

# Information and Instructions

This shop manual contains several sections each covering a specific group of wheel type tractors. The Tab Index on the preceding page can be used to locate the section pertaining to each group of tractors. Each section contains the necessary specifications and the brief but terse procedural data needed by a mechanic when repairing a tractor on which he has had no previous actual experience.

Within each section, the material is arranged in a systematic order beginning with an index which is followed immediately by a Table of Condensed Service Specifications. These specifications include dimensions, fits, clearances and timing instructions. Next in order of arrangement is the procedures paragraphs.

In the procedures paragraphs, the order of presentation starts with the front axle system and steering and proceeding toward the rear axle. The last paragraphs are devoted to the power take-off and power lift systems. Interspersed where needed are additional tabular specifications pertaining to wear limits, torquing, etc.

## HOW TO USE THE INDEX

Suppose you want to know the procedure for R&R (remove and reinstall) of the engine camshaft. Your first step is to look in the index under the main heading of ENGINE until you find the entry "Camshaft." Now read to the right where under the column covering the tractor you are repairing, you will find a number which indicates the beginning paragraph pertaining to the camshaft. To locate this wanted paragraph in the manual, turn the pages until the running index appearing on the top outside corner of each page contains the number you are seeking. In this paragraph you will find the information concerning the removal of the camshaft.

# SHOP MANUAL

# ALLIS-CHALMERS

## MODELS D-10, D-10 Series III, D-12 AND D-12 Series III

The tractor serial number is stamped on the left front of the torque tube. The engine serial number is stamped on the rear left side of the engine block.

All models are available in both standard or high clearance design. All types use adjustable front axles. D-10 tractors have narrower tread than D-12 tractors.

### IMPORTANT

At tractor Serial Numbers D10-3501 and D12-3001, numerous changes were made in D-10 and D-12 tractors. D-10 Series III and D-12 Series III tractors, beginning at tractor serial number D10-9001 and D12-9001, also incorporate numerous additional changes. Where service procedure or specifications are affected, changes are noted in the text of this manual by serial number range. Check serial number of tractor prior to reference to manual.

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\*Indicates feature not available within Serial Number range.

# 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.**

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## 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
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Ignition Distributor Make .....	D-R	D-R	—	D-R	—
Mark Indicating:					
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\* 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.

# SHOP MANUAL

# ALLIS - CHALMERS

MODEL 160

## NOTE

Throughout this manual, it will be noted that in the course of setting end-play, pre-load or clearances to specification that certain shim thicknesses proposed for use are somewhat unusual. For example: a shim may be offered as having a thickness of 0.0039 inches. This thickness corresponds to 1/10 millimeter, just as 0.00039 is 1/100 of a millimeter. The number thirty-nine will often appear as a multiple in some shim material proposed, just as 0.00196 (5 x 0.00039) is 5/100 (0.05) millimeter. Sometimes values will be rounded-off: Instead of 0.0039, 0.004 may be used. In almost every case, tolerance allowed is sufficient so that US-produced shim stock, available from suppliers in thicknesses of 0.002, 0.004, 0.005, etc., will serve in place of the metric material.

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# SHOP MANUAL

# ALLIS-CHAMBERS

## MODELS 170, 175

**Models 170 and 175 tractors are available in single wheel tricycle, dual wheel tricycle or adjustable front axle version. Model 170 and early 175 are equipped with either a 226 cubic inch non-diesel or 236 cubic inch diesel engine. Late Model 175 is equipped with either a 226 cubic inch non-diesel or a 248 cubic inch diesel engine.**

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## CONDENSED SERVICE DATA

### GENERAL

	Gasoline	Diesel	Diesel
Engine Make . . . . .	Own	Perkins	Perkins
Cylinders . . . . .	4	4	4
Bore-Inches . . . . .	4	3.875	3.975
Stroke-Inches . . . . .	4½	5	5
Displacement-Cubic Inches . . . . .	226	236	248
Piston Removed From . . . . .	Above	Above	Above
Main Bearings, Number of . . . . .	3	5	5
Main Bearings Adjustable? . . . . .	No	No	No
Rod Bearings Adjustable? . . . . .	No	No	No
Cylinder Sleeves . . . . .	Wet	Dry	Dry

### TUNE UP

	1-2-4-3	1-3-4-2	1-3-4-2
Firing Order . . . . .			
Valve Tappet Gap (Hot)			
Intake . . . . .	0.010-0.012	0.010	0.010
Exhaust . . . . .	0.014-0.016	0.010	0.010

### TUNE-UP Cont.

	30	45	45
Valve Seat & Face			
Intake . . . . .	30	45	45
Exhaust . . . . .	45	45	45
Ignition Distributor Make . . . . .	D-R	—	—
Mark Indicating:			
Retarding Timing . . . . .	See	—	—
Full Advanced Timing . . . . .	Paragraph	—	—
Mark Location . . . . .	117	—	—
Breaker Point Gap . . . . .	0.022	—	—
Spark Plug Gap . . . . .	0.025	—	—
Injection Pump Make . . . . .	—	CAV	CAV
Injection Pump Timing . . . . .	—	See Paragraph 98	
Compression Pressure			
at Cranking Speed . . . . .	160	390-410	390-410
Low Idle RPM . . . . .	525	600	600
High Idle RPM . . . . .	2000	2000	2000
Full Load RPM . . . . .	1800	1800	1800