

PARTS AND OPERATION MANUAL



CONCRETE SAW MODEL FS 1

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Revision #3 (04/24/03)



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800-478-1244
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WARNING



CALIFORNIA — Proposition 65 Warning

Engine exhaust and some of its constituents, and some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks.
- Cement and other masonry products.
- Arsenic and chromium from chemically treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: **ALWAYS** work in a well ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.

HERE'S HOW TO GET HELP

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

PARTS DEPARTMENT

800-427-1244 or 310-537-3700

FAX: 800-672-7877 or 310-637-3284

SERVICE DEPARTMENT

800-421-1244

FAX: 310- 537-4259

TECHNICAL ASSISTANCE

800-478-1244

FAX: 310- 631-5032

WARRANTY DEPARTMENT

888-661-4279, or 310-661-4279

FAX: 310- 537-1173

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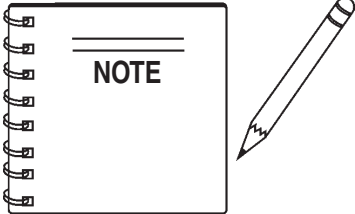
MQ-Whiteman — FS 1 Concrete Saw

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When ordering parts, please supply the following information:

- Dealer account number
- Dealer name and address
- Shipping address (if different than billing address)
- Return fax number
- Applicable model number
- Quantity, part number and description of each part
- Specify preferred method of shipment:
 - ✓ FedEx or UPS Ground
 - ✓ FedEx or UPS Second Day or Third Day
 - ✓ FedEx or UPS Next Day
 - ✓ Federal Express Priority One
 - ✓ DHL
 - ✓ Truck

Note: Unless otherwise indicated by customer, all orders are treated as "Standard Orders", and will ship within 24 hours. We will make every effort to ship "Air Shipments" the same day that the order is received, if prior to 2PM west coast time. "Stock Orders" must be so noted on fax or web forms.



Here's how to get help...

Please have the model and serial number on hand when calling.

Parts Department

800-427-1244 Fax: 800-672-7877
310-537-3700 Fax: 310-637-3284

Mayco Parts

800-306-2926 Fax: 800-672-7877
310-537-3700 Fax: 310-637-3284

Service Department

800-478-1244 Fax: 310-537-4259
310-537-3700

MQ Power Service Department

800-835-2551 Fax: 310-638-8046
310-537-3700

Warranty Department

800-421-1244, Ext. 279 Fax: 310-537-1173
310-537-3700, Ext. 279

Multiquip's Main Phone Numbers

800-421-1244 Fax: 310-537-3927
310-537-3700

Place Your Parts Order Via Web or Fax For Even More Savings!

Extra Discounts!

All parts orders which include complete part numbers and are received by our automated web parts order system, or by fax qualify for the following extra discounts:

Ordered via	Standard orders	Stock orders (\$750 list and above)
Fax	3%	10%
Web	5%	10%

Special freight allowances when you order 10 or more line items via Web or Fax! **

FedEx Ground Service **at no charge for freight**
No other allowances on freight shipped by any other carrier.

NOTE: DISCOUNTS ARE SUBJECT TO CHANGE



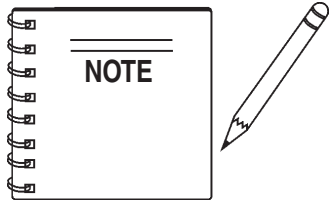
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to our Parts Department:**
Toll-free nationwide — 800-427-1244

FS 1 CONCRETE SAW — SAFETY MESSAGE ALERT SYMBOLS

FOR YOUR SAFETY AND THE SAFETY OF OTHERS!

Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the Safety Messages and Operating Instructions could result in injury to yourself and others.



This Owner's Manual has been developed to provide complete instructions for the safe and efficient operations of the MQWhiteman FS 1 Concrete Saw. Depending on the power plant you have selected, please refer to the engine manufacturers instructions for data relative to its safe operations.

Before using this Concrete Saw, ensure that the operating individual has read and understands all instructions in this manual.

SAFETY MESSAGE ALERT SYMBOLS

The three (3) 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 three words: **DANGER**, **WARNING**, or **CAUTION**.



DANGER: You **WILL** be **KILLED** or **SERIOUSLY** injured if you do not follow directions.



WARNING: You **CAN** be **KILLED** or **SERIOUSLY** injured if you do not follow directions.



CAUTION: You **CAN** be injured if you do not follow directions.

Potential hazards associated with Concrete Saw operations will be referenced with Hazard Symbols which appear throughout this manual, and will be referenced in conjunction with Safety Message Alert Symbols.

HAZARD SYMBOLS



Lethal Exhaust Gases



Engine exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled. **NEVER** operate this equipment in a confined area or enclosed structure that does not provide ample free flow air.



Explosive Fuel



Gasoline is extremely flammable, and its vapors can cause an explosion if ignited. **DO NOT** start the engine near spilled fuel or combustible fluids. **DO NOT** fill the fuel tank while the engine is running or hot. **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system. Store fuel in approved containers, in well-ventilated areas and away from sparks and flames. **NEVER** use fuel as a cleaning agent.



Burn Hazards



Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operations. Never operate the engine with heat shields or heat guards removed.



Rotating Parts



NEVER operate equipment with covers, or guards removed. Keep fingers, hands, hair and clothing away from all moving parts to prevent injury.

FS 1 CONCRETE SAW — SAFETY MESSAGE ALERT SYMBOLS



Accidental Starting



ALWAYS place ON/OFF switch to OFF, remove key and/or disconnect the spark plug lead before servicing the engine or equipment. Ground the lead to prevent sparks that could ignite a fire.



Respiratory Hazard



ALWAYS wear approved respiratory protection.



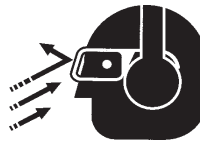
Over Speed Conditions



NEVER tamper with the factory settings of the engine governor or settings. Personal injury and damage to the engine or equipment can result if operating in speed ranges above maximum allowable.



Sight and Hearing hazard



ALWAYS wear approved eye and hearing protection.



Guards and Covers In Place

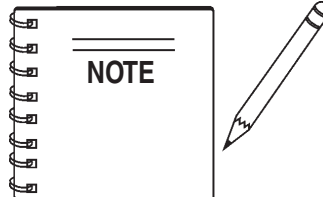


NEVER operate the saw without blade guards and covers in place. Adhere to safety guidelines ANSI American National Standards Institute, OSHA or other applicable local regulations.



Equipment Damage Messages

Other important messages are provided throughout this manual to help prevent damage to your concrete saw, other property, or the surrounding environment.



This concrete saw, other property, or the surrounding environment could be damaged if you do not follow instructions.

FS 1 CONCRETE SAW — DECALS

Machine Safety Decals

The FS 1 Concrete Saw is equipped with a number of safety decals (Figure 1). These decals are provided for operator safety and maintenance information. The illustration shows these decals as they appear on the concrete saw. Should any of these decals become unreadable, replacements can be obtained from you dealer.

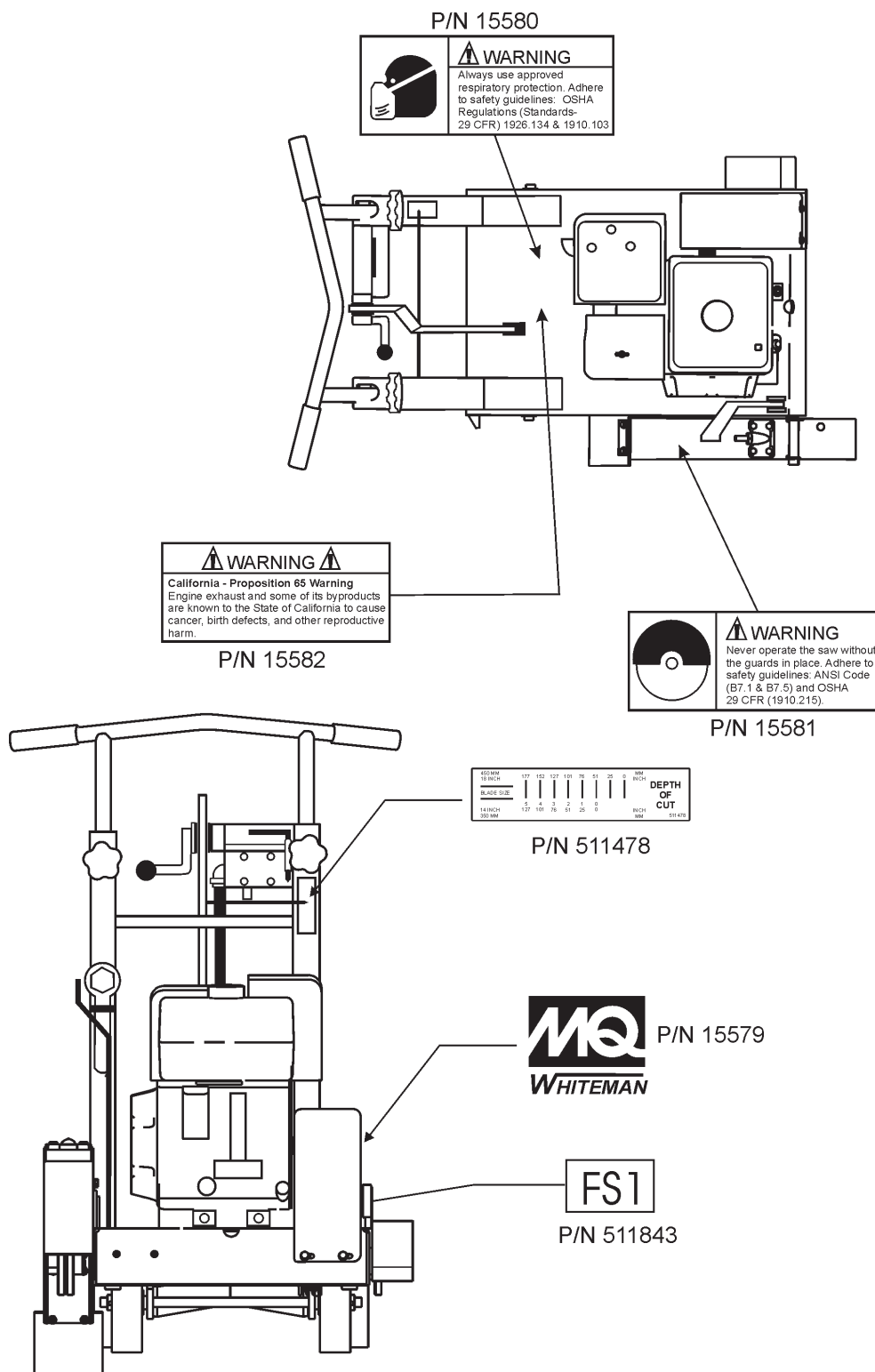


Figure 1. FS 1 Concrete Saw Decal Placement

FS 1 CONCRETE SAW — RULES FOR SAFE OPERATION

WARNING:



Failure to follow instructions in this manual may lead to serious injury or even death! This equipment is to be operated by trained and qualified personnel only! This equipment is for industrial use only.

The following safety guidelines should always be used when operating the MQ Whiteman FS 1 Concrete Saw:

GENERAL SAFETY

- **DO NOT** operate or service this equipment before reading this entire manual.



- This equipment should not be operated by persons under 18 years of age.



- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, steel-toed boots and other protective devices required by the job.

- **NEVER** operate this equipment when not feeling well due to fatigue, illness or taking medicine.



- **NEVER** operate this equipment under the influence of drugs or alcohol.



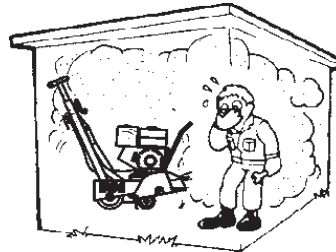
- **NEVER** use accessories or attachments, which are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.
- The manufacturer does not assume responsibility for any accident due to equipment modifications.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult to read.
- Always check the machine for loosened threads or bolts before starting.

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



- **High Temperatures** – Allow the engine to cool before adding fuel or performing service and maintenance functions. Contact with *hot* components can cause serious burns.

- The engine section of this saw requires an adequate free flow of cooling air. Never operate the saw in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause serious damage to the saw or engine and may cause injury to people. Remember the saw's engine gives off **DEADLY** carbon monoxide gas.



- Always refuel in a well-ventilated area, away from sparks and open flames.

- Always use extreme caution when working with **flammable** liquids. When refueling, **stop the engine** and allow it to cool. **DO NOT** smoke around or near the machine. Fire or explosion could result from fuel vapors, or if fuel is spilled on a hot engine.



- **NEVER** operate the saw in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe *bodily harm or even death*.
- Topping-off to the filler port is dangerous, as it tends to spill fuel.
- **NEVER** use fuel as a cleaning agent.

FS 1 CONCRETE SAW — RULES FOR SAFE OPERATION

GENERAL SAFETY

- Always read, understand, and follow procedures in Operator's Manual before attempting to operate equipment.
- Always be sure the operator is familiar with proper safety precautions and operating techniques before using the saw.
- Stop the engine when leaving the saw unattended.
- Block the unit when leaving or when using on a slope.
- Maintain this equipment in a safe operating condition at all times.
- Always stop the engine before servicing, adding fuel and oil.
- **NEVER** Run engine without air filter. Severe engine damage may occur.
- Always service air cleaner frequently to prevent carburetor malfunction.
- Always store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.
- **NEVER** use accessories or attachments, which are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.
- **NEVER** operate this saw in areas that contain combustible material or fumes. Fire and/or explosions may result from errant sparks from the equipment.

WARNING:



- **DO NOT** operate this equipment unless all guards and safety devices are attached and in place.
- Caution must be exercised while servicing this equipment. Rotating and moving parts can cause injury if contacted.
- Keep all inexperienced and unauthorized people away from the equipment at all times.
- Unauthorized equipment modifications will void all warranties.
- Test the **ON/OFF** switch before operating. The purpose of the switch is to shut down the engine.

DIAMOND BLADE SAFETY

- Use appropriate steel centered diamond blades manufactured for use on concrete saws.
- Always inspect diamond blades before each use. The blade should exhibit no cracks, dings, or flaws in the steel centered core and/or rim. Center (arbor) hole must be undamaged and true.
- Examine blade flanges for damage, excessive wear and cleanliness before mounting blade. Blade should fit snugly on the shaft and against the inside/outside blade flanges.
- Ensure that blade is marked with an operating speed greater than the blade shaft speed of the saw.
- Only cut the material that is specified by the diamond blade. Read the specifications of the diamond blade to ensure the proper tool has been matched to the material being cut.
- Always keep blade guards in place. Exposure of the diamond blade must not exceed 180 degrees.
- Ensure that the diamond blade does not come into contact with the ground or surface during transportation. **DO NOT** drop the diamond blade on ground or surface.
- The engine governor is designed to permit maximum engine speed in a no-load condition. Speeds that exceed this limit may cause the diamond blade to exceed the maximum safe allowable speed.
- Ensure that the blade is mounted for proper operating direction.

SAW TRANSPORTATION SAFETY

- Use the lifting bail and appropriate lifting equipment to ensure the safe movement of the saw.
- **DO NOT** use the handle bars and/or front pointer as lifting points.
- **NEVER** tow the saw behind a vehicle.
- Ensure that both pointer bars are positioned appropriately to minimize their exposure during transportation.
- Safeguard against extreme saw attitudes relative to level. Engines tipped to extreme angles may cause oil to gravitate into the cylinder head making the engine difficult to start.
- **NEVER** transport the saw with the blade mounted.

FS 1 CONCRETE SAW — RULES FOR SAFE OPERATION

Emergencies

- Always know the location of the nearest **fire extinguisher** and **first aid kit**. Know the location of the nearest telephone. Also know the phone numbers of the nearest **ambulance**, **doctor** and **fire department**. This information will be invaluable in the case of an emergency.

Maintenance Safety

- **NEVER** lubricate components or attempt service on a running machine.
- Always allow the machine a proper amount of time to cool before servicing.
- Keep the machinery in proper running condition.
- Fix damage to the machine immediately and always replace broken parts.
- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, fuel and fuel filters.
- **DO NOT** use food or plastic containers to dispose of hazardous waste.

FS 1 CONCRETE SAW — DIMENSIONS

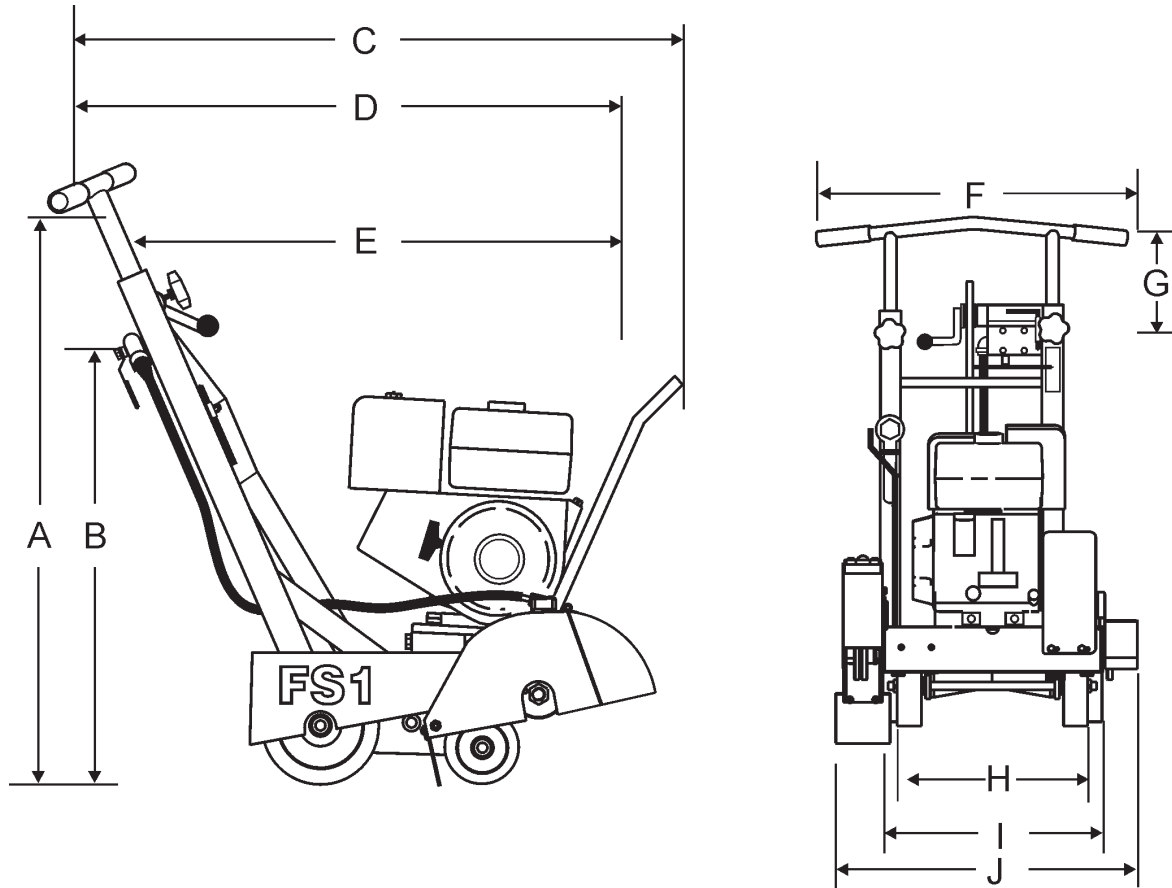


Figure 2. FS 1 Concrete Saw Dimensions

TABLE 1. DIMENSIONS

REFERENCE LETTER	DESCRIPTION	DIMENSION (MM)
A	Max Height (Handle Bars Fully Raised)	50" (1270)
B	Max Height (Handle Bars Fully Lowered)	36" (914)
C	Max Length (Handle Bars Fully Raised & Front Pointer Lowered)	50" (1270)
D	Max Length (Handle Bars Fully Raised & Front Pointer Raised)	39" (991)
E	Max Length (Handle Bars Fully Lowered & Front Pointer Raised)	36." (914)
F	Max Handle Bar Width	26" (660)
G	Max Handle Bar Deflection	16.5" (419)
H	Front Wheel Base	13.5" (343)
I	Rear Wheel Base	16" (406)
J	Max Width	25" (635)
Crated Dimension (L x W x H)		47" (1194) x 30" (762) x 44" (1118)

FS 1 CONCRETE SAW — WEIGHTS

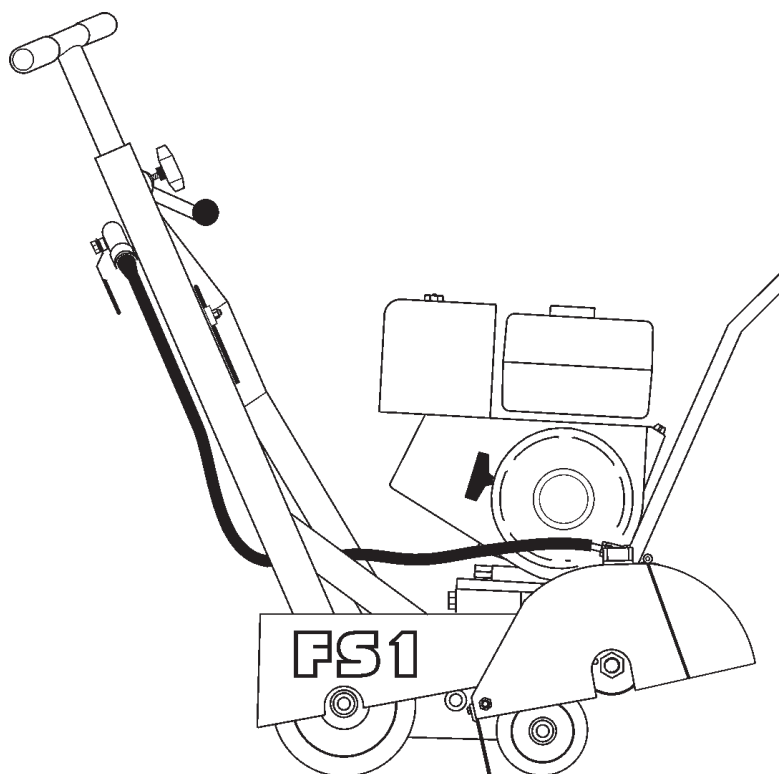


Figure 3. FS 1 Concrete Saw Weights

TABLE 2. WEIGHTS		
SAW	DESCRIPTION	WEIGHT (kgs)
FS1-LE14	SAW, FS1, 14", PUSH, LESS ENGINE	160 (73)
FS1-LE18	SAW, FS1, 18", PUSH, LESS ENGINE	165 (75)
FS1-8H14	SAW, FS1, 14", PUSH, 8 HP HONDA	230 (104)
FS1-8H18	SAW, FS1, 18", PUSH, 8 HP HONDA	235 (106)
FS1-8K14	SAW, FS1, 14", PUSH, 8.5 HP KOHLER	230 (104)
FS1-8K18	SAW, FS1, 18", PUSH, 8.5 HP KOHLER	235 (106)
FS1-9H14	SAW, FS1, 14", PUSH, 9 HP HONDA	230 (104)
FS1-9H18	SAW, FS1, 18", PUSH, 9 HP HONDA	235 (106)
FS1-12K14	SAW, FS1, 14", PUSH, 12 HP KOHLER	240 (109)
FS1-12K18	SAW, FS1, 18", PUSH, 12 HP KOHLER	245 (111)
FS1-13H14	SAW, FS1, 14", PUSH, 13 HP HONDA	240 (109)
FS1-13H18	SAW, FS1, 18", PUSH, 13 HP HONDA	245 (111)
Crated Weight (kgs.) 300 lbs (137)		

FS 1 CONCRETE SAW — BASIC COMPONENTS

BASIC COMPONENTS

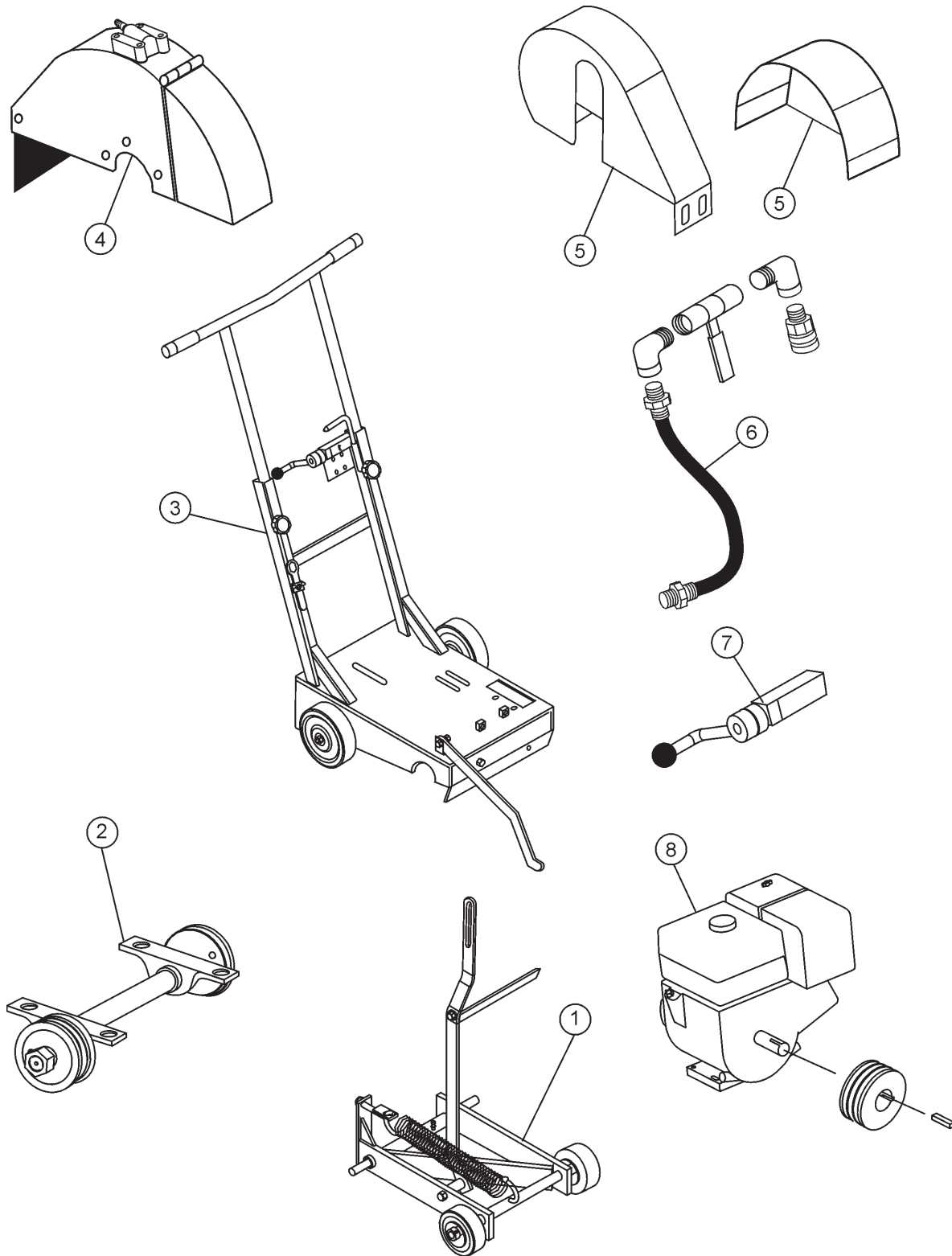


Figure 4. FS 1 Concrete Saw Basic Components

FS 1 CONCRETE SAW — BASIC COMPONENTS

BASIC COMPONENTS

<u>NO</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1	UNDER CARRIAGE ASSEMBLY	SEE PAGE 38
2	BLADE SHAFT ASSEMBLY	SEE PAGE 40
3	FRAME ASSEMBLY	SEE PAGE 42
4	BLADE COVER ASSEMBLY	SEE PAGE 44
5	BLADE GUARD ASSEMBLIES	SEE PAGE 46
6	WATER SYSTEM ASSEMBLY	SEE PAGE 48
7	RAISE/LOWER ASSEMBLY	SEE PAGE 50
8	GASOLINE ENGINE ASSEMBLIES	SEE PAGE 52

FS 1 CONCRETE SAW — BASIC ENGINE COMPONENTS

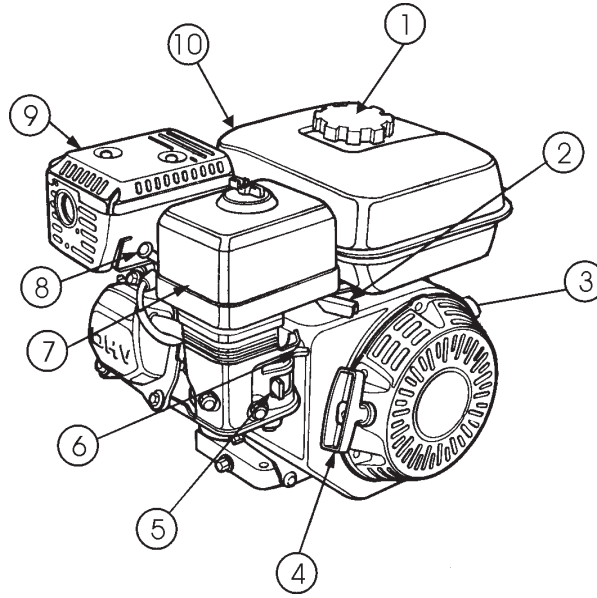


Figure 5. Engine Controls and Components

INITIAL SERVICING

The engine (Figure 5) must be checked for proper lubrication and filled with fuel prior to operation. Refer to the manufacturer's Engine manual for instructions & details of operation and servicing.

1. **Fuel Filler Cap** – Remove this cap to add unleaded gasoline to the fuel tank. Make sure cap is tightened securely. **DO NOT** over fill.



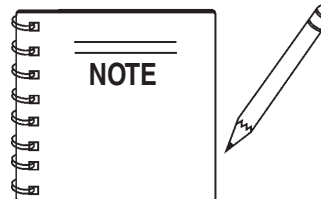
WARNING

Adding fuel to the tank should be accomplished only when the engine is stopped and has had an opportunity to cool down. In the event of a fuel spill,

DO NOT attempt to start the engine until the fuel residue has been completely wiped up, and the area surrounding the engine is dry.

2. **Throttle Lever** – Used to adjust engine RPM speed (lever advanced forward **SLOW**, lever back toward operator **FAST**).
3. **Engine ON/OFF Switch** – ON position permits engine starting, OFF position stops engine operations.
4. **Recoil Starter (pull rope)** – Manual-starting method. Pull the starter grip until resistance is felt, then pull briskly and smoothly.

5. **Fuel Valve Lever** – **OPEN** to let fuel flow, **CLOSE** to stop the flow of fuel.
6. **Choke Lever** – Used in the starting of a cold engine, or in cold weather conditions. The choke enriches the fuel mixture.
7. **Air Cleaner** – Prevents dirt and other debris from entering the fuel system. Remove wing-nut on top of air filter canister to gain access to filter element.



Operating the engine without an air filter, with a damaged air filter, or a filter in need of replacement will allow dirt to enter the engine, causing rapid engine wear.

8. **Spark Plug** – Provides spark to the ignition system. Set spark plug gap to 0.6 - 0.7 mm (0.028 - 0.031 inch) Clean spark plug once a week.
9. **Muffler** – Used to reduce noise and emissions.



WARNING

Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operating. **NEVER** operate the engine with the muffler removed.

10. **Fuel Tank** – Holds unleaded gasoline. For additional information refer to engine owner's manual.

FS 1 CONCRETE SAW — GENERAL INFORMATION

FAMILIARIZATION

The MQWhiteman FS1 Series Concrete Saws are designed for wet or dry cutting utilizing diamond blades. They have been engineered for general and industrial flat sawing applications. The exceptional performance of these saws centers around simple operating features, top quality components, and committed attention to state-of-the-art manufacturing. The reinforced heavy gauge steel frame and chassis assembly has been precisely jig welded to eliminate operational bending and/or flex that would lead to diminished blade performance.

Additionally, the general weight-to-strength ratio design of the frame and chassis assembly provides for optimum weight distribution to keep the blade running true in the cut. A rugged blade shaft bearing assembly ensures minimal flutter and shaft harmonics providing the most advantageous condition for a diamond blade at operating speeds.

Heavy-duty front and rear axles, sturdy oversized wheels, and industrial under carriage assembly ensure accurate tracking and years of reliable use. A positive locking counter balance Raise/Lower system with a depth meter easily orients blade elevation.

A hardy water plumbing system evenly distributes optimum water volume & flow rate to both sides of the blade. Operator control of the saw is safely accomplished with adjustable ergonomic handlebars.

All FS1 saws are designed, engineered and manufactured with strict adherence to American National Standards Institute, Inc. (ANSI) guidelines B7.1 and B7.5.

POWER PLANTS

The FS1 Saw Series provides a variety of gasoline engine choices. Selection of a specific engine, and its capacity measured in horsepower/torque, directly affects the performance of the diamond blade. The FS1 series is generally classified in the industry as a "LOW to MEDIUM" horsepower saw.

This classification is particularly useful when selecting the proper diamond blade for an application. Refer to the engine Owner's Manual for specific instructions regarding engine operation and maintenance practices. [See Table 3]

TABLE 3. POWER PLANTS

ENGINE MFR.	HP	STARTING SYSTEM	AIR CLEANER	FUEL TANK GAL. (Liters)
HONDA	8	Manual	Dual Element	1.6 (6.1)
HONDA	9	Manual	Cyclone Air Filtration	1.6 (6.1)
HONDA	13	Manual	Cyclone Air Filtration	1.7 (6.4)
KOHLER	8.5	Manual	Cyclone Air Filtration	1.6 (6.1)
KOHLER	12	Manual	Cyclone Air Filtration	1.8 (6.8)

FS 1 CONCRETE SAW — GENERAL INFORMATION

UNDER CARRIAGE SYSTEM

A jig welded heavy steel gauge under carriage chassis assembly supports the saw in tracking, pivoting and stabilization. Two rear wheels (8" x 2.0" x 3/4") and two front wheels (4" x 2.0" x 3/4") supports the chassis. The entire assembly pivots about the rear carriage and is lubricated through 90-degree grease fitting in the rear axle tube. [See page 38, Under Carriage Assembly]

BLADE DRIVE SYSTEM

A rugged blade shaft assembly has been specifically designed to support the optimum distribution of torque from the engine shaft to the blade shaft, and to ensure minimal vibratory conditions on the tips of the shaft. Balanced engine & blade shaft pulleys are connected to their respective shafts. Two premium V-belts connect the engine pulley to the blade shaft pulley. The 1-1/4" diameter blade shaft is supported by two self-aligning pillow block bearings, and is designed for left and right hand cutting. [See page 40, Blade Shaft Assembly]

BLADE GUARD ASSEMBLY

The two-piece heavy gauge 14" blade guard is designed with a water system to meet the challenges of wet cutting operations. A fluted floodwater manifold assembly supplies optimum volume and dispersal of water to both sides of the diamond blade for wet cutting applications. The sizable (6") fluted tubes that direct the floodwater resist clogging and are easily removed for maintenance. The blade guard has a convenient "flip-up" front cover for easy blade changes, and is spring tensioned for positive up/down positioning. The blade guard may be oriented for left or right hand cutting.

WATER SYSTEM

The FS1 Series employs a water system that provides floodwater to the blade. Two 6" fluted tubes are connected via a manifold, and are oriented inside the blade guard to provide optimum water volume and dispersal to both sides of the blade. A standard "garden hose" hookup valve connects the water source to the saw, and a 2-way water lever (ON/OFF) is conveniently located for the operator. [See Figure 6 and page 48]

MANUAL RAISE/LOWER SYSTEM

A positive locking mechanical raise and lower spring tension assembly supports elevation cycling operations. A rotating ball handle permits the engage/disengage process, and the tension spring assists the operator with smooth blade entry and egress. Blade orientation is referenced on the front face of the handle bar support tube and is calibrated for 12", 14", 16" and 18" diamond blades. [See Figure 11 and page 22]

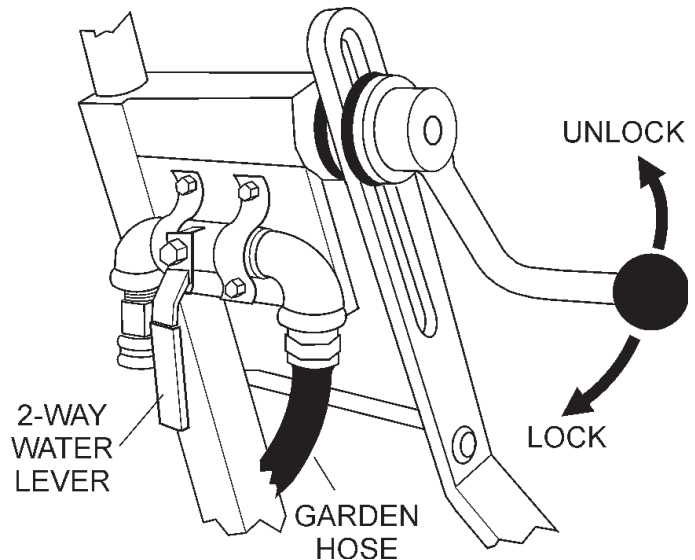


Figure 6. Water Connection/Manual/Raise Lower Assembly

TABLE 4. BLADE SELECTION

Diamond Blade Diameter (In.)	Depth of Cut
12"	3 5/8"
14"	4 5/8"
16"	5 5/8"
18"	6 5/8"

FS 1 CONCRETE SAW — INSPECTION -ENGINE

Before Starting

1. Read safety instructions at the beginning of manual.
2. Clean the SAW, removing dirt and dust, particularly the engine cooling air inlet, carburetor and air cleaner.
3. Check the air filter for dirt and dust. If air filter is dirty, replace air filter with a new one as required.
4. Check carburetor for external dirt and dust. Clean with dry compressed air.
5. Check fastening nuts and bolts for tightness.

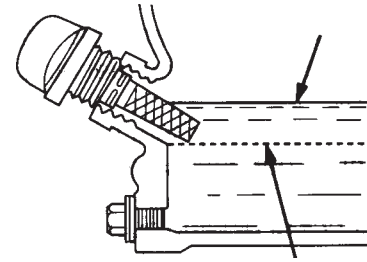


Figure 8. Engine Oil Dipstick (Oil Level)

Engine Oil Check

1. To check the engine oil level, place the saw on secure level ground with the engine stopped, and the diamond blade removed.
2. Remove the filler cap/dipstick from the engine oil filler hole (Figure 7) and wipe it clean.

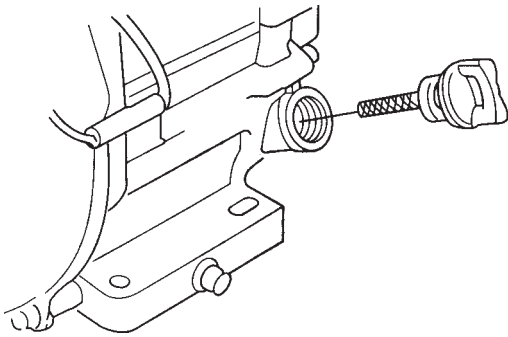
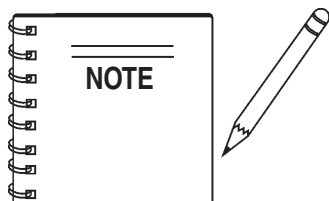


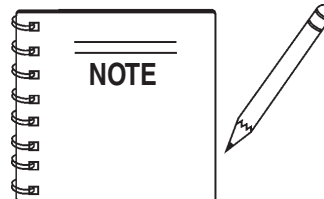
Figure 7. Engine Oil Dipstick (Removal)

3. Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick.
4. If the oil level is low (Figure 8), fill to the edge of the oil filler hole with the recommended oil type (Table 5). Maximum oil capacity is 400 cc.



Reference manufacturer engine manual for specific servicing instructions.

Some engines used with the FS 1 Concrete Saw have an oil Alert System. This system will automatically stop the in the event of low oil level. ALWAYS be sure to check the engine oil level prior to starting the engine.



Season	Temperature	Oil Type
Summer	25°C or Higher	SAE 10W-30
Spring/Fall	25°C~10°C	SAE 10W-30/20
Winter	0°C or Lower	SAE 10W-10



Gasoline Check



1. Remove the gasoline cap located on top of fuel tank.
2. Visually inspect to see if fuel level is low. If fuel is low, replenish with unleaded fuel.
3. When refueling, be sure to use a strainer for filtration. **DO NOT** top-off fuel. Wipe up any spilled fuel.

FS 1 CONCRETE SAW — INSPECTION -BLADE

WARNING

Failure to thoroughly inspect the diamond blade (Figure 9) for operational safety could result in damage to the blade, the saw, and may cause injury to the user or others in the operating area.

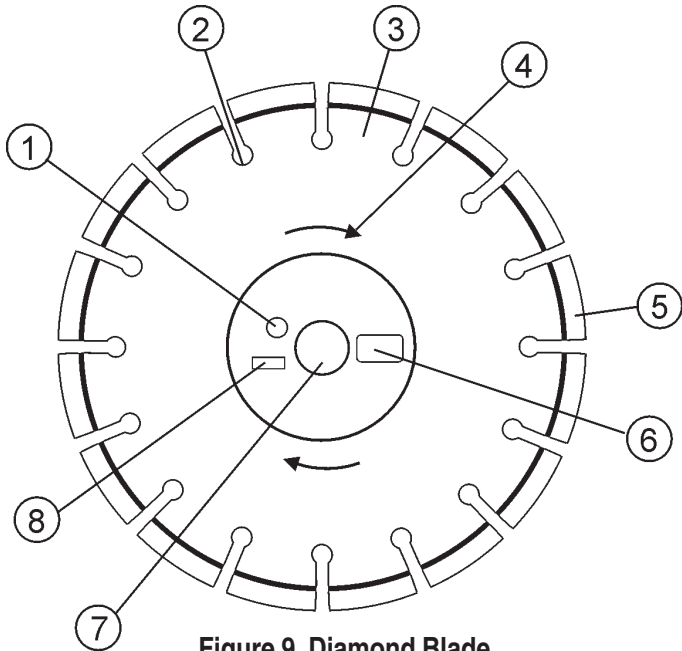


Figure 9. Diamond Blade

- 1. Drive Pin Hole** – A commonly located hole located on the diamond blade core that prevents operational blade slippage between the inner & outer blade flanges (collars). Inspect the diameter of the hole to ensure there is no distortion, and that a snug fit develops between the hole and drive pin.
- 2. Stress Relief Holes (Gullets)** – Check the steel core for cracks that may have propagated from the slots and/or gullets. Cracks indicate extreme fatigue failure and if sawing continues, catastrophic failure will occur.
- 3. Edge Of The Steel Core** – Check the diameter edge for discoloration (blue oxidation) indicating an overheating condition caused by insufficient cooling water/air. Overheating of blades may lead to loss of core tension and/or increase the possibility for blade failure. Check to make sure the steel core's width is uniform about the rim of the blade, and not succumbing to an “under cutting” condition brought about by highly abrasive material or improper under cutting core protection.
- 4. Directional Arrow** – Check to ensure that the blade is oriented properly on the blade shaft for sawing. Reference the directional arrow in the blade and place it so the direction of rotation “downcuts” with the turn of the shaft.
- 5. Diamond Segment or Rim** – Ensure there are no cracks, dings, or missing portions of the diamond segment/rim. **DO NOT use a blade that is missing a segment or a portion of the rim.** Damaged and/or missing segments/rims may cause damage to your saw, and injury to the user or others in the operating area.
- 6. Specifications** – Ensure that the blade specifications, size, and diameter properly match up to the sawing operation. Wet blades must have water to act as a coolant. Utilizing a diamond blade not matched properly to the task may result in poor performance and/or blade damage.
- 7. Arbor Hole** – It is essential that the arbor hole diameter properly matches the blade, and that it is free from distortions. Correct blade flanges (collars) must be used. The inside face of the flanges must be clean & free of debris. An out of round arbor condition will cause damage to the blade and the saw.
- 8. MAX RPM** – This RPM reference is the maximum safe operating speed for the blade selected. **NEVER** exceed the max RPM on the diamond blade. Exceeding the MAX RPM is dangerous, and may cause poor performance and may damage the blade.

FS 1 CONCRETE SAW — INSPECTION -BLADE PLACEMENT



WARNING

Failure to thoroughly inspect the diamond blade (Figure 10) for operational safety could result in damage to the blade, the saw, and may cause injury to the user or others in the operating area.

1. **Blade Guard** – Pivot the blade guard front cover all the way back. The guard tension spring will keep the front cover in position.
2. **Blade Hex Nut** – Unscrew the [blade shaft nut “right hand” side loosens clockwise, and tightens counter clockwise], [blade shaft nut “left side” loosens counter clockwise and tightens clockwise]. Utilize the blade nut wrench and shaft lock wrench located on the lower inside console cavity. **DO NOT** overtighten the nut (approximately 45-50 ft.-lb/ 61-68 N/m) when finalizing the assembly.
3. **Outside Blade Flange (Collar)** – Ensure that the outside blade flange is placed flush against the diamond blade, and that the flange drive pin goes through the blade pin hole and seats properly into the inner flange drive pin hole. The inside surface of the flange must be free of debris and permit a tight closure on the surface of the blade core.
4. **Diamond Blade** – Ensure that the proper diamond blade has been selected for the job. Pay close attention to the directional arrows on the blade, clockwise for right-hand cutting and counter-clockwise for left-hand cutting, then place the blade onto the blade shaft, and ensure the arbor hole of the blade matches the diameter of the shaft.
5. **Blade Drive Pin** – Line up the blade drive pin with the inner flange (collar) pin hole. The blade’s operating directional arrows must point in a “down-cutting” direction (whether cutting on right side or left) to perform correctly.
6. **Inner Flange (Collar)** – This flange is fixed upon the blade shaft, and is manufactured with a drive pin hole. The inside surface of the flange must be free of debris and permit a tight closure on the surface of the blade.
7. **Blade Shaft Torque Hole** – A conveniently placed opening on the frame that permits the use of the shaft lock wrench to assist in blade changes. The pointed end of the locking wrench fits into the saw frame hole and a machined hole in the blade shaft. Once in place, the blade shaft can not rotate making it easier to remove the blade nut.

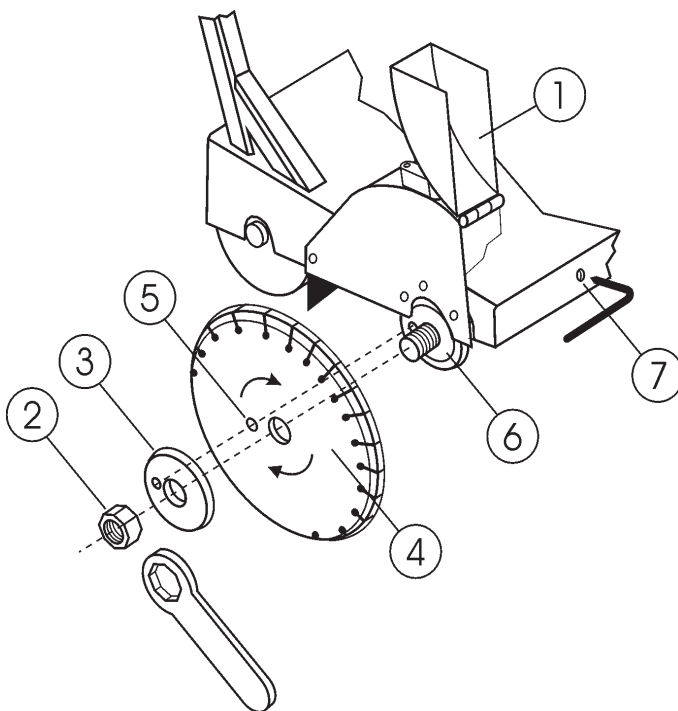
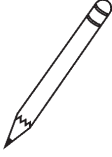
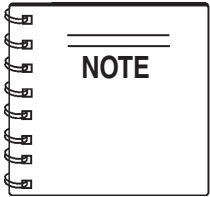


Figure 10. Diamond Blade Placement

FS 1 CONCRETE SAW — INSPECTION -BLADE PLACEMENT



The following steps should be accomplished before using the FS1 on any cutting surface.

Diamond Blade Placement Procedure

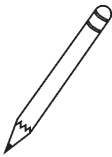
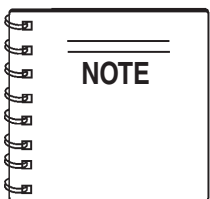
The FS1 is equipped with an Raise/Lower assembly that is supported by the following components (Figure 11):

- Raise/Lower Ball Handle (1)
- Actuating Arm Lever (2)
- Depth Pointer Bar (3)
- Raise/Lower Scale (4)

1. Set the engine ON/OFF switch to the OFF position.



2. Place the FS1 saw on a stable level working surface.
2. Grasp the raise/lower ball handle (1) and reorient the saw to its highest position by rotating the ball handle counter-clockwise while pulling back on the handle bars.
4. Lock this new position in place by maintaining back pressure on the handle bars while rotating the ball handle clockwise firmly against the actuating arm lever (2).
5. Lift up the blade guard cover to gain access to the diamond blade.



When removing or installing a diamond blade, please note that the blade retaining nuts are left and right hand threaded.

6. Use the provided blade nut and blade shaft locking wrenches (Figure 10) to install the diamond blade. Also reference steps 1 through 7 on page 21.
7. When cutting, reference the cutting depth by viewing the depth pointer bar (3) in conjunction with the raise lower scale until the desired depth is achieved.
8. Always "lock in" the depth by firmly rotating the ball handle against the actuating arm lever.

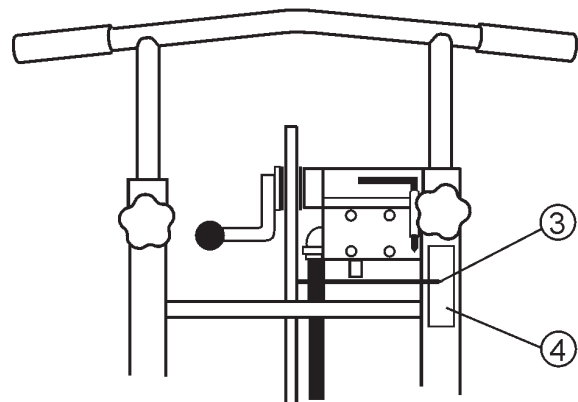
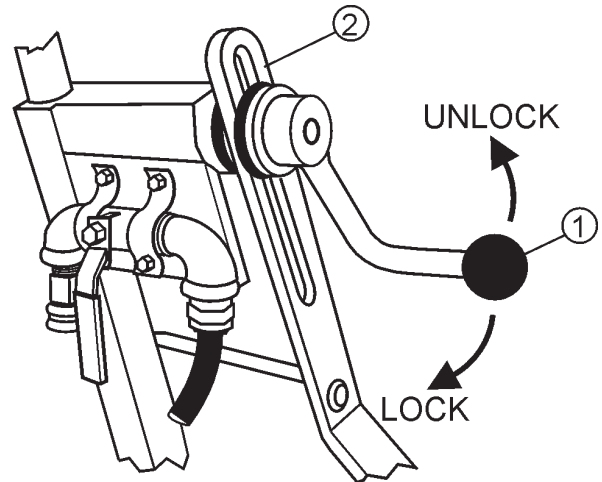


Figure 11. Raise/Lower Assembly

WARNING

Dropping or forcing the blade onto the cutting surface can severely damage the diamond blade and may cause serious damage to the saw and bodily harm.

WARNING

ALWAYS make sure that the ball handle has been securely locked against the actuating arm lever to prevent blade depth creep.

FS 1 CONCRETE SAW — INSPECTION -GUARDS, COVERS AND V-BELTS

Guards and Covers Check



NEVER operate the saw without blade guards and covers (Figures 12,13 and 14) in place. **DO NOT** operate with the front of the blade guard raised. The blade exposure cannot exceed 180 degrees during operations. Adhere to the safety guidelines of the **American National Standards Institute (ANSI) B7.1 and B7.5.**

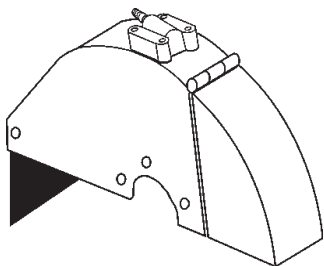


Figure 12. Mist Blade Guard

CHECK the following on the "blade guard":

- Check to ensure the capacity of the blade guard matches the diameter of your diamond blade.
- Check that the guard is bolted firmly upon the saw frame.
- Check that the spring tensioned front cover of the guard is firmly seated with the rear section of the guard, and there are no gaps.
- Check the fit of the water hoses about the water manifold. **NEVER** lift the blade guard while cutting.
- Check that the flood water tubes and water jets are clear and open. Test the water supply for pressure and flow (to both sides of the blade) before sawing operations.

CHECK the following on the "blade flange cover":

- Check that the flange cover seats firmly upon the bayonet fitting of the saw frame prior to operation.
- This flange cover is to be in place when cutting from either the right or left side of the saw.

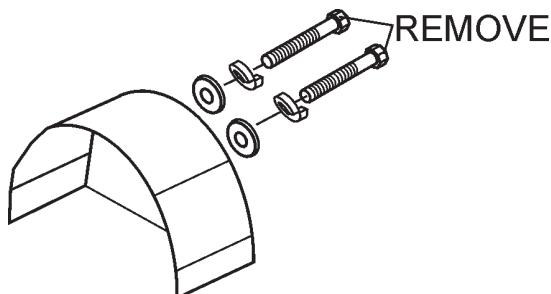
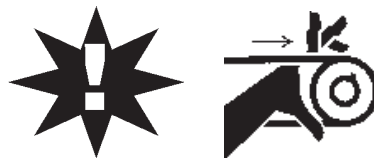


Figure 13. Blade Flange Cover

V-belts and Cover **CAUTION:**



NEVER attempt to check the V-belt with the engine running because severe injury can occur. Keep fingers, hands, hair and clothing away from all moving parts.

V-belts Alignment and Tensioning

This concrete saw is equipped with two premium V-belts (14") and three premium V-belts (18") that have been aligned and tensioned by factory personnel. All two V-belts **MUST** be installed for proper operation of the saw. Failure to run the saw with less than two belts may damage the saw or equipment.

Use the following procedure to check the alignment of V-belts:

1. Remove the bolts that secure the V-belt cover (Figure 14) to the saw frame.

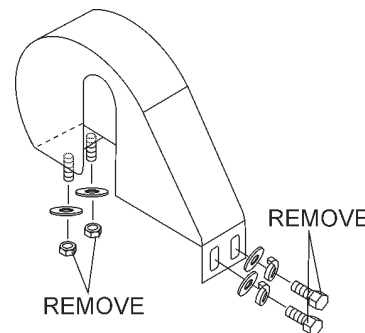


Figure 14. V-Belt Cover

2. Check uniform parallelism (Figure 15) of V-belts and pulley (sheaves). Use a straight edge or machinists's square against both pulleys and adjust both pulleys until equally aligned.

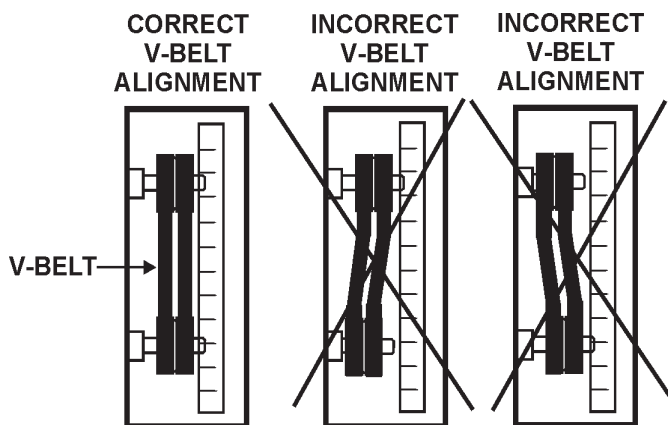


Figure 15. Pulley Alignment

FS 1 CONCRETE SAW — INSPECTION -GUARDS, COVERS AND V-BELTS

3. Check V-belt tension (Figure 16) by using a tension meter (6.0 - 9.0 lbs) against the inside belt at a mid point between the two pulleys, or by deflecting the center belt at a mid point 3/8" (10mm) - 1/2" (13mm).

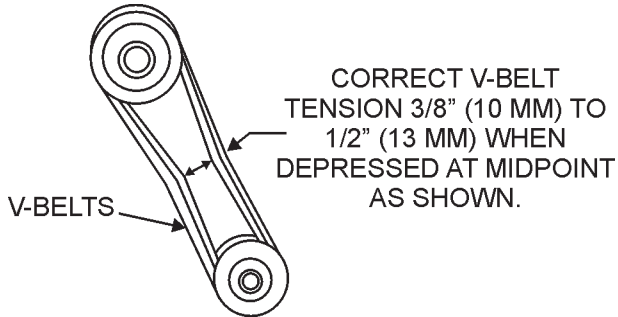


Figure 16. V-Belt Tension

4. **DO NOT** over or under tension the V-belts. Severe damage can occur to the saw and engine crank shaft if the belts are over tensioned. A decrease of power to the blade and poor performance will result if the belts are under tensioned (loose on pulleys).
5. If the V-belts becomes worn or loose, replace them by using V-belt part number .

FS 1 CONCRETE SAW— INITIAL START-UP

CAUTION:



DO NOT attempt to operate the saw until the Safety, General Information and Inspection sections have been read and understood. Depending on engine manufacturer, operating steps may vary. See engine manufacturer's operating manual. The following start-up procedure makes reference to a **HONDA** engine.

1. Ensure the diamond blade has been mounted correctly and that it is raised above the surface you are about to saw.
2. Connect to water source (as applicable) see item 7 on page 48 (Water System Assembly), and test for adequate flood water [4 to 5 gallons per minute (15 to 19 LT/min)], and/or misting water [steady geometric aerosol spray at 40 psi].
3. Place the **fuel valve lever** (Figure 17) to the "ON" position.

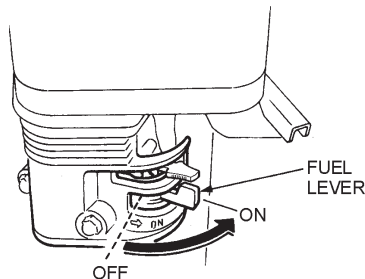


Figure 17. Fuel Valve Lever

4. Place the **Engine ON/OFF switch** (Figure 18) in the "ON" position.

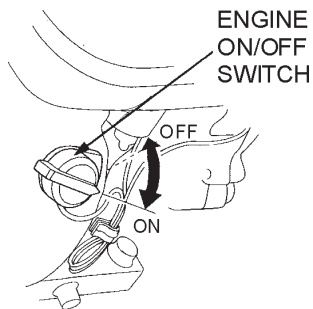
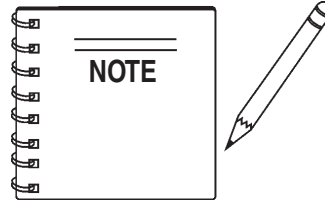


Figure 18. Engine ON/Off Switch



The **CLOSED** position of the choke lever enriches the fuel mixture for starting a **COLD** engine. The **OPEN** position provides the correct fuel mixture for normal operation after starting, and for restarting a warm engine.

5. Place the **Choke Lever** (Figure 19) in the "OPEN" position

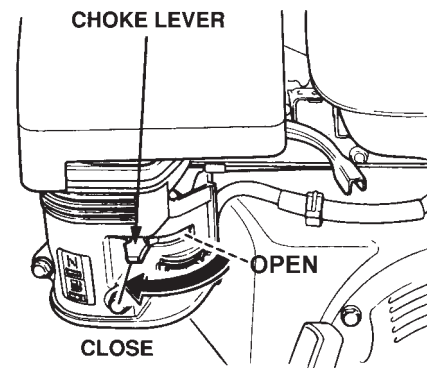


Figure 19. Choke Lever

CAUTION:



The engine governor speed has been set at the factory. Changing the governor speed could damage the blade and/or the saw.

6. Place the **throttle lever** (Figure 20) halfway between **fast** and **slow** for starting. All sawing is done at full throttle. The engine governor speed is factory set to ensure optimum blade operating speeds.

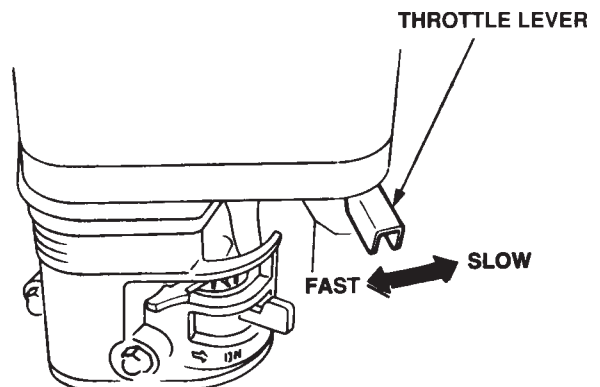


Figure 20. Throttle Lever

FS 1 CONCRETE SAW — INITIAL START-UP

8. Grasp the starter grip (Figure 21) and slowly pull it out. The resistance becomes the hardest at a certain position, corresponding to the compression point. Pull the starter grip briskly and smoothly for starting.

CAUTION:



- **DO NOT** pull the starter rope all the way to the end.
- **DO NOT** release the starter rope after pulling. Allow it to rewind as soon as possible.

STARTER GRIP

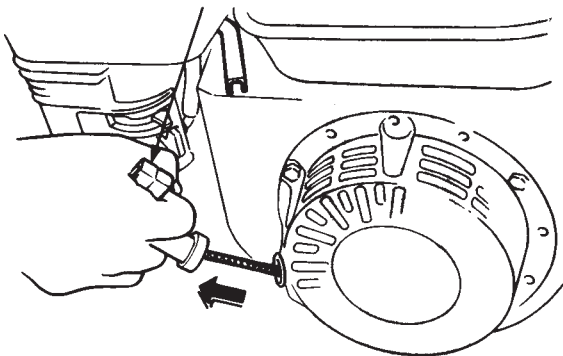


Figure 21. Starter Grip

9. If the engine has started, slowly return the choke lever (Figure 19) to the **CLOSED** position. If the engine has not started repeat steps 1 through 5.
10. Before the saw is placed into operation, run the engine for several minutes. Check for fuel leaks, and noises that would associate with a loose guard and/or covers.
11. All sawing is done at full throttle. Your engine governor has been set at the factory to ensure an optimum speed setting.

Stopping the Engine

NEVER stop the engine while the blade is in the cut, except for extreme emergencies. A sudden stoppage of the engine at high speed while in a cut could damage the blade and/or saw, and may cause injury to the user or other in the operating area.

1. Place the throttle lever (Figure 20) in the slow position, and listen for the engine speed to decrease.
2. Place the engine ON/OFF switch (Figure 18) to the “OFF” position.
3. Place the fuel valve lever (Figure 17) to the “OFF” position.

Maneuvering The Saw



The blade is spinning whenever the engine is running.

Raise the blade high above the surface when maneuvering the saw. Damage to the blade and/or saw may occur if the blade strike the pavement.

CAUTION:



- **NEVER** stop the engine in the cut while working at high speeds, except for extreme emergencies.

FS 1 CONCRETE SAW — OPERATION

Saw Alignment

1. The FS 1 employs a front and rear pointer (Figure 22) that has been precisely aligned with the diamond blade at the factory. Referencing the figure below, accurate tracking is accomplished by referencing the front and rear pointer tips over the cut line. Precise saw direction is accomplished by slight operator pressure against the handle bars.

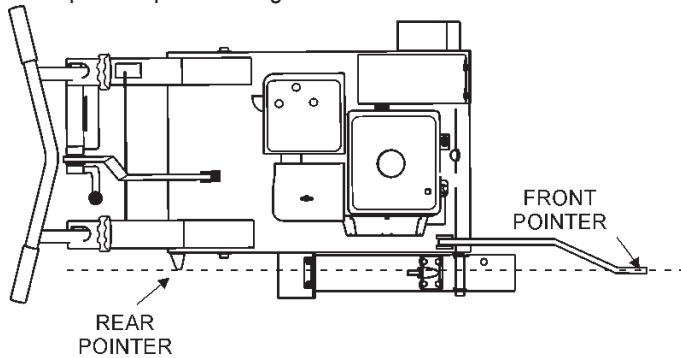


Figure 22. Pointer View (Front/Rear)

2. For operator comfort, an ergonomically designed handle bar adjusts by loosening two clamping knobs and adjusts to the desired height. Tighten the knobs back down when the desired height is met.

Wet Saw Operation



The operator must wear the appropriate protective equipment and clothing while engaged in sawing.

1. Connect hose from water source to the hose fitting connection (Hose Connection below handle bars) on the saw. The source pressure should be approximately 40 psi.
2. Select the “ON” position of the two-way water valve, and ensure the proper flow and rate 4-5 gallons/ minute (15-19 Lt/min) is equally directed to both side of the blade.
3. Advance engine throttle to full (FAST) position.
4. Slowly lower the blade onto your cut line by unlocking the mechanical Raise/Lower lever (Figure 6); freeing the spring assisted lowering assembly. Observe the depth of cut with the depth feed scale, and lock in the depth with the Raise/Lower handle. ***IF the water supply to your blade is interrupted, stop sawing immediately.***

5. Set the depth and saw only as the job conditions and specifications require. Unnecessary deep sawing is wasteful to the life of your blade.
6. The preferred method of sawing is to step cut in increments of 2” (51 mm). “Step-cutting” provides the optimum opportunity for the blade to cut fast and last its longest.

CAUTION:



ALWAYS saw in a straight line only. Serious damage to the blade may occur if the saw is twisted or forced to cut radius shapes.

7. The rotation of the blade creates a tendency for the saw to pull in a particular direction (to the right if the blade is mounted on the right, to the left if the blade is mounted on the left).
8. To ensure a straight line of sawing, apply pressure to the appropriate handle as you slowly advance the saw forward. ***DO NOT force the blade to the cut any faster than its natural tendency.***



If the engine stalls for any reason during sawing, raise the blade out of the cut before restarting.



9. The operator must recognize and adhere to the optimum speed that the saw advances while sawing. ***DO NOT force the saw in the cut.*** Observe the engine tachometer from time to time to get the feel for a smooth sawing pace relative to RPM.
10. Factors for sawing economy:
 - Type of Blade
 - Depth of Cut
 - Sawing Speed
 - Characteristics of the Material Being Cut

FS 1 CONCRETE SAW — OPERATION

Dry Saw Operation



Engine components can generate extreme heat.



The operator must wear the appropriate protective equipment and clothing while engaged in sawing.

1. Ensure the proper DRY Cutting blade is selected for the job.
2. The preferred method of sawing is to step cut in increments of 2" (51 mm). "Step-cutting" provides the optimum opportunity for the blade to cut fast and last its longest. Airflow acts as a blade coolant during sawing. Cutting too deep with one pass, or exerting excessive forward/side-ward pressure may damage the blade.

Finishing a Cut

1. Raise the blade out of the cut by utilizing the ball handle adjustment assembly. Raise the blade high enough out of the cut to clear the surface and allow the saw to be maneuvered.
2. Move the engine throttle lever to the idle (SLOW) position (Figure 20).
3. Set the engine ON/OFF switch to the "OFF" position (Figure 18).
4. Place the two-way water valve (Figure 6) in the "OFF" position .

Diamond Blades and Blade Speed

1. Diamond Sawing consists of cutting WET or DRY.
2. Matching the correct blade for the specific job and material being cut optimizes performance and value.
3. Selection of the proper diamond blade consists of:
 - Determining WET or DRY cutting
 - Material to be Cut
 - Type of Saw Being Used
 - Horsepower of Saw
 - Hardness Characteristics of the Material
 - Performance Expectations
4. Selecting the "grade" of diamond blade often defines the performance factors that can be achieved. Multiquip offers a variety of diamond blade grades to provide the desired level of value and performance.

Blade Speed

1. A diamond blade's performance is directly connected to specific peripheral (rim) speeds.
2. The following shaft rotational speeds have been factory set to ensure optimum blade performance.
 - FS 1 14" Capacity-3,200 RPM.
 - FS 1 18" Capacity-2,700 RPM.



Operating saw blades at rotational speeds greater than those specified by the manufacturer can cause blade damage, and may injure the user or others in the operating area.



CAUTION:



General maintenance practices are crucial to the performance and longevity of your saw. The extreme environments of sawing operations require routine cleaning, lubrication, belt tensioning, and inspection for wear and damage



WARNING

The following procedures devoted to maintenance can prevent serious saw damage or malfunctioning. Before servicing or inspection, **ALWAYS** park the saw on a level surface with the engine ON/OFF switch in "OFF" position.



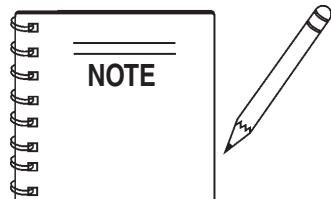
WARNING

Some maintenance operations may require the engine to be run. Ensure that the maintenance area is well ventilated. Exhaust contains poisonous carbon monoxide gas that can cause of unconsciousness and may result in **DEATH**



General Engine Care

1. **ENGINE CHECK:** Check daily for any oil and/or fuel leakage, thread nut & bolt tightness, and overall cleanliness.
2. **ENGINE OIL:** Check daily. Inspect with blade removed and saw frame level on a level surface. Keep the oil clean, and at the proper servicing level (Figure 8). **DO NOT OVERFILL!** SAE 10W30 of SG is recommended for general use.
3. **ENGINE OIL CHANGE:** Change engine oil the first month or 20 hours of operation. Then every 3 months/ or 50 HOURS



ALWAYS dispose of used oil in a responsible manner. Ensure that the disposition of all hazardous waste is handled properly. Call your Recycling Center for information about recycling engine oil.

4. **ENGINE AIR FILTER:** Clean air filter 2 TO 3 times daily when DRY cutting. See Engine Owner's Manual for detailed information.
5. **ENGINE TANK & STRAINER:** Clean every year/ or 300 hours.
6. **FUEL LINE:** Replace every two years/ or as necessary.
7. **SPARK PLUG:** Clean/adjust every 6 months/or 100 hours. Replace every year/ or 300 hours.

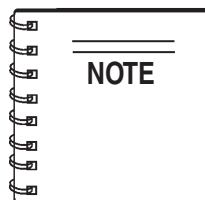
Bearing Lubrication Care

There are three (3) grease points (zerk fittings, Figure 23) on the FS 1 Concrete Saw. Use only Premium Lithium 12 based Grease, conforming to NLG1 Grade #2 consistency.



Figure 23. Zerk Fitting

1. **BLADE SHAFT BEARINGS:** Grease daily, see page 40, Blade Shaft Assembly.



When cutting **DRY**, lubricate blade shaft bearings 2 to 3 times daily. The grease can provide an added protective seal for the bearings.

2. **REAR AXLE:** Grease daily, see page 38, Under Carriage Assembly.

General Cleanliness

Clean the machine daily. Remove all dust and slurry build up. If the saw is steam cleaned, ensure that lubrication is accomplished **AFTER** steam cleaning operations.

Blade Shaft Bearing Replacement

The FS 1 is supported by “tapped” base lock collar self-aligning blade shaft bearings. These heavy duty bearings support the 1-1/4 blade shaft, and have grease (zerk) points (Figures 24 and 25) conveniently located for service.

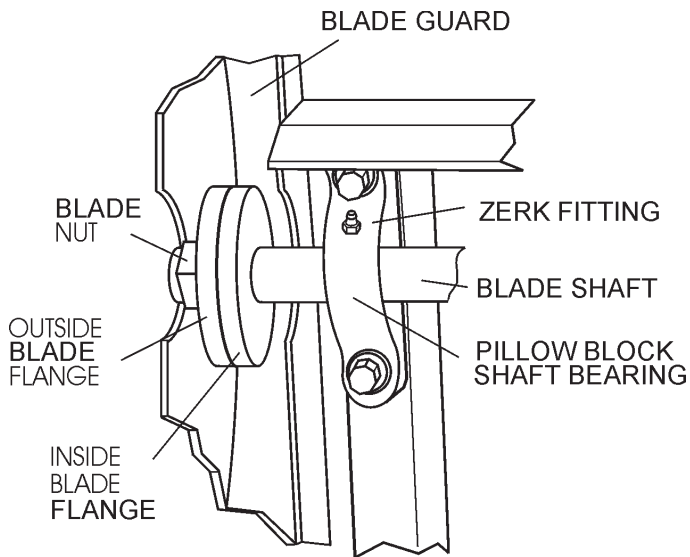


Figure 24. Right-Side Shaft Bearing

1. Reference page 40 (Blade Shaft Assembly), during bearing replacement.
2. Its recommended to replace both left & right hand bearings collectively.

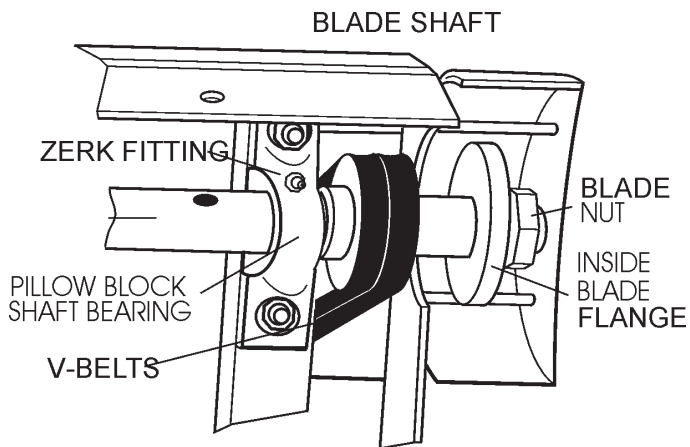


Figure 25. Left-Side Shaft Bearing

3. To loosen the tension on the two V-belts perform the following:

- Remove the V-belt cover (Figure 14).
- Loosen the engine adjustment bolts (Figure 26).
- Position the engine to allow for slack in the V-belts.

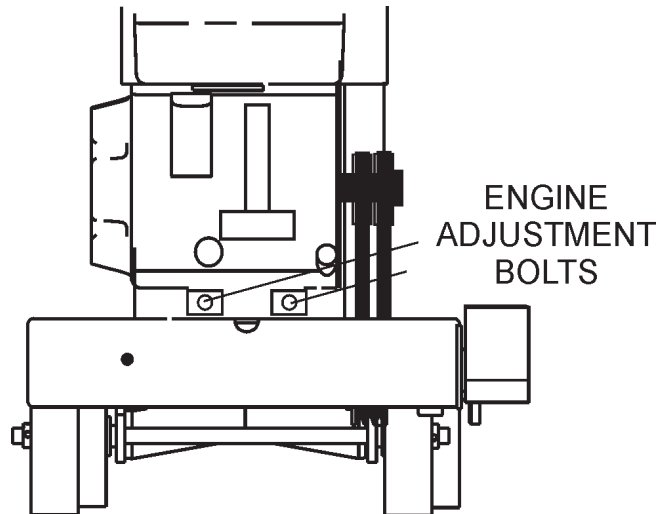


Figure 26. V-Belt Adjustment

Replacement of the Blade Shaft Bearings

Perform the following to replace the "*blade shaft bearings*". Reference Blade Shaft Assembly drawing, page 40:

4. Remove both the right and left hand blade shaft nuts from the blade shaft.
5. Remove the blade flanges (items 3 and 4)
6. Remove pulley set screw (item 8), and slide pulley (item 9) off blade shaft.
7. Remove (4) hex head cap screws (item 16) to free the blade shaft assembly from the saw frame.
8. Remove the set screws from the pillow block bearing, then slide the bearing(s) off the blade shaft.
9. Position the new blade shaft bearing(s) onto the blade shaft and ensure that the bearing's zerk fitting is oriented forward.
10. Re-install blade shaft nuts, pulley and blade shaft flanges in the reverse order that they were removed.
11. Reposition the V-belts onto the blade shaft pulley, and realign the V-belts for parallelism (Figure 15) as required.
12. Tighten the V-belts by adjusting the engine adjustment bolts.
13. Replace the V-belt cover guard.

V-Belt Tension Check

Check tension after first day of operation, then weekly/or 25 hours. Replace as required (see Figure 16). **NEVER operate with less than 2 belts.**

The FS 1 is equipped with (2) premium A-27 V-belts for the 14-inch model and (3) premium A-27 V-belts belts for the 18-inch model which will provide optimum torque transfer.

The saw must be operated with all V-belts, and must be adjusted collectively and properly to be effective.

The V-belt adjustment of the FS 1 has been factory set utilizing precision standards. For V-belt adjustments only, see page 23, **V-belts alignment tensioning** section.

V-Belt Replacement

To replace V-belts perform the following procedure:
Reference Figure 27 unless otherwise noted.

1. Remove the belt guard, Figure 14.
2. Loosen the engine adjustment bolts (1).
3. Position the engine to allow for slack in the V-belts, (2).
4. Remove the worn V-belt from the blade shaft and engine pulleys.
5. Install the new V-belts by looping them around the blade shaft and engine pulleys.
6. Tighten the new V-belts by collectively repositioning the engine by tightening the engine adjustment bolts.
7. Re-install the V-belt guard.

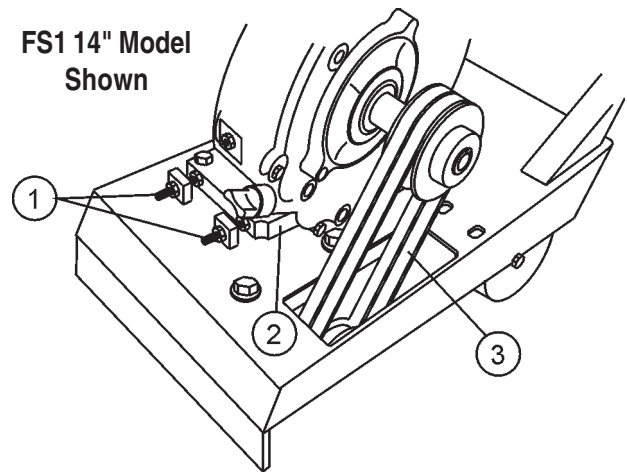


Figure 27. V-Belts

FS 1 CONCRETE SAW — TROUBLESHOOTING (ENGINE)

TABLE 6. ENGINE TROUBLESHOOTING

SYMPTON	POSSIBLE CAUSE	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.
Difficult to start, "fuel is available, and SPARK is present at the spark plug".	Engine 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, and replace with correct type of fuel.
	Water or dust in fuel system?	Flush fuel system.
	Air cleaner dirty?	Clean or replace air cleaner.
Difficult to start, "fuel is available, spark is present and compression is low"	Suction/exhaust valve stuck or protruded?	Re-seat 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 at carburetor.	Fuel not available in fuel tank?	Fill with correct type of fuel.
	Fuel cock does not open properly?	Apply lubricant to loosen fuel cock lever, replace if necessary.
	Fuel filter clogged?	Replace fuel filter.
	Fuel tank cap breather hole clogged?	Clean or replace fuel tank cap.
	Air in fuel line?	Bleed fuel line.

FS 1 CONCRETE SAW — TROUBLESHOOTING (ENGINE)

TABLE 6. ENGINE TROUBLESHOOTING (CONTINUED)

SYMPTON	POSSIBLE CAUSE	SOLUTION
"Weak in power" compression is proper and does not misfire.	Air cleaner not clean?	Clean or replace air cleaner
	Improper level in carburetor?	Check float adjustment, re-build carburetor.
	Defective Spark plug?	Clean or replace spark plug.
	Defective Spark plug?	
"Weak in power" compression is proper but misfires.	Water in fuel system?	Flush fuel system, and replace with correct type of fuel.
	Dirty spark plug?	Clean or replace spark plug.
	Ignition coil defective?	Replace ignition coil.
Engine overheats.	Spark plug heat value improper?	Replace with correct type of spark plug.
	Correct type of fuel?	Replace with correct type of fuel
	Cooling fins dirty?	Clean cooling fins.
Rotational speed fluctuates.	Governor adjusted correctly?	Adjust governor.
	Governor spring defective?	Replace governor spring.
	Fuel flow restricted?	Check entire fuel system for leaks or clogs.
Recoil starter malfunction.	Recoil mechanism clogged with dust and dirt?	Clean recoil assembly with soap and water.
	Spiral spring loose?	Replace spiral spring.

FS 1 CONCRETE SAW — TROUBLESHOOTING (BLADE)

TABLE 7. BLADE TROUBLESHOOTING

SYMPTON	POSSIBLE CAUSE	SOLUTION
Blade slows or Stops cutting, still remains on blade.	Blade too hard for the material being cut.	Consult Dealer or Multiquip for correct blade. Try cutting very soft material (sandstone, silica brick, cinder block) to "Redress" the blade.
	Engine Torque diminished because of loose V-Belts.	Tighten and/or replace V-Belts.
	Insufficient Engine power.	Check Throttle setting. Check Engine horsepower.
	Improper direction of rotation.	Check that the blade is oriented, and rotational arrow points in a "Down-Cutting" direction.
	Blade is slipping on the blade shaft.	Check that the blade & flange pin is properly installed on the blade shaft (see Figure 10).
Blade does not cut straight and/or true.	Blade being used on misaligned saw.	Check blade shaft bearings and alignment integrity.
	Blade is excessively hard for the material being cut.	Check specifications of the blade with the material being cut. Consult Dealer or Multiquip for information.
	Blade being used at improper RPM.	Ensure blade surface feet per minute speed (SFPM) is approximately 10,000 (see Page 29).
	Blade improperly mounted on arbor shoulders and flanges.	Ensure blade is properly affixed on the blade shaft.
	Excessive force applied to blade while cutting.	Do not force the blade in the cut. Apply a slow/steady pace to sawing..
Blade discoloring, crackling and/or wearing excessively.	Blade too hard for the material being cut.	Consult Dealer or Multiquip for correct blade. Try cutting very soft material (sandstone, silica brick, cinder block) to "Redress" the blade.
	Blade improperly mounted on arbor shoulders and flanges.	Ensure blade is properly affixed on the blade shaft. Ensure the blade flanges are clean & free of debris.
	Blade not receiving enough cooling water or air.	Ensure proper flow & volume of water is provided for wet cutting blades. Ensure sufficient cooling air is circulated about a dry cutting blade.
	Arbor hole out of round	Ensure blade is properly affixed on the blade shaft.
	Incorrect blade chosen for material being cut.	Check specifications of the blade with the material being cut. Consult Dealer or multiquip for information.
	Excessive force applied to blade while cutting.	Do not force the blade in the cut. Apply a slow/steady pace to sawing.

FS 1 CONCRETE SAW — EXPLANATION OF CODE IN REMARKS COLUMN

How to read the marks and remarks used in this parts book.

Section 1: Items Found In the “Remarks” Column

Serial Numbers-Where indicated, this indicates a serial number range (inclusive) where a particular part is used.

Model Number-Where indicated, this shows that the corresponding part is utilized only with this specific model number or model number variant.

Section 2: Items Found In the “Remarks” Column

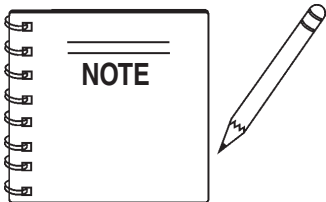
Serial Numbers-Where indicated, this indicates a serial number range (inclusive) where a particular part is used.

Model Number-Where indicated, this shows that the corresponding part is utilized only with this specific model number or model number variant.

Section 3: Items Found In the “Items Number” Column

All parts with same symbol in the number column, *, #, +, %, or <, belong to the same assembly or kit.

Note: If more than one of the same reference number is listed, the last one listed indicates newest (or latest) part available.



The contents of this parts catalog are subject to change without notice.

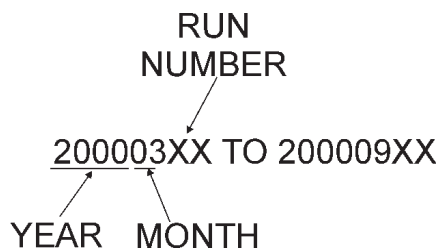
FS 1 CONCRETE SAW — SUGGESTED SPARE PARTS

FS 1 CONCRETE SAW 1 TO 3 UNITS

1 to 3 Units

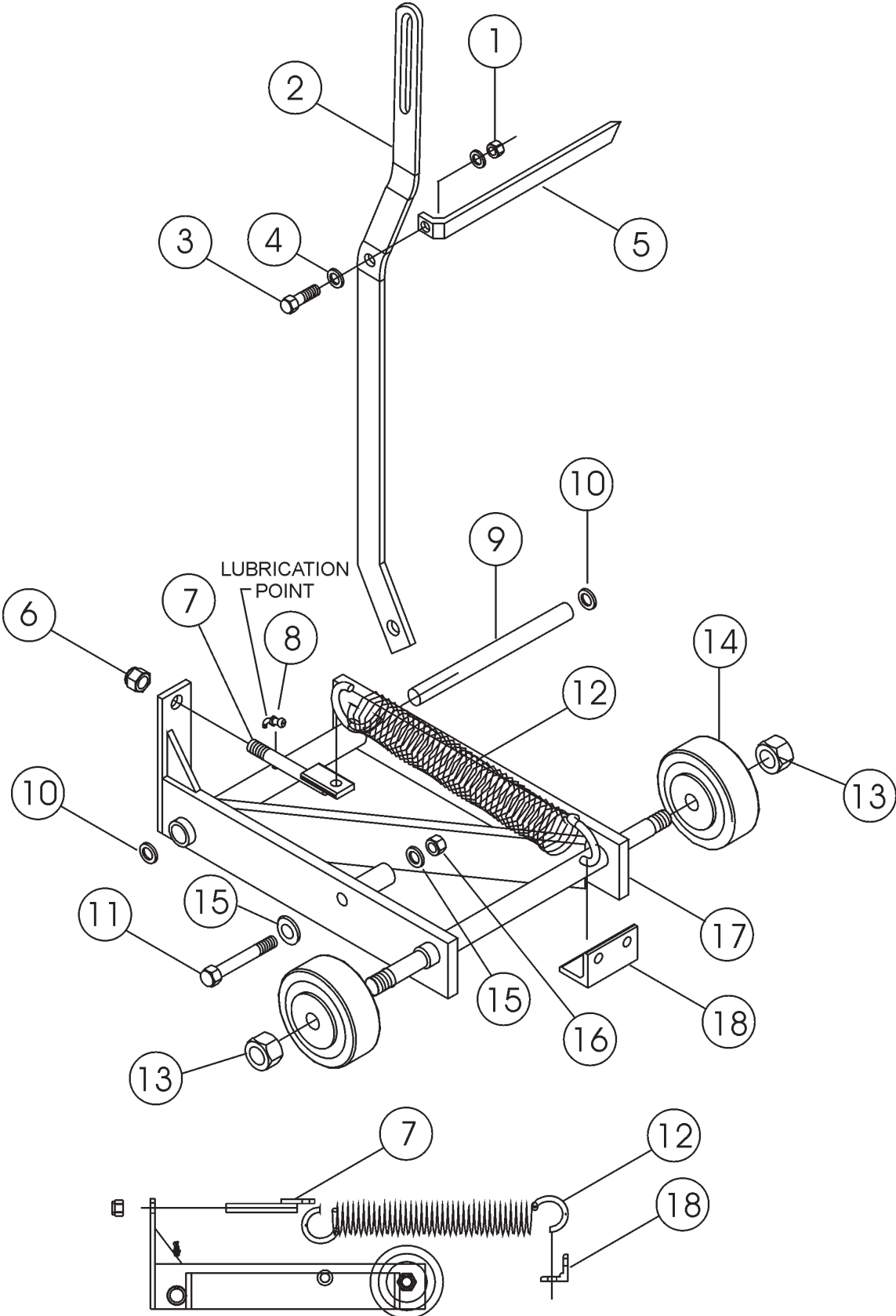
Qty.	P/N	Description
1	511329	SHAFT, BLADE S/N 200003 TO 200009
1	511659	SHAFT, BLADE S/N 200010-
2	511333	FLANGE, BLADE INSIDE
1	511332	FLANGE, BLADE OUTSIDE
2	492167	BEARING PILLOW BLOCK
1	511331	NUT, BLADE, RIGHT-HAND
1	511330	NUT, BLADE LEFT-HAND
1	500194	KEY, 1/4" X 1-3/4
2	511501	V-BELT A-27
2	511433	WHEELS, REAR
2	503088	WHEELS, FRONT
1	511503F	WRENCH
1	511502	TOOL, SHAFT LOCK

Serial number breakdown:



FS 1 CONCRETE SAW — UNDER CARRIAGE ASSY.

UNDER CARRIAGE ASSY.



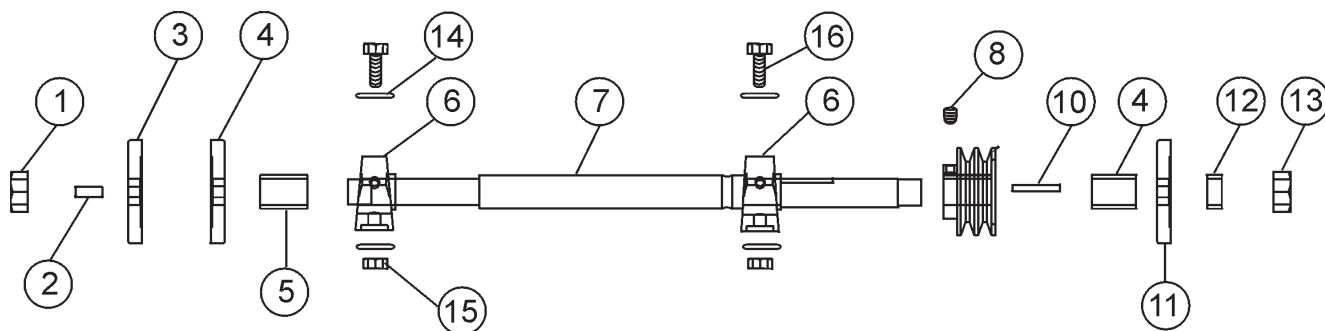
FS 1 CONCRETE SAW — UNDER CARRIAGE ASSY.

UNDER CARRIAGE ASSY.

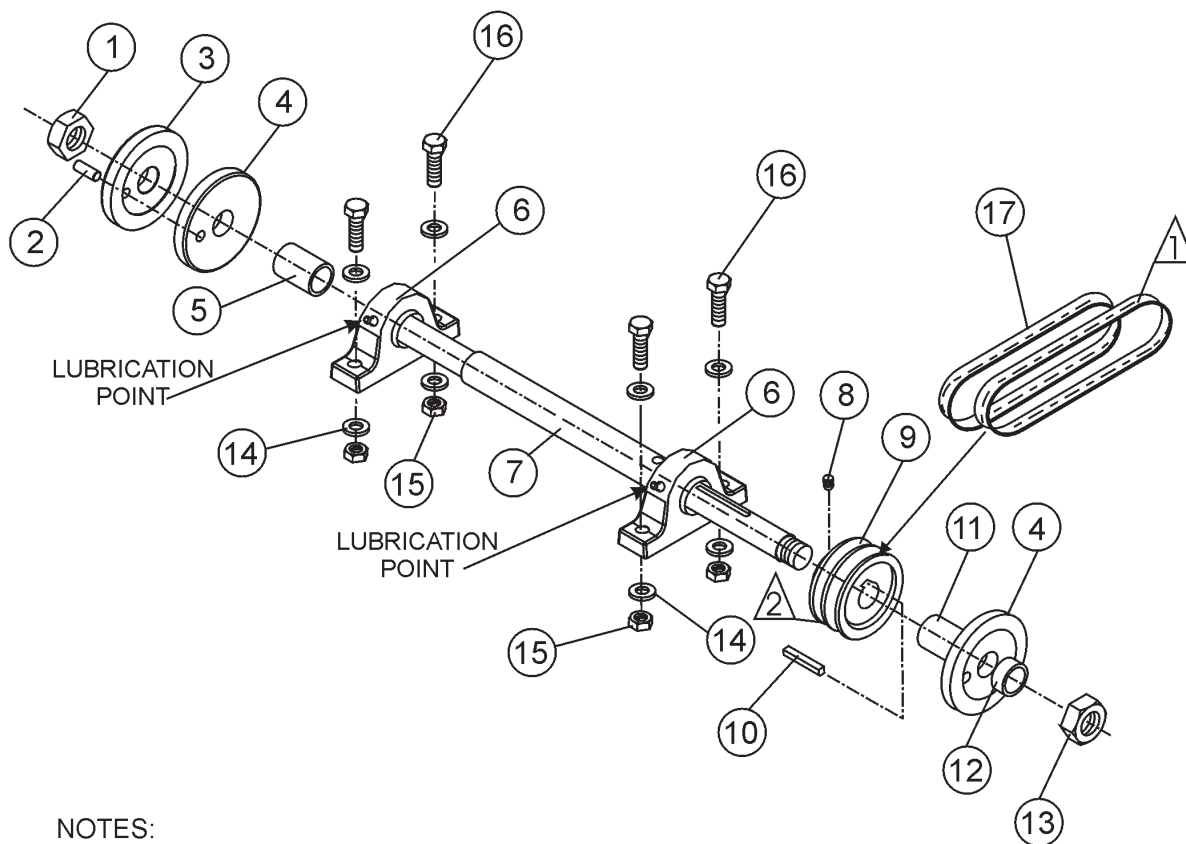
<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	10024	NUT, NYLOC 1/4-20	1	
2	503078	ROD, DEPTH ADJUSTMENT	1	
3	0730	SCREW, HHC 1/4-20 X 1	1	
4	0948	WASHER, FLAT 1/4	2	
5	503602	POINTER, DEPTH	1	
6	10024	NUT, NYLOC 1/2-13	2	
7	511471	TENSIONER, SPRING	1	
8	491704	ZERK FITTING	1	
9	511407	AXLE, REAR	1	S/N 200003 TO 200009
9	511661	AXLE, REAR	1	S/N 200010 TO
10	8151	WASHER, FLAT 3/4	8	
11	503111	SCREW, HHC 1/2-13 X 4-1/4	1	
12	511487	SPRING, DEPTH ADJUSTMENT	1	
13	492586	NUT, NYLOC 5/8 - 11	2	
14	503088	WHEEL, FRONT	2	
15	621	WASHER, FLAT 1/2	2	
16	10176	NUT, NYLOC 1/2 - 13	1	
17	512468	FRAME, CARRIAGE	1	S/N 200003 TO 200009
17	511311	FRAME, CARRIAGE	1	S/N 200010 TO
18	511472	PLATE, SPRING ANCHOR	1	

FS 1 CONCRETE SAW — BLADE SHAFT ASSY.

BLADE SHAFT ASSY.



TOP VIEW



NOTES:

- △ 1 FS1 18" MODEL REQUIRES 3 V-BELTS
P/N 511501.
- △ 2 FS1 18" MODEL USES THREE GROOVE
PULLEY P/N 512892.

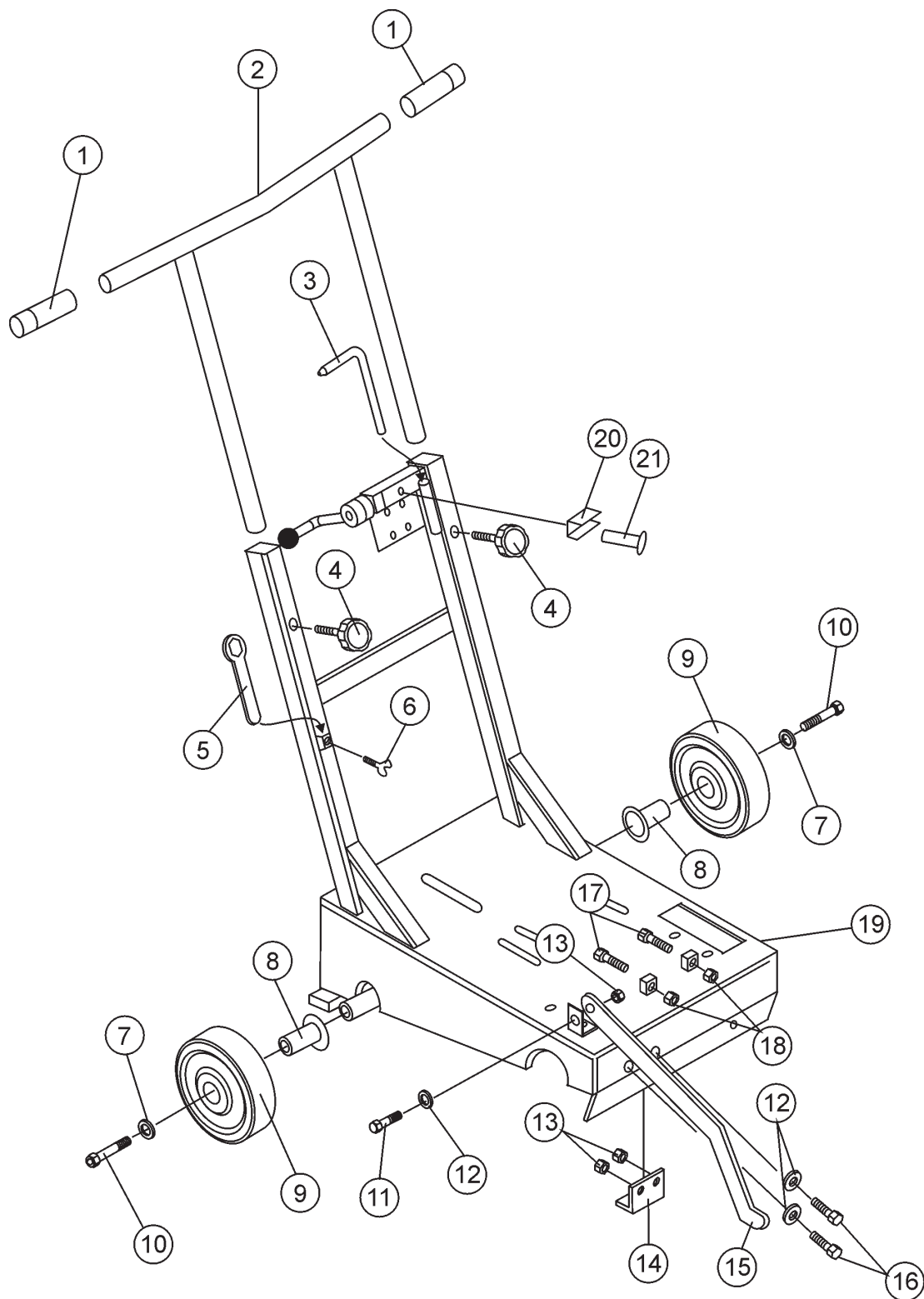
FS 1 CONCRETE SAW — BLADE SHAFT ASSY.

BLADE SHAFT ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	511330	NUT, LEFT-HAND	1	
2	503803	PIN, BLADE DRIVE 3/8" X 1"	1	
3	511332	FLANGE, DRIVEN ASSY.	1	
4	511333	FLANGE, BLADE INSIDE	2	
5	511404	BUSHING, LEFT SIDE	1	
6	492167	BEARING, PILLOW BLOCK	2	
7	511329	SHAFT, BLADE	1	S/N 200003 TO 200009
7	511659	SHAFT, BLADE	1	S/N 200010 TO
8	492467	SCREW, SET 5/16" NC X 3/8"	1	
9	505205	PULLEY (2-GROOVE)	1	
9	512892	PULLEY (3-GROOVE)	1	S/N 20010501
10	500194	KEY 1/4" X 1-3/4	1	
11	511405	BUSHING, RIGHT SIDE	1	USED WITH 2-BELT PULLEY
11	512896	BUSHING, RIGHT SIDE	1	USED WITH 3-BELT PULLEY S/N20010128
12	511466	SPACER, BLADE SHAFT	1	
13	511331	NUT, RIGHT-HAND	1	
14	504679	WASHER, FLAT 3/8	8	
15	10133	NUT, NYLOCK 3/8 - 16	4	
16	490166	SCREW, HHC 3/8 - 16 X 3 1/2	4	
17	511501	V-BELT A-27	2	8.0, 8.5 AND 9.0 HP ENGINES.
17	511501	V-BELT A-27	3	11, 12 AND 13 HP ENGINES S/N 20010501

FS 1 CONCRETE SAW — FRAME ASSY.

FRAME ASSY.



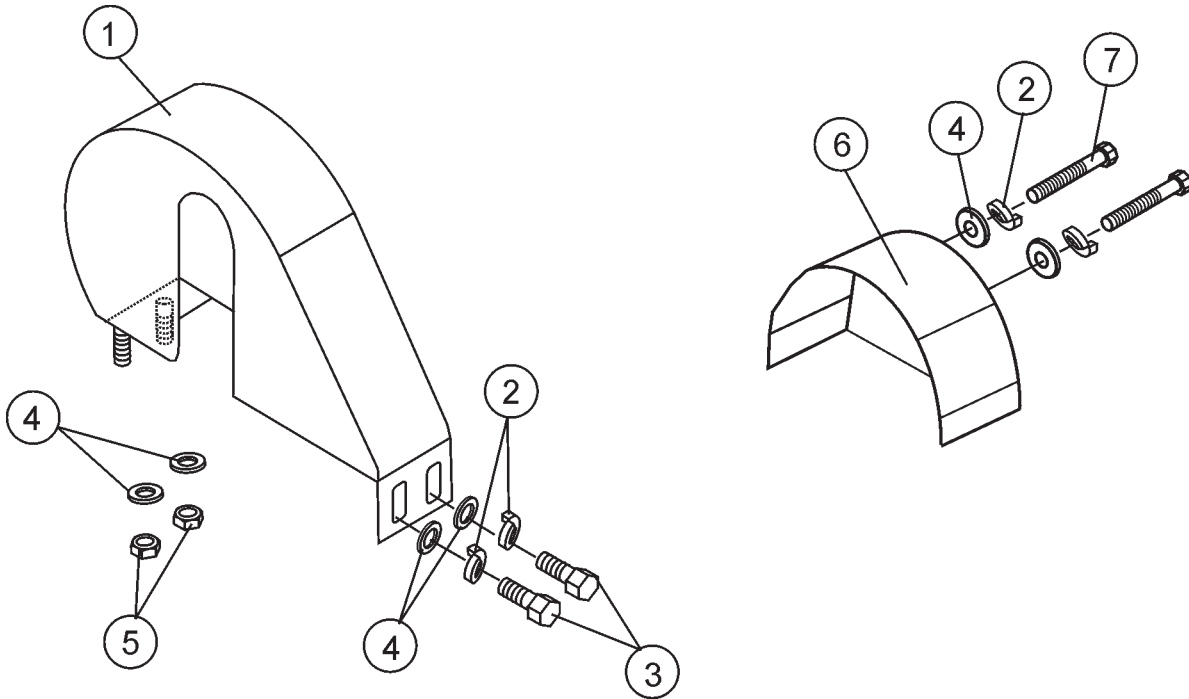
FS 1 CONCRETE SAW — FRAME ASSY.

FRAME ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	511432	HANDLE, GRIP	2	
2	511436	HANDLE BAR	1	
3	511502	TOOL, SHAFT LOCK	1	
4	503015	KNOB, CLAMPING	2	
5	511503F	WRENCH	1	
6	511481	SCREW, WING 5/16-18X1	1	
7	621	WASHER, FLAT 1/2	2	
8	511429	BUSHING, WHEEL	2	
9	511433	WHEEL, REAR	2	
10	511428	SCREW, ALLEN HEAD 1/2-13X3	2	
11	1023	SCREW, HHC 3/18-16 X 1-1/4	2	
12	504679	WASHER, FLAT 3/8	3	
13	10133	NUT, NYLOC 3/8-16	3	
14	511472	PLATE, SPRING ANCHOR	1	
15	503057	ROD, POINTER	1	
16	1023	SCREW, HHC 3/8-16 X 1-1/4	1	
17	492305	SCREW, HHC 5/16-18 X 1-3/4	2	
18	492553	NUT, HEX FINISH 5/16-18	2	
19	512467	CHASSIS	1	S/N 200003 TO 200009
19	511853	CHASSIS	1	S/N 200010 TO
20	511474	CLIP, TOOL	1	
21	503723	RIVET	1	

FS 1 CONCRETE SAW — COVER ASSY.

COVER ASSY.



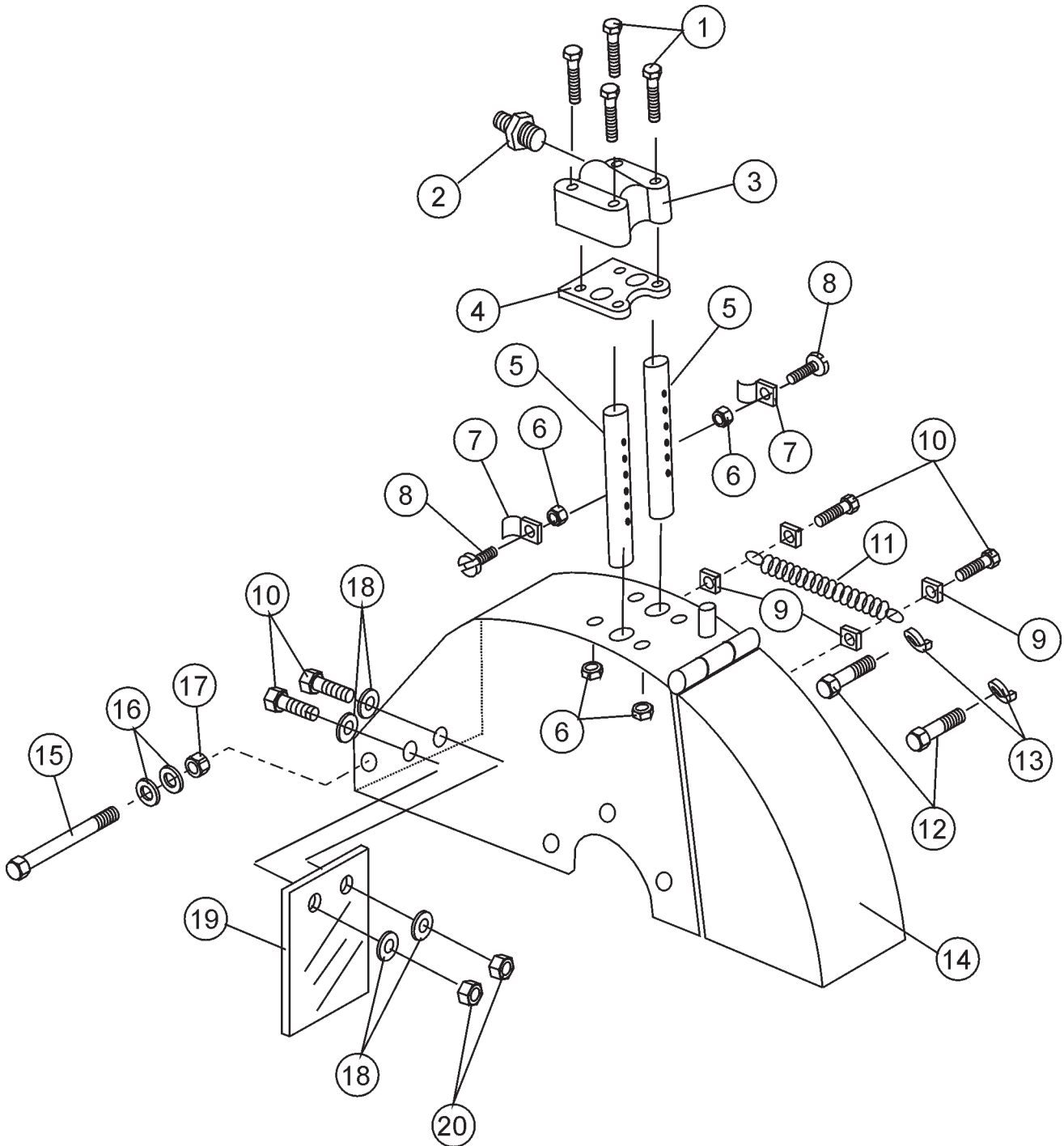
FS 1 CONCRETE SAW — COVER ASSY.

COVER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	503012	COVER, BELT	1	
2	592623	WASHER, LOCK	4	
3	0655	SCREW, HHC 5/16 - 18 X 3/4	2	
4	492597	WASHER, FLAT 5/16	6	
5			2	
6	503014	COVER, BLADE FLANGE	1	
7	503114	SCREW, HHC 5/16 - 18 X 3-1/2	2	

FS 1 CONCRETE SAW — BLADE GUARD ASSY.

BLADE GUARD ASSY.



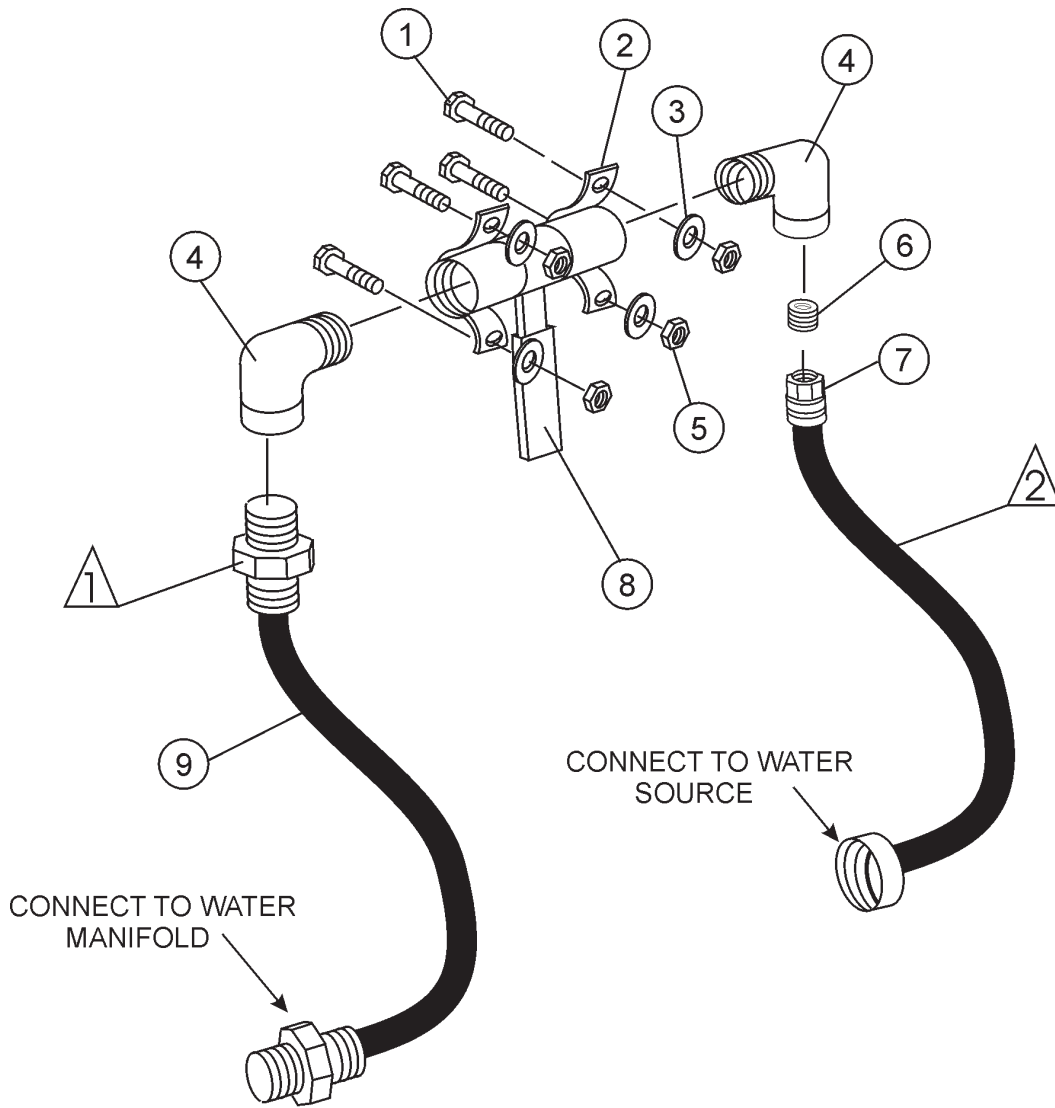
FS 1 CONCRETE SAW — BLADE GUARD ASSY.

BLADE GUARD ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	26250	SCREW, HHC 1/4 - 20 X 13/4	4	
2	503103	FITTING	1	
3	503082	MANIFOLD	1	
4	503083	GASKET, MANIFOLD FLOOD	1	
5	503079	TUBE, FLOOD	2	
6	10024	NUT, NYLOCK 1/4 - 20 X 3/4	6	
7	15160	CLIP, CONDUIT	2	
8	503113	SCREW, COUNTER SUNK 1/4 - 20 X 3/4	2	
9	492531	NUT, SQUARE 3/16 - 24	4	
10	503115	SCREW, HHC 3/16 - 24 X 3/4	4	
11	503090	SPRING, CENTURY	1	
12	0655	SCREW, HHC 5/16 - 18 X 3/4	4	
13	492623	WASHER, LOCK 5/16"	6	
14	503017	GUARD, BLADE 14" BODY	1	
14	504673	GUARD, BLADE 18" BODY	1	
15	492384	SCREW, HHC 3/8 - 16 X 4	1	
16	504679	WASHER, FLAT 3/8	2	
17	10133	NUT, NYLOC 3/8 - 16	1	
18	492595	WASHER, FLAT 3/16	4	
19	503084	FLAP, NEOPRENE WATER SHIELD	1	
20	503119	NUT, NYLOC 3/16 - 24	2	

FS 1 CONCRETE SAW — WATER SYSTEM ASSY.

WATER SYSTEM ASSY.



NOTES:

- ① INCLUDED WITH HOSE, ITEM 9.
- ② GARDEN HOSE NOT INCLUDED

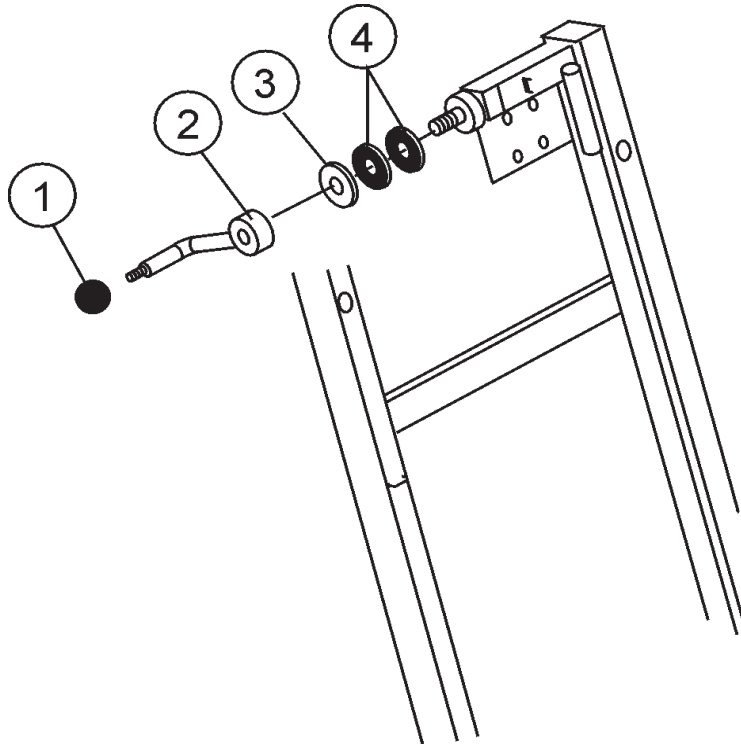
FS 1 CONCRETE SAW — WATER SYSTEM ASSY.

WATER SYSTEM ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	0730	SCREW, HHC 1/4-20 X 1	4	
2	511431	CLAMP, 3/4	2	
3	0948	WASHER, FLAT 1/4	4	
4	491163	FITTING, 1/2" X 90" PIPE	2	
5	10024	NUT, NYLOC 1/4-20	4	
6	491201	FITTING, 1/2" NPT CONNECTOR	1	
7	503124	FITTING, 1/2 NPT/ GARDEN HS BRASS	1	
8	491237	VALVE, BALL COCK 1/2" NPT	1	
9	503108	HOSE, 1/2	1	

FS 1 CONCRETE SAW — MANUAL RAISE AND LOWER ASSY.

MANUAL RAISE AND LOWER ASSY.



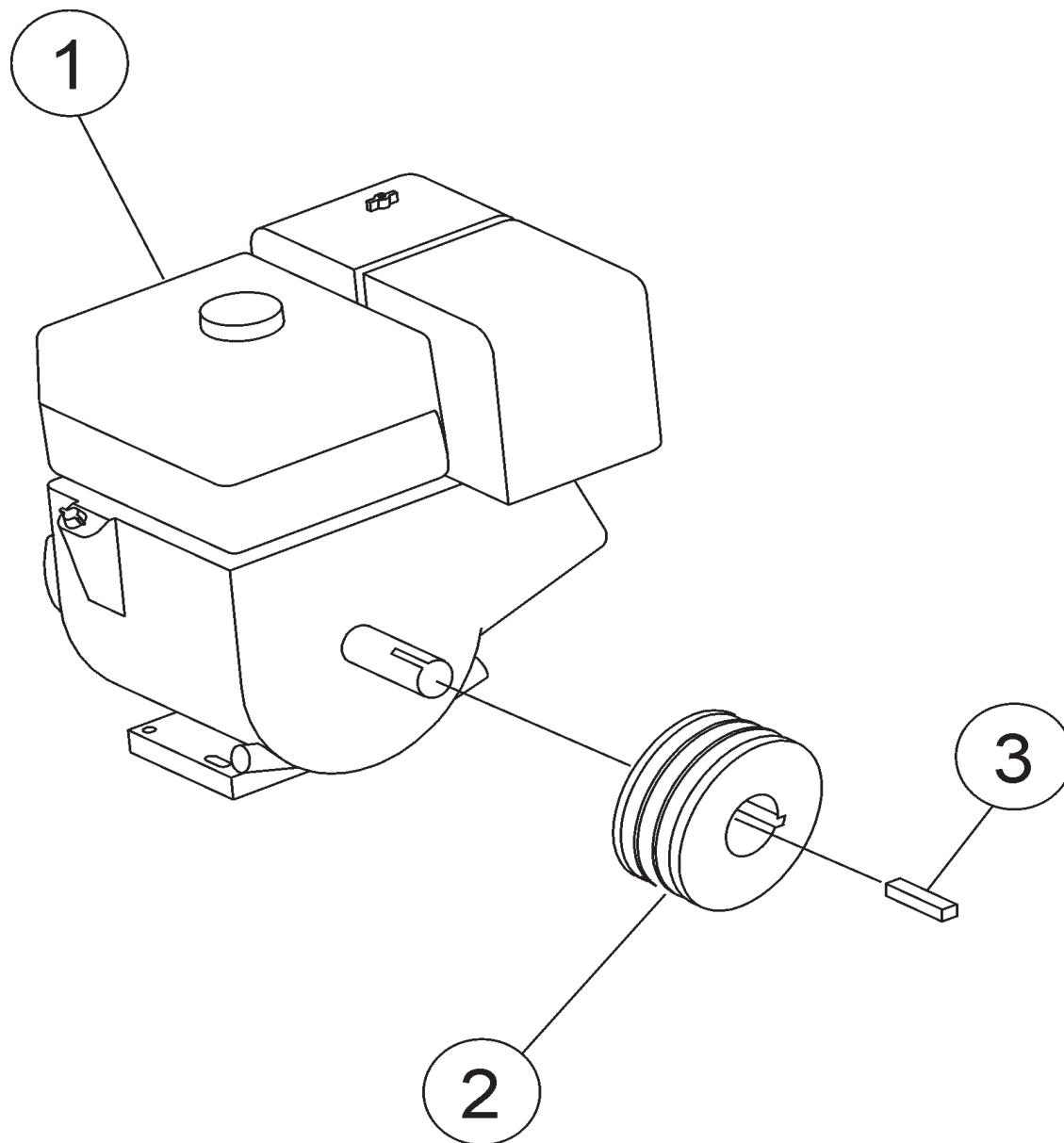
FS 1 CONCRETE SAW — MANUAL RAISE AND LOWER ASSY.

MANUAL RAISE/LOWER ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	4910196	KNOB, 3/8 NC	1	
2	503013	LEVER	1	
3	503093	WASHER, FLAT	1	
4	503094	WASHER, COMPOSITE	2	

FS 1 CONCRETE SAW — ENGINE ASSY.

ENGINE ASSY.



FS 1 CONCRETE SAW — ENGINE ASSY.

ENGINE ASSY.

<u>NO</u>	<u>PART NO</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1		8.0 H.P. HONDA MODEL GX240K1QA2	1	
1		8.5 H.P. KOLHER MODEL PA-951502	1	
1		9.0 H.P. HONDA MODEL GX270K1QC9	1	
1		12.0 H.P. KOHLER MODEL PA-941502	1	
1		13.0 H.P. HONDA MODEL GX390K1QC9	1	
2	492054	PULLEY 2-GROOVE	1	
2	512891	PULLEY 3-GROOVE	1	
3	500194	KEY, 1/4 X 1- 3/4	1	

PAYMENT TERMS

Terms of payment for parts are net 10 days.

FREIGHT POLICY

All parts orders will be shipped collect or prepaid with the charges added to the invoice. All shipments are F.O.B. point of origin. Multiquip's responsibility ceases when a signed manifest has been obtained from the carrier, and any claim for shortage or damage must be settled between the consignee and the carrier.

MINIMUM ORDER

The minimum charge for orders from Multiquip is \$15.00 net. Customers will be asked for instructions regarding handling of orders not meeting this requirement.

RETURNED GOODS POLICY

Return shipments will be accepted and credit will be allowed, subject to the following provisions:

1. A Returned Material Authorization must be approved by Multiquip prior to shipment.
2. To obtain a Return Material Authorization, a list must be provided to Multiquip Parts Sales that defines item numbers, quantities, and descriptions of the items to be returned.
 - a. The parts numbers and descriptions must match the current parts price list.
 - b. The list must be typed or computer generated.
 - c. The list must state the reason(s) for the return.
 - d. The list must reference the sales order(s) or invoice(s) under which the items were originally purchased.
 - e. The list must include the name and phone number of the person requesting the RMA.
3. A copy of the Return Material Authorization must accompany the return shipment.
4. Freight is at the sender's expense. All parts must be returned freight prepaid to Multiquip's designated receiving point.

5. Parts must be in new and resalable condition, in the original Multiquip package (if any), and with Multiquip part numbers clearly marked.

6. The following items are not returnable:

- a. Obsolete parts. (If an item is in the price book and shows as being replaced by another item, it is obsolete.)
- b. Any parts with a limited shelf life (such as gaskets, seals, "O" rings, and other rubber parts) that were purchased more than six months prior to the return date.
- c. Anyline item with an extended dealer net price of less than \$5.00.
- d. Special order items.
- e. Electrical components.
- f. Paint, chemicals, and lubricants.
- g. Decals and paper products.
- h. Items purchased in kits.

7. The sender will be notified of any material received that is not acceptable.

8. Such material will be held for five working days from notification, pending instructions. If a reply is not received within five days, the material will be returned to the sender at his expense.

9. Credit on returned parts will be issued at dealer net price at time of the original purchase, less a 15% restocking charge.

10. In cases where an item is accepted, for which the original purchase document can not be determined, the price will be based on the list price that was effective twelve months prior to the RMA date.

11. Credit issued will be applied to future purchases only.

PRICING AND REBATES

Prices are subject to change without prior notice. Price changes are effective on a specific date and all orders received on or after that date will be billed at the revised price.

Rebates for price declines and added charges for price increases will not be made for stock on hand at the time of any price change.

Multiquip reserves the right to quote and sell direct to Government agencies, and to Original Equipment Manufacturer accounts who use our products as integral parts of their own products.

SPECIAL EXPEDITING SERVICE

A \$35.00 surcharge will be added to the invoice for special handling including bus shipments, insured parcel post or in cases where Multiquip must personally deliver the parts to the carrier.

LIMITATIONS OF SELLER'S LIABILITY

Multiquip shall not be liable here under for damages in excess of the purchase price of the item with respect to which damages are claimed, and in no event shall Multiquip be liable for loss of profit or good will or for any other special, consequential or incidental damages.

LIMITATION OF WARRANTIES

No warranties, express or implied, are made in connection with the sale of parts or trade accessories nor as to any engine not manufactured by Multiquip. Such warranties made in connection with the sale of new, complete units are made exclusively by a statement of warranty packaged with such units, and Multiquip neither assumes nor authorizes any person to assume for it any other obligation or liability whatever in connection with the sale of its products. Apart from such written statement of warranty, there are no warranties, express, implied or statutory, which extend beyond the description of the products on the face hereof.

PARTS AND OPERATION MANUAL

HERE'S HOW TO GET HELP

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

PARTS DEPARTMENT

800-427-1244 or 310-537-3700

FAX: 800-672-7877 or 310-637-3284

SERVICE DEPARTMENT/TECHNICAL ASSISTANCE

800-478-1244 or 310-537-3700

FAX: 310- 537-4259

WARRANTY DEPARTMENT

888-661-4279, or 310-661-4279

FAX: 310- 537-1173

MAIN

800-421-1244 or 310-537-3700

FAX: 310-537-3927



MULTIQUIP INC.

POST OFFICE BOX 6254

CARSON, CA 90749

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