

SECTION 2 - CHASSIS

MERCURY

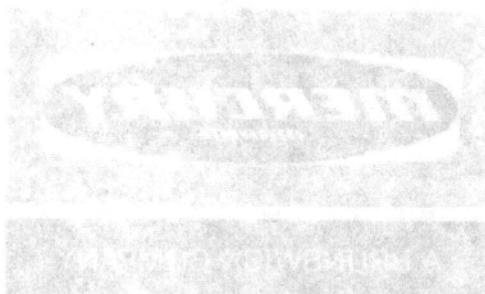
SNOWMOBILES

PART D - CHAIN and SPROCKETS



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CHAIN and SPROCKETS

GENERAL

Adjustment, selection and replacement of the chain and sprockets are covered in this section. Sprockets consist of the

(top) driver and (bottom) drive sprocket which is splined to the front axle. The drive chain is endless and is not designed for addition, removal or repair of links.

ELEVATION INFORMATION and SPROCKET SELECTION

Different size sprockets are available to provide owners with an overall drive ratio that is best suited for a particular elevation, terrain, snow condition or temperature, thus realizing the best possible performance when one or more of these conditions is a constant factor.

The determining factor in selecting sprockets is the recommended maximum engine RPM attained when the snowmobile is operated at full throttle under normal and average conditions.

If conditions (load and/or elevation) are such that engine RPM at full throttle is lower than recommended maximum, the engine cannot deliver full horsepower. When load conditions represent normal and average conditions in which the snowmobile usually will be used, a smaller driver sprocket or larger drive sprocket (higher sprocket ratio) then must be selected to attain maximum RPM and horsepower.

CAUTION: Extreme caution must be exercised when heavy load conditions are not a factor (downhill run - light or hard packed snow) as engine RPM at full throttle easily could surpass the recommended maximum and cause possible severe internal engine damage.

The opposite of this procedure holds true if engine RPM exceeds recommended maximum.

Generally, variance in top speed of the snowmobile under heavy load conditions will be very slight regardless of which sprockets are used, as the torque sensing clutch compensates and automatically adjusts to load conditions within power range of the engine.

When operating below 2,500 ft. elevation with ideal, light load conditions (flat terrain - light or hard packed snow), lower sprocket ratios (larger driver sprocket or smaller drive sprocket) can be applied with somewhat more effect on snowmobile top speed.

STANDARD EQUIPMENT - SPECIFICATIONS

STANDARD EQUIPMENT - SPROCKETS, DRIVE CHAINS and SPROCKET RATIOS

Model	Year	Chassis Serial No.	Maximum Engine RPM	Driver Sprocket (Top)		Drive Sprocket (Bottom)		Drive Chain		Sprocket Ratio
				No. Teeth	Part No.	No. Teeth	Part No.	Pitch	Part No.	
200*	1970-71	All	5500	13	D-53498	29	D-48774	70	D-53511	2.23:1
220*	1969-70	All	5000	13	D-53498	29	D-48774	70	D-53511	2.23:1
250*	1970-71	All	5000	15 §	D-55636	29	D-48774	72	D-54915	1.93:1
Rocket*	1971-72	All	6000	11	D-54151	29	D-48774	70	D-53511	2.63:1
Lightning*	1971-72	All	6000	11	D-54151	29	D-48774	70	D-53511	2.63:1
Hurricane	1972	All	6000	15	D-59805	36	D-61347	90	D-61327	2.40:1
440 MAX	1973	3447382 and Below	6800	17	D-63573	36	D-61347	92	D-62187	2.12:1
Mark I	1973	All	6000	16	D-64131	36	D-61347	90	D-61327	2.25:1
Mark II	1973	3591478 and Below	6500	17	D-63573	36	D-61347	90	D-61327	2.12:1
440 MAX	1974	3709838 and Above	7000	17	D-63573	36	D-61347	92	D-62187	2.12:1
440 S/R	1974	3795657 and Below	7000	17	D-63573	36	D-61347	92	D-62187	2.12:1
Mark II	1974-75	3787640 and Above	6500	16	D-64131	36	D-61347	90	D-61327	2.25:1
400 S/T	1974	All	8500	15	D-63318A1	34	D-67570	76	D-67580	2.27:1
340 S/R	1975	All	7000	15	D-69757-15	36	D-69758-36	92	D-69780-92	2.40:1
440 M/X	1975	4064696 and Below	7000	17	D-63573	36	D-61347	92	D-62187	2.12:1
440 M/X	1975	4064697 and Above	7000	17	D-69757-15	36	D-69758-36	92	D-69780-92	2.12:1
440 S/R	1975	4067797 and Above	7000	18	D-69757-18	28	D-69758-28	88	D-69780-88	1.56:1
440 T/T	1975	4210249 and Below	7000	17	D-63573	34	D-67570	78	D-71483	2.00:1
340 S/T	1975	4207499 and Below	8250	14	D-64684	34	D-67570	76	D-69514	2.43:1
440 S/T	1975	4206249 and Below	8250	15	D-63318A1	34	D-67570	76	D-69514	2.27:1
340 T/T	1976	All	7000	17	D-69757-17	34	D-67570	78	D-71483	2.00:1
440 T/T	1976	4347125 and Above	7000	18	D-69757-18	34	D-67570	78	D-71483	1.89:1

* Equipped with single roller chain and sprockets.

§ A 15-tooth sprocket was standard on all 250 Models, CHASSIS Serial No. 2748517 and up. CHASSIS Serial No. 2743221 thru 2748516 were equipped with a 16-tooth sprocket.

STANDARD EQUIPMENT - CARBURETOR FIXED HIGH SPEED JET/METERING ROD SIZES

Model	Year	Chassis Serial No.	Fixed High Speed Jet/Metering Rod Size	Part No.
200	1970-71	All	Adjustable	N.A.
220	1969-70	All	.067"	C-1399-1467
250	1970-71	All	.069"	C-1399-1962
Rocket	1971-72	All	Adjustable	N.A.
Lightning	1971-72	All	Adjustable	N.A.
Hurricane	1972	All	.084"	C-1399-3517
440 MAX	1973	3447382 and Below	.082"	C-1399-3518
Mark I	1973	All	.0785"	C-1399-3520
Mark II	1973	3591478 and Below	.064" *	C-1399-4216
440 MAX ●	1974	3709838 and Above	.065"	C-1395-5389
440 S/R ●	1974	3795657 and Below	.065"	C-1395-5389
Mark II ●	1974-75	3787640 and Above	.081" ■	C-1395-5451
400 S/T	1974	All	No. 290	C-1395-5508
340 S/R	1975	All	Adjustable	N.A.
440 M/X	1975	All	Adjustable	N.A.
440 S/R	1975	4067797 and Above	Adjustable	N.A.
340 S/T	1975	4207499 and Below	No. 220 No. 320 ▲	C-1393-5875
440 S/T	1975	4206249 and Below	No. 220 No. 320 ▲	C-1393-5875
440 T/T	1975-76	All	No. 270	C-1393-5511
340 T/T	1976	All	No. 200	C-1393-5506
				C-1393-6147

● Walbro carburetor with fixed high speed metering rod

N.A. - Not Applicable

* Standard in all modified carburetors. (Refer to Snowmobile Service Bulletin No. 73-7.)

■ Standard in all modified carburetors. (Refer to Snowmobile Service Bulletin No. 76-11.)

▲ No. 220 and No. 320 jets were supplied with each snowmobile. Fixed jets are used in conjunction with adjustable high speed mixture needles.

ELEVATION CHARTS

Information in the following elevation charts is general in nature and intended only as a guide to aid in determining the proper sprocket ratio. When selecting sprocket(s), keep in mind that many factors, such as load, terrain, snow condition and temperature, have a marked effect on snowmobile performance which could result in slight deviations from this guide.

After installing different size sprocket(s) and/or carburetor jet, maximum RPM MUST BE checked under normal operating conditions. Engine speed (RPM) should be checked with an

accurate tachometer and must fall within the recommended limits. If engine speed is too low, try a higher sprocket ratio (smaller driver sprocket or larger drive sprocket). Likewise, if engine speed is high, try a lower sprocket ratio (larger driver sprocket or smaller drive sprocket).

IMPORTANT: For operation at or above 5000 feet elevation on 220 or 250 models ONLY, increase maximum spark advance from 15° to 18° BTDC. DO NOT increase maximum spark advance on any other models.

200 MODEL

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)-5000' (1525m)		5000' (1525m)-7500' (2287m)		7500' (2287m)-10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor Jet	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.
Drive Chain	70	D-53511	70	D-53511	70	D-53511	68	D-60333	68	D-60333
Driver Sprocket	13	D-53498	11	D-54151	10	D-62067 ^①	9	D-60329 ^②	9	D-60329 ^②
Drive Sprocket	29	D-48774	29	D-48774	29	D-48774	29	D-48774	29	D-48774
Sprocket Ratio	2.23:1		2.63:1		2.90:1		3.22:1		3.22:1	

220 MODEL

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)-5000' (1525m)		5000' (1525m)-7500' (2287m)		7500' (2287m)-10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor Jet	.067"	C-1399-1467	.063"	C-1399-1463	.063"	C-1399-1463	.063"	C-1399-1463	.061"	C-1399-1461
Drive Chain	70	D-53511	70	D-53511	70	D-53511	70	D-53511	70	D-53511
Driver Sprocket	13	D-53498	13	D-53498	11	D-54151	11	D-54151	11	D-54151
Drive Sprocket	29	D-48774	29	D-48774	29	D-48774	29	D-48774	29	D-48774
Sprocket Ratio	2.23:1		2.23:1		2.63:1		2.63:1		2.63:1	

250 MODEL ^③

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)-5000' (1525m)		5000' (1525m)-7500' (2287m)		7500' (2287m)-10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor Jet	.069"	C-1399-1962	.065"	C-1399-1465	.065"	C-1399-1465	.063"	C-1399-1463	.061"	C-1399-1461
Drive Chain	72	D-54915	70	D-53511	70	D-53511	70	D-53511	70	D-53511
Driver Sprocket	15	D-55636	13	D-53498	11	D-54151	11	D-54151	11	D-54151
Drive Sprocket	29	D-48774	29	D-48774	29	D-48774	29	D-48774	29	D-48774
Sprocket Ratio	1.93:1		2.23:1		2.63:1		2.63:1		2.63:1	

ROCKET ④

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)- 5000' (1525m)		5000' (1525m)- 7500' (2287m)		7500' (2287m)- 10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor Jet	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.
Drive Chain	70	D-53511	70	D-53511	68	D-60333	68	D-60333	68	D-60333
Driver Sprocket	11	D-54151	10	D-62067①	9	D-60329②	9	D-60329②	9	D-60329②
Drive Sprocket	29	D-48774	29	D-48774	29	D-48774	29	D-48774	29	D-48774
Sprocket Ratio	2.63:1		2.90:1		3.22:1		3.22:1		3.22:1	

LIGHTNING ④

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)- 5000' (1525m)		5000' (1525m)- 7500' (2287m)		7500' (2287m)- 10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor Jet	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.
Drive Chain	70	D-53511	70	D-53511	70	D-53511	68	D-60333	68	D-60333
Driver Sprocket	11	D-54151	10	D-62067①	10	D-62067①	9	D-60329②	9	D-60329②
Drive Sprocket	29	D-48774	29	D-48774	29	D-48774	29	D-48774	29	D-48774
Sprocket Ratio	2.62:1		2.90:1		2.90:1		3.22:1		3.22:1	

HURRICANE

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)- 5000' (1525m)		5000' (1525m)- 7500' (2287m)		7500' (2287m)- 10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor Jet	.084"	C-1399-3517	.080"	C-1399-3519	.080"	C-1399-3519	.0785"	C-1399-3520	.076"	C-1399-3796
Drive Chain	90	D-61327	90	D-61327	92	D-62187	92	D-62187	92	D-62187
Driver Sprocket	15	D-59805	15	D-59805	15	D-59085	14	D-64684	14	D-64684
Drive Sprocket	36	D-61347	36	D-61347	40	D-62272⑤	40	D-62272⑤	40	D-62272⑤
Sprocket Ratio	2.40:1		2.40:1		2.66:1		2.90:1		2.90:1	

440 MAX (Chassis Serial No. 3447382 and Below)

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)- 5000' (1525m)		5000' (1525m)- 7500' (2287m)		7500' (2287m)- 10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor Jet	.0785"	C-1399-3520	.070"	C-1399-3811	.068"	C-1399-4214	.066"	C-1399-4215	.064"	C-1399-4216
Drive Chain	92	D-62187	92	D-62187	92	D-62187	92	D-62187	92	D-62187
Driver Sprocket	17	D-63573	15	D-63318A1	15	D-63318A1	14	D-64684	14	D-64684
Drive Sprocket	36	D-61347	36	D-61347	38	D-64685	38	D-64685	38	D-64685
Sprocket Ratio	2.12:1		2.40:1		2.53:1		2.75:1		2.75:1	

MARK I

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)- 5000' (1525m)		5000' (1525m)- 7500' (2287m)		7500' (2287m)- 10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor Jet	.0785"	C-1399-3520	.074"	C-1399-3794	.072"	C-1399-3795	.070"	C-1399-3811	.068"	C-1399-4214
Drive Chain	90	D-61327	90	D-61327	92	D-62187	92	D-62187	92	D-62187
Driver Sprocket	16	D-64131	15	D-63318A1	15	D-63318A1	14	D-64684	14	D-64684
Drive Sprocket	36	D-61347	36	D-61347	40	D-62272 (5)	40	D-62272 (5)	40	D-62272 (5)
Sprocket Ratio	2.25:1		2.40:1		2.67:1		2.86:1		2.86:1	

MARK II (Chassis Serial No. 3591478 and Below)

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)- 5000' (1525m)		5000' (1525m)- 7500' (2287m)		7500' (2287m)- 10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor Jet	.064"	C-1399-4216	.056"	C-1399-5213	.054"	C-1399-5225	.052"	C-1399-5226	.050"	C-1399-5227
Drive Chain	90	D-61327	90	D-61327	92	D-62187	92	D-62187	92	D-62187
Driver Sprocket	17	D-63573	15	D-63318A1	15	D-63318A1	14	D-64684	14	D-64684
Drive Sprocket	36	D-61347	36	D-61347	40	D-62272 (5)	40	D-62272 (5)	40	D-62272 (5)
Sprocket Ratio	2.12:1		2.40:1		2.67:1		2.86:1		2.86:1	

440 MAX and 440 M/X (Chassis Serial No. 3709838 thru 4064696)

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)- 5000' (1525m)		5000' (1525m)- 7500' (2287m)		7500' (2287m)- 10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor	.065"	C-1395-5389	.071"	C-1395-5447	.073"	C-1395-5449	.081"	C-1395-5451	.083"	C-1395-5448
Metering Rod *										
Drive Chain	92	D-62187	92	D-62187	92	D-62187	92	D-62187	92	D-62187
Driver Sprocket	17	D-63573	15	D-63318A1	15	D-63318A1	14	D-64684	14	D-64684
Drive Sprocket	36	D-61347	36	D-61347	38	D-64685	38	D-64685	38	D-64685
Sprocket Ratio	2.12:1		2.40:1		2.53:1		2.71:1		2.71:1	

* 440 M/X uses an adjustable high speed mixture needle.

440 M/X (Chassis Serial No. 4064697 and Above)

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)- 5000' (1525m)		5000' (1525m)- 7500' (2287m)		7500' (2287m)- 10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.
High Speed										
Drive Chain	92	D-69780-92	92	D-69780-92	92	D-69780-92	92	D-69780-92	92	D-69780-92
Driver Sprocket	17	D-69757-17	15	D-69757-15	15	D-69757-15	14	D-64684	14	D-64684
Drive Sprocket	36	D-69758-36	36	D-69758-36	38	D-64685	38	D-64685	38	D-64685
Sprocket Ratio	2.12:1		2.40:1		2.54:1		2.71:1		2.71:1	

440 S/R (Chassis Serial No. 3795657 and Below)

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)- 5000' (1525m)		5000' (1525m)- 7500' (2287m)		7500' (2287m)- 10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor										
Metering Rod	.065"	C-1395-5389	.071"	C-1395-5447	.073"	C-1395-5449	.081"	C-1395-5451	.083"	C-1395-5448
Drive Chain	92	D-62187	92	D-62187	92	D-62187	92	D-62187	92	D-62187
Driver Sprocket	17	D-63573	16	D-64131	15	D-63318A1	14	D-64684	14	D-64684
Drive Sprocket	36	D-61347	36	D-61347	38	D-64685	38	D-64685	38	D-64685
Sprocket Ratio	2.12:1		2.25:1		2.53:1		2.71:1		2.71:1	

MARK II (Chassis Serial No. 3787640 and Above)

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)- 5000' (1525m)		5000' (1525m)- 7500' (2287m)		7500' (2287m)- 10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor										
Metering Rod	.077"	C-1395-5445	.079"	C-1395-5450	.081"	C-1395-5451	.083"	C-1395-5448	.085"	C-1395-5456
Drive Chain	90	D-61327	90	D-61327	92	D-62187	92	D-62187	92	D-62187
Driver Sprocket	16	D-64131	15	D-63318A1	15	D-63318A1	14	D-64684	14	D-64684
Drive Sprocket	36	D-61347	36	D-61347	40	D-62272 (5)	40	D-62272 (5)	40	D-62272 (5)
Sprocket Ratio	2.25:1		2.40:1		2.67:1		2.86:1		2.86:1	

340 S/R

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)- 5000' (1525m)		5000' (1525m)- 7500' (2287m)		7500' (2287m)- 10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor										
High Speed	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.
Drive Chain	92	D-69780-92	92	D-69780-92	92	D-69780-92	92	D-69780-92	92	D-69780-92
Driver Sprocket	15	D-69757-15	14	D-64684	13	D-68439	12	D-69757-12	12	D-69757-12
Drive Sprocket	36	D-69758-36	36	D-69758-36	38	D-64685	38	D-64685	38	D-64685
Sprocket Ratio	2.40:1		2.57:1		2.92:1		3.17:1		3.17:1	

440 S/R (Chassis Serial No. 4067797 and Above)

Description	Elevation									
	Up to 2500' (762.5m)		2500' (762.5m)- 5000' (1525m)		5000' (1525m)- 7500' (2287m)		7500' (2287m)- 10000' (3050m)		10000' (3050m) and Up	
	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.	Size	Part No.
Carburetor	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.	Adj.	N.A.
High Speed	88	D-69780-88	88	D-69780-88	92	D-69780-92	92	D-69780-92	92	D-69780-92
Drive Chain	18	D-69757-18	15	D-69757-15	17	D-69757-17	15	D-69757-15	14	D-64684
Driver Sprocket	28	D-69758-28	28	D-69758-28	36	D-69758-36	36	D-69758-36	36	D-69758-36
Sprocket Ratio	1.56:1		1.87:1		2.12:1		2.40:1		2.57:1	

N.A. = Not Applicable

Adj. = Adjustable

- ① Smaller diameter jackshaft is required; available in a Sprocket Kit (D-62067A1) which includes jackshaft and driver sprocket.
- ② Smaller diameter jackshaft is required; available in a Sprocket Kit (D-60330A2) which includes jackshaft, driver sprocket and drive chain.
- ③ 14-tooth (D-56025) and 16-tooth (D-54902) driver sprockets also are available.
- ④ On Rocket and/or Lightning models above CHASSIS Serial No. 2985933 (1971 only), replace original drive sheave roller weights with Roller Weight Kit (D-61798) for maximum performance above 5000 ft. (1,524m) elevation.
- ⑤ Available in a Sprocket Kit (D-62333A1) which includes drive chain (D-62187), driver sprocket (D-62272) and .080" carburetor fixed jet.

"TWISTER" MODELS

The following chart outlines optional equipment available for high altitude operation of "stock" Mercury Trail Twister (T/T) and Sno-Twister (S/T) Snowmobiles.

To realize and maintain peak snowmobile performance when

operating a T/T or S/T Snowmobile at elevations of 5000' (1524m) or above, it is important that ALL of the modifications and/or adjustments, specified for a particular model, be performed.

OPTIONAL HIGH ALTITUDE EQUIPMENT

	Model	Year	Carburetor	Drive Sheave	Driver (Top) Sprocket	
			Kit	Kit	Standard	Altitude
	400 S/T	1974	Opt. Main Jets	None	(15-T) D-63318A1	(13-T) D-68439
①	440 T/T	1975	D-1393-5874A1	None	(17-T) D-63573	(14-T) D-64684
②	340 S/T	1975	D-1393-5872A1	D-71712A1	(14-T) D-64684	(12-T) D-69757A12
③	440 S/T	1975	D-1393-5854A1	D-71712A1	(15-T) D-63318A1	(13-T) D-68439
	340 T/T	1976	D-1393-6150A1	D-74124A1	(17-T) D-69757A17	(14-T) D-64684
④	440 T/T	1976	D-1393-5874A2	D-71716A1	(18-T) D-69757A18	(15-T) D-63318A1
	250 S/T	1976	⑦	D-71712A2	(14-T) D-69757A14	(12-T) D-69757A12
⑤	340 S/T	1976	⑦	D-71712A2	(15-T) D-69757A15	(13-T) D-68439
⑥	440 S/T	1976	⑦	D-71712A2	(16-T) D-69757A16	(14-T) D-64684

■ - One (1) kit per snowmobile required.

● - Use D-69514 drive drain (76 pitch length) with 12-thru-15 tooth sprockets;
Use D-71483 drive drain (78 pitch length) with 16-thru-18 tooth sprockets.

① - Below CHASSIS Serial No. 4210250

② - Below CHASSIS Serial No. 4207500

③ - Below CHASSIS Serial No. 4206250

④ - Above CHASSIS Serial No. 4347124

⑤ - Above CHASSIS Serial No. 4495559

⑥ - Above CHASSIS Serial No. 4349324

⑦ - Refer to 1976 S/T "Operation and Maintenance Manual" (C-90-74530), Page 24

MODELS 200-220-250, ROCKET and LIGHTNING

DRIVE CHAIN TENSION

To check chain tension, remove the chain inspection cover (Figure 3) and press on the side of the chain. Chain tension is correct when the chain is not so tight as to be preloaded, and a slight deflection (slack in chain) is noticeable when pressing on the side of the chain.

NOTE: Over-tight tension on chain can cause premature wear on sprockets and chain. Too much slack in chain could cause chain to "jump" teeth on the sprockets, with subsequent damage to sprockets, chain and/or chaincase.

Chain tension also can be checked with chaincase cover removed. Total slack in the drive chain (Figure 1) must be $\frac{1}{4}$ " (plus/minus $\frac{1}{16}$ ") -- $\frac{1}{8}$ " to each side of centerline of chain. Place a scale as shown in Figure 1.

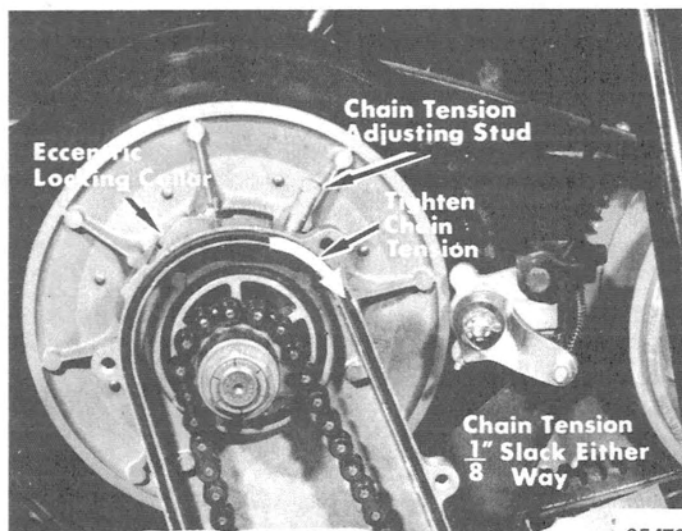
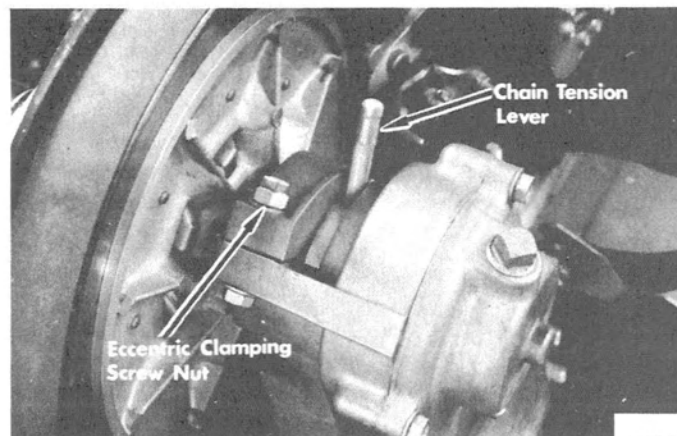


Figure 1. Measuring Chain Slack



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Figure 2. Adjusting Chain Tension

If required, adjust chain tension as follows:

1. Loosen eccentric clamping screw and nut. (Figure 2)
2. Tighten chain by moving tension lever toward rear of vehicle for 220, 250, Rocket and Lightning Models. Tighten chain tension on 200 Models by moving tension lever toward front of vehicle. Move tension lever until proper chain tension is obtained.
3. Torque eccentric clamping screw and nut to 14 ft. lbs.

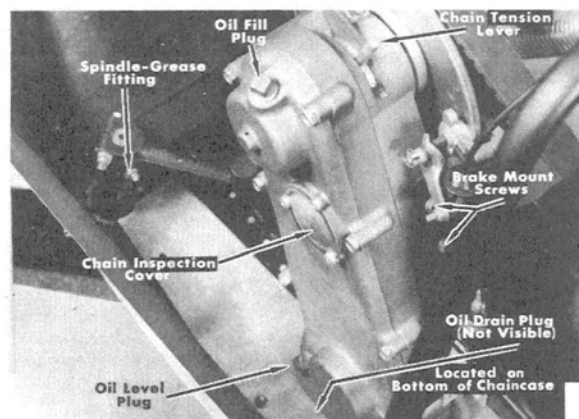
CAUTION: Failure to adhere to recommended torque can result in breakage of chaincase at clamping screw boss.

4. If tension lever has been rotated completely to rear of slot in chaincase housing (Figure 2), and recommended chain tension cannot be obtained, remove tension lever and reinsert it at front of slot where another hole in eccentric will have appeared.
5. Refer to "Brake Mount Adjustment", Section 7 "Miscellaneous" - Part A.

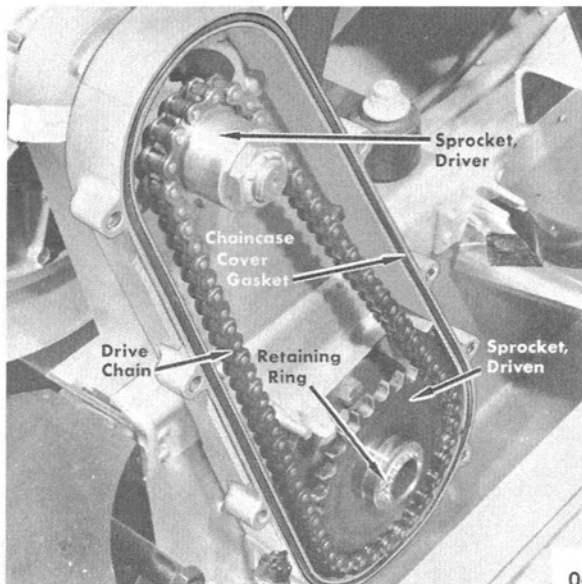
SPROCKET and DRIVE CHAIN REPLACEMENT

1. Remove drain plug from bottom of chaincase (Figure 3) and drain all lubricant, then remove chaincase cover.
2. Loosen chain tension by reversing procedures outlined in "Drive Chain Tension", preceding, and remove tension lever from eccentric.
3. Remove retaining clip from front drive shaft and remove drive sprocket from shaft which permits removal of chain. (Figure 4)

Figure 3. Chaincase Assembly



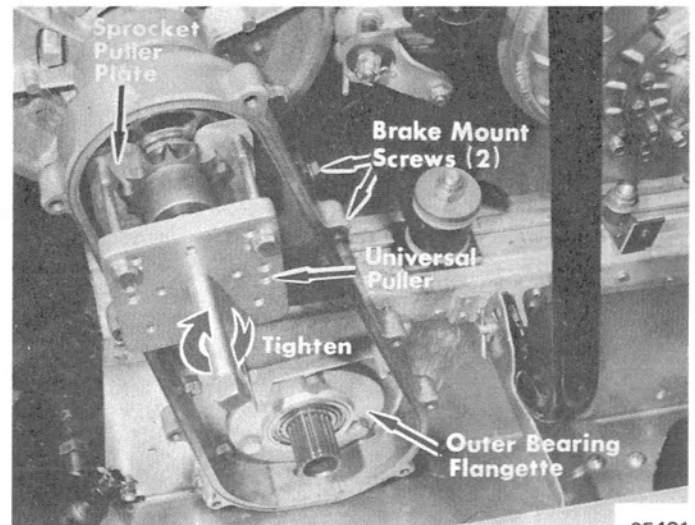
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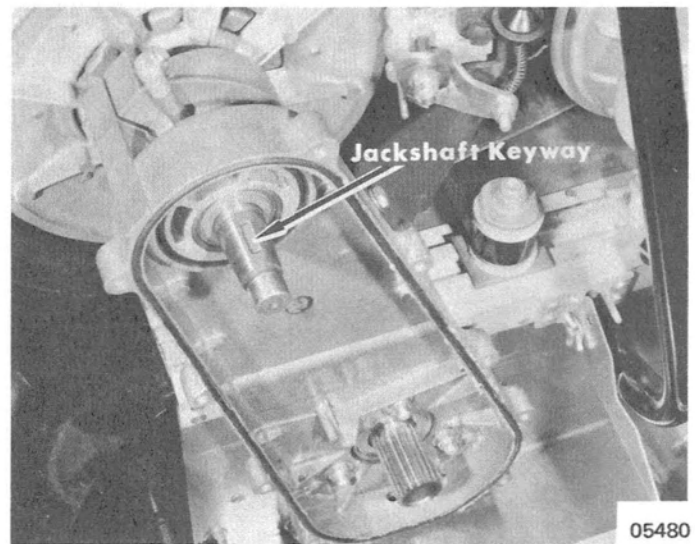
Figure 4. Drive Chain

4. Apply brake and remove driver sprocket retaining nut.
5. Remove driver sprocket with Puller Plate (C-91-58164) and Universal Puller (C-91-25733A2). (Figure 5)
6. Place new driver sprocket on jackshaft and align jackshaft key (Figure 6) with sprocket keyway.
7. Apply brake and torque retaining nut to specifications.
8. Install new chain and drive sprocket and secure sprocket with clip on jackshaft.
9. Install tension lever and adjust chain to proper tension as outlined in "Drive Chain Tension", preceding.
10. Install a new chaincase cover gasket, if necessary. Apply a thin coat of Multipurpose Lubricant (C-92-49588) to gasket in position on chaincase while cover is being installed. Reinstall cover, tightening screws evenly to specifications.
11. Reinstall drain plug and fill chaincase to lower edge of oil level hole in chaincase cover with Automatic Transmission Fluid (ATF) type A, AA, or Dextron.



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Figure 5. Driver Sprocket Removal



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Figure 6. Jackshaft Keyway

HURRICANE, MARK I and MARK II MODELS

DRIVE CHAIN TENSION

Drive chain tension should be checked after the first 10 hours of operation and every 25 hours of operation thereafter.

Chain tension is correct when approximately 1/4" (plus/minus 1/8") free travel or "backlash" of the driven sheave assembly (Figure 1) is present. Adjust chain tension as follows:

1. Loosen idler retaining nut "A" and idler adjustment nut "B" on inside of chaincase. (Figure 2) DO NOT remove

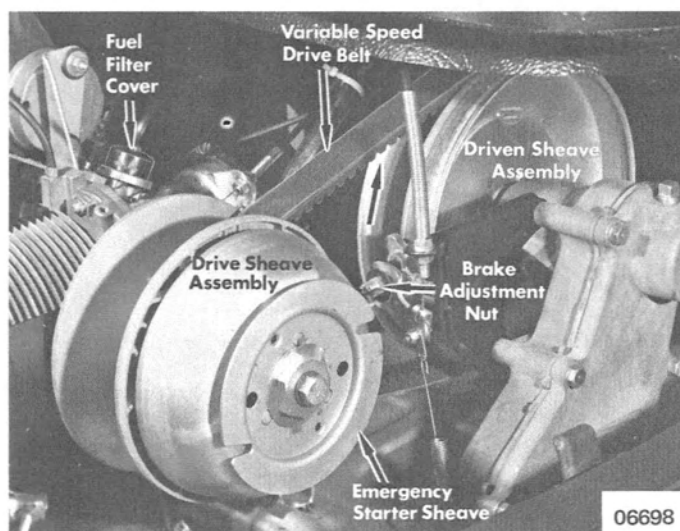


Figure 1. Driven Sheave

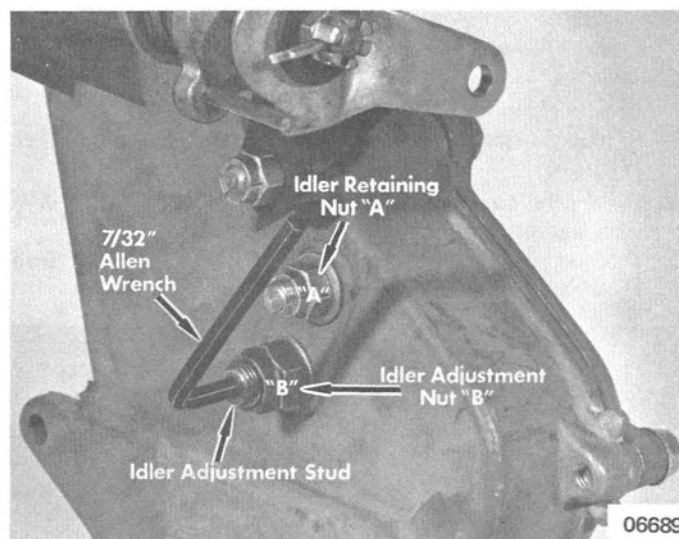


Figure 2. Chain Tension Adjustment

2. Insert a 7/32" allen wrench into adjustment stud. Rotate stud (when viewed from left side of snowmobile) counter-clockwise to increase tension, clockwise to decrease tension, until specified driven sheave "backlash" is obtained.
3. Secure idler retaining nut "A", then idler adjustment nut "B".

DRIVE CHAIN REPLACEMENT

1. Remove drain plug from bottom of chaincase and drain all lubricant, then remove chaincase cover.
2. Loosen chain tension by reversing procedures outlined in "Drive Chain Tension", preceding.
3. Remove jackshaft nut from jackshaft (Figure 3) and remove driver sprocket and chain from jackshaft. Remove chain from drive sprocket.

NOTE: Driver sprocket on Mark I and Mark II Models is secured to jackshaft with a retaining screw.

4. Inspect both sprockets for wear and replace if necessary.
5. Install new chain and reinstall sprocket and nut on jackshaft. Torque sprocket retainer to specification.
6. Adjust chain to proper tension as outlined in "Drive Chain Tension".
7. Install a new chaincase cover gasket, if necessary. Apply a thin coat of Multipurpose Lubricant (C-92-49588) to gasket in position on chaincase while cover is being installed. Reinstall cover, tightening screws evenly to specifications.
8. Reinstall drain plug and fill chaincase to lower edge of oil level hole in chaincase cover with Automatic Transmission Fluid (ATF) type A, AA, or Dextron.

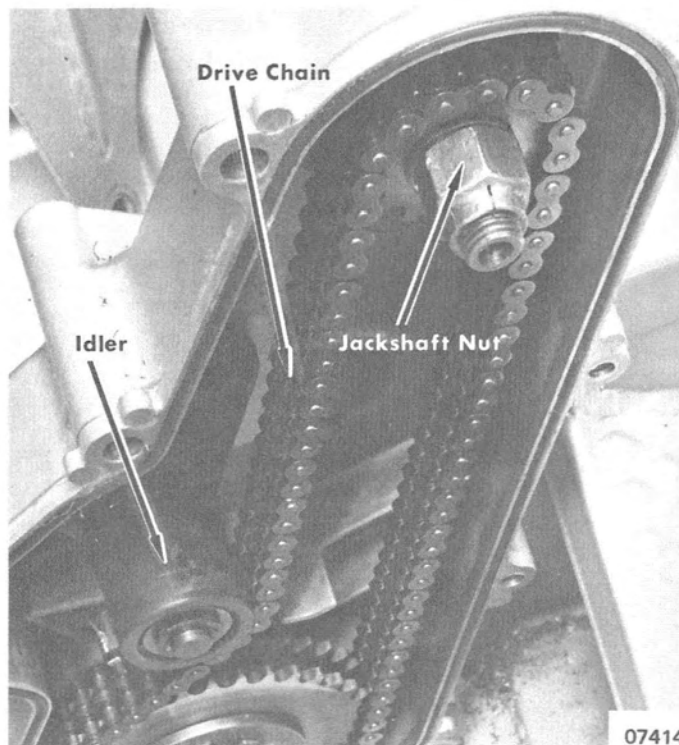


Figure 3. Chain and Jackshaft Nut



SPROCKET REPLACEMENT

NOTE: On models equipped with a speedometer, remove speedometer angle drive and drive key from chaincase.

1. Drain lubricant from chaincase and remove chaincase cover.
2. Relieve chain tension.
3. Remove attaching nut or bolt from driver sprocket. (Figure 4)
4. Bend tabs on tab washer down and remove special drive sprocket attaching screw. (Figure 4)
5. Remove driver sprocket, drive sprocket and chain from chaincase as an assembly. (Figure 5)

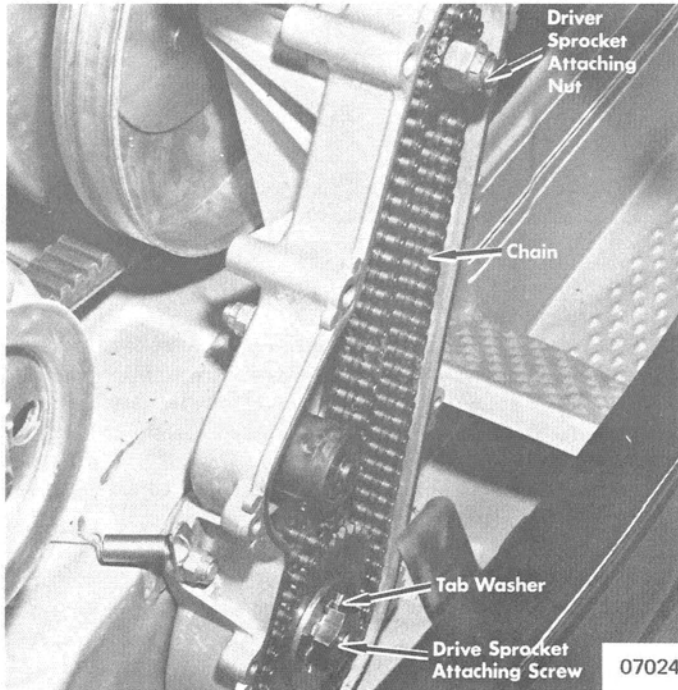


Figure 4. Driver Sprocket, Drive Sprocket and Chain

6. Replace driver sprocket, drive sprocket and chain as necessary.
7. Install driver sprocket, drive sprocket and chain on driven shaft and axle as an assembly.

NOTE: Shoulder on driver sprocket **MUST** be toward driven sheave. (Figure 5)

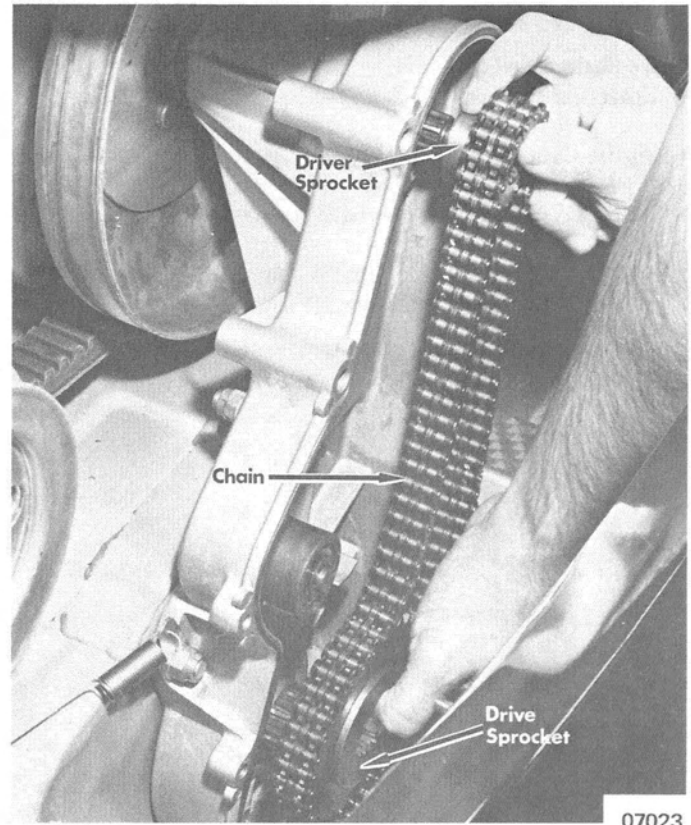


Figure 5. Removing/Replacing Driver Sprocket, Drive Sprocket and Chain

8. Secure drive and driver sprockets and torque sprockets to specifications. (Refer to "Specifications" Section 8.)
9. Adjust chain tension as outlined preceding.
10. Install a new chaincase cover gasket, if necessary. Apply a thin coat of Multipurpose Lubricant (C-92-63250) to gasket. Reinstall chaincase cover, tightening bolts evenly to specifications. (Refer to "Specifications" Section 8.)

NOTE: On models equipped with a speedometer, install speedometer drive key and angle drive in chaincase.

11. Reinstall chaincase drain plug and fill chaincase to lower edge of oil level hole in chaincase cover with Automatic Transmission Fluid (ATF) type A, AA or Dextron.

MAX, M/X and S/R MODELS (TYPICAL)

DRIVE CHAIN TENSION

NOTE: Over-tight drive chain tension can cause premature wear to sprockets and chain. Too much slack in chain could cause chain to “jump” teeth on the sprockets, with subsequent damage to sprockets, chain and/or chaincase.

Drive chain tension should be checked after the first 10 hours of operation and every 25 hours of operation thereafter.

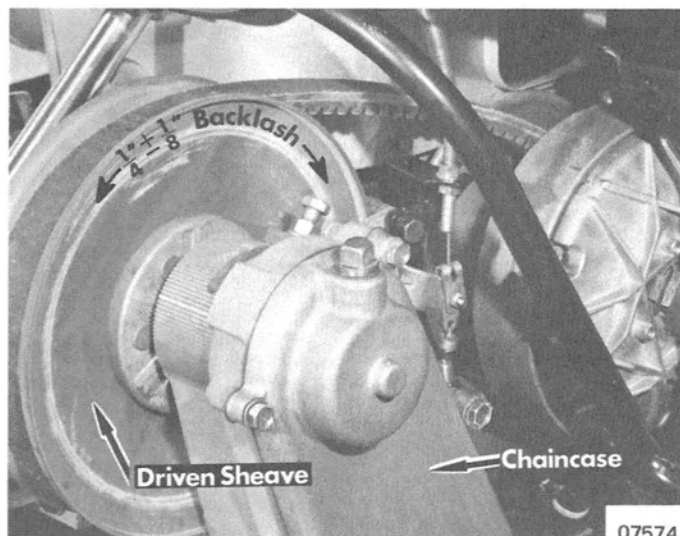


Figure 1. Chain Tension

Chain tension is correct when approximately $\frac{1}{4}$ " (6.35mm) [plus/minus $\frac{1}{8}$ " (3.2mm)] free travel or “backlash” of driven sheave assembly (Figure 1) is present. Adjust chain tension as follows:

1. Loosen locknut on chain tension screw. (Figure 2)
2. Tighten chain by moving adjusting screw in chaincase housing slot toward rear of snowmobile until recommended chain tension is obtained.

NOTE: If adjusting screw has been rotated completely to rear of slot in chaincase housing (Figure 2), and recommended chain tension cannot be obtained, remove and re-insert adjusting screw at front of slot where another hole in eccentric will have appeared.

3. Torque locknut on chain tension screw to specifications. (Refer to “Specifications” Section 8.)
4. Refer to “Brake Mount Adjustment”, Section 7 “Miscellaneous”, Part A.

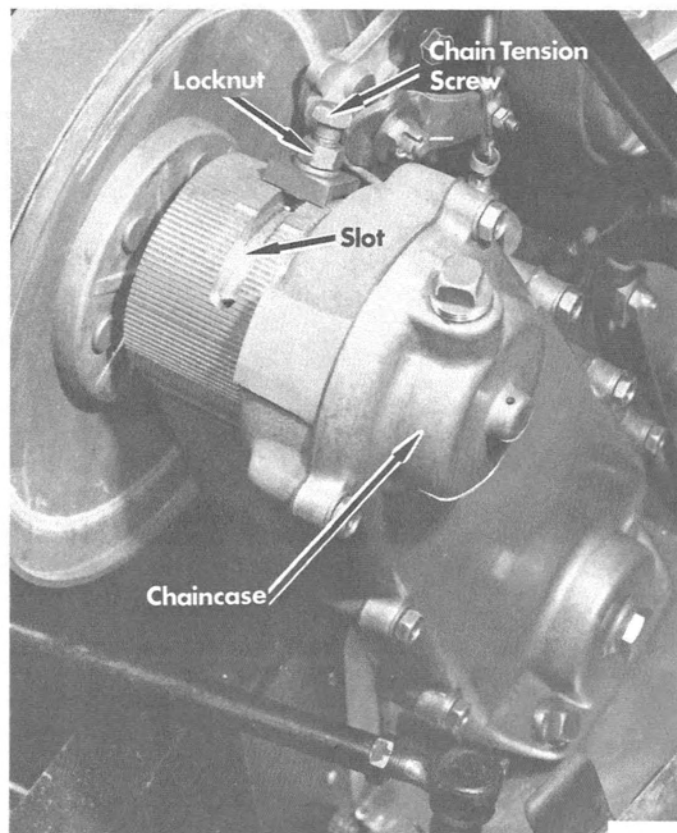


Figure 2. Tension Adjusting Screw

SPROCKET and DRIVE CHAIN REPLACEMENT

NOTE: On models equipped with a speedometer, remove speedometer angle drive and drive key from chaincase.

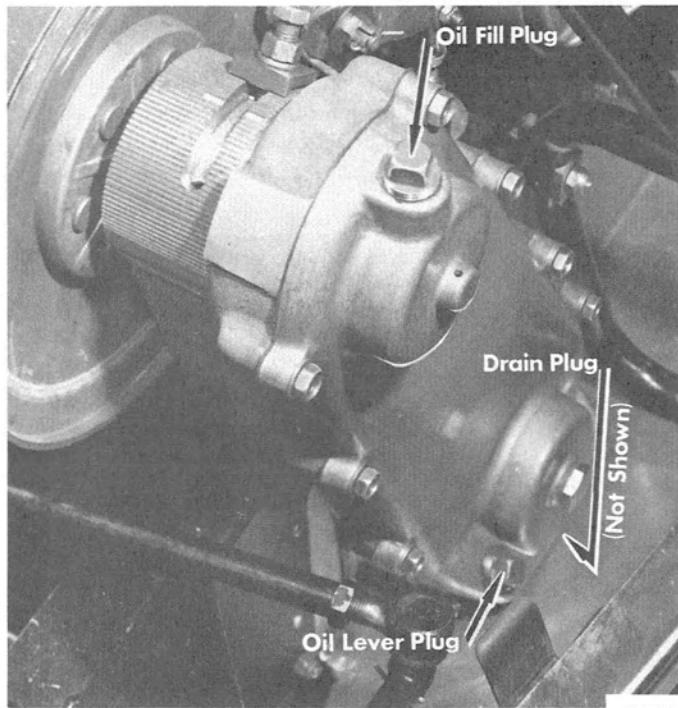


Figure 3. Chaincase Assembly

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1. Remove drain plug from bottom of chaincase (Figure 3) and drain all lubricant, then remove chaincase cover.
2. Loosen chain tension by reversing procedures outlined in "Drive Chain Tension", preceding.
3. Straighten locking tabs on tab washer (located under drive sprocket retaining screw). (Figure 4)

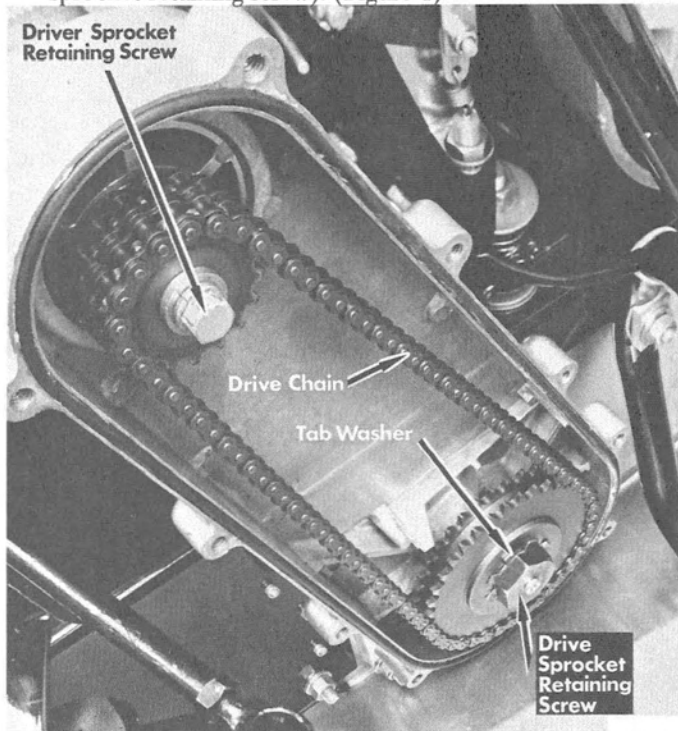


Figure 4. Drive Chain and Sprockets

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4. Apply brake and remove drive and driver sprocket retaining screws and washers. (Figure 4)

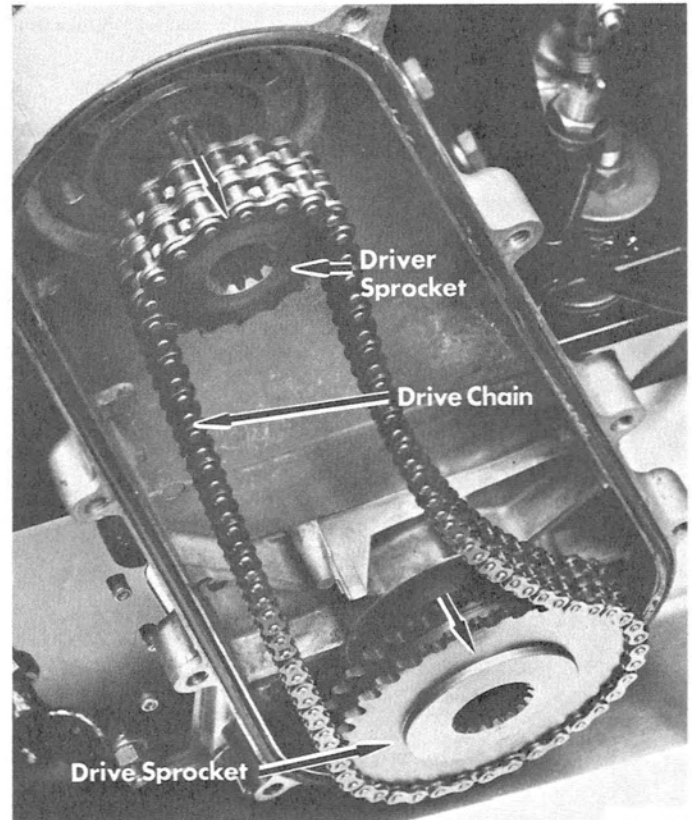


Figure 5. Removing Chain and Sprockets

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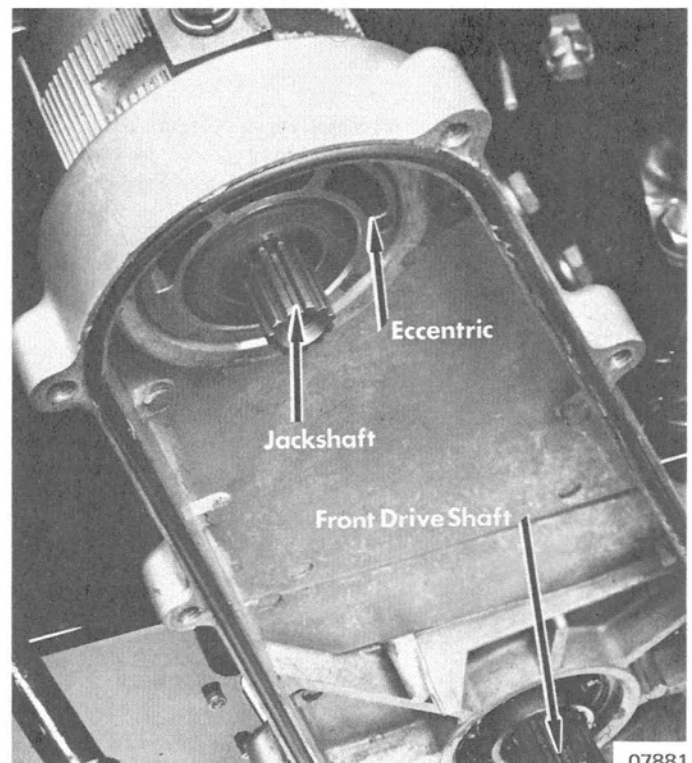


Figure 6. Jackshaft and Front Drive Shaft

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5. Remove drive sprocket, driver sprocket and drive chain as an assembly. (Figure 5) Sprockets are not press-fitted on spline shafts. (Figure 6)
6. Install new sprockets and chain as an assembly.

NOTE: Shoulder on driver sprocket MUST be toward eccentric. (Figure 6)

7. Install sprocket retaining screws and washers.
8. Apply brake and torque retaining screws to specifications. (Refer to "Specifications" Section 8.)
9. Bend tabs on tab washer against drive sprocket retaining screw.
10. Adjust drive chain to proper tension as outlined in "Drive

Chain Tension", preceding.

11. Install a new chaincase cover gasket, if necessary. Apply a thin coat of Multipurpose Lubricant (C-92-63250) to gasket in position on chaincase while cover is being installed. Reinstall cover, tightening screws evenly to specifications. (Refer to "Specifications" Section 8.)

NOTE: On models equipped with a speedometer, install speedometer drive key and angle drive in chaincase.

12. Reinstall chaincase drain plug and fill chaincase to lower edge of oil level hole (Figure 3) in chaincase cover with Automatic Transmission Fluid (ATF) Type, A, AA or Dextron.

"TWISTER" MODELS (TYPICAL)

DRIVE CHAIN TENSION

Proper drive chain tension is an important factor in reducing drive chain and sprocket wear; therefore, chain tension should be checked periodically.

Drive chain tension is correct when there is a "slight tension" on drive chain.

Drive chain should not be loose or excessively tight.

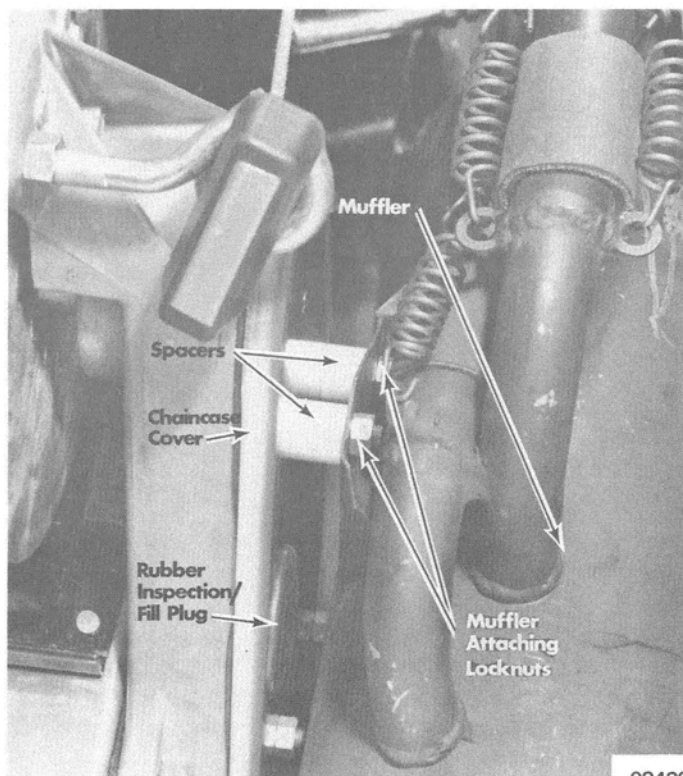
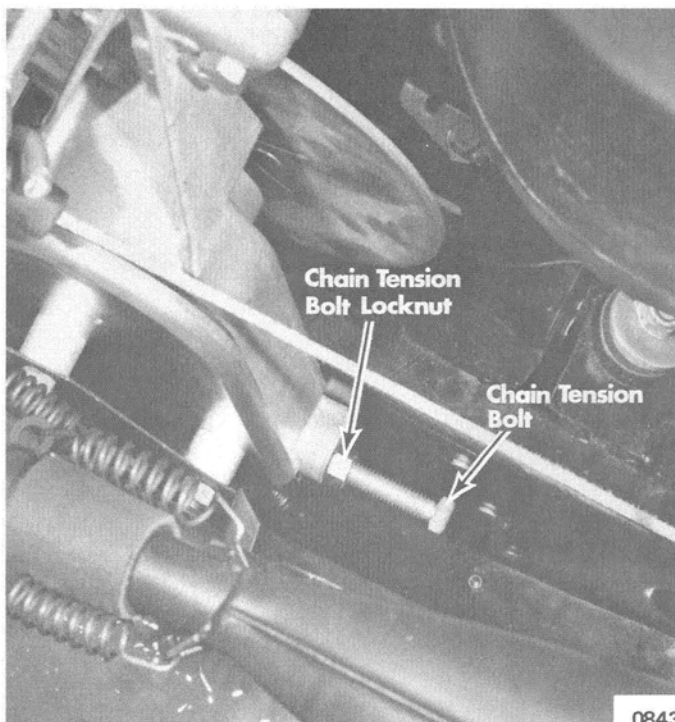


Figure 1. Chaincase Assembly

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Adjust drive chain tension as follows:

1. Remove rubber inspection/fill plug from chaincase cover. (Figure 1)

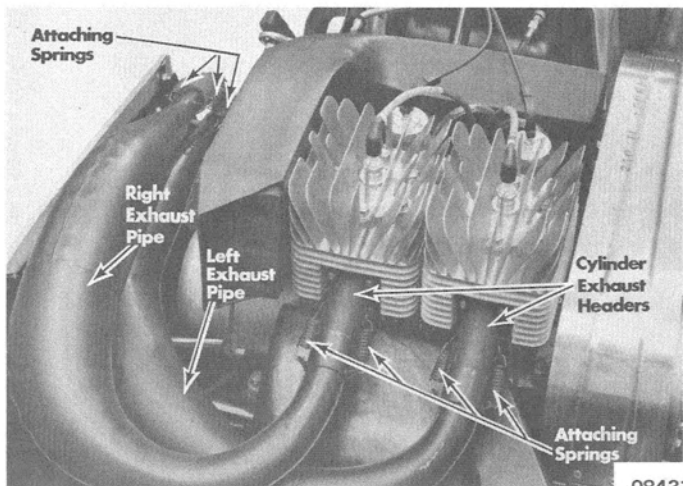


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Figure 2. Drive Chain Tension

2. Loosen chain tension bolt locknut. (Figure 2)
3. Tighten drive chain by turning chain tension bolt (Figure 2) inward (clockwise) until recommended drive chain tension is obtained. Drive chain tension can be checked by reaching thru inspection/fill hole in chaincase cover.
4. Tighten chain tension bolt locknut and reinstall rubber inspection/fill plug (Figure 1) in chaincase cover.

SPROCKET and DRIVE CHAIN REPLACEMENT



08431

Figure 3. Exhaust Pipes

1. Remove 4 attaching springs which secure exhaust pipes to cylinder exhaust headers. (Figure 3)
2. Remove 2 attaching springs which secure right exhaust pipe (No. 2 cylinder - rewind side) to muffler and pull right exhaust pipe (Figure 3) from muffler seal hose and exhaust header.
3. Remove 2 attaching springs which secure left exhaust pipe (No. 1 cylinder - PTO side) to muffler and pull left exhaust pipe (Figure 3) from muffler seal hose and exhaust header.
4. Remove bolt which secures muffler outlet pipe to chassis. Remove 2 muffler attaching locknuts, muffler and 2 spacers from upper chaincase thru bolts. (Figure 1)
5. Loosen drive chain tension by reversing procedure outlined in "Drive Chain Tension", preceding.
6. Remove 2 remaining chaincase cover locknuts and pull chaincase cover (Figure 4) from chaincase, allowing chaincase lubricant to drain.

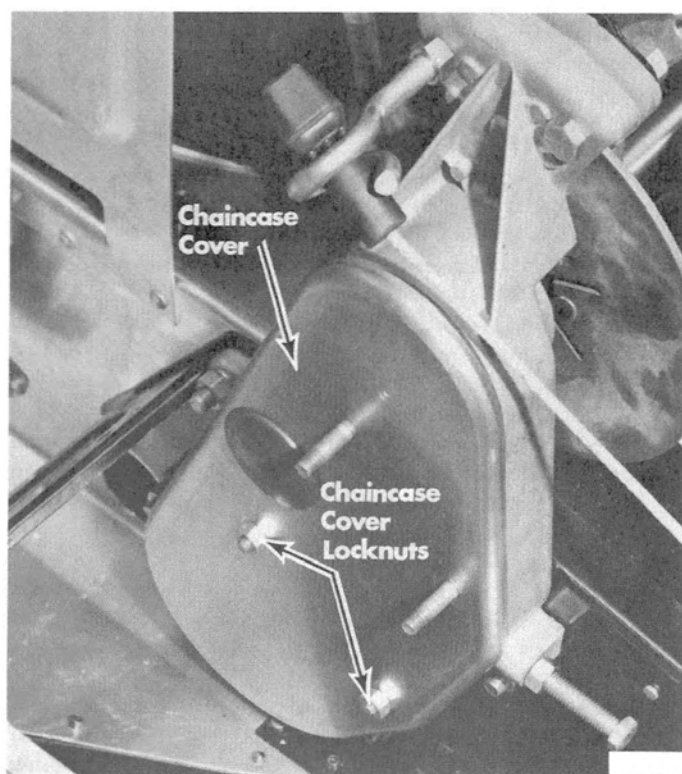


Figure 4. Chaincase Cover

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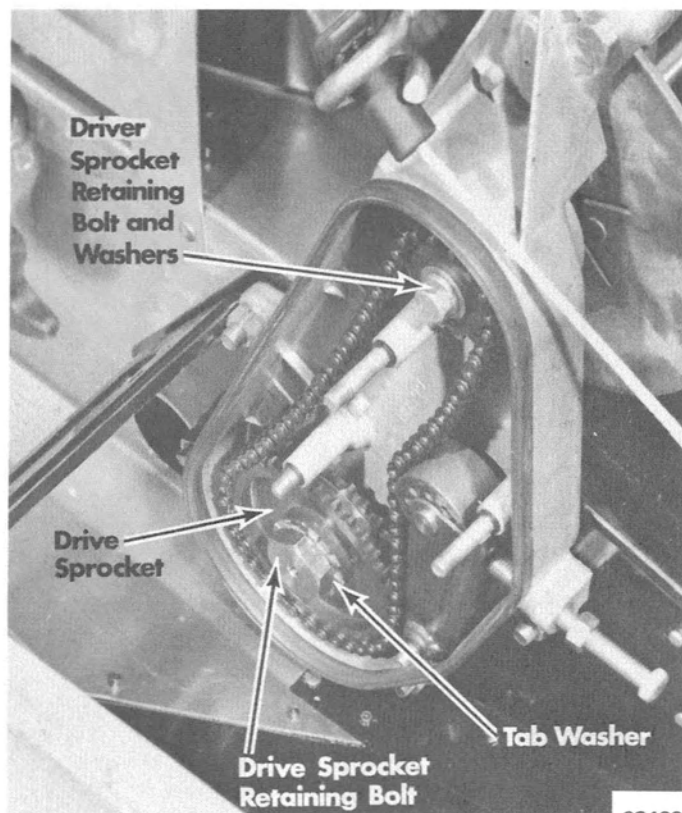


Figure 5. Drive Chain and Sprockets

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NOTE: Removal of drive sprocket (bottom sprocket - Figure 5) is not necessary if removal of only the drive chain is desired.

7. Straighten locking tabs on tab washer which secures drive sprocket retaining bolt. (Figure 5)
8. Apply brake and remove drive and driver sprocket retaining bolts and washers. (Figure 5)

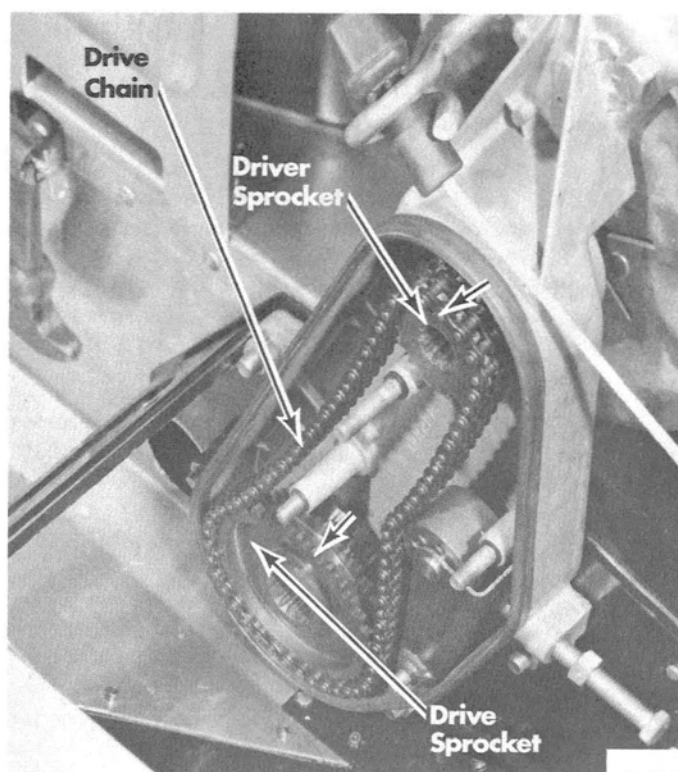


Figure 6. Removing Drive Chain and Driver Sprocket

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9. Remove driver (top) sprocket and drive chain from driven shaft. Remove drive chain from around drive (bottom) sprocket. (Figure 6)
10. Remove drive (bottom) sprocket (Figure 6) from front drive shaft.

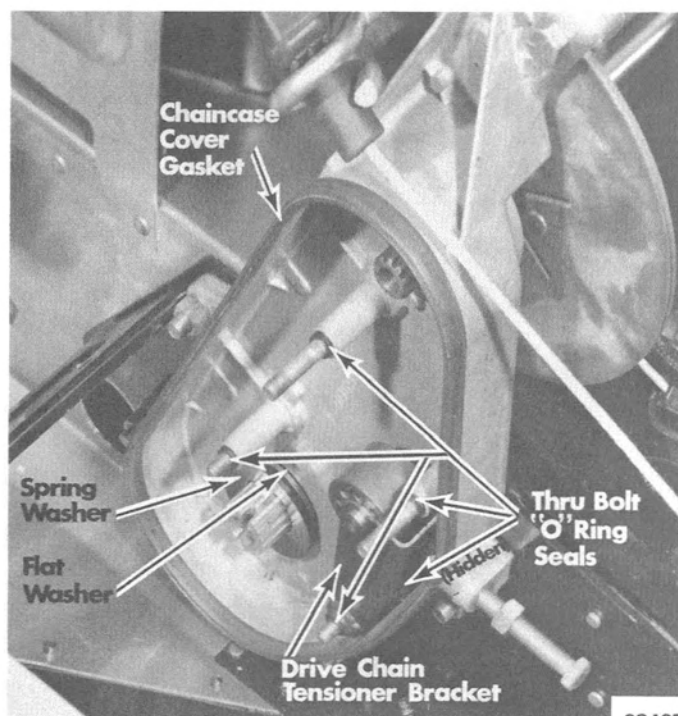


Figure 7. Driven Shaft and Front Drive Shaft

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11. Carefully inspect chaincase cover gasket, bottom chaincase oil seal and 5 thru bolt "O" ring seals (one on each side of drive chain tensioner bracket and one on remaining 3 chaincase cover bolts) for signs of leakage and replace as necessary. (Figure 7)

12. Clean all parts and inspect for damage or wear and replace as necessary.
13. Install drive sprocket (Figure 6), tab washer and sprocket retaining bolt on front drive shaft.

IMPORTANT: Drive sprocket **MUST** be installed with shoulder toward chaincase, as shown in Figure 6. If washers between drive sprocket and bottom chaincase bearing (Figure 7) were removed, install flat washer against bearing and spring washer (concave [hollowed] side toward sprocket) between flat washer and sprocket.

14. Place drive chain around drive sprocket and driver sprocket and install driver sprocket and drive chain on driven shaft. (Figure 6)

IMPORTANT: Shoulder on driver sprocket **MUST** be toward chaincase.

15. Install driver sprocket retaining washers and bolt. (Figure 5)
16. Apply brake and torque drive and driver sprocket retaining bolts to specifications. (Refer to "Specifications" Section 8.)

17. Bend locking tabs on drive sprocket tab washer (Figure 5) against drive sprocket retaining bolt. (Figure 5)
18. Apply a thin coat of Multipurpose Lubricant (C-92-63250) to chaincase cover gasket and "O" ring seals on chaincase thru bolts. (Figure 7)
19. Install chaincase cover and secure with locknuts on 2 lower thru bolts. (Figure 4) Tighten locknuts evenly to specification shown in "Specifications" Section 8.
20. Adjust drive chain to proper tension as outlined in "Drive Chain Tension", preceding.
21. With rubber inspection/fill plug (Figure 1) removed from chaincase cover, refill chaincase with 3 ounces (89cc) of automatic transmission fluid (ATF) type A, AA or Dextron. Reinstall rubber inspection/fill plug.
22. Place a spacer on 2 upper chaincase thru bolts, install muffler and secure with locknuts. (Figure 1) Tighten locknuts evenly to specifications. (Refer to "Specifications" Section 8.) Secure muffler outlet pipe to chassis with bolt and locknut.
23. Install left exhaust pipe into lower muffler seal hose and on No. 1 cylinder (PTO side) exhaust header. (Figure 3) Secure to muffler and exhaust header with 4 attaching springs.
24. Install right exhaust pipe into upper muffler seal hose and on No. 2 cylinder (rewind side) exhaust header. (Figure 3) Secure to muffler and exhaust header with 4 attaching springs.