

**LEGEND:**  
 △ = Sharp Edge  
 L = Left Bolo Tine  
 R = Right Bolo Tine

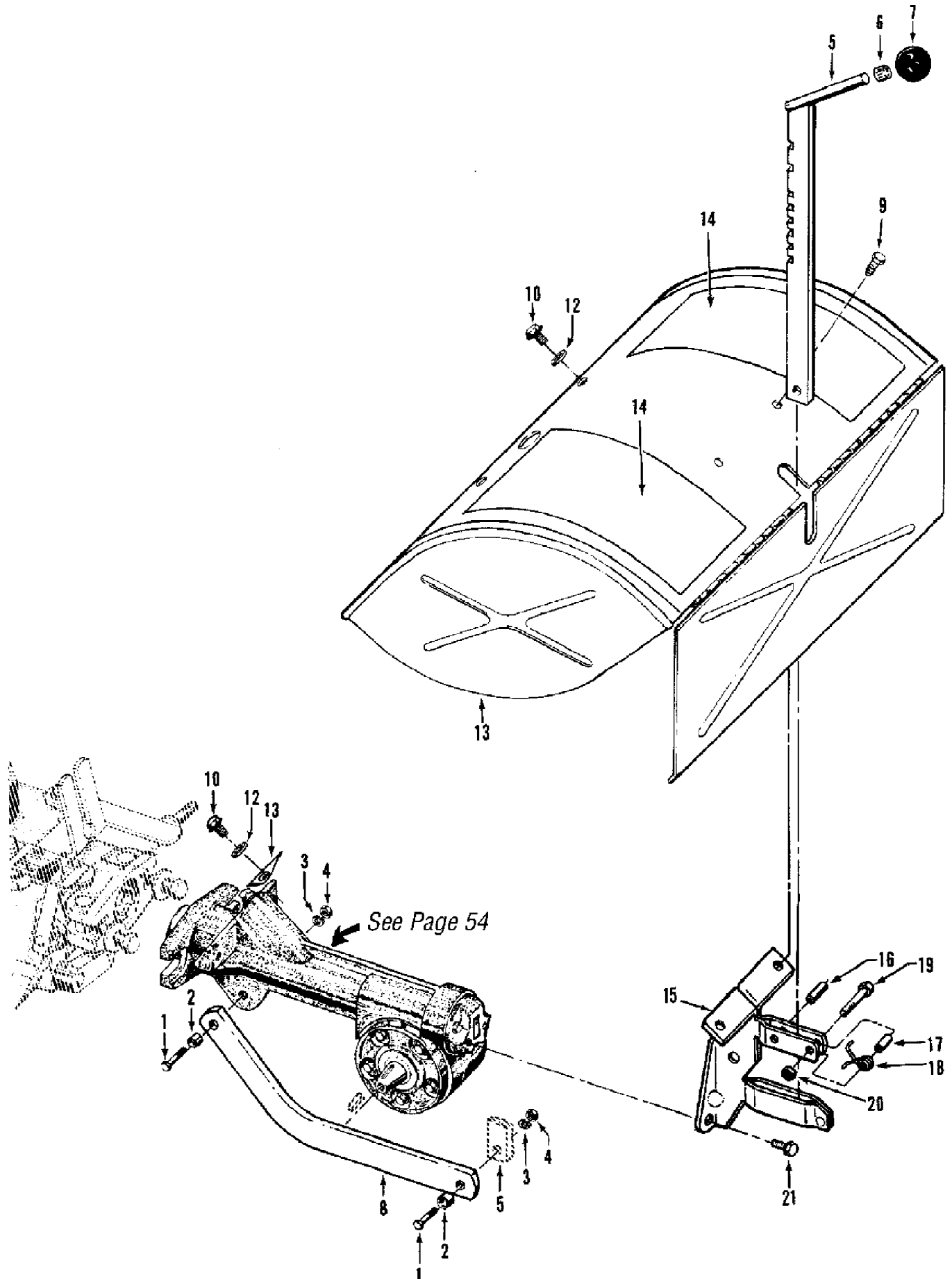
**NOTE: Make sure Sharp Edge △ of tines faces FORWARD to enter soil first**

**LEFT HAND TINE      RIGHT HAND TINE**  
 (As viewed with blunt edge facing you.)

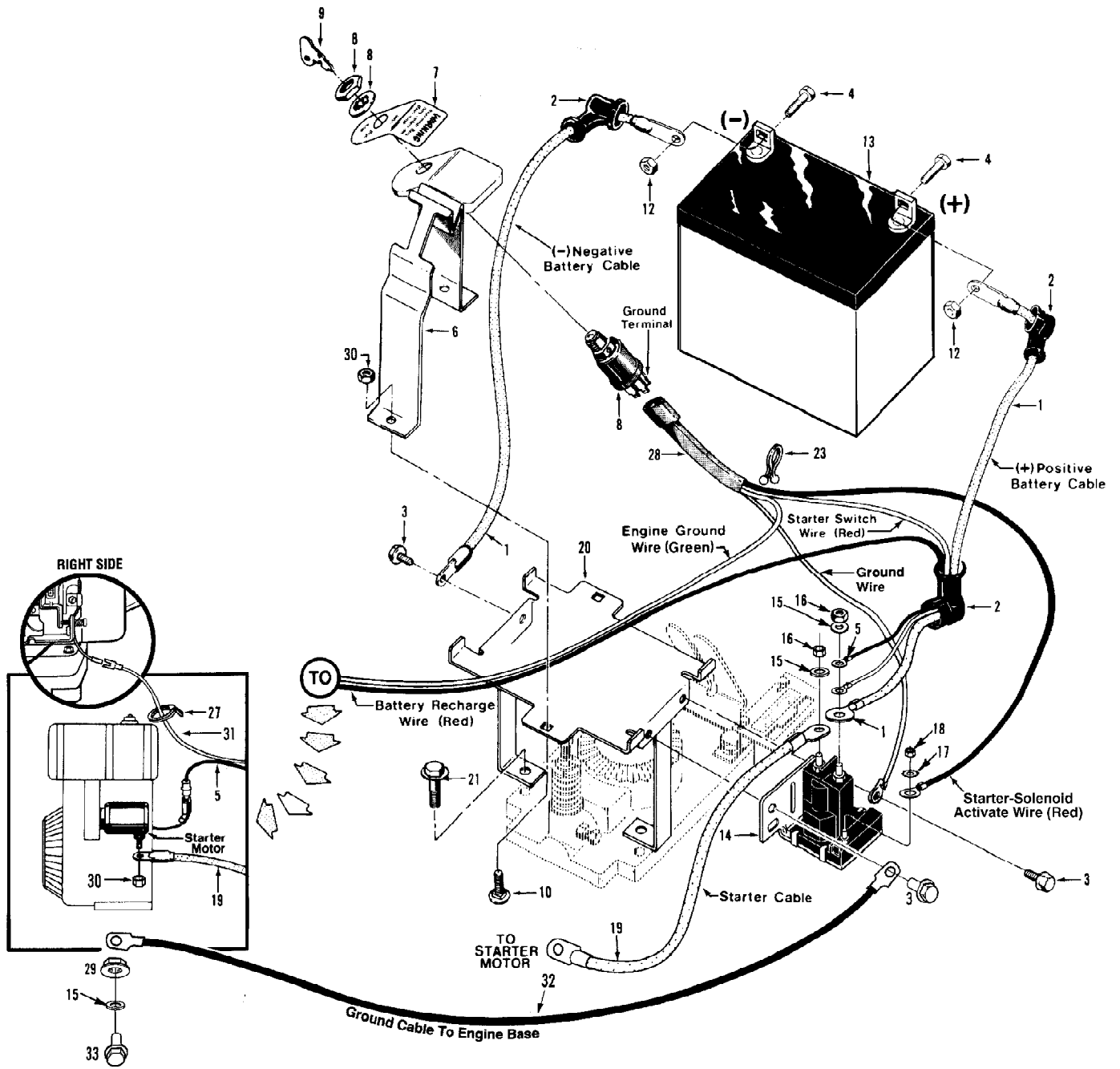
21AE686N766 Horse Roto-Tiller (2005)  
Bolo Tine Assemblies

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Ref #	Part Number	Qty	S/P/F	Description
		1		STANDARD TILLING TINES
1	1901975	2	S	Tine Holder-welded steel, fits left or right sides
2	710-3096	4	/P	Bolt-hex hd., 3/8-16 x 2"
3	712-3000	20	S	Locknut-hex, 3/8"-16
6	GW-1270-1	8	S	Bolo Tine-single, left hand. Tine is stamped either "EL" or "AL"
7	GW-1270-2	8	S	Bolo Tine-single, right hand. Tine is stamped either "ER" or "AR"
8	710-3005	16	/P	Bolt-hex hd., 3/8-16 x 1"
	290-253-081	1		Tine Replacement Kit-unassembled (Incl. eight each of Ref. No.'s 6, and 7, sixteen each of Ref. No.'s 8 and 10). Includes easy-to- follow installation instruction. DOES NOT INCLUDE tine holders, holder mounting hardware, or tine shaft keys.
		1		CUSTOM TILLING TINES Special hard-faced, high-chrome carbon alloy tines that are thicker than standard Bolo Tines. These tines better resist the abrasive action of rocky, gritty or sandy soil as compared to standard Bolo Tines, and are especially suited for custom tilling or market gardening.
	GW-10802	1	/P	Custom Tilling Tine Kit (Incl. eight each of Part GW-2475-1 and GW-2475-2 tines and sixteen each of Ref. No.'s 8 and 10)
	GW-2475-1	8	S	Bolo Tine, Custom Tilling-single, left hand
	GW-2475-2	8	S	Bolo Tine, Custom Tilling-single, right hand



Ref #	Part Number	Qty	S/P/F	Description
1	710-3005	2	/P	Bolt-hex hd., 3/8-16 x 1-1/4"
2	GW-1113-1	2	S	Bushing-19/64" (.300" lg.)
3	736-0169	2	S	Lockwasher-spring lock, 3/8"
4	712-3017	2	S	Nut-hex, 3/8"-16
5	GW-20795	1	S	Bar-depth regulator
6	GW-9120	1	/P	Ring-retaining
7	GW-9119	1	/P	Knob-depth regulator
8	GW-2121	1	S	Bar-drag, depth regulator
9	710-0599	2	/P	Screw-thread-forming, 1/4-20 x 1/2"
10	1186329	2	S	Bolt-flanged hex hd., 5/16-18 x 3/4"
12	GW-9929	2	/P	Washer-flat, 5/16"
13	686-04027	1	S	Hood
14	777I22027	1		Decal-hood, operating inst. (LH)
	777S32049	1		Decal-hood, operating inst. (RH)
15	GW-2525	1		Bracket
16	1185469	1	S	Pin-roll (spirol) 1/4" x 1"
17	GW-9534	1	/P	Spacer
18	GW-9384	1	S	Spring
19	710-0597	1	/P	Bolt-hex hd., 1/4-20x1"
20	1110106	1	/P	Locknut-1/4"-20
21	710-04049	2	/P	Bolt-flanged hex hd., 5/16-18 x 5/8"



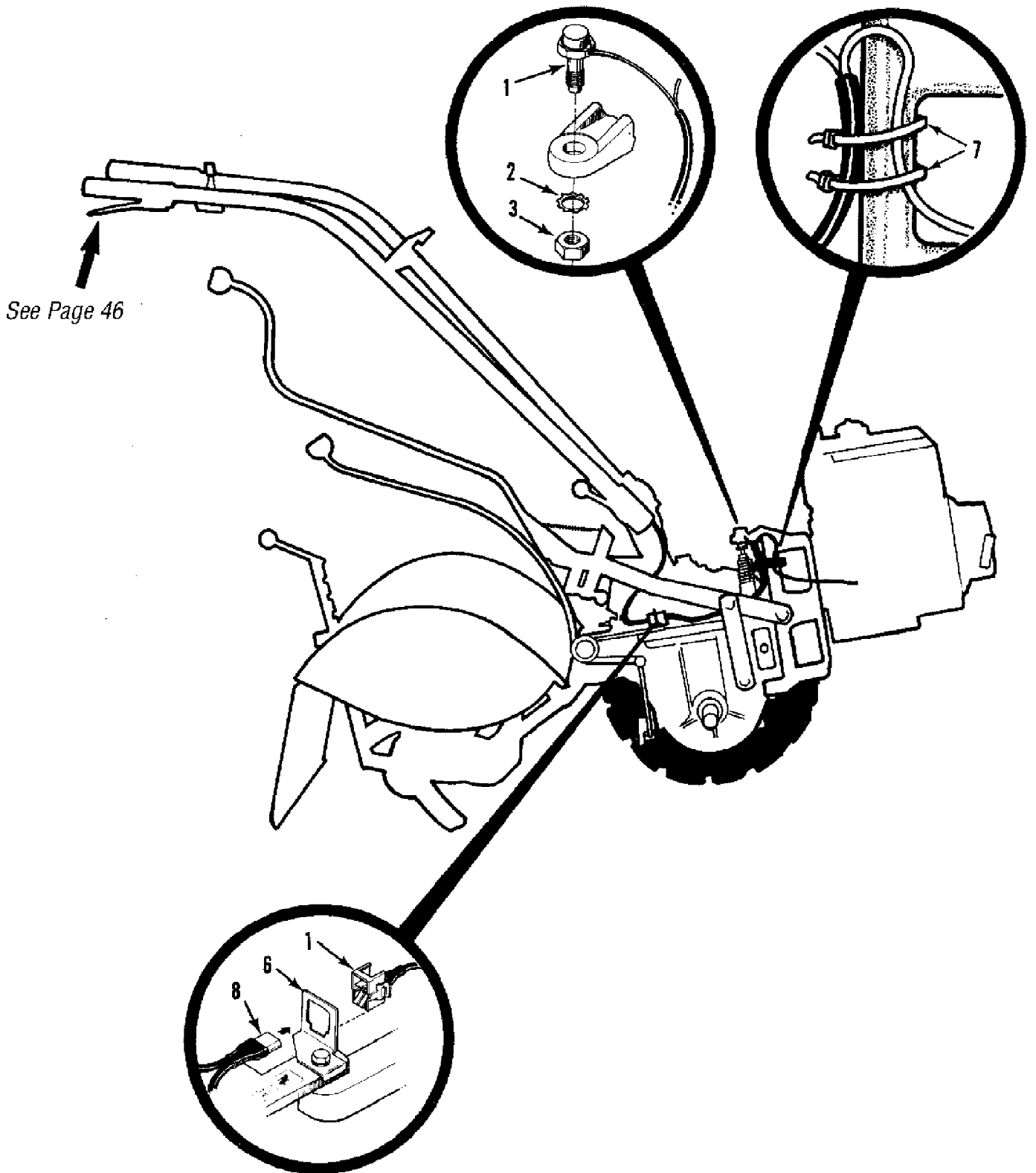
21AE686N766 Horse Roto-Tiller (2005)  
Electric Start System

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Ref #	Part Number	Qty	S/P/F	Description
1	GW-96515	2	/P	Cable-battery, positive and negative terminals
2	GW-97020	3	/P	Boot-terminal insulating
3	GW-9552	3	S	Screw-self-threading, 1/4-20 x 1/2"
4	1186309	2	/P	Bolt-hex hd., 1/4-20 x 5/8"
5	1901894	1	/P	Wire-recharge (red)
6	GW-2614	1	S	Battery Hold-down Clamp-with attached Key Switch Plate
7	777S30648	1	/P	Decal-ignition switch instruc
8	725-0267	1	S	Key Switch Includes two ignition keys (Ref. No. 9), one lockwasher, and one mounting nut (lock-washer and nut not available separately)
9	725-0201	1	S	Key-ignition, one pair
10	1186073	2	/P	Bolt-carriage, 1/4-20 x 1-1/4"
11	1100241	2	S	Lockwasher-spring lock, 1/4"
12	712-3006	2	/P	Nut-hex, 1/4"-20
13	725-1706A	1	S	Battery-12 volt, 270 CCA
14	GW-96514	1	S	Solenoid-starter Includes nuts and washers for cables and wires
15	736-0119	3	S	Lockwasher-5/16"
16	1186211	2	/P	Nut-hex, 5/16"-24
17	736-0147	1	S	Lockwasher-external tooth, #10
18	GW-9853	1	/P	Nut-hex, #10-32,
19	GW-96510	1	/P	Cable-solenoid to starter motor
20	GW-2557	1	S	Battery Bracket
21	1186349	2	/P	Bolt-flanged hex hd., 3/8-16 x 1-1/2"
23	GW-9265	1	/P	Tie-plastic, wire retaining
27	725-0157	2	/P	Tie-plastic
28	1908118	1	S	Wire Harness & Connecting Terminal Assembly
29	712-3010	1	S	Nut-flange lock, 5/16"-18
30	1186389	3	/P	Locknut-hex, 1/4"-20
31	629-04018	1	S	Ground Wire Assembly
32	1901202	1	/P	Cable-ground, solenoid to engine block
33	710-3180	1	/P	Bolt-flange lock, 5/16-18 x 1"

21AE686N766 Horse Roto-Tiller (2005)  
Forward Interlock System

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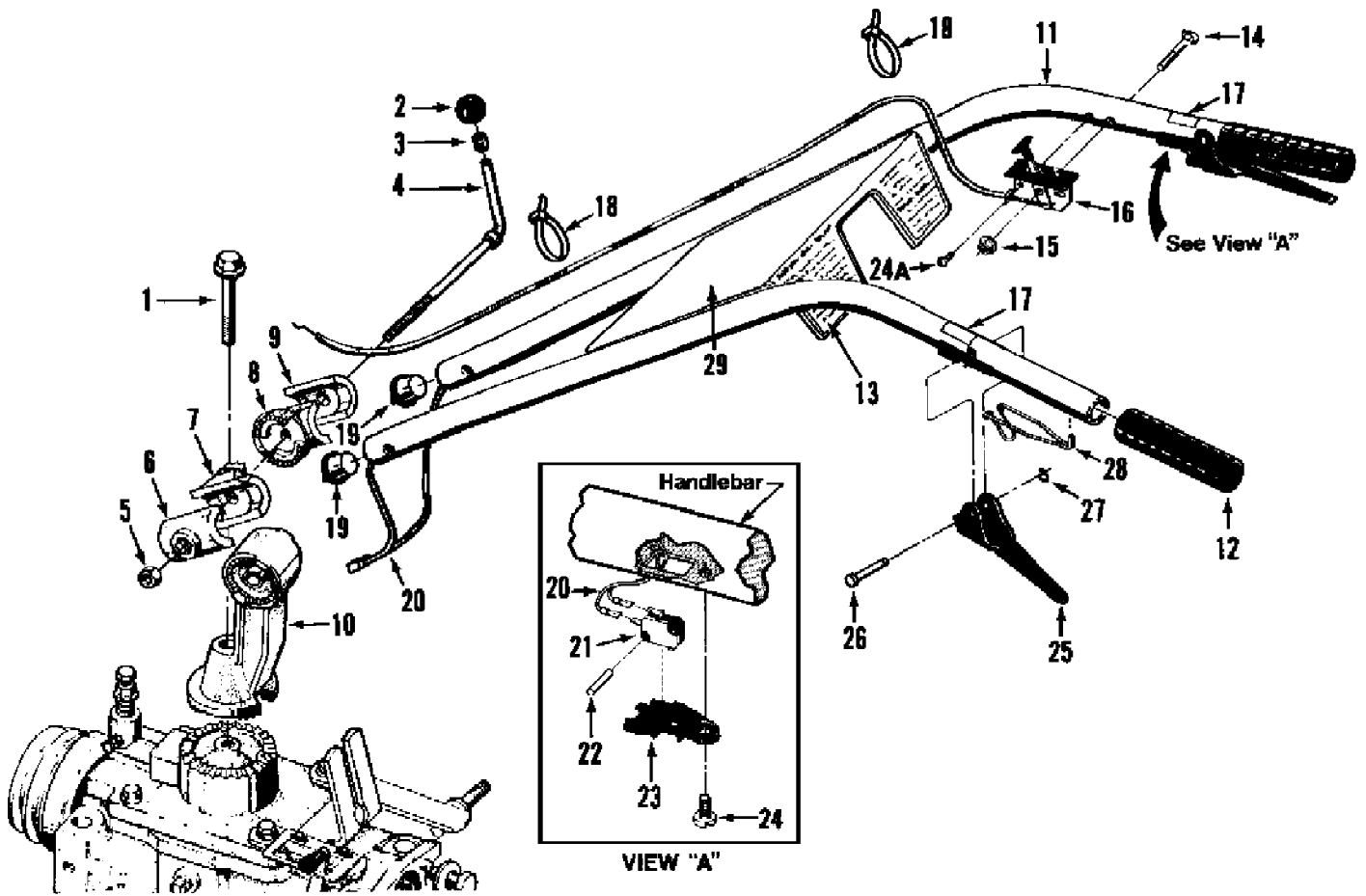


21AE686N766 Horse Roto-Tiller (2005)  
Forward Interlock System

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Ref #	Part Number	Qty	S/P/F	Description
1	629-04017	1	S	Engine Wire Harness Assy-forward interlock system (Incl. one red and one black wire, plug connector, neutral switch and PVC tubing. Parts not available separately)
2	GW-9971	1	/P	Lockwasher-external tooth, 7/16"
3	1186246	1	/P	Nut-hex, 7/16"-20
6	GW-9205	1	/P	Clip-for plug connector
7	725-0157	2	/P	Tie-plastic
8	GW-2551	1	/P	Handlebar Wire Harness Assy

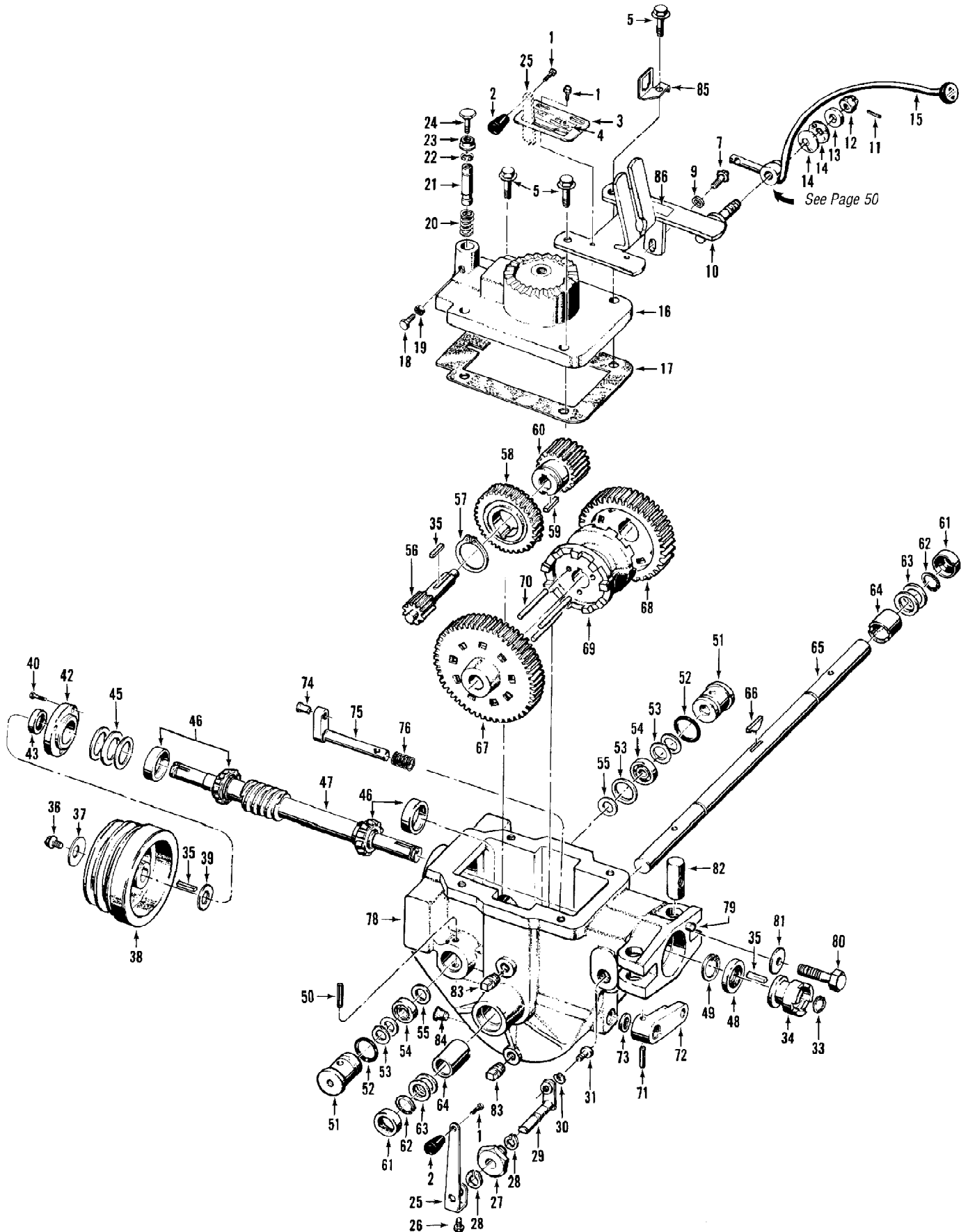




21AE686N766 Horse Roto-Tiller (2005)  
Handlebar Assembly

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Ref #	Part Number	Qty	S/P/F	Description
1	GW-9548	1	/P	Bolt-Hex hd., flanged self-locking Grade 5, 1/2-13 x 3-1/2"
2	GW-9119	1	/P	Knob-handlebar height adjustment
3	GW-9120	1	/P	Ring-retaining (tolerance ring)
4	GW-2657	1	S	Stud-handlebar height adjustment
5	1186233	1	S	Nut-hex, 1/2"-13
6	GW-1021-1	1	S	Clamp-left, handlebar height adjustment
7	GW-2542-1	1	S	Ratchet-left, handlebar height adjustment
8	GW-2542-2	1	S	Ratchet-right, handlebar height adjustment
9	1901784	1	S	Clamp-right, handlebar height adjustment
10	GW-2534A	1	S	Base-handlebar mounting
11	649-04020	1	S	Handlebars
12	GW-9125	2	S	Grip-handlebars
13	777I22026	1		Decal-Control panel
14	1918111	1		Bolt-curved hd, GR5, 1/4-20 x 2"
15	1186389	1	/P	Nut-hex, flanged self-locking, whiz lock, 1/4"-20
16	1909286	1	S	Throttle Control & Cable, 66"
17	777I20946	2		Decal-Forward Interlock Lever
18	725-0157	2	/P	Tie-plastic
19	GW-9219	2	/P	Plug-wire harness retainer
20	GW-2551	1	/P	Handlebar Wire Harness Assy- forward interlock system
21	GW-9250	2	S	Handlebar Switch-forward interlock system
22	GW-9385	2	/P	Lock Pin-handlebar switch
23	GW-2543	2	S	Switch Housing-handlebar switch
	GW-2563	1	S	Switch Assembly (Includes Ref. 21-23)
24	1186009	2	/P	Screw-pan head, 10-24 x 1/2", thread-forming
24A	GW-9733	1	/P	Screw-phillips head, 10-32 x 1/2", thread-forming
25	786-04003	2	S	Lever-Operator Presence Control
26	GW-9199	2	/P	Pivot Pin-forward interlock lever
27	GW-9514	2	/P	Retaining Ring-klip ring-forward interlock lever
28	GW-9387	2	/P	Return Spring-fwd interlock lever
29	777D07724	1	S	Label - Troy-Bilt Horse
	777D06527	1		Label - Troy-Bilt Horse "Big Red"



21AE686N766 Horse Roto-Tiller (2005)  
Power Unit Transmission Assemblies

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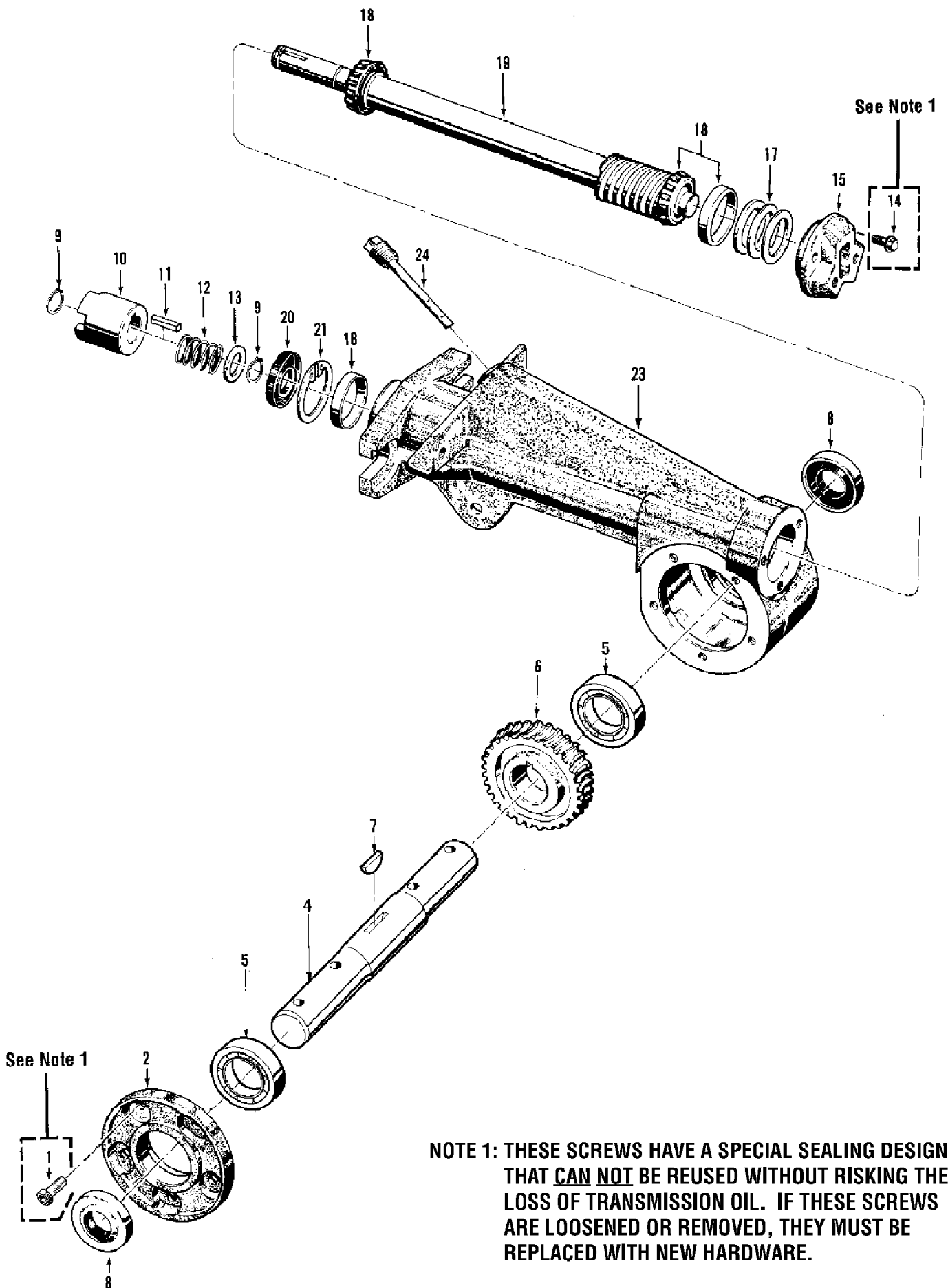
Ref #	Part Number	Qty	S/P/F	Description
		1		TRANSMISSION COVER & SHIFT LEVER BRACKET ASSEMBLIES
1	1186299	3	S	Bolt-hex hd., #10-32 x 3/8", self-locking flange
2	GW-9463	1	/P	Knob-tines/PTO clutch lever, tapered, plastic
3	GW-2124	1	S	Detent Plate-tines/PTO clutch lever
4	777I20945	1	/P	Decal-operating instructions, detent plate
5	1186349	4	/P	Bolt-flanged hex hd., 3/8-16 x 1-1/2"
7	1186329	1	S	Bolt-flanged hex hd., 5/16-18 x 3/4", Grade 5
9	736-0275	1	S	Washer-flat, 5/16", S.A.E.
10	GW-2149	1	S	Bracket-shift levers
11	GW-9362	1	/P	Pin-spring, 1/8"
12	GW-9838	1		Nut-castle (slotted), 1/2"-20 Call Tech Service for tightening instructions
13	GW-9934	1	/P	Washer-shoulder, 1/2"
14	GW-9932	2	/P	Washer-disc spring
15	GW-2178	1	S	Lever-wheel speed shift
16	GW-2523	1	S	Cover-power unit transmission
17	GW-1123	1	/P	Gasket-transmission cover
18	710-0376	1	/P	Bolt-hex hd., 5/16-18 x 1", Grade 5, (remove with care)
19	712-3010	1	S	Nut-hex, 5/16"-18
20	1901439	1	/P	Spring-neutral plunger (remove with care)
21	GW-1035-1	1	S	Plunger-neutral (remove with care)
22	1901440	1	/P	Clip Ring-retains neutral plunger
23	1186393	1	/P	Nut-hex, flange locknut, 3/8"-16
24	1902004	1	/P	Bolt-hex hd., 3/8-16x1-1/2", threaded full length
		1		TINES/PTO CLUTCH LEVER ASSEMBLY
25	786-04002	1	/P	Lever-eccentric, tines/PTO clutch
26	710-3013	1	/P	Bolt-hex hd., 1/4-20 x 1/2"
27	741-04008	1	/P	Bushing-tines/PTO clutch lever eccentric shaft
28	GW-9516	2	/P	Retaining Ring-(snap ring), external
29	GW-2461	1	/P	Eccentric-shaft, tines/PTO clutch lever
30	GW-9911	1	/P	Lockwasher-hi-collar, 1/4"
31	GW-9672	1	S	Screw-socket hd., 1/4-20 x 3/8"
		1		DRIVE SHAFT ASSEMBLY
33	716-0101	1	S	Retaining Ring-external
34	1909139	1	S	Dog Clutch-power unit
35	GW-9301	3	S	Key-3/16 sq. x 1"
36	1100004	1	S	Bolt-hex hd., 5/16-24 x 3/4", self-locking flange, Grade 5
37	GW-9944	1	S	Washer-disc spring (concave)
38	GW-2107	1	/P	Pulley-transmission drive, cast iron
39	GW-50027	1	/P	Washer-flat, hardened shoulder 1-1/4"
40	1186310	3	/P	Bolt-hex hd., 1/4-20 x 3/4", front bearing cap
42	718-04007	1	/P	Cap-front bearing
43	721-04044	1	S	Seal-oil, front bearing cap
45	GW-1224-1	As Req'd	S	Shim-front bearing cap, .010" thick
45	GW-1224-2	As Req'd	S	Shim-as above, .030"

Ref #	Part Number	Qty	S/P/F	Description
45	GW-1224-3	As Req'd	S	Shim-as above, .005"
45	GW-1224-4	As Req'd	S	Shim-as above, .062"
46	GW-1714	2	S	Bearing & Race (Incl. one bearing GW-9400 and one cup (race) GW-9401)
47	GW-2655	1		Shaft-main drive, power unit
48	721-04030	1	S	Seal-oil, drive shaft, rear
49	GW-9517	1	S	Retaining Ring-(snap ring), internal
		1		PINION SHAFT ASSEMBLY
50	715-0121	2	/P	Pin-roll (spiro), 1/4 x 2"
51	718-04006	2		Plug-retaining, pinion bearing
52	GW-9604	2	/P	O-Ring-retaining plug
53	GW-1132-1	As Req'd	/P	Shim-retaining plug, 1-1/64" inner dia., .033" thick (On right side only one GW-1132-1 shim is also used between bearing and washer, Ref. No.'s 54 & 55)
53	GW-1132-2	As Req'd	/P	Shim-same as GW-1132-1, .062"
53	GW-1132-3	As Req'd	/P	Shim-same as GW-1132-1, .010"
54	GW-9404	2	/P	Bearing-ball, pinion shaft
55	GW-1126	2	/P	Washer-pinion shaft
56	GW-1222	1	/P	Stem Pinion-slow speed gear & shaft
57	GW-9502	1	/P	Ring-retaining, external
58	GW-2656	1	/P	Worm Gear-bronze, wheel drive
59	GW-9300	1	/P	Key-3/16" x 5/8"
60	GW-1233	1	/P	Gear-fast speed pinion
		1		WHEEL SHAFT ASSEMBLY
61	721-04031	2	S	Seal-oil, wheel shaft
62	1909950	2	S	Retaining ring-external
63	GW-1166-1	As Req'd	S	Shim-wheel shaft, 1-1/64" inner dia., .062" thick
63	GW-1166-2	As Req'd	/P	Shim-as above, .030" thick
63	GW-1166-3	As Req'd	/P	Shim-as above, .015" thick
63	GW-1166-4	As Req'd	S	Shim-as above, .010" thick
63	GW-1166-5	As Req'd	S	Shim-same as above, .005" thick
64	GW-1086	2	S	Bushing-bronze, wheel shaft bearing
65	711-04086	1	S	Shaft-wheel, 15-5/8"
66	714-04014	1	/P	Key-Hi Pro, 1/4" x 1-3/4"
67	GW-1223	1	/P	Gear-slow speed, wheel drive
68	GW-1232	1	/P	Gear-fast speed, wheel drive
69	GW-1237	1	/P	Dog Clutch-wheel drive
70	GW-1112	3	/P	Pin-clutch guide, 1/4" diameter
		1		ECCENTRIC SHAFT ASSEMBLY
71	1911372	1	/P	Pin-roll, 3/16" x 1-1/4" (spiro)
72	619-04000	1	S	Lever-eccentric, wheel speed shifting
73	721-04034	1	S	Seal-oil, eccentric shaft
74	GW-1442	1	S	Pin-eccentric shaft, wheel speed shifting
75	611-04003	1	/P	Eccentric Shaft-wheel speed shifting
76	GW-1441	1	/P	Spring-eccentric shaft
		1		TRANSMISSION HOUSING
78	GW-2109	1	S	Housing-power unit transmission (Empty housing without covers, shafts, gears, seals, etc.)

21AE686N766 Horse Roto-Tiller (2005)  
Power Unit Transmission Assemblies

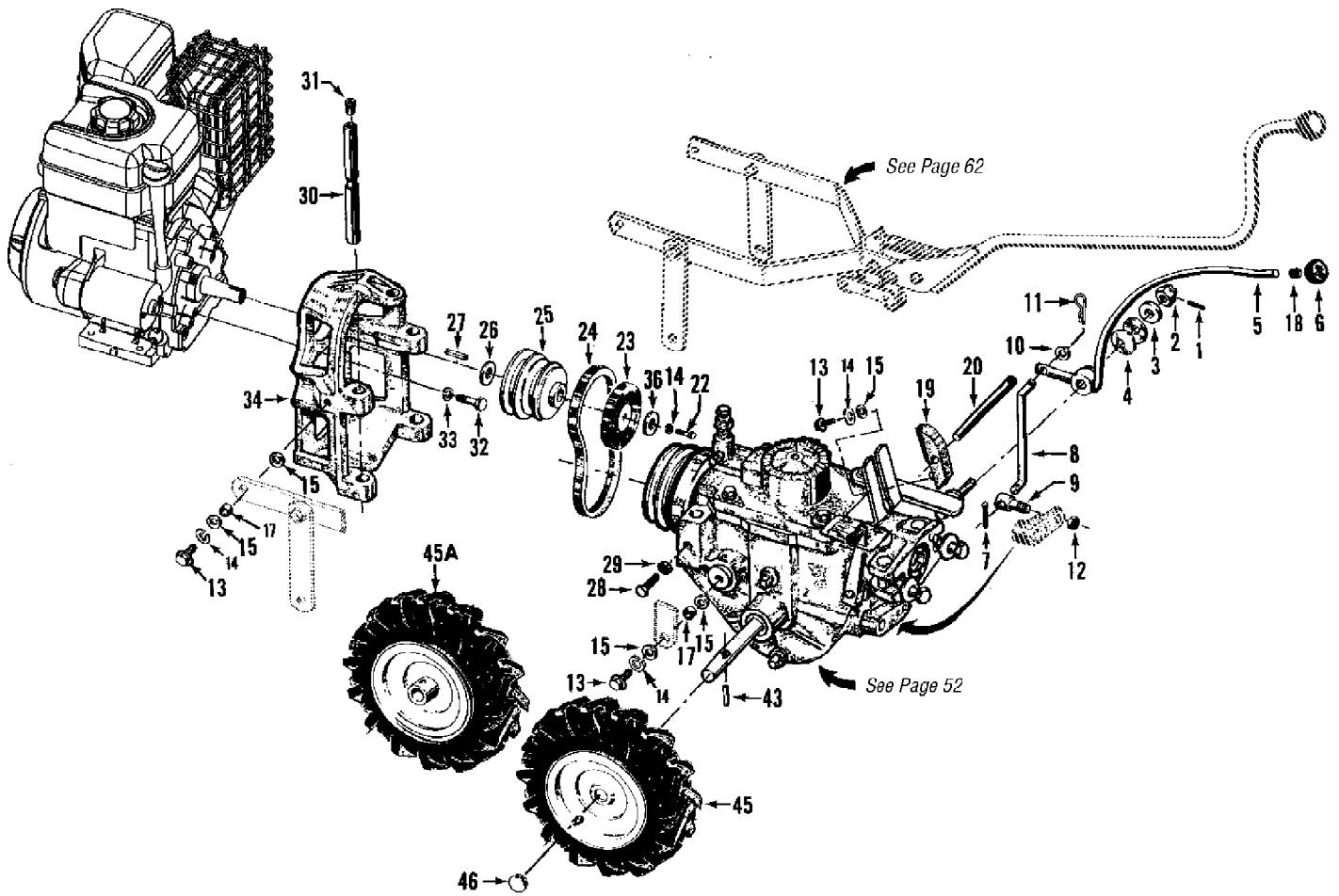
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Ref #	Part Number	Qty	S/P/F	Description
79	GW-9359	1	/P	Pin-alignment
		1		MISCELLANEOUS PARTS
80	1100067	2	/P	Bolt-hex hd., 1/2-13 x 2" Grade 5
81	GW-9928	2	/P	Washer-disc spring (concave), domed side faces bolt head
82	GW-2126	2		Post-with threaded hole For Ref. No. 80
83	1105620	2	/P	Plug-pipe, 1/4"
84	GW-9122	1	/P	Plug-red plastic, thread protector
85	GW-9205	1	/P	Clip-forward interlock system plug connector (See "Depth Regulator & Tine Hood Assemblies")
86	777I20944	1	/P	Decal-forward interlock wire harness
		1		TRANSMISSION ASSEMBLY
	618-04004	1	S	Transmission -power unit (Does NOT include Ref. 35-39. Does NOT include Shift Lever and Bracket Assemblies, Ref. 3, 4, 10, 15, 85, 86, etc.)



Ref #	Part Number	Qty	S/P/F	Description
1	1915068	5	/P	Screw-self-sealing, 1/4"-20 x 5/8"
2	GW-20873	1	/P	Cover-tiller housing
4	711-04082	1	S	Shaft-tiller tine
5	741-3037	2	S	Ball Bearing
6	1901976	1	/P	Worm Gear-bronze, tiller tine shaft
7	GW-1104	1	/P	Key-tiller tine shaft, woodruff key
8	721-04035	2	S	Seal-oil, tiller tine shaft
		1		TILLER DRIVE SHAFT ASSEMBLY
9	716-0101	2	S	Retaining Ring-external
10	1909138	1	S	Dog Clutch-tiller drive shaft
11	GW-9301	1	S	Key-3/16" x 1"
12	GW-2127	1	/P	Spring-dog clutch
13	GW-1138-1	1	S	Shim-dog clutch, 1/16"(.62") thick
14	1915069	3	/P	Screw-self-sealing, 1/4"-20 x 7/8"
15	GW-1115	1	S	Cap-rear bearing
17	GW-1224-1	As Req'd	S	Shim-front bearing cap, .010" thick
17	GW-1224-2	As Req'd	S	Shim-same as above, .030" thick
17	GW-1224-3	As Req'd	S	Shim-same as above, .005" thick
17	GW-1224-4	As Req'd	S	Shim-same as above, .062" thick
18	GW-1714	2	S	Bearing & Race (Incl. one bearing GW-9400 and one cup (race) GW-9401)
19	GW-2653	1	S	Shaft-main tiller drive
20	721-04030	1	S	Seal-oil, drive shaft, front
21	GW-9517	1	S	Retaining Ring-internal
		1		TRANSMISSION HOUSING AND DIPSTICK
23	1901971	1	S	Housing-tiller attachment (Empty housing without shafts, gears, seals, dipstick, etc.)
24	1909157	1		Dipstick-oil, tiller attachment
		1		TRANSMISSION ASSEMBLY
	618-04003	1	S	Transmission -Tiller (Includes Ref. 1-24)

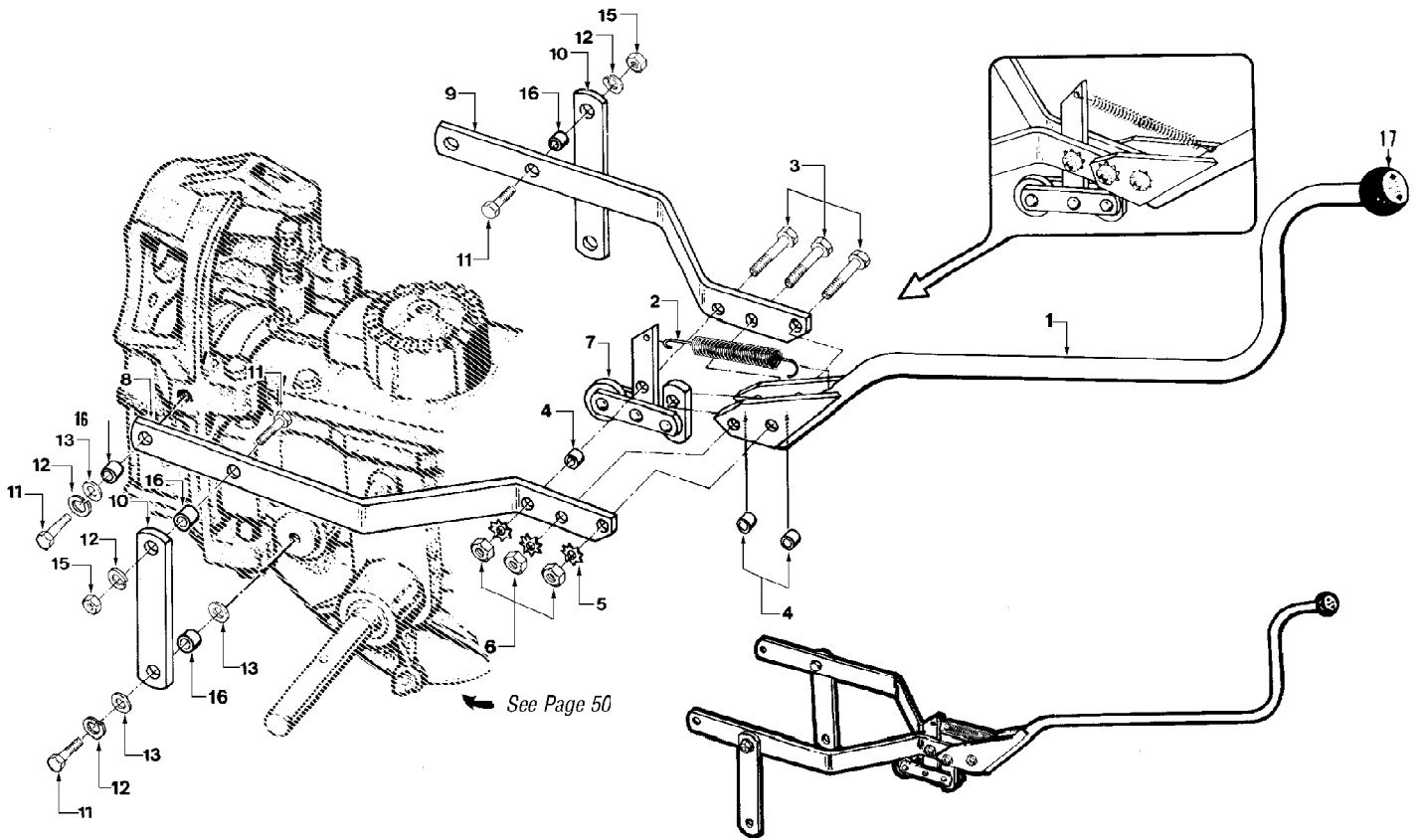




## Wheel Speed Lever, Belt Drive System, Engines, Wheels

Ref #	Part Number	Qty	S/P/F	Description
		1		WHEEL SPEED LEVER
1	GW-9362	1	/P	Pin-spring, 1/8"
2	GW-9838	1		Nut-castle (slotted), 1/2"-20
3	GW-9934	1	/P	Washer-shoulder, 1/2"
4	GW-9932	2	/P	Washer-disc spring
5	GW-2178	1	S	Lever-wheel speed shift
6	1902240	1	/P	Knob-wheel speed shift lever
7	GW-9317	1	/P	Pin-cotter, 3/32" x 1"
8	GW-1515	1		Connecting rod, wheel speed -shift lever (Incl. Ref. 7 & Ref. 9)
9	GW-1033	1	/P	Swivel-connecting rod
10	736-0275	1	S	Washer-flat, 5/16", S.A.E.
11	GW-9338	1	S	Pin-hair cotter
12	712-0158	1	S	Locknut-hex hd., 5/16"-18
13	710-0514	5	/P	Bolt-flanged hex hd., 3/8-16 x 1"
14	736-0169	5	S	Lockwasher-spring lock, 3/8"
15	736-3050	8	/P	Washer-flat, 3/8", S.A.E.
17	GW-1113-1	4	S	Bushing-spacer, 19/64" (.300"lg.)
18	GW-9120	1	/P	Ring-retaining (tolerance ring)
		1		BELT DRIVE SYSTEM
19	GW-2102	1		Block- belt adjustment, 3-7/8"
20	GW-2100	1	/P	Rod- belt adjust., 7" with measuring gauge
21	777I20942	1		Decal- engine stabilization
22	1100012	1	/P	Bolt-hex hd., 3/8-24 x 1-1/2"
23	GW-2111	1	S	Disc-reverse
24	GW-9245	1	/P	Belt-forward drive (No substitute due to extra strength required)
25	GW-1483	1	S	Pulley-engine power take off
26	GW-1138-1	1	S	Shim-engine pulley, 1/16" As Req'd
26	GW-1138-2	As Req'd	S	Shim-as above, 1/32"
27	GW-9303	1	/P	Key-engine pulley, 3/16"sq. x 2-1/2"
		1		ENGINES AND ENGINE MOUNT
28	710-0376	2	/P	Bolt-hex hd., 5/16-18 x 1", Grade 5
29	712-3010	1	S	Nut, hex, 5/16-18
30	GW-1034	2	S	Bar-engine mounting
31	GW-9147	2	/P	Plug-thread protector, red plastic
32	GW-9572	4	S	Bolt-hex hd., 5/16-24 x 1-1/8"
33	736-0119	4	S	Lockwasher-spring lock, 5/16"
34	GW-2553	1	S	Mount- engine to tiller
36	736-3052	1	/P	Washer, flat, .406 x 1.0 x .105
	777S30647	1		Decal-hot surface warning
		1		WHEEL & TIRE ASSEMBLIES
43	1915072	2	/P	Pin- roll, 5/16" x 1-1/2"
45	1915056	1	/P/F	Wheel & Tire Assy - Left-Hand bar tread, left side, 4:80 x 8" tubeless tire with valve stem, on one-piece steel wheel
45A	1915057	1	/P/F	Wheel & Tire Assy - Right-Hand bar tread. Same as above but for right side of tiller
46	1902020	2	/P	Cap-wheel hub

21AE686N766 Horse Roto-Tiller (2005)  
Wheels/Tines/PTO Drive Lever & Yoke Assembly



21AE686N766 Horse Roto-Tiller (2005)  
Wheels/Tines/PTO Drive Lever & Yoke Assembly

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Ref #	Part Number	Qty	S/P/F	Description
1	647-04006	1	/P	Lever Assembly-Wheels/Tines/PTO Drive (Includes Ref. 17)
2	1908156	1	/P	Spring-clutch pawl
3	710-0805	3	/P	Bolt-hex hd., 5/16-18 x 1-1/2"
4	GW-2447	3	/P	Bushing-3/8"
5	1177548	3	S	Lockwasher-external tooth, 5/16"
6	712-3010	3	S	Nut-hex, 5/16"-18
7	686-04006	1	S	Roller Assembly
8	GW-2165-1	1	S	Yoke-left side
9	GW-2165-2	1	S	Yoke-right side
10	GW-2164	2	S	Link-yoke pivot, left & right, 6-7/8" long
11	710-0514	6	/P	Bolt-hex hd., 3/8-16 x 1"
12	736-0169	6	S	Lockwasher-spring lock, 3/8"
13	736-3050	6	/P	Washer-flat, 3/8", S.A.E
15	712-3017	2	S	Nut-hex, 3/8"-16
16	GW-1113-1	6	S	Bushing-spacer, 19/64" (.300")
17	GW-2595	1	S	Knob