

CATALOG NO. 2  
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*The*  
**DANZER**

*Riding Tractor*

**INSTRUCTION BOOK**

*and*

**REPLACEMENT PARTS LIST**

*for*

**MODEL T 102 TRACTOR**

**COPAR**

INCORPORATED

21 AVONDALE STREET, LAUREL, MD.



# OPERATING AND MAINTENANCE INSTRUCTIONS FOR PANZER MODEL T 102 TRACTOR

**NOTE:** Before operating the Panzer Tractor read Engine Instruction Booklet and these Operating Instructions carefully.

## To Prepare New Tractor For Initial Operation:

1. Fill Engine crank case with oil as specified in Engine Instruction Booklet.
2. Fill differential housing to 1" below filling hole with #90 transmission grease (Fig. 2).
3. Oil all points shown on Fig. 1 and Fig. 2, with #20 motor oil.
4. Grease (3) Alemite grease fittings, (39) Fig. 1, and steering gear mesh shown on Fig. 1, with grease gun.

### IMPORTANT MAINTENANCE NOTE:

Grease and oil points shown on Fig. 1 and Fig. 2 after every 8 hours of operation.

5. Check Tires, (54) (55) Fig. 1, inflate, if necessary, to satisfactory working pressure. This pressure may be determined by noting bulge of sidewall at ground. Inflate until this bulge is not excessive.

**CAUTION:** Maximum Tire pressure - 15 lbs.

**NOTE:** The rear Tires are equipped with special valves. Using a commercially available air-water adapter, these Tires may be filled with calcium chloride for additional weight.

## To Start Engine:

1. Start Engine with Control Lever, (92) Fig. 2, always in neutral position or half way back. (See Engine Instruction Manual for engine starting instructions.)

## To Operate Tractor:

1. Lower throttle lever (located on right side at rear of hood) to increase engine speed.

**NOTE:** Engine is equipped with a governor and will continue to run at rpm set by throttle lever.

2. Slowly push Control Lever all the way forward to start Tractor in forward motion.

3. Tighten (2) Locking Bolts.

4. Adjust Bolt and Nut, (90) (91) Fig. 2, at front end of Drive Casting, (89) Fig. 2, up or down and back and forth, so that when Control Lever rests against head of Bolt, large friction wheel in upper Pulley, (42) Fig. 1, clears small friction Disc, (8) Fig. 1, on lower Pulley, (12) Fig. 1, by approximately 1/8"

**NOTE:** Bolt head should not be so low that undue force is required to pull Control Lever past head into reverse or so high that vibration may cause Control Lever to slip past Bolt head.

**CAUTION:** DO NOT ATTEMPT TO ADJUST BELT TENSION WITH ENGINE RUNNING.

## To Adjust Drive Chain:

1. Remove Sprocket Cover, (46) Fig. 1, loosen and tighten respectively the (2) pivot Bolts, (72) and (86) Fig. 2, which position Drive Casting.

**NOTE:** Moving Casting to left tightens Chain. If Casting is all the way to the left and Chain is still loose a half link should be removed. Washers may have to be added or removed from under head of one bolt or the other to prevent threaded ends of bolts from rubbing Chain.

2. Tighten elastic Stop Nuts, (73) Fig. 2, so that Drive Casting has no side play but not so tight that it binds against the Nuts.
3. After adjusting Chain, (82) Fig. 2, adjust (2) belt guide Bolts, (13) Fig. 1, and Fig. 2, by loosening the Nuts, (3) Fig. 1 and Fig. 2, and sliding the Bolts in their slots, rotating as required, so that the Belt clears Bolts by approximately 3/16" when Control Lever is all the way forward no matter in which pulley groove Belt is located.

### IMPORTANT MAINTENANCE NOTES:

- a. Keep Chain well greased when using Tractor in clean areas.
- b. Leave Chain perfectly dry when using Tractor in dusty areas.
- c. Clean Chain frequently.

## To Replace Reverse Disc:

1. Remove the four Bolts, (6) Fig. 1, in rear of Motor Pulley and remove Disc Plate, (9) Fig. 1, and Disc, (8) Fig. 1.



3. Pull Control Lever half way back for neutral and all the way back, firmly, for reverse.

#### To Adjust Seat:

1. Remove Bolt, (51) Fig. 2, in center of Seat, (76) Fig. 2, and move Seat forward or backward as desired.
2. For additional adjustment of Seat, remove (2) Bolts, (51) Fig. 1, which hold Seat Spring, (47) Fig. 1, to seat spring bracket and move Seat Spring forward or backward as desired.

#### To Turn Tractor Sharply:

1. Turn Steering Wheel, (40) Fig. 1, to its limit and apply inside Wheel Brake, (66) or (87) Fig. 2.

NOTE: The white spoke in the Steering Wheel is vertical when front wheel is straight.

#### To Change Drive Ratio:

1. Stop the Engine.
2. Pull Control Lever all the way to rear and move Belt, (34) Fig. 1, from one pulley step to another.

CAUTION: DO NOT ATTEMPT TO ADJUST DRIVE RATIO WITH ENGINE RUNNING.

3. Use low speed, (small step on Motor Pulley, (12) Fig. 1), for plowing or any extremely heavy loads.
4. Use intermediate speed (middle step), for most jobs, such as mowing, cultivating, harrowing, leaf raking, etc.
5. Use high speed (large step), for moving Tractor from one location to another over long distances.

#### To Adjust Belt Tension:

1. Stop the Engine.
2. Loosen (2) Locking Bolts (2) Fig. 1, which hold Control Lever Tube Assembly, (5) Fig. 1, and turn Vertical Adjusting Screw, (93) Fig. 1, under Control Lever Tube Assembly as required.

CAUTION: ADJUST BELT ONLY AS TIGHT AS NECESSARY TO PREVENT SLIPPING. DO NOT STRETCH BELT.

#### To Change Position of Draw Bar:

1. Remove (2) Bolts, (49) Fig. 1, which hold Draw Bar, (50) Fig. 1, to (2) vertical draw bar supports and raise, lower, move sideways or tilt Draw Bar as desired.

### ATTACHMENTS

Many attachments are available for use with the Panzer Tractor. The following is a partial list of available attachments:

Two additional 8-16 Wheels, Tires and Tubes for converting to Dual Wheel Tractor

Note: Two combination Wheel Weight-Spacers are required for converting to Dual Wheels.

Combination Wheel Weight-Spacer (with Bolts)

#### Rear Attachment Lift

Bulldozer and Snow Plow	Generator 2000 Watts
Mold Board Plow	Rotary Lawn Mower
Cultivator Unit	Spike Tooth Harrow
Lawn Spreader	Rolling Coulter
Lawn Mower	Disc Harrow
Roller	Sickle Bar
Seeder	Hay Rake
Dump Trailer (1/2 ton capacity)	

Your inquiries concerning your specific needs are invited.

Patent Pending



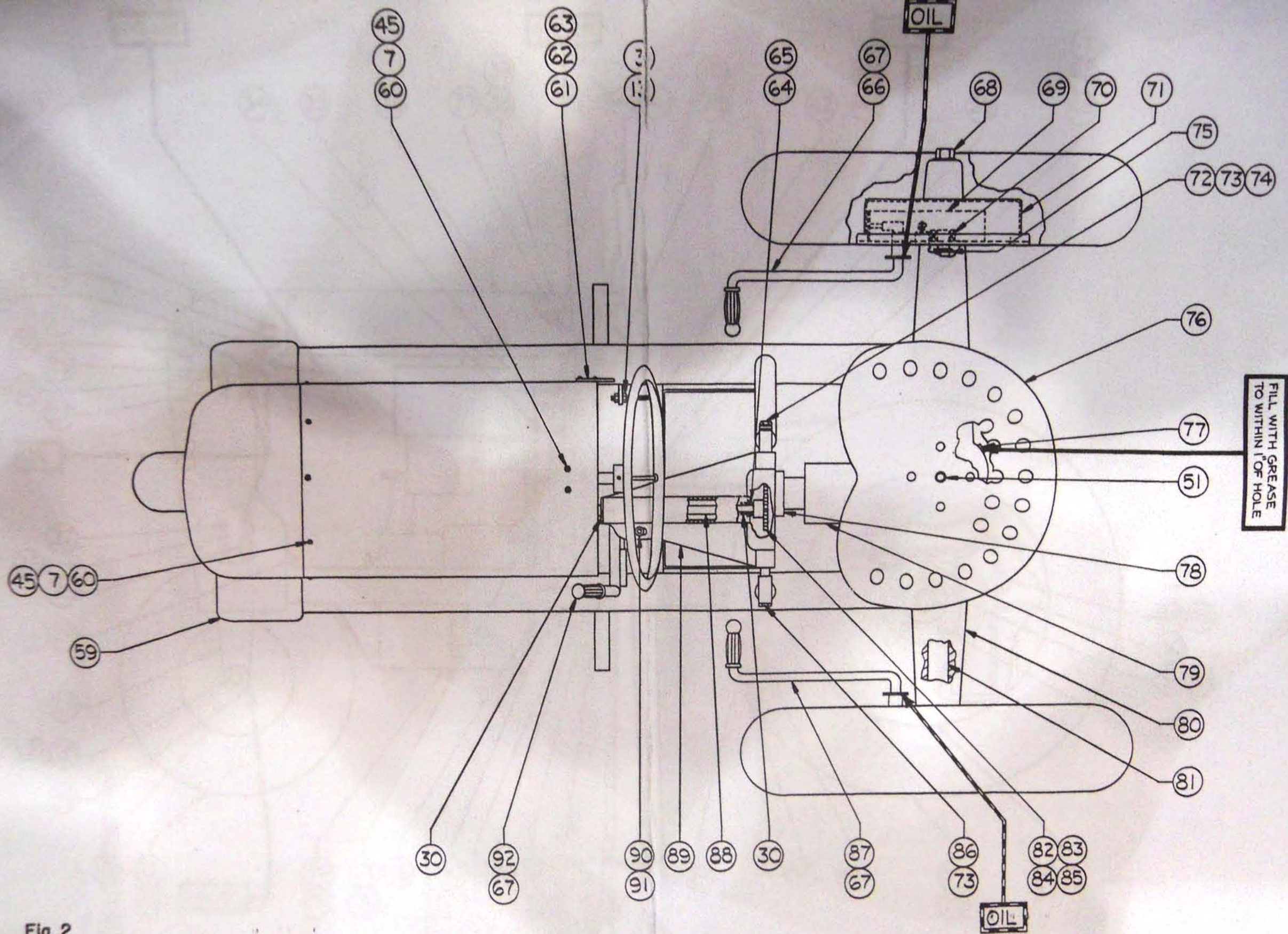


Fig. 2



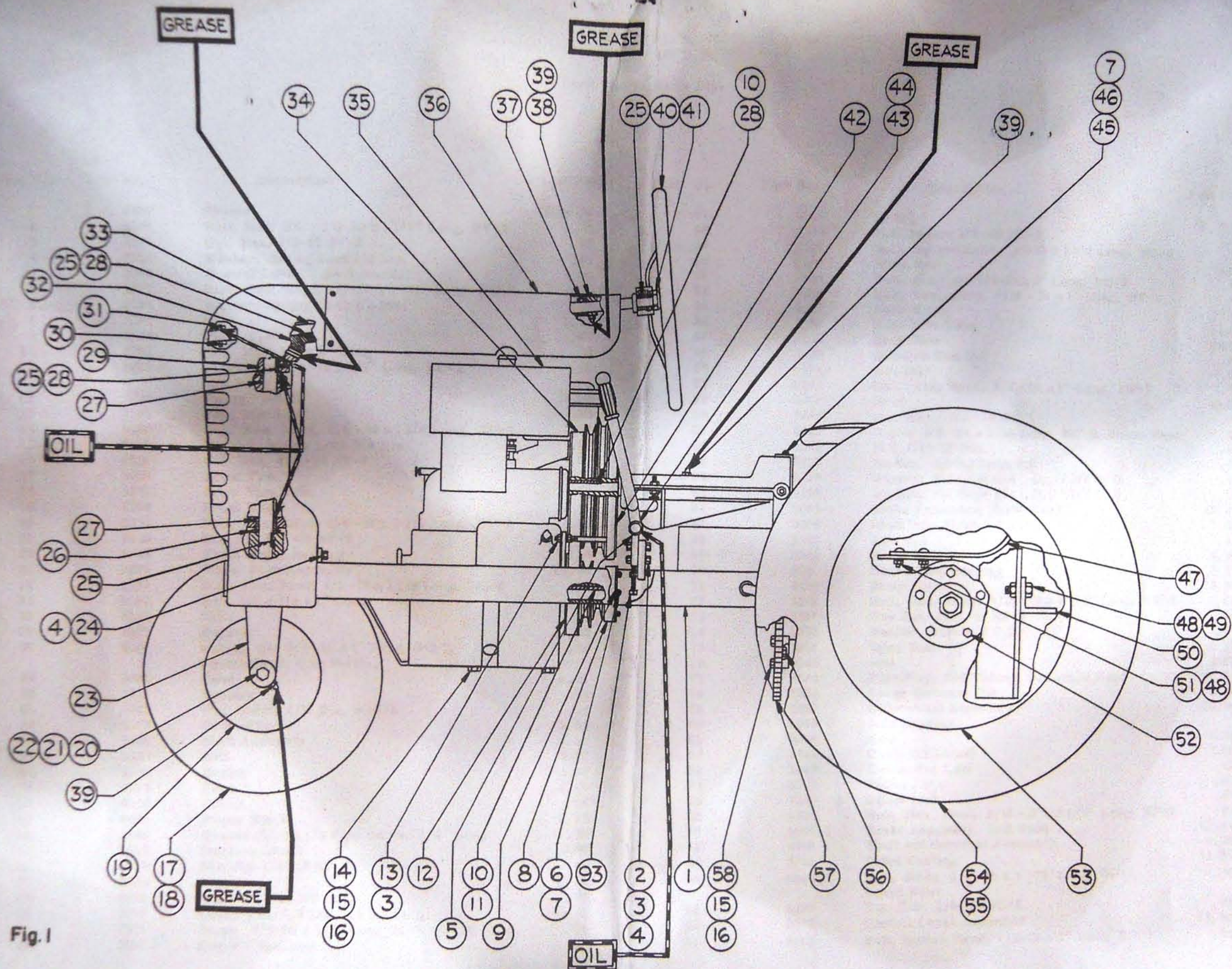


Fig.1



# THE PANZER GARDEN TRACTOR

## Replacement Parts List

Item No.	Part No.	Description	List Price	Item No.	Part No.	Description	List Price
1	5299	Frame	\$ 60.00	47	5087	Spring	
2	5228	Bolt, Hex. Hd., 1/2-20 x 1 1/2" Long, NF-2	.08	48	5235	Nut, Square 1/2 -13 NC-2	\$ 4.00
3	5227	Nut, Hex. 1/2-20 NF-2	.06	49	5238	Bolt, Square Head, 1/2-13 x 1 1/2 Long, NC-2	.08
4	5231	Washer, Spring Lock 1/2 Dia.	.03	50	5132	Draw Bar	3.00
5	5073	Control Lever Tube Assembly	4.00	51	5226	Bolt, Carriage 1/2-13 x 1" Long, NC-2	.08
6	5237	Bolt, Hex. Head, 1/4-20 x 1 1/2" Long, NC-2	.06	52	5236	Bolt, Hex. Head, 9/16 - 18 x 1" Long, NF-2	.09
7	5225	Washer, Spring Lock 1/4 Dia.	.03	53	5259	Rear Wheel	6.00
8	5101	Disc	1.50	54	5258	Rear Tire Tube	3.00
9	5144	Plate, Disc	.85	55	5202	Rear Tire	18.00
10	5222	Key, 1/4 x 1/4 x 2" Long	.20	56	5255	Sprocket Hub Nut	.80
11	5223	Screw, Set 3/8 -16 x 1/2" Long, NC-2,	.10	57	5074	Sprocket	7.60
		Cup Point		58	5242	Bolt, Hex. Head, 3/8 -24 x 1" Long, NF-2	.08
12	5053	Pulley - Small	14.00	59	5045	Grill	45.00
13	5195	Bolt, Modified	.60	60	5224	Nut, Hex., 1/4 -20 NC-2	.03
14	5220	Bolt, Hex. Head, 3/8 -24 x 1 1/4 Long, NF-2	.08	61	5229	Screw, #10 -24 x 9/16 Long, NC-2, Round Head	.03
15	5219	Washer, Spring Lock 3/8 Dia.	.03	62	5232	Nut, #10 -24 Hex.	.03
16	5218	Nut, Hex. 3/8 -24 NF-2	.06	63	5233	Washer, Spring Lock #10	.03
17	5256	Front Tire	7.50	64	5297	Washer, #10 Gage 3/4 I.D., 1 1/4 O.D.	.08
18	5257	Front Tire Tube	1.50	65	5298	Washer, #14 Gage 3/4 I.D., 1 1/4 O.D.	.08
19	5204	Front Wheel	6.00	66	5095-1	Brake Assembly, Right Hand	12.40
20	5214	Bolt, Hex. Head, 5/8 -18 x 8 1/2 Long, NF-2	1.00	67	5209	Hand Grip 39/64 x 3 3/16	.20
21	5215	Stop Nut 5/8 -18 NF-2	.24	68	5252	Axle Nut	.45
22	5246	Front Wheel Bearing	1.20	69	5250	Brake Shoe	2.20
23	5286	Wheel Fork Assembly	18.00	70	5251	Rear Wheel Bearing	3.50
24	5234	Bolt, Hex. Head, 1/2 -13 x 1 1/2 Long, NC-2	.10	71	5249	Brake Drum	5.30
25	5230	Key, 1/4 x 1/4 x 1" Long	.20	72	5216	Bolt, Hex. Head, 9/16 -18 x 4 1/2" Long, NF-2	.85
26	5145	Shim	.30	73	5217	Stop Nut, 9/16 -18 NF-2	.40
27	5207	Bushing	.90	74	5295	Washer, Flat 9/16 I.D.	.06
28	5243	Screw, Set 3/8 -16 x 1" Long, NC-2,	.20	75	5316	Inner Seal	1.35
		Square Head, Cup Point		76	5205	Seat	3.00
29	5088	Gear	4.10	77	5245	Pipe Plug, 3/4 Thread, Recessed Head	.60
30	5208	Bushing	.60	78	5254	Large Sprocket Hub	3.20
31	5206	Pin, Spring 3/16 Dia. x 1 1/2	.25	79	5253	Differential Assembly	28.00
32	5079	Gear (Pinion)	2.80	80	5076	Axle Housing	
33	5188	Shaft Assembly	6.10	81	5078	Axle	6.00
34	5201	Belt	2.50	82	5292	Chain (63 Links)	7.00
35	5200	Engine	135.00	83	5247	Connecting Link	.40
36	5075	Hood	12.00	84	5300	Roller Link	.30
37	5210	Collar	.80	85	5248	Offset Link	.95
38	5055	Pillow Block	1.80	86	5240	Bolt, Hex. Head, 9/16 -18 x 5 1/2" Long, NF-2	.85
39	5244	Grease Fitting 1/8 Pipe Thread 3/4" Long	.20	87	5095-2	Brake Assembly, Left Hand	12.40
40	5203	Steering Wheel	6.00	88	5315	Shaft and Sprocket Assembly	6.20
41	5239	Stop Nut 3/4 -16 NF-3	.40	89	5051	Drive Casting	11.80
42	5054	Pulley	18.00	90	5294	Bolt, Stove, 3/8 -16 x 1 1/2" Long, NC-2,	.08
43	5221	Washer, Flat 5/8 I.D.	.06			Round Head	
44	5213	Cotter Pin, 1/8 Dia. x 1 1/4 Long	.03	91	5296	Nut, Hex. 3/8 -16 NC-2	.06
45	5212	Screw, 1/4-20 x 3/4" Long NC-2, Truss Head	.05	92	5069	Control Lever Assembly	3.20
46	5130	Cover - Sprocket	.90	93	5304	Bolt, Square Head, 1/2-13 x 3" Long, NC-2	.18