

Group 7 Steering

GENERAL: This group contains information on the steering components from the coach steering wheel to the front wheel steering arms. It includes all components necessary to provide power steering if coach is so equipped.

SPECIFICS: As applicable

...Power Steering Hydraulic Lines, fittings and Reservoir

...Power Steering Pump (on engine)

...Power Steering Pump Drive Components

...Steering Gear

...Steering Gear Column and Mounting Parts

...Steering Linkage From Pitman Arm to Front Wheels

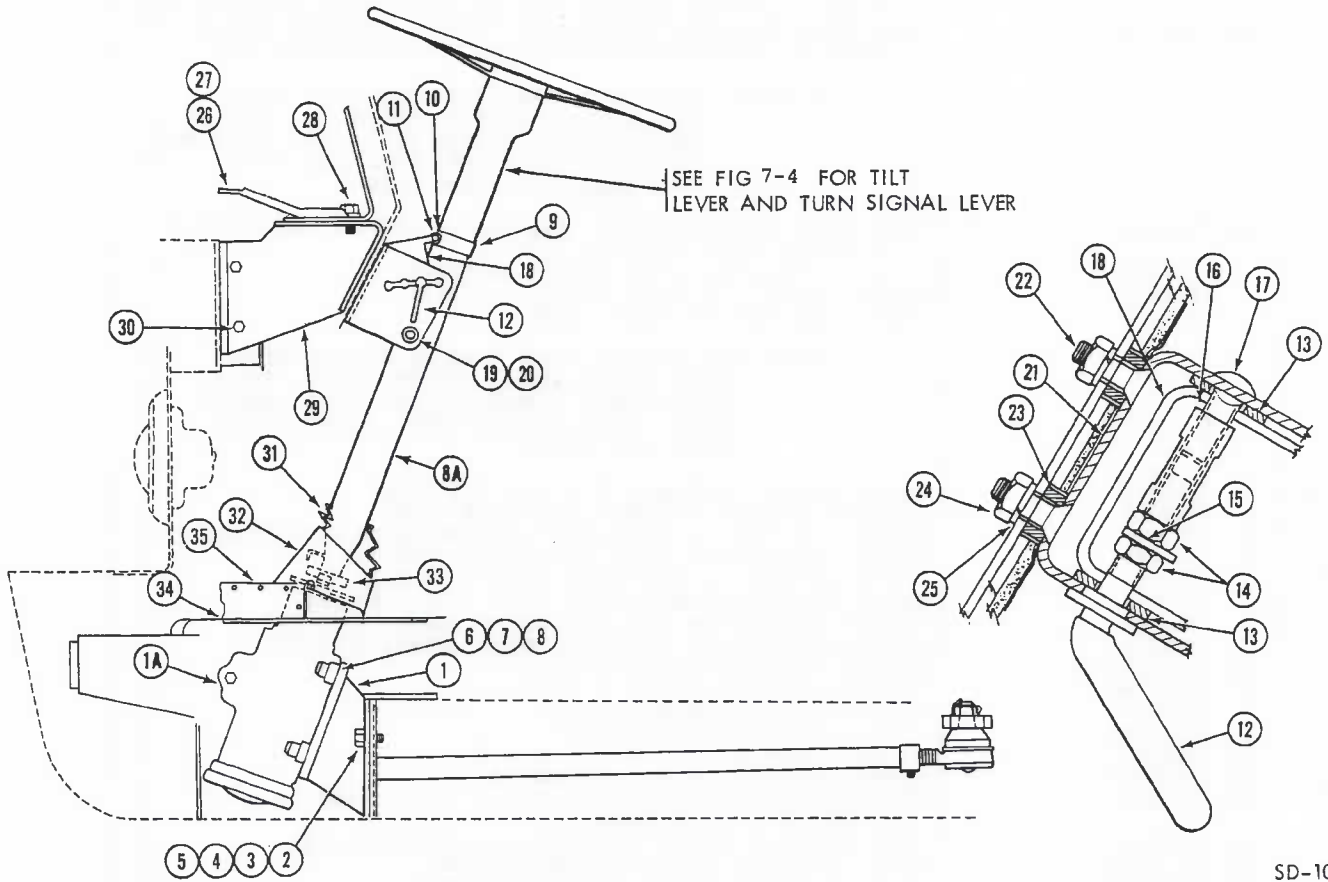
...Steering Wheel and Mounting Parts (including horn button, turn lever, tilt lever, etc.).



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REPAIR PARTS LIST

GROUP 7 Steering
 MODEL 2900R



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Figure 7-1. Steering Gear and Column

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FIG NO.	ITEM NO.	PART NUMBER	ITEM DESCRIPTION	QTY PER UNIT
7-1	1	5100139	BRACKET, Gear assy mounting	1
	1A	5101085-02	GEAR ASSY, Steering (GMSS-Model 708D20, 7811915) (Coach 00001 to 00645) (Marked "SG" on side cover) (See Fig 7-8)	1
	1A	5106945	GEAR ASSY, Steering (GMSS-Model 708D22, 7812158) (Coach 00646 & up) (Marked "SN" on side cover) (See Fig 7-8)	1
	1A	5106811	GEAR ASSY, Steering-Heavy Duty Double Housing (GMSS-Model 710D4-7813251) (See Fig 7-9)	1
			CAUTION: The above gear assemblies look alike but turn in opposite directions because one has a right hand ball screw in it and the other has a left hand ball screw. They cannot be interchanged.	
		5106727	BRACKET, Gear Mounting (Welded to frame)	1
		5109226	SCREW, Bracket to Gear (5/8-11 x 3 1/2)	4
		M17008	WASHER, Bracket to Screw (5/8)	4
			NOTE: The above 4 items used on coaches 00630, 00654, 00655, 00656, 00658, 00659, 00660, 00663, 00664, 00665, 00666, 00667, 00669, 00680, 00682, 00684, 00686, 00688, 00692, 00694, and 00696.	
7-1	2	M18095	BOLT, Bracket to frame (1/2 - 13 x 1-1/2)	4
	3	M17049	LOCKNUT, Bracket to frame bolt (1/2 - 13)	4
	4	M17006	WASHER, Bracket to frame bolt (not required with locknut)	4
	5	M17023	WASHER, Bracket to frame bolt (flat, 1/2 ID)	4
7-1	6	M18097	SCREW, Bracket to gear assy (7/16 - 14 x 2)	3
	6	M18096	SCREW, Bracket to gear assy (7/16 - 14 x 1-1/2)	1
	7	M17009	WASHER, Bracket to gear assy screw (lock, 7/16 ID)	4
	8	M17001	WASHER, Bracket to gear assy screw (flat, 7/16 ID)	4
	8A	5101085-01	COLUMN, Steering (GMSS-7826186)	1
	9	5100598	CLAMP, Steering column	1
		M25076	RIVET, Steering column clamp	2
	10	5100998	BOSS, Steering column clamp	1
	11	M14260	SCREW, Clamp to boss (1/4 - 20 x 1)	2
7-1	12	5101233	LEVER, Steering column adjustment	1
	13	M17018	WASHER, Steering column adjustment (flat, 1.06 OD x 0.531 ID x 0.100 thick)	2
	14	M17032	NUT, Steering column adjustment lever (3/8 - 24)	2
	15	5101234	STOP, Steering column adjustment lever	1
	16	5100997	BOSS, Steering column adjustment lever	1
	17	M18063	BOLT, Steering column adjustment lever boss (3/8 - 16 x 1)	1
7-1	18	5101000	SWING ARM, Steering column adjustment, with bracket and tube	1
	19	5100979-02	BUSHING, Swing arm	2
	20	M25032	RIVET, Swing arm	2
	21	5101003	BRACKET, Swing arm	1
	22	M14255	BOLT, Swing arm bracket to upper steering column (5/16 x 1)	4
	23	M17087	SPACER, Swing arm bracket to support bracket	4
7-1	24	M17039	NUT, Swing arm bracket bolt (5/16 - 18)	4
	25	M17005	WASHER, Swing arm bracket bolt (flat, 5/16 ID)	4
	25	M17042	WASHER, Swing arm bracket bolt (lock, 5/16 ID)	4
	26	5101001	STRUT, Upper steering column support	1
	27	M14221	SCREW, Strut to frame (3/8 - 16 x 1)	2
	27	M17007	WASHER, Strut to frame screw (lock, 3/8 ID)	2
	27	M17004	WASHER, Strut to frame screw (flat, 3/8 ID)	2
	28	M18037	BOLT, Strut to upper steering column support (1/2 - 13 x 1-1/4)	2
	28	M17055	NUT, Column support bracket bolt (1/2 - 13)	2
	28	M17006	WASHER, Column support bracket bolt (lock, 1/2 ID)	2
	28	M17023	WASHER, Column support bracket bolt (flat, 1/2 ID)	4
	29	5101002	BRACKET, Upper steering column support	1
7-1	30	M14221	SCREW, Upper steering column support bracket to frame (3/8 - 16 x 1)	2
	30	M17007	WASHER, Column support bracket to frame screw (lock, 3/8 ID)	2



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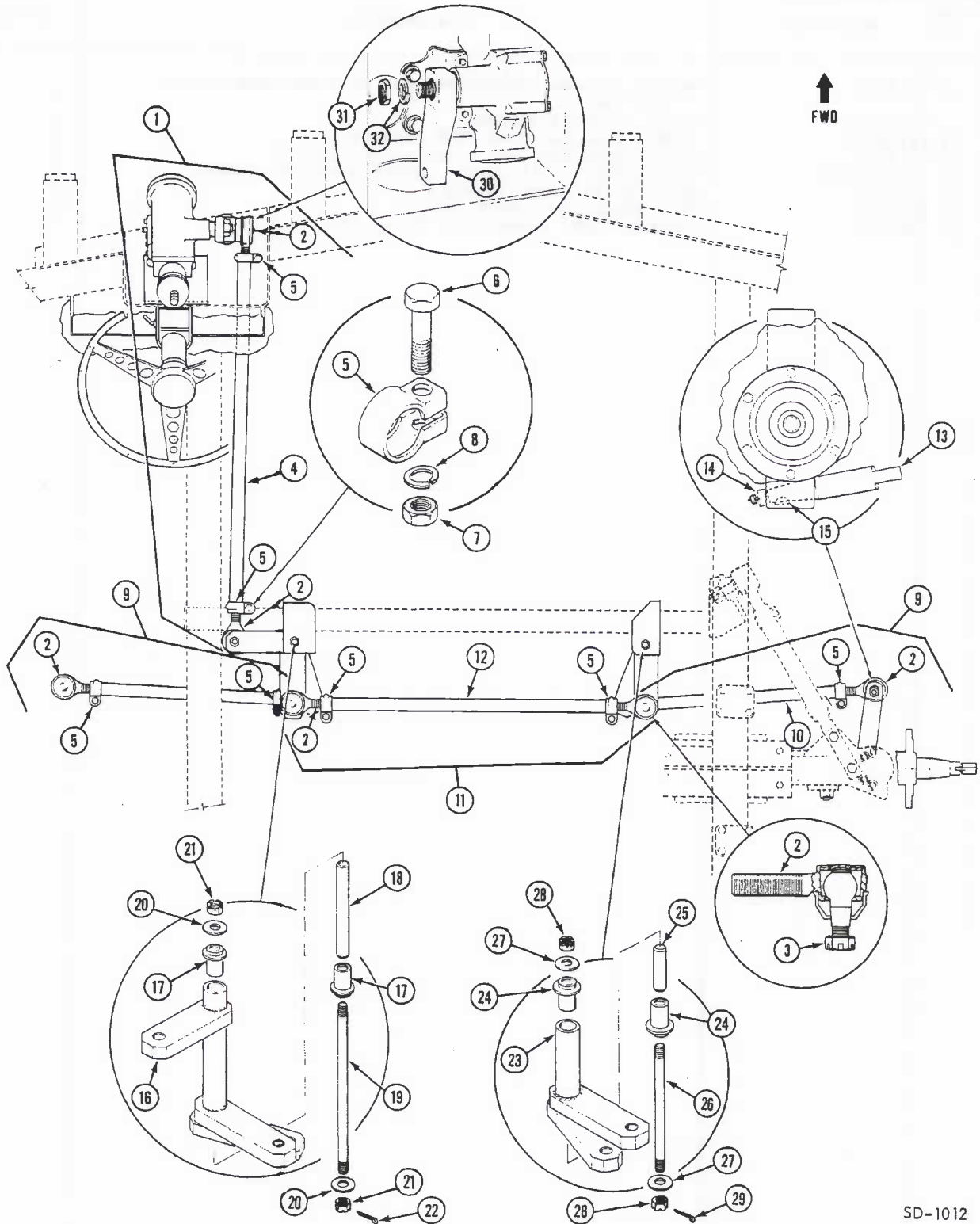
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FIG NO.	ITEM NO.	PART NUMBER	ITEM DESCRIPTION	QTY PER UNIT
7-1	30	M17004	WASHER, Column support bracket to frame screw (flat, 3/8 ID)	2
	31	5100599	BOOT, Steering column	1
	32	5108359	COVER, Steering gear (SUP 5100405)	1
	33	M14260	SCREW, Steering gear cover (1/4 - 20 x 1)	2
	34	5100404-02	COVER, Plate with dimmer switch mounting bracket	1
	35	M14254	BOLT, Plate cover (10-24 x 1/2)	16
	35	M25037	NUT, Plate cover bolt (10-24)	16
	35	M17047	WASHER, Plate cover bolt (lock, 10)	16

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Figure 7-2. Steering Linkage (Coaches 00001 to 00645)

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FIG NO.	ITEM NO.	PART NUMBER	ITEM DESCRIPTION	QTY PER UNIT
<u>STEERING LINKAGE</u>				
<u>COACHES 00001 to 00645</u>				
7-2	1	5100053-04	DRAG LINK ASSY, Pitman arm to bellcrank	1
	2	5100455-02	ROD END, LH thread (includes nut) (TRW L20-SV-4000-B16)	1
	2	5100455-03	ROD END, RH thread (includes nut) (TRW L20-SV-4001-B15)	1
7-2	3	M-17091	NUT, Rod end (3/4-16) (TRW L12-MN-1)	2
		M-25002	PIN, Rod end nut cotter (1/8 x 1-1/4)	2
	4	5100053-08	TUBE, Drag link (32.70 inches long)	1
	5	5107759	CLAMP, Drag link tube (TRW L20-CP-11-A-10) (sup 5100455-01)	2
	6	M-14218	BOLT, Tube clamp (7/16-20 x 1-3/4)	2
	7	M-17011	NUT, Tube clamp bolt (7/16-20)	2
7-2	8	M-17006	WASHER, Tube clamp bolt lock (7/16)	2
	9	5100053-02	CONTROL LINK ASSY, Bellcrank and idler to control arm	2
	2	5100455-02	ROD END, LH thread (includes nut) (TRW L20-SV-4000-B16)	1
	2	5100455-03	ROD END, RH thread (includes nut) (TRW L20-SV-4001-B15)	1
	3	M-17091	NUT, Rod end (3/4-16) (TRW L12-MN-1)	2
		M-25002	PIN, Rod end nut cotter (1/8 x 1-1/4)	2
7-2	10	5100053-06	TUBE, Control link (17.15 inches long)	2
	5	5107759	CLAMP, Control link tube (TRW L20-CP-11-A-10) (sup 5100455-01)	2
	6	M-14218	BOLT, Tube clamp (7/16-20 x 1-3/4)	2
	7	M-17011	NUT, Tube clamp bolt (7/16-20)	2
	8	M-17006	WASHER, Tube clamp bolt lock (7/16)	2
7-2	11	5100053-01	TIE ROD ASSY, Bellcrank to idler	1
	2	5100455-02	ROD END, LH thread (includes nut) (TRW L20-SV-4000-B16)	1
	2	5100455-03	ROD END, RH thread (includes nut) (TRW L20-SV-4001-B15)	1
	3	M-17091	NUT, Rod end (3/4-16) (TRW L12-MN-1)	2
		M-25002	PIN, Rod end nut cotter (1/8 x 1-1/4)	2
7-2	12	5100053-05	TUBE, Control link (26.70 inches long)	1
	5	5107759	CLAMP, Control link tube (TRW L20-CP-11-A-10) (sup 5100455-01)	2
	6	M-14218	BOLT, Tube clamp (7/16-20 x 1-3/4)	2
	7	M-17011	NUT, Tube clamp bolt (7/16-20)	2
	8	M-17006	WASHER, Tube clamp bolt lock (7/16)	2
7-2	13	5101842-01	ARM, Steering control, left hand	1
		5101842-02	ARM, Steering control, right hand	1
	14	5101183	NUT, Steering control arm (1 x 20 x 1/2)	2
		M-25055	PIN, Steering arm nut (0.141 x 1-1/2)	2
	15	5101181	KEY, Steering arm woodruff	2
7-2	16	5100051	BELLCRANK, Steering linkage	1
	17	5100458-02	BUSHING, Steering bellcrank	2
	18	5100051-04	SPACER, Steering bellcrank (0.662 x 6.76)	1
	19	5101034-02	SHAFT, Steering bellcrank	1
	20	M-17031	WASHER, Steering bellcrank shaft flat (5/8)	2
	21	M-17025	NUT, Steering bellcrank shaft (5/8-18)	2
	22	M-25002	PIN, Steering bellcrank shaft cotter (1/8 x 1-1/4)	2
	23	5100052	IDLER, Steering linkage	1
	24	5100458-02	BUSHING, Steering idler	2
7-2	25	5100052-03	SPACER, Steering idler (0.662 x 1.062)	1
	26	5101034-01	SHAFT, Steering idler	1
	27	M-17031	WASHER, Steering idler shaft flat (5/8)	2
	28	M-17025	NUT, Steering idler shaft (5/8-18)	2
	29	M-25002	PIN, Steering idler shaft cotter (1/8 x 1-1/4)	2
	30	5106072	ARM, Steering gear to drag link	1
	31	5100062-R044	NUT, Pitman arm to gear (GMSS 5667628)	1
	32	5100062-R045	WASHER, Pitman arm nut (GMSS 5697702)	1

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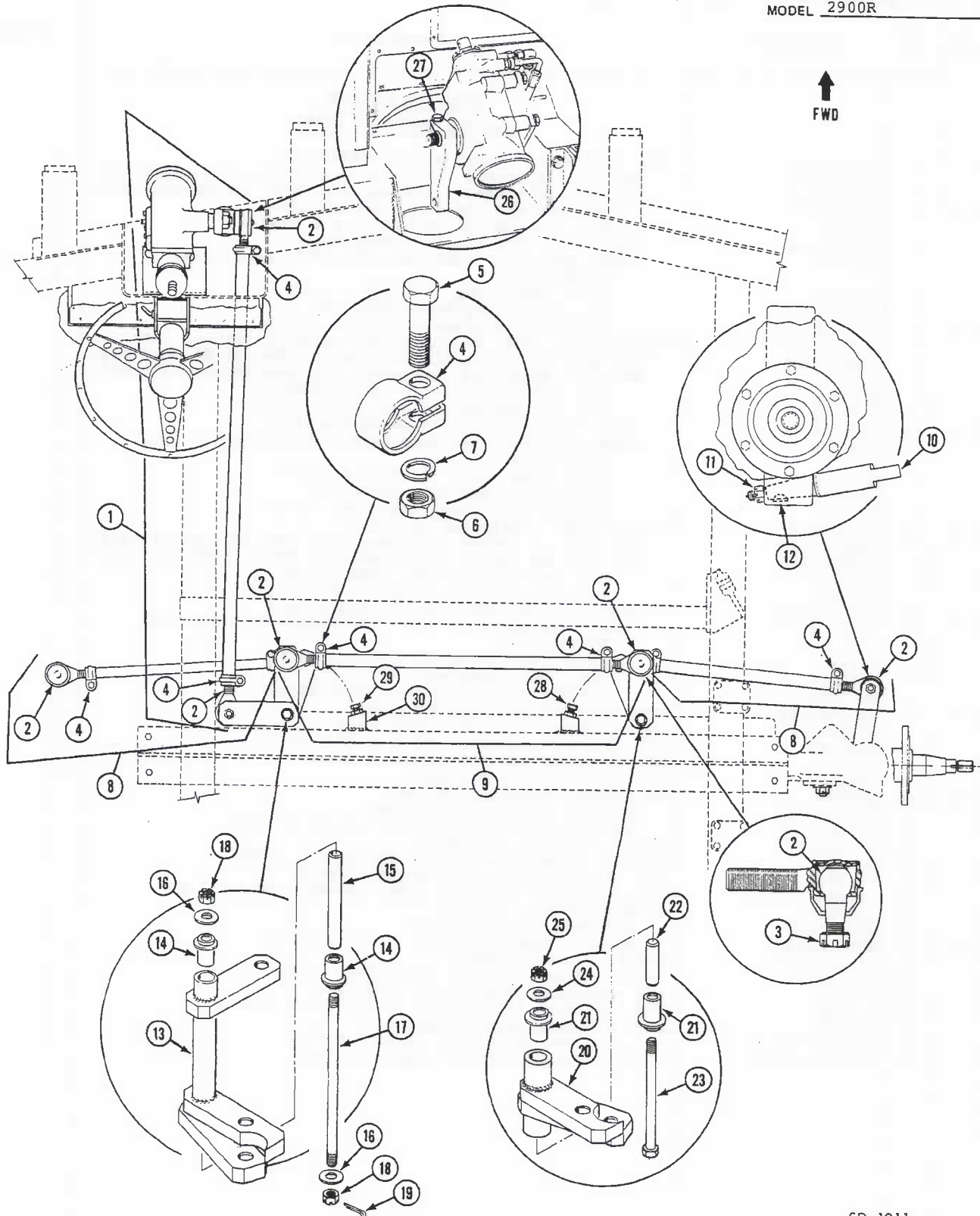


Figure 7-3. Steering Linkage (Coaches 00646 & up)

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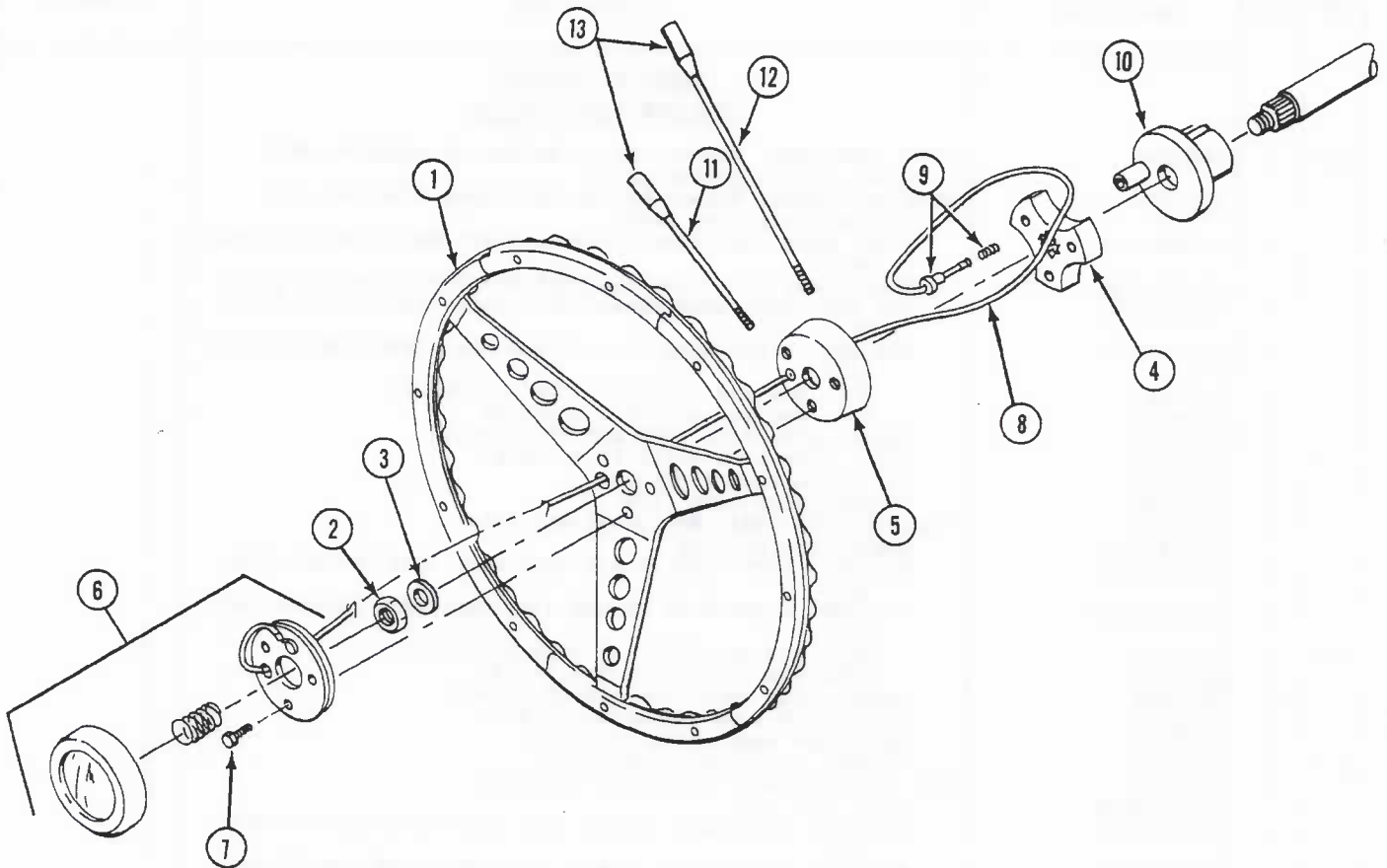
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FIG NO.	ITEM NO.	PART NUMBER	ITEM DESCRIPTION	QTY PER UNIT
			<u>STEERING LINKAGE</u> <u>(COACHES 00646 AND UP)</u>	
7-3	1	5107978	DRAG LINK ASSY, Pitman Arm to Bellcrank (Coaches with heavy duty steering gear)	1
		5107975	DRAG LINK ASSY, Pitman Arm to Bellcrank (Coaches with standard steering gear)	1
	1	5106834-01	TUBE, Drag Link (Coaches with heavy duty steering gear only)	1
		5106834-04	TUBE, Drag Link (Coaches with standard steering gear)	1
	2	5100455-02	ROD END, Left hand thread (inc nut) (TRW L20-SV-4000-B16)	1
	2	5100455-03	ROD END, Right hand thread (inc nut) (TRW L20-SV-4001-B15)	1
	3	M-17091	NUT, Rod end (3/4-16) (TRW L-12-MN-1)	2
	3	M-25002	PIN, Rod end nut (1/8 x 1-1/4)	2
	4	5107759	CLAMP, Link tube (TRW L20-CP-11-A-10)	2
7-3	5	M-14218	BOLT, Link tube (7/16-20 x 1-3/4)	2
	6	M-17011	NUT, Link tube (7/16-20)	2
	7	M-17006	WASHER, Link tube (1/2)	2
	8	5107976	CONTROL LINK ASSY, Bellcrank and idler	2
		5106834-03	TUBE, Control link	1
	2	5100455-02	ROD END, Left hand thread (inc nut) (TRW L20-SV-4000-B16)	1
	2	5100455-03	ROD END, Right hand thread (inc nut) (TRW L20-SV-4001-B15)	1
7-3	3	M-17091	NUT, Rod end (3/4-16) (TRW L-12-MN-1)	2
	3	M-25002	PIN, Rod end nut (1/8 x 1-1/4)	2
	4	5107759	CLAMP, Link tube (TRW L20-CP-11-A10)	2
	5	M-14218	BOLT, Link tube (7/16-20 x 1-3/4)	2
	6	M-17011	NUT, Link tube clamp (7/16-20)	2
7-3	7	M-17006	WASHER, Link tube clamp (1/2)	2
	9	5107977	TIE ROD ASSEMBLY, Bellcrank to idler	1
		5106834-02	TUBE, Tie rod	1
	2	5100455-02	ROD END, Left hand thread (inc nut) (TRW L20-SV-4000-B16)	1
	2	5100455-03	ROD END, Right hand thread (inc nut) (TRW L20-SV-4001-B15)	1
	3	M-17091	NUT, Rod end (3/4-16) (TRW L12-MN-1)	2
	3	M-25002	PIN, Rod end nut (1/8 x 1-1/4)	2
	4	5107759	CLAMP, Link tube (TRW L20-CP-11-A10)	2
	5	M-14218	BOLT, Link tube (7/16-20 x 1-3/4)	2
	6	M-17011	NUT, Link tube (7/16-20)	2
	7	M-17006	WASHER, Link tube (1/2)	2
	10	5101842-01	ARM, Steering control, left hand	1
	10	5101842-02	ARM, Steering control, right hand	1
	11	5101183	NUT, Steering control arm (1 x 20 x 1/2)	2
	11	M-25055	PIN Steering arm nut (0.141 x 1-1/2)	2
7-3	12	5101181	KEY, Steering arm woodruff	2
	13	5106672	BELLCRANK, Steering linkage	1
	14	5100458-02	BUSHING, Steering bellcrank	2
	15	5106679	SPACER, Steering bellcrank (0.68 ID x 6.25)	1
	16	M-17031	WASHER, Bellcrank shaft flat (5/8)	2
	17	5107991	SHAFT, Bellcrank	1
	18	M-17025	NUT, Bellcrank shaft (5/8-18)	2
	19	M-25002	PIN, Bellcrank shaft cotter (1/8 x 1-1/4)	2
	20	5106673	IDLER, Steering linkage	1
	21	5100458-02	BUSHING, Steering idler	2
	22	5106680	SPACER, Steering idler (0.636 ID x 1.00)	1
	23	5107024	BOLT, Steering idler (5/8-18 x 6)	1
	24	M-17031	WASHER, Steering bolt flat (5/8)	1
	25	M-17025	NUT, Steering bolt (5/8-18)	1
	26	5106748	ARM, Steering gear assy to drag link (pitman)	1
	27	M-18176	BOLT, Steering arm pinch (5/8-11 x 2-1/2)	1
	28	M-18016	BOLT, Linkage stop adjustment (1/2-20 x 1-1/2)	2
	29	M-17087	NUT, Stop adjustment jam (1/2-20)	2
	30	5107608	STOP, Wheel (welded to frame)	2

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Figure 7-4. Steering Wheel

FIG NO.	ITEM NO.	PART NUMBER	ITEM DESCRIPTION	QTY PER UNIT
<u>STEERING WHEEL PARTS</u>				
7-4	1	5101075-01	WHEEL, Steering 17" diameter	1
	2	M17013	NUT, Wheel to steering column (GMSS-114496) (1/2 x 20)	1
	3	M17023	WASHER, Wheel to steering column	1
	4	5100062-R080	HUB, Steering Wheel	1
	5	5100062-R081	COVER, Steering Post	1
7-4	6	5100062-R079	BUTTON KIT, Horn	1
NOTE: Above kit contains contactor ring, bolts, button wire, and spring.				
	7	5100062-R082	BOLT, Horn Retainer	3
	8	5100062-R083	WIRE, Horn	1
	9	5100062-R084	SPRING & SLEEVE, Horn Wire (GMSS-3916047)	1
	10	510062-R085	CAM, Turn Signal (GMSS-399294)	1
	11	5101076-01	LEVER, Tilt (GMSS-3832567)	1
	12	5101076-02	LEVER, Turn Signal (GMSS-3909580) (Coaches without cruise control)	1
	12	5106949	LEVER, Cruise Control & turn Signal (Coaches with cruise control)	1
		M14266	SCREW, Lever Attaching (GMSS-94225578)	1
7-4	13	5101076-03	KNOB, Tilt & Turn Signal Lever (GMSS-3782965)	1

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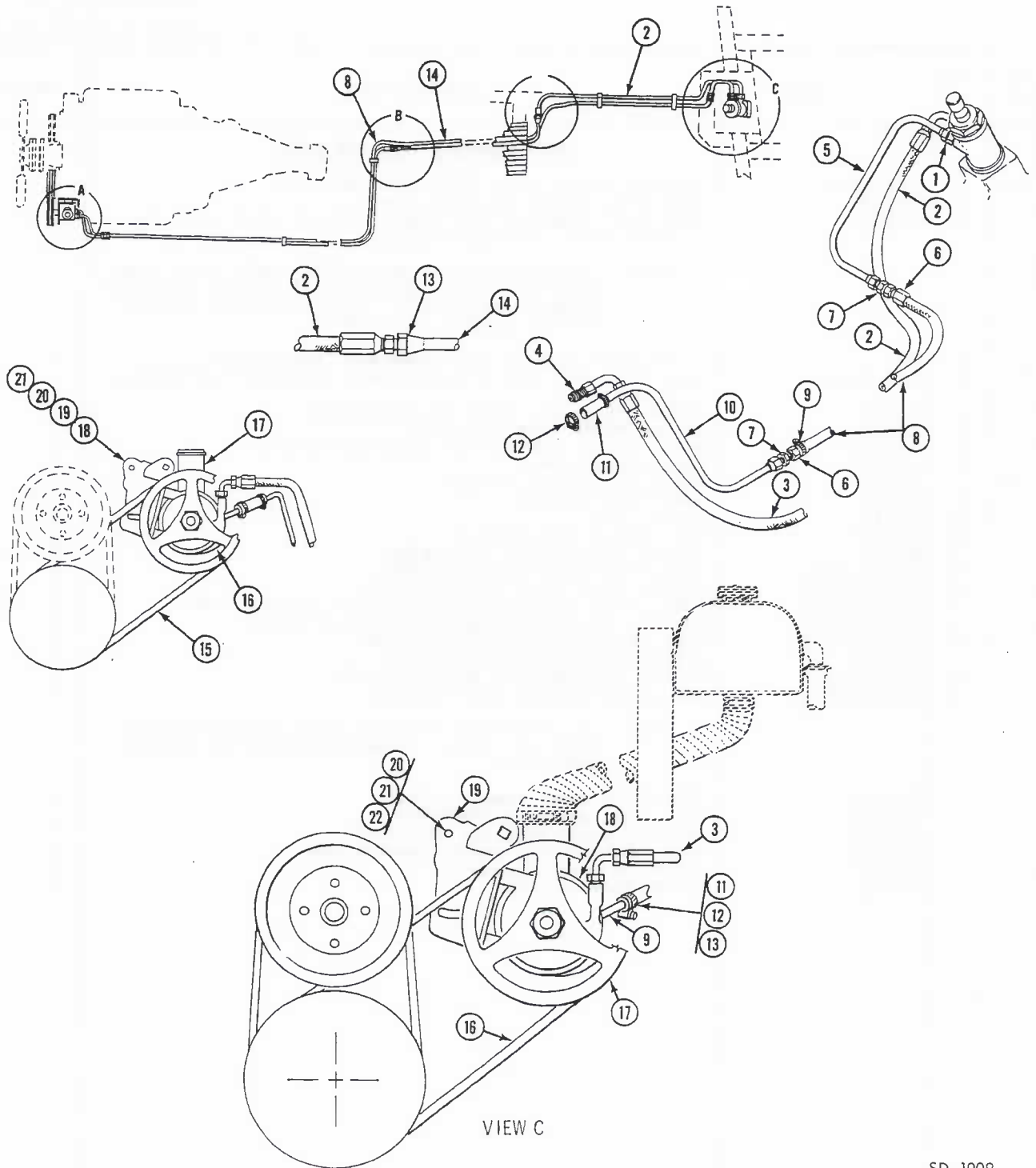


Figure 7-5. Power Steering Pump and Lines

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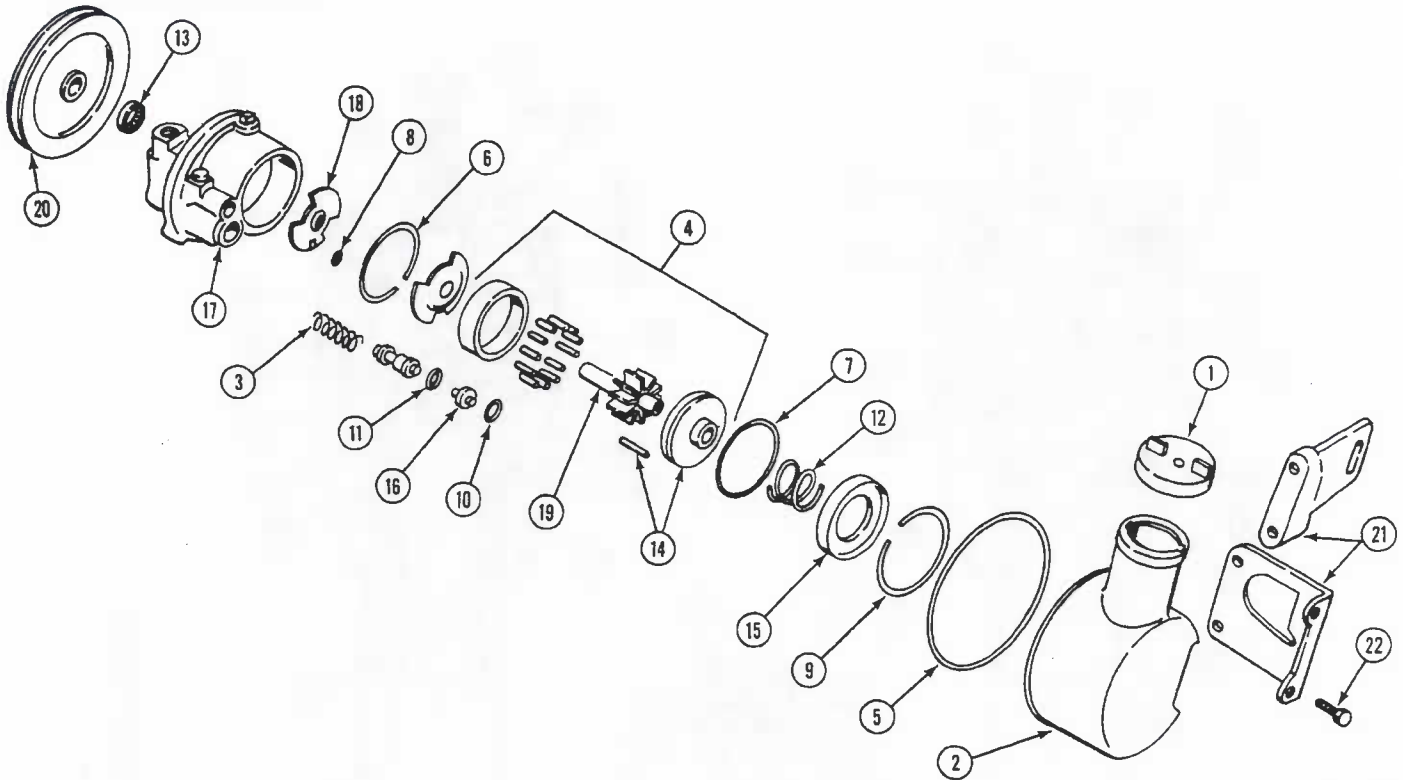
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FIG NO.	ITEM NO.	PART NUMBER	ITEM DESCRIPTION	QTY PER UNIT
<u>POWER STEERING PUMP AND LINES</u>				
7-5	1	5101376-01	ADAPTER, Supply hose (7/16-3/8) (WD-1554)	1
	2	5101938	HOSE ASSY, Supply to frame tube	1
	3	5101939	HOSE ASSY, Steering gear supply tube to power steering pump (rear, includes fittings)	1
<p style="margin-left: 40px;">NOTE: Above items replaced 5100732 supply hose; hose ends 5101377-01, 5101064, and 5100727 at approximately coach 00600. Use 5101938 and 5101939 for all service replacement.</p>				
7-5	4	NPN	"O" RING, Supply hose (pump end) (WD-7629x5)	1
	5	5107924-02	TUBE ASSY, Gear Box to Return hose (Replaces 5101374-01; 5101373-01)	1
7-5	6	M24646	CONNECTOR, Return hose (WD-10008B-408)	1
	7	M24643	UNION, Return hose (1/2-3/8)	1
	8	5100733	HOSE, Return (1/2 ID x 30 feet) (WD-H9-1/2)	1
	9	M22054	CLAMP, Return hose	2
	10	5107923	TUBE, Return hose to pump	1
	11	M20084	HOSE, Tube to pump	1 ft.
	12	M22041	CLAMP, Hose	2
	13	5101065	NUT, Tubing (WD-C5115-x6)	2
	14	M24013	TUBING, Supply hose thru frame	15 ft.
	15	5100011-R003	BELT, Pump drive (CCMI-3419000)	1
	16	5100011-R006	PULLEY, Pump drive (CCMI-2951128)	1
	17	5100011-R007	PUMP, Power Steering (CCMI-3004799) (See Fig 7-6)	1
	18	5100011-R008	BRACKET, Power Steering pump (CCMI-3671887)	1
	19	5100011-R009	BOLT, Pump Bracket (CCMI-9422840)	2
		M17004	SPACER, Pump Bracket to engine	6
	20	5100011-R010	WASHER, Pump Bracket (CCMI-6022190)	2
	7-5	21	5100011-R011	BOLT, Pump Bracket (CCMI-220901)
<p style="margin-left: 40px;">NOTE: The following reservoir parts used from coach 00001 to 00365. reservoir deleted on coaches thereafter.</p>				
		5100592	RESERVOIR Power steering fluid	1
		5100592-02	CAP, Power steering reservoir	1
		5100823	BRACKET, Power steering reservoir	1
		5101153	HOSE, reservoir to power steering pump	1
		M22044	CLAMP, Hose to reservoir	1
		M22045	CLAMP, Hose to pump	1

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Figure 7-6. Power Steering Pump - Component Parts

FIG NO.	ITEM NO.	PART NUMBER	ITEM DESCRIPTION	QTY PER UNIT
<u>POWER STEERING PUMP (COMPONENT PARTS)</u>				
7-6		5100011-R007	PUMP ASSY, Power steering (CCMI 3004799)	1
	1	5100011-R390	CAP, Steering pump (CCMI 2891434)	1
	2	5100011-R354	RESERVIOR, Steering pump (CCMI 2891156)	1
	3	5100011-R342	SPRING, Flow control valve (CCMI 2537926)	1
	4	5100011-R343	ROTATING GROUP, Pump rings-rotor and vanes (CCMI 2537995)	1
7-6	5	5100011-R344	"O" RING, Pump rotor shaft (CCMI 2537869)	1
	6	5100011-R345	"O" RING, Pump rear plug (CCMI2537858)	1
	7	5100011-R346	"O" RING, Pump pressure plate (CCMI 2537694)	1
	8	5100011-R347	"O" RING, Pump control valve bore (CCMI 1859444)	1
	9	5100011-R348	RING, Pump rotor shaft retaining (CCMI 1738681)	2
	10	5100011-R349	RING, Pump control valve (CCMI 2537866)	1
7-6	11	5100011-R350	RING, Pump control valve (CCMI 2537859)	1
	12	5100011-R351	SPRING, Pump pressure plate (CCMI 2537958)	1
	13	5100011-R352	OIL SEAL, Pump rotor shaft (CCMI 2537689)	1
	14	5100011-R353	PLATE W/PIN Pump cam (CCMI 2537503)	1
	15	5100011-R355	SEAL, Reservoir mounting (CCMI 2127486)	1
	16	5100011-R357	PLUG, Pump valve bore (CCMI 2537865)	1
	16	5100011-R358	PLUG, Pump valve bore (CCMI 2537959)	1
	17	5100011-R359	SEAT, Pump valve bore (CCMI 2537863)	1
	18	5100011-R360	SEAL, Pump plate to housing (CCMI 2891261)	1
7-6	19	5100011-R361	SHAFT, Pump rotor (CCMI 2537095)	1
	20	5100011-R006	PULLEY, Steering pump (CCMI 2951128)	1
	21	5100011-R008	BRACKET, Steering pump mounting (CCMI 3671887)	1
	22	5100011-R009	BOLT, Steering pump (CCMI 9422840)	2

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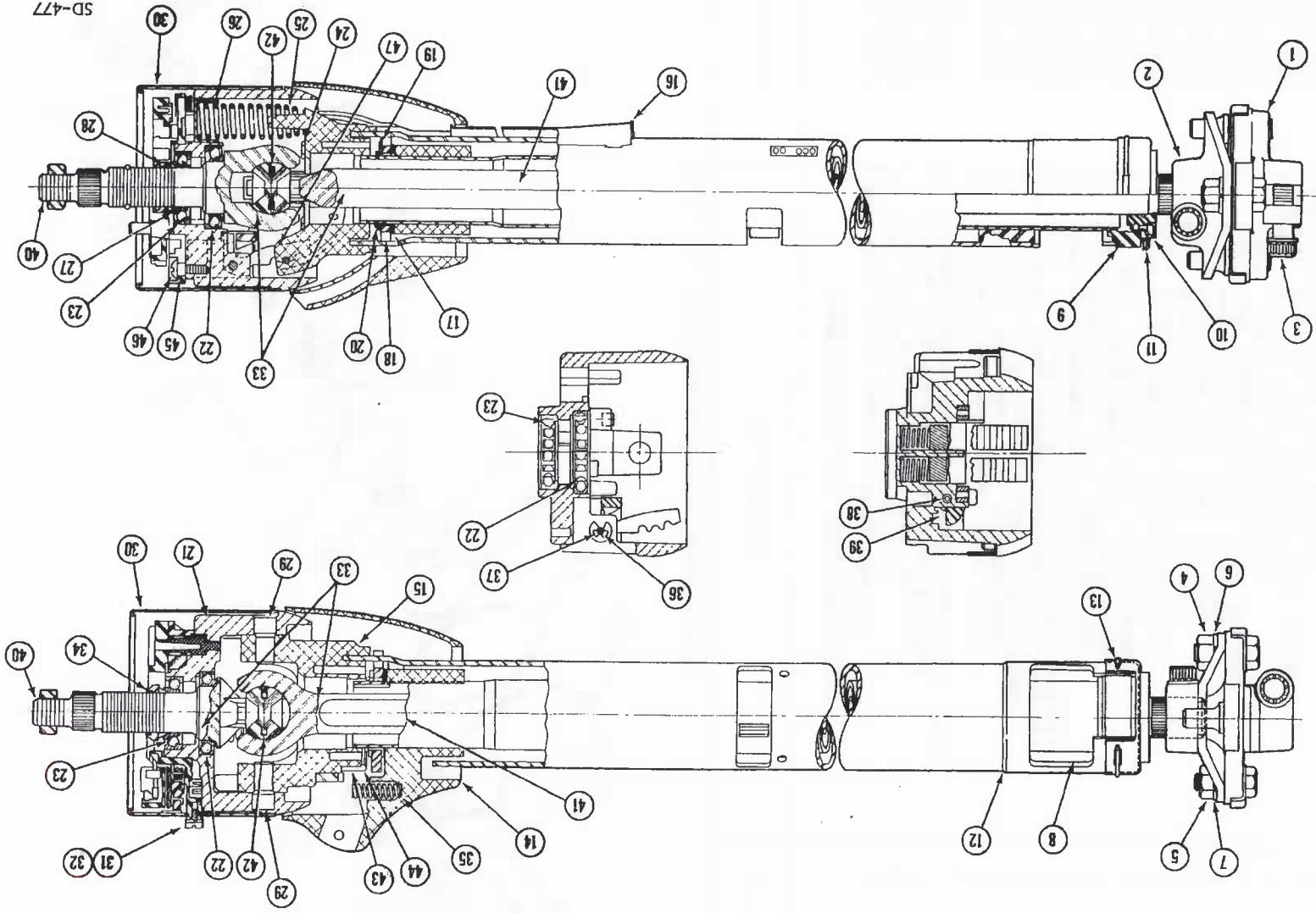


Figure 7-7 Steering Column Assembly

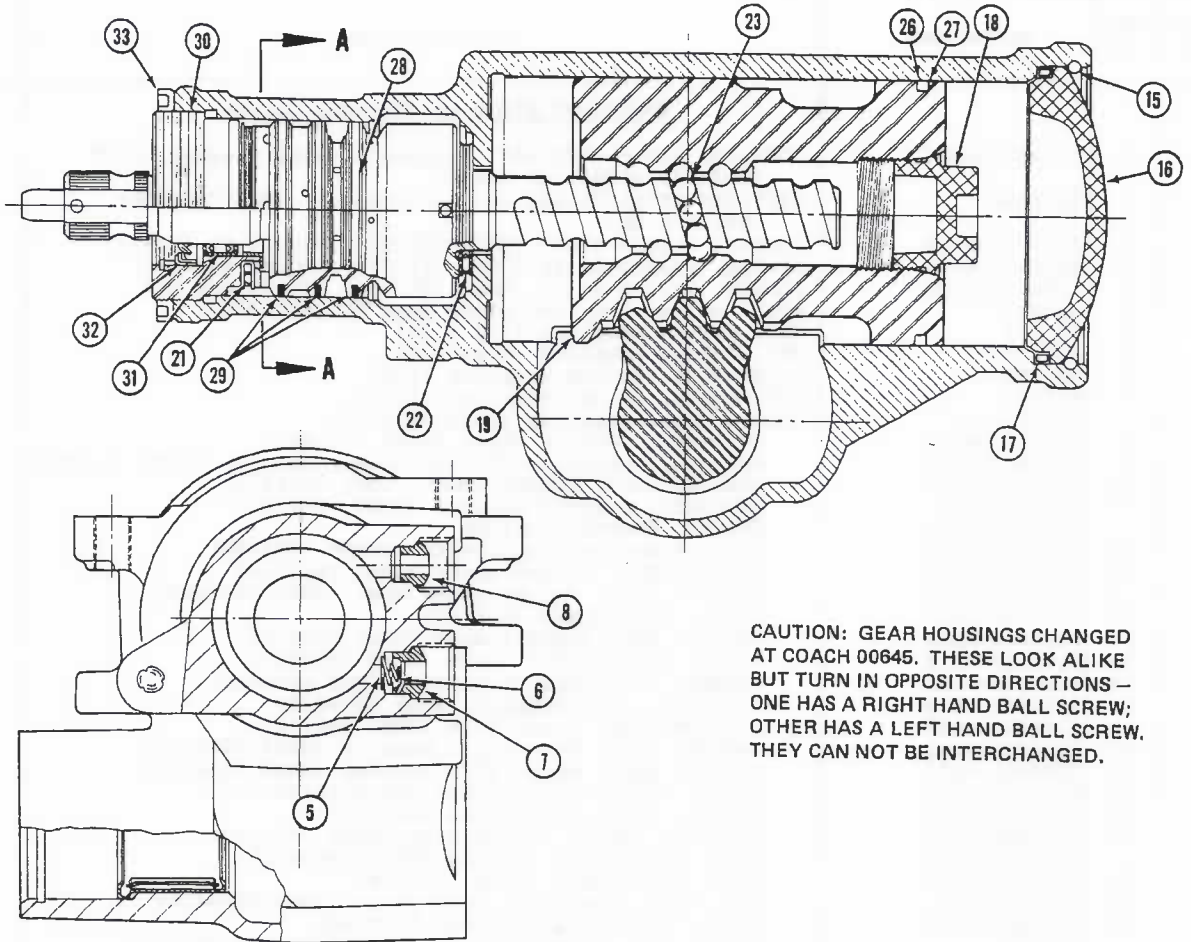
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FIG NO.	ITEM NO.	PART NUMBER	ITEM DESCRIPTION	QTY PER UNIT
			<u>COMPONENT PARTS OF STEERING COLUMN</u>	
7-7	1	5100062-R001	COUPLING AND FLANGE ASSY, Column to gear housing (GMSS 7809444) (00001 to 00645)	1
	1	5106851	COUPLING ASSY, Column to gear housing (GMSS-7813555) (00646 & up)	1
	2	5100062-R002	FLANGE, Column Shaft (GMSS-7807053) (00001 to 00645)	1
	2	5106851-R001	FLANGE, Column Shaft (GMSS-7813277) (00646 and up)	1
	2	5106851-R002	FLANGE, Column Shaft (GMSS 7813296) (00646 and up)	1
	3	M14201	BOLT, Column coupling pinch (sup 5100062-R003)	2
	4	M17032	NUT, Column coupling (3/8 x 24)	1
	5	M17071	NUT, Column coupling (5/16 x 24)	1
	6	M17007	LOCKWASHER, Column coupling (3/8)	1
	7	M17009	LOCKWASHER, Column coupling (5/16)	1
		5101085-01	COLUMN ASSY, Steering (GMSS-7826186)	1
7-7	8	5100062-R004	TUBE ASSY, Column shift (GMSS 7812085)	1
	9	5100062-R005	ADAPTER, Column shift tube, lower bearing (GMSS 7805822)	1
	10	5100062-R006	BEARING ASSY, Column lower (GMSS 7809271)	1
	11	5100062-R007	RETAINER, Bearing adapter (GMSS 7810240)	1
	12	5100062-R008	JACKET, Steering column	1
	13	5100062-R009	CLIP, Lower bearing adapter (GMSS 7804439)	1
	14	5100062-R089	SHROUD ASSY, Column upper (GMSS 7800262)	1
	15	5100062-R011	SUPPORT ASSY, Column upper bowl (GMSS 5698649)	1
	16	5100062-R012	GUIDE, Wire (GMSS 7800145)	1
	17	5100062-R013	WASHER, Bowl support wave (GMSS 5699618)	1
	18	5100062-R014	PLATE, Bowl support lock (GMSS 5698395)	1
	19	5100062-R015	WASHER, Bowl support thrust (GMSS 5698413)	1
	20	5100062-R016	RETAINER, Bowl support (GMSS 5698409)	1
	21	5100062-R017	HOUSING ASSY, Wheel tilt (GMSS 7807313)	1
	22	5100062-R021	BEARING ASSY, Wheel tilt housing (GMSS 5696210)	1
	23	5100062-R022	BEARING ASSY, Wheel tilt housing (GMSS 5698407)	1
	24	5100062-R018	SCREW, Upper bowl support (GMSS 5698404)	4
	25	5100062-R019	SPRING, Wheel tilt (GMSS 5698415)	1
	26	5100062-R020	RETAINER, Wheel tilt spring (GMSS 7800177)	1
7-7	27	5100062-R023	RACE, Wheel tilt housing (GMSS 5698422)	1
	28	5100062-R024	SEAT, Inner race (GMSS 5698399)	1
	29	5100062-R025	PIN, Tilt housing to bowl pivot (GMSS 5693411)	2
	30	5100062-R090	COVER, Tilt housing (GMSS 7800499)	1
	31	M14235	SCREW, Tilt housing cover (hazard switch opening)	1
	32	M17081	WASHER, Tilt housing cover screw	2
	33	5100062-R027	SHAFT ASSY, Upper and lower steering (GMSS 7812082)	1
	34	5100062-R028	NUT, Upper steering shaft lock (GMSS 5698741)	1
7-7	35	5100062-R030	SPRING, Shift lever (GMSS 7800670)	1
	36	5100062-R031	LEVER, Shoe release (GMSS 7800154)	1
	37	5100062-R032	PIN, Dowel (GMSS 5698688)	1
	38	5100062-R033	PIN, Release lever (GMSS 5698406)	1
	39	5100062-R034	SPRING, Release lever (GMSS 5698410)	1
	40	5100062-R035	SHAFT ASSY W/RACE, Upper steering (GMSS 7810022)	1
	41	5100062-R036	SHAFT ASSY W/YOKE, Lower steering (GMSS 7812083)	1
	42	5100062-R037	SPRING, Joint preload (GMSS 7805259)	1
	43	5100062-R038	PLATE, Shift stop (GMSS 5698651)	1
	44	5100062-R087	SCREW, Shift stop plate (GMSS 7800639)	2
	45	5100062-R039	SWITCH ASSY, Turn signal (GMSS 1997970)	1
	46	5100062-R040	SCREW, Signal switch mounting (GMSS 7801513)	1
	46	5100062-R041	SCREW, Signal switch mounting (GMSS 7801514)	1
	47	5100062-R043	SHOE SERVICE KIT, Contains wheel lock shoes, spacer ring, and shoe springs (GMSS 7815595)	1

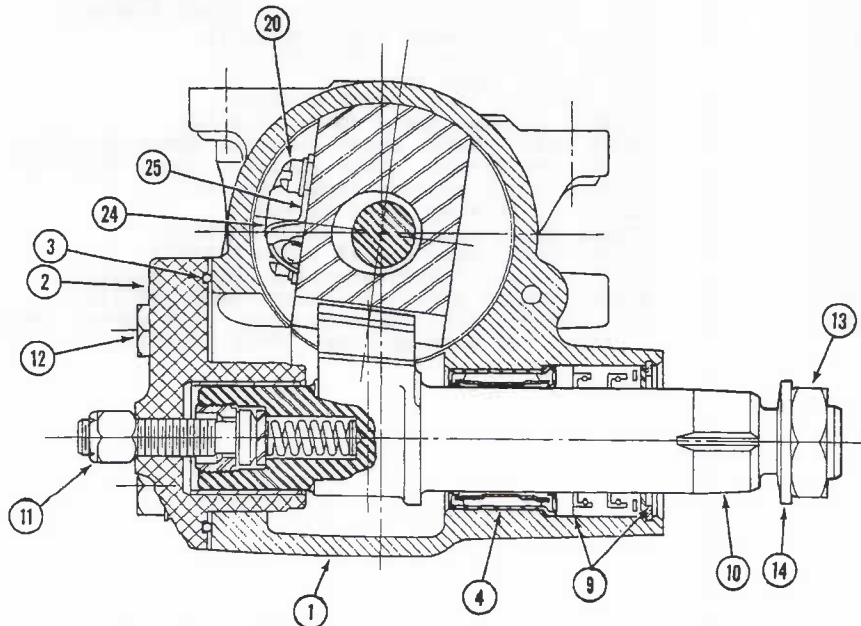
REPAIR PARTS LIST

GROUP 7 Steering
 MODEL 2900R



CAUTION: GEAR HOUSINGS CHANGED AT COACH 00645. THESE LOOK ALIKE BUT TURN IN OPPOSITE DIRECTIONS — ONE HAS A RIGHT HAND BALL SCREW; OTHER HAS A LEFT HAND BALL SCREW. THEY CAN NOT BE INTERCHANGED.

Section A-A



SD-1002

Figure 7-8. Steering Gear Housing Assembly

REPAIR PARTS LIST

GROUP 7
MODEL 2900R

FIG NO.	ITEM NO.	PART NUMBER	ITEM DESCRIPTION	QTY PER UNIT
			<u>COACHES (SERIAL 00001 TO 00645)</u>	
7-8	1	5101085-02 5100062-R048	GEAR ASSY, Steering (GMSS Model 708D20, 7811915) HOUSING ASSY, Steering gear (GMSS 5697803) NOTE: Above includes housing, check valve, tubing connector, and needle bearing.	1 1
	2	5100062-R046	COVER ASSY, Housing side (GMSS 7812147)	1
	3	5100062-R047	SEAL ASSY, Side cover (GMSS 7812146)	1
7-8	4	5100062-R049	BEARING ASSY, Housing needle (GMSS 5697804)	1
	5	5100062-R067	KIT, Housing check valve (GMSS 5687624)	1
	6	5100062-R073	SPRING, Housing check valve (GMSS 5687499)	1
	7	5100062-R074	POPPET, Housing check valve (GMSS 5687539)	1
	8	5100062-R075	CONNECTOR, Housing inverted flare (GMSS 5687538)	1
7-8	9	5100062-R076	CONNECTOR, Housing inverted flare (GMSS 5682044)	1
	10	5100062-R050	SEAL KIT, Pitman shaft oil (GMSS 5685355)	1
	11	5100062-R051	SHAFT ASSY, Steering gear (GMSS 7815885)	1
	12	5100062-R052	NUT, Lash adjuster seal (GMSS 5685372)	1
	13	5100062-R053	BOLT, Side cover attaching (GMSS 7806685)	4
7-8	14	5100062-R044	NUT, Pitman shaft (GMSS 5667628)	1
	15	5100062-R045	WASHER, Pitman shaft (GMSS 5697702)	1
	16	5100062-R054	RING, Housing end plug retaining (GMSS 5686814)	1
7-8	17	5100062-R055	PLUG, Housing end (GMSS 5686815)	1
	18	5100062-R056	SEAL, Housing end (GMSS 7812122)	1
	19	5100062-R057	PLUG, Rack piston end (GMSS 5689695)	1
	20	5100062-R058	RACK-PISTON NUT ASSY, Steering worm end (GMSS 5692425)	1
7-8	21	5100062-R072	SCREW, W/lockwasher rack and piston (GMSS 5696151)	2
	22	5100062-R059	BEARING KIT, Upper thrust (GMSS 5687185)	1
	23	5100062-R060	BEARING KIT, Lower thrust (GMSS 5687186)	1
	24	5100062-R061	BALL KIT, Recirculating (GMSS 5695513)	1
	25	5100062-R062	CLAMP, Ball return guide (GMSS 5686539)	1
	26	5100062-R063	GUIDE, Ball return (GMSS 5686540)	2
	27	5100062-R064	RING, Rack piston (GMSS 5687958)	1
	28	5100062-R065	SEAL, Rack piston O-ring (GMSS 5688034)	1
	29	5100062-R066	VALVE ASSY, Steering gear (GMSS 7808369)	1
	30	5100062-R068	SEAL KIT, Valve (GMSS 5687182)	1
	31	5100062-R069	PLUG ASSY, Steering adjuster (GMSS 5686866)	1
	32	5100062-R070	BEARING ASSY, Needle (GMSS 5683229)	1
		5100062-R071	SEAL SERVICE KIT, Adjuster plug (GMSS 5687183)	1
		5100062-R077	SEAL SERVICE KIT, Master (GMSS 7811277)	1
			NOTE: Above kit contains all housing seals, rings, washers, and lash nut required for overhaul.	
		5100062-R078	SEAL KIT, O-ring (GMSS 7811276)	1
			NOTE: Above kit contains all housing seals required for overhaul.	
7-8	33	5100062-R086	NUT, Adjuster plug lock (GMSS 5690698) <u>SEE NEXT PAGE FOR 00646 & UP</u>	1

REPAIR PARTS LIST

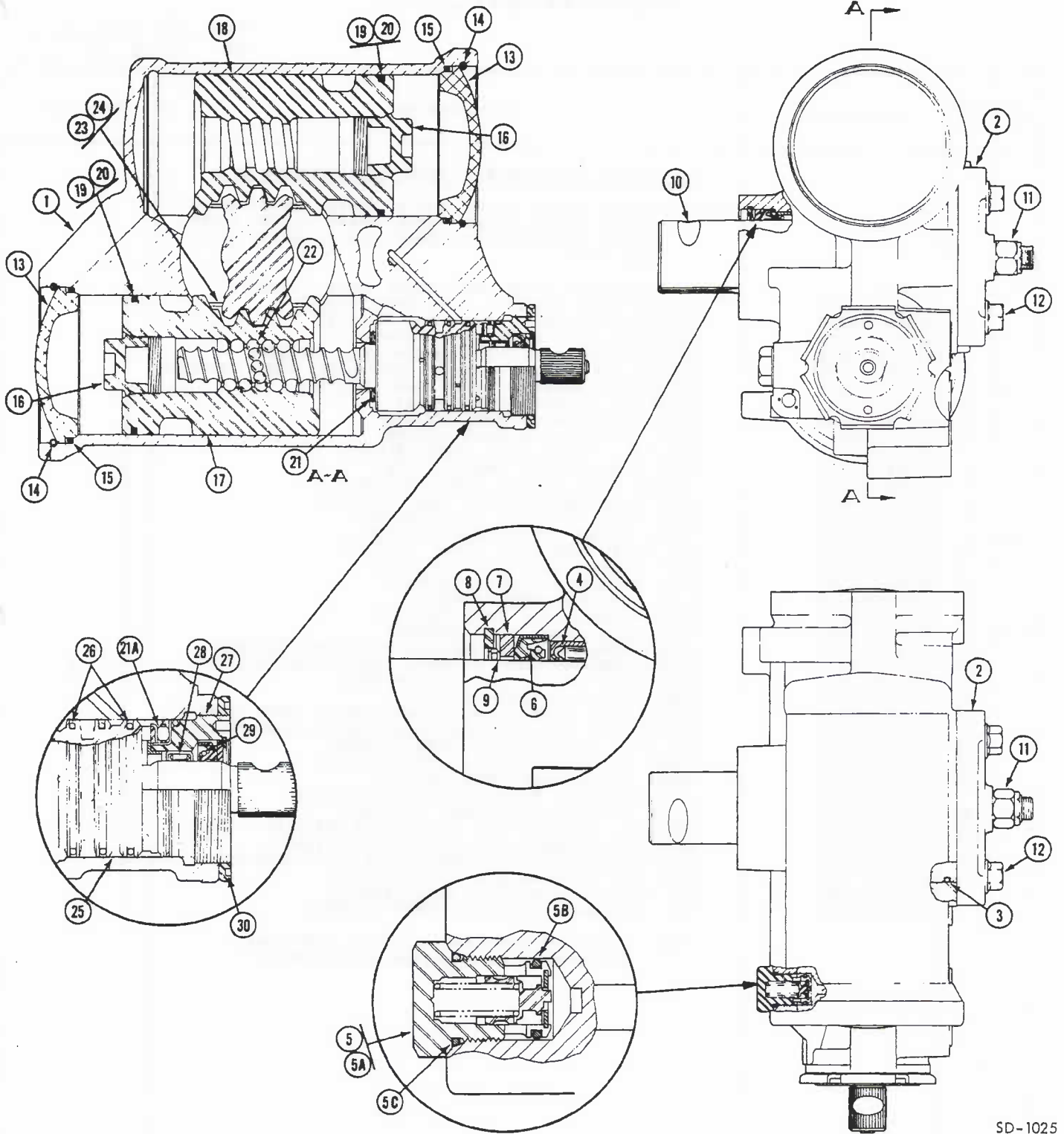
GROUP 7
MODEL 2900R

FIG NO.	ITEM NO.	PART NUMBER	ITEM DESCRIPTION	QTY PER UNIT
<u>COACHES SERIAL 00646 AND UP</u>				
<u>STANDARD STEERING GEAR</u>				
7-8	1	5106945 5100062-R048	GEAR ASSY, Steering (GMSS-Model 708-D22; 7812158) HOUSING, Gear Box (GMSS-5697803)	1 1
NOTE: Above includes housing, check valve, tubing connector, and needle bearing.				
	2	5106945-R001	COVER ASSY, Housing side (GMSS-7815398)	1
	3	5106945-R002	SEAL ASSY, Side Cover (GMSS-7816227)	1
	4	5100062-R049	BEARING, Housing Needle (GMSS-5697804)	1
		5100062-R067	KIT, Housing Check Valve (GMSS-5687624)	1
7-8	5	5100062-R073	SPRING, Housing Check Valve (GMSS-5687499)	1
	6	5100062-R074	POPPETT, Housing Check Valve (GMSS-5687539)	1
	7	5100062-R075	CONNECTOR, Housing Inverted Flare (GMSS-5687538)	1
	8	5100062-R076	CONNECTOR, Housing Inverted Flare (GMSS-5682044)	1
	9	5100062-R050	SEAL KIT, Pitman Shaft Oil (GMSS-5685355)	1
7-8	10	5100062-R051	SHAFT, Pitman Arm (GMSS-7815885)	1
	11	5106945-R003	NUT, Lash Adjuster (GMSS-5687973)	1
	12	5106811-R013	BOLT, Side Cover (GMSS-7816516)	4
	13	5100062-R044	NUT, Pitman Shaft (GMSS-5667628)	1
	14	5100062-R045	WASHER, Pitman Shaft Nut 7/8 (GMSS-5697702)	1
	15	5100062-R054	RING, Housind End Plug Retaining (GMSS-5686814)	1
	16	5100062-R055	PLUG, Housing End (GMSS-5686815)	1
	17	5100062-R056	SEAL, Housing End (GMSS-7812122)	1
7-8	18	5100062-R057	PLUG, Rack Piston End (GMSS-5689695)	1
	19	5106945-R004	RACK-PISTON-NUT ASSY, Worm end (GMSS-5688752)	1
	20	5100062-R072	SCREW & WASHER, Rack & Piston (GMSS-5696151)	2
	21	5106945-R005	BEARING KIT, Upper Thrust (GMSS-7817487)	1
	22	5106811-R016	BEARING KIT, Lower Thrust (GMSS-7816645)	1
	23	5100062-R061	BALL KIT, Recirculating (GMSS-5695513)	1
7-8	24	5100062-R062	CLAMP, Ball Return Guide (GMSS-5686539)	1
	25	5106945-R006	GUIDE, Ball Return (GMSS-5688765)	2
	26	5100062-R064	RING, Rack Piston (GMSS-5687958)	1
	27	5100062-R065	SEAL, Rack Piston O-ring (GMSS-5688034)	1
	28	5106945-R007	VALVE ASSY, Gear (GMSS-7811780)	1
7-8	29	5100062-R068	SEAL KIT, Valve (GMSS-5687182)	1
	30	5106945-R008	PLUG ASSY, Steering Adjuster (GMSS-7819848)	1
	31	5100062-R070	BEARING, Needle (GMSS-5683229)	1
	32	5100062-R071	SEAL SERVICE KIT, Adjuster Plug (GMSS-5687183)	1
		5100062-R077	SEAL SERVICE KIT, Master (GMSS-7811277)	1
NOTE: Above kit contains all housing seals, rings, washers, and lash nut required for overhaul.				
		5100062-R078	SEAL KIT, O-Ring (GMSS-7811276)	1
NOTE: Above kit contains all housing seals required for overhaul.				
7-8	33	5100062-R086	NUT, Adjuster plug lock (GMSS-5690698)	1

REPAIR PARTS LIST

GROUP 7 Steering

MODEL 2900R



SD-1025

Figure 7-9. Steering Gear-Heavy Duty Double Housing Style

REPAIR PARTS LIST

GROUP 7
MODEL 2900R

FIG NO.	ITEM NO.	PART NUMBER	ITEM DESCRIPTION	QTY PER UNIT
			<u>ALL COACHES EQUIPPED WITH HEAVY DUTY STEERING GEAR</u>	
			Coaches 00630, 00654, 00655, 00656, 00658, 00659, 00660, 00663, 00664, 00665, 00666, 00667, 00669, 00680, 00682, 00684, 00686, 00688, 00690, 00692, 00694, and 00696.	
7-9		5106811	GEAR ASSEMBLY, Steering (GMSS Model 710D4, 7813251)	1
	1	5106811-R001	HOUSING ASSY, Steering gear (GMSS 7813252)	1
	2	5106811-R002	COVER ASSY, Housing side (GMSS 7813153)	1
	3	5106811-R003	SEAL ASSY, Side cover (GMSS 7816407)	1
		5106811-R004	BEARING ASSY, Side cover needle (GMSS 9434188)	1
	4	5106811-R005	BEARING ASSY, Housing needle (crosshaft) (GMSS 9434189)	1
7-9	5	5106811-R006	VALVE ASSY, Housing relief (GMSS 7813928)	1
	5A	5100062-R067	VALVE KIT, Relief (GMSS 5687624)	1
	5B	5106811-R025	SEAL, Relief valve (GMSS 5682174)	1
	5C	5106811-R026	SEAL, Relief valve (GMSS 5664566)	1
		5106811-R022	SEAL KIT, Pitman shaft (GMSS 7816985)	1
	6	5106811-R007	SEAL, Pitman shaft (GMSS 7816424)	1
	7	5106811-R008	WASHER, Shaft housing (GMSS 7816414)	1
	8	5106811-R009	SEAL, Shaft housing dust (GMSS 7812297)	1
	9	5106811-R010	RING, Shaft retaining (GMSS 7816491)	1
7-9	10	5106811-R011	SHAFT, Pitman cross (GMSS 7813155)	1
	11	5106811-R012	NUT, Shaft side cover (GMSS 7813170)	1
	12	5106811-R013	BOLT, Housing side (GMSS 7816516)	4
	13	5100062-R055	PLUG, Housing end (GMSS 5686815)	2
	14	5100062-R054	RING, End plug (GMSS 5686814)	2
	15	5100062-R056	SEAL, Housing plug (GMSS 7812122)	2
7-9	16	5100062-R057	PLUG, Rack piston (GMSS 5689695)	2
	17	5106811-R014	RACK/PISTON/NUT ASSY, Steering worm (GMSS 7813162)	1
	18	5106811-R015	RACK/PISTON/NUT ASSY, Steering idler (GMSS 7812761)	1
	19	5100062-R064	RING, Worm rack piston (GMSS 5687958)	2
	20	5100062-R065	SEAL, Worm rack (GMSS 5688034)	2
	21	5106811-R016	BEARING KIT, Steering worm lower thrust (GMSS 7816645)	1
7-9	21A	5106811-R020	BEARING KIT, Steering worm upper thrust (GMSS 7816982)	1
	22	5106811-R017	BALL KIT, Recirculating (GMSS 7815988)	1
	23	5106811-R062	CLAMP, Ball return guide (GMSS 5686539)	1
	24	5106811-R018	GUIDE, Ball return (GMSS 7813165)	2
		5100062-R072	SCREW & WASHER, Return guide (GMSS 5696151)	2
7-9	25	5106811-R019	VALVE, Steering worm (GMSS 7813167)	1
	26	5100062-R068	SEAL KIT, Steering worm valve (GMSS 5687182)	1
	27	5106811-R023	PLUG ASSY, Steering adjuster (GMSS 7812288)	1
	28	5100062-R070	BEARING ASSY, Steering worm needle (GMSS 5683229)	1
	29	5106811-R024	SEAL KIT, Adjuster plug (GMSS 7816983)	1
7-9	30	5100062-R086	NUT, Adjuster plug lock (GMSS 5690698)	1
		5106811-R021	SEAL KIT, Master overhaul (GMSS 7816984)	1
			NOTE: Above kit contains all seals, and rings, required to rebuild gear box assembly.	


 URGENT

 ROUTINE

 MANDATORY

 INFORMATIONAL

Service Bulletin

AUGUST 14, 1986

NUMBER _____

N/A

ATTENTION: SERVICE MANAGERS AND OWNERS

GROUP

SUBJECT

6 1/2" Depth FACE DOWN 6" HOLE CENTER

NEW IMPROVED HYBRID PLASTIC BUSHING
INSTALLATION:

*DRUM 14 IN DI BRAKE 3 1/2 IN WIDE
5-5/16" PATTERN HOLE 3/4" IN CENTER TO CENTER
1 1/2 IN*

NOTE:

L-86-748R-5E19

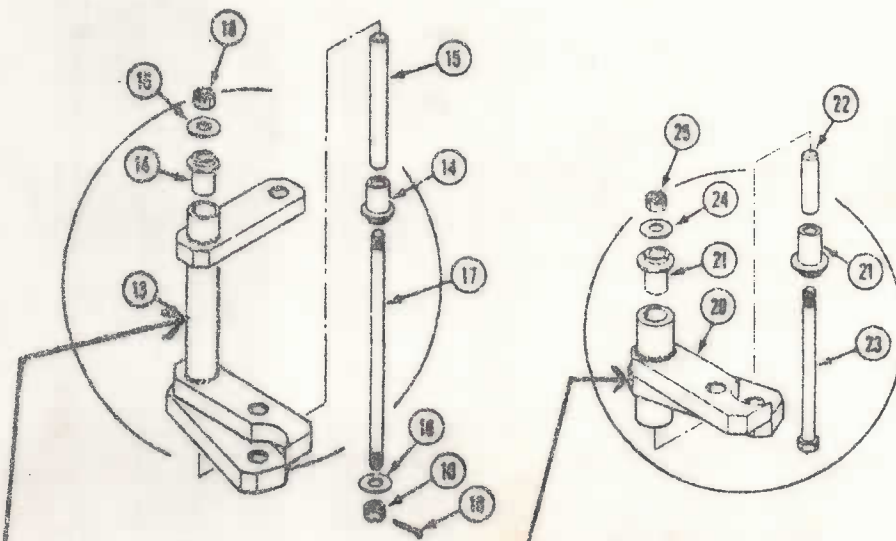
The diagram below will serve as an exploded view of the assembly to be serviced. Use the diagram as a guide and not an absolute as dimensions are not to scale. The new kit, as designed by FMC provides 2 plastic bushings per side that ride on polished and ground shafts. They are lubricated via grease used during installation of the components as well as injection thru a grease fitting you should install in the body weldment of both the bellcrank and idler assembly. During installation be sure components are torqued for proper crush so that the bushing properly rides on this new shaft.

FMC Corp. cycle life testing showed this modification to out-perform the stock design by over a 5 to 1 ratio. It was developed for use originally in the FMC transit installations.

 MODEL (S)
AFFECTED

 APPLICABLE
TO ALL
MODELS:

(2900R)



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