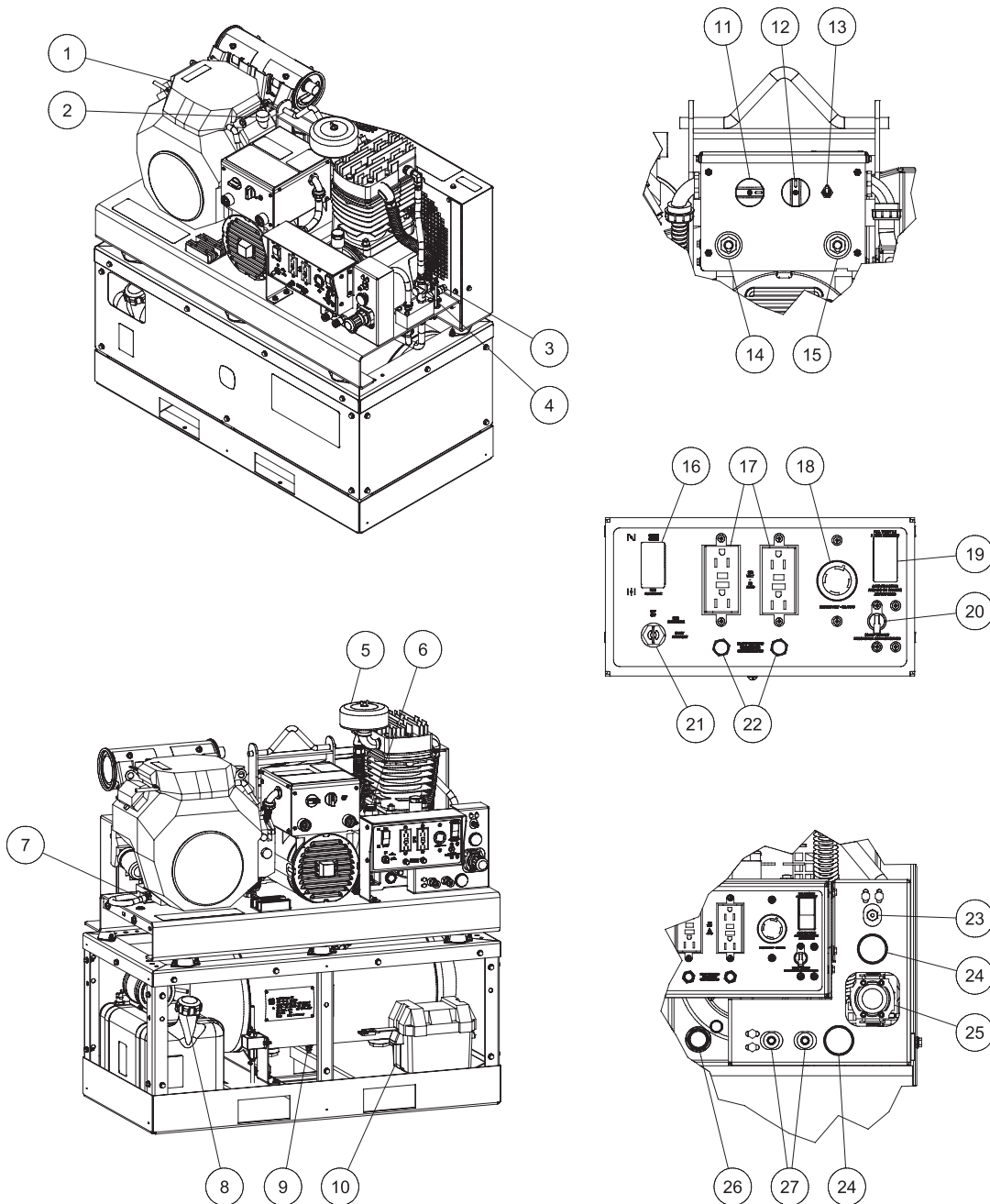


# Controls



- 1-Engine Air Cleaner
- 2-Engine Oil Fill
- 3-Pump Oil Drain
- 4-Pilot Valve
- 5-Pump Air Filter
- 6-Pump Oil Fill
- 7-Engine Oil Drain
- 8-Fuel Cap
- 9-Air Tank Drain
- 10-Battery

- 11-Weld Amperage Setting
- 12-Generator/Welder Selector Switch
- 13-Min/Max Weld Amperage Toggle Switch
- 14-Positive Welding Terminal
- 15-Negative Welding Terminal
- 16-Engine Choke
- 17-125V Receptacle
- 18-125/250V 20A Twist Lock

- 19-Idle Control Switch
- 20-20A Toggle Breaker
- 21-Engine Keyswitch
- 22-20A Push Button Breaker
- 23-Safety Relief Valve
- 24-Pressure Gauge
- 25-Regulator
- 26-Pump Oil Sight Glass
- 27-Quick Connect

# Installation

## INSTALLATION

Read safety warnings before setting-up the unit.

Ensure the oil level in the unit's pump is adequate. If low, add SAE-30W non-detergent oil.

### LOCATION:

In order to avoid damaging the unit, do not incline the unit transversely or longitudinally more than 10°.



**WARNING: RISK OF ASPHYXIATION! DO NOT OPERATE IN AN ENCLOSED AREA. USE THIS PRODUCT ONLY IN WELL VENTILATED AREAS! THE EXHAUST FROM THE ENGINE CONTAINS CARBON MONOXIDE, A POISONOUS, ODORLESS AND INVISIBLE GAS. BREATHING THE GAS CAN CAUSE SERIOUS INJURY, ILLNESS AND POSSIBLE DEATH.**



**WARNING: RISK OF EXPLOSION OR FIRE CAUSING SERIOUS INJURY OR DEATH! DO NOT ALLOW THE ENGINE OR MUFFLER TO COME IN CONTACT WITH FLAMMABLE VAPORS, COMBUSTIBLE DUST, GASES OR OTHER COMBUSTIBLE MATERIALS. A SPARK MAY CAUSE A FIRE.**

**WHEN USING THE UNIT FOR SPRAY PAINTING, PLACE THE UNIT AS FAR AWAY FROM THE WORK AREA AS POSSIBLE, USING EXTRA AIR HOSES IF NEEDED.**

Place unit at least 12 inches away from obstacles that may prevent proper ventilation. Do not place unit in an area:

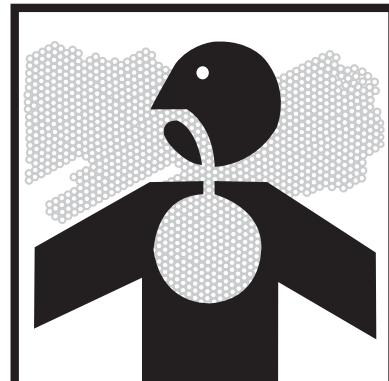
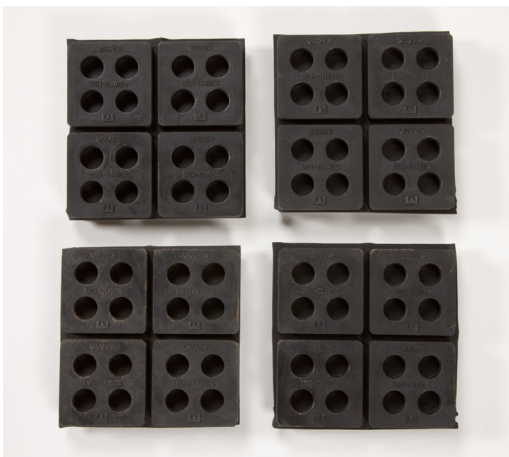
- where there is evidence of oil or gas leaks.
- where flammable gas vapors or materials may be present.
- where air temperatures fall below 32°F or exceed 104°F.
- where extremely dirty air or water could be drawn into the unit.

### SERVICE TRUCK INSTALLATION:

Installations may vary. Mounting should be done to a rigid frame member. Installer is responsible for securing the equipment in a safe manner.

### 30 GALLON UNITS:

Optional Hardware: IX-0001 (Isolators).



## GROUNDING INSTRUCTIONS

This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.



**DANGER: IMPROPER CONNECTION OF THE EQUIPMENT GROUNDING CONDUCTOR CAN RESULT IN A RISK OF ELECTROCUTION. CHECK WITH A QUALIFIED ELECTRICIAN OR SERVICE PERSON IF YOU ARE IN DOUBT AS TO WHETHER THE UNIT IS PROPERLY GROUNDED.**

The screw and ground terminal on the frame must always be used to connect the unit to a suitable ground source. The ground path should be made with #8 size wire. Connect the terminal of the ground wire between the star washers and screw then tighten the screw fully. Connect the other end of the wire securely to a suitable ground source.

The National Electric Code contains several practical ways in which to establish a good ground source. Examples given below illustrate a few of the ways in which a good ground source may be established.

A metal underground water pipe in direct contact with the earth for at least 10 feet can be used as a grounding source. If a pipe is unavailable, an 8 foot length of pipe or rod may be used as the ground source. The pipe should be 3/4 inch trade size or larger and the outer surface must be noncorrosive. If a steel or iron rod is used it should be at least 5/8 inch diameter and if a nonferrous rod is used it should be at least 1/2 inch diameter and be listed as material for grounding. Drive the rod or pipe to a depth of 8 feet. If a rock bottom is encountered less than 4 feet down, bury the rod or pipe in a trench. All electrical tools and appliances operated from this unit, must be properly grounded by use of a third wire or be "Double Insulated".

It is recommended to:

1. Use electrical devices with 3 prong power cords.
2. Use an extension cord with a 3 hole receptacle and a 3 prong plug at the opposite ends to ensure continuity of the ground protection from the unit to appliance.

Mi-T-M strongly recommends that all applicable federal, state and local regulations relating to grounding specifications be checked and followed.

### LINE TRANSFER SWITCH:

If this unit is used for standby service, it must have a transfer switch between the utility power service and the unit. The transfer switch not only prevents the utility power from feeding into the unit, but also prevents the unit from feeding out into the utility company's lines. This is intended to protect the serviceman who may be working on a damaged line.

**THIS INSTALLATION MUST BE DONE BY A LICENSED ELECTRICIAN AND ALL LOCAL CODES MUST BE FOLLOWED.**



**GASOLINE ENGINE**

Review "Risk of Fire or Explosion" before fueling. Read the engine manual accompanying this unit for correct engine start-up maintenance procedures. Read and understand the safety labels located on the unit.



**WARNING: RISK OF EXPLOSION OR FIRE CAUSING SERIOUS INJURY OR DEATH! DO NOT SMOKE WHILE FUELING!**

**DO NOT FILL FUEL TANK WHILE THE UNIT IS RUNNING OR HOT. ALLOW THE UNIT AND ENGINE TO COOL DOWN FOR TWO MINUTES BEFORE REFUELING.**

**DO NOT FILL FUEL TANK TO POINT OF OVERFLOWING. ALLOW APPROXIMATELY 1/4" OF TANK SPACE FOR FUEL EXPANSION.**

**DO NOT PLACE UNIT IN AN AREA WHERE FLAMMABLE GAS VAPORS MAY BE PRESENT. A SPARK COULD CAUSE AN EXPLOSION OR FIRE.**

**ALWAYS STORE FUEL AWAY FROM THE UNIT WHILE IT IS RUNNING OR HOT.**



**WARNING: RISK OF EXPLOSION OR FIRE CAUSING SERIOUS INJURY OR DEATH DO NOT ALLOW THE ENGINE OR MUFFLER TO COME IN CONTACT WITH FLAMMABLE VAPORS, COMBUSTIBLE DUST, GASES OR OTHER COMBUSTIBLE MATERIALS. A SPARK MAY CAUSE A FIRE.**

**WHEN USING THE UNIT FOR SPRAY PAINTING, PLACE THE UNIT AS FAR AWAY FROM THE WORK AREA AS POSSIBLE, USING EXTRA AIR HOSES IF NEEDED.**

A minimum of 87 octane fuel is recommended for use with this air compressor. Do not mix oil with gasoline.

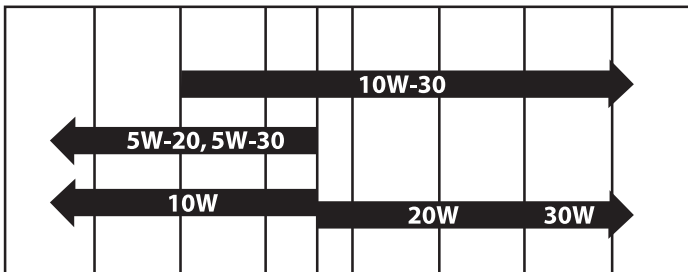
Use of clean, fresh, lead free gasoline is recommended. Leaded gasoline may be used if lead free is not available. Do not use gasoline containing methanol or alcohol.

Refer to the engine manual for all necessary maintenance and adjustments.

**ENGINE OIL**

Use oil viscosity based on the expected air temperature range during the period between oil changes.

TEMPERATURE CHART



°F -20 -10 20 32 40 60 80 100  
 °C -30 -20 -10 0 10 20 30 40

Use a high quality detergent oil with API classifications of SJ or higher.

Check oil level before each operation and ensure that it is maintained.

 **CAUTION: THIS ENGINE CRANKCASE IS NOT FILLED WITH OIL AT THE FACTORY, SO BE SURE TO FILL IT BEFORE OPERATING THE ENGINE.**

### ENGINE OIL CAPACITY

MODEL #	Liters	Quart	Ounces
AGW-SM14-30M	1.1	1.16	37.2
AGW-SH22-20M	2.0	2.1	67.6
AGW-SV14-30M	0.95	1.0	32

**NOTE:** *These engines are equipped with a “Low Oil” shut-off system for engine protection. If the engine fails to start, check engine crankcase for oil.*

To fill with oil:

1. Level the engine to ensure accurate inspection and to prevent overfilling.
2. Unscrew the oil gauge (Fig. 1), wipe the dipstick dry. Reinsert the oil gauge back into the oil fill gauge opening. Remove the oil gauge and check the oil level.
3. The oil level should be between the full and low marks on the dipstick. (Fig. 2)

**NOTE:** *When checking the oil be sure the engine is level.*

4. Fill with oil as required through the oil fill gauge opening.
5. Replace the oil gauge and screw in firmly.
6. Wipe up any spilled oil.


### FUELING

 **WARNING: EXPLOSIVE FUEL! GASOLINE IS EXTREMELY FLAMMABLE AND ITS VAPORS CAN EXPLODE IF IGNITED.**

**STORE GASOLINE ONLY IN APPROVED CONTAINERS, IN WELL VENTILATED, UNOCCUPIED BUILDINGS AND AWAY FROM SPARKS OR FLAMES.**

**DO NOT FILL THE FUEL TANK WHILE THE ENGINE IS HOT OR RUNNING, SINCE SPILLED FUEL COULD IGNITE IF IT COMES IN CONTACT WITH HOT PARTS OR SPARKS FROM IGNITION. DO NOT START THE ENGINE NEAR SPILLED FUEL.**

**NEVER USE GASOLINE AS A CLEANING AGENT.**

 **WARNING: DO NOT OVERFILL THE FUEL TANK, LEAVE ROOM FOR THE FUEL TO EXPAND.**

#### General Recommendations

- Purchase gasoline in small quantities and store in clean, approved containers.
- To minimize gum deposits in your fuel system and to insure

easy starting, do not use gasoline left over from the previous season.

- Do not add oil to the gasoline.

**Fuel Type**

- For best results use only clean, fresh, unleaded gasoline with a pump sticker octane rating of 87 or higher.
- Unleaded gasoline is recommended as it leaves less combustion chamber deposits.

**GASOLINE/ALCOHOL BLENDS:**

Gasohol (up to 10% ethyl alcohol, 90% unleaded gasoline by volume) is approved, as a fuel. Other gasoline/alcohol blends are not approved.

**GASOLINE/ETHER BLENDS:**

Methyl Tertiary Butyl Ether (MTBE) and unleaded gasoline blends (up to a maximum of 15% MTBE by volume) are approved as a fuel. Other gasoline/ether blends are not approved.

**BATTERY INSTALLATION**



**WARNING: SHOULD ONLY BE DONE BY AN AUTHORIZED DEALER.**

**BATTERY REPLACEMENT #**

32-0058

**HIGH ALTITUDE**

At high altitude, the standard carburetor air/fuel mixture will be too rich. Performance will decrease, and fuel consumption will increase. A very rich mixture will also foul the spark plug and cause hard starting. Operation at an altitude that differs from that at which this engine was certified, for extended periods of time, may increase emissions.

High altitude performance can be improved by specific modifications to the carburetor. If you always operate your unit at altitudes above 5,000 feet (1,500 meters), have your dealer perform this carburetor modification. This engine, when operated at high altitude with the carburetor modifications for high altitude use, will meet each emission standard throughout its useful life.

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

**NOTE:** *When the carburetor has been modified for high altitude operation, the air/fuel mixture will be too lean for low altitude use. Operation at altitudes below 5,000feet (1,500 meters) with a modified carburetor may cause the engine to overheat and result in serious engine damage.*

*For use at low altitudes, have your servicing dealer return the carburetor to original factory specifications.*

# Operation

## OPERATION

### PRE-OPERATION:

Check the engine oil level before starting. (See engine manual.) Fill the fuel tank according to the engine manual instruction.

Pump oil level should be checked before each use. Check the oil level indicator on the pump crankcase. Make certain the oil is in the center of the oil sight glass. If the level appears to be low, fill with SAE20 or 30 non-detergent pump oil.

Remove any moisture in the unit's air tank.



**WARNING: NEVER ATTEMPT TO OPEN THE AIR TANK DRAIN VALVE WHEN MORE THAN 10 PSI OF AIR PRESSURE IS IN THE AIR TANK!**

Remove excessive pressure with an air tool, then open the Air Tank Drain Valve in the bottom of the air tank. Close tightly when drained. Make sure the Engine Switch is in the "OFF" position. Make sure the Safety Relief Valve is working correctly. Make sure all guards and covers are in place and securely mounted.

### START-UP:

1. Read safety warnings before performing operation.
2. Make sure the unit is grounded. See Grounding Instructions.

*NOTE: Unplug all equipment from the power receptacles before starting the unit.*

3. Flip the toggle on top of the Pilot Valve to the upright position. This provides a load less start. The unit will unload and allow easier engine start-up.
4. Start the engine. (Refer to the Engine Manual accompanying this unit. On Honda engine units, the choke and key switch is located on the electric box panel.)
5. When the engine has run for 1-2 minutes, flip toggle back to the original position.
6. Set pressure by adjusting the Pressure Regulator counterclockwise for less pressure and clockwise for more pressure.
7. Ensure breakers are in on position.
8. Test the GFCI receptacle(s) on the unit. Push the test button. The reset button should pop out and there should be no power at the receptacle. Apply a test load or lamp to each receptacle to verify. IF THE RESET BUTTON DOES NOT POP OUT, DO NOT USE THE RECEPTACLES(S). SEE DEALER FOR SERVICE IMMEDIATELY.
9. If GFCI receptacle(s) test correctly, firmly push the reset button to restore power. A distinctive click should be heard or felt when this is complete. IF THE RECEPTACLE(S) DO NOT RESET PROPERLY, DO NOT USE THE RECEPTACLE(S). SEE DEALER FOR SERVICE IMMEDIATELY.
10. Turn idle control switch to AUTO-IDLE DOWN position. Loads can now be applied to unit.

### WELDING START-UP:

1. Remove all AC electrical loads from the unit.
2. Move GEN/WELD switch to WELD position.
3. Position selector switch min/max switch for amperage setting.



4. Move idle control to full throttle setting.
5. Check grounding.
6. Welding Cable Diagram (Selecting Weld Cable Sizes)\*:



**WARNING: DO NOT USE WORN, DAMAGED, UNDERSIZED, OR POORLY SPLICED CABLES. TURN OFF POWER BEFORE CONNECTING TO WELD OUTPUT TERMINALS.**

Weld Output Terminals							
Weld Cable Size** and Total Cable (Copper) Length in Weld Circuit Not Exceeding***							
Welding Amperes	100 ft (30 m) or Less	150 ft (45 m)	200 ft (60 m)	250 ft (70 m)	300 ft (90 m)	350 ft (105 m)	400 ft (120 m)
	100% Duty Cycle	10 – 100% Duty Cycle					
100	4 (20)	4 (20)	3 (30)	2 (35)	1 (50)	1/0 (60)	1/0 (60)
150	3 (30)	2 (35)	1 (50)	1 (50)	2/0 (70)	3/0 (95)	3/0 (95)
200	2 (35)	1 (50)	1/0 (60)	2/0 (70)	3/0 (95)	4/0 (120)	4/0 (120)

\* This chart is a general guideline and may not suit all applications. If cable overheats, use next size larger cable.

\*\*Weld cable size (AWG) is based on either a 4 volts or less drop or a current density of at least 300 circular mils per ampere ( ) = mm<sup>2</sup> for metric use.

\*\*\*For distances longer than those shown in this guide, call a representative at 800-553-9053.

**ELECTRODE CHART**

ELECTRODE	DIAMETER	AMPERAGE RANGE					
		50	100	150	200	250	300
6010 and 6011	3/32	■					
	1/8		■				
	5/32			■			
6011	3/16			■			
	1/16	■					
6013	5/64	■					
	3/32		■				
	1/8			■			
	5/32				■		
	3/16					■	
7014	3/32		■				
	1/8			■			
	5/32				■		
	3/16					■	
7018	3/32		■				
	1/8			■			
	5/32				■		
	3/16					■	

34-2670 081711



*NOTE: This engine is equipped with a "Low Oil" shutdown system for engine protection. The engine stops when the oil level gets too low. The engine will not restart without adding oil.*

*If you notice any unusual noise or vibration, stop the unit and refer to "Troubleshooting".*

#### **SHUTDOWN:**

1. Remove all load by turning off electrical appliances and unplugging electric/welding cords.
2. Move the Engine Switch to the "Off" position. (Refer to the Engine Manual accompanying this unit.)
3. Move the GEN/WELD switch to the GEN position.
4. Drain air from the air tanks by releasing air with an attached air tool or by pulling on the Safety Relief Valve.
5. Once the Air Tank Pressure Gauge registers under 10 pounds, open the drain valve under each air tank to drain any moisture.
6. Close fuel valve on unit or engine.
7. Wipe the unit clean and store in a safe, non-freezing, dry area.

*NOTE: Failure to allow the engine to cool at idle for two (2) minutes may result in damage to the generator.*

## **OPERATING CONTROLS**

### **IDLE CONTROL OPERATION:**

**Note: Idle control is disabled in welding mode. Idle control switch must be at full throttle setting.**

The idle control is factory installed. This electrical device is designed to let the engine run at fuel saving low idle speed when the generator or compressor are not loaded, and at full normal governed speed when a load is applied. The idle system overrides the engine governor to provide idle speed. When a load is applied, the electronic circuit reacts to de-energize the idle system so that the engine can resume full governed operating speed.

The idle control system controls the engine speed in the following manner:

1. With the idle control switch in the "FULL THROTTLE" position, start the engine.
2. After one or two minute warm up period, apply load and move the switch to the "IDLE CONTROL" position. The engine will throttle back to idle speed following a 5-8 second delay.
3. When a load is applied to the generator or air compressor tank pressure drops below regulated set point. The idle control system becomes de-energized. The engine then accelerates to normal operating speed, controlled by the governor.
4. When the load is removed or air compressor tank pressure is restored, the idle system becomes re-energized and throttles the engine back to idle speed after a 5-8 second delay.

*NOTE: While the engine is idling, the generator voltage is automatically reduced to reduce generator temperatures. The voltage will return to normal levels immediately upon the application of load.*

## OPERATION

### CABLE SIZE:

Equipment damage can result from low voltage. Therefore, to prevent excessive voltage drop between the unit and the equipment, the cable should be of adequate gauge for the length used. The cable selection chart gives the maximum cable lengths for various gauges of wire which can adequately carry the loads shown.

CURRENT IN AMPS	LOAD IN WATTS		MAXIMUM CABLE LENGTH (FEET)				
	120 VOLTS	240 VOLTS	#8 WIRE	#10 WIRE	#12 WIRE	#14 WIRE	#16 WIRE
2.5	300	600		1000	600	375	250
5	600	1200		500	300	200	125
7.5	900	1800		350	200	125	100
10	1200	2400		250	150	100	50
15	1800	3600		150	100	65	
20	2400	4800	175	125	75	50	
25	3000	6000	150	100	60		
30	3600	7200	125	65			
40	4800	9600	90				

### ELECTRIC MOTOR LOADS:

It is characteristic of common electric motors in normal operation to draw up to six times their running current while starting. This table may be used to estimate the watts required to start "CODE G" electric motors.



**CAUTION: IF AN ELECTRIC MOTOR FAILS TO START OR REACH RUNNING SPEED, TURN OFF THE APPLIANCE OR TOOL IMMEDIATELY TO AVOID EQUIPMENT DAMAGE. ALWAYS CHECK THE REQUIREMENTS OF THE TOOL OR APPLIANCE BEING USED COMPARED TO THE RATED OUTPUT OF THE UNIT.**

MOTOR (H.P.)	RUNNING WATTS	WATTS REQUIRED TO START MOTOR		
		REPULSION INDUCTION	CAPACITOR	SPLIT PHASE
1/8	275	600	850	1200
1/6	275	600	850	2050
1/4	400	850	1050	2400
1/3	450	975	1350	2700
1/2	600	1300	1800	3600
3/4	850	1900	2600	
1	1100	2500	3300	

# Troubleshooting

Symptom	Problem	Solution
<b>Engine will not start.</b>	Various engine problems.	Refer to the engine manual accompanying your unit.
<b>Noisy operation.</b>	Loose engine pulley or pump flywheel.	Tighten pulley and or flywheel.
	Lack of oil in the pump.	Add correct amount of oil. Check for bearing damage.
	Carbon deposits on pistons or valves.	Remove cylinder head and inspect. Clean or replace.
	Bearing, piston or connecting rod failure.	STOP THE UNIT! Contact customer service.
<b>Pressure drop in air tank or rapid pressure loss when the unit is shut off.</b>	Air leaks at connections.	Allow the unit to build pressure to the maximum allowed. Turn off and brush a soapy water solution onto all connections. Check connections for air bubbles. Tighten the connections where leaks are present.
	Air leak in air tank.	Air tank must be replaced. Do not attempt to repair air tank!
<b>Insufficient pressure at air tool or accessory.</b>	Defective Pilot Valve.	Clean or replace.
	Pressure Regulator not turned to high enough pressure or defective.	Adjust Pressure Regulator to proper setting or replace.
	Restricted air intake.	Clean or replace Air Intake Filter.
	Air leaks or restrictions.	Check for leaks and repair.
	Hose or hose connections are too small or long.	Replace with larger hose or connectors.
	Slipping belt.	Tighten or replace.
	The unit is not large enough for air requirement.	Check the accessory air requirement. If it is higher than the CFM or pressure supply to the air compressor, use a larger unit.
Restriction in Pilot Valve.	Clean or replace.	

Symptom	Problem	Solution
<b>Unit has no output.</b>	Circuit breakers tripped. Inadequate cord sets or extension cords.	Reset circuit breakers. Check cord sets or extension cords capabilities.
<b>Air leaks from Safety Relief Valve.</b>	Possible defective Safety Relief Valves.	Operate Safety Relief Valve manually by pulling on ring. If it still leaks, it should be replaced.
<b>Air leaks at pump.</b>	Excessive air tank pressure. Defective gaskets.	Clean, reset or replace Pilot Valve. Tighten bolts on compressor head to proper torque or replace gaskets.
<b>Air blowing from Air Intake Filter.</b>	Defective inlet (reed) valve.	Contact your Customer Service Center.
<b>Moisture in discharge air.</b>	Condensation in air tank caused by high level of atmospheric humidity or the unit is not run long enough.	Run the unit a minimum of one hour to prevent condensation buildup. Drain air tank more often in humid weather and use an air line filter.
<b>Excessive oil consumption or oil in hose.</b>	Restricted Air Intake Filter.  The unit on unlevel surface.  Crankcase overfilled with oil.  Wrong viscosity.  Plugged crankcase breather. Oil leaks.  Worn piston rings or scored cylinder.	Clean or replace.  Do not incline the unit more than 10° in any direction while running.  Drain oil. Refill to proper level with SAE-30W non-detergent oil.  Drain oil. Refill to proper level with SAE-30W non-detergent oil.  Clean or replace. Tighten bolts on compressor to proper torque or replace gaskets.  Contact your Customer Service Center.
<b>Oil has milky appearance.</b>	Water in oil due to condensation.	Change oil and move air compressor to a less humid environment.
<b>Unit has no output.</b>	Inadequate cord sets or extension cords.	Check cord sets or extension cords capabilities in section Maintenance; Cable Size in this manual. Consult your Customer Service Center.

# Maintenance

## MAINTENANCE CHART:

To ensure satisfactory operation over an extended period of time, an engine requires normal maintenance at regular intervals. The Periodic Maintenance Chart below shows periodic inspection and maintenance items and suitable intervals. The bullet mark designates that the corresponding item should be performed at that interval.

*NOTE: Some adjustments require the use of special tools or other equipment. An electronic tachometer will facilitate setting idle and running speeds.*

Procedure	Daily	Weekly	Monthly	100 Hours	200 Hours	Before Storage
Check Pump Oil Level	x					
Check Engine Oil Level	x					
Oil Leak Inspection	x					
Check Engine Air Filter	x					
Drain Condensation in Air Tank (s)	x					
Inspect Guards/Covers	x					
Check for Unusual Noise/Vibration	x					
Check for Air Leaks	x					
Check cylinder and head fins for dust and dirt	x					
Check battery electrolyte level	x					
Check fuel lines (replace if necessary)	x					
Clean Exterior of Compressor		x				
Inspect Air Filter		x				
Inspect Belt			x			
Check Safety Relief Valve			x			
Change engine oil (**)				x		
Clean fuel filter				x		
Clean dust and dirt from cylinder and cylinder head fins (***)				x		
Change Pump Oil (*)					x	
Replace Air Filter					x	
Check Engine Spark Plug					x	
Add fuel stabilizer						x
Run unit dry						x

• The pump oil must be changed after the first 50 hours of operation and every 200 hours or 3 months, whichever comes first.

•• The engine oil must be changed after the first 5 hours of operation and every 50 hours or 3 months, whichever comes first.

••• Service more frequently under dusty conditions.

Every 2 years, an Authorized Service Technician should check the safety valve, intake valves and delivery valves.

## MAINTENANCE

Read the instruction manual before performing maintenance.

Keep all air vents clear.

Keep the unit clean.

DO NOT spray with water.

Periodically check all fasteners and tighten, see the periodic maintenance chart.

The following procedures must be performed when stopping the unit for maintenance or service:

1. Turn off the unit.
2. Disconnect spark plug wire from engine.
3. Open all drains.
4. Wait for the unit to cool before starting service.

### ENGINE:

The engine for this unit is governed to operate at speeds close to 3600 RPM (60Hz) throughout the operating load range.



**WARNING: DO NOT TAMPER WITH THE GOVERNOR MECHANISM, CHANGE THE SETTING EXPERIMENTALLY, OR PUSH THE THROTTLE OPEN IN AN ATTEMPT TO GENERATE MORE ELECTRICAL CURRENT; EQUIPMENT DAMAGE OR PERSONAL INJURY MAY RESULT.**

**GOVERNOR SPEED ADJUSTMENT SHOULD BE MADE ONLY BY A SERVICING DEALER.**

### CHECKING ENGINE OIL:

Check oil level before each operation and ensure that it is maintained per engine manual.

### CHANGING ENGINE OIL:

Change oil after the first 25 hours of operation. Thereafter it should be changed every 50 hours.

1. Make sure the unit is on level ground. Run the engine to warm the oil.
2. Stop the engine.
3. Remove the oil drain plug. (See Fig. 1)



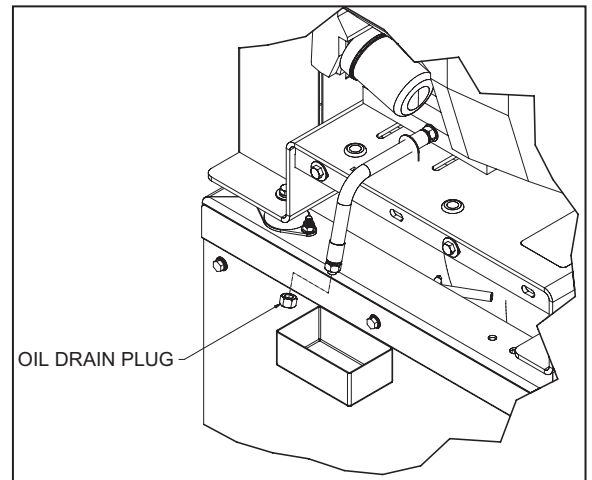
**CAUTION: OIL BEING DRAINED MAY BE HOT. TO REDUCE THE RISK OF BURN INJURY, HANDLE WITH CARE. DISPOSE OF USED OIL PROPERLY.**

4. Drain oil while engine is warm, into a suitable container.
5. Reinstall the oil drain plug.
6. Remove oil gauge and refill with new oil. (Fig. 2)
7. Check the oil level as instructed in the engine manual.
8. Wipe up any spilled oil.

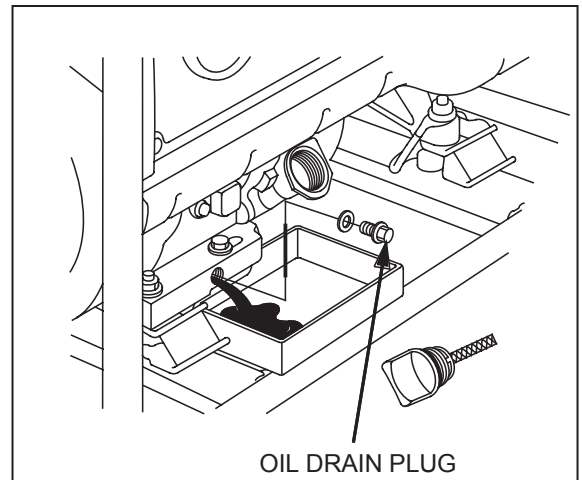
### AIR CLEANER:



**WARNING: RISK OF FIRE OR EXPLOSION. DO NOT USE GASOLINE OR LOW FLASH POINT SOLVENTS TO CLEAN THE ELEMENT. CLEAN THE ELEMENT**



(Fig. 1 Honda)



(Fig. 1 MI-T-M)

**IN A WELL VENTILATED AREA. ENSURE THAT NO SPARKS OR FLAMES ARE NEAR THE WORKING AREA, THIS INCLUDES ANY APPLIANCE WITH A PILOT LIGHT.**



**CAUTION: NEVER RUN THE ENGINE WITHOUT THE AIR FILTER, SERIOUS DANGER CAN RESULT.**

Check the air cleaner daily or before starting the engine. Check for and correct heavy buildup of dirt and debris along with loose or damaged components.

1. Unscrew the air cleaner cover and remove the elements.
2. Clean the element:

**PAPER AIR CLEANER ELEMENT:** Do not wash the paper element or use pressurized air, as this will damage the element. Clean by gently tapping the element to remove dust. Replace the element if damaged, bent or extremely dirty. Handle new element carefully; do not use if the sealing surfaces are bent or damaged.

**NOTE: Replace the paper element every 100 hours (more often under extremely dusty conditions.)**

3. Reinstall the paper air cleaner element. Close air cleaner cover and screw shut.

## GENERATOR MAINTENANCE

### EVAPORATIVE EMISSION COMPONENTS:

The unit you have purchased includes the following components that are in compliance with California Air Resources Board Evaporative Emission Standards;

1. Fuel Hose
2. Fuel Hose Fittings
3. Fuel Tank and Cap
4. Carbon Canister and Mounting Brackets

These components should be inspected on a daily basis for cracks, leaks, and abnormal wear. If cracking, leaks or abnormal wear has occurred, the components should be replaced immediately.

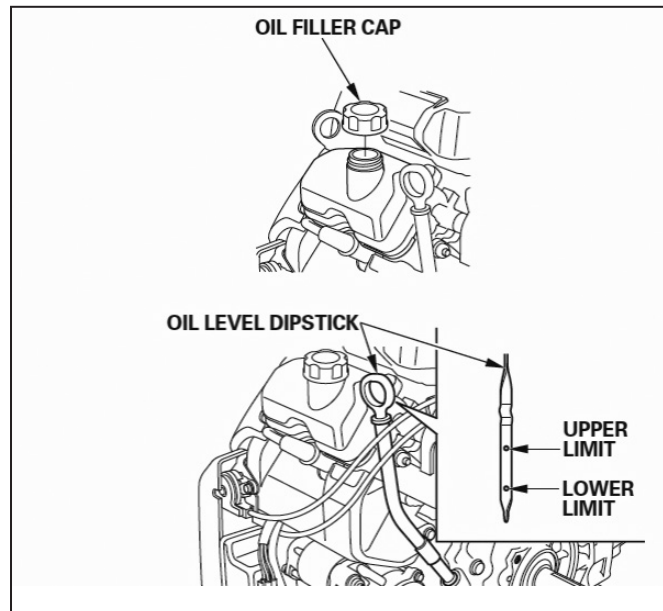
### IDLE CONTROL ADJUSTMENT:

**NOTE: The automatic idle speed is set between 2640 and 2940 RPM.**

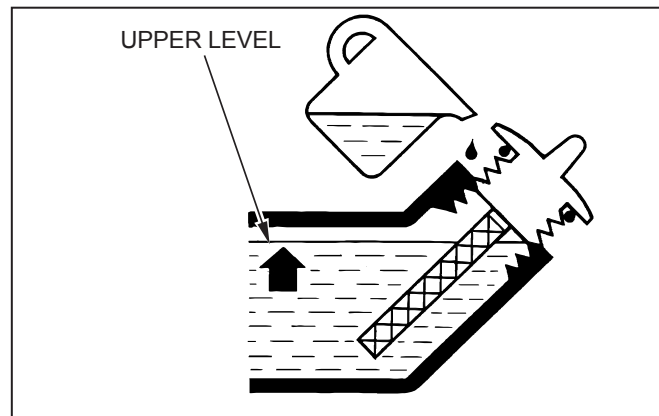
The idle speed has been pre-set at the factory and should rarely require readjustment. We recommend that all adjustments of this nature be made by a Customer Service Representative.

Erratic idle operation of the engine usually indicates a need for carburetor adjustment to provide a smooth idle. The idle control will not function properly when the idle speed is below the recommended limits or the carburetor is improperly adjusted.

**HAVE THE UNIT SERVICED BY AN AUTHORIZED CUSTOMER SERVICE REPRESENTATIVE.**



(Fig. 2 Honda)



(Fig. 2 MI-T-M)



**GFCI TEST RECORDS:**

As with any other safety devices, the GFCIs supplied with these generators must be checked every month to insure that they are functioning properly. To test the GFCIs, follow the instructions and then enter the date of the test below.

1. With the generator running and the idle control switch in the "START" position, push the "TEST" button. The "RESET" button should pop out. This should result in the power being off at both outlets of the duplex receptacle. Verify this by plugging a test lamp into each outlet.



**WARNING: IF THE RESET BUTTON DOES NOT POP OUT, DO NOT USE THE RECEPTACLE(S). SEE AUTHORIZED CUSTOMER SERVICE REPRESENTATIVE FOR SERVICE IMMEDIATELY.**

2. If the GFCI test correctly, restore power by FIRMLY pushing the "RESET" button back in until you hear or feel a distinctive "click". IF THE GFCI FAILS TO RESET PROPERLY, DO NOT USE EITHER OUTLET OF THE DUPLEX RECEPTACLE. Have the unit serviced by an authorized Customer Service Representative immediately.
3. High vibration or severe mechanical shock loads may cause the GFCIs to trip. IF EITHER GFCI TRIPS BY ITSELF AT ANY TIME, reset it and perform test procedures 1 and 2.
4. Repeat steps 1-3 for the second GFCI.



**WARNING: ALTHOUGH THE ABOVE TEST PROCEDURES WILL INDICATE PROPER GFCI OPERATION ON AN UN-GROUNDED OR IMPROPERLY GROUNDED GENERATOR, THE GENERATOR MUST STILL BE GROUNDED PER THE GROUNDING INSTRUCTIONS LISTED ON PAGE 14 FOR THE GFCI TO FUNCTION PROPERLY AND PROTECT THE USER FROM ELECTRICAL FAULTS.**

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.

**NOTE:** Situations exist where a GFCI will not afford any protection against the hazards of electrical shock.  
*EXAMPLE: if a person touches two or more conductors from a damaged cord set and is not in direct contact with the ground, he or she may receive a shock. Since there is no path to ground for a ground fault current to flow through, the GFCI will not operate and serious injury may result.*  
 The GFCI are merely an added safety feature. There are no substitutes for good safety precautions, correct electrical practices and proper maintenance of cords, equipment and connections.

## MAINTENANCE

### CLEANING AND GAPPING SPARK PLUG:

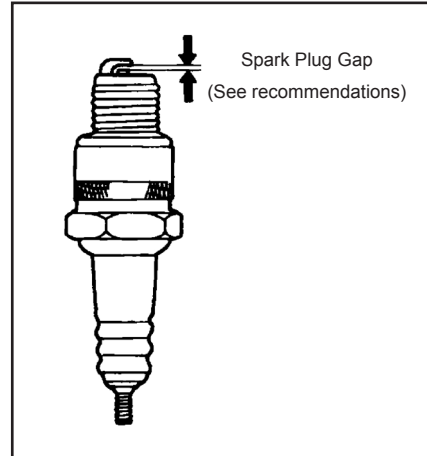
If the plug is contaminated with carbon, remove it using a plug cleaner or wire brush.

Check the spark plug gap and reset it if necessary. The spark plug gaps are listed below. To change the gap, bend the side-electrode only, using a spark plug tool. (Fig. 3)

Install and tighten the spark plug. Connect the spark plug lead.

### RECOMMENDED SPARK PLUG:

Engine	MI-T-M	Honda
Spark Plug	NGK BPR6ES	ZFR5F
Spark Plug Gap	0.7 - 0.8 mm (0.03 in.)	0.7 - 0.8 mm (0.03 in.)
Torque - New	8.7-10.9 ft-lb	1/2 turn to compress washer
Torque - Retighten	16.6-19.5 ft-lb	1/8 to 1/4 turn to compress washer



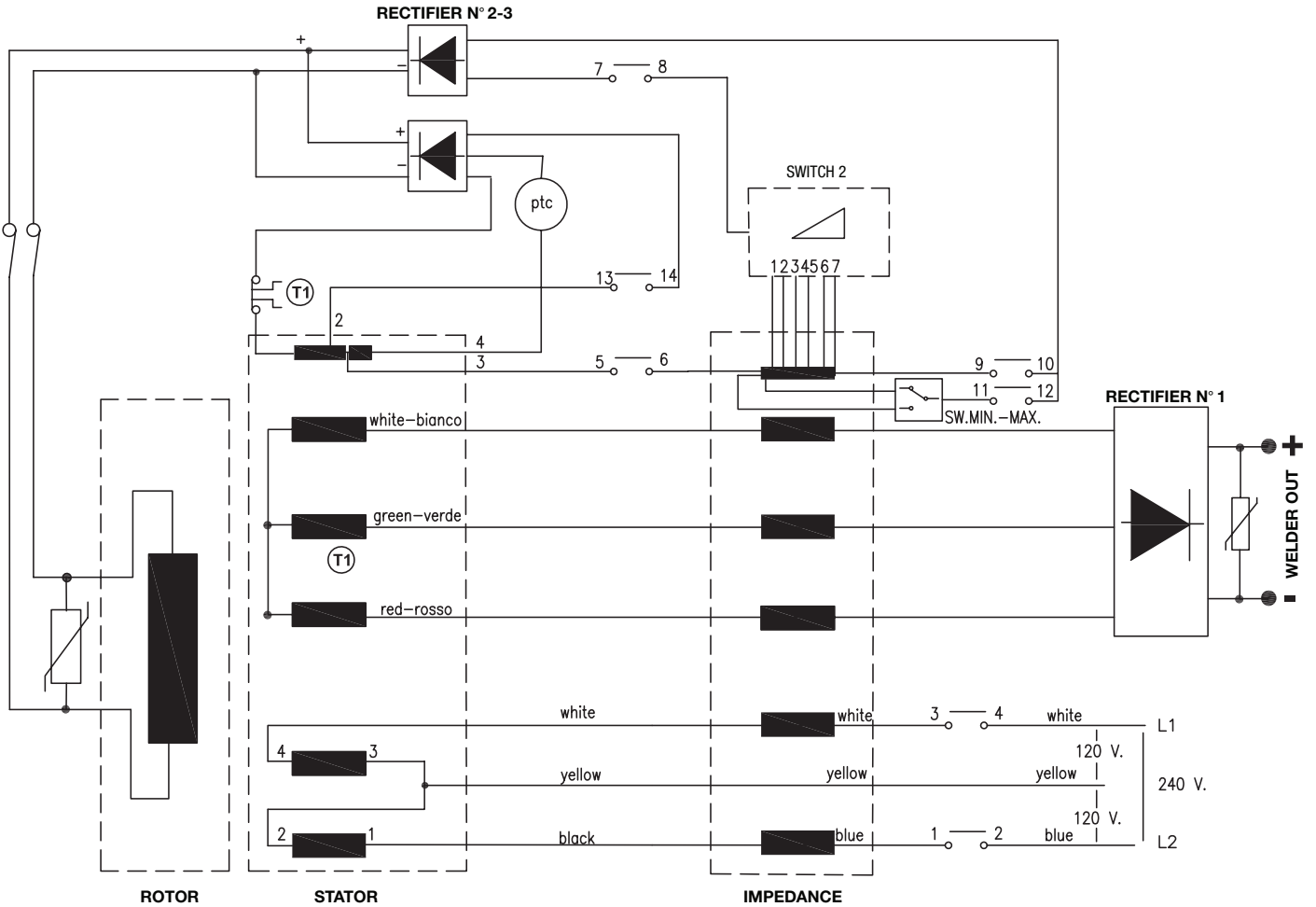
(Fig. 3)

### BELT TENSION ADJUSTMENT:

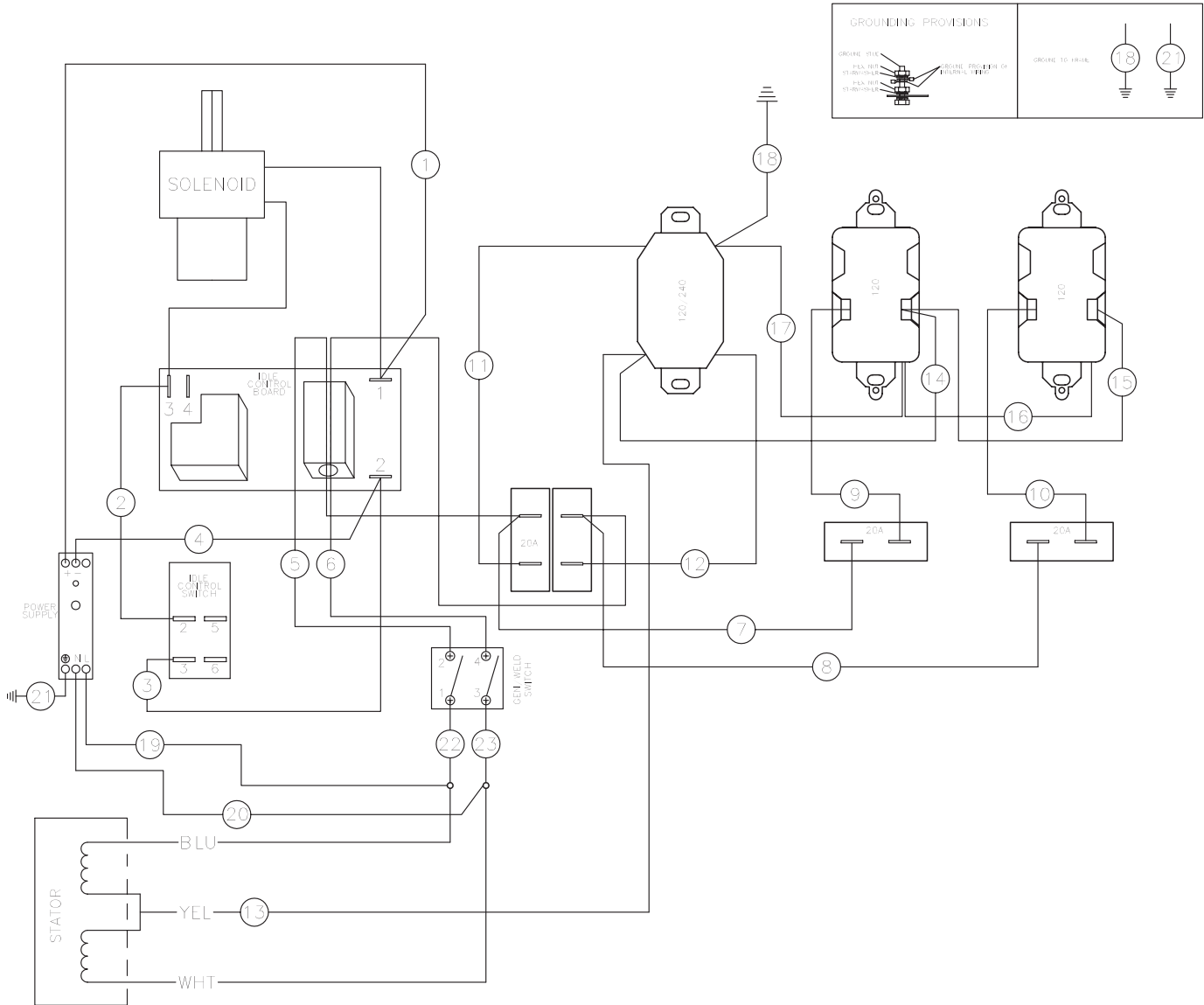
To maintain peak performance of your unit, it may be necessary to adjust the belt tension on occasion. Follow the procedure outlined below:

1. Remove the beltguard and loosen the two nuts on each side of the pump or engine. There are a total of 4 nuts.
2. Turn the cap screw clockwise until a 1/2 inch belt deflection is noticed between the pulleys.
3. Tighten the side nuts.
4. Put a straight edge across both pulleys. If necessary, loosen one set of pulley screws and adjust in or out to properly align. Tighten the pulley screws and check the tension again.
5. Replace the beltguard and tighten the fasteners securely.

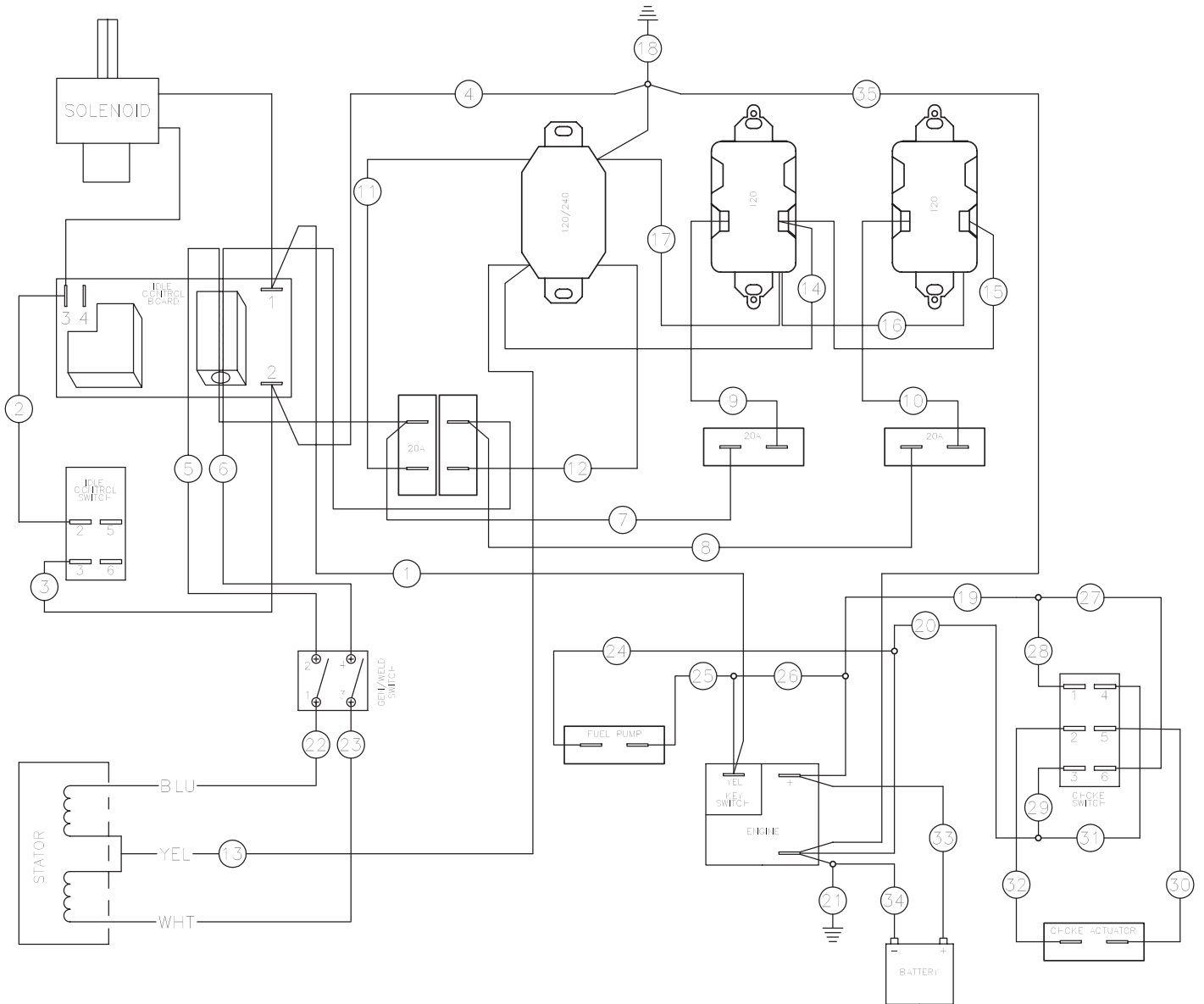
WIRING SCHEMATIC



WIRING DIAGRAM AGW-SM14-30M / AGW-SV14-30M



WIRING DIAGRAM AGW-SH22-20M



# Storage

## STORING UNIT

### SHORT TERM (1-6 MONTHS):

1. Add gasoline conditioner & stabilizer at the specified concentration.
2. Run the unit for two (2) minutes to ensure the mixed fuel is in the entire fuel system. Close the fuel valve and run the unit until it stops.
3. Remove the spark plug, pour 1-2 teaspoons (5-10cc) of engine oil into the cylinder, slowly pull the starter handle 2 or 3 times, reinstall the spark plug and tighten securely.
4. Clean the exterior surface of the unit and apply a rust inhibitor.
5. Store the unit in a dry, well ventilated place.

### LONG TERM (MORE THAN 6 MONTHS):

1. Add gasoline conditioner & stabilizer at the specified concentration.
2. Run the unit until the fuel tank and carburetor are dry. As the engine is beginning to die, move the choke lever to the choke position.

*NOTE: Turn off the idle control to decrease the run time.*

3. Remove the spark plug, pour 1-2 teaspoons (5-10cc) of engine oil into the cylinder, slowly pull the starter handle 2 or 3 times, reinstall the spark plug and tighten securely.
4. Clean the exterior surface of the unit and apply a rust inhibitor.
5. Store the unit in a dry, well ventilated place.



**WARNING: FUEL SHOULD BE DRAINED IN A WELL VENTILATED AREA AND STORED IN A CONTAINER APPROVED FOR GASOLINE.**

# Specifications

## SPECIFICATIONS

ITEM	SPECIFICATION		
	AGW-SM14 / SV14-30M	AGW-SM14 / SV14-B	AGW-SH22-20M
	Mi-T-M	Mi-T-M	Honda
Model	R420E / 25V3	R420E / 25V3	GX690
Engine Oil	37.2 oz. / 32 oz	37.2 oz. / 32 oz	67.6 oz.
Max Watts w/o Compressor	5000	5000	5000
Cont. Watts w/o Compressor	4500	4500	4500
Cont. Watts w/ Compressor	@100 PSI 3000	@100 PSI 3000	@100 PSI 4500
Cont. Watts w/ Compressor	@150 PSI 2500	@150 PSI 2500	@150 PSI 4500
Rated Voltage	120 V	120 V	120 V
Frequency	60 Hz	60 Hz	60 Hz
Compressor Pump	2 stage	2 stage	2 stage
Pump Oil	24.7 oz	24.7 oz	48 oz
Air Tank	30 gallons	-	20 gallons
Max. Pressure	175 PSI	175 PSI	175 PSI

## RECORD SERIAL NUMBER

Write your model number, machine serial number and date of purchase in the spaces provided below. Your dealer needs this information when ordering parts.

Model No. \_\_\_\_\_

Machine Serial No. \_\_\_\_\_

\_\_\_\_\_

Date of Purchase \_\_\_\_\_

(To be filled in by purchaser)





## STATEMENT OF WARRANTY

Mi-T-M warrants all parts, (except those referred to below), of your new unit to be free from defects in materials and workmanship during the following periods:

For Two (2) years from the date of original purchase:

Compressor Pump	Plumbing
Alternator	Tank Assembly

For Six (6) months from date of original purchase:

Pressure Switch	Regulator
Check Valve	Pilot Valve
Copper/stainless steel line	

For Ninety (90) days from the date of original purchase:

Pressure Gauges	Safety Relief Valves
Drain Valves	

Defective parts not subject to normal wear and tear will be repaired or replaced at our option during the warranty period. In any event, reimbursement is limited to the purchase price paid.

### Exclusions

1. Engine is covered under separate warranty by its respective manufacturer and is subject to the terms set forth therein.
2. Normal wear parts:

Isolators	Air Filter
-----------	------------
3. This warranty does not cover parts damaged due to normal wear, abnormal conditions, misapplication, misuse, accidents, operation at other than recommended speeds, pressures or temperature, improper storage or freight damage. Parts damaged or worn by operation in dusty environments are not warranted. Failure to follow recommended operating and maintenance procedures also voids warranty.
4. Labor charges, loss or damage resulting from improper operation, maintenance (other than routine air tank draining and oil changes, if applicable) or repairs made by persons other than a Authorized Service Center.
5. The use of other than Genuine Repair Parts will void warranty. Parts returned, prepaid to our factory or to an Authorized Service Center will be inspected and replaced free of charge if found to be defective and subject to warranty. Under no circumstances shall the manufacturer bear any responsibility for loss of use of the unit, loss of time or rental, inconvenience, commercial loss or consequential damages. There are no warranties which extend beyond the description of the face hereof.

For Service or Warranty Consideration, contact  
Mi-T-M® Corporation, 50 Mi-T-M Drive, Peosta, IA 52068  
563-556-7484 / 800-553-9053 / Fax 563-556-1235  
Monday - Friday 8:00 a.m. - 5:00 p.m. CST

## **CALIFORNIA EVAPORATIVE EMISSIONS CONTROL WARRANTY STATEMENT YOUR WARRANTY RIGHTS AND OBLIGATIONS**

The California Air Resources Board and Mi-T-M are pleased to explain the emission control system's warranty on your 2020/2021 small off-road engine/equipment (SORE). In California, new equipment that use small off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. Mi-T-M must warrant the evaporative emissions control system (EECS) on your SOREs for the period listed below provided there has been no abuse, neglect or improper maintenance of your equipment leading to the failure of the evaporative emission control system.

Your EECS may include parts such as the carburetor, fuel tanks, fuel lines (for liquid fuel and fuel vapors), fuel caps, valves, canisters, filters, clamps, connectors, and other associated components. Where warrantable conditions exist, Mi-T-M will repair your small off-road engine at no cost to you including diagnosis, parts and labor.

### **MANUFACTURER'S WARRANTY COVERAGE:**

This EECS is warranted for two years. If any evaporative emissions-related part on your small off-road engine/equipment is defective, the part will be repaired or replaced by Mi-T-M.

### **OWNER'S WARRANTY RESPONSIBILITIES:**

-As the SORE owner, you are responsible for performance of the required maintenance listed in your owner's manual. Mi-T-M recommends that you retain all receipts covering maintenance on your SORE, but Mi-T-M cannot deny warranty coverage solely for the lack of receipts.

-As the SORE owner, you should be aware that Mi-T-M may deny you warranty coverage if your SORE or a part has failed due to abuse, neglect, or improper maintenance or unapproved modifications.

-You are responsible for presenting your SORE to distribution center or service center authorized by Mi-T-M Corporation, 50 Mi-T-M Drive, Peosta, IA 52068 (herein Mi-T-M) as soon as the problem exists. The warranty repairs shall be completed in a reasonable amount of time, not to exceed 30 days.

If you have a question regarding your warranty coverage, you should contact Mi-T-M Customer Service Department at 1-800-553-9053 or by emailing us at [corp@mitm.com](mailto:corp@mitm.com).

## **GENERAL EMISSIONS WARRANTY COVERAGE - CALIFORNIA ONLY -**

Mi-T-M warrants to the ultimate purchaser and each subsequent purchaser that the SORE (1) has been designed, built and equipped so as to conform with all applicable regulations; and (2) is free from defects in materials and workmanship that cause the failure of a warranted part to conform with those regulations as may be applicable to the terms and conditions stated below.

- (a) The warranty period begins on the date the engine is delivered to an ultimate purchaser or first placed into service. The warranty period is two years.
- (b) Subject to certain conditions and exclusions as stated below, the warranty on emissions related parts is as follows:
  - (1) Any warranted part that is not scheduled for replacement as required maintenance in your owner's manual is warranted for the warranty period stated above. If the part fails during the period of warranty coverage, the part will be repaired or replaced by Mi-T-M according to subsection (4) below. Any such part repaired or replaced under warranty will be warranted for the remainder of the period.
  - (2) Any warranted part that is scheduled only for regular inspection in your owner's manual is warranted for the warranty period stated above. Any such part repaired or replaced under warranty will be warranted for the remaining warranty period.
  - (3) Any warranted part that is scheduled for replacement as required maintenance in your owner's manual is warranted for the period of time before the first scheduled replacement date for that part. If the part fails before the first scheduled replacement, the part will be repaired or replaced by Mi-T-M according to subsection (4) below. Any such part repaired or replaced under warranty will be warranted for the remainder of the period prior to the first scheduled replacement point for the part.
  - (4) Repair or replacement of any warranted part under the warranty provisions herein must be performed at a warranty station at no charge to the owner.
  - (5) Notwithstanding the provisions herein, warranty services or repair will be provided at all of our distribution centers that are franchised to service the subject engines.
  - (6) The owner must not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at a warranty station.
  - (7) Throughout the engine warranty period stated above, Mi-T-M will maintain a supply of warranted parts sufficient to meet the expected demand for such parts.
  - (8) Any replacement parts that do not increase the exhaust or evaporative emissions of the engine or evaporative emission control system must be used in the performance of any warranty maintenance or repairs and must be provided without charge to the owner. Such use will not reduce the warranty obligations of Mi-T-M.
  - (9) Add-on or modified parts that are not exempted by the Air Resources Board may not be used. The use of any non-exempted add-on or modified parts by the ultimate purchaser will be grounds for disallowing a warranty claims. Mi-T-M will not be liable to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.

(10) Mi-T-M shall provide any documents that describe that Mi-T-M warranty procedures or policies within five working days of request by the Executive Officer.

(c) WARRANTED PARTS:

The repair or replacement of any warranted part otherwise eligible for warranty coverage may be excluded from such warranty coverage if Mi-T-M demonstrates that the engine has been abused, neglected, or improperly maintained, and that such abuse, neglect, or improper maintenance was the direct cause of the need for repair or replacement of the part. That notwithstanding, any adjustment of a component that has a factory installed, and properly operating, adjustment limiting device is still eligible for warranty coverage. The following emissions warranty parts list are covered.

- (1) Fuel Tank\*
- (2) Fuel Cap
- (3) Fuel Lines (for liquid fuel and fuel vapors)
- (4) Fuel Line Fittings
- (5) Clamps\*
- (6) Pressure Relief Valves\*
- (7) Control Valves\*
- (8) Control Solenoids\*
- (9) Electronic Controls\*
- (10) Vacuum Control Diaphragms\*
- (11) Control Cables\*
- (12) Control Linkages\*
- (13) Purge Valves\*
- (14) Gaskets\*
- (15) Liquid/Vapor Separator
- (16) Carbon Canister
- (17) Canister Mounting Brackets
- (18) Carburetor Purge Port Connector

\* Note: As they relate to the evaporative emission control system.