

# 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

# INTERNATIONAL HARVESTER

## SERIES 454-464-484-574-584-674

Engine serial number is stamped on left side of engine crankcase on all non-diesel series. Engine serial number is stamped on right side of engine crankcase on all diesel series.

Tractor serial number is stamped on name plate attached to left side of speed transmission housing on Models 454, 464, 574 and 674 or on the right rear side of front axle support on Models 484 and 584.

### INDEX (By Starting Paragraph)

	454, 464 Non-Diesel	454, 464, 484 Diesel	574, 674 Non-Diesel	574, 674, 584 Diesel
<b>BRAKES</b>				
Bleed .....	153	153	153	153
Master Cylinder .....	155	155	155	155
Pedal Adjustment .....	152	152	152	152
R&R and Overhaul .....	154	154	154	154
<b>CARBURETOR</b>				
Gasoline .....	83	...	83	...
<b>CLUTCH, ENGINE</b>				
Adjustment .....	123	123	123	123
Remove and Reinstall .....	124	124	124	124
<b>COOLING SYSTEM</b>				
Fan .....	105	105	105	105
Radiator .....	104	104	104	104
Water Pump .....	107	108	107	108
<b>DIESEL FUEL SYSTEM</b>				
Ether Starting Aid .....	...	99	...	99
Filter and Bleeding .....	...	89	...	89
Injection Pump .....	...	90	...	90
Injection Pump Timing .....	...	91	...	91
Nozzles .....	...	95	...	95
<b>DIFFERENTIAL</b> .....	141	141	141	141
<b>ELECTRICAL SYSTEM</b>				
Alternator and Regulator .....	109	109	109	109
Magnetic Pulse Ignition .....	...	...	116	...
Standard Ignition .....	114	...	114	...
Starting Motor .....	113	113	113	113
<b>ENGINE</b>				
Cam Followers .....	27	56	27	56
Camshaft .....	35	65	35	65
Connecting Rods & Brgs. ....	40	70	40	70
Crankshaft .....	41	71	41	71
Crankshaft Oil Seals .....	42,43	72,73	42,43	72,73
Cylinder head .....	24	52	24	52
Cylinder Sleeves .....	...	68	...	68
Engine Removal .....	23	51	23	51

## INDEX CONT.

	454, 464 Non-Diesel	454, 464, 484 Diesel	574, 674 Non-Diesel	574, 674, 584 Diesel
<b>ENGINE CONT.</b>				
Flywheel .....	44	74	44	74
Ignition Timing .....	115	...	115, 117	...
Injection Timing .....	...	91	...	91
Main Bearings .....	41	71	41	71
Nozzle Sleeves .....	...	53	...	53
Oil Pump .....	48	79	48	79
Pistons & Rings .....	38	68	38	68
Piston Pins .....	39	69	39	69
Piston Removal .....	37	67	37	67
Rocker Arms .....	28	57	28	57
Timing Gear Cover .....	31	60	31	60
Timing Gears .....	32	61	32	61
Valves and Seats .....	25	54	25	54
Valve Guides & Springs .....	26	55	26	55
Valve Timing .....	30	59	30	59
<b>MAIN DRIVE BEVEL GEARS AND DIFFERENTIAL</b>				
Adjustment Carrier Bearings .....	142, 143	142, 143	142, 143	142, 143
R&R Bevel Gears .....	145	145	145	145
R&R Differential .....	146	146	146	146
Differential Lock .....	147	147	147	147
Planetary & Rear Axles .....	148, 149	148, 149	148, 149	148, 149
<b>FRONT SYSTEM</b>				
Axle Main Member .....	1	1	1	1
Steering Knuckles .....	3	3	3	3
Tie Rods .....	2	2	2	2
GOVERNOR (Non-Diesel) .....	100	...	100	...
<b>HYDRAULIC SYSTEM</b>				
Auxiliary Valves .....	175	175	175	175
Cylinder and Valve Unit .....	171	171	171	171
Pump .....	10	10	10	10
R&R Lift Unit .....	169	169	169	169
Test and Adjust .....	165	165	165	165
Trouble Shooting .....	164	164	164	164
<b>POWER STEERING SYSTEM</b>				
Cylinder .....	18	18	18	18
Flow Divider .....	9	9	9	9
Lubrication & Bleeding .....	5	5	5	5
Oil Cooler .....	19	19	19	19
Flow & Pressure Tests .....	6	6	6	6
Pump .....	10	10	10	10
Steering Control Valve .....	14	14	14	14
Steering Relief Valve .....	8	8	8	8
<b>POWER TAKE-OFF</b>				
Linkage Adjustment .....	158	158	158	158
Operating Pressure .....	159	159	159	159
R&R and Overhaul .....	160, 162	160, 162	160, 162	160, 162
<b>TRANSMISSION, RANGE</b>				
Linkage Adjustment .....	135	135	135	135
R&R and Overhaul .....	136	136	136	136
Lubrication Pump .....	131	131	131	131
<b>TRANSMISSION, SPEED</b>				
Linkage Adjustment .....	125	125	125	125
R&R and Overhaul .....	127, 128	127, 128	127, 128	127, 128

# SHOP MANUAL

# INTERNATIONAL HARVESTER

## SERIES

766-826-966-1026-1066

Engine serial number is stamped on left side of engine crankcase on all series except series 826 equipped with the D358 diesel engine. Engine serial number is stamped on right side of engine crankcase on the D358 engine. Engine serial number will be preceded by engine model number.

Tractor serial number is stamped on name plate attached to left side of clutch housing or hydrostatic drive housing.

### INDEX (By Starting Paragraph)

	766 Non-Diesel	766 Diesel	826 Non-Diesel	826 Diesel	966 Diesel	1026 Turbo-Diesel	1066 Turbo-Diesel
BELT PULLEY.....	302	302	302	302	302	...	...
<b>BRAKES</b>							
Bleed.....	298	298	298	298	298	298	298
Control Valve.....	300	300	300	300	300	300	300
Pedal Adjustment.....	297	297	297	297	297	297	297
R&R and Overhaul.....	299	299	299	299	299	299	299
<b>CARBURETOR</b>							
Gasoline.....	167	...	167	...	...	...	...
LP-Gas.....	...	...	172	...	...	...	...
CLUTCH, ENGINE.....	234	234	234	234	234	...	234
<b>COOLING SYSTEM</b>							
Fan.....	214	216	214	215	216	215	216
Radiator.....	213	213	213	213	213	213	213
Water Pump.....	217	220	217	218	220	219	220
<b>DIESEL FUEL SYSTEM</b>							
Ether Starting Aid.....	...	200	...	200	200	200	200
Filters and Bleeding.....	...	181	...	179	181	180	181
Injection Pump and Drive.....	...	185	...	182	185	183	185
Injection Pump Timing.....	...	188	...	186	188	187	188
Nozzles.....	...	193	...	193	193	193	193
DIESEL TURBOCHARGER.....	...	...	...	...	...	201	202
DIFFERENTIAL.....	283	283	283	283	283	283	283
<b>ELECTRICAL SYSTEM</b>							
Alternator and Regulator.....	221	221	221	221	221	221	221
Magnetic Pulse Ignition.....	...	...	228	...	...	...	...
Standard Ignition.....	226	...	226	...	...	...	...
Starting Motor.....	224	224	224	224	224	224	224
Wiring Diagrams.....	Located at End of Manual						
<b>ENGINE</b>							
Cam followers.....	73	108	73	106	108	107	108
Camshaft.....	83	140	83	136	140	138	140
Connecting Rods & Brgs.....	89	147	89	147	147	147	147
Cooling Tubes, Water Directors and Nozzle Sleeves.....	...	99	...	99	99	99	99
Crankshaft.....	90	150	90	148	150	149	150
Crankshaft Oil Seals.....	91,92	153,154	91,92	151,152	153,154	151,152	153,154
Cylinder Head.....	70	98	70	98	98	98	98
Cylinder Sleeves.....	87	145	...	143	145	144	145
Engine Removal.....	69	97	69	97	97	97	97
Flywheel.....	93	155	93	155	155	155	155
Ignition Timing.....	227	...	227,229	...	...	...	...
Injection Timing.....	...	188	...	186	188	187	188
Main Bearings.....	90	150	90	148	150	149	150
Oil Cooler.....	...	165	...	163	165	164	165
Oil Pump.....	94	158	94	156	158	157	158
Pistons & Rings.....	87	145	86	143	145	144	145
Piston Pins.....	88	146	88	146	146	146	146
Piston Removal.....	85	142	85	142	142	142	142

## INDEX (Cont.)

	766 Non-Diesel	766 Diesel	826 Non-Diesel	826 Diesel	966 Diesel	1026 Turbo-Diesel	1066 Turbo-Diesel
<b>ENGINE (Cont.)</b>							
Rocker Arms .....	75	114	75	110	114	112	116
Timing Gear Cover .....	79	123	79	123	123	123	123
Timing Gears .....	80	132	80	124	132	128	132
Valves and Seats .....	71	102	71	100	102	101	102
Valve Guides & Springs .....	72	105	72	103	105	104	105
Valve Timing .....	78	121	78	119	122	120	122
<b>FINAL DRIVE</b>							
Bull Gears .....	293	293,294	293,294	293,294	293,294	293,294	293,294
Bull Pinions .....	293	293,294	293,294	293,294	293,294	293,294	293,294
Remove and Reinstall .....	291	291	291	291	291	291	291
Wheel Axle Shaft .....	293	293,294	293,294	293,294	293,294	293,294	293,294
<b>FRONT SYSTEM</b>							
All-Wheel Drive .....	...	...	11	11	11	11	11
Axle Center Member .....	3,4	3,4	3,4,5	3,4,5	3,4	3,4,5	3,4
Steering Knuckles .....	10	10	10	10	10	10	10
Tie Rods .....	9	9	9	9	9	9	9
Tricycle Type .....	1,2	1,2	1,2	1,2	1,2	1,2	1,2
GOVERNOR (Non-diesel) .....	209	...	209	...	...	...	...
<b>HYDRAULIC SYSTEM</b>							
Auxiliary Valves .....	336	336	336	336	336	336	336
Hydraulic Seat .....	339	339	339	339	339	339	339
Lift Unit, R&R & Overhaul .....	322	322	322	322	322	322	322
Pump .....	332	332	332	332	332	332	332
Right Hand Seat Support .....	329	329	329	329	329	329	329
Test and Adjust .....	311	311	311	311	311	311	311
Trouble Shooting .....	310	310	310	310	310	310	310
<b>HYDROSTATIC DRIVE</b>							
Adjustments .....	...	...	260	260	260	260	260
Lubrication and Filter .....	...	...	282	282	282	282	282
Pressure Checks .....	...	...	262	262	262	262	262
R&R and Overhaul .....	...	...	267	267	267	267	267
Trouble Shooting .....	...	...	259	259	259	259	259
L-P GAS SYSTEM .....	...	...	172	...	...	...	...
<b>MULTIPLE CONTROL VALVE</b>							
VALVE .....	64	64	64,65	64,65	64,65	65	64,65
<b>POWER STEERING SYSTEM</b>							
Cylinder .....	58,60	58,60	58,62	58,62	58,60	58,62	58,60
Flow Divider .....	56	56	56,57	56,57	56,57	57	56,57
Hand Pump .....	51	51	49	49	51	49	51
Lubrication & Bleeding .....	29	29	29	29	29	29	29
Oil Cooler .....	66	66	66,67	66,67	66,67	67	66,67
Operational Tests .....	33	33	33	33	33	33	33
Pump .....	43	43	43	43	43	43	43
Pilot Valve .....	...	...	53,54	53,54	...	54	...
<b>PTO</b>							
Pressure Check & Adjustment .....	304	304	304	304	304	304	304
R&R and Overhaul .....	305	305	305	305	305	305	305
<b>TORQUE AMPLIFIER</b>							
Linkage Adjustment .....	248	248	248	248	248	...	248
Overhaul .....	251	251	251	251	251	...	251
Remove & Reinstall .....	249	249	249	249	249	...	249
TRANSMISSION, BRAKE .....	238	238	238	238	238	...	238
<b>TRANSMISSION, RANGE</b>							
Linkage Adjustment .....	258	258	258	258	258	258	258
R&R and Overhaul .....	253	253	253	253	253	253	253
<b>TRANSMISSION, SPEED</b>							
Linkage Adjustment .....	248	248	248	248	248	...	248
R&R and Overhaul .....	249,251	249,251	249,251	249,251	249,251	...	249,251

# SHOP MANUAL

# INTERNATIONAL HARVESTER

**SERIES**  
786 - 886 - 986 - 1086

Engine serial number is stamped on right side of engine crankcase on Models 786 and 886 equipped with D-358 engines and on left side of engine crankcase on Model 886 equipped with D-360 engine and all 986 and 1086 models. Tractor serial number is stamped on name plate attached to right side of rear frame. Cab/ROPS serial and model number is stamped on plate on right side of cab.

## INDEX (By Starting Paragraph)

	786 Diesel	886 Diesel	986 Diesel	1086 Diesel
<b>BRAKES</b>				
Bleed .....	186	186	186	186
Control Valve .....	188	188	188	188
Pedal Adjustment .....	185	185	185	185
R&R and Overhaul .....	187	187	187	187
<b>CAB</b>				
Remove & Reinstall .....	.....	240	240	240
<b>CLUTCH, ENGINE</b> .....	140	140	140	140
<b>COOLING SYSTEM</b>				
Fan .....	131	131	131	131
Radiator .....	130	130	130	130
Water Pump .....	132	132, 133	133	133
<b>DIESEL FUEL SYSTEM</b>				
Ether Starting Aid .....	124	124	124	124
Filters and Bleeding .....	109	109	109	109
Injection Pump and Drive .....	112	112, 113	113	113
Injection Pump Timing .....	114	114, 115	115	115
Nozzles .....	119	119	119	119
<b>DIESEL TURBOCHARGER</b> .....	.....	.....	.....	125
<b>DIFFERENTIAL</b> .....	172	172	172	172
<b>ELECTRICAL SYSTEM</b>				
Alternator and Regulator .....	136	136	136	136
Starting Motor .....	138	138	138	138
<b>ENGINE</b>				
Cam Followers .....	68	68, 69	69	69
Camshaft .....	87	87, 89	89	89
Connecting Rods & Bearings .....	95	95	95	95
Cooling Tubes, Water Directors and Nozzle Sleeves .....	62	62	62	62
Crankshaft .....	96	96, 97	97	97
Crankshaft Oil Seals .....	98	98	98	98
Cylinder Head .....	61	61	61	61
Cylinder Sleeves .....	92	92, 93	93	93

# INDEX CONT.

	786 Diesel	886 Diesel	986 Diesel	1086 Diesel
<b>Engine (Cont.)</b>				
Engine Removal .....	60	60	60	60
Flywheel .....	100	100	100	100
Injection Timing .....	114	114, 115	115	115
Main Bearings .....	96	96, 97	97	97
Oil Cooler .....	106	106, 107	107	107
Oil Pump .....	101	101, 102	102	102
Pistons & Rings .....	92	92, 93	93	93
Piston Pins .....	94	94	94	94
Piston Removal .....	91	91	91	91
Rocker Arms .....	71	71, 73	73	73
Timing Gear Cover .....	78	78	78	78
Timing Gears .....	79	79, 83	83	83
Valves and Seats .....	63	63, 64	64	64
Valve Guides & Springs .....	65	65, 66	66	66
Valve Timing .....	76	76, 77	77	77
<b>FINAL DRIVE</b>				
Bull Gears .....	181	181	181	181
Bull Pinions .....	181	181	181	181
Remove and Reinstall .....	180	180, 182	180, 182	180, 182
Wheel Axle Shaft .....	181	181, 182	181, 182	181, 182
<b>FRONT SYSTEM</b>				
All-Wheel Drive .....	25	10, 25	10, 25	10, 25
Axle Center Member .....	2	2	2	2
Steering Knuckles .....	6	6	6	6
Tie Rods .....	5	5	5	5
Tricycle Type .....	.....	1	1	1
<b>HYDRAULIC SYSTEM</b>				
Auxiliary Valves .....	233	233	233	233
Hydraulic Seat .....	237	237	237	237
Lift Unit, R&R & Overhaul .....	216	216	216	216
Pump .....	227	227	227, 229	227, 229
Test and Adjust .....	197	197	197, 200	197, 200
Troubleshooting .....	195	195	195, 196	195, 196
MULTIPLE CONTROL VALVE .....	57	57	57	57
<b>POWER STEERING SYSTEM</b>				
Cylinder .....	55	53, 55	53, 55	53, 55
Flow Divider .....	45, 52	45, 52	45, 52	45, 52
Hand Pump .....	50	50	50	50
Lubrication & Bleeding .....	38	38	38	38
Oil Cooler .....	58	58	58	58
Operational Tests .....	41	41	41	41
Pump .....	47	47	47	47
<b>PTO</b>				
Pressure Check & Adjustment .....	191	190, 191	190, 191	190, 191
R&R and Overhaul .....	192	192	192	192
<b>TORQUE AMPLIFIER</b>				
Linkage Adjustment .....	152	152	152	152
Overhaul .....	154	154	154	154
Remove & Reinstall .....	153	153	153	153
TRANSMISSION BRAKE .....	145, 154	145, 154	145, 154	145, 154
<b>TRANSMISSION, SPEED</b>				
Linkage Adjustment .....	152	152	152	152
R&R and Overhaul .....	153, 154	153, 154	153, 154	153, 154
<b>TRANSMISSION, RANGE</b>				
Linkage Adjustment .....	171	171	171	171
R&R and Overhaul .....	158	158	158	158