

# TITAN INDUSTRIAL

P.O.Box 791, Travelers Rest, S.C. 29690  
Phone 864-834-7212  
Service/Replacement Parts 800-845-4141



## OWNER'S MANUAL MODEL TG 7000R Industrial Generator

The Emission Control System for this generator is warranted for standards set by the Environment Protection Agency.

### **IMPORTANT!**

It is extremely important to read and understand the entire contents of this Owner's Manual for the Titan Industrial Model TG 7000R before attempting to operate the generator. This is a gas engine powered, industrial strength generating unit of electrical power. The gas engine and the generator are both potentially extremely hazardous and could cause physical injury or even death if improperly used.

### **WARNING!**

**Do Not Operate Equipment until reading & understanding Owner's Manual!**  
Disconnect all loads before starting or stopping generator.  
Allow to run for a few minutes with no load before stopping.

**IMPORTANT !  
READ FIRST**

# **TITAN INDUSTRIAL**

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TITAN INDUSTRIAL shall not be responsible for any consequences resulting from improper use of this equipment. The operator is required to read the entire contents of this manual before attempting to operate the unit. If the operator does not completely understand the instructions and all of the hazards of operating this unit after reading this manual, he must call the factory at 1-800-845-4141 to answer these questions to his complete satisfaction before proceeding.

**READ AND COMPLETELY UNDERSTAND** entire contents of this Owner's Manual and become familiar with the unit before attempting to start using this equipment! It is your responsibility to know its applications, limitations, and hazards! Call the factory at 1-800-845-4141 with any questions.

**FOR OUTDOOR USE ONLY!** Never use this unit inside any enclosure including the generator compartment of a recreation vehicle (RV) or inside any building. No modifications will eliminate the danger of possible carbon monoxide poisoning, fire, or explosion.

**TWO (2) FEET OF CLEARANCE** on all sides is required even while using outdoors.

**GENERATOR MUST BE ISOLATED FROM ELECTRIC UTILITY** by opening the electrical systems main circuit breaker or main switch if the generator is used for backup power. **FAILURE TO ISOLATE THIS GENERATOR FROM THE POWER UTILITY MAY RESULT IN INJURY OR DEATH TO ELECTRIC UTILITY WORKERS AND CAUSE DAMAGE TO THE GENERATOR. CONSULT YOUR LOCAL POWER COMPANY FOR RULES AND REGULATIONS.**

This Manual contains information to ensure your safety and to prevent any equipment problems. Various terms such as 'WARNING', 'CAUTION', 'DANGER', 'IMPORTANT', and the SYMBOL  are all used to signify information that is essential for the operator of this equipment to understand and to practice!

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P.O. Box 791  
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864-834-7212  
Toll Free 1-888-828-8126  
Replacement Parts 1-800-845-4141

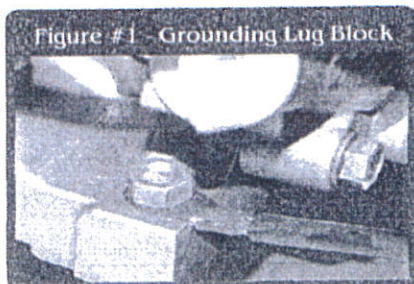
## MODEL TG 7000R GAS POWERED GENERATOR

Model	TG 7000R
Voltage	120/240
Current	35/17.5
Frequency	60Hz
AC Output	6.0 KW

### DESCRIPTION

THE TITAN INDUSTRIAL INC. MODEL TG 7000R is a gas engine driven, revolving field, alternating current (AC) generator designed to supply electrical power for compatible electrical tools, motors, appliances, and lighting (see wattage reference guide on page 10).

The Model TG 7000R operates at 120 volt and/or 240 volt, single phase, 60 Hz and will operate devices that require up to 6000 watts (6.0 KW) up to 35 Amps at 120 Volts or 17.5 Amps at 240 Volts.



### CONNECTING LOADS

The Model TG 7000R operates at 120 volt and/or 240 volt, single phase, 60 Hz and will operate devices that require up to 6000 watts up to 35 Amps at 120 Volts or 17.5 Amps at 240 Volts.

Add up the Watts of all devices you connect to the TITAN INDUSTRIAL GENERATOR at one time. Do not exceed 6200 Watts on TITAN INDUSTRIAL Generator Model TG 7000R (see wattage reference guide).

The rated Watts of most electrical devices can be found on its nameplate. The rated Watts of lights can be taken from the light bulbs. In cases where only Volts and Amps are shown on the nameplate, simply multiply Volts by the Amps to get Watts (Volts X Amps = Watts).

Some electric motors require about three times the rated Watts of power for start-up. This surge of power is required for only a few seconds. Be sure to allow for this high starting wattage when selecting electrical devices to connect to the generator.

First, figure the watts needed to start the largest motor. Add to that figure the running watts of all other connected loads.

Please see the Wattage Reference Guide.

It provides an estimated approximation of running watts, to help determine which devices to select to connect to the generator.

**CAUTION!** Do not tamper with engine governed speed. The TITAN INDUSTRIAL GENERATOR supplies correct rated frequency and voltage when running at the proper governed speed. Incorrect frequency and/or voltage could damage connected electrical devices.

### GROUNDING THE GENERATOR

It is required by The National Electrical Code to have the frame and all external conductive parts of the generator connected to an earth ground. Proper grounding also satisfies most local electrical codes.

Connect a No. 12 AWG standard copper wire to the Grounding Lug Block (See Figure 1). The grounding lug can be found inside the rear access panel near the oil cap. Connect the other end of the wire to an earth driven copper or brass grounding rod (electrode).

**CAUTION!** Do not connect ground to a preexisting ground rod, water pipe, or building frame.

Consult with an electrician in your area because local codes vary. Properly grounding the generator helps prevent electrical shock if a ground fault condition exists in the generator or in connected electrical devices. This will also help to dissipate static electricity resulting from ungrounded devices.

## → SAFETY ←

This generator was designed for specific applications. **DO NOT** attempt to modify the unit in any way or use it for any application that it was not designed to do. Ask the dealer or contact the factory if you have any questions concerning the generator's application.

Warnings and cautions in this manual and on decals and tags on the unit are not all inclusive. It would be impossible to anticipate every circumstance that might involve a hazard. Handling, operating, or servicing this unit by any procedure not recommended by the manufacturer may render this equipment unsafe and may pose a threat to you or to others.

- ⚡ The generator produces a very powerful voltage that can cause extremely dangerous electrical shock. Avoid contact with bare wires, terminals, etc. never permit an unqualified person to operate or service the generator.
- ⚡ Never handle any kind of electrical cord or device while standing in water, while barefoot or with wet hands or when feet are wet. Dangerous electrical shock could result.
- ⚡ The National Electric Code requires that the frame and external conductive parts be properly connected to an approved earth ground. Local electrical codes may vary. Check with an electrician for local grounding requirements.
- ⚡ Use a ground fault circuit interrupter in any damp or highly conductive area such as metal decking or steel work.
- ⚡ Do not use worn, bare, frayed or otherwise damaged electrical cords or wiring with the generator. A defective cord may result in electrical shock or may cause damage to equipment.
- ⚡ Do not expose unit to excessive moisture, dirt or corrosive vapors. Unit must be operated on a level surface.
- ⚡ Do not overfill the fuel tank. Always allow room for diesel fuel expansion. Fuel could overflow and cause fire or explosion if tank is overfilled. Allow for a 20 minute cool down before refueling. Never refuel tank while engine is running.
- ⚡ Only operate this unit outside with adequate ventilation. This generator's exhaust produces carbon monoxide gas that can cause unconsciousness or even death.
- ⚡ Never store a generator with fuel in the tank where diesel fuel vapors could be ignited by a flame, spark, or pilot light from an appliance such as a furnace, water heater, or clothes dryer.
- ⚡ Always allow a minimum of 2 feet of clearance on all sides for ventilation while unit is operating. Allow 2 feet of clearance from all combustibles.
- ⚡ Generator must always be stopped or started with all loads unconnected. Start the engine and let it stabilize before connecting any loads. Disconnect all loads before shutting down the generator.
- ⚡ Never insert any object through the cooling slots of the engine. You could damage the unit or cause injury.
- ⚡ **NEVER OPERATE THE GENERATOR:**
  - In rain
  - In an enclosed compartment
  - If connected devices overheat
  - If electrical output is lost
  - If engine or generator sparks
  - If flame or smoke is observed
  - If unit vibrates excessively

**CAUTION!** The engine exhaust contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

**CAUTION!** If it is your first time starting the generator, allow it to run for 30 minutes before connecting electrical loads. This is for wet seating purposes

# OPERATION OF THE GENERATOR

## Starting the engine

⚡ Always check the oil level and air filter before starting the engine. This unit is equipped with a low oil system.

⚡ NOTE:

*(If starting manually).*

Do not allow the handle grip to snap back against the engine. Always return it gently to prevent damage to the starter.

NOTE:

⚡ *(If electric starting).*

Release key and allow it to return to the "ON" position as soon as engine starts. Key must be in the "ON" position to generator to run.

⚡ NOTE:

Allow generator to settle. Run before connecting any electrical loads or appliances. Failure to do so may result in generator damage!

## Connecting electrical loads

⚡ Let engine stabilize and warm up for at least 3 minutes.

⚡ Make sure devices to be connected are in good working order and in the "OFF" position before connecting to the generator.

⚡ Make sure to plug in desired devices into the correct receptacle. **Make sure that the voltage selector switch is on the right setting.**

⚡ DO NOT connect 240 Volt loads to the 120 Volt duplex receptacles.

⚡ DO NOT connect 3 phase loads to the generator.

⚡ DO NOT connect 50 Hz loads to the generator.

⚡ DO NOT overload the generator. Add up the rated Watts of all loads to be connected. This total should not exceed the total watts of the generator

## Stopping the engine

⚡ Turn off all electrical devices connected to the generator.

⚡ Turn off the main breaker on the receptacle panel. Unplug all devices from the generator.

⚡ WARNING:

**DO NOT start or stop generator with electrical devices plugged in.**

⚡ Allow the generator engine to run at a 'No Load' condition for several minutes to stabilize internal engine temperature before stopping

⚡ If using the electric start, turn key to the "OFF" position.

## Generator maintenance

(see maintenance table for list).

⚡ Keep the generator clean and dry. Use a damp cloth to clean exterior surfaces. Remove caked on dirt with a soft brush.

⚡ Never spray with water. Water can contaminate the engine fuel system and cause serious problems in the generator.

⚡ Damage may occur if engine or carburetor cleaning products are used.

## Storage

⚡ IMPORTANT:

Empty fuel system if unit is to be stored for 30 days or more. This will help prevent gum deposits from forming in fuel system such as the carburetor, fuel filter, fuel hose, and fuel tank during storage.

### Wattage Reference Guide

Device	Running Watts	Device	Running Watts
*Air Conditioner (12,000 BTU)	1700	Impact Wrench	500
Battery Charger (20 Amp)	500	*Jet Pump	800
Belt Sander (3")	1000	Lawn Mower	1200
Chain Saw	1200	Light Bulb	100
Circular Saw (6-1/2")	800 to 1000	Microwave Oven	700
Coffee Maker	1000	*Milk Cooler	1100
Compressor (1 HP)	2000	Oil Burner on Furnace	300
Compressor (3/4 HP)	1800	Oil Fired Space Heater (140,000 BTU)	400
Compressor (1/2 HP)	1400	Oil Fired Space Heater (85,000 BTU)	225
Curling Iron	700	Oil Fired Space Heater (30,000 BTU)	150
*Freezer	500	*Airless Paint Sprayer (1/3 HP)	600
Disc Sander (9")	1200	Handheld Airless Paint Sprayer	150
Edge Trimmer	500	Radio	50 to 200
Electric Nail Gun	1200	Refrigerator	600
Electric Range (one element)	1500	Slow Cooker	200
Electric Skillet	1250	*Submersible Pump (1-1/2 HP)	2800
*Furnace Fan (1/3 HP)	1200	*Submersible Pump (1 HP)	2000
Hair Dryer	1200	*Submersible Pump (1/2 HP)	1500
Hand Drill (1")	1100	Sump Pump	600
Hand Drill (1/2")	750 to 1000	*Table Saw (10")	1750 to 2000
Hand Drill (3/8")	500	Television	200 to 500
Hand Drill (1/4")	250	Weed Trimmer	500

\*Allow 3 times the listed Watts for starting these devices  
 These wattages shown are approximate and may vary with each specific device

### Maintenance Guide

	DAILY	EVERY MONTH/ 20 HRS	EVERY 3 MONTHS/ 100 HRS	EVERY 6 MONTHS/ 500 HRS
Check/Refill Fuel	X			
Drain fuel from tank		X	(If stored more than 90 days)	
Check/Refill Oil	X			
Check for oil leakage	X			
Check battery fluid		X		
Change oil		*	X	
Clean/Replace oil filter			X	
Replace air filter		X*	X*	
Clean/Replace fuel filter				X

\*First oil change should be after the first month or 20 hrs. of use. After initial break-in period change oil every 3 months or 100 hrs.

X\*Air filter may need to be replaced frequently, due to adverse conditions. Check filter frequently.

# TROUBLESHOOTING

Problem	Cause	Solution
Engine is running but no power output is available.	<ol style="list-style-type: none"> <li>1. Circuit breaker is open.</li> <li>2. Poor connection or defective cord set.</li> <li>3. Connected device is bad.</li> <li>4. Fault in generator.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reset the circuit breaker.</li> <li>2. Check &amp; repair.</li> <li>3. Connect another device that is in good condition.</li> <li>4. Contact service center.</li> </ol>
Engine runs good until loads are connected, then bogs down.	<ol style="list-style-type: none"> <li>1. Short circuit in a connected load.</li> <li>2. Overloaded generator.</li> <li>3. Engine speed is too slow.</li> <li>4. Short in generator circuit.</li> </ol>	<ol style="list-style-type: none"> <li>1. Disconnect shorted load.</li> <li>2. See 'Connecting Electrical Loads' section of manual.</li> <li>3. Contact service center.</li> <li>4. Contact service center.</li> </ol>
Engine will not start or engine starts but runs rough.	<ol style="list-style-type: none"> <li>1. On/Off Switch is turned 'OFF'.</li> <li>2. Battery is dead</li> <li>3. Dirty air cleaner.</li> <li>4. Not enough speed or force is used for recoil start.</li> <li>5. Water in fuel.</li> <li>6. Speed control is not set to "RUN".</li> <li>7. Low oil level.</li> <li>8. Engine has lost compression.</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn On/Off Switch to 'ON'.</li> <li>2. Charge or replace it.</li> <li>3. Clean air filter</li> <li>4. Read and follow directions.</li> <li>5. Drain and refill tank.</li> <li>6. Move speed control to "RUN" position.</li> <li>7. Add oil to proper level.</li> <li>8. Contact service center.</li> </ol>
Engine shuts down during operation.	<ol style="list-style-type: none"> <li>1. Out of fuel.</li> <li>2. Low oil level.</li> <li>3. Fault in engine.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill fuel tank.</li> <li>2. Fill crankcase with oil.</li> <li>3. Contact service center</li> </ol>
Engine lacks power	<ol style="list-style-type: none"> <li>1. Load is too high.</li> <li>2. Dirty air filter.</li> <li>3. Engine needs to be serviced.</li> </ol>	<ol style="list-style-type: none"> <li>1. See 'Connecting Electrical Loads' section of manual.</li> <li>2. Replace the air filter.</li> <li>3. Contact service center.</li> </ol>

**Service**  
1-800-845-4141

**Replacement Parts**  
1-800-845-4141



Toll Free 1-800-845-4141  
www.titanindustrial.net

**Fax**  
864-834-5127

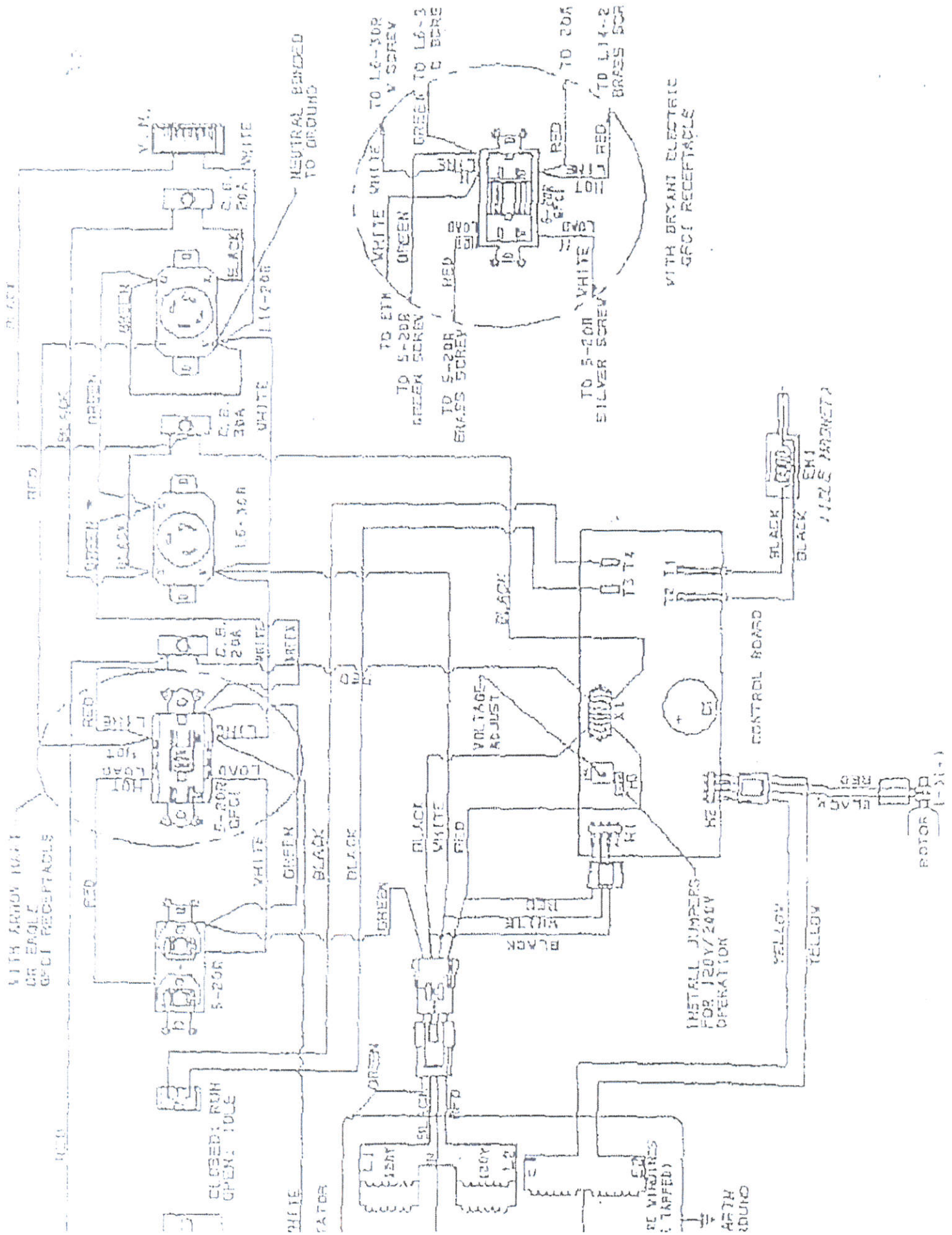


**MODEL 7000R  
Industrial Generator**



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WITH ARMY HAT OR EAGLE GFCI RECEPTACLE

WITH BRYANT ELECTRIC GFCI RECEPTACLE

CLOSED: RUN  
OPEN: IDLE

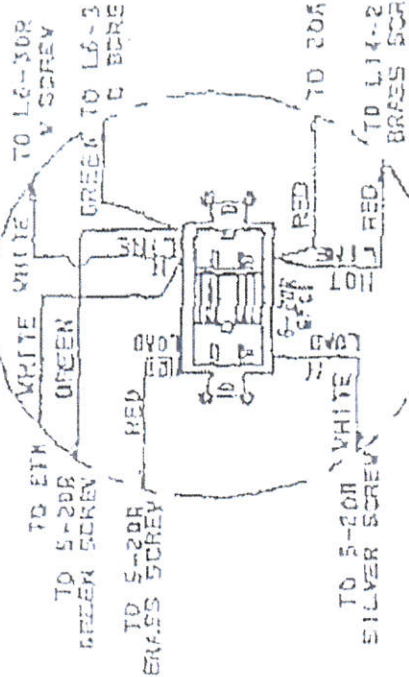
INSTALL JUMPERS FOR 120V/240V OPERATION

RE WIRES (TAPPED)

ARTH GROUND

ROTOR (1-21-1)

NEUTRAL BONDED TO GROUND

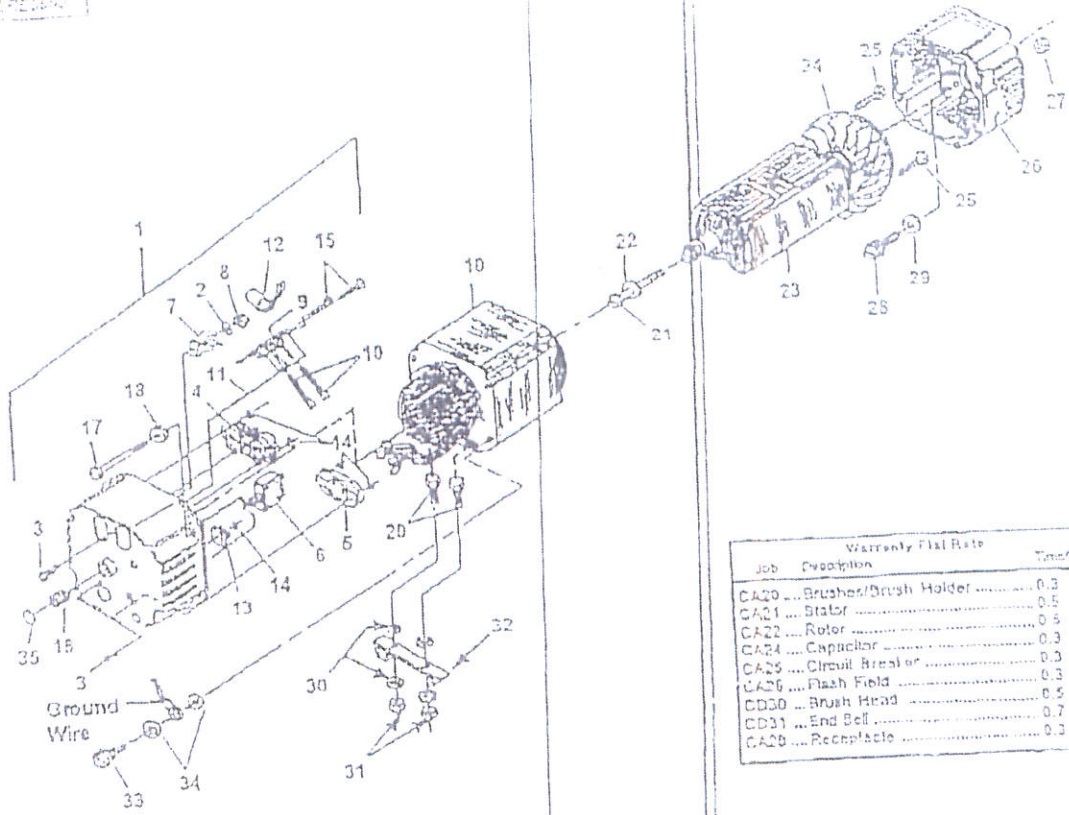


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EM1  
FILE PAPER#7



UP 03403

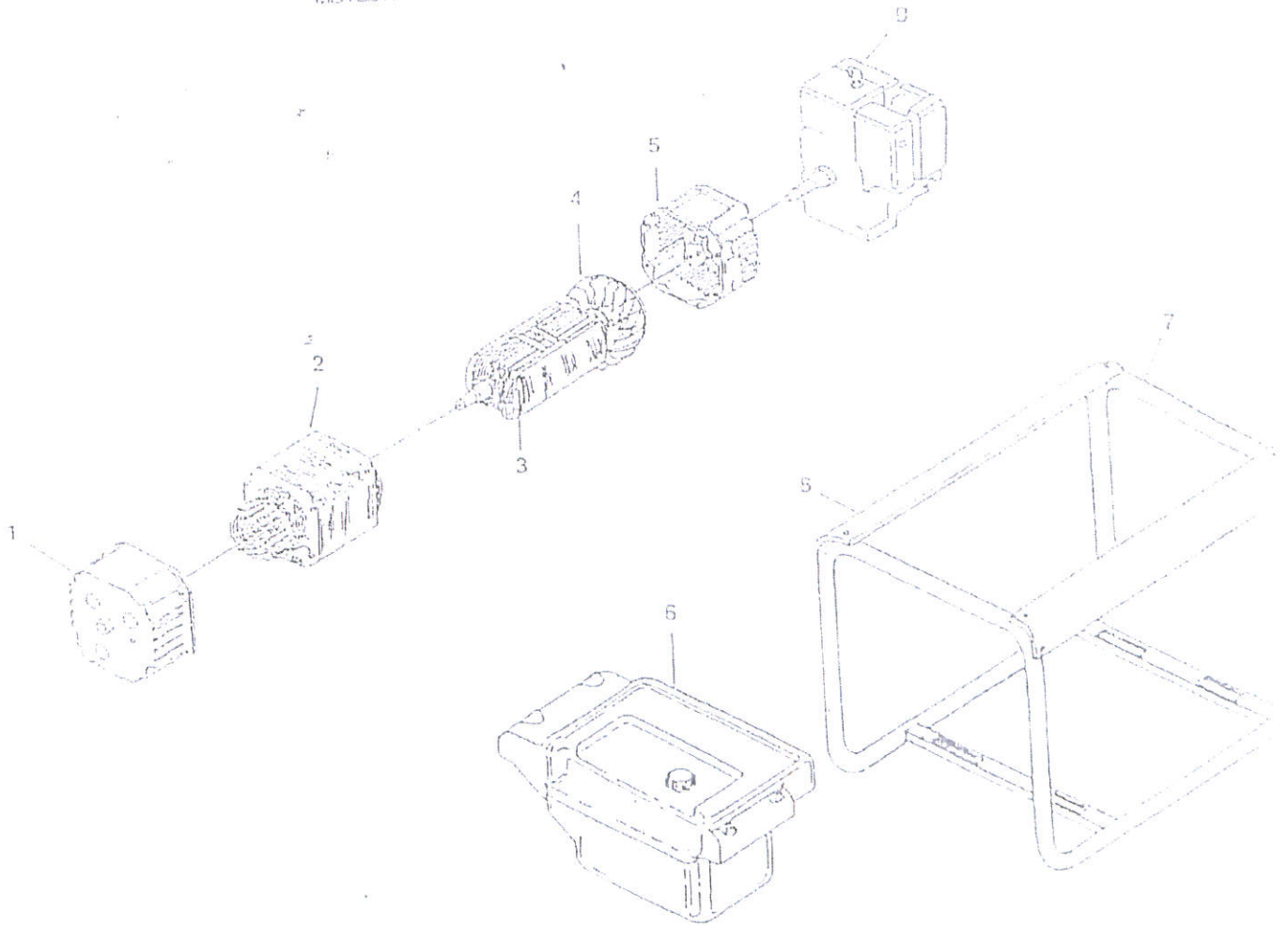
# BRUSH HEAD - GENERATOR



Job	Description	Quantity	Time
CA20	Brushes/Brush Holder	0.3	
CA21	Stator	0.5	
CA22	Rotor	0.5	
CA24	Capacitor	0.3	
CA25	Circuit Breaker	0.3	
CA26	Flash Field	0.3	
CD30	Brush Head	0.5	
CD31	End Bell	0.7	
CA20	Receptacle	0.3	

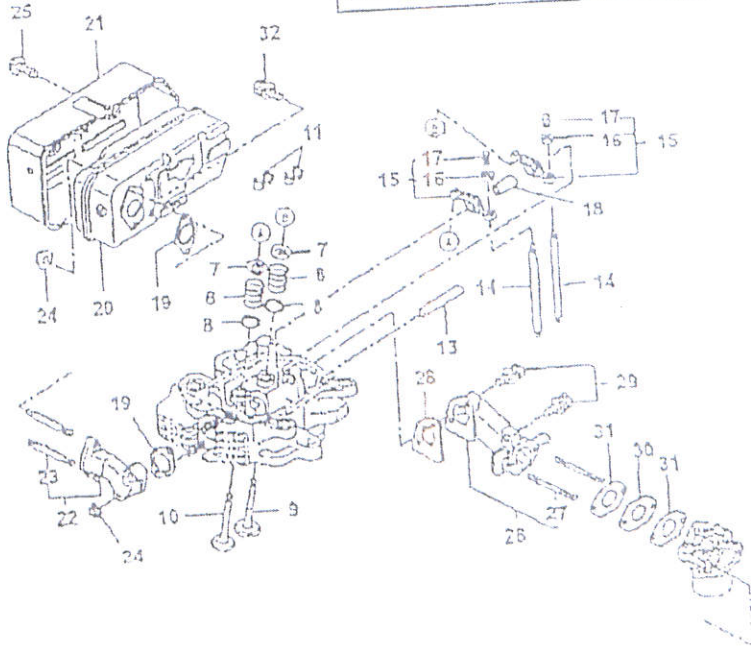
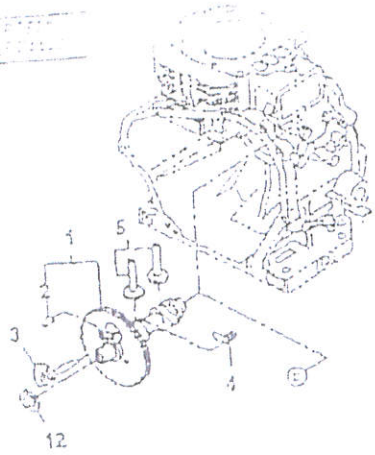
NO.	PART NO.	DESCRIPTION	Qty.	NO.	PART NO.	DESCRIPTION	Qty.
1	A 05023	COMPLETE BRUSH HEAD	1	16	UP 03408	WASHER Flat	4
2	55064	WASHER-Lock (ext)	1	19	A 02705 BS	STATOR	1
3	50530	SCREW-Mach. Pan Hd. (6-32 X 1/2)	2	20	UP 03501	SCREW-Hex Hd (5/16-18 X 3/4)	2
4	UP 03458	RECEPTACLE-Duplex (Nema 5-20R)	1	21	UP 03405	BOLT-Rotor	1
5	UP 03476	RECEPTACLE-Locking (120V/240V) (Nema L14-20R)	1	22	UP 03407	WASHER-Lock (5/16)	1
6	UP 03480	BREAKER-Circuit (20 amp)	1	23	A 02708 AS	ROTOR	1
7	02435	CLIP-Spring Cap	2	24	UP 03407	FAN-Generator	1
8	91062	NUT-Hex (6-32)	1	25	UP 03403	SCREW-Pan Hd (6-18 X 3/4)	4
9	UP 03419	BRUSH HOLDER	1	26	02026 P	END BELL	1
10	UP 03738	BRUSH & RETAINER KIT	1	27	UP 03400	NUT-Hex (1/4-20)	4
11	02857	PIN	1	28	UP 03400	SCREW-Hex Hd (5/16-24 X 3/4)	4
12	A 02860	CAPACITOR (w/Lead)	1	29	UP 03402	WASHER-Lock	4
13	02872	RECTIFIER	1	30	UP 03403	WASHER-Lock (int/ext)	2
14	UP 06528	WASHER-Shaft Retention	4	31	UP 02807	NUT-Hex (5/16-18)	1
15	UP 03403	SCREW-Pan Hd (6-18 X 3/4)	1	32	UP 03408	SUPPORT-Engine	1
16	UP 03400	BEARING-Needle	1	33	UP 03406	SCREW-Tap/ma (10/24 X 3/4)	1
17	UP 03430	BOLT-Split	4	34	03401	WASHER-Lock (int/ext)	2
				35	UP 02807	PLUG-Expansion	1

1	UP 03370	STATOR / ESTATOR
2	A 12,89740	ROTOR / ROTOR
3	A 96313	FAN - GENERATOR VENTILATEUR - GÉNÉRATRICE / VENTILADOR - GENERADOR
4	92005/9	BEL - End CARTER - ARRIÈRE / Extremo - ACAMPANADO
5	UP 03373	FUEL TANK RÉSERVOIR DE CARBURANT / TANQUE DEL COMBUSTIBLE
6	UP 03376	ROLL CAGE CAGE DE ROULEMENT / BARRAS DE RODAMIENTO
7	UP 03377	TANK SUPPORT ( 2 required) SUPPORT DE RESERVOIR ( 2 REQUIS) / SOPORTE DE TANQUE (Se necesitan 2)
8		ENGINE MOTEUR / MOTOR



- See an authorized servicing dealer for engine replacement parts.  
To locate an authorized servicing dealer call: 1-800-242-4672.
- Pour toute pièce de remplacement pour le moteur, voir un détaillant / service d'entretien et de réparation autorisé.
- Pour trouver un détaillant / service d'entretien et de réparation autorisé, appelez le : 1-800-242-4672.
- Consulte a un agente de servicio autorizado si necesita piezas de repuesto para el motor.  
Lláme al 1-800-242-4672 para ubicar a un agente de servicio autorizado.

EXHAUST



Item No.	In. lbs	Item	Torque Specs	Required Lubric
29	80-121	9 8-13 T		

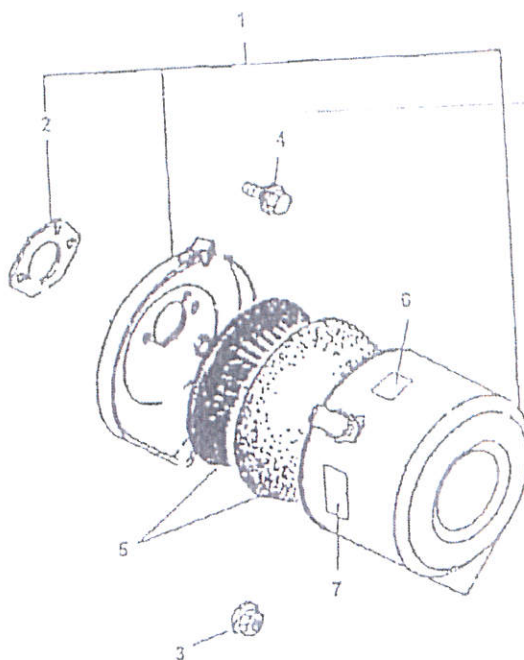
  

Job	Description	Warranty Print Date	Time
GB 18	Muffler Replace		0.3
GF 42	Air Filter Assy		0.3

NO.	PART NO.	DESCRIPTION	ROBIN PIN	Qty.	NO.	PART NO.	DESCRIPTION	ROBIN PIN	Qty.
1	UP 05341	Camshaft	246-31701-01	1	16	UP 05361	Spacer / Rocker Stud	246-08100-13	2
2	UP 05354	Spring pin	005-19041-03	1	10	UP 04674	Gasket, exhaust	246-35701-03	1
3	UP 04930	Release lever cap	246-36201-11	1	20	UP 05252	Muffler cap	246-34101-31	1
4	UP 04940	Return spring	246-36701-03	1	21	UP 05353	Muffler Cover cap	246-34201-31	1
5	UP 05342	Tappet	246-33301-03	2	22	UP 05314	Exhaust Pipe cap	246-34001-01	1
6	UP 04416	Valve spring	246-33011-03	2	23	UP 05355	Stud	016-50603-60	2
7	UP 04942	Spring retainer	246-33711-03	2	24	UP 05356	Flange Nut	016-00800-10	4
8	UP 05350	Washer	020-02000-10	2	25	UP 03274	Flange Bolt	011-60600-10	2
9	UP 05343	Intake valve	246-33411-03	1	26	UP 05359	Intake Pipe cap	246-33001-01	1
10	UP 05344	Exhaust valve	246-33511-03	1	27	UP 05375	Stud	016-50602-30	2
11	UP 04412	Collar, valve	246-35001-03	4	28	UP 04432	Gasket, In. Flw	246-35001-13	1
12	UP 04945	Spacer T=0 6	023-02200-30	1	29	UP 04433	Bolt and Washer AY	001-13082-60	3
	UP 04940	Spacer T=0 7	023-02200-40	1	30	UP 05362	Insulator	246-32901-03	1
	UP 04947	Spacer T=0 8	023-02200-70	1	31	UP 03281	Casket, Insulator	244-25907-03	2
13	UP 05345	Rocker shaft	238-35001-03	1	32	UP 05360	Bolt and Washer AY	011-13081-65	1
14	UP 05348	Push rod cap	246-35301-11	2					
15	UP 05317	Rockor arm Ay	246-35101-10	2					
16	UP 05348	Nut	017-00800 50	2					
17	UP 05348	Adjusting Screw	014-00800-21	1					

# AIR CLEANER

UPPER  
PARTS

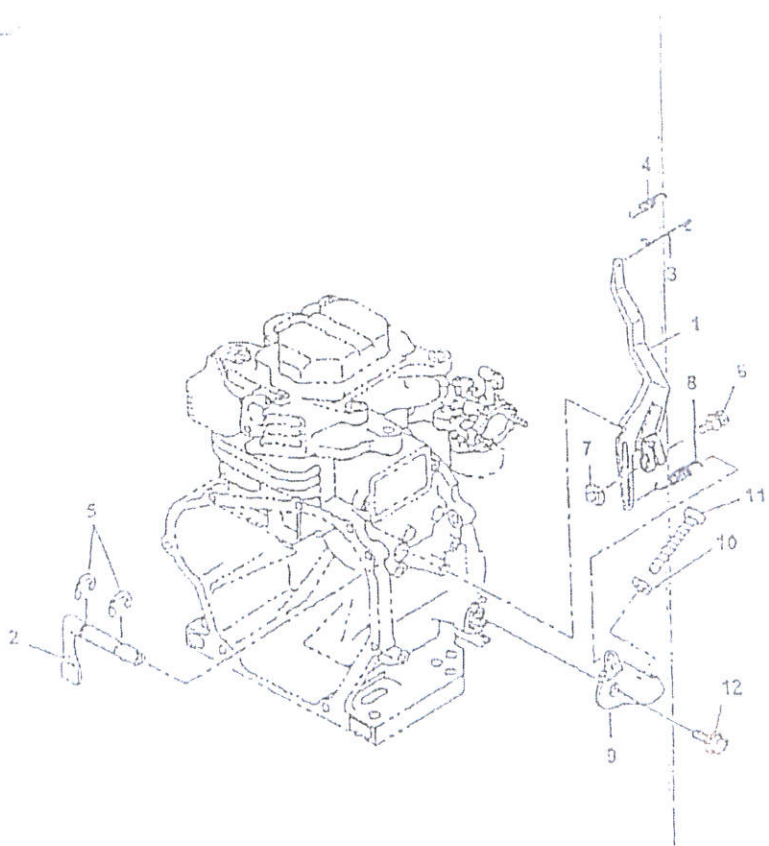


NO.	PART NO.	DESCRIPTION	ROBIN PIN	Qty
1	UP 04429	Air Cleaner AY	254-32603-10	1
2	UP 05361	Gasket	234-36003-08	1
3	UP 03967	Flange Nut	002-38050-00	2
4	UP 03282	Bolt and washer	004-10081-20	1
5	UP 03278	Element set	234-32604-07	1
6	UP 03290	Choke Label	073-20044-00	1
7	UP 06057	Label, cleaner	254-06061-13	1

9210002

5

# GOVERNOR



NO.	PART NO.	DESCRIPTION	ROBIN PIN	Qty.
1	UP 05363	Governor lever	240-42301-11	1
2	UP 05364	Governor shaft	240-42201-23	1
3	UP 03200	Governor rod	234-42701-01	1
4	UP 05365	Rod spring	240-42801-13	1
5	UP 03292	Clip	003-13050-00	2
6	UP 03293	Bolt and Washer AY	001-14062-50	1
7	UP 03294	Nut	018-80800-20	1
8	UP 05366	Governor spring	240-42501-23	1
9	UP 05367	Speed control lever	240-43310-03	1
10	UP 04500	Nut	002-17050-00	1
11	UP 06368	Screw, panhead	004-31053-50	1
12	UP 03000	Bolt & Washer	001-13051-50	1

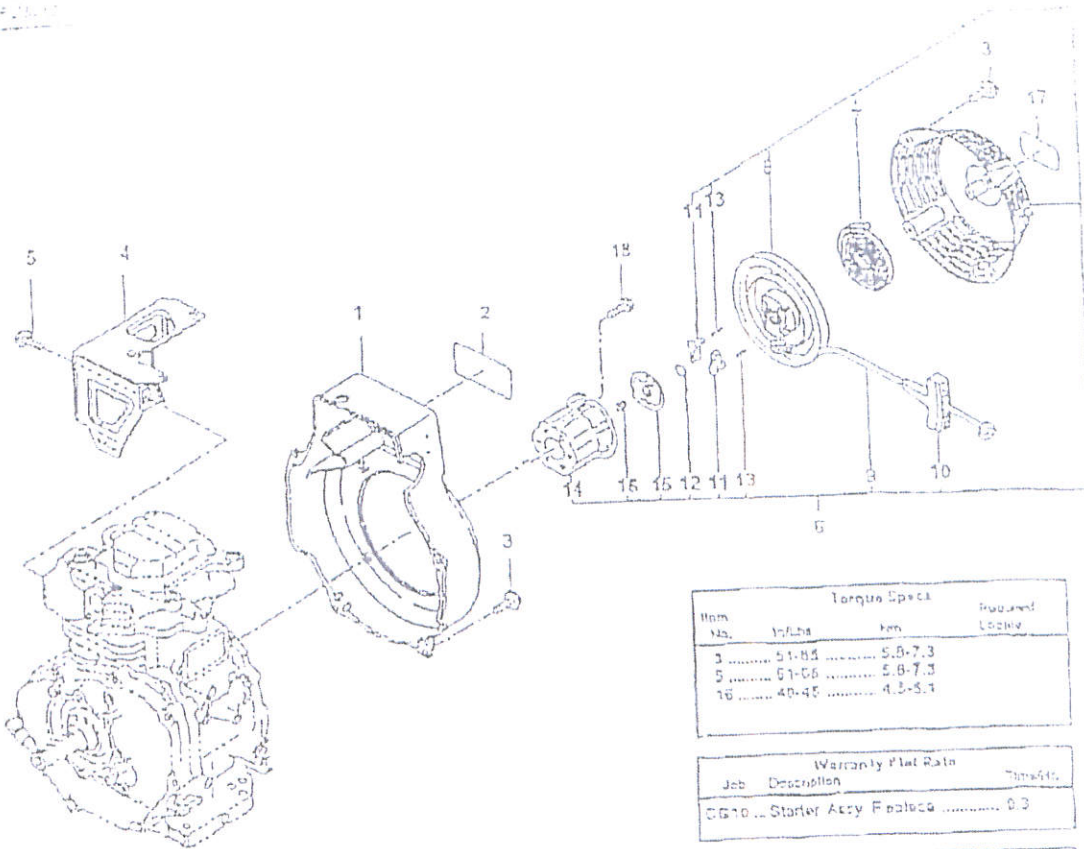
Torque Specs			
Num No.	In/Lb	ft/Lb	Required Units
11	65-80	7.5-9.0	

Warranty Flat Rate		
Job	Description	Time
GB23	Governor Levers/Linkage	0.8
GB24	Governor Shaft/Gear	2.5

# STARTER

UP 05372



Item No.	Torque Specs		Required Loosely
	In/Lbs	Fm	
3	51-85	5.8-7.3	
5	51-65	5.8-7.3	
16	40-45	4.5-5.1	

Job	Description	Time/Hr.
CG10	Starter Assy Replace	0.3

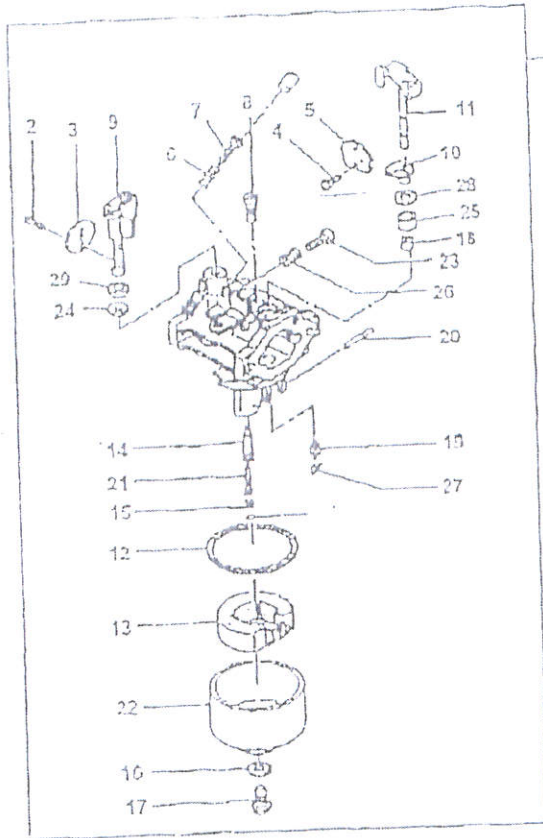
NO.	PART NO.	DESCRIPTION	ROBIN P/N	Qty
1	UP 05369	Blower housing	245-11205-11	1
2	UP 05370	Label (trademark)	247-91705-03	1
3	UP 05274	Flange bolt	011-00800-10	8
4	UP 05371	Cylinder buffer cap	246-02701-11	1
5	UP 05358	Flange bolt	011-00500-10	1
6	UP 05372	Recoil starter Assy	248-50201-00	1
7	UP 05373	Spring rewind	248-50115-08	1
8	UP 05009	Reel	248-50120-08	1
9	05274 10	Starter rope	270-50110-08	1
10	UP 04008	Starter knob	281-50100-08	1
11	UP 05010	Ratchet	248-50125-08	2
12	UP 05011	Friction spring	248-50130-08	1
13	05274 07	Return spring	227-50135-08	2
14	UP 05374	Pulley	248-50147-00	1
15	UP 05013	Ratchet guide	248-50180-08	1
16	05274 03	Set screw	227-50150-08	1
17	UP 04013	Label, OHV	073-20040-00	1
18	UP 05014	Roll	001-20081-00	3

UP 05372



# CARBURETOR

UP 05375  
UP 05376

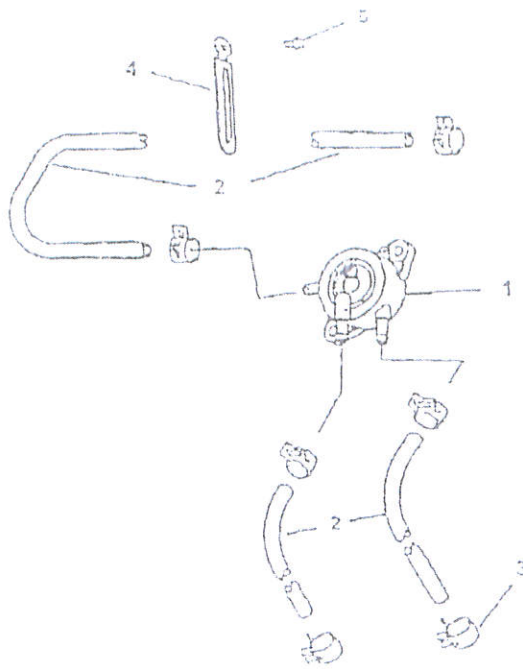


Item No.	Torque Specs		Required Lubric
	In/Lbs	Nm	
17	45	6.5	

Job	Warranty Est Rate		Turnover
	Description	Turnover	
GF10 ... Carburetor Replace		0.5	

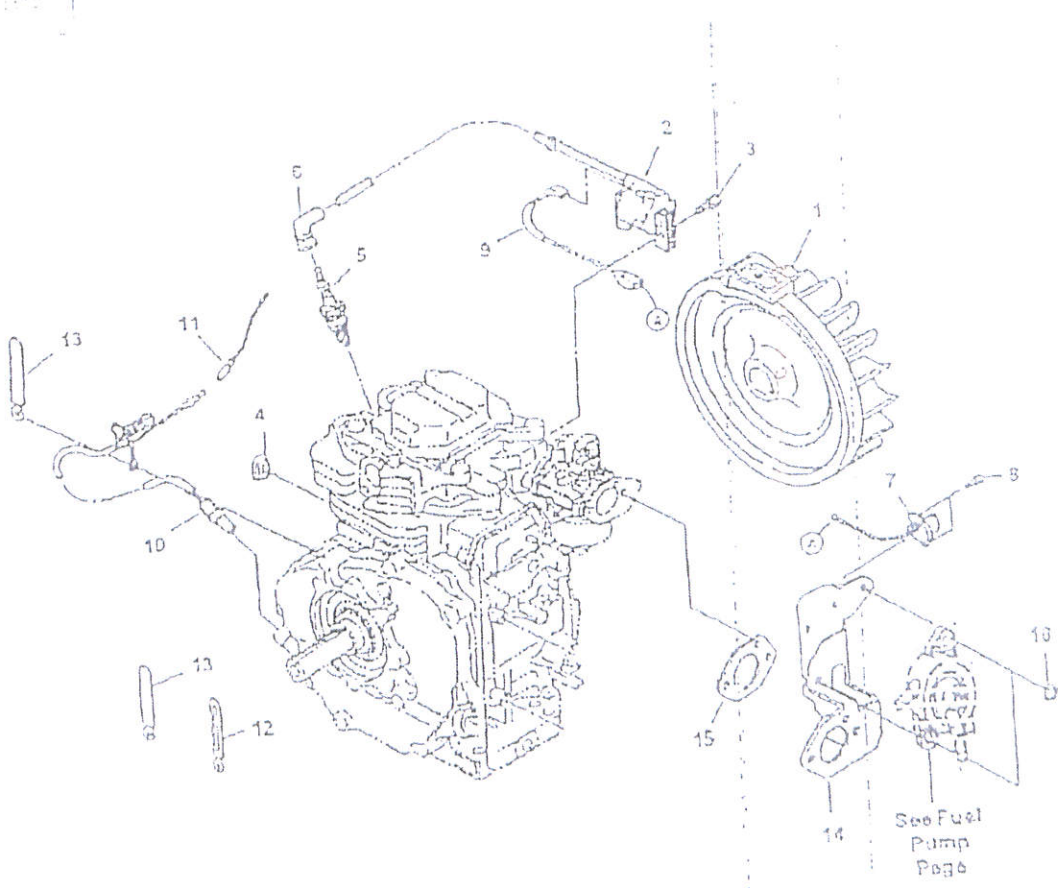
NO.	PART NO.	DESCRIPTION	ROBIN PIN	Qty.	NO.	PART NO.	DESCRIPTION	ROBIN PIN	Qty.
1	UP 05375	Carburetor	247-62331-00	1	21	UP 04474	Guide holder	246-62425-06	1
2	UP 03314	Screw	209-62361-68	2	22	UP 03329	First chamber body	224-62552-06	1
3	UP 05377	Throttle valve	213-62535-08	1	23	UP 04044	Screw	248-62435-06	1
4	UP 03318	Screw	207-62451-09	2	24	UP 05382	Seal	108-62362-08	1
5	UP 05315	Choke valve	254-62825-08	1	25	UP 03336	Cap, choke	247-62550-09	1
6	UP 04053	Spring	209-62445-08	2	26	UP 04053	Spring	209-62445-08	1
7	UP 03044	Adjuster	248-62430-08	1	27	UP 05099	Die	224-62560-18	1
8	UP 05378	Pilot jet	247-62420-09	1	28	UP 03337	Seal	209-62360-09	1
9	UP 05081	Throttle shaft	246-62531-05	1		UP 03335	Gasket	156-62331-08	1
10	UP 03320	Ring	230-62560-08	1					
11	UP 04457	Choke lever	234-62520-08	1					
12	UP 05328	Chamber Gasket	209-62540-08	1					
13	UP 03329	Float	234-62506-08	1					
14	UP 05379	Main nozzle	246-62441-08	1					
15	UP 05280	Main jet	246-62402-08	1					
16	UP 03327	Insert washer	207-62345-05	1					
17	UP 04450	Bolt	224-62544-08	1					
18	UP 03323	Ring	226-62765-08	1					
19	UP 04052	Needle valve	224-62312-18	1					
20	UP 03326	Float pin	214-62515-08	1					

FUEL PUMP



NO	PART NO.	DESCRIPTION	RODIN PIN	Qty
1	UP 05384	Fuel Pump Assy	067-02201-00	1
2	UP 05015	Fuel Line (Cut to Length) (39 in/1000mm)	085-10500-00	1
3	UP 04018	Hose clamp	050-11100-00	8
4	UP 04082	Clamp cap	050-60002-00	1
5	UP 03300	Screw	011-00500-30	1

REVISED



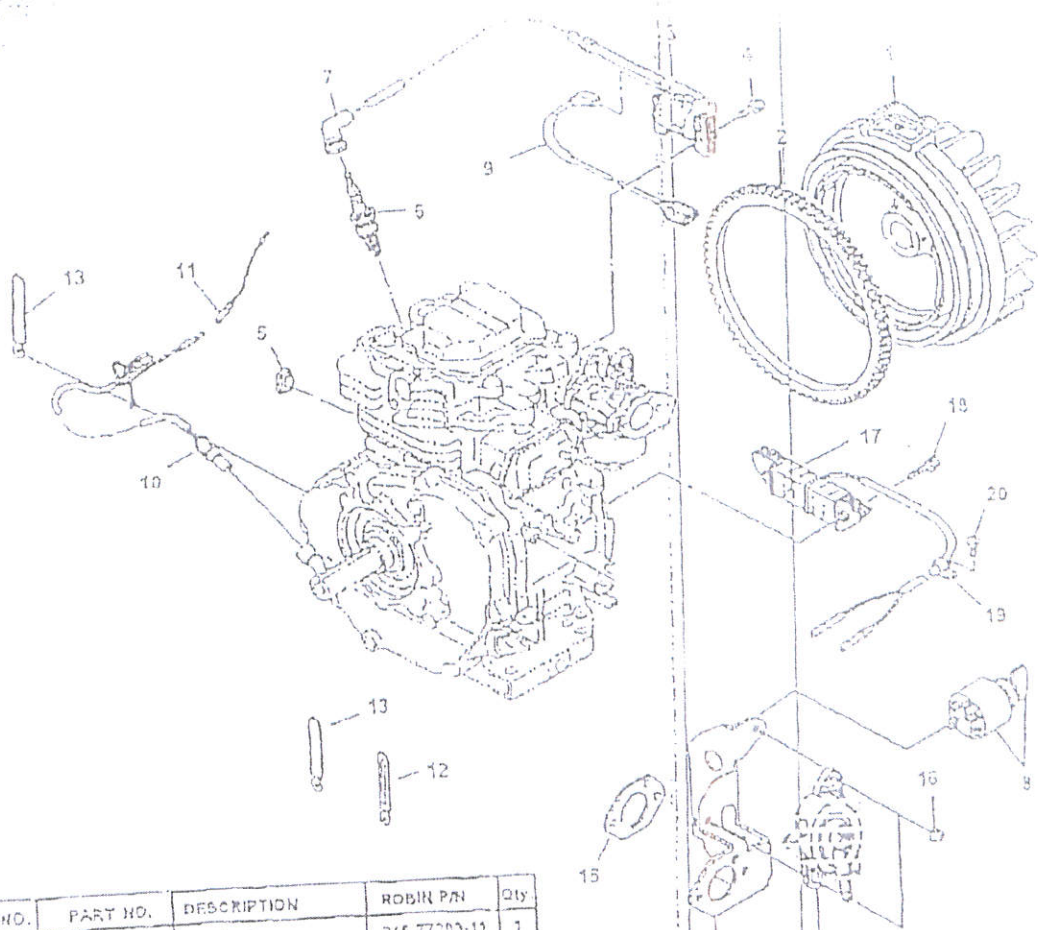
NO.	PART NO.	DESCRIPTION	ROBIN P/N	Qty
1	UP 05368	Flywheel	245-77202-01	1
2	UP 05369	Ignition coil cap	245-78201-21	1
3	UP 03090	Bolt and washer AY	001-14010-00	1
4	UP 04390	Crossnut	227-75001-03	1
5	UP 05345	Spark plug	055-01404-80	1
6	UP 03351	Spark plug cap	055-50001-20	1
7	UP 04065	Switch AY	086-00002-61	1
8	UP 03347	Tapping screw	015-00400-90	2
9	UP 05391	Wire 3 sp	245-73103-01	1
10	UP 05392	Oil Sensor cap	K53-11013-01	1
11	UP 05353	Wire 16 co	245-73118-01	1
12	UP 04392	Clamp cap	056-80002-50	1
13	UP 05354	Clamp	056-80002-60	2
14	UP 05363	Bracket, Fuel Pump	245-85501-01	1
15	UP 05367	Gasket, Air Cleaner	234-26503-031	1
16	UP 03967	Nut	002-38060-00	2

Job	Description	Warranty Mtl Rate	Time/lt
CA11	Ignition Module	0.4	
GA17	Ign. Switch/Lead	0.4	
CF64	Oil Sensor Test & Replace	0.5	

Item No.	Torque Specs	Probed Location
3	15-20	1.7-2.3
5	108-125	18.8-22.0

See Fuel Pump Page

IGNITION



NO.	PART NO.	DESCRIPTION	ROBIN P/N	Qty
1	UP 06742	Flywheel	246-77203-11	1
2	UP 06745	Ring Gear	246-71002-03	1
3	UP 06329	Ignition coil cap	246-78201-21	1
4	UP 03096	Ball and washer AY	001-14063-00	1
5	UP 05380	Grommet	227-75001-03	1
6	UP 05045	Spark plug	065-01404-60	1
7	UP 03051	Spark plug cap	065-50001-40	1
8	UP 04005	Switch AY	066-00003-01	1
9	UP 05381	Wire 3 cp	246-73103-01	1
10	UP 05382	Oil Sensor cap	K53-11015-01	1
11	UP 05383	Wire 18 cp	246-73116-01	1
12	UP 04002	Clamp cp	066-60002-60	1
13	UP 05384	Clamp	066-60002-60	2
14	UP 05713	Bracket, Fuel Pump	246-45502-01	1
15	UP 05367	Gas filter, Air Cleaner	234-75003-031	1
16	UP 03987	Nut	002-36000-00	2
17	UP 06744	Charging Coil	246-75201-01	1
18	UP 04407	Screw & Washer AY	004-31000-50	2
19	UP 03342	Clamp	200-75501-01	1
20	UP 04407	Screw	004-31050-80	1

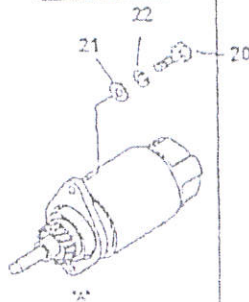
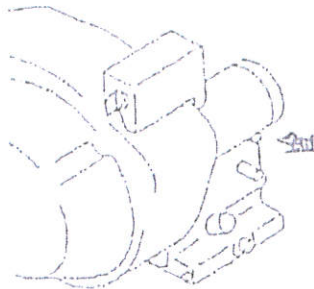
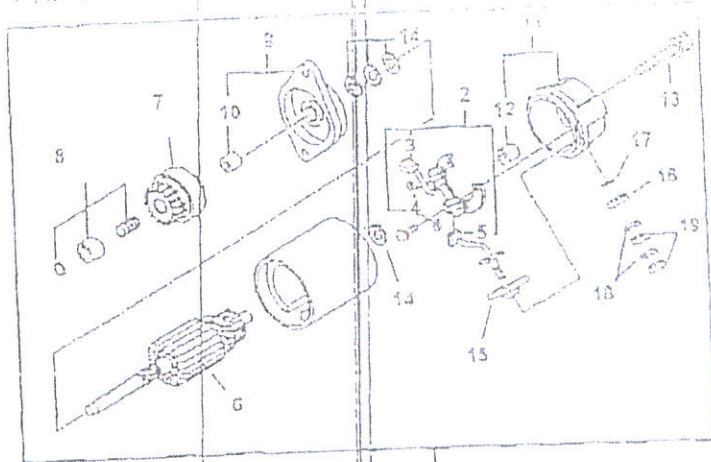
See Fuel Pump Page

Warranty Flat Rate		
Job	Description	Time/hr.
GA11	Ignition Module	0.4
GA17	Ign. Switch/Lead	0.4
CF64	Oil Sensor Test & Replace	0.5

Torque Specs		
Item No.	in/lbs	ft/lbs
4	15-20	17-23
6	60-105	12.0-22.0

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# HELICOPTIC MOTOR

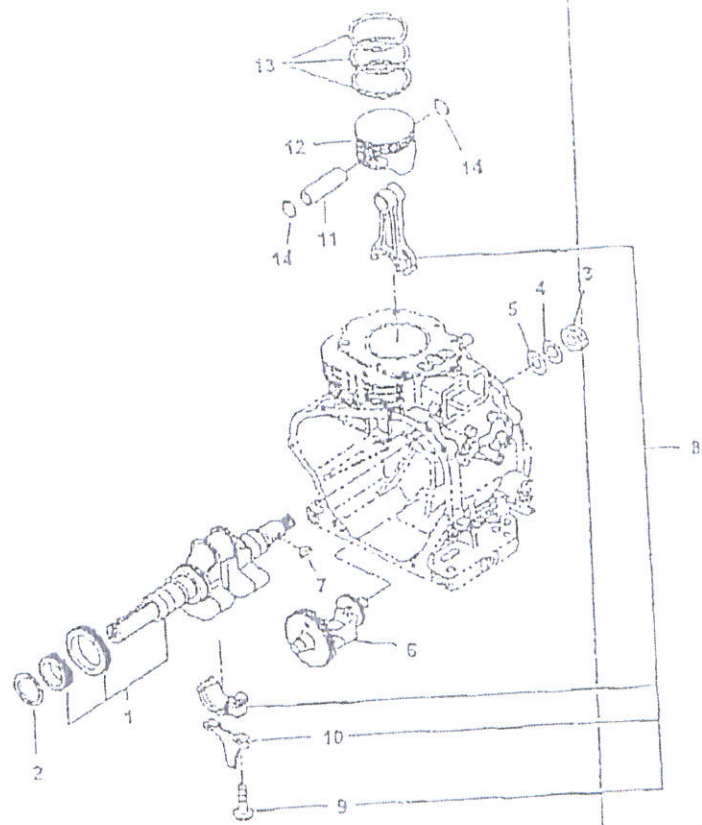


NO.	PART NO.	DESCRIPTION	ROBIN P/N	Qty.
1	UP 06748	Starting motor Assy	224-70502-00	1
2	UP 05026	Holder Assy, brush	235-70530-08	1
3	UP 05023	Brush	235-70535-08	1
4	UP 05024	Spring, brush	235-70545-08	2
5	UP 05031	Brush (-)	235-70540-08	1
6	UP 05027	Armature Assy	235-70550-08	1
7	UP 06747	Pinion Assy	224-70551-08	1
8	UP 06748	Pinion stopper pin	224-70550-08	1
9	UP 05030	Front cover Assy	246-70500-08	1
10	UP 05037	Front metal	214-70550-08	1
11	UP 05032	Rear cover Assy	246-70500-08	1
12	UP 05033	Rear metal	113-70510-08	1
13	UP 05035	Through bolt	235-70075-08	2
14	UP 05036	Washer kit	235-70555-08	1
15	UP 05038	Bushing	230-70005-08	1
16	UP 05039	Bushing	235-70566-08	1
17	UP 05040	O ring	246-70560-08	1
18	UP 04493	Spring Washer	003-20080-00	2
19	UP 03299	Nut	003-20080-00	2
20	UP 05041	Bolt, stator	214-70007-01	1
21	UP 05042	Washer	003-10080-00	2
22	UP 05043	Spring washer	053-20080-00	2

Job	Warranty Flat Rate Description	Time/hr
0010	Stator Assembly Replace	0.3

FIELD  
SPEC

# CRANKSHAFT - PISTON



Job	Description	Warranty Flat Rate	Time/Hr.
GB10	... Partial Engine Rebuild	.....	3.5
GB11	... Complete Engine Rebuild	.....	5.0

Line No.	Torque Specs		Required Limits
	In/Lbs	ft/Lb	
3	43-470	69.0-53.1	
5	122-145	13.5-18.4	

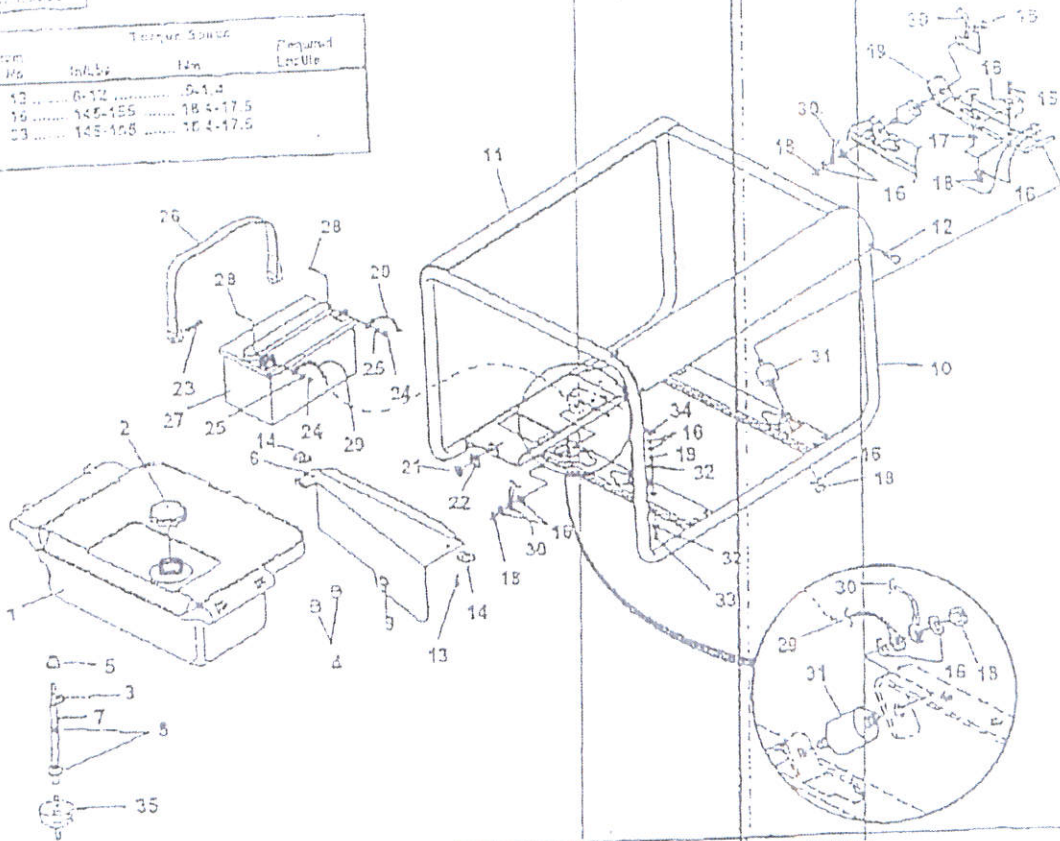
NO.	PART NO.	DESCRIPTION	ROBIN P/N	Qty.
1	UP 05331	Crankshaft sp	246-21201-01	1
2	UP 04921	Spacer (B)	023-03501-60	1
	UP 04922	Spacer (B)	023-03501-70	1
	UP 04923	Spacer (1 D)	023-03501-80	1
3	UP 03248	Nut	002-18180-03	1
4	UP 03250	Spring washer	003-20180-00	1
5	UP 04925	Washer	003-10180-00	1
6	UP 05305	Balance shaft	246-24102-23	1
7	UP 04927	Woodruff key	005-32054-01	1
8	UP 06322	Connecting rod Ay	248-22501-00	1
9	UP 04303	Connecting rod bolt	246-20001-03	2
10	UP 05333	Oil scraper	248-23101-13	1
11	UP 05334	Piston pin	246-23301-03	1
12	UP 05335	Piston	247-23401-13	1
	UP 05336	Piston (2S)	247-23402-13	1
	UP 05337	Piston (S)	247-23403-13	1
13	UP 05338	Piston ring set (1S)	247-23501-07	1
	UP 05339	Piston ring set (2S)	247-23502-07	1
	UP 05340	Piston ring set (S)	247-23503-07	1
14	UP 04506	Clip	006-52100-10	2

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GROUP  
APPENDIX

FRAME - FUEL TANK

Item No.	Qty	Torque Source	Required Lubric
13	6-12	12-14	
19	145-155	18.4-17.5	
23	145-155	18.4-17.5	



NO.	PART NO.	DESCRIPTION	Qty.	NO.	PART NO.	DESCRIPTION	Qty.
1	A 04861 A	FUEL TANK (5 Gal.)	1	21	UP 03364	NUT-Hex (10-32)	2
2	UP 03458	FUEL CAP (2 1/4" dia)	1	22	UP 03411	WASHER-LOCK	2
3	UP 03464	VALVE-Fuel	1	23	UP 03378	SCREW-Shoulder (10-32 X 1/4")	2
4	UP 03465	PAD-Fuel Tank	4	24	UP 03369	NUT-Hex (10-32)	4
5	UP 03450	BUSHING	1	25	UP 03409	WASHER-LOCK	4
6	UP 03461	SHIELD-Fuel Tank	1	26	UP 03455	STRAP-Battery Hold Down	1
7	UP 03486	FUEL LINE	1	27	UP 03494	BATTERY (12 Volt)	1
8	UP 03494	CLIP-Hose	2	28	UP 03380	SCREW-Hex Hd. (1/4-20 X 5.87)	2
9	UP 03467	BUSHING-Snap In	1	29	UP 03458	BATTERY CABLE (Hook, to Ground)	1
10	UP 03388	ROLL CAGE	1	30	UP 03511	GROUND STRAP	2
	UP 04504	ROLL CAGE (Electric Start)	1	31	UP 03483	ISOLATOR	4
11	UP 03480	BRACE-Tank Support	2	32	UP 03413	WASHER-LOCK (Int./Int.)	6
12	UP 03420	SCREW-Torc (10-24 X 1/2")	8	33	UP 03382	SCREW-Hex Hd. (5/16-18 X 1.307)	1
13	UP 03389	SCREW-Pan Hd. (8-32 X 3/8")	2	34	UP 03305	NUT-Wing	1
14	UP 03358	NUT-HI Speed	2	35	UP 03887	Fuel Filter	1
15	UP 03386	SCREW-Hex Hd. (5/16-18 X 2")	4				
16	UP 03413	WASHER-LOCK (Int.)	16				
17	UP 03416	WASHER-Flat	1				
18	UP 03367	NUT-Hex (5/16-18)	15				
19	UP 03535	SUPPORT-Engine	1				
20	UP 03507	CABLE-Battery (Red, Pos.)	1				

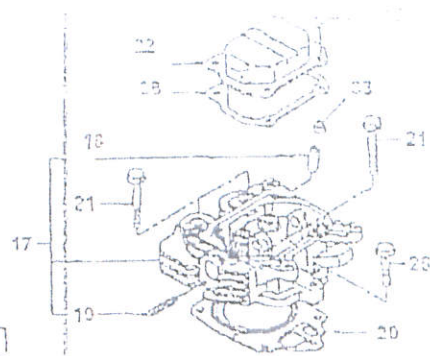
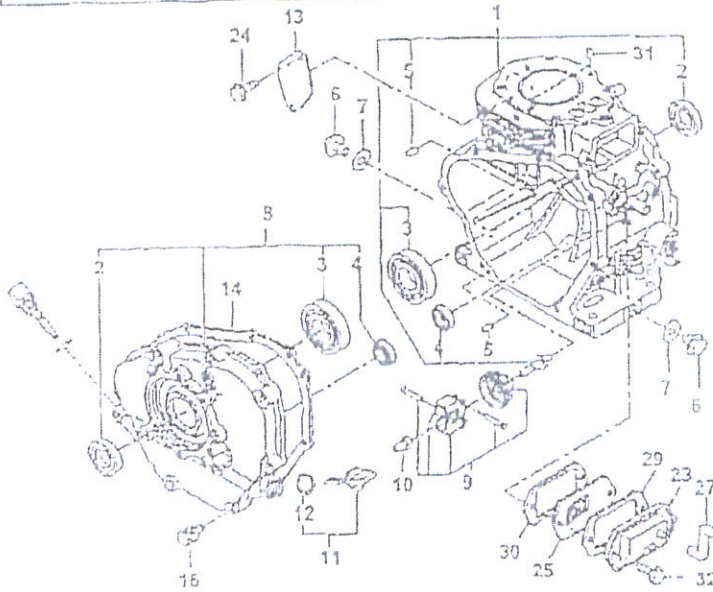
Job	Description	Warranty	Flat Rate	Time/Rate
CF16	Fuel Tank			0.3
CS17	Roll Cage			0.5
CS15	Isolators			0.3

# CRANKCASE

Warranty Hrs/Min		
Job	Description	Time/Hr.
0010	Partial Engine Rebuild	3.0
0011	Complete Engine Rebuild	5.0
0015	Crankcase Seal (each)	1.0
0021	Cylinder Head Gasket	0.5
0022	Valve Train Rebuild	1.0

Torque Spec		
Item No.	ft./lb	Nm
15	72-84	8.0-9.5
16	150-160	17-18.5
24	150-160	18.0-21.2



NO.	PART NO.	DESCRIPTION	ROBIN P/N	Qty.	NO.	PART NO.	DESCRIPTION	ROBIN P/N	Qty.
1	UP 05312	Crankcase	247-10120-01	1	17	UP 05324	Cylinder head	247-13001-31	1
2	UP 04998	Oil seal	044-03500-50	1	18	UP 05313	Valve guide	245-14201-03	2
3	UP 04999	Ball bearing	060-03500-10	1	19	UP 05314	Gird	010-50804-00	2
4	UP 02900	Ball bearing	060-01500-10	1	20	UP 05322	Head gasket	247-15001-13	1
5	UP 03210	Dowel pin	031-00600-20	2	21	UP 04578	Flange bolt	011-01000-40	4
6	UP 03223	Plug	040-11400-30	2	22	UP 05323	Rocker cover cap	246-15501-01	1
7	UP 03224	Gasket	021-11400-20	2	23	UP 05324	Breather Cover Cap	246-14301-01	1
8	UP 05315	Main bearing cover	248-11002-31	1	24	UP 05014	Bolt	001-85081-20	2
9	UP 04900	Oil seal	044-03500-20	1	25	UP 05325	Breather Plate Cap	246-14401-01	1
3	UP 04880	Ball bearing	060-03500-10	1	26	UP 05326	Flange bolt	011-01000-20	1
4	UP 04900	Ball bearing	060-01500-10	1	27	UP 05327	Rubber pipe	248-10501-02	1
9	UP 05318	Governor gear cap	246-45001-01	1	28	UP 05328	Gasket rocker cover	240-16002-13	1
10	UP 03226	Governor sleeve	205-41901-03	1	29	UP 04083	Gasket breather cover	246-16000-03	1
11	UP 04907	Oil gauge	224-63601-03	1	30	UP 05329	Gasket breather plate	246-16007-13	1
12	UP 04908	Gasket	021-22000-10	2	31	UP 03220	Dowel pin	031-00500-20	2
13	UP 05318	Blind cover	224-17101-03	1	32	UP 03000	Flange bolt	011-00500-30	2
14	UP 05319	Bearing cover gasket	246-15101-03	1					
15	UP 03242	Flange bolt	011-00600-20	4		UP 05330	Gasket set	247-09001-07	1
16	UP 05320	Bolt and washer	001-13064-00	7		UP 05513	Complete engine	EM54	
						UP 05515	Complete engine	EM54 Electric	

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