

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



OWNER'S MANUAL

MODEL TG 6500DW Diesel Generator/Welder

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 TG6500DW before attempting to operate the generator/welder. This is a diesel engine powered, industrial strength generating unit of electrical power. The diesel engine and the generator/welder 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.

TG6500DW Manual Revision # 030321A



INDUSTRIAL

OWNER'S MANUAL MODEL TG 6500DW Diesel Generator/ Welder

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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 EQUIPMENT. 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!

→ SAFETY ←

This generator/welder 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 unit 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.
- Comply with all laws regulating the storage and handling of diesel fuel. Diesel fuel is highly flammable and explosive. Avoid spilling diesel fuel on a hot engine. Do not allow smoking, open flames, sparks or heat in the vicinity while handling diesel fuel.
- Do not overfill the fuel tank. Always allow room for diesel fuel expansion. Diesel 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 diesel engine 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

IMPORTANT! IMPORTANT! IMPORTANT! IMPORTANT!

BEFORE STARTING THE ENGINE

CHECK AND/OR FILL OIL

CHECK AND/OR FILL DIESEL

CHECK AND/OR REPLACE FILTER

WARNING!

DO NOT ATTEMPT TO START THE ENGINE BEFORE FILLING WITH OIL!

Titan Industrial
Recommends
ONLY
Using Rotella T
Multigrade
15W - 40
engine oil.

* Capacity 1.2 qts. Fill with oil

- Place generator on a level surface.
- Clean area around oil fill opening.
- Remove the dipstick.
- → Wipe the dipstick clean.
- Pour oil in until it reaches the FULL mark on dipstick.
- **⇒** DO NOT OVERFILL!
- → CLOSE OIL CAP!

Note:

The generator's revolving field rides on a sealed ball bearing that requires no additional lubrication for the life of the bearing.

WARNING!

Do not overfill! Leave room for fuel expansion. Never fill fuel indoors. Never fill fuel when engine is hot or running. Do not smoke or fill fuel near an open flame or sparks.

Fill with diesel fuel only

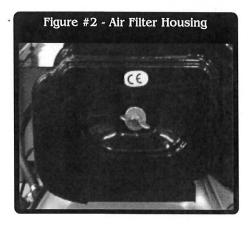
- Use diesel fuel only.
- Clean area around fuel cap.
- Remove fuel cap.
- Add diesel fuel to fuel tank.
- DO NOT overfill. Do not fill above the red plug inside the fuel tank filter (this allows for fuel expansion).
- Replace fuel cap.
- → Wipe up any spilled diesel fuel.

WARNING!

Do not clean filter with any type of detergent.

Check air filter

- Remove cover panel. Loosen wingnut and remove air filter cover.
- Never wash air cleaner with any kind of detergent or cleaning solvent.
- Air filter should be changed if engine performance decreases or color of exhaust changes.
- Never run engine without air filter. This can cause rapid engine wear.



Note:

Because this is a diesel engine, frequent oil and filter changes are required.

CHECK AND/OR ADD BATTERY FLUID

WARNING!

Do not try to start engine with a "dry" battery! This cause irreversible damage to the battery!

Check Battery

BATTERY MAY BE SHIPPED WITHOUT BATTERY ACID! Your local auto parts store will have battery acid available. Use caution when filling battery. Fill to the "full" line on the battery. Follow all safety directions on the battery acid container!

IMPORTANT! IMPORTANT! IMPORTANT! IMPORTANT

OPERATION OF THE GENERATOR/WELDER

CAUTION!

DO NOT start or stop the engine with electrical loads connected to the receptacles. Be certain connected devices are OFF before connecting or disconnecting.

DANGER!

DO NOT run generator indoors or in poorly ventilated areas. Engine exhaust contains carbon monoxide which is an odorless, deadly gas.

WARNING!

To avoid burns, avoid muffler and nearby areas.

Starting the Engine - Recoil starting

- Be Sure all loads are unplugged from the generator before attempting to start it.
- Place unit at a level position.
- Turn fuel cock to the on position (figure #3).
- Turn the key switch to the "RUN" position and move the red engine speed lever to the "RUN" position (push to the right, it will click into place).
- Push the compression release switch, located on the top of the generator, to the down position (figure #4). It is important to do this. It will be too hard to pull the recoil start handle if you do not.
- Pull Starter Handle slowly until you feel some resistance. Then pull cord out with a rapid, full arm stroke. Always let the rope return slowly. Never allow the rope to 'snap back' against the starter.

Figure #3 - Fuel Cock Positions





Starting the Engine - Electric starting

- Be Sure all loads are unplugged from the generator/welder before attempting to start it.
- Place unit in a level position.
- Turn fuel cock to the on position.

 Reach under the fuel tank, on the left hand side, locate the fuel cock and turn the lever to the down position).

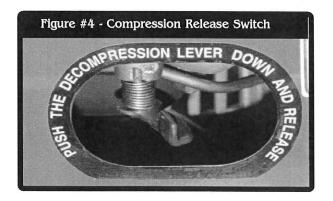
Move the engine speed lever to the "RUN" position .

- Turn the key clockwise to the "START" position.
- As soon as the engine starts, let go of the key. The key will return to the "ON" position.
- If the engine does not start after 10 seconds, wait about 15 seconds before attempting to start it
- again. If starting motor is run for too long it may cause the battery to become weak.

MAKE SURE THAT BATTERY FLUID HAS BEEN ADDED!

BATTERY MAY BE SHIPPED WITHOUT FLUID.

IF STARTING ENGINE FOR FIRST TIME, ALLOW IT TO RUN FOR 5 MINUTES BE-FORE CONNECTING ANY ELECTRICAL LOADS!



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 shutdown 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 for generator to run.

NOTE:

Allow generator to settle. Run for at least 3 minutes, 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
- Turn key to the "OFF" position.
- Close the fuel cock valve.

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.

■ USE DIESEL FUEL ONLY!

Never use gasoline, alcohol, or blended fuel (gasohol, ethanol, or methanol). They will damage a diesel engine and void the warranty.

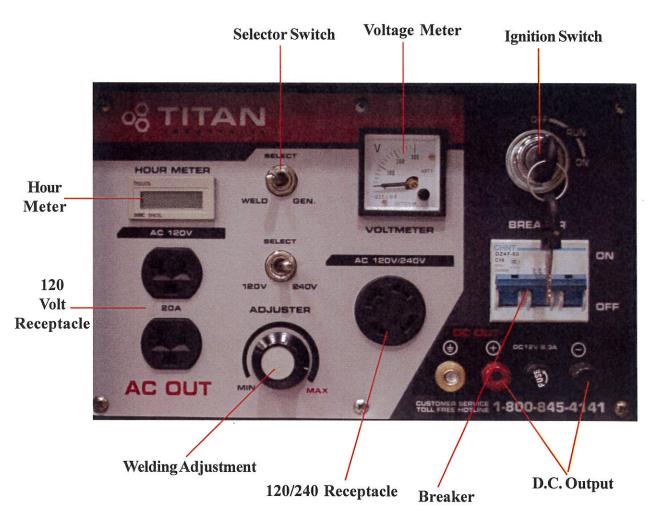
Damage may occur if engine or carburetor cleaning products are used.

Storage

→ IMPORTANT:

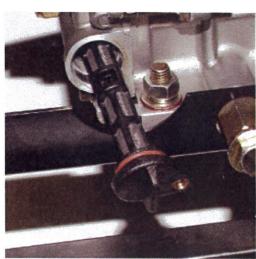
Empty fuel system if unit is to be stored for 30 days or more. This will help prevent gum deposits from forming in fuel system such as the injector fuel filter, fuel pump, fuel hose, and fuel tank during storage.

RECEPTACLES/SELECTORS



WELDING LEAD CONNECTIONS





OIL FILTER

Clean/Change filter after the first 5 hours of operations.

Change oil every 30 days, or sooner in adverse conditions. Check oil filter each and every time oil is changed. Failure to do so, will cause engine damage and void the warranty.

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

WARNING:

Factory warranty is voided if fuel, other than specified diesel fuel, is used in this engine, refer to owners manual for fuel.

Maintenance Guide				
	DAILY	EVERY MONTH/ 20 HRS	EVERY 3 MONTHS/ 100 HRS	EVERY 6 MONTHS/ 500 HRS
			(1)	
Check/Refill Fuel	X			
Drain fuel from tank		When stored longe	r than 60 days	
Check/Refill Oil	X			
Check for oil leakage	X			
Check battery fluid		X		
Change oil		*		
Clean/Replace oil filter		X		
Replace air filter		X* (Replace (a	v) 500 Hours) X*	
Clean/Replace fuel filter				X

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

^{*}First oil change should be after 5 hrs. of use. After initial break-in period change oil every 30 days or sooner, if under adverse conditions.

TROUBLESHOOTING

Problem	Cause	Solution
Engine is running but no power output is available.	 Circuit breaker is open. Poor connection or defective cord set. Connected device is bad. Fault in generator. 	 Reset the circuit breaker. Check & repair. Connect another device that is in good condition. Contact service center.
Engine runs good until loads are connected, then bogs down.	 Short circuit in a connected load. Overloaded generator. Engine speed is too slow. Short in generator circuit. 	 Disconnect shorted load. See 'Connecting Electrical Loads' section of manual. Contact service center. Contact service center.
Engine will not start or engine starts but runs rough.	 On/Off Switch is turned 'OFF'. Battery is dead Dirty air cleaner. Out of diesel fuel. Stale diesel fuel. Not enough speed or force is used for recoil start. Water in diesel fuel. Speed control is not set to "RUN". Low oil level. Oil nozzle is dirty. Engine has lost compression. 	 Turn On/Off Switch to 'ON'. Charge or replace it. Clean air filter Fill fuel tank. Drain fuel tank and refill. Read and follow directions. Drain and refill tank. Move speed control to "RUN" position. Add oil to proper level. Clean oil nozzle. Contact service center.
Engine shuts down during operation.	 Out of diesel fuel. Fault in engine. 	Fill fuel tank. Contact service center
Engine lacks power	 Load is too high. Dirty air filter. Engine needs to be serviced. 	See 'Connecting Electrical Loads' section of manual. Replace the air filter. Contact service center.

Service 1-800-845-4141



Fax 864-834-5127

Replacement Parts 1-800-845-4141

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

OUT OF FUEL/START PROCEDURE

- 1. Close fuel shut off valve under tank.
- 2. Fill tank with proper fuel to no less than 1/4 full.
- 3. Remove clamp that holds fuel line to the fuel pump and gently remove the fuel hose.
- 4. Slowly open shut off valve until fuel appears at the end of hose.
- 5. Re-install fuel line at pump and secure clamp using needle nose pliers.
- 6. Put solenoid switch to "run" position and turn ignition switch to start engine. If engine fails to start, repeat #3.
- 7. If engine fails to start, after a reasonable attempt, bleed the fuel pump, using the following procedure. Loosen the fuel pump line using a 17mm wrench. Turn ignition and check for fuel coming from fuel pump. Contain any spilled fuel during this procedure. Maintain solenoid in "run" position during this procedure.
- 8. At the appearance of fuel, re-install and tighten fuel line. Start the engine using the above procedure.

If the problem continues, Call 1-800-845-4141, a factory service representative will assist.



TG6500DW Diesel Generator/Welder

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Titan Industrial TG 6500DW



Generator

Туре	Voltage Regulation
Wound Stator and Rotor	Engine Speed Control System

120 Volts AC

Frequency	Rated Power	Voltage	Rated Current
60Hz	3600/4800	120V	30A

240 Volts AC

Frequency	Rated Power	Voltage	Rated Current
60Hz	3600/4800	240V	15A

Engine

Туре	Air Cooled Gas Diesel Engine
Model	TG 6500DW
Horse Power	10 HP
Fuel	Diesel
Fuel Capacity	3.3 Gallons
Ignition System	Electric Start / Manual
Hours of Operation @ Full Load	12 Hours
Dimensions (inches)	30.3" x 22" x 29.5"
Net Weight	350 LBS
RPM	3600

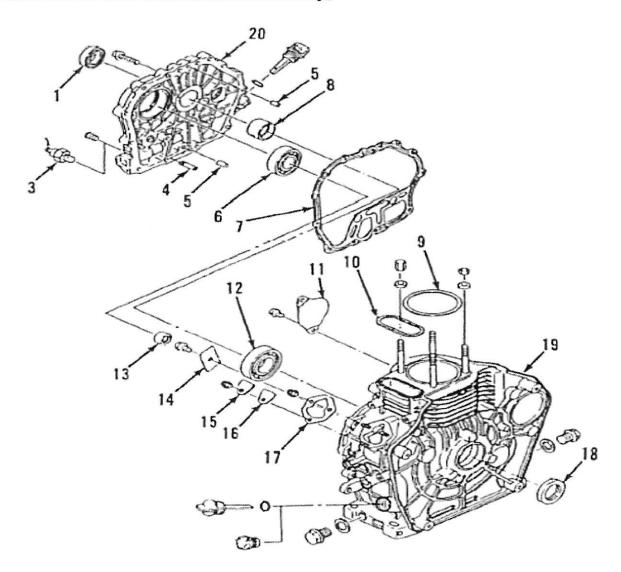
Welder

Operating Voltage/Rated Current	25V-160A DC
Current adjustm ent Scope	5 0 A - 1 8 0 A

Titan Industrial PO Box 791 Travelers Rest, SC 29690

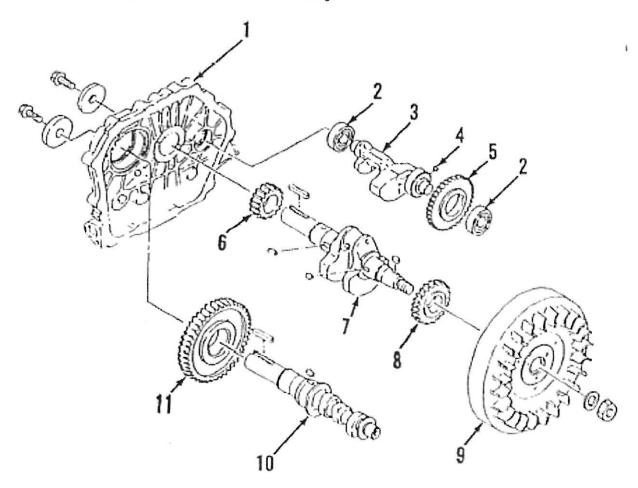
Phone: (864) 834-7212 Toll Free: 888-828-8126 www.titanindustrial.net

1. Cylinder Block Assembly



tan Part#	Part Name	<u>Titan Part #</u>
LCT-7557 LCT-7520 LCT-7513	12. Crank Shaft Bearing 13. CamShaft Bearing 14. Bearing Retainer Plate 15. Fuel Pump cover 16. Fuel Pump Gasket 17. Fuel Pump Shims 18. CrankShaft Oil Seal 19. Cylinder Block 20. Crank Case Cover	LCT-7515 LCT-7514 LCT-7543 LCT-7537 LCT-7537 LCT-7536 LCT-7552 LCT-7553 LCT-7553
	LCT-016 LCT-7528 LCT-7528 LCT-7528 tLCT-7529 LCT-7557 LCT-7520	LCT-7552 12. Crank Shaft Bearing LCT-016 13. CamShaft Bearing LCT-7528 14. Bearing Retainer Plate LCT-7528 15. Fuel Pump cover LCT-7528 16. Fuel Pump Gasket tLCT-7529 17. Fuel Pump Shims LCT-7557 18. CrankShaft Oil Seal LCT-7520 19. Cylinder Block LCT-7513 20. Crank Case Cover

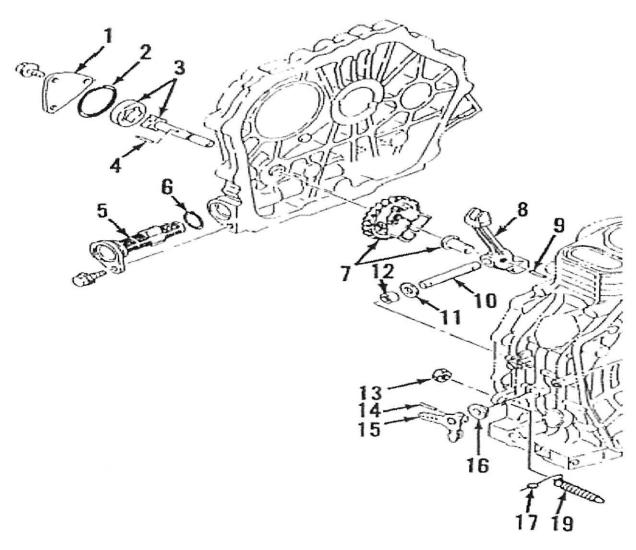
2. Crank Shaft Assembly



<u>Part Name</u>	<u>Titan Part #</u>
1. Crank Case Cover	LCT-7520
2. Balancer Shaft Bearing	LCT-7522
3. Balancer Shaft	LCT-7522
4. Key	LCT-7522
5. Balancer Shaft Gear	LCT-7522
6. Camshaft Drive Gear	LCT-7515
7. CrankShaft	LCT-7515
8. Balancer Shaft Drive Gear	LCT-7515
9. Flywheel	LCT-7551
10. Camshaft	LCT-7514
11. Cam Shaft Drive Gear	LCT-7514

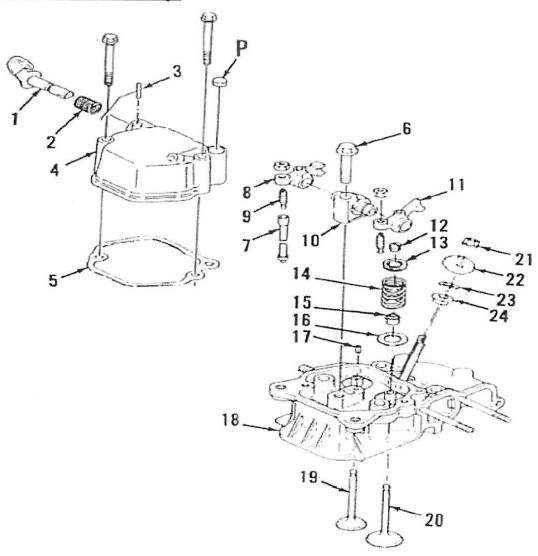
Some Parts Sold As Assemblies

3. Governor Gear Assembly



Part Name	<u>Titan Part #</u>	Part Name	Titan Part #
1. Oil Pump	LCT-7522	10. Governor Arm Shaft	LCT-7525
2. Oil Pump O-ring	LCT-7527	11. Flat Washer	N\A
3. Oil Pump Rotor	LCT-7523	12. Governor Shaft Bearing	N\A
4. Oil Pump Drive Pir	LCT-7523	13. Lock Nut	LCT-7526
5. Oil Filter\Sreen	LCT-015	14. Dowel Pin	LCT-7525
6. O-Ring	LCT-015	15. Governor Arm	LCT-7525
7. Governor Assembl	y LCT-7523	16. Thrust Bearing	LCT-7525
8. Governor Arm	LCT-7525	17. Seal Wire	N\A
9. Dowel Pin	LCT-7525	19. Governor Stop	LCT-7526

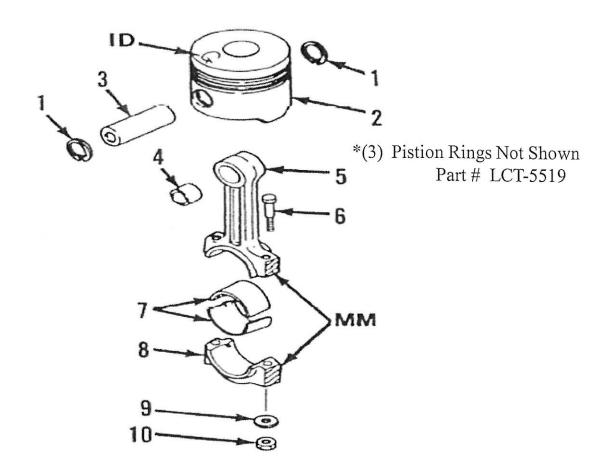
4. Head Asssembly



Part Name	<u>Titan Part #</u>	Part Name	Titan Part#
1. Decompression Lever	N\A	13. Valve Keepers	LCT-7511
2. Return Spring	N\A	14. Valve Spring	LCT-7511
3. Retaining Pin	N\A	15. Valve Guide Seal	LCT-7511
4. Valve Cover	LCT-7530	Spring Seat Washer	N\A
Valve Cover Gasket	LCT-7531	17. Padestal Dowel Pin	LCT-7501
6. Rocker Pedestal Bolt	LCT-7541	18. Cylinder Head	LCT-7501
7. Push Rod	LCT-7512	19. Exhaust Valve	LCT-7511
8. Exhaust Rocker Arm	LCT-7541	20. Intake Valve	LCT-7511
9. Adjusting Screw	LCT-7541	21. Injector Clamp Nuts	LCT-7504
10. Rocker Arm Pedestal	LCT-7541	22. Injector Clamp Plate	LCT-7504
11. Intake Rocker Arm	LCT-7541	23. Injector Spacer	N\A
12. Split Valve Locks	LCT-7511	24. Injector Gasket	LCT-7503

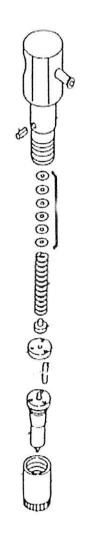
Some Parts Sold As Assemblies

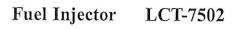
5. Piston Assembly

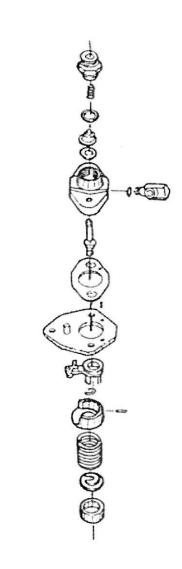


Part Name	Titan Part#	Part Name	<u>Titan Part#</u>
1. Snap Rings	LCT-7516	6. Rod Cap Bolt	LCT-7517
2. Piston	LCT-7516	7. Rod Sleeve Bearing	LCT-7517
3. Piston Pin	LCT-7516	8. Rod Cap	LCT-7517
4. Pin Bushing	LCT-7517	9. Washer	N\A
5. Connecting Rod	LCT-7517	10. Nut	N\A

6. Fuel Injection System

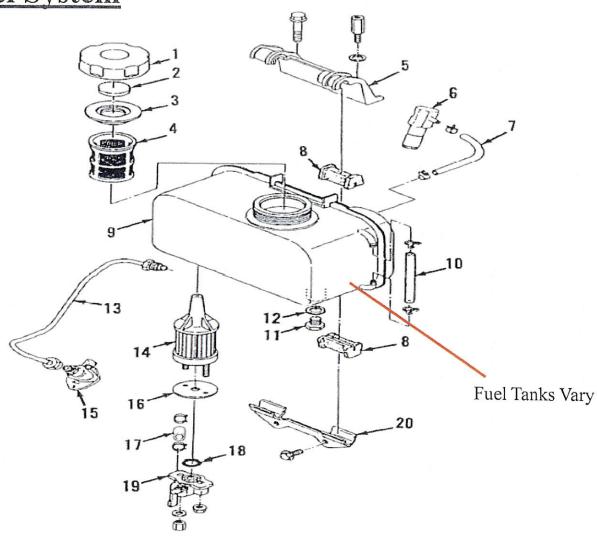






Fuel Pump LCT-7535

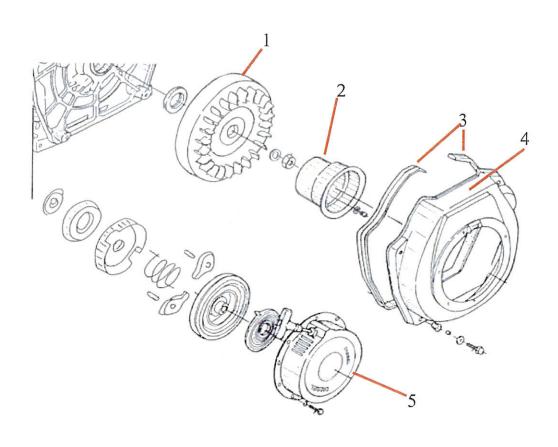
7. Fuel System



Part Name	<u>Titan Part #</u>	Part Name	<u> Γitan Part #</u>
 Fuel Cap Fuel Cap Seal Fuel Cap Gasket Filter Screen Mounting Clamp Fuel Injector Fuel Return line Vibration Dampers Fuel Tank Fuel Gauge 	LCT-009 LCT-009 LCT-009A N\A LCT-7502 LCT-057 N\A LCT-008 LCT-008A	11. Drain Plug 12. Gasket 13. Fuel Injector Line 14. Fuel Filter 15. Fuel Injector Pump 16. Fuel Filter Plate 17. Rubber Fuel Line 18. O-ring 19. Fuel Shut Off Valve 20. Mounting Clamp	N/A N\A LCT-7550 LCT-010 LCT-7535 LCT-10A LCT-056 LCT-011 LCT-012 N\A

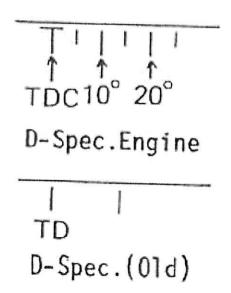
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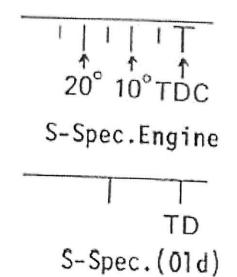
8. Starter Assembly

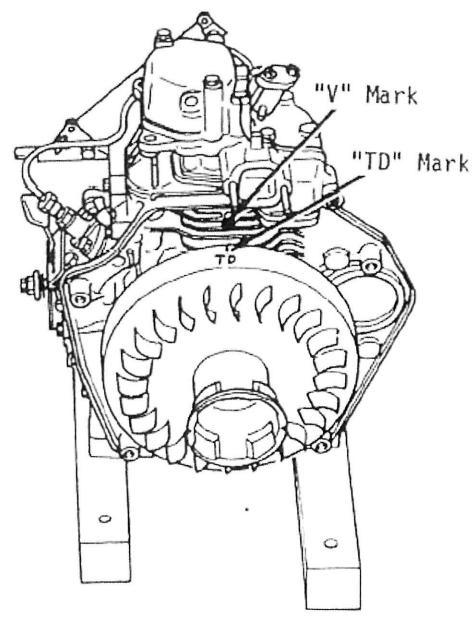


Part Name	Titan Part#
1. Fly Wheel	LCT-7551
2. Recoil Cup	LCT-7544
3. Blower Housing Gaskets	LCT-7546
4. Blower Housing	LCT-7545
5. Recoil Assembly	LCT-7542









Engine Timing Reference Information