

RED-D-ARC GX200 2+4 Gas Welder

Red-D-Arc Welderentals

SERVICE MANUAL

Red-D-Arc Spec-Built Welding Equipment

This **RED-D-ARC** welder is built to **RED-D-ARC Extreme Duty** design specifications by Lincoln Electric.

Safety Depends on You

This welder is designed and built with safety in mind.

However, your overall safety can be increased by proper installation ... and thoughtful operation on your part.

DO NOT INSTALL, OPERATE OR REPAIR THIS EQUIPMENT WITHOUT READING THIS MANUAL AND THE SAFETY PRECAUTIONS CONTAINED THROUGHOUT.

And, most importantly, think before you act and be careful.

1-866-733-3272

North America's Largest Fleet of Welding Equipment

SAFETY

WARNING

CALIFORNIA PROPOSITION 65 WARNINGS

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

The Above For Diesel Engines

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

The Above For Gasoline Engines

ARC WELDING CAN BE HAZARDOUS. PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS SHOULD CONSULT WITH THEIR DOCTOR BEFORE OPERATING.

Read and understand the following safety highlights. For additional safety information, it is strongly recommended that you purchase a copy of "Safety in Welding & Cutting - ANSI Standard Z49.1" from the American Welding Society, P.O. Box 351040, Miami, Florida 33135 or CSA Standard W117.2-1974.

BE SURE THAT ALL INSTALLATION, OPERATION, MAINTENANCE AND REPAIR PROCEDURES ARE PERFORMED ONLY BY QUALIFIED INDIVIDUALS.



FOR ENGINE powered equipment.

1.a. Turn the engine off before troubleshooting and maintenance work unless the maintenance work requires it to be running.



1.b. Operate engines in open, well-ventilated areas or vent the engine exhaust fumes outdoors.



1.c. Do not add the fuel near an open flame welding arc or when the engine is running. Stop the engine and allow it to cool before refueling to prevent spilled fuel from vaporizing on contact with hot engine parts and igniting. Do not spill fuel when filling tank. If fuel is spilled, wipe it up and do not start engine until fumes have been eliminated.



1.d. Keep all equipment safety guards, covers and devices in position and in good repair. Keep hands, hair, clothing and tools away from V-belts, gears, fans and all other moving parts when starting, operating or repairing equipment.

1.e. In some cases it may be necessary to remove safety guards to perform required maintenance. Remove guards only when necessary and replace them when the maintenance requiring their removal is complete. Always use the greatest care when working near moving parts.

1.f. Do not put your hands near the engine fan. Do not attempt to override the governor or idler by pushing on the throttle control rods while the engine is running.

1.g. To prevent accidentally starting gasoline engines while turning the engine or welding generator during maintenance work, disconnect the spark plug wires, distributor cap or magneto wire as appropriate.



1.h. To avoid scalding, do not remove the radiator pressure cap when the engine is hot.



ELECTRIC AND MAGNETIC FIELDS may be dangerous

2.a. Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding current creates EMF fields around welding cables and welding machines

2.b. EMF fields may interfere with some pacemakers, and welders having a pacemaker should consult their physician before welding.

2.c. Exposure to EMF fields in welding may have other health effects which are now not known.

2.d. All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

2.d.1. Route the electrode and work cables together - Secure them with tape when possible.

2.d.2. Never coil the electrode lead around your body.

2.d.3. Do not place your body between the electrode and work cables. If the electrode cable is on your right side, the work cable should also be on your right side.

2.d.4. Connect the work cable to the workpiece as close as possible to the area being welded.

2.d.5. Do not work next to welding power source.



ELECTRIC SHOCK can kill.

3.a. The electrode and work (or ground) circuits are electrically “hot” when the welder is on. Do not touch these “hot” parts with your bare skin or wet clothing. Wear dry, hole-free gloves to insulate hands.

3.b. Insulate yourself from work and ground using dry insulation. Make certain the insulation is large enough to cover your full area of physical contact with work and ground.

In addition to the normal safety precautions, if welding must be performed under electrically hazardous conditions (in damp locations or while wearing wet clothing; on metal structures such as floors, gratings or scaffolds; when in cramped positions such as sitting, kneeling or lying, if there is a high risk of unavoidable or accidental contact with the workpiece or ground) use the following equipment:

- Semiautomatic DC Constant Voltage (Wire) Welder.
- DC Manual (Stick) Welder.
- AC Welder with Reduced Voltage Control.

3.c. In semiautomatic or automatic wire welding, the electrode, electrode reel, welding head, nozzle or semiautomatic welding gun are also electrically “hot”.

3.d. Always be sure the work cable makes a good electrical connection with the metal being welded. The connection should be as close as possible to the area being welded.

3.e. Ground the work or metal to be welded to a good electrical (earth) ground.

3.f. Maintain the electrode holder, work clamp, welding cable and welding machine in good, safe operating condition. Replace damaged insulation.

3.g. Never dip the electrode in water for cooling.

3.h. Never simultaneously touch electrically “hot” parts of electrode holders connected to two welders because voltage between the two can be the total of the open circuit voltage of both welders.

3.i. When working above floor level, use a safety belt to protect yourself from a fall should you get a shock.

3.j. Also see Items 6.c. and 8.



ARC RAYS can burn.

4.a. Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing open arc welding. Headshield and filter lens should conform to ANSI Z87.1 standards.

4.b. Use suitable clothing made from durable flame-resistant material to protect your skin and that of your helpers from the arc rays.

4.c. Protect other nearby personnel with suitable, non-flammable screening and/or warn them not to watch the arc nor expose themselves to the arc rays or to hot spatter or metal.



FUMES AND GASES can be dangerous.

5.a. Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. When welding, keep your head out of the fume. Use enough ventilation and/or exhaust at the arc to keep

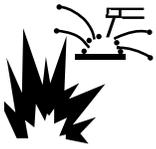
fumes and gases away from the breathing zone. **When welding with electrodes which require special ventilation such as stainless or hard facing (see instructions on container or MSDS) or on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and below Threshold Limit Values (TLV) using local exhaust or mechanical ventilation. In confined spaces or in some circumstances, outdoors, a respirator may be required. Additional precautions are also required when welding on galvanized steel.**

5.b. Do not weld in locations near chlorinated hydrocarbon vapors coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other irritating products.

5.c. Shielding gases used for arc welding can displace air and cause injury or death. Always use enough ventilation, especially in confined areas, to insure breathing air is safe.

5.d. Read and understand the manufacturer's instructions for this equipment and the consumables to be used, including the material safety data sheet (MSDS) and follow your employer's safety practices. MSDS forms are available from your welding distributor or from the manufacturer.

5.e. Also see item 1.b.



WELDING SPARKS can cause fire or explosion.

6.a. Remove fire hazards from the welding area.

If this is not possible, cover them to prevent the welding sparks from starting a fire.

Remember that welding sparks and hot

materials from welding can easily go through small cracks and openings to adjacent areas. Avoid welding near hydraulic lines. Have a fire extinguisher readily available.

6.b. Where compressed gases are to be used at the job site, special precautions should be used to prevent hazardous situations. Refer to "Safety in Welding and Cutting" (ANSI Standard Z49.1) and the operating information for the equipment being used.

6.c. When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.

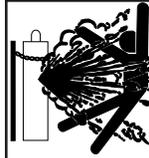
6.d. Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to insure that such procedures will not cause flammable or toxic vapors from substances inside. They can cause an explosion even though they have been "cleaned". For information, purchase "Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping That Have Held Hazardous Substances", AWS F4.1 from the American Welding Society (see address above).

6.e. Vent hollow castings or containers before heating, cutting or welding. They may explode.

6.f. Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuffless trousers, high shoes and a cap over your hair. Wear ear plugs when welding out of position or in confined places. Always wear safety glasses with side shields when in a welding area.

6.g. Connect the work cable to the work as close to the welding area as practical. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables until they fail.

6.h. Also see item 1.c.



CYLINDER may explode if damaged.

7.a. Use only compressed gas cylinders containing the correct shielding gas for the process used and properly operating regulators designed for the gas and pressure used. All hoses, fittings, etc. should be suitable for the application and maintained in good condition.

7.b. Always keep cylinders in an upright position securely chained to an undercarriage or fixed support.

7.c. Cylinders should be located:

- Away from areas where they may be struck or subjected to physical damage.

- A safe distance from arc welding or cutting operations and any other source of heat, sparks, or flame.

7.d. Never allow the electrode, electrode holder or any other electrically "hot" parts to touch a cylinder.

7.e. Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.

7.f. Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.

7.g. Read and follow the instructions on compressed gas cylinders, associated equipment, and CGA publication P-1, "Precautions for Safe Handling of Compressed Gases in Cylinders," available from the Compressed Gas Association 1235 Jefferson Davis Highway, Arlington, VA 22202.



FOR ELECTRICALLY powered equipment.

8.a. Turn off input power using the disconnect switch at the fuse box before working on the equipment.

8.b. Install equipment in accordance with the U.S. National Electrical Code, all local codes and the manufacturer's recommendations.

8.c. Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer's recommendations.

PRÉCAUTIONS DE SÛRETÉ

Pour votre propre protection lire et observer toutes les instructions et les précautions de sûreté spécifiques qui paraissent dans ce manuel aussi bien que les précautions de sûreté générales suivantes:

Sûreté Pour Soudage A L'Arc

1. Protégez-vous contre la secousse électrique:
 - a. Les circuits à l'électrode et à la pièce sont sous tension quand la machine à souder est en marche. Éviter toujours tout contact entre les parties sous tension et la peau nue ou les vêtements mouillés. Porter des gants secs et sans trous pour isoler les mains.
 - b. Faire très attention de bien s'isoler de la masse quand on soude dans des endroits humides, ou sur un plancher métallique ou des grilles métalliques, principalement dans les positions assis ou couché pour lesquelles une grande partie du corps peut être en contact avec la masse.
 - c. Maintenir le porte-électrode, la pince de masse, le câble de soudage et la machine à souder en bon et sûr état de fonctionnement.
 - d. Ne jamais plonger le porte-électrode dans l'eau pour le refroidir.
 - e. Ne jamais toucher simultanément les parties sous tension des porte-électrodes connectés à deux machines à souder parce que la tension entre les deux pinces peut être le total de la tension à vide des deux machines.
2. Dans le cas de travail au dessus du niveau du sol, se protéger contre les chutes dans le cas où on recoit un choc. Ne jamais enrouler le câble-électrode autour de n'importe quelle partie du corps.
3. Un coup d'arc peut être plus sévère qu'un coup de soliel, donc:
 - a. Utiliser un bon masque avec un verre filtrant approprié ainsi qu'un verre blanc afin de se protéger les yeux du rayonnement de l'arc et des projections quand on soude ou quand on regarde l'arc.
 - b. Porter des vêtements convenables afin de protéger la peau de soudeur et des aides contre le rayonnement de l'arc.
 - c. Protéger l'autre personnel travaillant à proximité au soudage à l'aide d'écrans appropriés et non-inflammables.
4. Des gouttes de laitier en fusion sont émises de l'arc de soudage. Se protéger avec des vêtements de protection libres de l'huile, tels que les gants en cuir, chemise épaisse, pantalons sans revers, et chaussures montantes.
5. Toujours porter des lunettes de sécurité dans la zone de soudage. Utiliser des lunettes avec écrans latéraux dans les zones où l'on pique le laitier.
6. Eloigner les matériaux inflammables ou les recouvrir afin de prévenir tout risque d'incendie dû étincelles.

7. Quand on ne soude pas, poser la pince à un endroit isolé de la masse. Un court-circuit accidentel peut provoquer un échauffement et un risque d'incendie.
8. S'assurer que la masse est connectée le plus près possible de la zone de travail qu'il est pratique de la faire. Si on place la masse sur la charpente de la construction ou d'autres endroits éloignés de la zone de travail, on augmente le risque de voir passer le courant de soudage par les chaînes de levage, câbles de grue, ou autres circuits. Cela peut provoquer des risques d'incendie ou d'échauffement des chaînes et des câbles jusqu'à ce qu'ils se rompent.
9. Assurer une ventilation suffisante dans la zone de soudage. Ceci est particulièrement important pour le soudage de tôles galvanisées plombées, ou cadmiées ou tout autre métal qui produit des fumées toxiques.
10. Ne pas souder en présence de vapeurs de chlore provenant d'opérations de dégraissage, nettoyage ou pistolage. La chaleur ou les rayons de l'arc peuvent réagir avec les vapeurs du solvant pour produire du phosgène (gaz fortement toxique) ou autres produits irritants.

PRÉCAUTIONS DE SÛRETÉ POUR LES MACHINES À SOUDER À TRANSFORMATEUR ET À REDRESSEUR

1. Relier à la terre le châssis du poste conformément au code de l'électricité et aux recommandations du fabricant. Le dispositif de montage ou la pièce à souder doit être branché à une bonne mise à la terre.
2. Autant que possible, l'installation et l'entretien du poste seront effectués par un électricien qualifié.
3. Avant de faire des travaux à l'intérieur de poste, la débrancher à l'interrupteur à la boîte de fusibles.
4. Garder tous les couvercles et dispositifs de sûreté à leur place.

PRODUCT DESCRIPTION

The GX200 is a portable engine driven arc welding power source capable of providing constant current output for stick welding or DC TIG welding.

GENERATOR

The generator of the GX200 is asynchronous with capacitor excitation and therefore with excellent mechanical features of sturdiness and simplicity; it requires no maintenance as it has no sliding parts such as slip rings and brushes. The rotor consists of a laminar pack with die cast aluminum stand. The sizing and setting up of these active parts represent a new principle which has made the asynchronous generator suitable for welding services and which has been appropriately patented.

The GX200 has a current range of 40-200 amps with a 60% duty cycle at 170 Amps. The unit is also capable of providing 2 KVA of 120 VAC and 4KVA of 240 VAC at 60 cycle.

PRE-OPERATION MAINTENANCE

OIL

1 - Remove the oil filler cap and wipe the dipstick clean. 2 - Insert the dipstick into the oil filler neck, but do not screw it in. 3 - If the level is low, fill to the top of the oil filler neck with the recommended oil.

OIL CAPACITY: 1.0 L (34 US oz.)
DO NOT OVERFILL.

FUEL

Fill the fuel tank with the grade of fuel recommended.

LOCATION/VENTILATION

The welder should be located to provide an unrestricted flow of clean, cool air. Also, locate the welder so that engine exhaust fumes are properly vented to an outside area.

POLARITY CONTROL AND CABLE SIZES

With the engine off, connect the electrode and work cables of the appropriate size (see the following table) to the studs located on the front panel. For positive polarity, connect the electrode cable to the terminal marked "Positive". For Negative polarity, connect the electrode cable to the "Negative" stud. These connections should be checked periodically and tightened if necessary.

When welding at a considerable distance from the welder, be sure you use ample size welding cables.

TABLE 2
RECOMMENDED COPPER CABLE SIZES
AT 60% DUTY CYCLE

Amps	% Cycle Duty	Total Combined Length of Electrode Plus Work Cable in feet				
		0-50	50-100	100-150	150-200	200-250
225	40	3 AWG	3 AWG	2AWG	1AWG	1/0AWG
225	100	1 AWG	1 AWG	1 AWG	1 AWG	1/0AWG

SAFETY SHUTDOWN SYSTEM

All units are equipped with low oil pressure shutdown systems. Engines should never be operated with shutdown system disconnected or inoperative.

GENERAL MAINTENANCE

Check all external bolts (engine mounts, generator mounts etc.) at least once per year and tighten/replace as required.

MANUAL START

- 1 - Turn the fuel valve to the on position (turn to right)
- 2 - Close the choke (turn to left)
- 3 - Turn the throttle control knob until half open
- 4 - Turn the engine switch to the on position
- 5 - Pull the start rope lightly until resistance is felt, then pull briskly.
- 6 - As the engine warms up, gradually move the choke lever to the open position.
- 7 - Let the engine run at low speed for 2-3 minutes to warm up.

ELECTRIC START

- 1-Turn the fuel valve to the on position (turn to right)
- 2-Close the choke (turn to left)
- 3-Turn the throttle control knob until half open.
- 4-Turn start key switch to start.
- 5-As the engine warms up, gradually move the choke lever to the open position.
- 6-Let the engine run at low speed for 2-3 minutes to warm up.

TO TURN OFF THE UNIT

Turn the throttle knob in an counterclockwise direction until the furthest position, after letting the engine run slowly for a few seconds, turn the stop switch to the off position. **IMPORTANT** * - Turn the fuel valve to the off position

CONTROL OF WELDING CURRENT

There is one continuous current control for each range which gives you complete adjustment of current from min. to max. within the range. There is a low tap for ranges from 40-90Amps, a medium tap for ranges from 90-170Amps and a high tap for ranges from 160-195Amps. Always use the lowest possible range with fine current adjustment closest to max. position.

AUXILIARY POWER

Your GX200 is equipped with AC auxiliary power.

The AC unit provides 1 X 120Volt Duplex receptacle 2KW, and 1 X 120/240Volt twist lock receptacle 4KW, at 60 Hertz power.

The output circuit is protected with a 15Amp circuit breaker for the 120V and a 15Amp circuit breaker for the 240V.

MAINTENANCE

Have qualified personnel do the maintenance work. Turn the engine off before working inside the machine. In some cases it may be necessary to remove safety guards to perform required maintenance. Remove guards only when necessary and replace them when the maintenance requiring their removal is complete. Always use the greatest care when working near moving parts.

Do not put your hands near the engine or generator fan. If a problem cannot be corrected by following the instructions, take the machine to the nearest RED-D-ARC location.

GENERAL INSTRUCTIONS

1. Blow out the welder and controls with an air hose at least once every two months. In particularly dirty locations, this cleaning may be necessary once a week. Use low pressure air to avoid driving dirt into the insulation.
2. Change oil after the first 20 hours of operation. Thereafter change the crankcase oil every 100 hours using the proper grade of oil as recommended in the engine operating manual.
3. Oil classification SG SF/CC CD

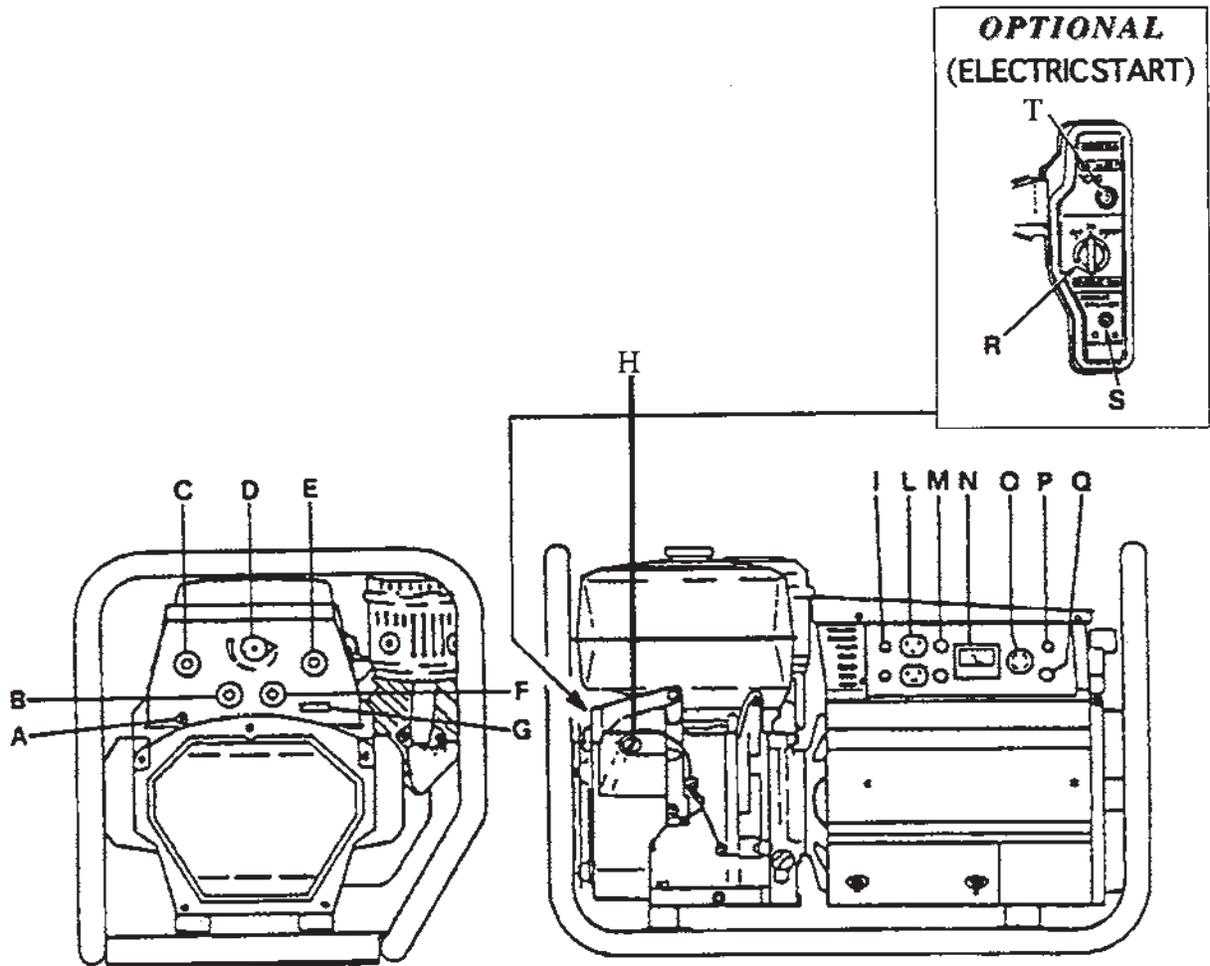
Use viscosities as per the engine manual.

WARNING

- Do not touch electrically live parts or electrode with skin or wet clothing. Insulate yourself from work and ground.
- Keep flammable materials away.
- Wear eye, ear and body protection.
- Keep your head out of fumes.
- Use ventilation or exhaust to remove fumes from breathing zone.
- Turn power off before servicing.
- Do not operate with panel open or guards off.
- Stop engine when fuelling.
- Do not smoke when fuelling.
- Remove cap slowly to release pressure.
- Do not overfill tank.
- Wipe up spilled fuel and allow fumes to clear before starting engine.
- Keep sparks and flame away from tank.



CONTROL PANEL FEATURES



A	Grounding Screw	M	120V circuit breaker - 10A
B	Welding Socket: negative 90-170A	N	Hourmeter/Tachometer
C	Welding Socket: negative 160-195A	O	120/240V Single Phase Outlet
D	Throttle Control	P	240V signal lamp
E	Welding Socket: positive connection	Q	240V circuit breaker - 145A
F	Welding Socket: negative 40-90A	R	Start/Stop engine switch
G	Serial Number	S	Electronic battery charger circuit breaker
H	Stop switch	T	Low oil level signal lamp
I	120V signal lamp		Receptacle covers not shown
L	120V Single Phase outlet		

OPERATION

Fuel Consumption

Fuel consumption has been optimized by means of careful design of the combustion chamber, fuel feed & injection systems, and cross-flow cylinder heads. In order to enhance longevity of the engine, the engine turns at a constant 3600 RPM and no engine idler is used. As a result, there is no waiting time for the welder to achieve operating speed when striking an arc.

Fuel consumption figures at average operating loads are as follows:

Tank Capacity 6.5 litres (1.6 U.S.gallons)

Operating Interval 3-4 hours per tank

Replacement Parts

Engine replacement parts are available from authorized HONDA dealers.

All other parts are available from any RED-D-ARC location.

Engine Specifications

Model	HONDA GX 340
No. of Cylinders	1
Displacement	337cc
Rotation Speed	3600 RPM
Power	11 HP
Cooling system	Forced Air
Ignition system	Transistorized magnet
Starting system	Pull start with recoil cable
Optional Electric Start	
PTO shaft rotation	Counterclockwise
Fuel	Automotive gasoline

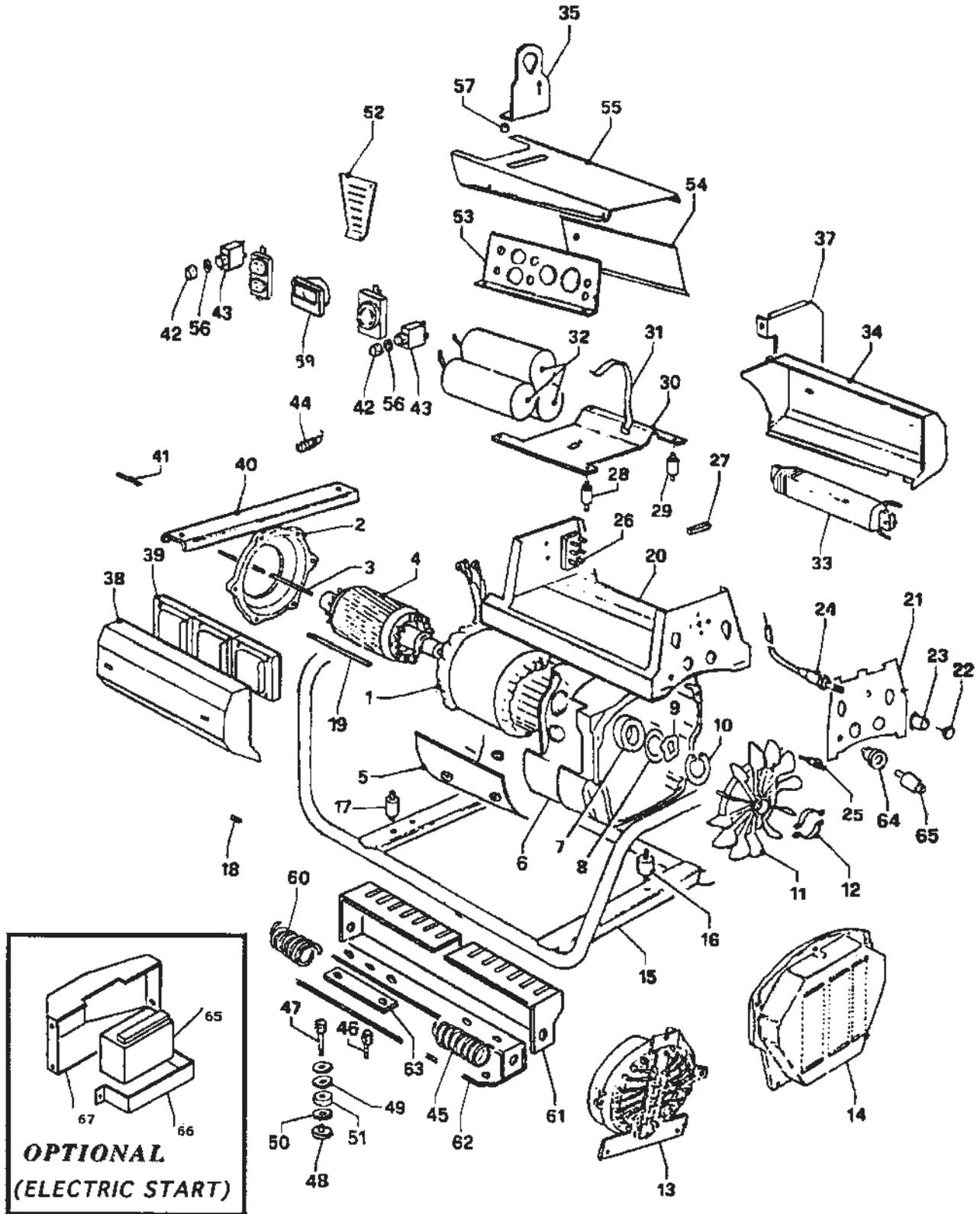
<u>MODEL</u>	<u>WELDING OUTPUT</u>	<u>AUXILIARY OUTPUT</u>
GX200	40-200 amps @ 25volts 90 volts maximum O.C.V.	120 Vac 15 amps 1 duplex outlet 2.0 KVA 120/240 Vac 15 amps 1 single outlet 4.0 KVA

WARNING:

- Have qualified personnel do the troubleshooting work. Turn the engine off before working inside the machine. In some cases it may be necessary to remove safety guards to perform required maintenance. Remove guards only when necessary and replace them when the maintenance requiring their removal is complete. Always use the greatest care when working near moving parts.
- Do not put your hands near the engine fan. If a problem cannot be corrected by following the instructions, take the machine to the nearest Red-D-Arc Location.

TROUBLE	CAUSE	WHAT TO DO
1. Engine won't start.	<ul style="list-style-type: none"> A. Weather colder than -10C B. Engine flooded. C. Fouled spark plug. D. Dirt or water in fuel. E. Clogged fuel line or fuel strainer. 	<ul style="list-style-type: none"> A. Use very light engine oil. B. Close fuel line, drain carburetor & bowl, try again. C. Clean or replace spark plug. D. Drain tank and refill. E. Drain fuel line, tank, and refill.
2. Engine runs but generator does not produce power at output studs and AC outlets.	<ul style="list-style-type: none"> A. Unit started with load plugged in. B. Loose connection or broken wire. C. Welding cables shorted together. D. Shorted diode. E. Bad condenser. F. Burned windings. 	<ul style="list-style-type: none"> A. Unplug load, start engine and then plug load in. B. Repair, mend or retighten connection BEFORE you do any major disassembly C. Remove short. D. Replace rectifier. E. Replace condenser. F. Replace stator.
3. Engine runs well and produces AC power but no welding output.	<ul style="list-style-type: none"> A. Broken wire to output studs B. Opened diodes. 	<ul style="list-style-type: none"> A. Repair. B. Replace rectifier.

MISCELLANEOUS ASSEMBLY



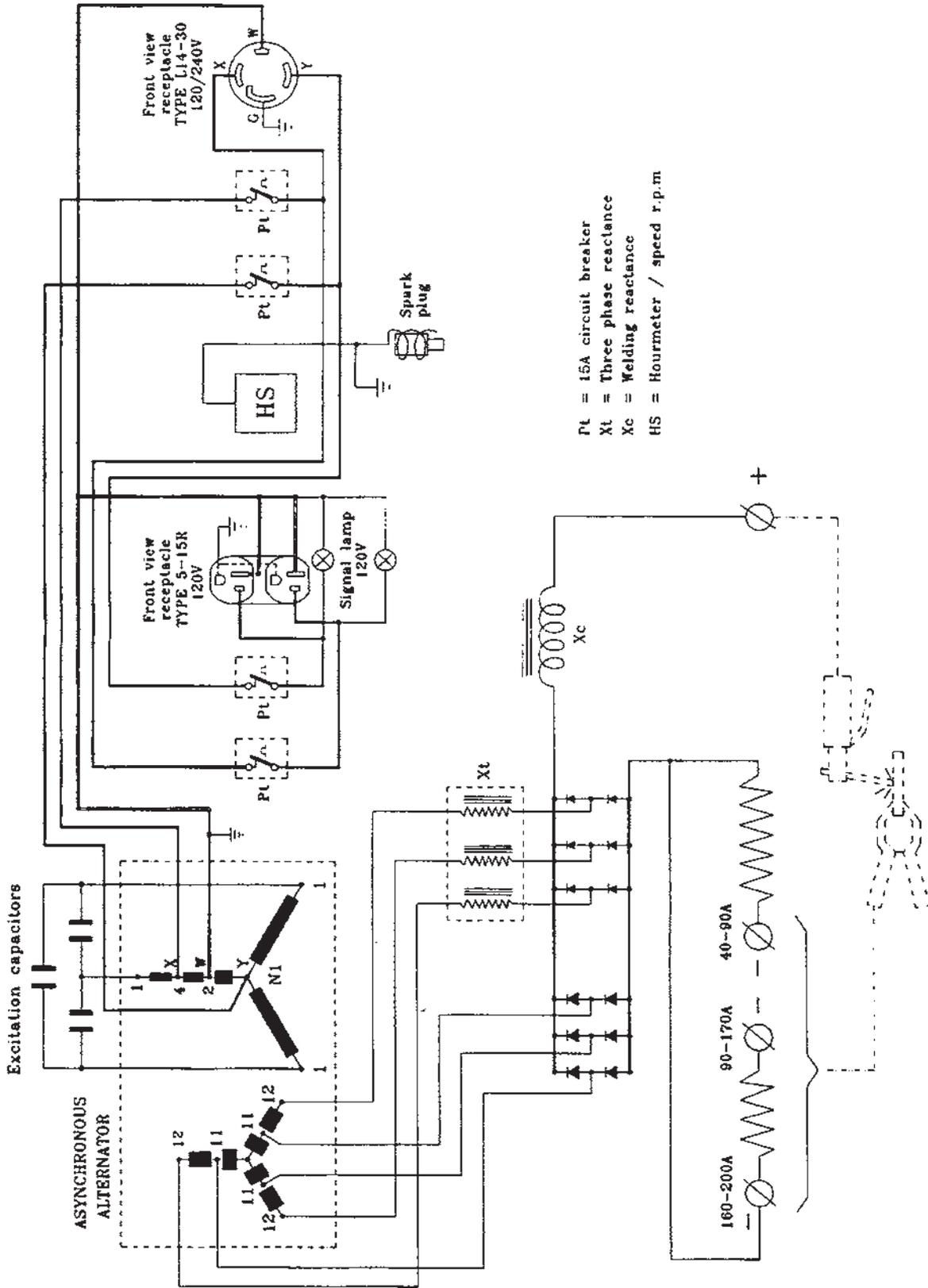
Receptacle covers not shown

MISC. ASSEMBLY PARTS LIST

ITEM	PART NAME & DESCRIPTION	NO. REQ'D	PART NO.
1	Stator	1	18.335
2	Engine flange	1	18.281
3	Tie Rod	1	18.279
4	Rotor	1	18.280
5	Lower Stator Cover	1	18.278
6	Bearing Flange	1	18.642
7	Ball Bearing	1	304
8	Internal Ring	1	305
9	Spring Washer	1	305
10	Clip Ring	1	307
11	Fan	1	310
12	Fan Ring	1	311
13	Power Rectifier Assy.	1	18.377
14	Rectifier Cover	1	606
15	Tubular Frame Assy.	1	RGX 200FRAME
16	Shock Absorber (40x40 mms)	2	13.961
17	Shock Absorber (30x30 mms)	2	313
18	Spacer (H 20 mms)	2	622
19	Flange Tie Rod	4	18.078
20	Instrument Case	1	17.114
21	Aluminum Front Plate	1	18.378
22	Knob Cap	1	11.209
23	Throttle Knob	1	16.900
24	Throttle Cable Assembly	1	14.436
25	Ground Screw	1	15.721
26	Connection Block 6 Poles	1	10.364
27	Spacer (H70 mms)	2	16.548
28	Shock Absorber (15x30 mms)	2	320
29	Shock Absorber (15x30 mms)	2	13.802
30	Capacitor Support Plate	1	13.799
31	Capacitor Bracket	1	17.119
32	Capacitor 60 uF	3	11.333
33	Reactance Assembly	1	13.925
34	Right Side Cover	1	18.376
35	Lifting Hook	1	18.379
37	Air Deflector	1	18.284
38	Left Side Cover	1	17.450
39	Three Phase Reactance	1	13.927
40	Engine Support Bracket	1	14.854
41	Screw (M 5x27 mms)	5	13.929
42	Rubber Protective Cover	4	14.658
43	Circuit Breaker 15A	4	13.640
44	Spring	1	14.139
45	Resistance Coil	1	14.432
46	Resistance Support	1	12.830
47	Resistance Terminal	4	11.439
48	Male Insulator (22 mms dia.)	5	17.603
49	Insulating Washer (7 mms dia.)	10	17.491
50	Insulating Washer (12 mms dia.)	10	17.490

MISC. ASSEMBLY PARTS LIST

ITEM	PART NAME & DESCRIPTION	NO. REQ'D	PART NO.
51	Female Insulator (22 mms dia.)	5	17.602
52	Left Protection Grate	1	13.922
53	Side Plate - Left	1	17.321
54	Side Plate - Right	1	15.720
55	Top Cover	1	17.571
56	Washer	4	14.270
57	Spacer	2	18.380
59	Digital Tachometer/Hourmeter	1	TT226NR-2C
60	Resistance Coil	1	17.117
61	Resistance Cover	1	17.322
62	Resistance Support	1	17.323
63	Plate	1	17.324
64	Cable Connector	4	18.285
65	12V 12Ah Battery	1	MOB-CB12B-B2
66	Battery Bracket	1	RGX200BOX
67	Battery Cover Panel	1	RGX200BOX
	Receptacle Cover, 120 Volt	1	114203
	Receptacle Cover, 240 Volt	1	117362



PL = 15A circuit breaker
 Xt = Three phase reactance
 Xc = Welding reactance
 HS = Hourmeter / speed r.p.m.