ensure proper engine operation, the spark plug must be properly gapped and free of deposits.

▲WARNING: *If the engine has been running, the muffler will be very hot. To reduce the risk of injury, allow cooling before proceeding.*

1. Remove the spark plug cap.
2. Clean any dirt from around the spark plug base.
3. Use a spark plug wrench (not supplied) to remove the spark plug.
4. Visually inspect the spark plug. Replace it if the insulator is cracked or chipped. Clean the spark plug with a wire brush if it is going to be reused.

▲WARNING: *Always wear certified safety equipment: ANSI Z87.1 eye protection (CAN/CSA Z94.3) with side shields.*

5. Measure the plug gap with a feeler gauge (DD). Correct as necessary by carefully bending the side electrode. The gap should be: 0.70–0.80 mm (0.028–0.031 in).
6. Make sure the spark plug washer is in good condition. Thread the spark plug in by hand to prevent cross threading.
7. After the spark plug is seated, tighten with a spark plug wrench to compress the washer. If installing a new spark plug, tighten the spark plug 1/2 turn after it seats to compress the washer. If reinstalling a used spark plug, tighten 1/8–1/4 turn after the spark plug seats to compress the washer. Do not overtighten.
8. Securely replace spark plug cap.



NOTE: The spark plug must be securely tightened. An improperly tightened spark plug can become very hot and could damage the engine. Never use spark plugs which have an improper heat range. Use only the recommended spark plugs or equivalent.

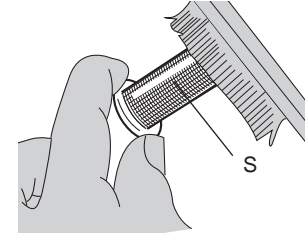
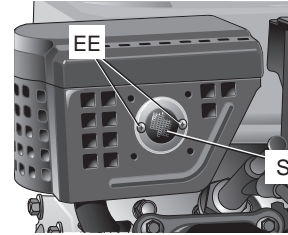
Spark Arrester (if equipped)

▲WARNING: *Risk of explosion or fire. DO NOT operate engine without spark arrestor (S).*

▲WARNING: *If the engine has been running, the muffler will be very hot. To reduce the risk of injury, allow engine to cool before proceeding.*

NOTE: The spark arrestor must be serviced every 100 hours to maintain its efficiency.

1. Remove the spark arrestor screws (EE) and remove the spark arrestor (S).



2. Use brush to remove carbon deposits from the spark arrestor screen. Inspect the spark arrestor screen for holes or tears. Replace the spark arrestor if necessary.

▲WARNING: *Always wear certified safety equipment: ANSI Z87.1 eye protection (CAN/CSA Z94.3) with side shields when removing carbon deposits.*

Drain Carburetor Bowl (Fig. 1)

1. Place the fuel valve lever (J, if equipped) in the closed position.
2. Place an OSHA-approved container suitable for fuel under the carburetor bowl (M). **NOTE:** Using a funnel will allow the fuel to flow into the container with less spillage.
3. Remove the carburetor bowl drain (L).
4. Fuel will drain from carburetor bowl.
5. When drained, replace carburetor bowl drain.

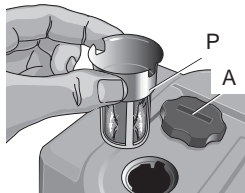
Cleaning Debris Screen (if equipped) (Fig. 1)

▲WARNING: Risk of explosion or fire. Gasoline vapor is highly flammable. Refuel outdoors only in well-ventilated areas. Do not refuel or check gasoline level while the engine is running. Do not store, spill, or use gasoline near an open flame, a source of sparks (such as welding), or near operating electrical equipment.

1. Remove fuel cap (A).
2. Remove debris screen (P).
3. Clean debris screen. Use compressed air to blow off debris.

▲WARNING: When using compressed air, user always must wear eye protection that conforms to ANSI Z87.1. (CAN/CSA Z94.3).

4. Replace debris screen and fuel cap.



Storage

▲WARNING: If the engine has been running, the muffler will be very hot. To reduce the risk of injury, allow engine to cool before proceeding.

If storing the unit for more than thirty days drain all fuel out of fuel lines, tank and carburetor bowl. Drain oil and refill with fresh, clean oil. **IMPORTANT:** Fuel will oxidize and deteriorate in storage. If fuel is allowed to deteriorate during storage the carburetor and fuel related parts will need to be serviced. **NOTE:** Fuel stabilizer can be used to lengthen the fuel life, follow the fuel stabilizer's recommended instructions

Service Information

Please have the following information available for all service calls:
 Model Number _____ Serial Number _____
 Date and Place of Purchase _____

Repairs

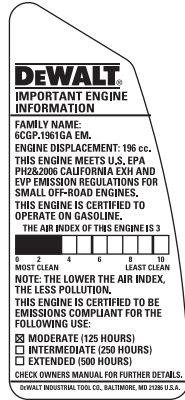
To assure product SAFETY and RELIABILITY, repairs, maintenance and adjustment should be performed by a DEWALT factory service center, a DEWALT authorized service center or other qualified service personnel. Always use identical replacement parts.

Full Two Year Warranty

DEWALT engines are warranted for two years from date of purchase. We will repair, without charge, any defects due to faulty materials or workmanship. For warranty repair information, call 1-800-4-DEWALT. This warranty does not apply to accessories or damage caused where repairs have been made or attempted by others. This warranty gives you specific legal rights and you may have other rights which vary in certain states or provinces.

LATIN AMERICA: This warranty does not apply to products sold in Latin America. For products sold in Latin America, see country specific warranty information contained either in the packaging, call the local company or see website for warranty information.

FREE WARNING LABEL REPLACEMENT: If your warning labels become illegible or are missing, call 1-800-4-DEWALT for a free replacement.



Troubleshooting Guide

This section provides a list of the more frequently encountered malfunctions, their causes and corrective actions. The operator or maintenance personnel can perform some corrective actions, and others may require the assistance of a qualified DEWALT technician or your dealer.

Problem

Code

Engine will not start 1,3,4,5,6,7,8,9,10,11,19
 Engine does not continue to run after starting
 1,3,5,6,9,10,12,19
 Knocking noise 14
 Over speed or low speed..... 15,16,17,18
 Low power..... 2,10,13,14,18

Code	Possible Cause	Possible solution
1	Low or no fuel	Add fuel
2	Bad fuel	Drain fuel tank and replace with fresh, clean, regular unleaded gasoline with a minimum of 86 octane
3	Low oil	Add oil
4	On/Off switch is in the OFF position	Place in ON position
5	Choke in the wrong position	Adjust choke accordingly
6	Fuel valve in CLOSED position	Place in OPEN position
7	Low battery (if equipped)	Charge the battery
8	Faulty spark plug	Replace spark plug
9	Spark plug cap loose	Attach spark plug cap securely

Code	Possible Cause	Possible solution
10	No or low compression	Tighten spark plug. If problem is not corrected, contact a DEWALT factory service center or a DEWALT authorized service center.
11	No spark	Check spark plug wire. If problem is not corrected, contact a DEWALT factory service center or a DEWALT authorized service center.
12	Spark plug fouling is sooty or sticky black	<p>a. Clean spark plug. See Spark Plug under <i>Maintenance</i>.</p> <p>b. Check spark plug gap, adjust if needed. See Spark Plug under <i>Maintenance</i>.</p> <p>c. Replace spark plug. See Specifications.</p> <p>d. If engine still fails to start, contact a DEWALT factory service center or a DEWALT authorized service center.</p>
13	Dirty air filter	Clean or replace the air filter elements
14	Improper valve clearances	Reset valve clearances. Contact a DEWALT factory service center or a DEWALT authorized service center.

Code	Possible Cause	Possible solution
15	Governor linkage stuck or bent	Contact a DEWALT factory service center or a DEWALT authorized service center.
16	Throttle shaft stuck	Contact a DEWALT factory service center or a DEWALT authorized service center.
17	Governor spring bent or lost	Contact a DEWALT factory service center or a DEWALT authorized service center.
18	Spark arrester clogged	Clean and replace
19	Dirty carburetor	Contact a DEWALT factory service center or a DEWALT authorized service center.

**THE FOLLOWING WARRANTY APPLIES ONLY TO
PRODUCTS MANUFACTURED TO
MEET CALIFORNIA AND UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
SPECIFICATIONS, WHICH ARE DISTRIBUTED AND SOLD
IN THE UNITED STATES.**

I. EMISSION CONTROL WARRANTY STATEMENT

Your warranty rights and obligations: The California Air Resources Board, the United States Environmental Protection Agency and DEWALT, are pleased to explain the emission control system warranty on your 2008 model year small off-road engine. In the United States and California, new small off-road engines must be designed, built and equipped to meet the State's stringent anti smog standards. DEWALT

must warrant the emission control system on your small off-road engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your small off-road engine.

Your emission control system may include parts such as the carburetor or fuel injection system, the ignition system, and catalytic converter. Also included may be hoses, belts, connectors and other emission related assemblies.

Where a warrantable condition exists, DEWALT will repair your small off-road engine at no cost to you including diagnosis, parts and labor.

Manufacturer's warranty coverage: The 1995 and later small off-road engines are warranted for two years. If any emission related part on your engine is defective, the part will be repaired or replaced by DEWALT.

Owner's warranty responsibilities: As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. DEWALT recommends that you retain all receipts covering maintenance on your small off-road engine, but DEWALT cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road engine owner, you should however be aware that DEWALT may deny you warranty coverage if your small off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road engine to a DEWALT distribution center as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact DEWALT Industrial Tool Co., Phone number 1-800-4-DEWALT (1-800-433-9258), or visit DEWALT website at www.dewalt.com for more information and assistance.

II. EMISSION CONTROL SYSTEM WARRANTY

Emission Control System Warranty (ECS Warranty) for 1997 and later model engines

- (a) **Applicability:** This warranty shall apply to 1997 and later model year engines. The ECS Warranty Period shall begin on the date the new engine or equipment is purchased by/delivered to its ultimate purchaser and shall continue for 24 consecutive months thereafter.
- (b) **General Emissions Warranty Coverage:** DEWALT warrants to the ultimate purchaser of the new engine or equipments and each subsequent purchaser for a two-year period.
 - (1) Designed, built and equipped so as to conform with all applicable regulations adopted by the EPA and CARB pursuant to their respective authority, and
 - (2) Free from defects in materials and workmanship, which, at any time during the ECS Warranty Period, may cause a warranted emissions-related part to fail to be identical in all material respects to the part as described in the engine manufacturer's application for certification.

The ECS Warranty only pertains to emissions-related parts on your engine, as follows:

- (1) Any warranted, emissions-related parts that are not scheduled for replacement as required maintenance in the Owner's Manual must be warranted for the ECS Warranty Period. If any such part fails during the ECS Warranty Period, it shall be repaired or replaced by DEWALT according to Subsection (4) below. Any such part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period.
- (2) Any warranted, emissions-related part that is scheduled only for regular inspection as specified in the Owner's Manual must be warranted for the ECS Warranty Period. A statement in such written instructions to the effect of "repair or replace as necessary"

shall not reduce the ECS Warranty Period. Any such part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period.

- (3) Any warranted, emissions-related part that is scheduled for replacement as required maintenance in the Owner's Manual shall be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part shall be repaired or replaced by DEWALT according to Subsection (4) below. Any such emissions-related part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period prior to the first scheduled replacement point for such emissions-related part.
- (4) Repair or replacement of any warranted, emissions-related part under this ECS Warranty shall be performed at no charge to the owner at a DEWALT Authorized Warranty Service Facility. The warranty services or repairs must be provided at all manufacturer distribution centers that are franchised to service the subject engines.
- (5) When the engine is inspected by a DEWALT Authorized Warranty Service Facility, the owner shall not be held responsible for diagnostic costs if the repair is deemed warrantable.
- (6) DEWALT shall be liable for damages to other original engine components or approved modifications proximately caused by a failure under warranty of any emission-related part covered by the ECS Warranty.
- (7) Throughout the ECS Warranty Period, DEWALT shall maintain a supply of warranted emission-related parts sufficient to meet the expected demand for such emission-related parts.
- (8) Any replacement part may be used in the performance of any Warranty maintenance or repairs and will be provided without charge to the ultimate purchaser. Such use shall not reduce DEWALT's ECS warranty obligations.

- (9) Add-on or modified parts that are not exempted by the Air Resources Board may not be used. Such use will be grounds for disallowing a warranty claim made in accordance with this article. DEWALT will not be liable under this article to warrant failures of warranted parts caused by the use of such an add-on or modified part.

EMISSION RELATED PARTS INCLUDE THE FOLLOWING:

- 1) Fuel Metering System:
 - a) Gasoline carburetor assembly and its internal components.
 - b) Fuel filter (if equipped)
 - c) Carburetor gaskets
 - d) Fuel pump (if equipped)
- 2) Air Induction System including:
 - a) Intake pipe/manifold
 - b) Air cleaner
- 3) Ignition System including:
 - a) Spark plug
 - b) Ignition module/coil
- 4) Miscellaneous Items Used in Above Systems
 - a) Vacuum, temperature, and time sensitive valves and switches.
 - b) Hoses, belts, connectors, and assemblies.
- 5) Evaporate Emissions Control
 - a) Fuel Hose certificated for CARB evaporative emission of 2007.
 - b) Fuel hose clamp
 - c) carbon canister (if equipped)
 - d) Roll over valve (if equipped)
 - e) Fuel tank (if equipped)
 - f) Fuel cap (if equipped)
- 6) Exhaust Emissions Control
 - a) catalytic converter (if equipped)

ENGINE SPECIFICATIONS	DW168F-2E	DW177FD-E	DW168F-2H	DW177F-H	DW188F-H	DW168F-2F	DW177F-F	DW188F
Dry weight (approximate)	38 lbs. (17.38 kg)	59 lbs. (26.70 kg)	38 lbs. (17.38 kg)	59 lbs. (26.70 kg)	72 lbs. (32.80 kg)	31 lbs. (13.87 kg)	53 lbs. (24.0 kg)	69 lbs. (31.50 kg)
Dimensions (LxWxH)	For dimensions, see shop manual installation drawings							
Type	Air cooled, 4 cycle single cylinder, spark ignited							
Fuel	Regular, unleaded gasoline (minimum 86 octane)							
Displacement (cc)	196	270	196	270	389	196	270	389
Application	Air compressor		Pressure washer			Generator		
Horsepower (*Gross HP) (hp @ rpm)	*6.5 @3400	*9 @ 3400	*6.5 @3600	*9 @ 3600	*13 @ 3600	*6.5@ 3600	*9 @ 3600	*13 @ 3600
Fuel tank capacity (gallons/liters)	.95/3.6	1.56/5.9	.95/3.6	1.56/5.9	1.93/7.3	Without		
Oil capacity	.63 qt/.60 l	1.2 qt/1.1 l	.63 qt/.60 l	1.2 qt/1.1 l	1.2 qt/1.1 l	.63 qt/.60 l	1.2 qt/1.1 l	1.2 qt/1.1 l
Air cleaner type	Foam element or paper							
Low oil shut down	Equipped							
Fuel filter	Equipped							
Spark plug type	NGK: BP6ES, **BPR6ES, BPR6ES/AUTOLITE: 63/AC DELCO: R41XL, R42XLS, R43FS, R43XL, R43XLS, R44XLS, R45XLS or equivalent							
Spark plug gap	0.028-0.031" (0.70-0.80 mm)							
Fuel shut off solenoid	Without						12 V DC solenoid	
Lamp coil	Without						2 pole	
Idle control	Pneumatic		Without			12 V DC solenoid	12 V DC relay	
Electric starter	Without	Equipped	Without			Equipped	Equipped	
Max. recommended tilt angle	< 25 or 30°							
<p>* Gross horsepower (HP). This horsepower rating represents the maximum output under laboratory conditions at 3600 RPM in accordance with SAE (Society of Automotive Engineers) J1995 and should be used for comparison purposes only. Actual engine output will be lower and will vary depending on the application, speed and other variables including altitude and temperature.</p> <p>** This spark plug complies with the Canadian Standard ICES-002.</p>								