

CHAPARRAL

1968-1974



Engine				Carburetor		Sprocket Ratio	Chain Size	Clutch		Belt Number
Model	Make	Model	Displ.	Make	Model			Make	Shaft Center	
1968										
Chaparral	Hirth	55R	300cc	Tillotson	HR8A			Salsbury 790	10 1/2	D100
Chaparral	Hirth	160R	372cc	Tillotson	HD7A			Salsbury 790	10 1/2	D100
Firebird	Hirth	170R	600cc	Tillotson	HR2A(2)			Salsbury 1195	10 1/2	D100
1969										
Chaparral	Kohler	K309-1	309cc	Tillotson	HR22A	13:36	35-2	Salsbury 790	10 1/2	D100S
Chaparral	Hirth	200R	372cc	Tillotson	HD7AX	13:36	35-2	Salsbury 790	10 1/2	D100S
Chaparral	Kohler	K618-2	618cc	Tillotson	HR35A		35-2	Salsbury 1195	10 1/2	D100FB
Firebird	Hirth	200R	372cc	Tillotson	HD7AX	13:36	35-2	Salsbury 790	10 1/2	D100S
Firebird	Hirth	170R	600cc	Tillotson	HR2A(2)		35-2	Salsbury 1195	10 1/2	D100FB
Snowgoer	Kohler	K618-2	618cc	Tillotson	HR35A		35-2	Salsbury 1195	10 1/4	D100FB
1970										
300	Kohler	K309-1	309cc	Tillotson or	Keihin	15:36	35-2	Salsbury	10 1/2	10542-1
300	Hirth	200R	372cc	T or K		15:36	35-2	Salsbury 770	10 1/2	10542-1
Firebird	Sachs	SA340	336cc	T or K		15:36	35-2	Salsbury 770	10 1/2	10542-1
Firebird	Hirth	210R	399cc	T or K		15:36	35-2	Salsbury 910	10 1/2	10542-2
Firebird	Hirth	211R	438cc	T or K		15:36	35-2	Salsbury 910	10 1/2	10542-2
Firebird	Hirth	220R	493cc	T or K		17:36	35-2	Salsbury 910	10 1/2	10542-2
Firebird	Hirth	171R	634cc	T or K		17:36	35-2	Salsbury 1190	10 1/2	10542-3
Executive	Kohler	K399-2	399cc	T or K		15:36	35-2	Salsbury 910	10 1/2	10542-2
Executive	Hirth	210R	399cc	T or K		15:36	35-2	Salsbury 910	10 1/2	10542-2
Executive	Hirth	211R	438cc	T or K		17:36	35-2	Salsbury 910	10 1/2	10542-2
Executive	Hirth	220R	493cc	T or K		17:36	35-2	Salsbury 910	10 1/2	10542-2
Executive	Hirth	171R	634cc	T or K		17:36	35-2	Salsbury 1190	10 1/4	10542-3
1971										
Skylark	Hirth	193R	292cc	Tillotson	HR	15:36	35-2	Salsbury 770	10 1/2	31650-1
Skylark	Hirth	194R	338cc	Tillotson	HD	15:36	35-2	Salsbury 770	10 1/2	31650-1
Skylark	Hirth	200R	372cc	Tillotson	HD	15:36	35-2	Salsbury 770	10 1/4	31650-1
Firebird	Hirth	194R	338cc	Tillotson	HD	15:36	35-2	Salsbury 770	10 1/2	31650-1
Firebird	JLO	LR340/2	339cc			15:36	35-2	Salsbury 770	10 1/2	31650-1
Firebird	CCW	340	339cc	Keihin	406	15:36	35-2	Salsbury 770	10 1/4	31650-1
Firebird	JLO	LR399/2	398cc			17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird	CCW	400	398cc	Keihin	406	17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird	Hirth	211R	438cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/4	31650-2
Firebird	Sachs	SA2-440	437cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird	CCW	440	436cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird	Hirth	220R	493cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird	Hirth	171R	635cc	Keihin	407	19:36	35-2	Salsbury 910	10 1/2	31650-2
Executive	JLO	LR340/2	339cc			15:36	35-2	Salsbury 770	10 1/2	31650-1
Executive	CCW	340	339cc	Keihin	406	15:36	35-2	Salsbury 770	10 1/2	31650-1
Executive	JLO	LR399/2	398cc			17:36	35-2	Salsbury 910	10 1/2	31650-2
Executive	CCW	400	398cc	Keihin	406	17:36	35-2	Salsbury 910	10 1/2	31650-2
Executive	Hirth	211R	438cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Executive	Sachs	SA2-440	437cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Executive	CCW	440	436cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Executive	Hirth	220R	493cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Executive	Hirth	171R	634cc	Keihin	407	19:36	35-2	Salsbury 910	10 1/2	31650-2
1972										
Skylark	CCW	248	249cc	Tillotson	HR	15:36	35-2	Salsbury 770	10 1/2	41650
Skylark	Hirth	193R	292cc	Tillotson	HR	15:36	35-2	Salsbury 770	10 1/2	41650
Firebird	Hirth	260R	338cc	Walbro	WR	17:36	35-2	Salsbury 770	10 1/4	41650
Firebird	CCW	340	339cc	Keihin	406	17:36	35-2	Salsbury 770	10 1/2	41650
Firebird	Chaparral	400	394cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird	CCW	400	398cc	Keihin	406	17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird	Hirth	270R	438cc	Walbro	WD	17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird	Chaparral	440	432cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird SS	Hirth	261R	292cc	Walbro	WR	15:36	35-2	Salsbury 770	10 1/2	41650
Firebird SS	Hirth	260R	338cc	Walbro	WD	17:36	35-2	Salsbury	10 1/2	41650
Firebird SS	Hirth	271R	399cc	Walbro	WD	17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird SS	Chaparral	400	394cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird SS	Sachs	SA2-440	437cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird SS	Hirth	270R	438cc	Walbro	WD	17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird SS	Chaparral	440	432cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Firebird SS	Hirth	280R	649cc	Walbro	WD	19:36	35-2	Salsbury 910	10 1/2	31650-2
Thunderbird	Hirth	260R	338cc	Walbro	WD	17:36	35-2	Salsbury 910	10 1/2	31650-2
Thunderbird	Chaparral	400	394cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Thunderbird	Chaparral	440	432cc	Keihin	407	17:36	35-2	Salsbury 910	10 1/2	31650-2
Thunderbird	Hirth	280R	649cc	Walbro	WD	19:36	35-2	Salsbury 910	10 1/2	31650-2

Engine				Carburetor		Clutch			Belt Number	
Model	Make	Model	Displ.	Make	Model	Sprocket Ratio	Chain Size	Make		Shaft Center
1973										
Firebird	Chaparral	248	249cc	Mikuni	38mm	15:36	35-2	Own *	Fixed	
Firebird	Chaparral	295	292cc	Keihin	CD 42	15:36	35-2	Own *	Fixed	
Firebird	Chaparral	340	338cc	Keihin	CD 42	17:36	35-2	Own *	Fixed	
Firebird	Chaparral	400	398cc	Keihin	CD 42	17:36	35-2	Own *	Fixed	
Firebird	Chaparral	440	432cc	Keihin	CD 42	17:36	35-2	Own *	Fixed	
SS III	Chaparral	295SS	292cc	Keihin	CD 42	15:36	35-2	Own *	Fixed	
SS III	Chaparral	340SS	338cc	Keihin	CD 42	17:36	35-2	Own *	Fixed	
SS III	Chaparral	400SS	394cc	Keihin	CD 50	19:36	35-2	Own *	Fixed	
SS III	Chaparral	440SS	432cc	Keihin	CD 50	19:36	35-2	Own *	Fixed	
Thunderbird ...	Chaparral	340	338cc	Keihin	CD 42	17:36	35-2	Own *	Fixed	
Thunderbird ...	Chaparral	440	432cc	Keihin	CD 42	19:36	35-2	Own *	Fixed	

*Asymetric Clutch. Recommended replacement is Salsbury 850 on 10½ center using Chaparral 31650-2 Belt.

1974									
Firebird 292	Chaparral		292cc	Mikuni	BND 42	15:36	35-2	Salsbury 815	10½ 741-650
Firebird 340	Chaparral		338cc	Mikuni	BNO 42	17:36	35-2	Salsbury 815	10½ 741-650
Thunderbird 440	Chaparral		432cc	Mikuni	BNO 42	19:36	35-2	Salsbury 815	10½ 741-650
SSX 340	Chaparral		338cc	Mikuni	BNO 38(2)	19:36	35-2	Salsbury 815	10½ 741-650
SSX 440	Chaparral		432cc	Mikuni	BNO 42(2)	21:36	35-2	Salsbury 815	10½ 741-650

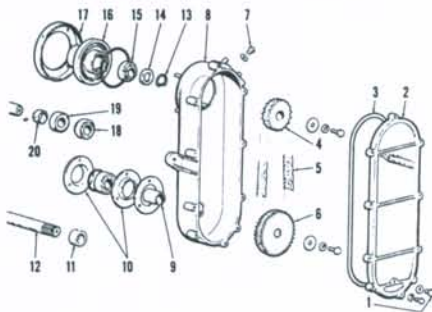


Fig. 1—Exploded view of "CHAPARRAL" chain case used on 1971 models and 1972 SKYLARK. 1970 model chaincase is similar.

1. Check plug
2. Cover
3. Gasket
4. Upper sprocket
5. Chain
6. Lower sprocket
7. Fill plug
8. Chain case
9. Spacer
10. Flangette bearing
11. Lock collar
12. Track drive shaft
13. Snap ring
14. Nut
15. Roller bearing
16. Eccentric housing
17. Lock ring
18. Roller bearing
19. Seal
20. Sleeve

LUBRICATION

The engine is lubricated by oil mixed with the fuel. The manufacturer recommends the use of Two Cycle Motor Oil at the ratio of 20:1.

The enclosed chain case on 1968 and 1969 models should be filled to level of check plug with Automatic Transmission Fluid, Type "A", and should be checked occasionally or when leakage is apparent.

All other parts are self lubricated and require attention only when service is needed.

On 1970, 300 Models, remove fill plug at top of chain case and insert a stiff wire to touch the bottom. Add Automatic Transmission Fluid, Type A, as necessary to bring fluid level to between 1 and 2 inches from chain-case bottom. On 1970 Executive and Firebird models, remove lower chain-

case cover and add fluid if necessary, until level is ½-inch below cover opening.

On late models with "Chaparral" gearcase, check fluid level at plug (1—Fig. 1) and fill to level of plug opening at upper plug (7). Use automatic transmission fluid, type A.

The steering column on 1970, 300 Models has two lubrication fittings; Firebird and Executive have one lube fitting on steering column. All other parts are self lubricated and require attention only when service is needed.

ADJUSTMENT

STEERING SKIS. With handlebar in normal straight driving position, skis should be parallel with each other and with vehicle frame. Steering arms are splined to spindle and both arms should point straight to rear.

On early models all tie rod ends have right hand threads and adjustment is made by disconnecting one end. Late models have R.H. and L.H. threads and adjustment can be made by loosening locknut and turning rod center section.

DRIVE CHAIN. Drive chain should have ¼-½ inch free play. Chain can be inspected by removing chain

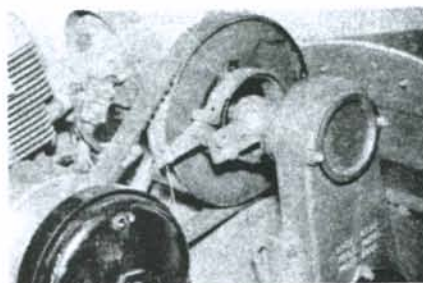


Fig. 2—View of torque converter drive unit, brake & chain case with hood removed.

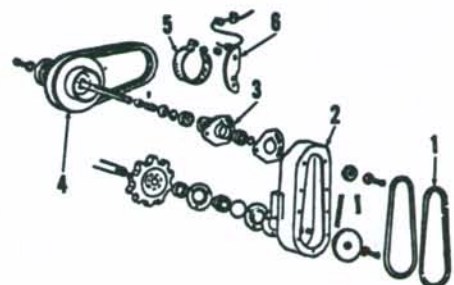


Fig. 3—Exploded view of chain case and associated parts used in 1969.

1. Cover
2. Chaincase
3. Bearing
4. Driven sheave
5. Brake band
6. Anchor plate

case inspection cover. Adjust the chain on 1969 models by loosening the stud nuts retaining upper shaft housing (3—Fig. 3) to chain case (2) and moving shaft housing in the slotted holes.

On 1970 and 1971 machines and 1972 Skylark, upper shaft housing (16—Fig. 1) is secured in chain case by clamp ring (17) but housing is not slotted and no inspection cover is provided. Loosen clamp screws and turn housing to reduce backlash to a minimum, then retighten nuts. Backlash can be measured at pulley rim.

On other 1972 models, turn adjusting stud (1—Fig. 4) until a backlash of ¼ inch can be measured at pulley rim.

NOTE: On late models with caliper type brakes, alignment must be checked after drive chain is adjusted.

BRAKE. The band type brake is shown in Fig. 2 and 3. Band should just clear drum when brake is released but should fully engage before hand lever contacts handlebar. Adjust by loosening cable clamp at actuating lever and pulling cable

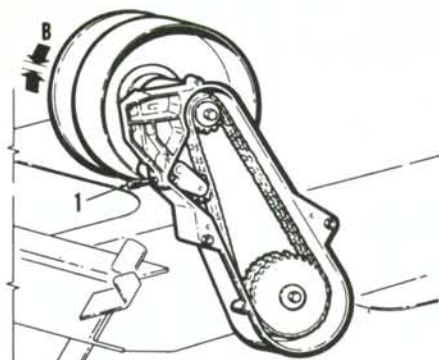


Fig. 4—View of "CHAPARRAL" chain case used on 1972 models except SKYLARK. Turn adjusting stud (1) until backlash (B) is $\frac{1}{4}$ -inch. Relative position of brake unit will not be changed by chain adjustment on these models.

through lever.

On models with caliper type disc brake, adjustment is made by removing cotter pin and turning slotted nut on actuating arm stud. First make sure that caliper is properly aligned

on sheave rim and that push pins center the valleys in actuating arm. Tighten nut until resistance is felt, back off one full turn, then reinstall cotter pin. Actuating arm can be realigned if necessary, by repositioning the cable housing anchor nuts.

Brake unit must be properly aligned with braking flange on driven pulley, and alignment on some models will be changed when drive chain is adjusted. Readjust by loosening the two bolts clamping brake housing to mounting bracket, fully applying the brake then retightening clamp bolts while brake is applied. Actuating arm may need to be repositioned after alignment.

TRACK. With rear of machine raised so that track is clear of ground, track should have some slack but must not be excessively loose. Adjust by loosening the screws on each side which secure rear track hanger brackets, then turning adjusting screws until excessive slack is removed. Both

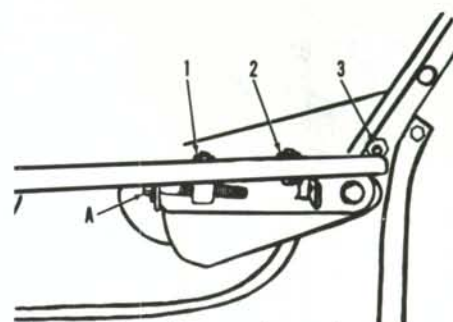


Fig. 5—To adjust track tension, loosen clamp bolts (1, 2 & 3) and turn adjusting screw (3) until tension is correct. Some early models have only two clamp screws.

sides must be adjusted alike. Refer to Fig. 5.

NOTE: Whenever track has been adjusted, alignment **MUST** be checked as outlined in **TRACK SERVICE** Section of this manual.

Snowgoer 600 is equipped with two 18-inch tracks. Adjustment is as outlined above except that each track must be adjusted individually.

COLUMBIA

1972-1975

Engine				Carburetor		Sprocket Ratio	Chain Size	Clutch		Belt Number
Model	Make	Model	Displ.	Make	Model			Make	Shaft Center	
1972										
C300 (351-900)	Sachs	SA290	293cc	Tillotson	HR	15:32	35-2	Salsbury	12½	754-152
C340T (351-910)	JLO	LR340/2	339cc	Walbro	WD	15:32	35-2	Salsbury	12½	754-152
C400T (351-920)	JLO	LR399/2	398cc	Walbro	WD	15:32	35-2	Salsbury	12½	754-160
C440T (351-930)	JLO	LR440/2	434cc	Walbro	WD	15:32	35-2	Salsbury	12½	754-160
SST340 (351-940)	JLO	LR340/2	339cc	Walbro	WD	15:32	35-2	Salsbury	12½	754-152
SST400 (351-950)	JLO	LR399/2	398cc	Walbro	WD	15:32	35-2	Salsbury	12½	754-160
SST440 (351-960)	JLO	LR440/2	434cc	Walbro	WD	15:32	35-2	Salsbury	12½	754-160
1973										
C-340	JLO	LR340/2	339cc	Walbro	WDA30	15:32	35-2	Salsbury	12½	754-152
C-400	JLO	LR399/2	398cc	Walbro	WDA30	15:32	35-2	Salsbury	12½	754-160
C-440	JLO	LR440/2	428cc	Walbro	WDA30	15:32	35-2	Salsbury	12½	743-160
1974										
C-340	JLO	2F-340-5	339cc	Walbro	WDA39	16:33	35-2	Salsbury 780	12	754-174
C-400	JLO	2F-400-7	398cc	Walbro	WDA39	17:33	35-2	Salsbury 850	12	754-172
C-440	JLO	2F-440-8	428cc	Walbro	WDA39	19:33	35-2	Salsbury 850	12	754-172
1975										
C-340	JLO	2F-340-5	339cc	Walbro	WDA39	16:33	35-2	Salsbury 780	12	754-174
C-400	JLO	2F-400-7	398cc	Walbro	WDA39	17:33	35-2	Salsbury 850	12	754-172
C-440	JLO	2F-440-8	428cc	Walbro	WDA39	19:33	35-2	Salsbury 850	12	754-172

LUBRICATION

The engine is lubricated by oil mixed with the fuel. The vehicle manufacturer recommends the use of regular gasoline

and SAE 40 or 50 Motor Oil or a known brand of Snowmobile Oil, mixed at a ratio of 20:1 for JLO engines or 25:1 for Sachs engines.

The enclosed chaincase should be filled to just above bottom of lower inspection cover opening with Automatic Transmission Fluid, Type A. Tip

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