

SECTION F

43-44-45000 POSITIVE TRACTION DIFFERENTIAL

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DIVISION I

SPECIFICATIONS AND ADJUSTMENTS

NOTE: All specifications and adjustments for the Positive Traction Differential are the same as are listed in Section E for standard differential. The only exception to this is the lubricant used in the Positive Traction Differential.

40-28 LUBRICATION OF POSITIVE TRACTION DIFFERENTIAL

The lubricant level should be checked every 6,000 miles. Maintain level between the bottom of the filler plug opening and 1/4 inch below the opening by adding Special Positive Traction Lubricant or equivalent available through the Buick Parts Department. Never use any lubricant

other than this special lubricant, even for adding.

Positive Traction Differentials can be easily identified either by a stainless steel plate attached by a rear cover bolt or by an X in a circle stamped on the bottom of the right axle tube. See Figure 40-130. For flushing procedure, see paragraph 40-32.

Capacity of the differential assembly is 2-3/4 pints.

DIVISION II

DESCRIPTION AND OPERATION

40-29 DESCRIPTION OF POSITIVE TRACTION DIFFERENTIAL

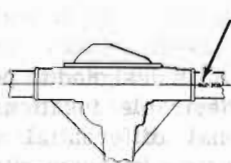
Buick Positive Traction Differential is optional equipment on all

Buicks. It is designed to perform all the desirable functions of a conventional differential and at the same time overcome its limitations. With a conventional differential, when one wheel is on a slippery surface, its pulling power is limited by the wheel with the lowest traction. Unlike the conventional differential, with the Positive Traction device, the anti-spinning action is limited by the wheel having the best traction thus limiting the possibility of becoming stuck.

Buick Positive Traction Differential is not a fully locking type and will release before excessive driving force can be directed to one rear wheel. The safety value of this feature eliminates the possibility of dangerous steering reaction. When the rear wheels are under extremely unbalanced tractive conditions, such as having one wheel on ice and the other

AXLE RATIO	SERIES							
	43-44000 EXCEPT SPORTWAGON AND 44600		44000 SPORT- WAGON		44600		45000	
	STD. AXLE	P.T. AXLE	STD. AXLE	P.T. AXLE	STD. AXLE	P.T. AXLE	STD. AXLE	P.T. AXLE
2.56	LK	—	—	—	—	—	—	—
2.78	LA	LN	—	—	—	—	NL	NY
2.93	OB	OW	—	—	OE	OX	NJ	NZ
3.23	LC	LP	MG	MT	—	—	—	—
3.36	—	LX	—	—	LJ	LX	NG	NU
3.55	—	OR	—	MW	—	OR	—	—
3.90	—	OS	—	MX	—	OS	—	NX
4.30	—	—	—	—	—	OT	—	—

(FIELD IDENTIFICATION)
FOR FIELD IDENTIFICATION, ALL AXLE ASSEMBLIES TO BE STAMPED WITH LETTERS 1/4" HIGH ON BOTTOM OF AXLE TUBE AS INDICATED FROM CHART. SAMPLE MARKING FOR 3.08 RATIO, (FOR 433 MODEL), DATE JULY 22, (DAY IN THE YEAR MFG'D.) WOULD BE.....
STANDARD AXLES LB-203;
POSITIVE TRACTION AXLES ⊗LO-203.



40-120A

Figure 40-130—Differential Identification

on dry pavement, wheel spin can occur if over-acceleration is attempted. However, even when wheel spin does occur, the major driving force is directed to the non-spinning wheel.

Another advantage of the Positive Traction Differential is that on uneven surfaces such as railroad tracks, chuck holes, etc., wheel action is not adversely affected. During power application on a conventional differential, when one wheel hits a bump and bounces clear of the road, it spins momentarily. When this rapidly spinning wheel again contacts the

road, the sudden shock may cause the car to swerve. This action is also hard on tires and the entire drive train. With a Positive Traction Differential the free wheel rotates at the same speed as the wheel on the road, thereby minimizing adverse effects.

40-30 OPERATION OF POSITIVE TRACTION DIFFERENTIAL

The design of the Positive Traction Differential is basic and simple and is completely interchangeable with a conventional differential. The Positive Trac-

tion unit has coarse, spiral-threaded cone brakes installed behind the side gears. These brakes are statically spring pre-loaded to provide an internal resistance to the differential action within the case itself. This pre-load assures an adequate amount of pull when extremely low tractive conditions such as wet ice, mud or snow are encountered at one rear wheel. It also provides smooth transfer of torque when traveling over alternating tractive to non-tractive conditions at either rear wheel.

During application of torque to the axle, the initial spring loading of the cone brakes is supplemented by the gear separating forces between the side and spider gears which progressively increases the resistance in the differential. This unit is therefore an automatic throttle-sensitive device that provides greater resistance under greater torque loads. It should be remembered however, that this is not a positive lock differential and it will release before excessive driving force can be applied to one wheel.

CAUTION: When working on a car with Positive Traction Differential, never raise one rear wheel and run the engine with the transmission in gear. The driving force to the wheel on the floor could cause the car to move.

DIVISION III

SERVICE PROCEDURES

40-31 POSITIVE TRACTION DIFFERENTIAL SERVICE PROCEDURES

All differential service procedures are the same in the Positive Traction differential as in a conventional differential, except

