

ALLIS-CHALMERS

SHOP MANUAL

MODELS

6060-6070-6080

The model and serial numbers of tractor are linked together to form the Product Identification Number (PIN). The PIN number is located on lower left-hand side of steering console on late production tractors. On earlier models, the PIN is stamped into right-hand side of flywheel housing.

The engine model and serial numbers are stamped on a plate located on upper left-hand side of cylinder block.

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CONDENSED SERVICE DATA

	6060	6070	6080
GENERAL			
Engine Make		Own	
Engine Model	433T	433T	433I
Number of Cylinders		4	
Bore		3.875 in. (98.42 mm)	
Stroke		4.250 in. (107.95 mm)	
Displacement		200 cu. in. (3.3 L)	
Number of Forward Speeds		12	
Battery		12 Volt, Negative Ground	
TUNE-UP			
Firing Order		1-3-4-2	
Valve Clearance (Hot)— Intake and Exhaust		0.015 in. (0.38 mm)	
Injection Timing (Static)		18° BTDC	
Timing Mark Location		Crankshaft Pulley	
Engine Low Idle—Rpm		775-825	
Engine High Idle—Rpm		2480-2580	
Engine Full Load—Rpm		2300	
Power Rating	63 hp (47.0 kW)	70 hp (52.2 kW)	83 hp (61.9 kW)
CAPACITIES			
Cooling System		17 qts. (16.1 liters)	
Crankcase (With Filter)		10 qts. (9.5 liters)	
Differential Housing (With Filter Change)	37 qts.* (35 liters)	37 qts.* (35 liters)	39 qts.* (37 liters)
Transmission	12 qts. (11.4 liters)	12 qts. (11.4 liters)	12.7 qts. (12.0 liters)
Front Drive Axle— Final Drive (Each)	1.5 qts. (1.4 liters)	1.5 qts. (1.4 liters)	1.9 qts. (1.8 liters)
Differential	5.5 qts. (5.2 liters)	5.5 qts. (5.2 liters)	5.9 qts. (5.5 liters)
Fuel Tank		32 gal. (121 liters)	
*Add 2 quarts (1.9 L) if equipped with front-wheel drive.			
SIZES AND CLEARANCES			
Crankshaft Main Journal Diameter		2.7465-2.7480 in. (69.76-69.80 mm)	
Crankpin Journal Diameter		2.3720-2.3735 in. (60.25-60.29 mm)	
Camshaft Journal Diameter		2.130-2.131 in. (54.18-54.23 in.)	
Cylinder Sleeve ID		3.8755-3.8770 in. (98.44-98.48 mm)	
Piston Skirt OD		3.8698-3.8718 in. (98.29-98.34 mm)	
Main Bearing Diametral Clearance		0.0016-0.0048 in. (0.04-0.12 mm)	
Rod Bearing Diametral Clearance		0.001-0.004 in. (0.02-0.10 mm)	
Crankshaft End Play		0.003-0.013 in. (0.8-0.33 mm)	

CONDENSED SERVICE DATA Cont.

	6060	6070	6080
Camshaft Bearing Diametral Clearance	_____	0.002-0.005 in. (0.05-0.13 mm)	_____
Camshaft End Play	_____	0.001-0.011 in. (0.03-0.28 mm)	_____
Piston Skirt Diametral Clearance	_____	0.0037-0.0072 in. (0.09-0.18 mm)	_____
TIGHTENING TORQUES			
Connecting Rod Cap	_____	45 ft.-lbs. (61 N · m)	_____
Main Bearing Cap	_____	135 ft.-lbs. (183 N · m)	_____
Cylinder Head	_____	165 ft.-lbs. (224 N · m)	_____
Injection Nozzle	_____	15 ft.-lbs. (20 N · m)	_____
Crankshaft Pulley	_____	182 ft.-lbs. (247 N · m)	_____
Flywheel	_____	135 ft.-lbs. (183 N · m)	_____

DUAL DIMENSIONS

This service manual provides specifications in both the U.S. Customary and Metric (SI) systems of measurement. The first specification is given in the measuring system perceived by us to be the preferred system when servicing a particular component, while the second specification (given in parenthesis) is the converted measurement. For instance, a specification of "0.11 inch (0.28 mm)" would indicate that we feel the preferred measurement, in this instance, is the U.S. system of measurement and the metric equivalent of 0.011 inch is 0.28 mm.

FRONT AXLE (TWO-WHEEL DRIVE)

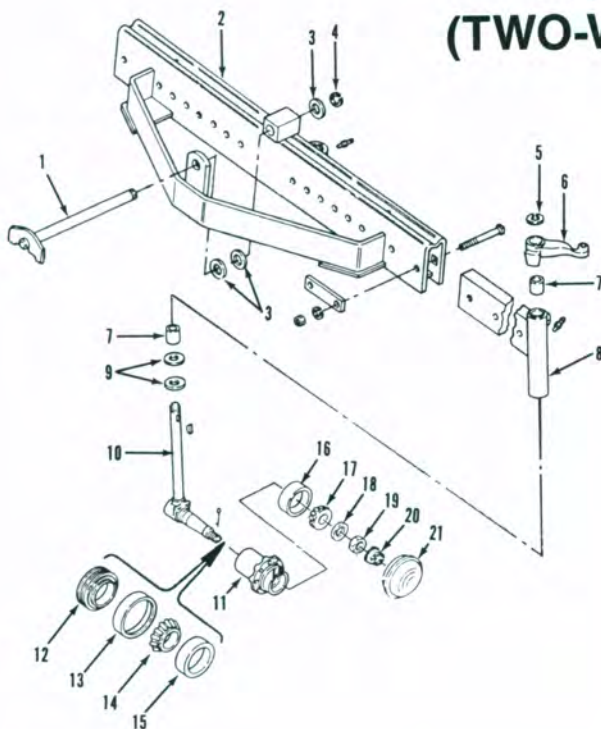


Fig. 1—Exploded view of adjustable front axle used on Model 6080. Other models are similar.

1. Pivot pin
2. Axle main member
3. Thrust washers
4. Cylinder anchor bushing
5. Retaining ring
6. Steering arm
7. Bushings
8. Axle extension
9. Thrust washers
10. Spindle
11. Wheel hub
12. Seal
13. Wear sleeve
14. Bearing cone
15. Bearing cup
16. Bearing cup
17. Bearing cone
18. Washer
19. Nut
20. Retainer (6080)
21. Hub cap

WHEEL BEARINGS

All Models

1. To disassemble, raise and support front of tractor. Remove hub cap (21—Fig. 1), cotter pin and bearing retaining (19), then separate wheel hub (11) and bearings from spindle (10). Drive bearing cups and seal wear sleeve (13) out of wheel hub if renewal is necessary. Drive seal (12) from spindle.

Install inner and outer bearing cups in wheel hub. Press new wear sleeve (13) into hub until edge of sleeve is 1/4 inch (6.35 mm) past flush (S—Fig. 2) with edge of hub on all 6080 models and 6060 and 6070 models with 96 inch (245 cm) tread, or flush with edge of hub on 6060 and 6070 models equipped with standard axle. Be sure to use correct size driver to install wear sleeve to prevent damage to sleeve. Install seal assembly (12—Fig. 2)

onto spindle (10) so side with name and number faces outward. Make certain seal bottoms against spindle shoulder.

Pack bearings with wheel bearing grease, then reinstall wheel hub. Tighten adjusting nut (19—Fig. 1) to 85 ft.-lbs. (115 N · m) torque while rotating hub to seat bearings. Then, loosen nut to align hole in spindle with notch in nut or nut retainer (20) and install cotter pin. Install hub cap.

SPINDLES AND BUSHINGS

All Models

2. To remove front spindle (10—Fig. 1), first raise and support front of tractor. Remove front wheel. Remove retaining ring (5), then pull steering arm (6) from spindle. Note that arm is an extreme shrink fit on spindle and removal will probably require using a hydraulic press or cutting arm off with a torch. Withdraw spindle from axle extension (8) and remove thrust washers (9).

Inspect spindle bushings (7) for wear and renew if necessary. Press new bushings into axle extension bore until they are flush to 0.030 inch (0.75 mm) below surface of axle extension.

Install new thrust washers on spindle, then position spindle in axle extension. Heat steering arm to 600 °F (315 °C), then press onto spindle until spindle end play is less than 0.030 inch (0.75 mm) and retaining ring (5) can be installed. Be sure spindle will rotate freely between stops. Do not attempt to reposition steering arm after it has cooled below 300 °F (150 °C).

Install front wheel and tighten mounting bolts to 85 ft.-lbs. (115 N · m) torque. Lubricate spindle bushings with multipurpose grease.

TIE ROD AND TOE-IN

All Models

3. Tie rod ends (3 and 6—Fig. 3) are nonadjustable and must be renewed if excessively worn. Lubricate tie rod ends with multipurpose grease.

Front wheel toe-in should be 1/8 inch (3 mm) measured at hub height. Toe-in can be adjusted without disconnecting tie rod from steering arms (1). Remove clamp bolt (5) from tie rod tube (4). Loosen tie rod end jam nut (7) or clamp, then turn inner rod (8) on 6060 and 6070 models or tie rod tube on 6080 models to lengthen or shorten tie rod as necessary to provide correct toe-in.

AXLE MAIN MEMBER

All Models

4. The axle main member (2—Fig. 1) is supported by pivot pin (1). The pin pivots in renewable bushings in front support casting.

Fig. 2—Press new wear sleeve (13) into wheel hub (11) until edge of sleeve is 1/4 inch (6.35 mm) past flush (S) with edge of hub on Model 6080 and Models 6060 and 6070 with 96 inch (245 cm) tread, or flush with edge of hub on 6060 and 6070 models with standard axle.

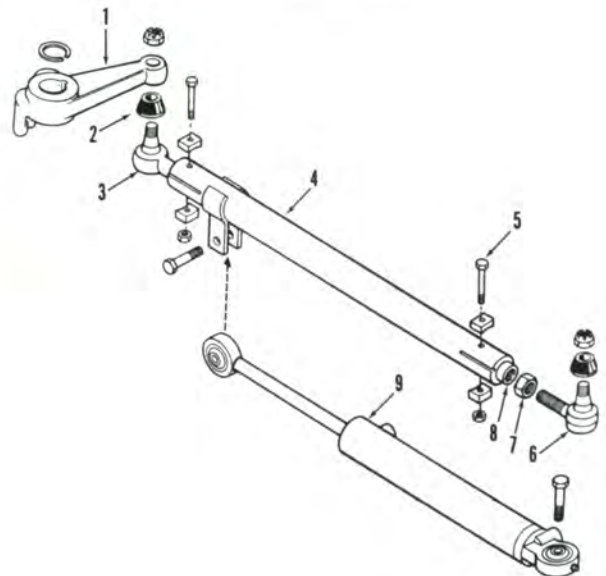
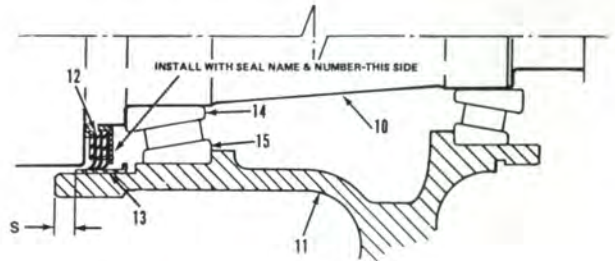


Fig. 3—Exploded view of tie rod assembly used on 6060 and 6070 models. Model 6080 is similar.

- 1. Steering arm
- 2. Seal
- 3. Sliding tie rod end
- 4. Tube
- 5. Clamp bolt
- 6. Tie rod end
- 7. Jam nut
- 8. Inner tube
- 9. Cylinder

FRONT-WHEEL DRIVE AXLE

LUBRICATION

All Models So Equipped

5. Check oil level in front axle housing and final drive housings after every 100 hours of operation. Manufacturer recommends renewing lubricant at 800 hours of operation or once a year, whichever

comes first. Fill housings to level plug openings with Allis-Chalmers Power Fluid 821 or equivalent. Axle housing fill and level plug (15—Fig. 4) is located on left rear side of axle housing. Final drive fill and level plug (24—Fig. 6) must be positioned at either 3 o'clock or 9 o'clock when filling with oil and checking oil level.

Lubricate axle pivot and steering linkage with multipurpose grease.

TIE ROD AND TOE-IN

All Models So Equipped

6. Front wheel toe-in should be "0" on front-wheel drive models. To adjust,

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