SERVICE MANUAL AND PARTS LIST

COMET RIDING MOWER

MODEL 304R
MODEL 306R
MODEL 304RD
MODEL 306RD
MODEL 306RDS

McDONOUGH POWER EQUIPMENT, INC.
McDONOUGH, GA., U. S. A., 30253

1-2-64
CATALOG NO. 1-0883

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Assembly, Operation, Service Manual and Parts List

1. **ASSEMBLY:**
   A. Remove top and sides from crate.
   B. Support steering shaft from underneath as steering wheel is installed using two (2) 1/4x1-1/8 roll pins. Be sure shim washer is between wheel hub and top bearing on steering post. Also that the bottom bearing on steering shaft is in place.
   C. Cut shipping straps and remove mower from crate bottom.

2. Service and lubricate engine per instructions in engine manual.

3. Front wheel bearings of mowers having pneumatic tires are lubricated using medium cup grease in pressure gun. Units having semi-pneumatic tires must be lubricated by removing wheels and hand repacking. Repeat every 50 hours of operation or more often if dirty service conditions require. Optional procedure for the semi-pneumatic wheels is weekly oiling using machine oil.

4. Rear wheel bearings are lubricated through the Alemite fitting in wheel lug. Use three (3) **shots only** of medium cup grease in pressure gun. This operation also forces grease from bearings to lubricate internal gear and pinion. After operation for a few minutes, check gear lubrication by standing mower on end (refer to storage) and removing yellow inspection plugs inside transmission case. Repeat every 50 hours of operation. If wheel is removed, make sure alemite lug bolt is replaced in proper hole. Recess in hub marks correct location.

5. **BATTERY INSTALLATION (FOR ELECTRIC STARTER ONLY):**
   A. Service battery according to instructions supplied with the battery.
   B. Remove battery clamping bracket and install battery under left hand side of seat.
   C. Attach long battery lead to positive terminal of battery. This is the terminal having the square hole.
   D. Attach short lead to ground terminal of battery.
   E. Refer to engine manual for operating instructions of the battery charging system used.

6. Lubricate King Pins with medium cup grease using pressure gun. Repeat every 50 hours of operation or more often if dirty service conditions require.

7. **TRANSMISSION CASE:**
   A. Differential requires 3 shots every 50 hours of operation. Move flexible dust shield to locate fitting.
   B. If disassembled for any reason, repack, using Lithium base grease or any grease suitable for automotive wheel bearings.
   C. Chain is lubricated by removing yellow plug and packing with Gulf Flex A Multi-purpose grease or equal. 1 pint is needed for full capacity. Add as needed, check every 50 hours of operation.
   D. Lubricate slide bearings and axle with medium cup grease, every 50 hours of operation or more often if used under very dirty conditions. Clean thoroughly before greasing.
   E. Hex primary shaft (same as D).
   F. Lubricate all other movable joints, linkages, etc., every 50 hours of operation or more often if dirty service conditions require, using machine oil.
   G. Shaft bearings (7) are sealed and lubricated for life.

8. **CUTTER UNIT:**
   A. Spindle is assembled with sealed precision ball bearings and requires infrequent lubrication. Lubricate each season using pressure gun with flexible hose adapter. Use Pure Oil Paco Sponge No. 1 or equal. Avoid over filling under pressure. This will damage bearing seals.
   B. Height Adjusting Cams — Remove spindle guard cover and lubricate cams with medium cup grease every 50 hours of operation or more often if dirty service conditions require.
   C. While cover is off, lubricate other movable joints, linkages, etc., with machine oil.

9. Lubricate all movable joints not covered above such as steering linkage, tube support, etc., with machine oil every 50 hours or more if dirty service conditions require.

10. Inflate tires to 20 lbs.

11. **STORAGE:**
    The mower may be set on end for servicing or storage within the following limitations:
    A. For electric starter units, remove battery to prevent acid leakage and subsequent damage.
    B. Model 306 Units must have bumper guards to prevent damage to the gasoline tank, and oil bath air cleaner must be removed.
    C. Gas tank must be practically empty to eliminate fire hazard.
    D. For winter storage, always drain oil and gasoline. Refer to engine manual for proper procedure to follow. Oil or grease any parts of the mower subject to rust or corrosion.

GENERAL OPERATION:

A. **START ENGINE —**
   1. **Make certain shift handle is in neutral and cutter unit out before attempting to start.**
   2. Refer to Engine manual for throttle control instructions for the type used.
   3. If engine is also equipped with electric starter, refer to engine manual for starting procedure. The starter switch is located to the rear of the battery.

B. **FORWARD MOTION:**
   1. Disengage clutch and apply brake by depressing pedal with either foot to the end of its travel.
   2. Move shift lever located on right hand side of seat to the low speed position (No. 1) and slowly release clutch and brake pedal.
   3. Speeds may now be increased or decreased without the use of the clutch pedal.
   4. Never start by moving shift handle without use of the clutch pedal as the driven disc life will be shortened.
   5. Always begin forward motion in No. 1 speed position.

C. **REVERSE MOTION:**
   Follow same procedure as "B" above; however, there is only one speed in reverse and shift handle must be held in reverse position at the end of the slot.

D. **STOPS:**
   1. The mower may be stopped in either forward or reverse motion by depressing clutch and brake pedal with either foot.
   2. Always return shift handle to neutral after a stop is made.
   3. As a safety precaution, if stops have to be made going up steep inclines, back down to level ground to re-start.

E. **CUTTER UNIT:**
   1. Cutting height is adjusted by simply changing the position of the lift handle. There are eight (8) different positions ranging between 1 and 4 inches.
   2. Cutter engagement is accomplished by slowly pulling the cutter handle to the rear until the spring loaded idler takes over. The spindle brake is automatically released or applied as this handle is shifted from the "in" or "out" position. Cutter engagement or release may be accomplished at any cutting height with the mower moving or at rest.

ADJUSTMENTS:

A. SEAT POSITION:

Comfortable seat position is accomplished by moving the seat to the rear for taller operators. Make sure the "bounce" is not so severe as to strike the engine, that is, adjust the seat stiffness to accommodate the weight of the operator.

B. MOWER BRAKES:

There are no adjustments to be made as the massive 9" dia. drums have sufficient wear resistance for adequate life.

C. CLUTCH:

The clutch linkage has been designed so that, with initial factory adjustment, the driven disc wear is accommodated throughout its useful life. Replace disc when worn to 1/32 - 1/16 inch rubber thickness. **Do not tamper with linkage if mower does not pull at this point. Replace driven disc.**

In the event someone tampers with the factory adjustment, the linkage can be checked as follows:

1. Remove driven disc and install adjusting gage. This is a driven disc with the "as new" radius of 3 inches on half the circumference and a 2¾ inch radius ground on the other half.
2. Depress clutch pedal and shift to second speed.
3. Adjust clutch rod until the 2¾ inch radius clears driving disc. .005/.010 inch. (Make sure brake bar is in its fully released position to the rear of both slots in the transmission case.)
4. Rotate gage 180 deg. and fully depress clutch pedal until brakes are applied. Check to see that the 3 inch radius clears driving disc by 1/32 inch minimum with slide pushed lightly against yoke lift. This assures that driven disc will be pulled down from driving disc when clutch is disengaged.

D. CLUTCH AND BRAKE PEDAL:

If cable stretch is sufficient that there is less than ½" between pedal arm and grille, loosen capscrew clamping cable and take up slack. **NOTE:** Make sure brake bar returns to full released position to rear of both slots in transmission case.

E. SPINDLE BRAKE:

Maintain 3/8 to ½" overall spring length with brake applied. This adjustment is made on the left hand side of the cutter unit by loosening or tightening the 5/16" hex nut found there.

F. CUTTER DRIVE BELT:

The spring loaded idler maintains proper belt tension throughout the effective belt life.

Adjust main tube when idler pulley causes the belt to rub together behind the spindle pulley. Main tube adjustment is accomplished as follows:

1. Remove seat bracket.
2. Shift enough horseshoe shims on main tube to front of tube support bracket so that belt does not rub together.
3. Re-assemble.
4. Make sure brake bar is at end of slot after assembly. Adjust if necessary at clamp on pedal.

Belt replacement is accomplished as follows:

1. Remove spindle guard cover and remove belt from pulley.
2. Stand mower on end (refer to "Storage") with shift handle in neutral.
3. Pull belt from behind drive disc. Reach behind slide and pull clutch rod for maximum driven disc clearance. Roll belt between drive and driven discs. Pull belt between driven disc and belt guide and remove from transmission case.
4. Reverse procedure to install new belt.

G. CUTTER SPINDLE REMOVAL:

If it is necessary to remove and re-assemble spindle housing, the housing must be plumbed to the cutter deck to obtain an equal distance between the blade tip and deck. This is accomplished by locating the housing flange correctly to the deck, using the clearance holes for the capscrews for alignment. Tighten securely, using self-locking nuts.

H. CUTTER BLADE HEIGHT:

The cutter blade has been factory adjusted for 1 inch minimum cutting height. After a period of time, wear in the linkage may require re-adjustment. Correct procedure is as follows — taking all measurements to the same blade tip:

1. Park mower on level and even floor or surface.
2. Move lift handle to lowest position.
3. Remove spindle guard cover.
4. Adjust blade tip cutting edge to 1¼ inch at rear using the set-screws that support the swinging chain arms of the rear suspension. Maintain level blade side to side as this is adjusted.
5. Swing blade tip to front and adjust to 1 inch by shortening or lengthening timing link that connects the front and rear lift arms. Shortening this link ½ turn of the rod end raises front approximately 1/8 inch.

I. ELECTRICAL — FOR ELECTRICAL STARTER ONLY —

Refer to Engine Manual.

J. OPTIONAL EQUIPMENT:

To increase the usefullness of your Comet Riding Mower, the following Kits may be obtained as Optional Equipment:

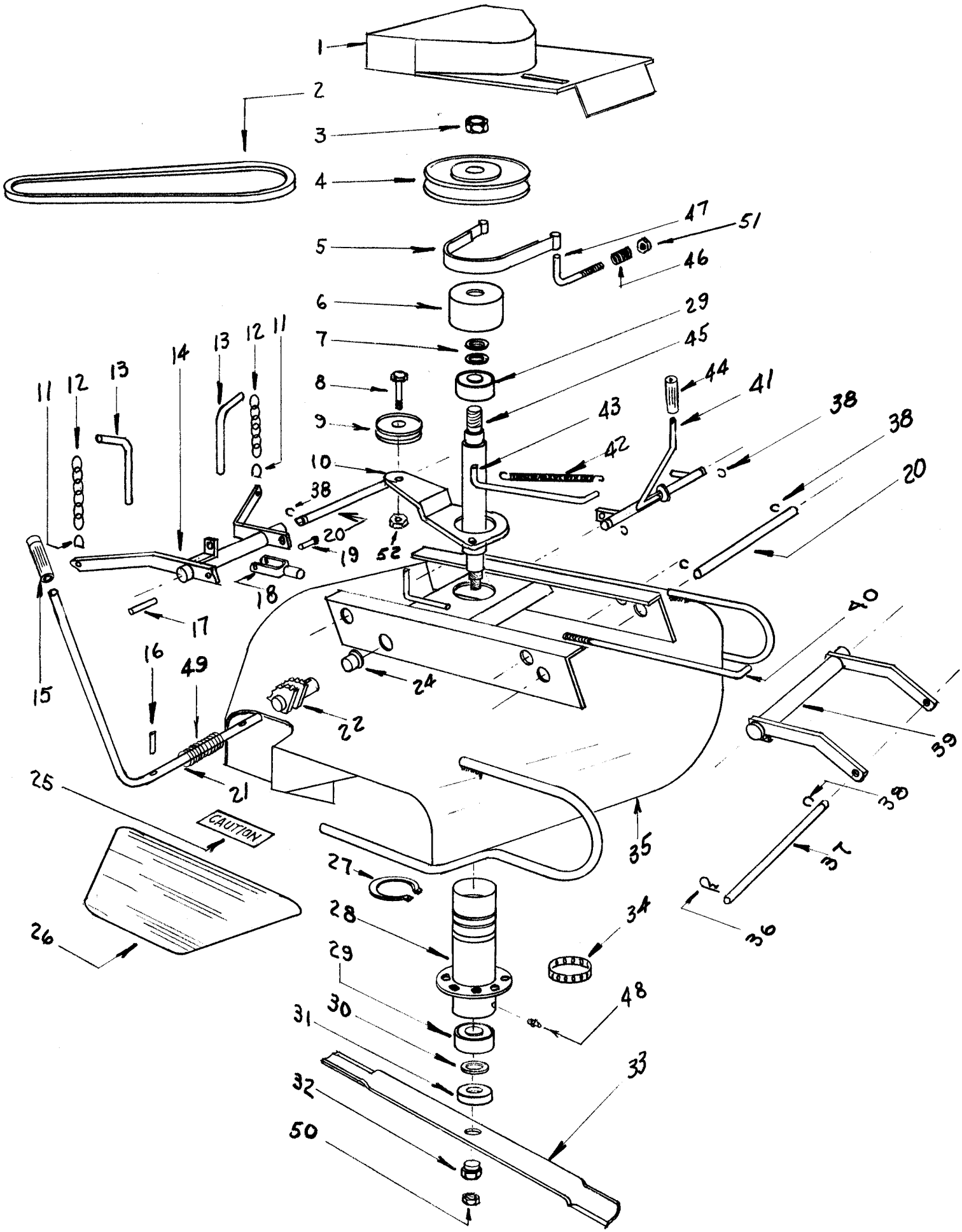
6-0077 Fender Kit
6-0078 Implement Hitch Kit
6-0079 36" Snow Plow Kit
6-0080 Engine Guard Rail Kit
6-0081 Chrome Hub Cap Kit
6-0082 Leaf Mulcher Kit
6-0086 Back Rest Kit
6-0049 Snow Chain Kit
6-0050 Seat Cushion Kit

SAFETY PRECAUTIONS:

1. Never attempt to start engine unless shift handle is in neutral and cutter handle is in the "out" position.
2. Mount mower from left hand side, opposite the discharge chute.
3. For forward motion, always begin movement with shift handle in No. 1 speed position.
4. Disengage cutter and stop engine before dismounting.
5. Keep hands and feet clear of all sides of the cutter unit. Never attempt to lift or move mower by the cutter unit.
6. If it is necessary to stop going up steep inclines, back down to level ground to re-start
7. When going down inclines, keep in low speed with clutch and brake pedal out to allow engine to maintain control of speed.

Spindle, Cutter Unit and Lift

Item	Part No.	Description	No. Req.
1.	1-8040	Cover	1
2.	1-0749	Belt	1
3.	1-0027	Jam Nut	1
4.	1-0787	Pulley	1
5.	5-0170	Brake Band Assy.	1
6.	3-0817	Brake Drum	1
7.	3-0028	Thrust Washer	2
8.	S-90269	½-20x1½ Hex Hd. Cap Screw	1
9.	1-0780	Idler Pulley	1
10.	4-7246	Idler Arm	1
11.	1-0742	Cold Shut	2
12.	2-0876	Chain	2
13.	3-0816	Arm	2
14.	4-7245	Rear Lift Arm	1
15.	1-0684	Grip	1
16.	1-0152	Roll Pin, ¼x1-⅜	2
17.	1-0737	Roll Pin, ⅜x1¼	2
18.	1-0735	Clevis, ⅜	1
19.	1-0736	Clevis Pin, ⅜x1-⅛	1
20.	2-0881	Lift Arm Shaft	2
21.	2-0878	Lift Handle	1
22.	4-0275	Cam Structure, R. H.	1
23.	4-0274	Cam Structure, L. H. (Not Shown)	1
24.	5-0009	Bearing Assy.	2
25.	1-0416	Caution Decal	1
26.	1-0763	Deck Pad	2
27.	1-0740	Retaining Ring	2
28.	4-0273	Spindle Housing	1
29.	1-0696	Bearing	2
30.	1-0121	Shim Washer	1
31.	2-0055	Spacer Washer	1
32.	2-1001	Shoulder Nut	1
33.	1-8038	Cutter Bar	1
34.	1-0741	Tolerance Ring	1
35.	4-7243	Deck Structure	1
36.	1-0546	Hair Pin	1
37.	2-0882	Support Rod	1
38.	1-0739	Retaining Ring	7
39.	4-7244	Front Lift Arm	1
40.	2-0877	Timing Rod	1
41.	4-7254	Idler Handle	1
42.	1-0750	Spring	1
43.	2-0880	Idler Link	1
44.	1-0681	Grip	1
45.	2-7184	Spindle	1
46.	1-0023	Spring	1
47.	2-0879	Anchor	1
48.	1-0817	Alemite Fitting	1
49.	1-0808	Spring	1
50.	S-90278	Jam Nut, ⅝-18	1
51.	S-90222	5/16-24 Lock Nut	1
52.	S-90266	½-20 Lock Nut	1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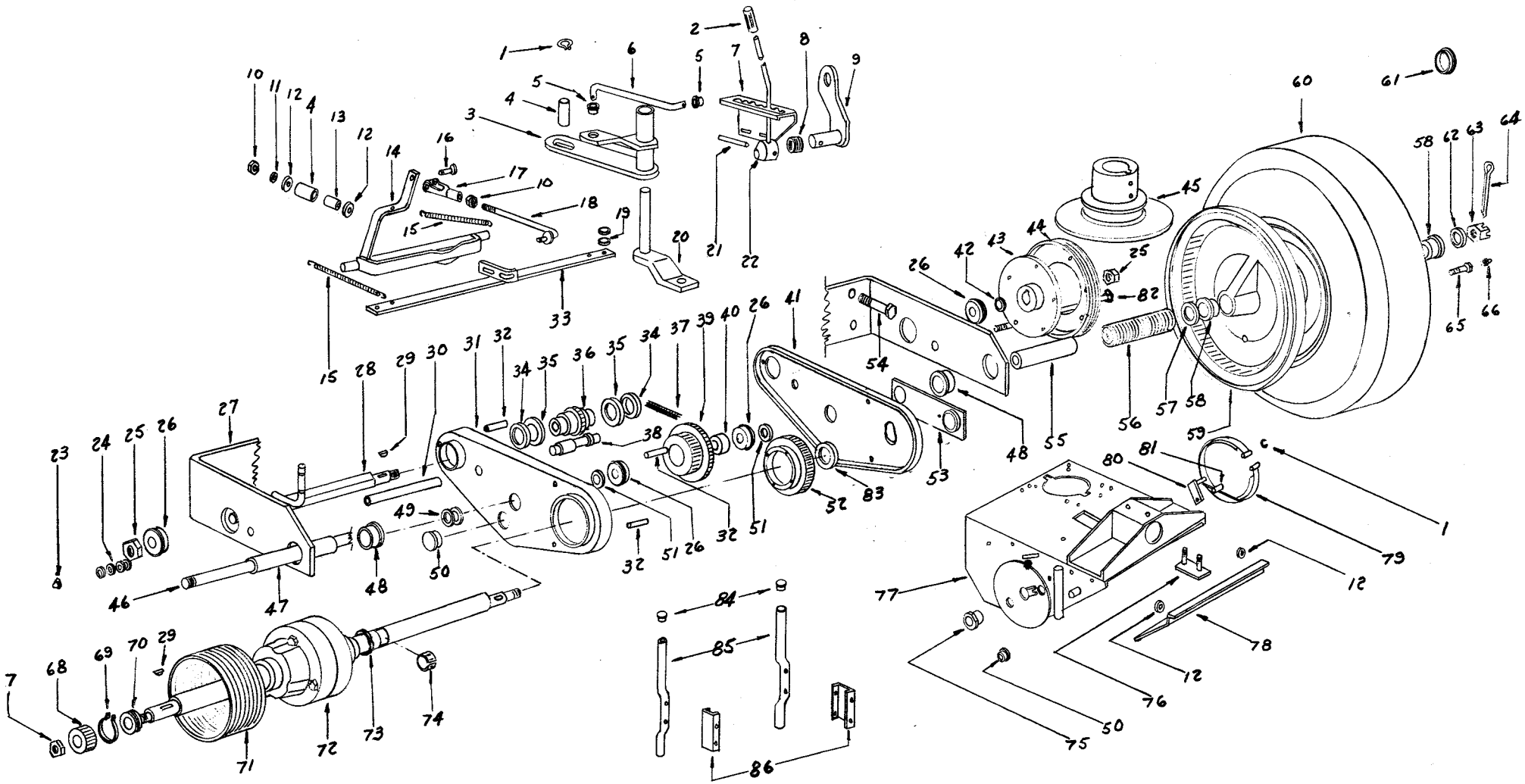
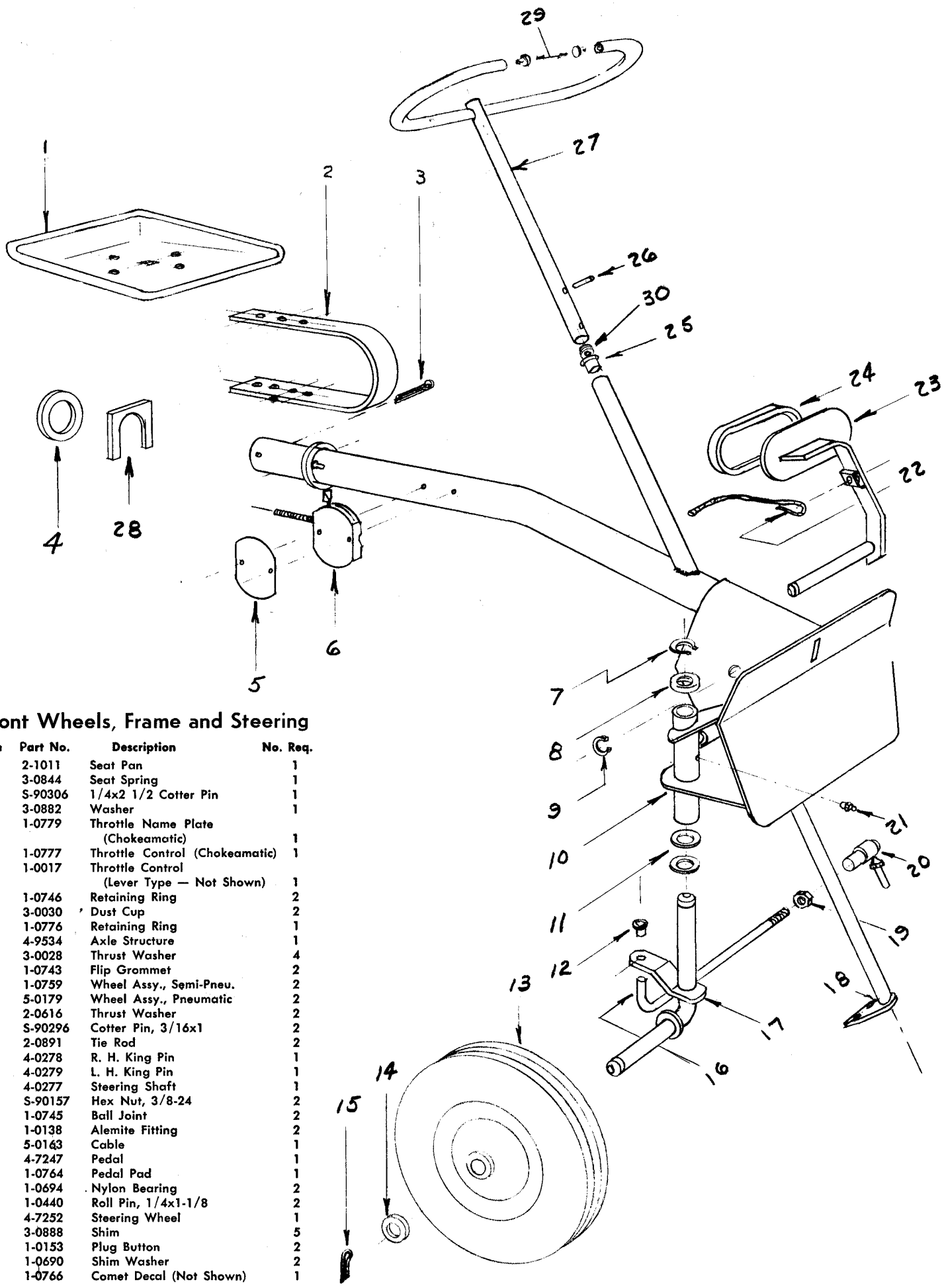
Rear Wheels, Transmission and Variable Speed Drive

Item	Part No.	Description	No. Req.
1.	1-0776	Retaining Ring	4
2.	1-0838	Grip	1
3.	4-0324	Yoke Shift	1
4.	2-0908	Roller	2
5.	1-0743	Flip Grommet	2
6.	3-0974	Shift Link	1
7.	3-7212	Shift Detent	1
8.	1-0754	Spring	1
9.	4-0281	Shift Handle Shaft	1
10.	S-90155	3/8-24 Hex Nut	2
11.	S-90177	3/8 Split Lock Washer	1
12.	1-0760	Washer	4
13.	2-0937	Anchor Guide	1
14.	4-7251	Yoke Lift	1
15.	1-0738	Spring	3
16.	1-0736	Clevis Pin	1
17.	1-0735	Clevis	1
18.	4-0287	Clutch Rod	1
19.	2-0984	Washer	4
20.	4-0325	Shift Pin	1
21.	1-0744	Roll Pin, 1/4x2 1/2	1
22.	4-0284	Shift Handle	1
23.	S-90194	5/16-18 Acorn Nut	1
24.	S-90188	5/16 SAE Washer	4
25.	S-90278	5/8-18 Hex Nut	2
26.	1-0756	Ball Bearing	4
27.	4-7304	Yoke Structure	1
28.	2-0907	Primary Shaft	1
29.	1-0614	Woodruff Key	3
30.	2-1064	Spacer	1
31.	3-9536	Case	1
32.	1-0868	Spacer	3
33.	4-0285	Brake Bar	1
34.	1-0641	Felt Washer	2
35.	1-0863	Thrust Washer	2
36.	2-1058	Primary Drive Sprocket	1
37.	1-0871	Drive Chain #35 54 P. or = 11890	1
38.	1-0870	Spacer	1
39.	5-0198	Sprocket & Gear Assy.	1
	2-0904	Sprocket	1
	2-0905	Gear	1
	1-0802	Retaining Ring	1
40.	2-0916	Bearing Spacer	1
41.	3-9537	Chain Cover	1
42.	1-0690	Shim Washer	1
43.	2-0911	Disc Hub	1
44.	1-0765	Driven Disc	1

Item	Part No.	Description	No. Req.
45.	5-0169	Drive Disc Assy.	1
46.	2-0914	Axle 26 1/4	1
47.	2-1063	Axle Tube, Short 9 11/16" x 41/64 ID	1
48.	2-0945	Yoke Bushing	2
49.	2-0938	Washer	2
50.	1-0807	Plug Button 1 1/8"	3
51.	1-0874	Washer	2
52.	2-0917	Differential Gear	1
53.	5-0186	Differential Support Bearing	1
54.	S-90168	3/8-24x2 1/4 Hex Hd. Cap Screw	1
55.	2-1062	Axle Tube, Long 13 3/16" x 41/64 ID	1
56.	1-0753	Reverse Spring	1
57.	2-0939	Washer	2
58.	1-0755	Sintered Bearing, 7/8"	4
59.	2-7182	Wheel Drum = 50292 short 64-66	2
60.	5-0116	Wheel Assy.	2
	1-0533	Rim	1
	1-0524	Tire	1
	1-0525	Tube	1
	1-0189	Valve Cap	1
61.	1-0762	Hub Cap	2
62.	2-0944	Washer	2
63.	S-90295	5/8-18 Slotted Nut	2
64.	S-90041	1/8x1 Cotter Pin	2
65.	2-0967	Hex Head Cap Screw	2
66.	1-0817	Alemite Fitting	2
67.	S-90266	1/2-20 Hex Lock Nut	2
68.	2-0918	Wheel Pinion, 10T, 8P	2
69.	1-0844	Retaining Ring	2
70.	1-0861	Bearing	2
71.	2-1057	Seal	1
72.	5-7049	Differential	1
73.	1-0864	Wavy Washer	1
74.	1-0866	Tolerance Ring	1
75.	2-1050	Bearing	2
76.	4-0304	Strap	1
77.	4-9535	Case Structure	1
78.	3-0969	Cover	1
79.	5-0171	Brake Band Assy., ~~R.H.~~ L.H.	1
79.	5-0185	Brake Band Assy., ~~L.H.~~ R.H.	1
80.	4-0276	Brake Lever	2
81.	2-0996	Bushing	2
82.	1-0869	Cap Screw 5/16-18x8 1/4	1
83.	3-0007	Washer	1
84.	1-0153	Plug Button (306R, 306RD, 306RDS)	2
85.	3-0798	Bumper (306R, 306RD, 306RDS)	2
86.	3-0939	Block (306RDS Only)	2

4" overall
1 5/16 shoulder





Front Wheels, Frame and Steering

Item	Part No.	Description	No. Req.
1.	2-1011	Seat Pan	1
2.	3-0844	Seat Spring	1
3.	S-90306	1/4x2 1/2 Cotter Pin	1
4.	3-0882	Washer	1
5.	1-0779	Throttle Name Plate (Chokeamatic)	1
6.	1-0777	Throttle Control (Chokeamatic)	1
6.	1-0017	Throttle Control (Lever Type — Not Shown)	1
7.	1-0746	Retaining Ring	2
8.	3-0030	Dust Cup	2
9.	1-0776	Retaining Ring	1
10.	4-9534	Axle Structure	1
11.	3-0028	Thrust Washer	4
12.	1-0743	Flip Grommet	2
13.	1-0759	Wheel Assy., Semi-Pneu.	2
13.	5-0179	Wheel Assy., Pneumatic	2
14.	2-0616	Thrust Washer	2
15.	S-90296	Cotter Pin, 3/16x1	2
16.	2-0891	Tie Rod	2
17.	4-0278	R. H. King Pin	1
17.	4-0279	L. H. King Pin	1
18.	4-0277	Steering Shaft	1
19.	S-90157	Hex Nut, 3/8-24	2
20.	1-0745	Ball Joint	2
21.	1-0138	Alemite Fitting	2
22.	5-0163	Cable	1
23.	4-7247	Pedal	1
24.	1-0764	Pedal Pad	1
25.	1-0694	Nylon Bearing	2
26.	1-0440	Roll Pin, 1/4x1-1/8	2
27.	4-7252	Steering Wheel	1
28.	3-0888	Shim	5
29.	1-0153	Plug Button	2
30.	1-0690	Shim Washer	2
	1-0766	Comet Decal (Not Shown)	1