

SHOP MANUAL

ALLIS-CHALMERS

MODELS D-14, D-15, D-15 SERIES II, D-17, D-17 SERIES III AND D-17 SERIES IV

Model D-14 tractors were available in single wheel tricycle, dual wheel tricycle and adjustable axle versions with non-diesel engines only.

Model D-15 tractors were available in single wheel tricycle, dual wheel tricycle, adjustable or heavy duty non-adjustable front axle versions with either 175 cubic inch diesel or 149 cubic inch non-diesel engines

Model D-15 Series II tractors are available in single wheel tricycle, dual wheel tricycle, adjustable or heavy duty non-adjustable front axle versions with either 175 cubic inch diesel or 160 cubic inch non-diesel engine.

D-17, D-17 Series III and D-17 Series IV tractors are available in single wheel tricycle, adjustable or heavy duty non-adjustable front axle versions with either 262 cubic inch diesel or 226 cubic inch non-diesel engine.

INDEX (By Starting Paragraph)

BELT PULLEY	218	ENGINE (DIESEL)		ENGINE (NON-DIESEL)	
BRAKES		Assembly, R&R	34	Assembly, R&R	33
D-14 and D-15	209	Cam Followers	48	Cam Followers	47
D-17 (Band/Disc Type)	215	Camshaft	68	Camshaft	65, 66
D-17 (Shoe Type)	212	Connecting Rods & Bearings	78	Connecting Rods & Bearings	77
CARBURETOR		Crankshaft & Bearings	81	Crankshaft & Bearings	79, 80
Gasoline	99	Cylinder Head	37	Cylinder Block	88
CLUTCH		Cylinder Sleeves	73	Cylinder Head	35, 36
Engine Clutch	149	Flywheel	89	Cylinder Sleeves	72
Engine Clutch Shaft	156	Front Oil Seal	86	Flywheel	89
"Power-Director" Clutch	160	Main Bearings	81	Front Oil Seal	82, 84
Shuttle Clutch	170	Oil Pan	92	Governor	132, 134
COOLING SYSTEM		Oil Pump	97	Ignition Timing	145
Radiator	135	Piston Pins	76	Main Bearings	79, 80
Water Pump	136, 140	Piston & Rod Removal	71	Oil Pan	90, 91
DIESEL FUEL SYSTEM		Pistons & Rings	73	Oil Pump	93, 95
Energy Cells	128	Rear Oil Seal	87	Piston Pins	74, 75
Filters and Bleeding	113	Rocker Arms	52	Piston & Rod Removal	69, 70
Injection Pump	124	Speed Adjustment	127	Pistons & Rings	72
Nozzles	115	Timing Gear Cover	56	Rear Oil Seal	83, 85
Quick Checks	112	Timing Gears	61	Rocker Arms	49, 50
ELECTRICAL		Valve Guides	43	Rear Oil Seal	83, 85
Spark Plugs	141	Valves & Valve Seats	39	Rocker Arms	49, 50
Distributor	142	Valve Springs	45	Spark Plugs	141
Generator	148			Speed Adjustment	129, 133
Starting Motor	148			Timing Gear Cover	53
Voltage Regulator	148			Timing Gears	58
Wiring Diagrams	Page 88			Valve Guides	41, 42
				Valves & Valve Seats	38
				Valve Springs	44

INDEX (Continued)

FINAL DRIVE AND DIFFERENTIAL

Bevel Gears, Adjust	186, 192
Bull Gear, Renew	199, 204
Bull Pinion, Renew	202, 206
Differential, Overhaul	190, 197
Final Drive Units, R&R	201, 207
Wheel Axle Shafts	199, 204

FRONT SYSTEM

Adjustable Axle	6
Dual Wheel Tricycle	3
Manual Steering Gear	14
Power Steering Gear	20
Single Wheel Tricycle	1
Wide (Non-Adjust.) Front Axle	6

GOVERNOR (NON-DIESEL)

129, 133

IGNITION SYSTEM

Distributor	142
Ignition Timing	145
Spark Plugs	141

LP-GAS SYSTEM

Adjustments	100
Filter	106
Regulator	107

"POWER-DIRECTOR"

Clutch	160
Pump	168
Shafts and Gears	163

POWER LIFT SYSTEM (PLUNGER PUMP)

Controls & Linkage	242
Optional Equipment	250
Pump	229
Testing	232
Work Cylinder	247

POWER LIFT SYSTEM (GEAR TYPE PUMP)

Checks & Adjustments	259
Control Valves	272
Pump	268
Three Point Lift System	274

POWER TAKE-OFF

222

SHUTTLE CLUTCH

170

STEERING GEAR

Manual Steering	14
Power Steering	20

TRANSMISSION

Bevel Pinion Shaft	175, 183
Countershaft	184
Input Shaft	174, 182
Reverse Idler	177, 185
Shifter Assembly	173, 179

CONDENSED SERVICE DATA

GENERAL

	D-14	D-15 Non-Diesel	D-15 Diesel	D-17 Non-Diesel	D-17 Diesel
Engine Make	Own	Own	Own	Own	Own
Cylinders	4	4	4	4	6
Bore—Inches	3½	3½*	3⅞	4	3⅞
Stroke—Inches	3⅞	3⅞	4⅞	4½	4⅞
Displacement—Cubic Inches	149	149*	175	226	262
Pistons Removed From	Above	Above	Above	Above	Above
Main Bearings, Number of	3	3	5	3	7
Main Bearings Adjustable?	No	No	No	No	No
Rod Bearings Adjustable?	No	No	No	No	No
Cylinder Sleeves	Wet	Wet	Wet	Wet	Wet

TUNE-UP

Firing Order	1-2-4-3	1-2-4-3	1-3-4-2	1-2-4-3	1-5-3-6-2-4
Valve Tappet Gap (Hot)					
Intake	0.012-0.014	0.008-0.010	0.010	0.012-0.014	0.010
Exhaust	0.012-0.014	0.014-0.016	0.019	0.012-0.014	0.019
Valve Seat & Face Angle					
Intake	45	45	45	30	See Paragraph 39
Exhaust	45	45	45	45	45
Ignition Distributor Make	D-R	D-R	—	D-R	—
Mark Indicating:					
Retarded Timing	"DC"	"Center"	—	See	—
Full Advanced Timing	"Fire"	"F-25"	—	Paragraph	—
Mark Location	Flywheel	Flywheel	—	147	—
Breaker Point Gap	0.022	0.022	—	0.022	—
Spark Plug Gap	0.030	0.025**	—	0.025**	—
Injection Pump Make	—	—	RoosaMaster	—	RoosaMaster
Injection Pump Timing	—	—	See Paragraphs	—	See Paragraphs
Compression Pressure at Cranking			124 and 125		124 and 125
Speed—Gasoline or Diesel	135	160	325	145	385
Low Idle RPM	450	550	625	400	625
High Idle RPM	2025	2200	2200	1975	1985
Full Load RPM	1650	2000	2000	1650	1650

* Series II D-15 engine cylinder bore 3⅞ inches; displacement is 160 cubic inches.

**Spark plug gap for D-15 and D-17 LP-Gas models should be 0.020.

FRONT SYSTEM

SINGLE WHEEL TRICYCLE

1. WHEEL ASSEMBLY. The single front wheel assembly may be removed after raising front of tractor and removing bolts (3—Fig. 1) at each end of front wheel spindle (1).

To renew bearings and/or seals, first remove wheel assembly; then, unbolt and remove bearing retainer (10—Fig. 2), seal (4), seal retainer (5) and shims (9). Drive or press on opposite end of spindle to remove spindle (8), bearing cones (7) and bearing cup from retainer side of hub. Then drive remaining seal and bearing cup out of hub. Remove bearing cones from spindle.

Soak new felt seals in oil prior to installation of seals and seal retainers. Drive bearing cup into hub until cup is firmly seated. Drive bearing cones tightly against shoulders on spindle. Pack bearings with No. 2 wheel bearing grease. Install spindle and bearings in hub and drive remaining bearing cup in against cone. When installing bearing retainer, vary the number of shims (9) to give free rolling fit of bearings with no end play.

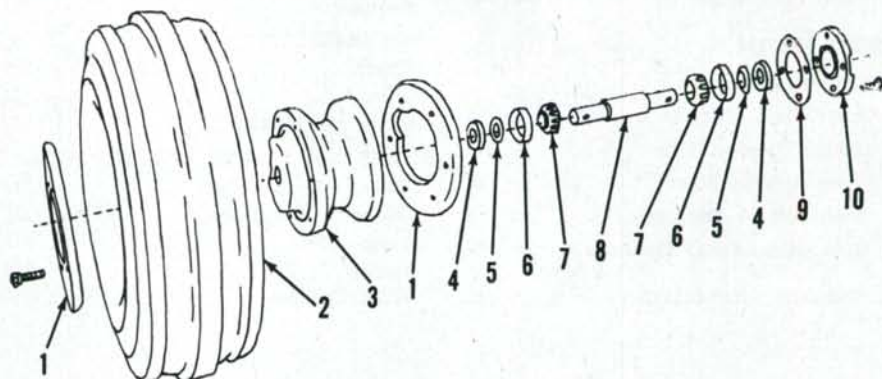


Fig. 2—Exploded view of single front wheel assembly.

- | | | |
|-------------------|-----------------------|----------------------|
| 1. Side rings (2) | 4. Seals (2) | 8. Spindle |
| 2. Tire | 5. Seal retainers (2) | 9. Shims |
| 3. Wheel | 6. Bearing cups (2) | 10. Bearing retainer |
| | 7. Bearing cones (2) | |

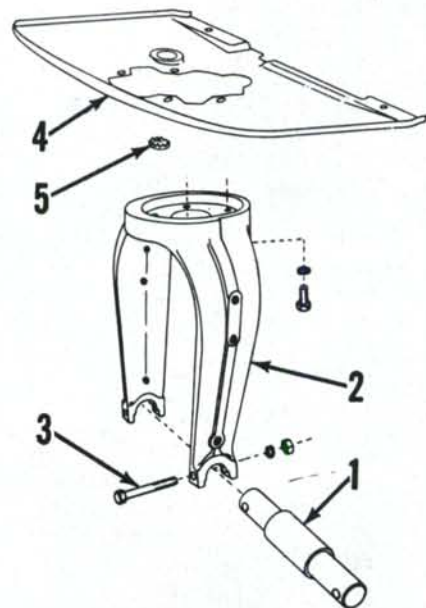


Fig. 1—Exploded view of single front wheel fork and associated parts.

- | | |
|--------------|---------------|
| 1. Spindle | 4. Mud shield |
| 2. Fork | 5. Plug |
| 3. Bolts (2) | |

Front wheel bearings should be re-packed with No. 2 wheel bearing grease after each 500 hours of use.

CAUTION: If necessary to renew single front wheel hub or repair tire, completely deflate tire before unbolting tire retaining rings.

2. R&R SINGLE FRONT WHEEL FORK. Remove wheel assembly as outlined in paragraph 1. Then unbolt and remove fork (2—Fig. 1) from steering sector shaft (14—Fig. 8 or Fig. 24).

When reinstalling fork, tighten the retaining cap screws to a torque of 130-140 Ft.-Lbs.

DUAL WHEEL TRICYCLE

3. WHEEL ASSEMBLY. Front wheel and bearing construction on dual wheel tricycle models is of conventional design. Stamped steel wheel disc is reversible on hub. Bearing adjustment is made by tightening retaining nut on spindle until bearings are firmly seated and then backing nut off one castellation and installing cotter pin. Bearings should be re-packed with No. 2 wheel bearing grease after each 500 hours of use.

On models D-14, D-15 (prior to Serial No. D15-9001) and D-17 (prior to Serial No. D17-42001), dual wheel pedestal spindles were equipped with

bearing spacers (10—Fig. 3) and seal retainers (11). Install seal retainer (11) and bearing spacer (10) on spindle; install seal retainer (8) in hub with cupped side to bearing. Soak felt seal in oil prior to installing seal in hub.

Models D-15 (after tractor Serial No. D15-9000) and D-17 (after tractor Serial No. D17-42000) have an external lip type seal. The three lips on outside diameter of seal contact a steel wear sleeve that is pressed into the front wheel hub. Install bearing spacer on spindle with flanged edge against shoulder on spindle. Install seal over spacer with crimped edge of seal against spacer flange. Pack wheel bearings with No. 2 wheel bearing grease and install inner cone in cup. Drive wear sleeve into hub with crimped edge of wear sleeve towards bearing.

4. R&R PEDESTAL. Raise front of tractor, then remove cap screws retaining pedestal to front support casting. The splined coupling (6—Fig. 4) will be removed with the pedestal assembly.

When reinstalling pedestal, hold steering wheel in the center (straight ahead) position and install pedestal with wheels in straight ahead position (caster to rear).

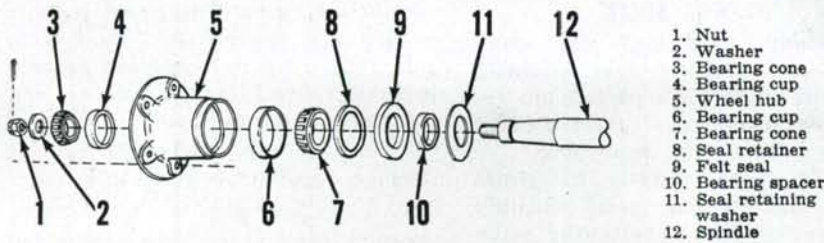


Fig. 3 — Exploded view of front wheel hub assembly used on dual front wheel tricycle models. Wide front axle models are similar except spacer (10) and washer (11) are not used.

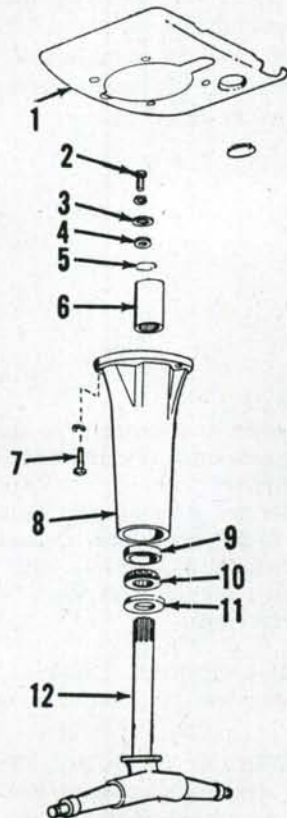


Fig. 4 — Exploded view of typical pedestal and associated parts.

- | | |
|---------------------|-------------------|
| 1. Mud shield | 7. Cap screw |
| 2. Cap screw | 8. Pedestal |
| 3. Washer | 9. Bearing cup |
| 4. Shims | 10. Bearing cone |
| 5. Snap ring | 11. Oil seal |
| 6. Splined coupling | 12. Spindle shaft |

5. OVERHAUL. To overhaul the removed unit, remove cap screw (2— Fig. 4), washer (3), shims (4) and coupling (6). NOTE: Make certain that shims (4) are not lost or damaged as they provide the proper bearing adjustment. With splined coupling removed, spindle shaft can be withdrawn from pedestal. Pack bearing (10) with No. 2 wheel bearing grease. Oil seal (11) is of the lip type and should be installed with lip towards bearing. Coupling should be installed on spindle shaft with end of coupling nearest internal snap ring downward. When reassembling, vary the number of shims (4) to provide shaft with a free rolling fit and no end play.

WIDE FRONT AXLE

NOTE: D-15 and D-17 models may be equipped with either a standard or heavy duty adjustable front axle or a heavy duty non-adjustable wide front axle. Servicing procedures are similar for all wide front axle models.

6. WHEEL ASSEMBLY. Front wheel and bearing construction on wide front axle models is of conventional design. Stamped steel wheel disc is reversible on hub. Bearing adjustment is made by tightening retaining nut on spindle until bearings are firmly seated; then, backing nut off one castellation and installing cotter pin. Bearings should be repacked with No. 2 wheel bearing grease after each 500 hours of use.

On models D-14, D-15 (prior to tractor Serial No. D15-9001) and D-17 (prior to tractor Serial No. D17-42001), a felt type seal was used in front wheel hubs. Install seal retainer (8— Fig. 3) in hub with cupped side of

retainer towards bearing. Soak felt seal in oil prior to installing in hub. Bearing spacer (10) and retainer (11) are not used on wide front axle models.

A lip-type seal is used in the front wheel hubs on D-15 models (after Serial No. D15-9000) and D-17 models (after Serial No. D17-42000). The three lips on outside diameter of seal contact a steel wear sleeve that is pressed into the wheel hub. Install the seal over spindle with crimped edge of seal against shoulder on spindle. Pack wheel bearings with No. 2 wheel bearing grease and install inner cone in cup. Drive the wear sleeve into hub with crimped edge of sleeve towards bearing.

7. ADJUSTMENTS. Front wheel toe-in should be checked after each tread width adjustment on adjustable front axle models. All wide front axle models are provided with toe-in alignment marks; however, it is advisable to measure front wheel toe-in and adjust to 1/16-1/8 inch if necessary. Be sure that tie rod clamps are securely tightened.

8. REMOVE AND REINSTALL. Support tractor, and disconnect tie rods from center steering arm (27— Fig. 5). Detach radius rod pivot bracket (24) from torque tube and lower rear of radius rod. NOTE: Some rear pivots may be different from type shown in Fig. 5. Move front axle assembly rearward and roll axle assembly away from tractor. Axle sup-

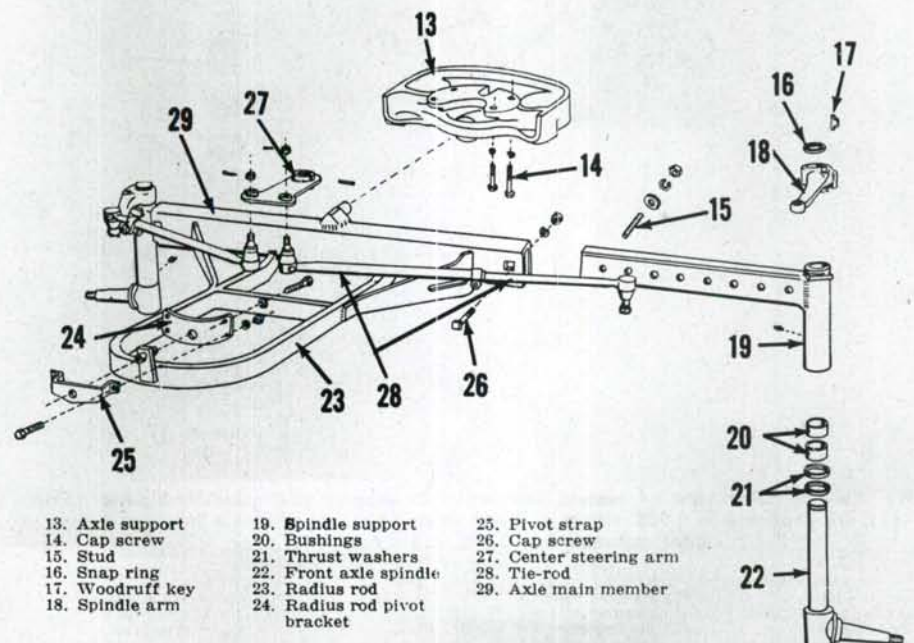


Fig. 5 — Exploded view of typical adjustable axle and associated parts. Radius rod (23) is welded to axle main member (29).

- | | | |
|------------------|------------------------------|-------------------------|
| 13. Axle support | 19. Spindle support | 25. Pivot strap |
| 14. Cap screw | 20. Bushings | 26. Cap screw |
| 15. Stud | 21. Thrust washers | 27. Center steering arm |
| 16. Snap ring | 22. Front axle spindle | 28. Tie-rod |
| 17. Woodruff key | 23. Radius rod | 29. Axle main member |
| 18. Spindle arm | 24. Radius rod pivot bracket | |

BUY NOW

**Then Instant Download
the Complete Manual
Thank you very much!**