

OPERATION MANUAL



MODEL DSGPULW DUOSCREEN LIGHTWEIGHT (HONDA GX35SAT GASOLINE ENGINE)

Revision #8 (06/12/23)

To find the latest revision of this publication or associated parts manual, visit our website at:

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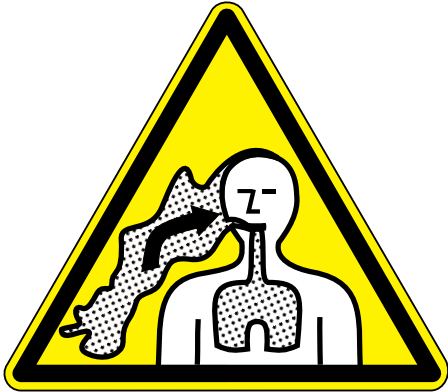


THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.

PROPOSITION 65 WARNING



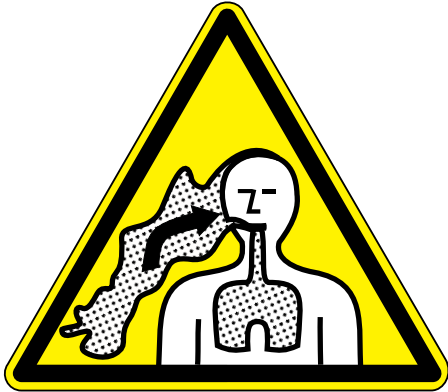
! WARNING



SILICOSIS WARNING

Grinding/cutting/drilling of masonry, concrete, metal and other materials with silica in their composition may give off dust or mists containing crystalline silica. Silica is a basic component of sand, quartz, brick clay, granite and numerous other minerals and rocks. Repeated and/or substantial inhalation of airborne crystalline silica can cause serious or fatal respiratory diseases, including silicosis. In addition, California and some other authorities have listed respirable crystalline silica as a substance known to cause cancer. When cutting such materials, always follow the respiratory precautions mentioned above.

! WARNING



RESPIRATORY HAZARDS

Grinding/cutting/drilling of masonry, concrete, metal and other materials can generate dust, mists and fumes containing chemicals known to cause serious or fatal injury or illness, such as respiratory disease, cancer, birth defects or other reproductive harm. If you are unfamiliar with the risks associated with the particular process and/or material being cut or the composition of the tool being used, review the material safety data sheet and/or consult your employer, the material manufacturer/supplier, governmental agencies such as OSHA and NIOSH and other sources on hazardous materials. California and some other authorities, for instance, have published lists of substances known to cause cancer, reproductive toxicity, or other harmful effects.

Control dust, mist and fumes at the source where possible. In this regard use good work practices and follow the recommendations of the manufacturers or suppliers, OSHA/NIOSH, and occupational and trade associations. Water should be used for dust suppression when wet cutting is feasible. When the hazards from inhalation of dust, mists and fumes cannot be eliminated, the operator and any bystanders should always wear a respirator approved by NIOSH/MSHA for the materials being used.

**DSGPULW VIBRATORY
DUOSCREED**

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NOTICE
Specifications are subject to change without notice.


SAFETY INFORMATION

Do not operate or service the screed before reading the entire manual. Safety precautions should be followed at all times when operating this screed. Failure to read and understand the safety messages and operating instructions could result in injury to yourself and others.


SAFETY MESSAGES

The four safety messages shown below will inform you about potential hazards that could injure you or others. The safety messages specifically address the level of exposure to the operator and are preceded by one of four words: **DANGER**, **WARNING**, **CAUTION** or **NOTICE**.


SAFETY SYMBOLS

 **DANGER**

Indicates a hazardous situation which, if not avoided, **WILL** result in **DEATH** or **SERIOUS INJURY**.

 **WARNING**

Indicates a hazardous situation which, if not avoided, **COULD** result in **DEATH** or **SERIOUS INJURY**.







 **CAUTION**

Indicates a hazardous situation which, if not avoided, **COULD** result in **MINOR** or **MODERATE INJURY**.

NOTICE

Addresses practices not related to personal injury.

Potential hazards associated with the operation of this screed will be referenced with hazard symbols which may appear throughout this manual in conjunction with safety messages.

Symbol	Safety Hazard
	Lethal exhaust gas hazards
	Explosive fuel hazards
	Burn hazards
	Respiratory hazards
	Accidental starting hazards
	Eye and hearing hazards

SAFETY INFORMATION

GENERAL SAFETY

CAUTION

- **NEVER** operate this screed without proper protective clothing, shatterproof glasses, respiratory protection, hearing protection, steel-toed boots and other protective devices required by the job or city and state regulations.



- **NEVER** operate this screed when not feeling well due to fatigue or illness, or when on medication.
- **NEVER** operate this screed under the influence of drugs or alcohol.



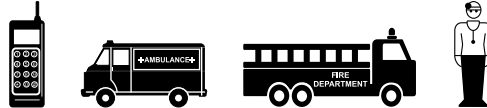
- **ALWAYS** check the screed for loosened threads or bolts before starting.
- **NEVER** use the screed for any purpose other than its intended purposes or applications.

NOTICE

- This screed should only be operated by trained and qualified personnel 18 years of age and older.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult to read.
- Manufacturer does not assume responsibility for any accident due to equipment modifications. Unauthorized modification of the screed will void all warranties.
- **NEVER** use accessories or attachments that are not recommended by Multiquip for this screed. Damage to the screed and/or injury to the user may result.
- **ALWAYS** know the location of the nearest **fire extinguisher**.
- **ALWAYS** know the location of the nearest **first aid kit**.



- **ALWAYS** know the location of the nearest phone or **keep a phone on the job site**. Also, know the phone numbers of the nearest **ambulance, doctor, and fire department**. This information will be invaluable in the case of an emergency.



SCREED SAFETY

DANGER

- **NEVER** operate the screed in an explosive atmosphere or near combustible materials. An explosion or fire could result causing **severe bodily harm or even death**.



WARNING

- **NEVER** disconnect any **emergency or safety devices**. These devices are intended for operator safety. Disconnection of these devices can cause **severe injury, bodily harm or even death**. Disconnection of any of these devices will void all warranties.

CAUTION

- **NEVER** attempt service on a **running** screed.

NOTICE

- **ALWAYS** ensure the screed is on level ground before use.
- **ALWAYS** read, understand, and follow procedures in Operator's Manual before attempting to operate screed.
- Refer to the Engine Owner's Manual for engine technical questions or information.
- **ALWAYS** keep the screed in proper running condition.
- Fix damage to the screed and replace any broken parts immediately.
- **ALWAYS** store the screed properly when it is not being used. The screed should be stored in a clean, dry location out of the reach of children and unauthorized personnel.



SAFETY INFORMATION

ENGINE SAFETY

DANGER

- The engine fuel exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause **death** if inhaled.
- The engine of this screed requires an adequate, free flow of cooling air. **NEVER** operate this equipment in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause injury to people and property and serious damage to the equipment or engine.



- When operating the screed outdoors, **DO NOT** place the screed near doors, windows or vents that could allow carbon monoxide to enter and build up in occupied spaces.

WARNING

- Operation of the screed may create sparks that can start fires around dry vegetation. A spark arrestor may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

CAUTION

- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing the screed.



NOTICE

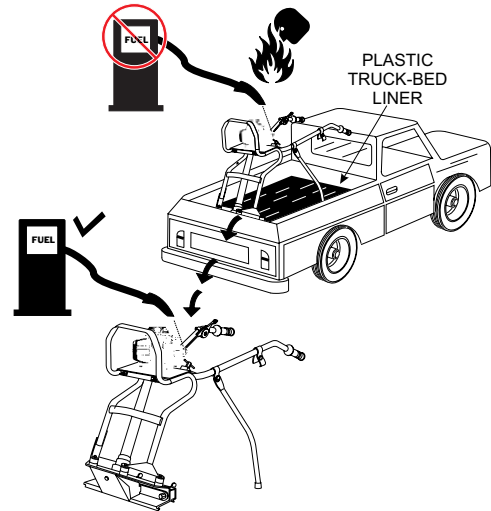
- **NEVER** run the engine without an air filter or with a dirty air filter. Severe engine damage may occur. Service the air filter frequently to prevent engine malfunction.
- **NEVER** tamper with the factory settings of the engine or engine governor. Damage to the engine or screed can result if operating in speed ranges above the maximum allowable.



FUEL SAFETY

DANGER

- **DO NOT** add fuel to equipment if it is placed inside truck bed with plastic liner. Possibility exists of explosion or fire due to static electricity.



- **NEVER** start the engine near spilled fuel or combustible fluids. Gasoline fuel is extremely flammable and its vapors can cause an explosion if ignited.
- **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames.
- **ALWAYS** use extreme caution when working with flammable liquids.
- **NEVER** fill the fuel tank while the engine is running or hot.
- **NEVER** overfill the fuel tank. Spilled fuel can ignite if it comes into contact with hot engine parts or sparks from the ignition system.
- Store fuel in appropriate containers, in well-ventilated areas and away from sparks and flames.
- **NEVER** use fuel as a cleaning agent.
- **NEVER** smoke around or near the equipment. Fire or explosion could result from fuel vapors or if fuel is spilled on a hot engine.

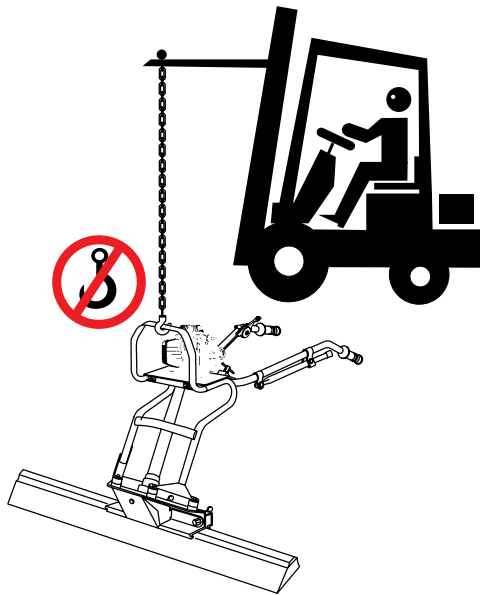


SAFETY INFORMATION

TRANSPORTING SAFETY

CAUTION

- **ALWAYS** shut down the engine before transporting.
- Drain fuel when transporting DuoScreed over long distances or bad roads.
- **NEVER** attach a forklift or other lifting device to the lifting bar. This bar is only for ***manual lifting on the jobsite***.



NOTICE

- **NEVER** lift the equipment while the engine is running.
- Tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.
- **DO NOT** lift machine to unnecessary heights.
- **ALWAYS** tie down equipment during transport by securing the equipment with rope or strap.

ENVIRONMENTAL SAFETY/DECOMMISSIONING

NOTICE

Decommissioning is a controlled process used to safely retire a piece of equipment that is no longer serviceable. If the equipment poses an unacceptable and unreparable safety risk due to wear or damage or is no longer cost effective to maintain (beyond life-cycle reliability) and is to be decommissioned (demolition and dismantlement), be sure to follow the rules below:

- **NEVER** pour waste or oil directly onto the ground, down a drain, or into any water source.
- Contact your country's Department of Public Works or recycling agency in your area and arrange for proper disposal of any electrical components, waste or oil associated with this equipment.
- When the life cycle of this equipment is over, remove the battery and bring it to an appropriate facility for lead reclamation. Use safety precautions when handling batteries that contain sulfuric acid.
- When the life cycle of this equipment is over, it is recommended that the frame and all other metal parts be sent to a recycling center.



Metal recycling involves the collection of metal from discarded products and its transformation into raw materials to use in manufacturing a new product.

Recyclers and manufacturers alike promote the process of recycling metal. Using a metal recycling center promotes energy cost savings.

EMISSIONS INFORMATION

NOTICE

The gasoline engine used in this equipment has been designed to reduce harmful levels of carbon monoxide (CO), hydrocarbons (HC), and nitrogen oxides (NOx) contained in diesel exhaust emissions.

This engine has been certified to meet US EPA evaporative emissions requirements in the installed configuration.

Attempting to modify or make adjustments to the engine emission system by unauthorized personnel without proper training could damage the equipment or create an unsafe condition.

Additionally, modifying the fuel system may adversely affect evaporative emissions, resulting in fines or other penalties.

Emission Control Label

The emission control label is an integral part of the emission system and is strictly controlled by regulations.

The label must remain with the engine for its entire life.







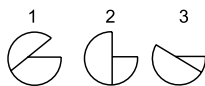
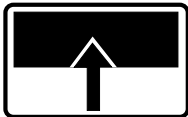
If a replacement emission label is needed, please contact your authorized engine distributor.

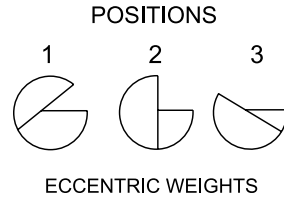
SAFETY DECALS

SAFETY DECALS

Safety decals are attached to the screed as shown in Figure 1. Keep these safety decals clean at all times. When the safety decals become worn or damaged, contact your nearest dealer or the Multiquip Parts Department.

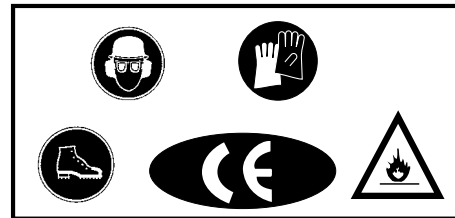
NOTICE
For safety decal part numbers, reference parts manual.

DuoScreed Safety Decals	
	Symbol indicates that it is mandatory to wear safety glasses, safety helmet and ear protection.
	Symbol indicates that it is mandatory to wear gloves.
	Symbol indicates that it is mandatory to wear safety shoes, with extra protection (steel toed).
	Symbol indicates unit should <u>not be</u> operated near flammable materials.
 P/N DCL121	Symbol indicates DO NOT use a pressure washer to clean unit.
	Symbol indicates unit complies with European standards.
POSITIONS  P/N DCL141	Symbol indicates position of eccentric weights depending on blade length.
 P/N DCL140	Symbol indicates alignment point when attaching blade to main body clamps.

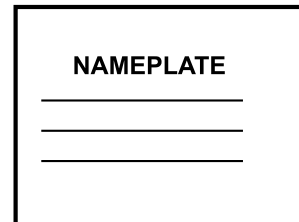


BLADE LENGTH		ECCENTRIC WEIGHT POSITION
FEET	METERS	
4.9	1.5	1
6.2	1.9	1
8.2	2.5	1
9.5	3.0	1
12.3	3.75	2
13.9	4.25	2
16.4	5.00	3
18.0	5.50	3
19.6	6.00	3

P/N DCL141



P/N DCL122



CONTACT MULTIQUIP
PARTS DEPT.



P/N BF260002

Figure 1. Operation and Safety Decals

Table 1. Screed Specifications	
Power Unit Model	DSGPULW
Number of Vibrations	5,500 v/min
Drive System	Flexible Shaft
Noise (Open Air)	50 dB(A)
Vibration Acceleration	1.5 m/sec ²
Drive Unit Weight (LW)	29 lbs. (13 Kg.)
Blade Construction	Extruded Aluminum Alloy
Blade Widths LW	6, 8, 10, 12, 14 and 16 ft. (1.82, 2.43, 3.04, 3.65, 4.26, and 4.87 meters)
Blade Weights LW	Approx. 1.95 lb./ft. (2.9 kg/m)

Table 2. Engine Specifications	
Engine Make	HONDA
Engine Model	GX35SAT
Engine Type	4-Stroke OHC Gasoline Engine
Number Of Cylinders	1
Displacement	2.18 cu. in (35.8 cm ³)
Maximum Output	1.6 HP/7,000 rpm
Oil Grade	SAE 10W-30
Oil Capacity	0.11 qt./(0.10 liter)
Fuel Type	Unleaded
Fuel Tank Capacity	172 gal./(.65 liters)
Spark Plug Gap	0.024-0.028 inch (0.60-0.70 mm)
Spark Plug Type	CMR5H (NGK)
Starting Method	Recoil Start
Weight (Dry)	7.34 lbs. (3.33 kg)

GENERAL INFORMATION

Introduction

The Multiquip DuoScreed is a hand held vibratory screed designed to strike-off and consolidate concrete slabs. It is comprised of two major components, the power unit (gasoline engine), and the strike-off blade. Generally this screed operates ideally in concrete with a slump of 2 inches or greater. Its applications include patios, driveways, sidewalks and floor slabs.

Assembly

There are no tools required to assemble the DuoScreed. The power unit (engine) is connected to the blade by means of a spring-loaded clamp. Springs within the clamp assembly prevent vibration from loosening the power unit from the blade.

Handle Adjustments

The handle assembly on the DuoScreed is height adjustable for operator comfort. The handle design used on this screed allows the operator to remain upright at all times and can be quickly adjusted without any tools.

Vibratory System

The vibratory system of the DuoScreed produces low amplitude high frequency vibrations, designed to level and compact concrete. This vibratory system is mounted at an angle to transmit vibration laterally and vertically through the blade to produce a strong, dense slab.

The engine drives a two piece eccentric weight by means of a one-piece flexible shaft. This weight produces a vibratory action which simultaneously allows the DuoScreed to level the slab and consolidate the concrete beneath the surface.

Blades

The DuoScreed can utilize various blade widths. This screed uses a lightweight (LW) type blade. The widths can range anywhere from 6~16 feet (1.82~ 4.87 meters). See Table 1 for more detailed information. Since different length blades will require varying amounts of vibration, the DuoScreed features adjustable eccentric weights.

NOTICE

Some blade widths may not be available. Please contact MQ unit sales for available blades.

Engine

The Multiquip DuoScreed is equipped with a Honda Model GX35SAT, 1.6 HP, mini 4-cycle gasoline engine. This engine is lightweight and requires *no fuel mixing*.

Drive System

The Honda 1.6 HP engine drives a flexible shaft that requires no greasing. Its short one piece design runs directly to the vibrator housing and does not bend. This type of design eliminates a major source of friction and reduces the likelihood of shaft failure.

DUOSCREED COMPONENTS

Figure 2. DuoScreed Components

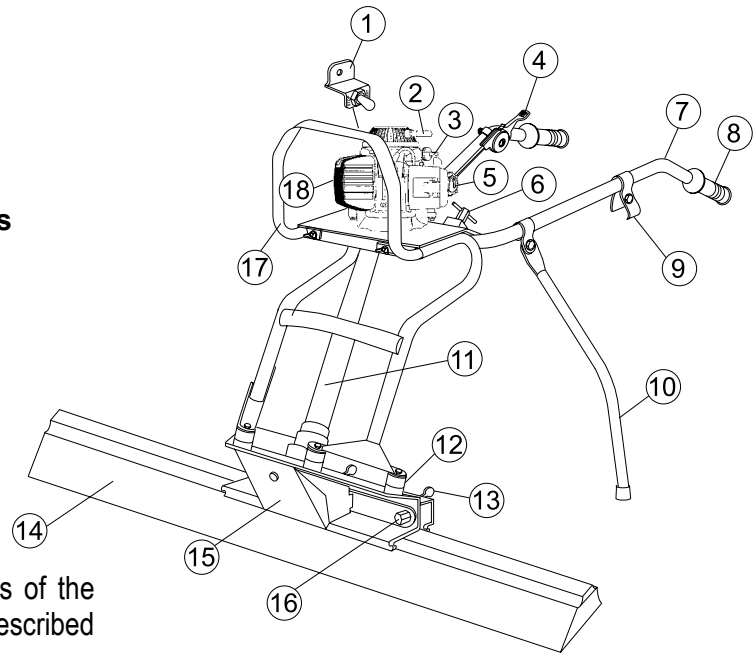


Figure 1 shows the location of the components of the DuoScreed. The function of each component is described below:

1. **Start/Stop Switch** – When starting the engine, place this switch in the **START** position. When stopping the engine, place in the **STOP** position.
2. **Recoil Starter** – Manual-starting method. Pull the starter grip until resistance is felt, then pull briskly and smoothly.
3. **Oil Cap** – Remove this cap to add engine oil.
4. **Throttle Control Lever** – Move the throttle lever to the down position for full throttle (max RPM's), for engine idle, move the throttle lever to the up position.
5. **Fuel Cap/ Tank** – Remove the fuel tank cap to add unleaded fuel **ONLY! DO NOT** mix fuel. **DO NOT** over fill. Tank holds approximately .172 gallons (.65 liters).
6. **Handle Bar Adjustment Knobs** – Loosen these two knobs to adjust the handle bar to a suitable working position.
7. **Handle Bar** – Used in the steering of DuoScreed.
8. **Hand Grip** – When operating the DuoScreed use this hand grip to maneuver the machine.
9. **Support Stand Latch** – Use this latch to lock support stand in place when DuoScreed is in operation.
10. **Support Stand** – Use this stand to support the DuoScreed when not in use.
11. **Flexible Drive Shaft** – Connected to the drive shaft of the engine, provides the vibrational force for the eccentric weights.
12. **Shock Mounts** – Used to absorb the vibration generated by the DuoScreed. These shock mounts minimize the transfer of vibration to the operator.
13. **Spring-Loaded Wing Nuts** – Turn these 3 spring loaded wing nuts counterclockwise to release the blade from the aluminum clamping strip, turn clockwise to secure the blade to the clamping strip.
14. **Blades** – The DuoScreed comes equipped from the factory with LW type blades. Reference Table 1 for details.
15. **Eccentric Cover** – Encloses the adjustable eccentric weights. Press the spring clip tab inward and slide the cover upward to gain access to the eccentric weights.
16. **Locking Nuts** – These 3 locking nuts are used in conjunction with the 3 spring loaded wing nuts which secure the blade to the aluminum clamping strip. Important! always cover the two outer nuts with the provided plastic cap. This will prevent concrete and other debris from entering the quick disconnect system.
17. **Lifting Bar** – This bar is only for manual lifting on the jobsite. Not to be used for manual lifting with a forklift or other lifting device.
18. **Gasoline Engine** – This DuoScreed uses a HONDA GX35SAT 1.6 HP gasoline engine. Refer to the HONDA owners manual for engine information and related topics

ENGINE COMPONENTS

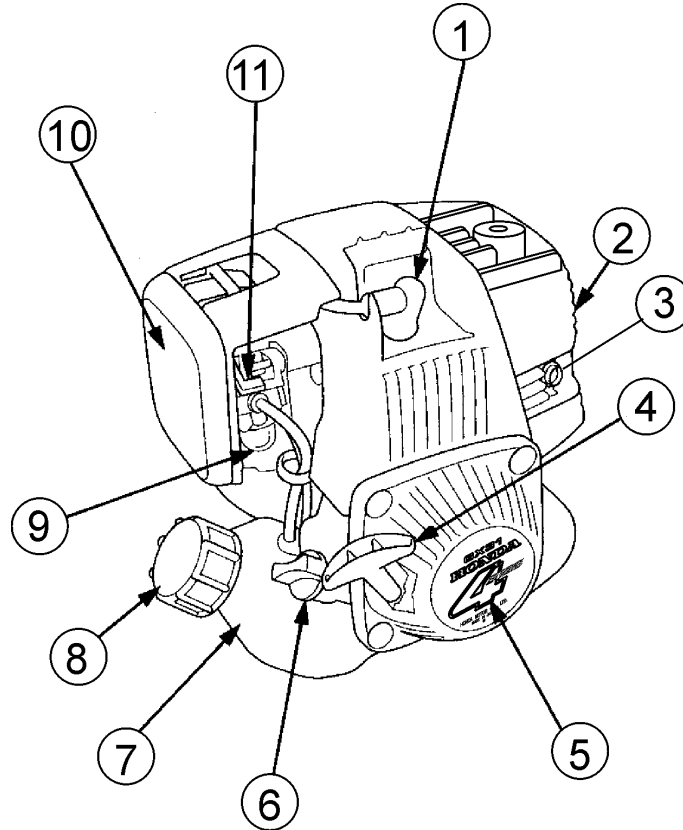


Figure 3. HONDA GX35SAT Components

1. **Spark Plug** – Provides spark to the ignition system. Set spark plug gap to 0.024 - 0.028 inch (0.6 - 0.7 mm) Clean spark plug once a week.
2. **Muffler** – Used to reduce noise and emissions. **DO NOT** touch muffler while engine is running, let engine cool before performing any maintenance.
3. **Spark Arrester** – Prevents sparks from leaving the engine exhaust system, which could ignite flammable materials.
4. **Starter Grip** – Grip this handle to start engine. See engine starting section of this manual.
5. **Recoil Starter (Pull Rope)** – Type of engine starting method.
6. **Oil Filler Cap** – Remove this cap to add engine oil. Engine oil capacity is 0.11 quart (0.1 liters). Use SAE 10W-30.
7. **Fuel Tank** – Holds approximately .172 gallons (.65 liters) of unleaded gasoline.
8. **Fuel Filler Cap** – Remove this cap to add unleaded gasoline to the fuel tank. Make sure cap is tighten securely. **DO NOT** over fill.
9. **Priming Bulb** – Used in the starting of a cold engine or an engine that has run out of fuel. Press the priming bulb repeatedly until fuel can be seen inside the clear plastic bulb.
10. **Air Cleaner** – Prevents dirt and other debris from entering the fuel system. Release latch on side of air filter compartment to gain access to filter element.
11. **Choke Lever** – Used in the starting of a cold engine, or in cold weather conditions. The choke enriches the fuel mixture for starting a cold engine.

ASSEMBLY INSTRUCTIONS

Assembly Instructions

This section will explain how to assemble the DuoScreed.

NOTICE

It is recommended that you familiarize yourself with the DuoScreed's components. For assistance identifying components called out in the text, refer to Figure 2.

1. The DuoScreed is comprised of two major components. The power unit (Honda GX35SAT gasoline engine) and the strike-off blade. This DuoScreed is equipped with a quick disconnect system, with which the power unit can be mounted onto two aluminum clamping strips with ease.
2. The aluminum clamping strip (retaining plate) is located at the base of the power unit. This clamping strip is what holds the blade in place with the aid of three quick disconnect spring loaded wing nuts (Figure 4) that can either be tightened or loosened by hand.
3. Determine whether you will be using the DuoScreed on forms or as a wet screed. This will decide how the power unit will be mounted. If the DuoScreed will be used as a wet screed the wing nuts should be located above the smooth edge of the blade. If the DuoScreed will be used on forms (Figure 4) the wing nuts should be located above the curled edge of the blade.
4. Loosen each of the three wing nuts about 1/4 inch (8 mm). It is not necessary to completely remove the wing nuts from the aluminum clamping strip.
5. Locate the two red indicator arrows) on the top of the blade. The power unit should be placed squarely between the two markers.

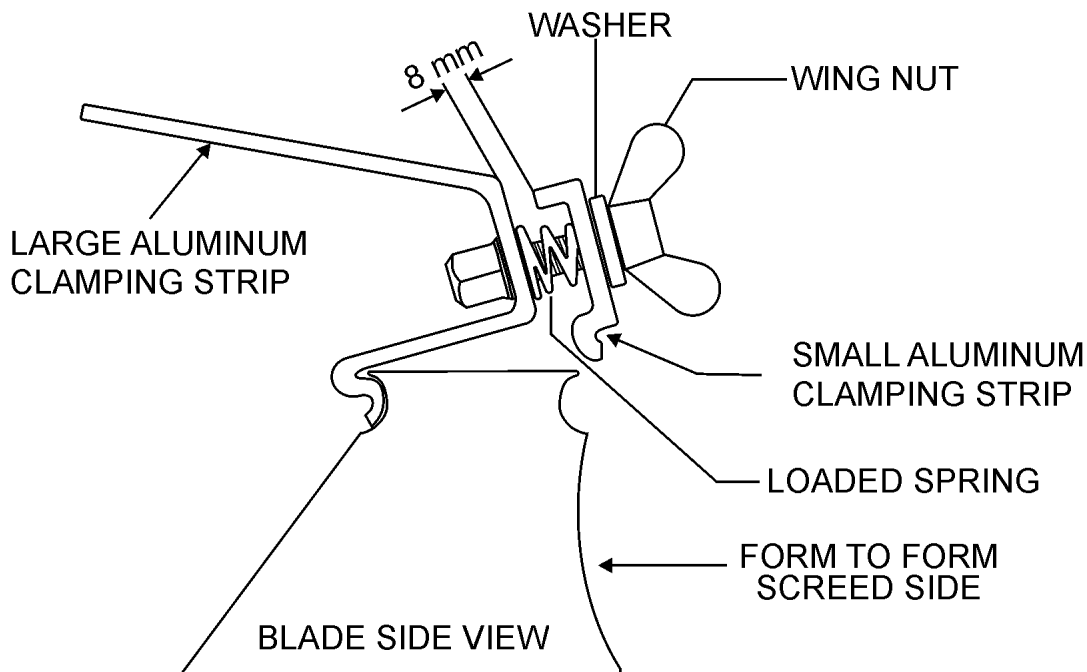


Figure 4. Blade Quick Disconnect System

ASSEMBLY INSTRUCTIONS

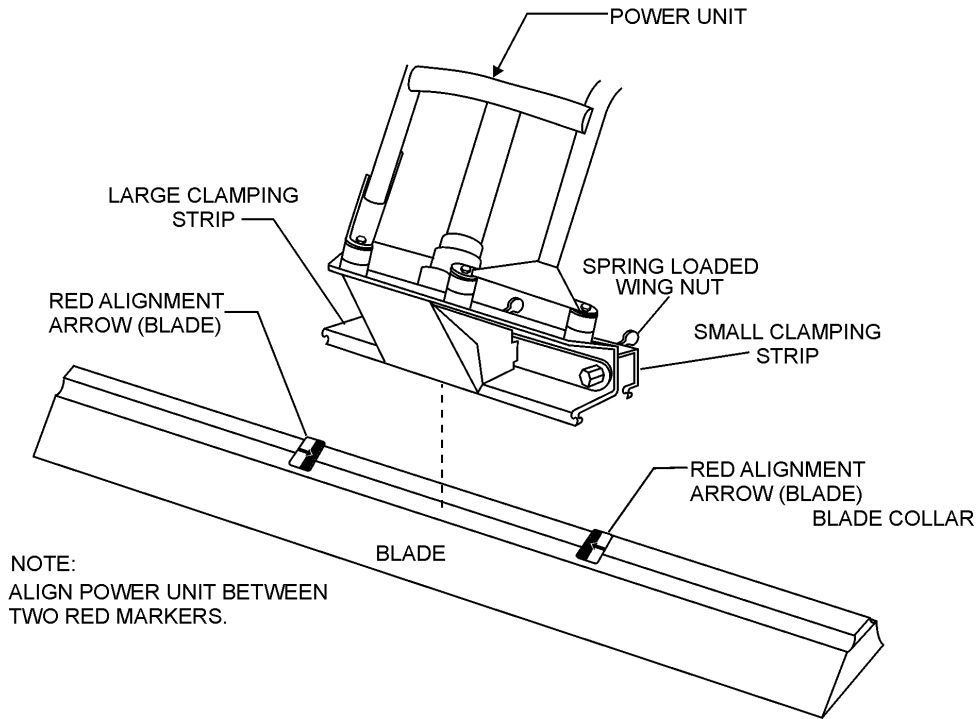


Figure 5. Blade Mounting Diagram

6. Place the front of the power unit over the blade (Figure 5) until the front of the clamp is seated within the front blade collar.
7. Ease the power unit back to allow the rear clamp to seat itself within the rear blade collar. It may be necessary to further loosen the wing nuts to allow the clamp to fit around the blade collar.
8. Securely hand tighten each of the three wing nuts. The wing nuts are spring loaded to prevent them from coming loose during operation.
9. Two handle bar adjustment knobs (Figure 6) are located at the base of the steering handle bar. Loosen these two knobs to adjust the height of the steering handle bar to a suitable working position.
10. The DuoScreed is now ready for operational use.

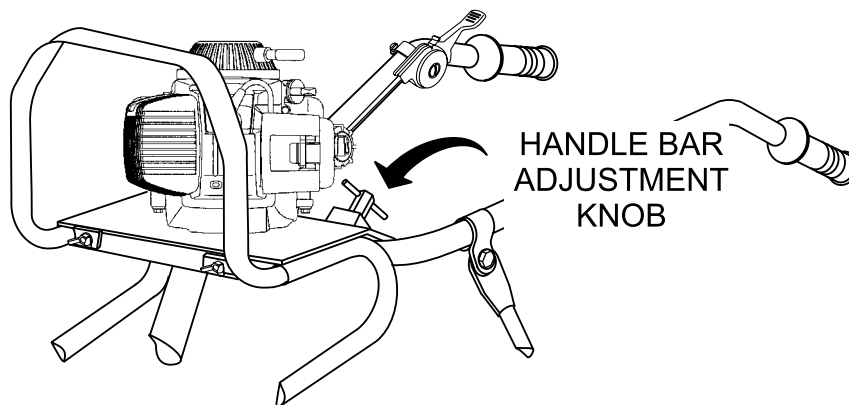


Figure 6. Handle Bar Adjustment Knob

ASSEMBLY INSTRUCTIONS

Eccentric Weight Adjustment

There are two eccentric weights (Figure 7) that are supplied with the DuoScreed. These weights are located inside the eccentric weight compartment, which is located at the bottom of the unit.

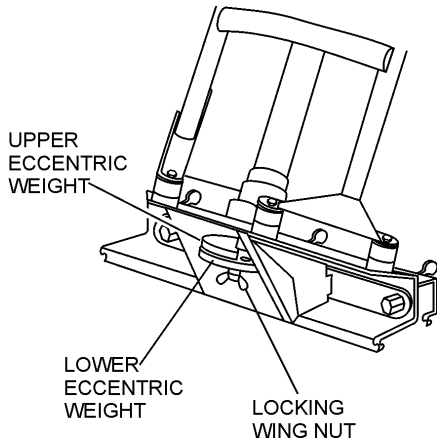
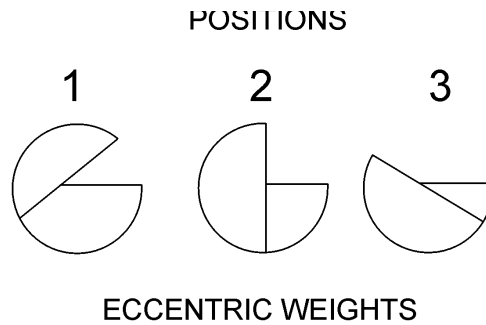


Figure 7. Eccentric Weight Location

These weights determine the amount of vibration that will travel down the blade. Depending on the type of blade that is used, will determine the position of the two eccentric weights. Reference Figure 8 in determining how your eccentric weights should be positioned.

1. To gain access to the eccentric weight compartment, press the spring clip tab on the eccentric cover and slide the cover upward to remove.
2. Loosen the eccentric locking wing nut.
3. Use the chart in Figure 8 to determine what position your eccentric weights should be in (position 1, 2 or 3).



HD BLADE WIDTH			LW BLADE WIDTH		
FEET	METERS	EWP	FEET	METERS	EWP
6.2	1.9	1	6.0	1.82	1
8.2	2.5	1	8.0	2.43	1
9.5	3.0	1	10.0	3.04	1
12.3	3.75	2	12.0	3.65	1
13.9	4.25	2	14.0	4.26	1
16.4	5.00	3	16.0	4.87	1
18.0	5.50	3*			
19.6	6.00	3*			

*TWO POWER UNITS REQUIRED PER BLADE

Eccentric Weight Position = EWP

Figure 8. Eccentric Weight Positions

STARTING

Engine Pre-Check

1. Fill the fuel tank (Figure 9) with unleaded gasoline. **DO NOT** over fill. Topping-off to filler port is dangerous, as it tends to spill fuel. Wipe up any spilled fuel immediately.

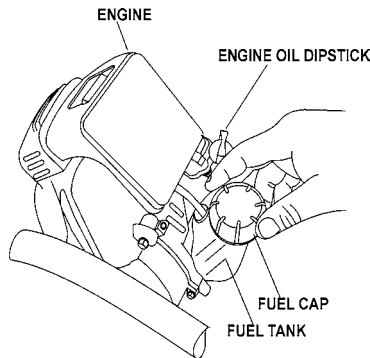


Figure 9. Fuel Tank

2. Place the engine in a level position.
3. Check the engine oil level by unscrewing the engine oil dip stick (Figure 10) from its holder.
4. If oil is not observed at the edge of the oil filler hole, fill with oil until oil is present at edge of oil filler hole. Remember to add oil slowly to avoid overflowing, as the engine oil tank capacity is small.

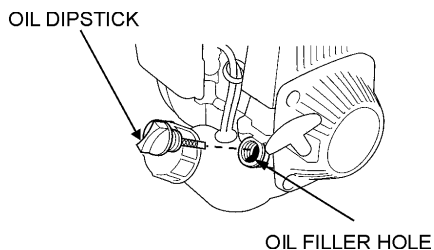


Figure 10. Engine Oil Dipstick/Oil Filler Hole

5. Reinstall the engine oil dipstick securely.

Starting The Engine

1. To start a cold engine, move the choke lever (Figure 11) to the **CLOSED** position. If restarting a warm engine leave the choke lever in the **OPEN** position.

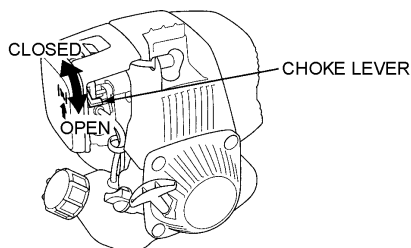


Figure 11. Choke Lever

2. Press the priming bulb (Figure 12) repeatedly until fuel can be seen inside the clear plastic bulb.

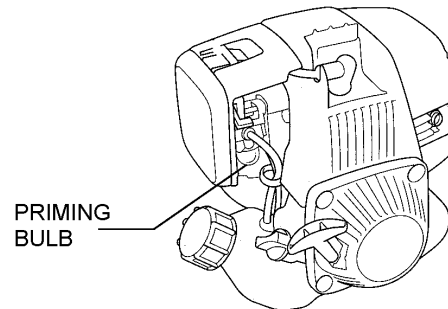


Figure 12. Priming Bulb Location

3. Set the engine **START/STOP** switch (Figure 13) to the **START** position.

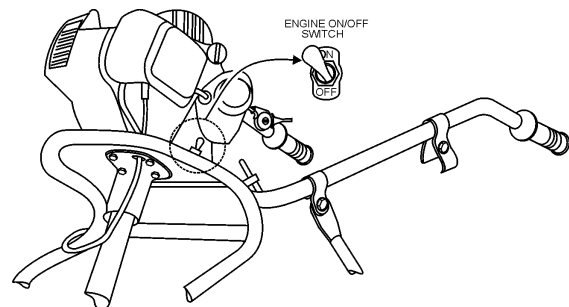


Figure 13. Engine START/STOP Switch

4. Pull the starter rope (Figure 14) lightly until you feel resistance, then pull briskly. Return the starter rope gently.

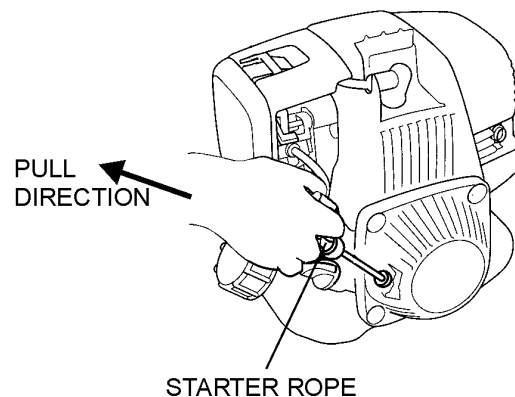


Figure 14. Engine Starter Rope

5. Once the engine has started, allow it to idle for 3 to 5 minutes.

APPLICATION/OPERATION

Application/Operation

1. Before placing the DuoScreed in concrete for screeding, it is a good idea to apply form oil onto the blade and all frame parts that may come in contact with the concrete. This form oil will become useful when cleaning the DuoScreed. Make sure to saturate the unit with a good amount of form oil.
2. Prepare a grid of #5 rebar pins (Figure 15) equally spaced approximately every 9 to 11 feet. If a 10 ft. screed blade is going to be used space the grade pins every 9 feet, if a 12 ft. screed blade is required, space the grade pins every 11 ft. Make sure to drive the pins deeply into the ground.
3. Use a string line or laser to set the pins to grade (height). The grade should be to the top of the grade pins. Remember, before any concrete is to be poured, make sure that the top of the pins are dead on grade.
4. Once all the grade pins have been placed correctly and are dead on grade, concrete can then be poured on top of grade pins.
5. Level, and form the concrete as close as possible to grade. Mark the top of each pin so that its exact location will be known. Use a hand trowel to float the edges and plumbing grade pins.
6. If chalk lines are used for grade against forms, walls or existing concrete, float out the grade with a hand float along the edge.
7. Two workers will be required to assist the DuoScreed operator when making the 12-18 concrete bases, one on each side. These workers will rake the concrete in toward the center of the DuoScreed away from the bases to avoid changing base elevation.

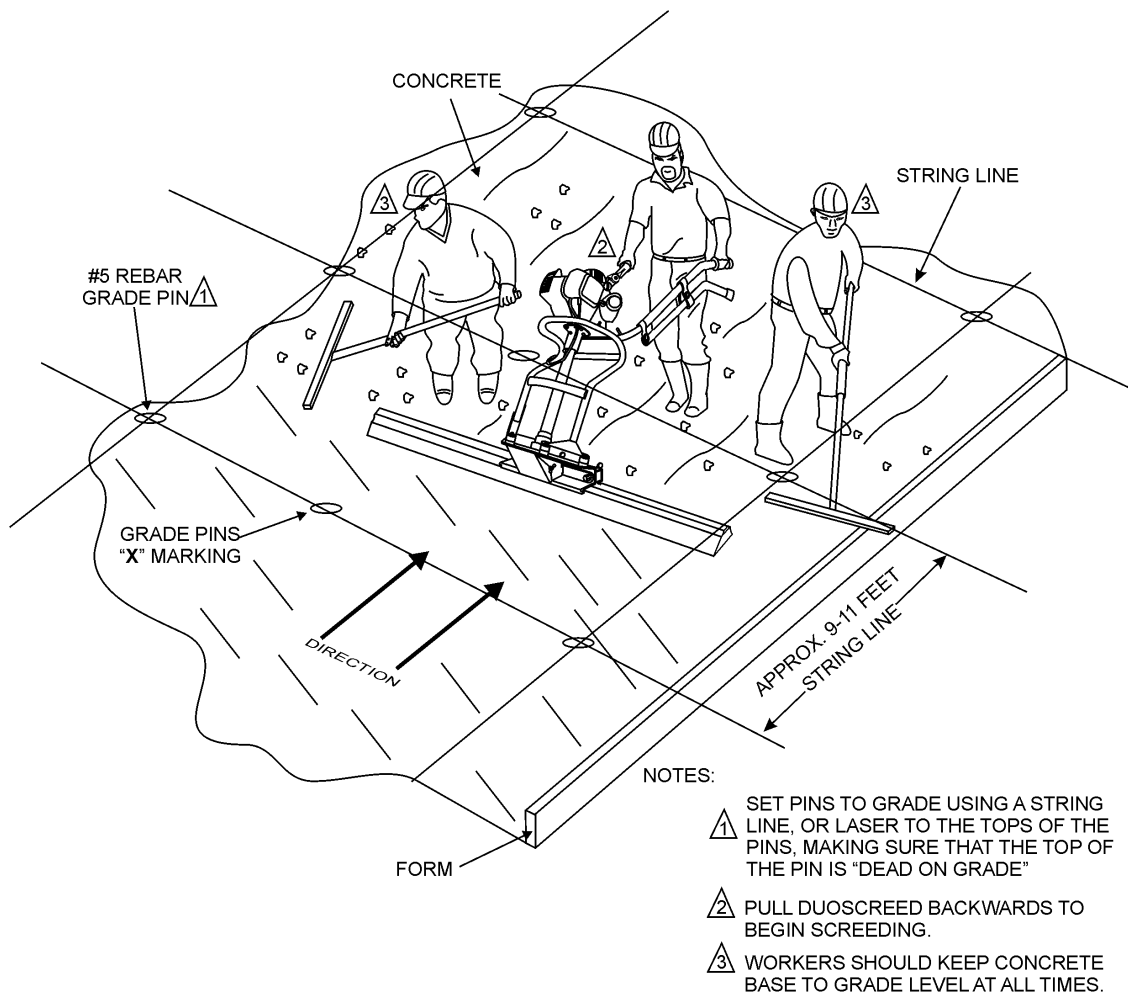


Figure 15. DuoScreed On Forms and Grade Pins

APPLICATION/OPERATION

NOTICE

Before placing the DuoScreed in concrete, make certain the unit has been set up (blade) for **wet screeding**. This can be verified by observing that the operator's toes are pointing towards the smooth side of the blade (Figure 4), from the operators's position (handle bars).

8. Set the DuoScreed blade down in the concrete base in the **left** most corner of the grid between the two grade pins as shown in Figure 17. Adjust the DuoScreed's handle bar to a height where the operators is not bending over, but standing upright with arms extended forward.
9. To begin screeding move the engine throttle lever (Figure 16) midway between **idle** and **full throttle**. Notice that the DuoScreed's vibration will cause the blade to sink into the concrete base until it touches the top of the grade pins.

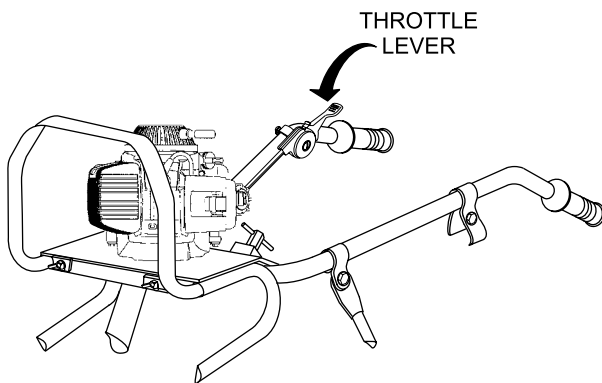


Figure 16. Throttle Lever

10. Pull the DuoScreed from the edge of the grid's **top left** corner, horizontally toward the **center**. Notice that as the DuoScreed passes over the grade pins a small circle of concrete around the grade pins will appear. This indicates that the DuoScreed has vibrated the grade pin, and that the operators is **dead on grade**.
11. Keep the DuoScreed blade level and create a level base between 12-18 inches wide.
12. After a complete pass over the first set of grade pins has been made, remove the DuoScreed from the concrete base and position it over the second set of grade pins (Figure 17), overlapping the first set of grade pins between 12-18 inches. Repeat this process until all **left** edge grade pins have a level base between 12-18 inches wide.

13. Repeat steps 9 through 12 pulling the DuoScreed from the edge of the grid's top right corner, horizontally toward the center.
14. Remember to build the bases in long parallel strips across the pins and on the hand floated edges and against plumbing or other outs, leaving the long unfinished areas about 8 or 9 feet wide. Once the bases are built, the workers can more accurately shape the concrete to grade.
15. When all the bases have been completed, the operator and his two workers can begin to work down the long parallel unfinished 8 to 9 foot wide middle portions. When moving the DuoScreed down the middle portions, the ends of the DuoScreed blade should be resting on the bases, and the leading edge of the blade should be approximately 1/8 to 1/4 inch above each base depending on the slump and condition of the concrete.

Have workers adjust the concrete along the face of the DuoScreed's blade to assure that the base is level with no high or low areas ahead of the blade.

16. Keep the engine throttle between 1/2 to 2/3 of full speed, if necessary readjust the DuoScreed's vibration to meet the condition of the concrete. Remember to move rapidly and watch both ends of the blade to assure that the blade remains 1/8 to 1/4 of an inch above the concrete base. Always keep the workers alert for concrete height changes.

Shut-Down

1. **NEVER** stop the engine suddenly while running at high speed.
2. Move the engine **throttle lever** (Figure 16) to the low speed position (idle).
3. Set the engine **ON/OFF** switch (Figure 13) to the **OFF** position.
4. Remove the DuoScreed from the slab surface.

Cleaning

1. Allow the engine to cool before cleaning. When the engine has cooled, use a damp and a mild detergent to remove all concrete and foreign debris. **DO NOT** spray the engine with water.
2. To remove all concrete and foreign debris from the DuoScreed, wash the DuoScreed's blade and frame using water and a mild detergent. Remember, if form oil was applied before the machine was placed in concrete, the cleanup will be much easier.

APPLICATION/OPERATION

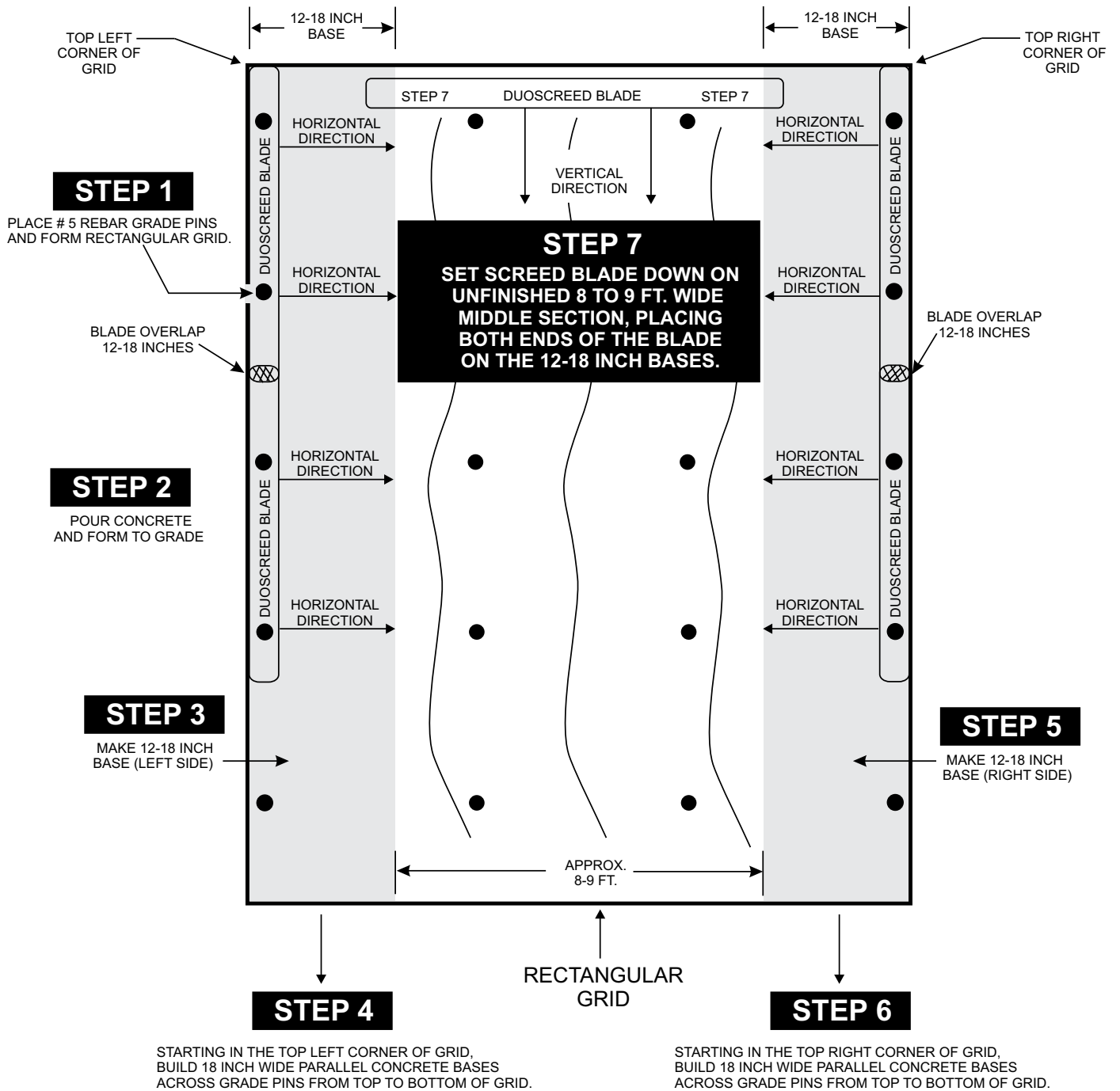


Figure 17. DuoScreed Wet Screeding Application

APPLICATION/OPERATION

Important Tips to Remember

- **DO NOT** allow the engine to run out of fuel as this may cause problems with starting. Always maintain an extra supply of fuel on the job site.
 - Always keep the DuoScreed moving backwards during operation. Allowing the DuoScreed to vibrate in the same location for too long will cause it to sink into the concrete.
 - When using the DuoScreed with low slump (dry) concrete do not attempt to walk it quickly across the slab. Walk slowly to allow the vibratory action to consolidate and level the slab surface. When using the DuoScreed with high slump (wet) concrete you will be able to walk the machine across the slab at a faster pace.
 - In applications where the DuoScreed is being used as a wet screed it is recommended that grade or height of the concrete slab be adjusted with a laser device.
 - Proper vibratory force is essential to producing a level, hard, durable slab. If the DuoScreed is vibrating too strongly the eccentric weights will require adjustment. Refer to the troubleshooting section of this manual.
 - When screeding using forms or rails, always size your screed blade appropriately for the job. It is best to have the blade extend beyond the forms, by about 6-inches on each side.
- When screeding make sure the blade is kept straight. **DO NOT** let blade turn.
 - **DO NOT** run the DuoScreed with one part of the blade on forms and the other on base. The blade must either be placed on forms or float (wet screeding), but not a combination of the two techniques.
 - **DO NOT** stand in the concrete with the engine throttle engaged. This will cause the DuoScreed to sink.
 - If the concrete appears too wavy, you are moving too slowly, increase your backing-up speed.
 - Always keep the workers back far enough to allow the operator to see the cutting face of the blade as it rides on the wet screed base.
 - The operator should keep the screed blade about 1/8 to 1/4 inch above the concrete base at all times.
 - Should the DuoScreed stick to the wet concrete slab, **DO NOT** attempt to lift it. Quickly increase engine rpm's while pushing forward on the handles to free the machine.

MAINTENANCE

Use Table 3 as a general maintenance guideline when servicing your engine. For more detail engine maintenance information, refer to the engine owner's manual supplied with your engine.

⚠ CAUTION-Pressure Washer
DO NOT clean the DuoScreed with a **pressure washer**.

1. **NEVER** clean the DuoScreed with the engine running.
2. Allow the engine to cool down before cleaning.

NOTICE
DO NOT allow concrete to harden on the DuoScreed. Wipe all concrete off the chrome frame and any other parts including the engine of the DuoScreed.

3. Keep the drive unit free from grease, dirt and grime as this can effect the performance of your DuoScreed.

4. Use a low pressure water hose, soft brush, wiping cloth and a mild cleaning detergent and remove all concrete from the DuoScreed. Be careful not to get excessive amounts of water in the engine compartment.

30 - Day Storage Procedure

For storage of the DuoScreed for over 30 days, the following is required:

- Drain the fuel tank completely.
- Run the engine until the fuel in the injection system is completely consumed.
- Completely drain used oil from the engine crankcase and fill with fresh clean oil, then follow the procedures described in the engine manual for engine storage.
- Cover DuoScreed and engine with plastic covering or equivalent and store in a clean, dry place.

Table 3. Engine Maintenance Schedule

DESCRIPTION (3)	OPERATION	BEFORE	FIRST MONTH OR 10 HRS.	EVERY 3 MONTHS OR 25 HRS.	EVERY 6 MONTHS OR 50 HRS.	EVERY YEAR OR 100 HRS.	EVERY 2 YEARS OR 200 HRS.
Engine Oil	Check	X					
	Change		X				
Air Cleaner	Check	X					
	Change			X (1)			
All Nuts and Bolts	Re-tighten if necessary	X					
Spark Plugs	Check/Clean				X		
	Replace						X
Cooling Fins	Check				X		
Spark Arrester	Clean					X	
Fuel Tank	Clean					X	
Fuel Filter	Check					X	
Idle Speed	Check/Adjust					X (2)	
Valve Clearance	Check/Adjust						X (2)
Fuel Lines	Check	Every 2 years (replace if necessary) (2)					

(1) Service more frequently when used in **DUSTY** areas.

(2) These items should be serviced by your service dealer, unless you have the proper tools and are mechanically proficient. Refer to the HONDA Shop Manual for service procedures.

(3) For commercial use, log hours of operation to determine proper maintenance intervals.

Air Cleaner

1. The air cleaner element should be cleaned because a clogged air cleaner can cause poor engine starting, lack of power and shorten engine life substantially.
2. Before opening the air cleaner compartment, wipe any dirt or foreign matter from the air cleaner body and cover, using a moist cloth. Be careful to prevent dirt from entering the carburetor.
3. Press the latch tab on the top of the air cleaner cover (Figure 18), and remove the cover. Check the filter to be sure that it is clean and in good condition.

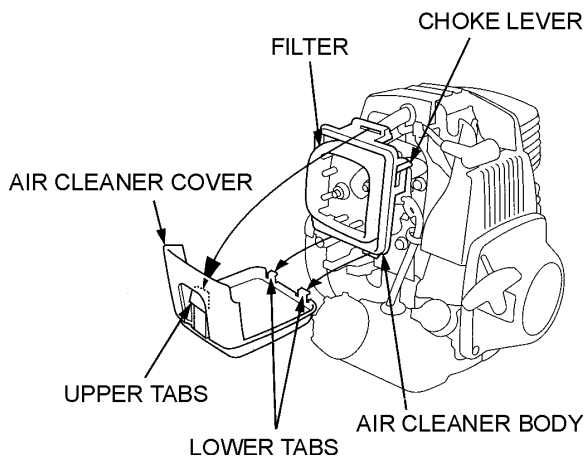


Figure 18. Air Cleaner

Spark Plug

1. Make sure the engine is off and cool.
2. Disconnect the spark plug cap (Figure 19), and remove any dirt from around the spark plug area.

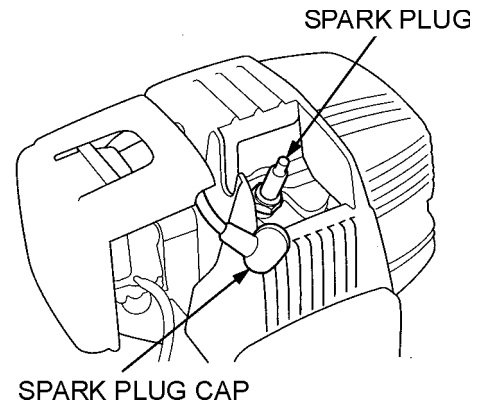


Figure 19. Spark Plug Removal

3. Remove the spark plug with 5/8-inch wrench.
4. Inspect the spark plug. Replace it if the electrodes are worn, or if the insulator is cracked or chipped. Clean the spark plug with a wire brush if you are going to reuse it.
5. Set the spark plug gap (Figure 20) using a suitable gauge. The gap should be between 0.024-0.028 inch (0.60-0.70 mm).

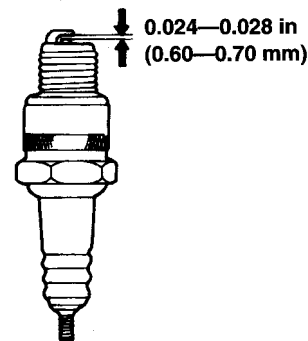


Figure 20. Spark Plug Gap

6. Carefully install the spark plug by hand to avoid cross threading, then tighten.
7. Attach spark plug cap.

TROUBLESHOOTING (DUOSCREED)

Table 4. DuoScreed Troubleshooting

Symptom	Possible Cause	Solution
Vibration is insufficient and as a result the concrete floor cannot be leveled and smoothed in the proper way.	The centrifugal force of the vibrator is set too low?	Adjust the eccentric weights per Figure 8 or increase engine speed.
	There is excessive amounts of concrete along the leading edge of the blade?	Remove the excessive concrete from the blade.
	The chosen width of the blade is too large?	Work with a smaller blade Remember maximum width is 20 ft. (2 engines)
The DuoScreed when used as a form to-form screed vibrates too much and does not travel smoothly across the rail supports.	Selected blade and eccentric weights do not match?	Adjust eccentric weights to match selected blade width. Reference Figure 8.
Concrete looks "WAVY" as the screed blade passes over it.	Operator moving too slowly?	Walk backwards at a faster pace.
	Too much vibration for the type of concrete?	Reduce engine speed and walk backwards at a faster pace.
Leaving HIGH or LOW spots during wet screeding.	Concrete too high or low on one side?	Have workers shape the concrete close as possible to grade. Maintain about 1 inch of concrete accross the front of the blade at all times.
Blade digs into wet concrete.	Is blade positioned correctly?	Each end of the blade must ride on the same surface. Either each end of the blade rides on forms or concrete (wet screed) not both.

TROUBLESHOOTING (ENGINE)

Table 5. Troubleshooting (Engine)		
Symptom	Possible Problem	Solution
Difficult to start, fuel is available, but no spark at spark plug.	Spark plug bridging?	Check gap, insulation or replace spark plug.
	Carbon deposit on spark plug?	Clean or replace spark plug.
	Short circuit due to deficient spark plug insulation?	Check spark plug insulation, replace if worn.
	Improper spark plug gap?	Set to proper gap.
	Spark plug is red?	Check transistor ignition unit.
	Spark plug is bluish white?	If insufficient compression, repair or replace engine. If injected air leaking, correct leak. If carburetor jets clogged, clean carburetor.
	No spark present at tip of spark plug?	Check if transistor ignition unit is broken, and replace defective unit. Check if voltage cord cracked or broken and replace. Check if spark plug is fouled and replace.
	No oil?	Add oil as required.
Difficult to start, fuel is available, and spark is present at the spark plug.	ON/OFF switch is shorted?	Check switch wiring, replace switch.
	Ignition coil defective?	Replace ignition coil.
	Improper spark gap, points dirty?	Set correct spark gap and clean points.
	Condenser insulation worn or short circuiting?	Replace condenser.
	Spark plug wire broken or short circuiting?	Replace defective spark plug wiring.
Difficult to start, fuel is available, spark is present and compression is normal.	Wrong fuel type?	Flush fuel system, replace with correct type of fuel.
	Water or dust in fuel system?	Flush fuel system.
	Air cleaner dirty?	Clean or replace air cleaner.
	Choke open?	Close choke.
Difficult to start, fuel is available, spark is present and compression is low.	Suction/exhaust valve stuck or protruded?	Reseat valves.
	Piston ring and/or cylinder worn?	Replace piston rings and/or piston.
	Cylinder head and/or spark plug not tightened properly?	Torque cylinder head bolts and spark plug.
	Head gasket and/or spark plug gasket damaged?	Replace head and spark plug gaskets.
No fuel present inside priming bulb.	No fuel in fuel tank?	Fill with correct type of fuel.
	Fuel filter/lines clogged?	Replace fuel filter.
	Fuel tank cap breather hole clogged?	Clean or replace fuel tank cap.
	Air in fuel line?	Bleed fuel line.

OPERATION MANUAL

HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL
NUMBER ON-HAND WHEN CALLING

UNITED STATES

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6141 Katella Avenue Suite 200
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