

Terrco[®], Inc.

Model 3100 Series



3100-3P
3100-SP
3100-LPK

OPERATING INSTRUCTIONS

MAINTENANCE INSTRUCTIONS

ILLUSTRATED PARTS LIST

Terrco[®], Inc.

222 1st Avenue NW • Watertown, SD 57201

Phone: (605) 882-3888 • Fax: (605) 882-0778 • Email: info@terrco.com

Terrco[®] Model 3100-LP

- Optimal for jobs exceeding 10,000 sq. ft.
- Despite the weight and size the 3100 can be easily maneuvered by a single person
- Movable weights for easy one person operation
- Four 42 lbs. Pocket Weights
- Stainless Steel Guards and Water Tanks
- Wet/Dry Setup

PRODUCTION RATES

- Mastic removal rate of 500 sq. ft. per hour
- Thin-Set removal rates of 500 sq. ft. per hour
- Thin-Mil coatings removal of 200 sq. ft. per hour
- Concrete polishing rates of 1,100 sq. ft. per polishing pad
- Rough Terrazzo rate of 1,200 sq. ft. per day

Terrco[®] 3100 LP

Motor	40 H.P. Kubota
LP Tank	33# Horizontal & Vertical Liquid Withdrawal
Clutch	Electric
Speed of Discs	510 RPM
Sweep of Discs	28" x 28"
Width of Machine	30 3/4"
Length of Machine	72 1/4"
Height of Machine	58 1/2" (without exhaust pipe)
Machine Net Ready to Use	1750 lbs. (without LP tank)
Shipping Weight Domestic Crated	1825 lbs.
Water Tank	20 gallons

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SAFTY PRECAUTIONS

This machine is intended for commercial use. It is designed exclusively to grind and polish Terrazzo and concrete floors. Use only recommended accessories and abrasives. When the machine is in need of repair, use only Terrco parts. All operators must read, understand and practice the following safety precautions.



WARNING: Rotating grinding wheels can cause injury, keep hands and loose clothing clear.



WARNING: Disconnect power at the machine before servicing or changing grinding stones.



WARNING: Always check ground (earth) connection prior to operating machine.

For Safety:

- 1: Have electrician hook up power to machine.
- 2: Always operate machine with ground fault protection.
- 3: Eye, hearing and respiratory protection advised.
- 4: Service and adjust guards for maximum protection. Never remove the guards.
- 5: Keep machine clean and properly serviced.

SAFETY LABEL

The safety label is located on the machine as indicated below.
Replace label if it is damaged or illegible.

 WARNING FOR SAFETY, READ OWNERS MANUAL BEFORE USING MACHINE	
	ROTATING CUTTERS KEEP GUARDS IN PLACE AND ADJUSTED KEEP HANDS AND FEET AWAY WHEN OPERATING
	WEAR EYE AND HEARING PROTECTION WHILE OPERATING THIS MACHINE
	GRINDING CAN GENERATE DUST. DUST MAY AFFECT THIS BREATHING FUNCTION. AVOID DUST CONTACT BY USE OF MASK OR RESPIRATOR.
	DISCONNECT POWER AT THE MACHINE BEFORE SERVICING MACHINE OR CHANGING GRINDING STONES. ALWAYS CHECK GROUND (EARTH) PRIOR TO OPERATING MACHINE.



Operating Instructions

Introduction

This Manual has been prepared to assist and instruct you in the proper operation and maintenance of your machine. Please bear in mind that your Terrco® 3100 is a precision piece of machinery manufactured to exacting standards. In order for you to obtain maximum use of your Terrco® 3100, we suggest that you read this manual completely and thoughtfully before attempting to operate your machine. A parts diagram and parts reference sheet are included to assist you in ordering the proper parts. Always give the machine number and model number when ordering repair parts.

PRELIMINARY PROCEDURES TO FOLLOW BEFORE PUTTING THE 3100 IN OPERATION FOR THE FIRST TIME.

A. Delivery of the Machine

1. On delivery, the contractor should very carefully examine the shipping crate to see that no part of the machine is damaged. If damage is noted, request an inspection immediately and request a copy of the claim report. When accepting the machine from the delivering carrier, note the damage on the Freight Bill before signing. TERRCO® WILL NOT honor any claims for broken, damaged, or missing parts that may have occurred in shipment, as each machine is checked and inspected for the same, before leaving our plant.

B. Installation and Replacement of Grinding Stones

1. Move the counterbalancing weights to the upper weight baskets.
2. Using the flop handle, tilt machine back so that the caster wheel rests on the floor.
3. Clean mounting surface of the machines tool plates underneath the gear case.
4. Grasp machine handle and lower machine to the floor slowly so that all stones are resting on the floor. Make certain no stones have fallen or loosened while lowering the machine to the floor.

C. Transport of Machine

1. With counterbalancing weights in the upper weight baskets, tilt the machine so that the caster wheel is firmly on the floor. You can use the flop handle to pull the machine or you can fold the flop handle over and push from gear case side.

D. To operate the 3100

1. Disconnect electrical source.
2. Install stones per instructions in #1B.
3. After stones are installed, lower the machine until it is in operating position. CAUTION - Never attempt to start the machine while lowering machine to the floor, as rear stones will strike on corners resulting in thrown stones and possible damage to the machine.
4. Before plugging into the electrical system, check the voltage at the source. The minimum acceptable voltage is (210/420 Volt, 60 HZ, 3 phase), or (380 Volt, 50 HZ, 3 Phase). Anything lower than this can result in blown heaters and possible motor burnout.
5. If the machine is to operate in an area more than 100 feet from the source, it will be necessary to use the next larger size cable (#4-4) from the source to the 100 feet of #6-4 wire cable that was furnished with the machine.
6. After you have the cable in place, relieve pressure on the stones by applying your weight on the handle and push the start button on the starter switch, then releasing pressure on the handle to lower the machine to the floor.
7. We recommend that the first pass over the floor be made with the weights in the upper weight baskets. After the floor is "roughed" out, move the weights to the weight baskets located on the gear case for maximum abrasive pressure.
8. Be sure to periodically check stone wear, to prevent grinding with the steel plugs, rather than the stones.

Starting the 3100LP

E. To Start the 3100 LP Propane Engine

1. A 33 lb. special combination horizontal propane cylinder liquid withdrawal must be used on this machine fitted with a Rego #7141 male fitting.

2. When installing tanks, the bottom guide hole near the top of the cylinder must drop over the locating pin on the cylinder bracket of the handle. Connect quick coupler to the cylinder. DO NOT USE A WRENCH - only hand tighten.

3. You are now ready to open main gas valve in fuel tank. CAUTION - “SLOWLY” open main gas valve in the fuel tank. An abrupt full opening of the valve will induce dirt from within the tank to enter the fuel line. Too rapid an opening can also cause frost to form on the fuel filter, main valve, and inlet line. CHECK FOR GAS LEAKS WITH SOAP SUDS SOLUTION. THERE MUST BE NO LEAK.

4. Make certain clutch is disengaged.

5. Place weights in the “up” position.

6. Make sure throttle switch is in the idle position.

7. Turn key to start engine.

8. Allow engine to warm up approximately 5 minutes.

9. After a few minutes of warm-up and with weights in the upper weight baskets, flip the throttle switch to the run position.

General Maintenance for your TERRCO® 3100

A. Gear Case

1. Ref. #10 - Four grease fittings to be greased with 3 shots of Mobilith XPH-222 or the equivalent every six months.

2. Ref. #29 - The main gear box contains 20 pounds of Mobilith XPH-222. Check the level once a year by removing plug at the front of the gear case. Grease should be halfway up driven gear. **DO NOT FILL TO THE TOP.** The drive gear must not be covered, as you will create a condition of extreme pressure with resultant seal damage and grease leakage.

B. Belt Replacement

1. Remove belt guard

2. Loosen locking nut on adjusting screw and loosen adjusting screw.

3. Loosen three cap screws on idler bracket and push idler bracket forward.

4. Remove worn belt. With new belt positioned in their respective grooves on pinion sheave, pull belt out to you and position in respective grooves on idler bracket sheaves. Pull up and align belt on engine drive sheave.

5. Tighten adjusting screw until required belt tension is obtained. (Belt should compress no more than 1/16" with full thumb pressure midway between engine pulley and idler pulley) Tighten lock nut and then securely tighten three cap screws on idler pulley bracket.

F. 6. Replace belt guard. Timing of Stone Spiders

1. Whenever repairs are necessary in the gear case, which requires removal of the engine and pinion gear assembly, the following procedure is to be followed. Where gear replacement is necessary:

a. Remove belt guard, loosen idler bracket, remove belt.

b. Unbolt engine from mounting base.

c. Unbolt engine mounting base and remove.

d. Loosen and remove top bearing plates. Loosen and remove gear shaft lock nuts, top and bottom.

e. Loosen and remove all nuts, gear case cover and remove stone spider, morflex coupling, and driving spider.

IMPORTANT: After removing drive spider, be certain to remember or mark position of keyway relative to fixed position on gear case.

f. With drive shaft out, you are in a position to remove the damaged gear of shaft.

g. Position gear and shaft in case, aligning keyway in position marked on removal.

Install lower bearing, grease seal, key, drive spider, lock nut, morflex coupling, and stone spider - in that order.

h. When you have installed the stone spider, it should be perfectly timed. If they are not, you are off on the alignment of the keyway and will have to adjust.

i. Timing drive gears follow instructions.

j. Install belt per instructions.

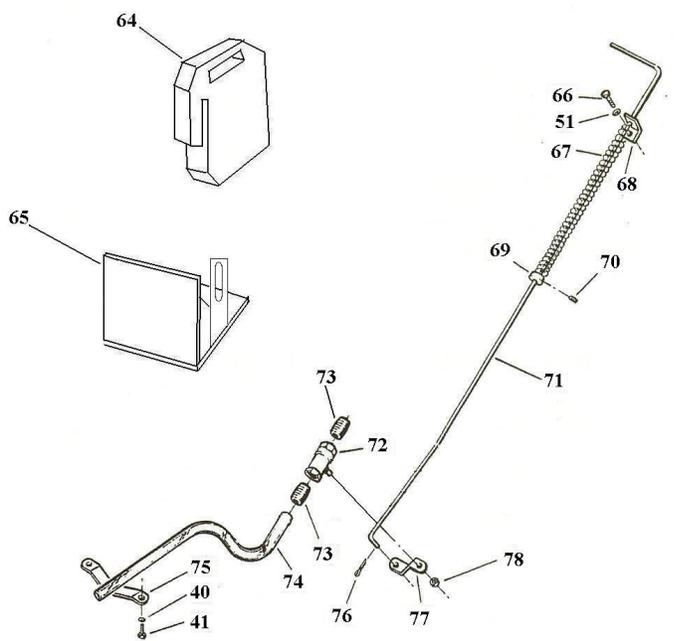
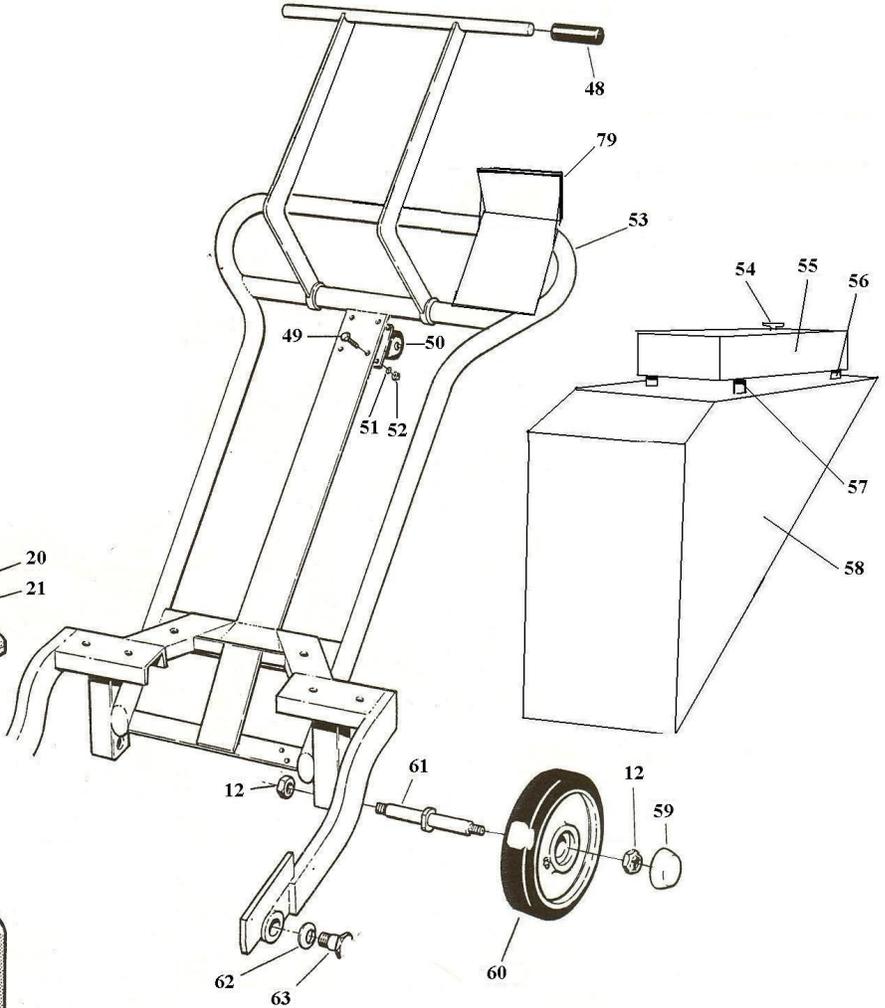
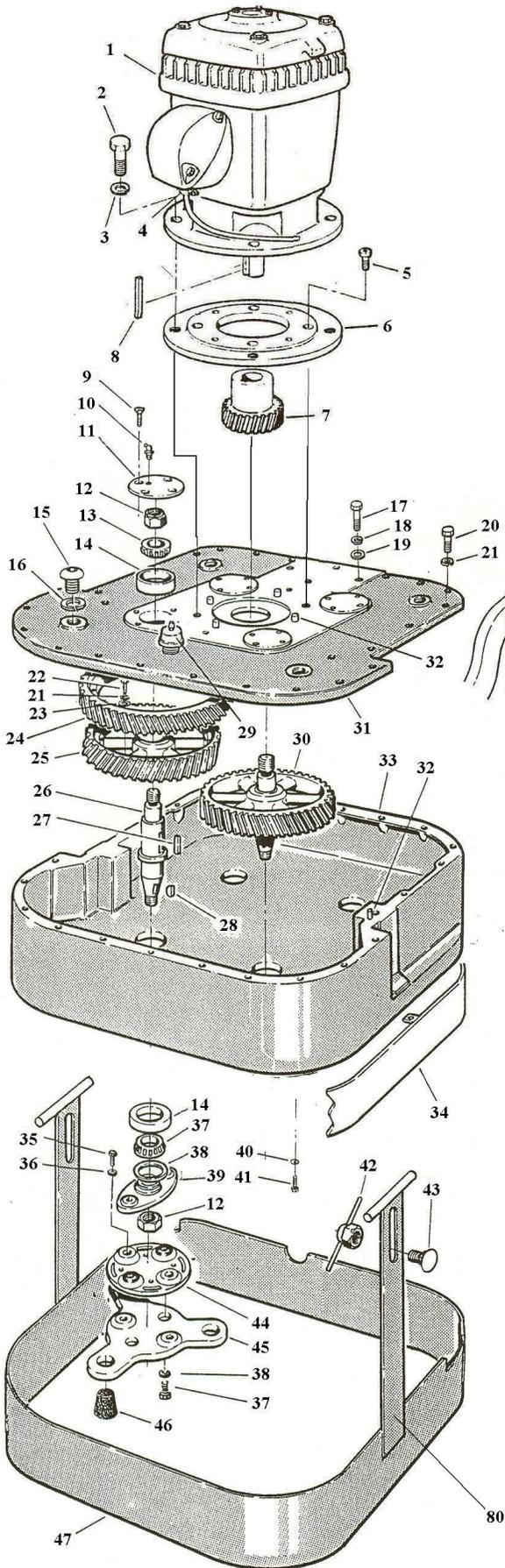
k. Install belt guards.

Kubota Engine Service

1. Change oil after first 50 hours of use. Change oil after every 160 hours after that (monthly)

2. Blow out air filter daily.

GEAR BOX & HANDLE ASSEMBLY 3100 SERIES



Model 3100 Parts List

Ref. #	Part #	Description	Qty	Ref. #	Part #	Description	Qty
1	FE146	25 HP Motor (Electric)	1	49	2038	Capscrew	4
	FE165	LP Motor	1	50	HB88A	Caster Wheel	1
2	2142	Capscrew	4	51	1030	1/4" Lockwasher	15
3	2140	Lockwasher	8	52	2003	1/4" Nut	8
4	X85	Cord Connector	2	53	FEN1B	Handle Assembly	1
5	2111	Mounting Ring Bolts	4	54	LW76	Emergency Stop	1
6	FE130HS	Motor Mounting Plate	1	55	FE142-230	Starter 230 V	1
7	FE5B	Pinion	1		FE142-460	Starter 460 V	
8	FE114	Motor Key	1	56	X84	Bracket	4
9	3011	Machine Screw	16	57	FE251	Rubber Mount	4
10	2118	Grease Fitting	4	58	FE32B	Water Tank	1
11	FE27	Bearing Cap	4	59	DS5	Wheel Cap	2
12	2008	Lock Nut	12	60	DS7	Wheel Assembly	2
13	SM43	Bearing Cone	4	61	FE20B	Wheel Shaft	2
14	SM37	Bearing Cup	8	62	FD90	Spring Washer	2
15	2139	Capscrew	4	63	FE32B	Pivot Bolt	2
16	2140	Lockwasher	8	64	FE246	Pocket Weight - 42lb.	4
17	FE101	Capscrew	7	65	FE247R	Lower Weight Basket	1
18	SM255	Lock Washer	12		FE247L	Lower Weight Basket	1
19	2027	Washer	7	66	2018	Capscrew	3
20	1025	Capscrew	20	67	SM182	Spring	1
21	1022	Lockwasher	36	68	FD43	Guide Bracket	1
22	2099	Capscrew	16	69	SM186	Spacer	1
23	HB25	Washer	16	70	2082	Set Screw	1
24	FE125B	Drive Gear (electric)	2	71	FE78	Water Tank Rod	1
	FE6	Drive Gear (LP)	2	72	SM174	Water Valve	1
25	FE4B	Driven Gear RH	2	73	FE189	Valve Stem	2
26	SM16	Gear Shaft	4	74	FS39	Water Hose	
27	SM72	Gear Key	4	75	SM172	Hose Bracket Clamp	1
28	2012	Key	4	76	2082	Cotter Pin	1
29	FEN17	Grease Vent Assy	1	77	FE79	Water Valve Lever	1
30	SM15	Driven Gear LH	2	78	2101	Lock Nut	2
31	FE2F	Gear Case Cover	1	79	FE248	Upper Weight Basket	2
32	FD40	Dowel Pin	6	80	FE29	Guard Straps	
33	FE1C	Gear Case	1			Parts Not Pictured	
34	FE21	Stationary Guard	1		SM448	Battery Box (LP only)	1
35	SM171	Capscrew	16		SM432	Battery (LP only)	1
36	2027	Lock Washer	16		FE207	Vacuum Hose	12'
37	SM36	Bearing Cone	4		SM424	50 Amp Male Plug	1
38	SM169	Grease Seal	4		SM 425	50 Amp Connector	1
39	SM500	Driving Spider	4		FE262	Rubber Dust Seal	1
40	1007	Lockwasher	14		LW78	Brush Strip	2
41	1033	Capscrew	16		FE141	4-4 Cable, feet-230 V	100
42	FEN9	Splash Guard Lock Nut	2		DS134	6-4 Cable, feet-460 V	100
43	FE153	Splash Guard Bolt	2		FE266	Vacuum Pipes	2
44	SM88	Morfex Coupling	4		SM489	60 Amp Plug	1
45	SM192B	Stone Spider Plug	4		SM490	60 Amp Plug	1
46	FR594	Plug Stone	12				
47	FEN010	Movable Splash Guard Assy.	1				
48	SM57	Handle Grips	2				

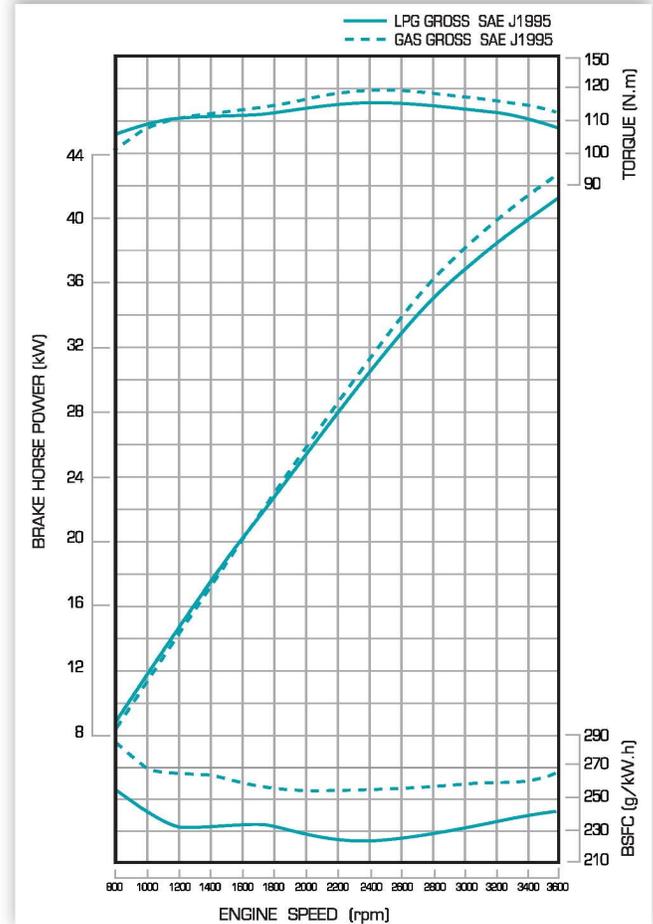
WG Series

SPARK IGNITED ENGINE



Dual Fuel Version Shown

PERFORMANCE CURVE



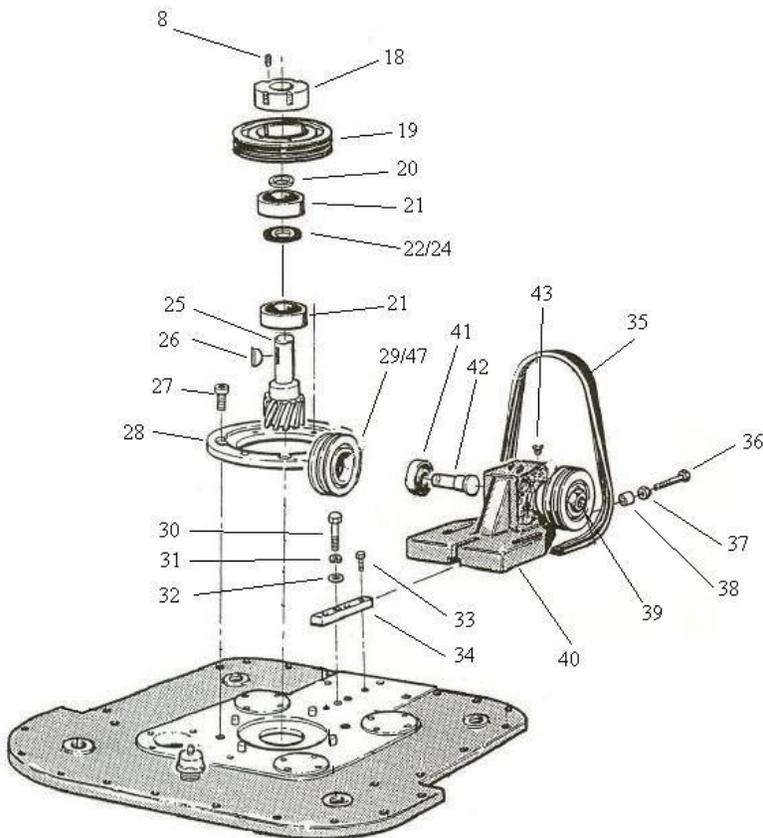
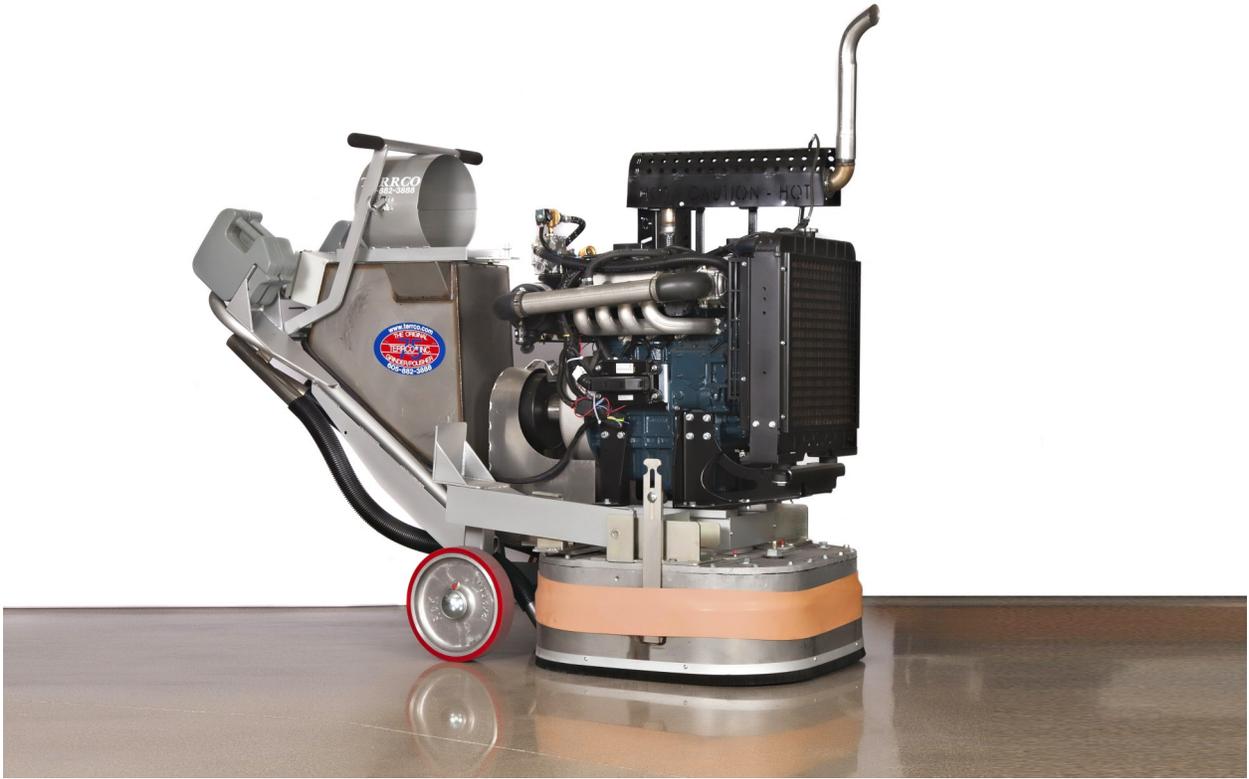
FEATURES & BENEFITS

- Based on industrial diesel engine platform
- Kubota is the Manufacturer of Record (MOR)
- Very low vibration
- Electronic fuel injection
- Throttle control - electronic drive by wire
- 3-Way Catalytic Converter
- Geardrive valve train - no belts or chains
- Diagnostic port
- Wire harness / ECU factory installed
- Hot tested at factory
- Full CAN capabilities - SAE J1939
- Same footprint as with V1505 diesel
- Similar performance to turbo diesel
- Exceptionally quiet

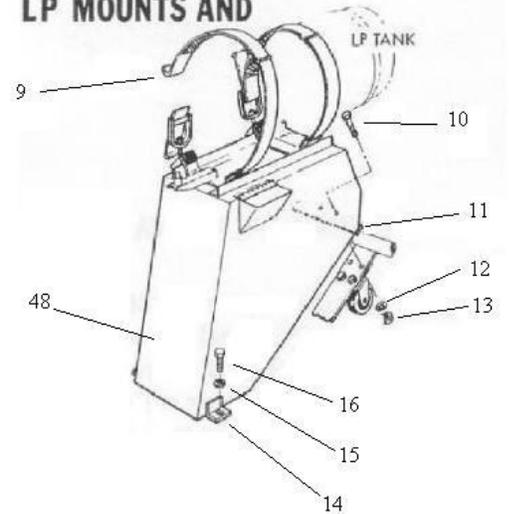
SPECIFICATIONS

Model	WG1605	Cooling System	High Capacity Liquid
Engine Type	Vertical liquid cooled 4 cycle	Direction of Rotation Rev.	Counter-clockwise (view from flywheel)
Number of Cylinders	4 in-line	Oil Pan Capacity L (gal)	6.0 (1.59)
Bore x Stroke mm (in)	79 x 78.4 (3.11 x 3.09)	Starter Capacity V-kW	12V - 1.0 kW
Displacement L	1.537	Alternator Capacity V-A	12V-40A
Ignition System	Coil on plug	Length mm (in)	591.3 (23.3)
Intake System	Naturally Aspirated	Width mm (in)	478.7 (18.8)
Compression Ratio	9.1:1 (all fuels)	Height mm (in)	652.3 (25.7)
Governor Type	Electronic	Dry Weight kg (lbs)	120 (264.6)

MODEL 3100LP-K



LP MOUNTS AND



MODEL 3100 LP PARTS LIST

REF #	PART #	DESCRIPTION	QTY
1	FE165C	40 HP Kubota LP Engine	1
8	FE100	SET SCREW	8
9	FEN14A	LP TANK BRACKET & BASE ASSEMBLY	1
10	T2038	CAPSCREW	4
11	FE74	WATER TANK BRACE	1
12	T1030	1/4" LOCK WASHER	2
13	T2003	1/4" NUT	2
14	FE133A	WATER TANK BRACKET	2
15	T1007	LOCK WASHER	2
16	T1006	CAPSCREW	2
17	FE 484	ELECTRIC CLUTCH	1
18	FD133	TAPER LOCK BUSHING	1
19	FE52	SHEAVE	1
20	FD77	PULLEY SPACER	1
21	FD115	BEARING	2
22	FD122	FELT WASHER	1
24	FD78	BEARING SPACER	1
25	FE66C	PINION RH	1
26	T1008	KEY	1
27	T2111	MOUNTING RING BOLTS	4
28	FE303	PINION BASE	1
29	FE216	SNAP RING	2
30	FE101	CAPSCREW	3
31	SM255	LOCK WASHER	3
32	T2027	WASHER	3
33	T2081	CAPSCREW	3
34	FD100	KEY BRACKET	1
35	FE302	BELT	1
36	FE88	IDLER ADJUSTING SCREW	1
37	T2101	LOCKING NUT	1
38	RT17	SPACER	1
39	T2008	LOCK NUT	2
40	FE211	IDLER BRACKET	1
41	FE215	BEARING	2
42	FE213	IDLER SHAFT	2
43	T3021	SET SCREW	2
47	FD129A	SHEAVE	2
48	FE300	WATER TANK	1

WARRANTY CLAIM PROCEDURE

Each new machine is covered by two separate, distinct warranties—one on the machine and one on the electric motor of gasoline engine. Read VERY CAREFULLY the Terrco[®] warranty covering the machine, as this will tell you whether you have a warranty claim or not. If your machine is under warranty and malfunctions, determine whether your problem is electrical or mechanical, and do the following:

I. Electrical.

- A. Consult the list of authorized motor repair stations sent with the machine and locate the station nearest you.
- B. Contact the repair station, giving them the following information:
 - 1. Complete nameplate date from the motor.
 - 2. Tell them that the machine is a terrazzo grinding and polishing machine.
 - 3. Give them a description or rundown of the trouble.
 - 4. Inform them of the voltage and amperage readings

II. Mechanical

- A. Contact your Terrco[®] Distributor giving them the following:
 - 1. Model and date purchased.
 - 2. Horsepower.
 - 3. Accurate description of the malfunction.
- B. If there is no Terrco[®] Distributor in your area call or write to us with the above information.

LIMITED ONE YEAR WARRANTY

TERRCO[®], Inc. warrants the original purchaser of the Terrco[®] grinding equipment to be free from defects in materials and workmanship under normal use and service. Our obligation under this warranty shall be limited to the repair or exchange of any part or parts which may prove defective under normal use and service within one year from date of purchase by, the original purchaser, and which our examination shall disclose to our satisfaction to be defective.

All equipment returned for repairs or exchange must be returned to: TERRCO[®], Inc., at the purchaser's expense and within the warranty period. All repaired or exchanged equipment will be shipped back to the purchaser F.O.B. Watertown, South Dakota.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING THE WARRANTIES OR MERCHANTABILITY AND FITNESS FOR USE AND ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF TERRCO[®], INC. AND WE NEITHER ASSUME OR AUTHORIZE ANY OTHER PERSON TO ASSUME FOR US, ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF THIS EQUIPMENT. SOME STATES DO NOT ALLOW THE EXCLUSIONS OR LIMITATIONS ON IMPLIED WARRANTIES OR DO NOT ALLOW THE EXCLUSION OF LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSIONS OR LIMITATIONS MAY NOT APPLY TO YOU. THIS WARRANTY SHALL NOT APPLY TO ANY EQUIPMENT OR PART THEREOF WHICH HAS BEEN SUBJECT TO ACCIDENT, NEGLIGENCE, ALTERATIONS, ABUSE, MISUSE, OR IMPROPER MAINTENANCE. TERRCO[®], INC. MAKES NO WARRANTIES WHATSOEVER IN RESPECT TO ACCESSORIES OR PARTS NOT MANUFACTURED OR SUPPLIED BY US.