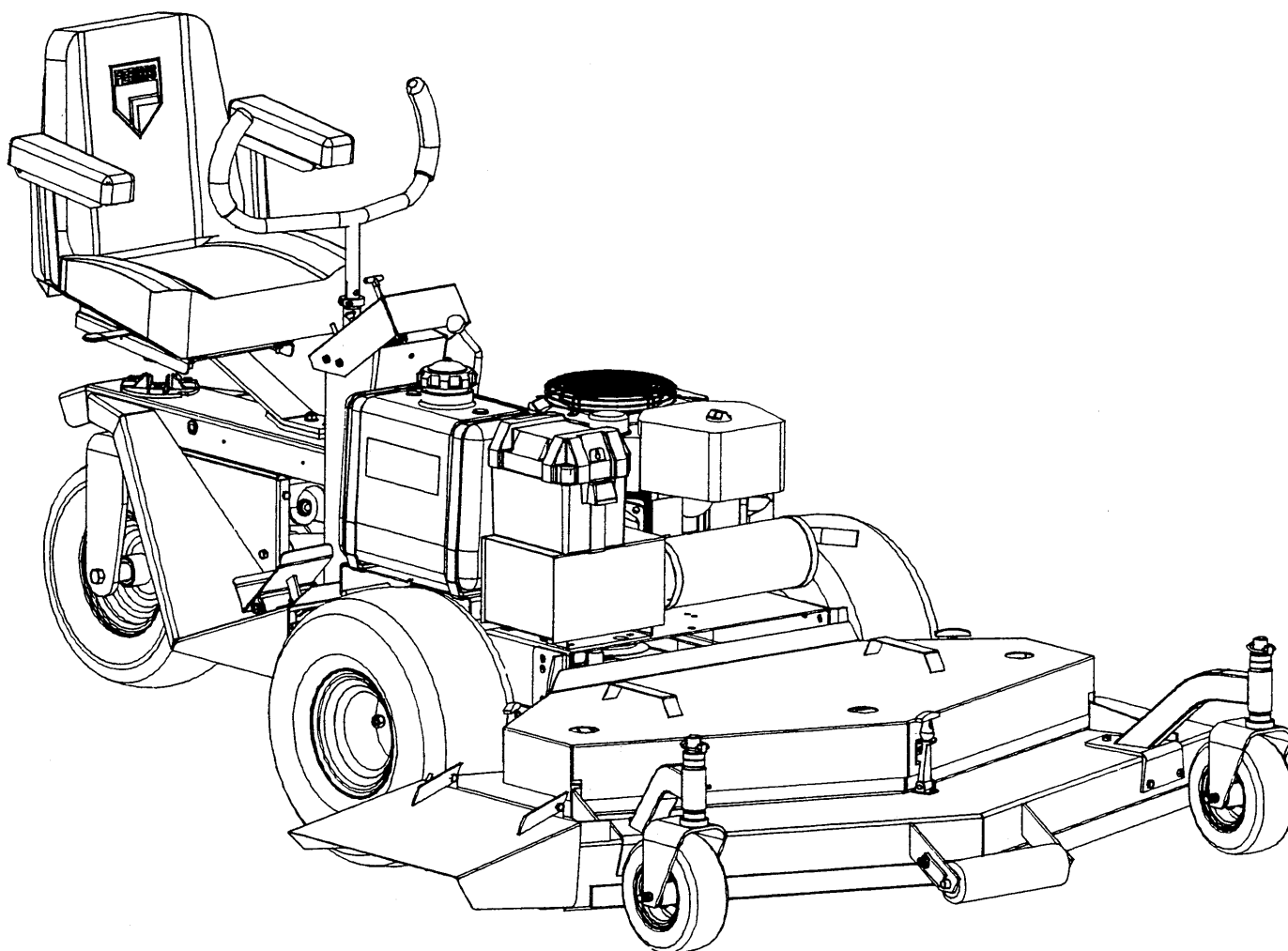


PRICE \$3.00

FERRIS

ILLUSTRATED PARTS MANUAL

Hydro Drive Rider Commercial Mower



MODELS:

H2220K

H2222K

CUTTER DECKS:

R52

R61

Ferris Industries, Inc.

5375 N. Main Street

Munnsville, NY 13409

Manual No. 22188

Beginning Serial No. 7541


Printed in USA

December 1997

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FERRIS



MODEL | SERIAL

FERRIS INDUSTRIES, INC.

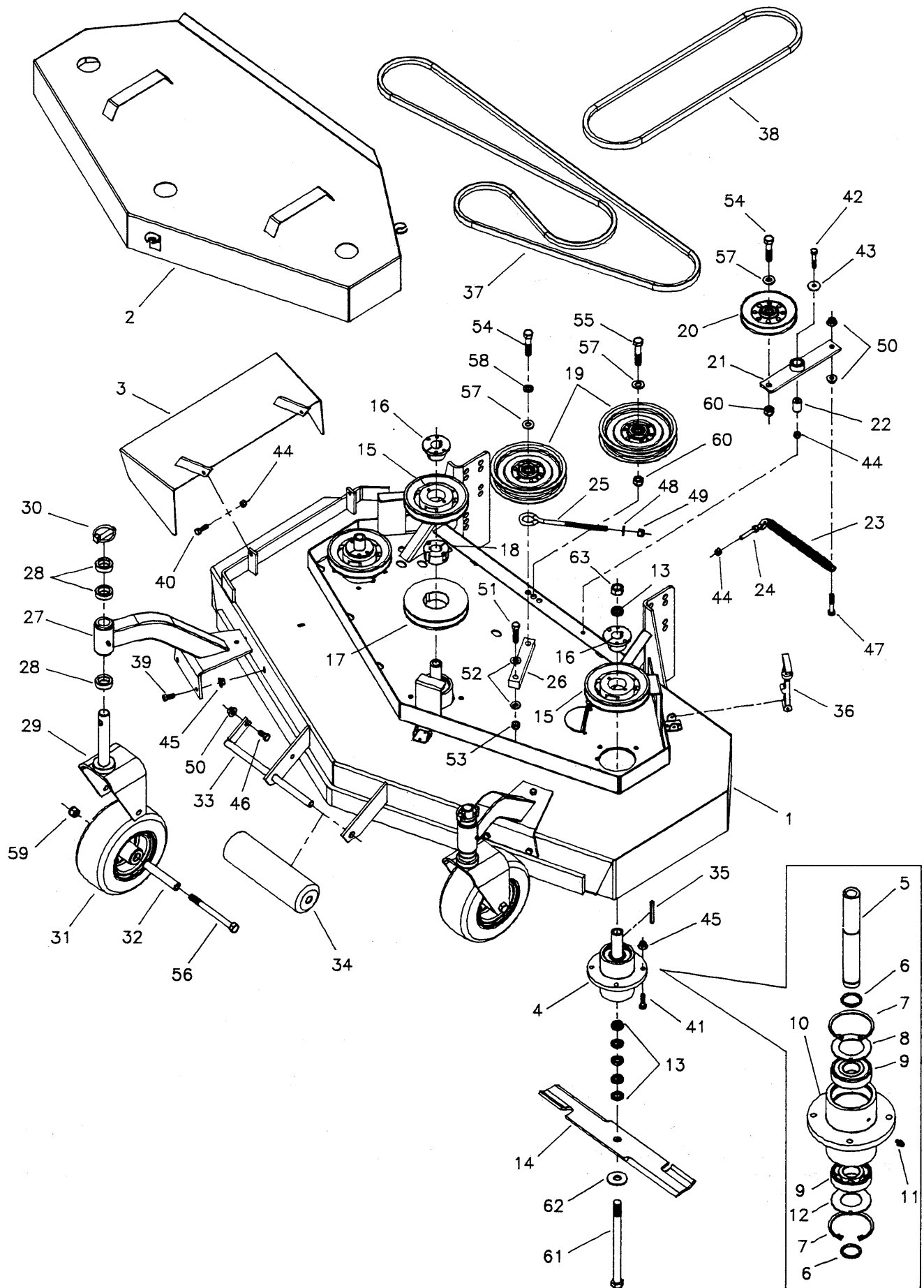
MADE IN U.S.A.

NOTE:

To insure that the correct parts for your machine are ordered and shipped, please be sure to use the parts book and pages that specifically cover your machine. Whenever in doubt, include the serial number along with the part numbers. For future reference, fill in the model and serial number of your machine in the space provided above.

⚠ WARNING: THOROUGHLY READ OPERATOR'S MANUAL AND COMPLETELY ASSEMBLE ALL LOOSE PARTS BEFORE OPERATING MOWER. DO NOT OPERATE YOUR MOWER UNLESS ALL PARTS ARE ATTACHED AND IN GOOD WORKING ORDER. KEEP YOUR MOWER IN GOOD REPAIR AT ALL TIMES.

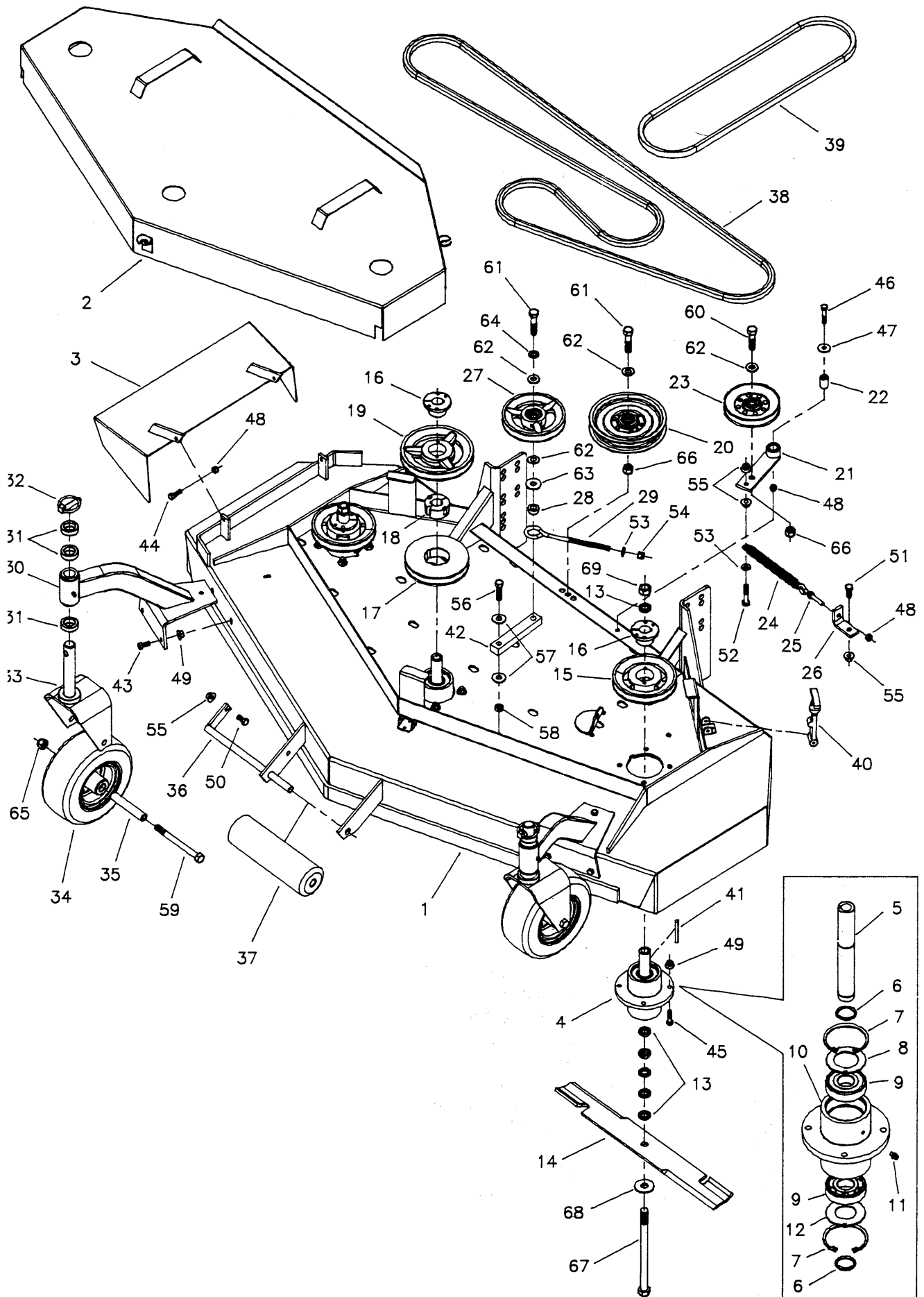
52" Cutter Deck Assembly



52" Cutter Deck Assembly

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	1530843	52" Cutter Deck	50	8825128	Nut, 3/8-16 Serrated Flange
2	1530845	52" Guard	51	1525016-14	Bolt, 7/16-20 x 1-3/4" GD.5
3	1541668	Chute, Discharge	52	8825157	Washer, 7/16" SAE
4	1530301	Spindle Assembly	53	1525094	Nut, 7/16-20 Hex Nylon Lock
5	1541480	Shaft, Spindle	54	1525018-16	Bolt, 1/2-20 x 2-1/4" GD.5
6	1520864	Snap Ring, External	55	1525018-18	Bolt, 1/2-20 x 2-1/2" GD.5
7	1520866	Snap Ring, Internal	56	1525017-44	Bolt, 1/2-13 x 5-1/2" GD.5
8	1541653	Spindle Washer-Top	57	8825158	Washer, 1/2" SAE
9	1520828	Bearing	58	8825173	Washer, 1/2" Lock
10	1530293	Housing, Spindle	59	1525056	Nut, 1/2-13 Hex Nylon Lock
11	8820095	Grease Fitting	60	8825098	Nut, 1/2-20 Hex Nylon Lock
12	1541672	Spindle Washer-Bottom	61	1525019-76	Bolt, 5/8-11 x 9-1/2" GD.5
13	1541477	Spacer, Blade	62	8825159	Washer, 5/8" USS
14	1521227	Blade, 18"	63	1525040	Nut, 5/8-11 Hex
15	1520814	Pulley, Spindle			
16	1520819	Bushing, Tapered Hub			
17	1522159	Pulley, Taper Lock			
18	1522160	Bushing, Taper Lock			
19	1521096	Pulley, Backside Idler			
20	1521097	Pulley, V-Idler			
21	1542338	Arm, Idler w/ Bushing			
--	1520876B	Bushing, Brass			
22	1542134	Spacer, Pivot			
23	1521103	Spring, Extension			
24	1525141-26	Eyebolt			
25	1521811	Eyebolt			
26	1544610	Arm, Idler			
27	1543887	Mount, Deck Caster			
--	1521541	Bushing, Flange			
--	1521728	Grease Fitting			
28	1541476	Spacer, Caster			
29	1541702	Yoke, Caster			
30	8820655	Pin, Lynch			
31	1521181	Tire, Caster			
32	1541657	Axle, Caster Wheel			
33	1541655	Pin, Roller Mount			
34	1520785	Roller			
35	1550407-9	Key, 1/4" Sq. x 2-1/2"			
36	1520841-1	Latch, Rubber			
37	1521297	Belt, Spindle			
38	1521298	Belt, Deck Drive			
39	8825011-6	Bolt, 5/16-18 x 3/4" GD.5			
40	8825011-8	Bolt, 5/16-18 x 1" GD.5			
41	1525011-10	Bolt, 5/16-18 x 1-1/4" GD.5			
42	8825011-14	Bolt, 5/16-18 x 1-3/4" GD.5			
43	8825164	Washer, 5/16" Fender			
44	8825057	Nut, 5/16-18 Hex Nylon Lock			
45	8825139	Nut, 5/16-18 Lg. Serrated Flange			
46	8825013-6	Bolt, 3/8-16 x 3/4" GD.5			
47	1525013-16	Bolt, 3/8-16 x 2" GD.5			
48	8825156	Washer, 3/8" SAE			
49	8825096	Nut, 3/8-16 Hex Nylon Lock			

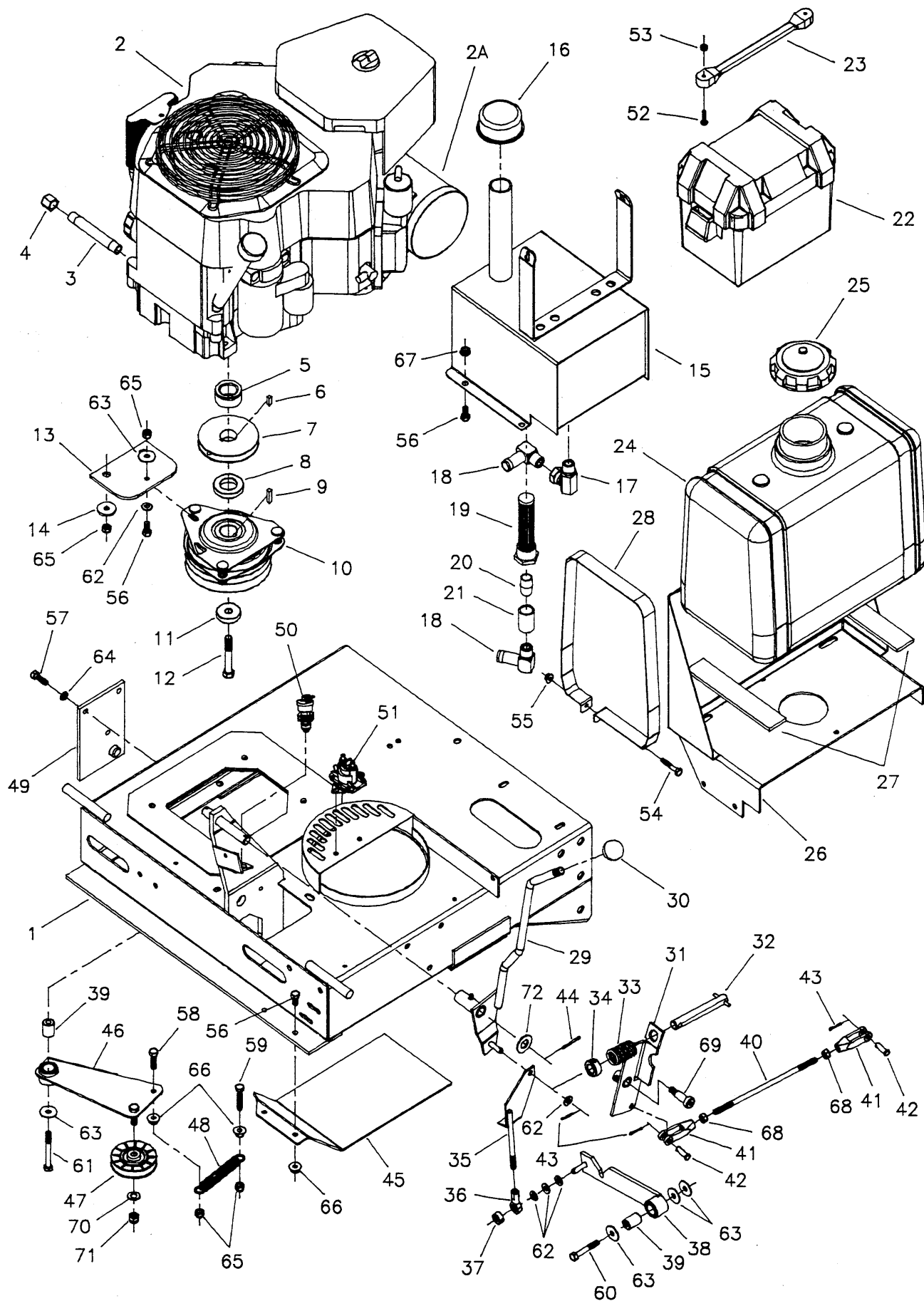
61" Cutter Deck Assembly



61" Cutter Deck Assembly

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	1530820	61" Cutter Deck	43	8825011-6	Bolt, 5/16-18 x 3/4" GD.5
2	1530822	61" Guard	44	8825011-8	Bolt, 5/16-18 x 1" GD.5
3	1541668	Chute, Discharge	45	1525011-10	Bolt, 5/16-18 x 1-1/4" GD.5
4	1530301	Spindle Assembly	46	8825011-14	Bolt, 5/16-18 x 1-3/4" GD.5
5	1541480	Shaft, Spindle	47	8825164	Washer, 5/16" Fender
6	1520864	Snap Ring, External	48	8825057	Nut, 5/16-18 Hex Nylon Lock
7	1520866	Snap Ring, Internal	49	8825139	Nut, 5/16-18 Large Serrated Flange
8	1541653	Spindle Washer-Top	50	8825013-6	Bolt, 3/8-16 x 3/4" GD.5
9	1520828	Bearing	51	8825013-8	Bolt, 3/8-16 x 1" GD.5
10	1530293	Housing, Spindle	52	1525013-16	Bolt, 3/8-16 x 2" GD.5
11	8820095	Grease Fitting	53	8825156	Washer, 3/8" SAE
12	1541672	Spindle Washer-Bottom	54	8825096	Nut, 3/8-16 Hex Nylon Lock
13	1541477	Spacer, Blade	55	8825128	Nut, 3/8-16 Serrated Flange
14	1520842	Blade, 21"	56	1525016-14	Bolt, 7/16-20 x 1-3/4" GD.5
15	1520814	Pulley, Spindle	57	8825157	Washer, 7/16" SAE
16	1520819	Bushing, Tapered Hub	58	1525094	Nut, 7/16-20 Hex Nylon Lock
17	1522159	Pulley, Taper Lock	59	1525017-44	Bolt, 1/2-13 x 5-1/2" GD.5
18	1522160	Bushing, Taper Lock	60	1525018-16	Bolt, 1/2-20 x 2" GD.5
19	1520815	Pulley, Spindle	61	1525018-18	Bolt, 1/2-20 x 2-1/4" GD.5
20	1521096	Pulley, Backside Idler	62	8825158	Washer, 1/2" SAE
21	1542145	Arm, Idler w/ Bushing	63	1525150	Washer, 1/2" USS
—	1520876B	Bushing, Brass	64	8825173	Washer, 1/2" Lock
22	1542134	Spacer, Pivot	65	1525056	Nut, 1/2-13 Hex Nylon Lock
23	1521097	Pulley, V-Idler	66	8825098	Nut, 1/2-20 Hex Nylon Lock
24	1521103	Spring, Extension	67	1525019-76	Bolt, 5/8-11 x 9-1/2" GD.5
25	1525141-26	Eyebolt	68	8825159	Washer, 5/8" USS
26	1542142	Anchor, Spring	69	1525040	Nut, 5/8-11 Hex
27	1530819	Idler Pulley Assembly			
—	1541481	Pulley, Idler			
—	1520827	Bearing			
—	1520870	Insert, Bearing			
—	1520865	Snap Ring, Internal			
28	1544609	Spacer, Idler			
29	1521811	Eyebolt, 3/8" x 8"			
30	1543887	Mount, Deck Caster			
—	1521541	Bushing, Flange			
—	1521728	Grease Fitting			
31	1541476	Spacer, Caster			
32	8820655	Pin, Lynch			
33	1541702	Yoke, Caster			
34	1521181	Tire, Caster			
35	1541657	Axle, Caster Wheel			
36	1541655	Pin, Roller Mount			
37	1520785	Roller			
38	1520824	Belt, Blade Spindle			
39	1521063	Belt, Deck Drive			
40	1520841-1	Latch, Rubber			
41	8850407-9	Key, 1/4" Sq. x 2-1/2"			
42	1544610	Arm, Idler			

Engine Deck Assembly



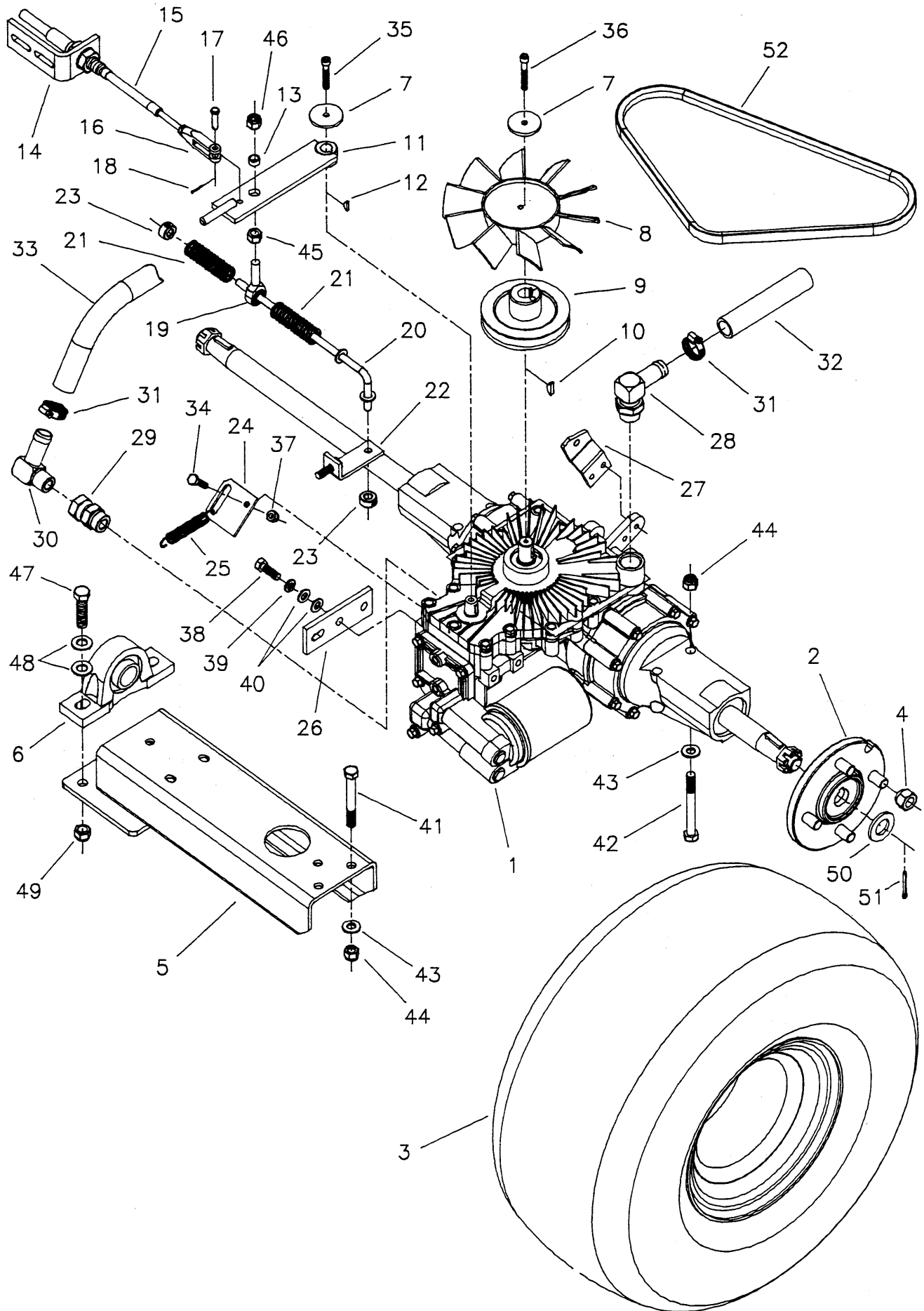
Engine Deck Assembly

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	1530775	Engine Deck	49	1541582-L	Bracket, Pivot-Left
2	1521531	Engine, Kohler 20hp	—	1541582-R	Bracket, Pivot-Right (not shown)
—	1521532	Engine, Kohler 22hp	50	1521522	Switch, Plunger
2A	1522161	Muffler, Kohler (22hp only)	51	1521886	Solenoid, Starter
3	1521707	Nipple, 3/8" NPT x 4-1/2"	52	1525270	Screw, #10-24 x 1" Phillips Head
4	1521466	Cap, 3/8" NPT	53	1525271	Nut, #10-24 Hex Nylon Lock
5	1542840	Spacer, Crank Shaft	54	8825010-12	Bolt, 1/4-20 x 1-1/2" GD.5
6	1550407-10	Key, 1/4" Sq. x 5/8"	55	8825126	Nut, 1/4-20 Hex Serrated Flange
7	1542302	Pulley, Crank Shaft	56	8825011-6	Bolt, 5/16-18 x 3/4" GD.5
8	1542304	Spacer, Clutch	57	8825011-8	Bolt, 5/16-18 x 1" GD.5
9	1550407-1	Key, 1/4" Sq. x 1"	58	8825055-10	Bolt, 5/16-18 x 1-1/4" TFL GD.5
10	1521145	Clutch, Electric	59	8825055-14	Bolt, 5/16-18 x 1-3/4" TFL GD.5
11	1542132	Washer, Clutch Retaining	60	8825011-16	Bolt, 5/16-18 x 2" GD.5
12	1543626	Bolt, Dri-Lock	61	1525011-24	Bolt, 5/16-18 x 3" GD.5
13	1543636	Pad, Clutch Mount	62	1525155	Washer, 5/16" SAE
14	1544617	Washer, Clutch Anchor	63	8825164	Washer, 5/16" Fender
15	1530789	Hydro Tank Assembly	64	8825170	Washer, 5/16" Lock
—	1530774	Hydro Tank	65	8825057	Nut, 5/16-18 Hex Nylon Lock
16	1521871	Breather	66	8825139	Nut, 5/16-18 Hex Lg. Serrated Flange
17	1521132	Fitting, 90° 1/2" NPT Swivel	67	8825127	Nut, 5/16-18 Hex Sm. Serrated Flange
18	1521160	Fitting, 90° 1/2" NPT	68	8825033	Nut, 5/16-24 Hex
19	1521082	Strainer, In-Line	69	1525223	Bolt, 3/8-16 - 1/2" Dia. x 1" Shoulder
20	1521163	Nipple, 1/2" NPT Close	70	8825156	Washer, 3/8" SAE
21	1520985	Coupler, 1/2" NPT	71	8825096	Nut, 3/8-16 Hex Nylon Lock
22	1521666	Box, Battery	72	1525281	Washer, 5/8" SAE
23	1521670	Strap, Rubber			
24	1521868	Tank, 6 Gallon Fuel			
—	1522151	Grommet, Fuel Shut Off Valve			
25	1522158	Cap, Gas			
26	1544692	Mount, Fuel Tank			
27	1521877	Pad, Rubber Mount			
28	1544693	Strap, 6 Gal. Fuel Tank			
29	1530919	Brake Lever			
30	1521733	Knob			
31	1543971	Brake Rocker Arm			
32	1543982	Bar, Spring			
33	1521667	Spring, Compression			
34	8810477	Collar, 5/8" Set			
35	1543972	Brake Lock			
36	1521146	Ball Joint, 5/16" Female			
37	8820047	Collar, 5/16" Set			
38	1542317	Neutral Lock w/ Bushing			
—	1520876B	Bushing, Brass			
39	1542134	Spacer, Pivot			
40	1543976	Rod, Brake Linkage			
41	1520979	Clevis, 5/16" Plastic			
42	1525213-8	Pin, Clevis			
43	1525201-6	Pin, Cotter			
44	1525203-10	Pin, Cotter			
45	1544616	Plate, Skid			
46	1542169	Idler Arm w/ Bushing			
—	1520876B	Bushing, Brass			
47	1543627	Pulley, Idler			
48	1520807	Spring, Extension			

ADDITIONAL PARTS NOT SHOWN:

- 1550831-28 - Fuel Line, 28" Long (tank to filter)
- 1521178-3 - Filter, Fuel
- 1520835 - Clamp, Hose (for fuel line)
- 1550833-24 - Wire Loom, 24" Long
(covers fuel line #1550831-28)

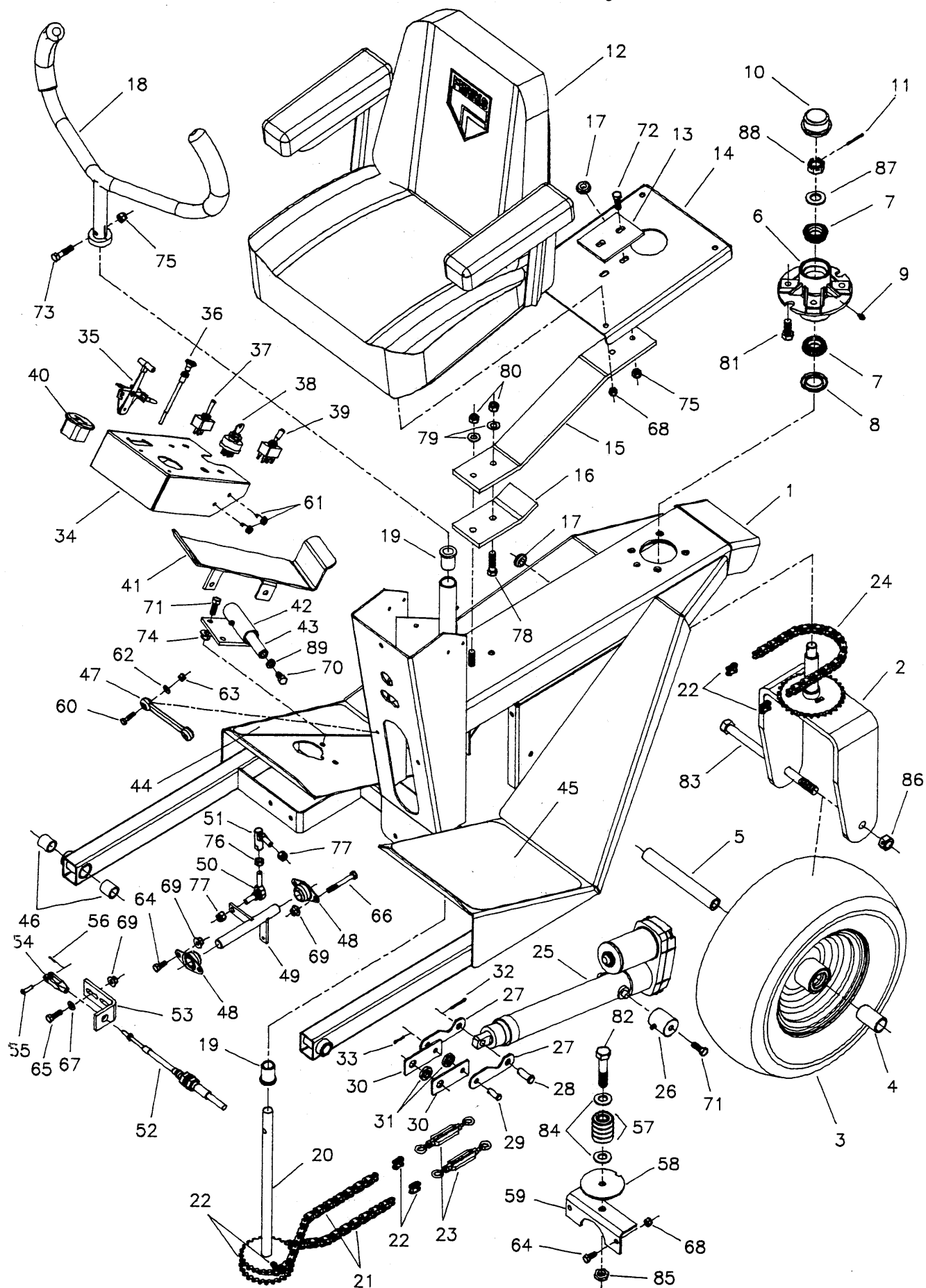
Transmission Assembly



Transmission Assembly

REF. NO.	PART NO.	DESCRIPTION
1	1522164	Transmission
--	1521068-1	Oil Filter
--	1522183	Nut, Hex Slotted
--	1522184	Key, Woodruff
2	1522165	Hub, 4 Bolt Tapered
3	1521094	Tire, 20" Drive
4	8820601	Nut, Lug
5	1543675	Support, Axle
6	1521095	Bearing
7	1544577	Washer, Fan Retaining
8	1521081	Fan
9	1543647	Pulley, Transmission Input
10	1521839	Key, Hi-Pro Woodruff
11	1542319	Arm, Stroke
12	8820149	Key, Woodruff
13	1541930	Spacer
14	1542170	Bracket, Cable
15	1521089	Cable, Speed Control
16	1521104	Clevis, Plastic
17	1525212-8	Pin, Clevis
18	1525204-4	Pin, Cotter
19	1521124	Ball Joint, 3/8" Male
20	1542329	Rod, Neutral Spring
21	1521102	Spring, Compression
22	1542328	Bracket, Neutral
23	8820047	Collar, 5/16" Set
24	1543671	Lever, Dump Valve
25	1520639	Spring, Extension
26	1542177	Bracket, Transmission Support
27	1543674	Lever, Brake
28	1521161	Fitting, 90° 7/8" O-Ring
29	1521166	Fitting, Straight 7/8" O-Ring Swivel
30	1521160	Fitting, 90° 1/2" NPT
31	1521164	Clamp, #10 Hose
32	1550836-4.87	Hose, Inlet
33	1550836-14.75	Hose, Return
34	8825010-8	Bolt, 1/4-20 x 1" GD.5
35	1525269	Bolt, 1/4-20 x 1-1/2" Allen Head w/ Patch
36	1525268	Bolt, 1/4-20 x 1-3/4" Allen Head w/ Patch
37	8825095	Nut, 1/4-20 Hex Nylon Lock
38	8825011-8	Bolt, 5/16-18 x 1" GD.5
39	8825170	Washer, 5/16" Lock
40	1525155	Washer, 5/16" SAE
41	8825013-24	Bolt, 3/8-16 x 3" GD.5
42	8825013-28	Bolt, 3/8-16 x 3-1/2" GD.5
43	1525293	Washer, 3/8" GD.9
44	8825096	Nut, 3/8-16 Hex Nylon Lock
45	8825035	Nut, 3/8-24 Hex
46	8825097	Nut, 3/8-24 Hex Nylon Lock
47	1525016-14	Bolt, 7/16-20 x 1-3/4" GD.5
48	8825157	Washer, 7/16" SAE
49	1525094	Nut, 7/16-20 Hex Nylon Lock
50	1525160	Washer, 3/4" SAE
51	1525203-10	Pin, Cotter
52	1521105	Belt, Hydro Drive

Rider Frame Assembly



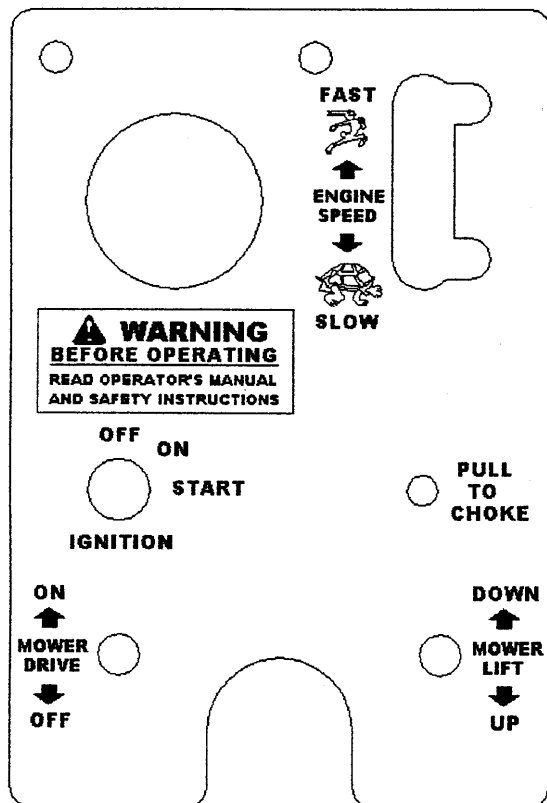
Rider Frame Assembly

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	1530770	Trailer Weldment	52	1521089	Cable, Speed Control
2	1542127	Mount, Steering Tire	53	1542170	Bracket, Cable
3	1521150	Tire, Steering	54	1521104	Clevis, Plastic
4	1542315	Spacer, Axle	55	1525212-8	Pin, Clevis
5	1542314	Axle, Steering Tire	56	1525204-4	Pin, Cotter
6	1542110	Hub, Steering	57	1521882	Bearing, Roller
7	1520884	Bearing, Tapered Roller	58	1543652	Washer, Chain
8	1521072	Seal, Grease	59	1544627	Mount, Chain Roller
9	8820095	Grease Fitting	60	8825010-8	Bolt, 1/4-20 x 1" GD.5
10	1521073	Cap, Dust	61	1525279-6	Bolt, 1/4-20 x 3/4" Self Tapper
11	1525203-10	Pin, Cotter	62	8825154	Washer, 1/4" SAE
12	1522167	Seat	63	8825095	Nut, 1/4-20 Hex Nylon Lock
13	1541522	Support, Seat Plate	64	8825011-6	Bolt, 5/16-18 x 3/4" GD.5
14	1542082	Plate, Seat	65	8825011-8	Bolt, 5/16-18 x 1" GD.5
15	1541836	Spring, Seat	66	8825011-20	Bolt, 5/16-18 x 2-1/2" GD.5
16	1542252	Support, Seat Spring	67	1525155	Washer, 5/16" SAE
17	1521077	Grommet, 1/2"	68	8825057	Nut, 5/16-18 Hex Nylon Lock
18	1530314	Steering Handle Assembly	69	8825139	Nut, 5/16-18 Serrated Flange-Large
--	1520837	Grip, Foam	70	8825013-6	Bolt, 3/8-16 x 3/4" GD.5
--	8820602	Collar, 1" Split	71	8825013-8	Bolt, 3/8-16 x 1" GD.5
19	1520823	Bushing, Flange	72	8825013-10	Bolt, 3/8-16 x 1-1/4" GD.5
20	1542087	Shaft, Steering Sprocket	73	8825013-12	Bolt, 3/8-16 x 1-1/2" GD.5
21	1510673-31	Chain, Roller - 31 Links	74	8825128	Nut, 3/8-16 Serrated Flange
22	8810674	Connector, Chain Link	75	8825096	Nut, 3/8-16 Hex Nylon Lock
23	1542090	Turnbuckle	76	1525035	Nut, 3/8-24 Hex
24	1510673-35	Chain, Roller - 35 Links	77	1525097	Nut, 3/8-24 Hex Nylon Lock
25	1543536	Actuator, Electric Lift	78	1525291-14	Bolt, 7/16-20 x 1-3/4" GD.8
26	1544082	Mount, Actuator	79	8825157	Washer, 7/16" SAE
27	1543677	Link, Actuator Lower	80	1525094	Nut, 7/16-20 Hex Nylon Lock
28	1543688	Pin, Clevis	81	1525018-10	Bolt, 1/2-20 x 1-1/4" GD.5
29	1525214-8	Pin, Clevis	82	1525280-24	Bolt, 5/8-11 x 3" GD.5
30	1544618	Link, Actuator	83	1525019-76	Bolt, 5/8-11 x 9-1/2" GD.5 Plain
31	1541477	Spacer, Blade	84	1525281	Washer, 5/8" SAE
32	1525203-10	Pin, Cotter	85	1525282	Nut, 5/8-11 Hex Nylon Jam
33	1525201-6	Pin, Cotter	86	8825103	Nut, 5/8-11 Hex Side Lock
34	1544212	Dash	87	1525160	Washer, 3/4" SAE
35	1521662	Cable, Throttle	88	1525104	Nut, 3/4-16 Hex Slotted
36	1521675	Cable, Choke			
37	1521734	Switch, Actuator			
38	1520927	Switch, Ignition			
39	1521545	Switch, Electric Clutch			
40	1520060	Hour Meter			
41	1542185	Pedal, Foot Control			
--	1542281	Safety Walk			
42	1542137	Mount, Foot Pedal			
--	1520875B	Bushing, Brass			
43	1542147	Shaft, Pedal Pivot			
44	1542282	Safety Walk - Right			
45	1541774	Safety Walk - Left			
46	1520876P	Bushing, Plastic			
47	1520959	Strap, Rubber			
48	1521098	Bearing, Bronze Flange			
49	1542184	Bell Crank			
50	1521049	Ball Joint, 3/8" Male Studded			
51	1520805	Ball Joint, 3/8" Female Studded			

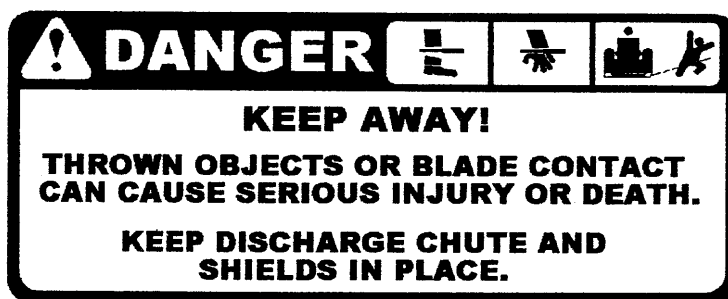
Electrical Schematic

REF. NO.	PART NO.	DESCRIPTION
1	1531051	Rider Wire Harness
2	1520927	Switch, Key
3	1521545	Switch, Electric Clutch
4	1545152	Interlock Relay Harness
5	1521734	Switch, Electric Actuator
6	1521522	Switch, Plunger N.O.
7	1521886	Solenoid, Starter
8	1520060	Hour Meter
9	1544501	Hour Meter Ground Wire
10	1544502	Dash Ground Wire
11	1544731	Starter Jumper Wire
12	1521406	Negative (-) Battery Cable
13	1521542	Positive (+) Battery Cable
14	1544092	Starter Cable

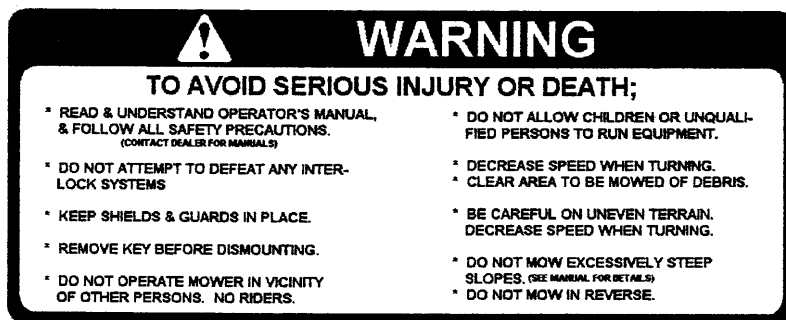
Replacement Decals



Decal, Dash
1521884



Decal, Danger-Keep Away
1520851



Decal, Warning
1520850



Decal, Ferris
1520852



Decal, Hydro Drive
1521126

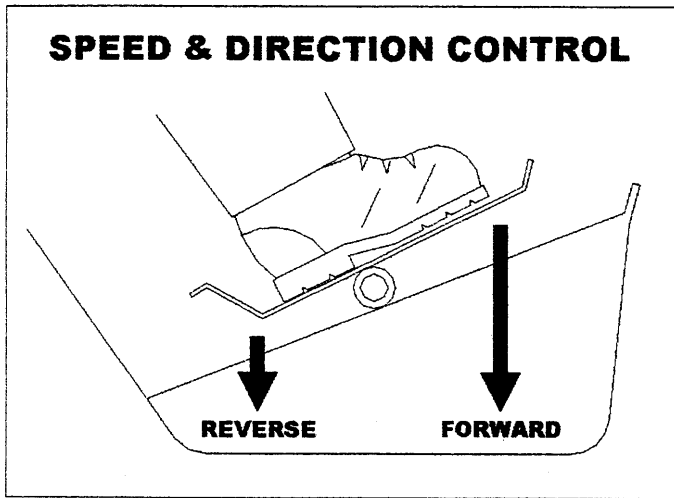


Decal, Grease Daily
1521036

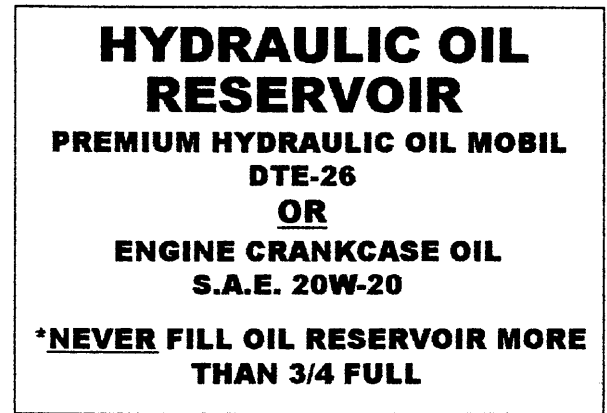


Decal, Warning-Power
8820337

Replacement Decals



Decal, Control Pedal
1521111



Decal, Oil Reservoir
1521114

SPEED & DIRECTION CONTROL

Decal, Speed & Direction
1521112

Commercial

Decal, Commercial
1520846

ProCut

Decal, Pro Cut
1521300

52

Decal, 52"
1521299

FERRIS

Decal, Ferris (Text Only)
1520849

61

Decal, 61"
1521302

OFF



**P
A
R
K
I
N
G**

**B
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A
K
E**



ON

Decal, Parking Brake
1521109

