5000 Air Drill

Models AD.A and AD.B

Service Manual

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DR-015V2 1/05

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SAFETY

SAFETY - ALERT SYMBOL



This symbol is used to denote possible danger and care should be taken to prevent bodily injury. This symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

THIS SYMBOL APPEARS WITH TEXT READING "DANGER!", "CAUTION!", OR "WARNING!" THESE WORDS INDICATE THREE LEVELS OF POSSIBLE HAZARDS; THEY ARE DESCRIBED BELOW.

DANGER!



Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. The color associated with Danger is RED.

WARNING!



Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. The color associated with Warning is ORANGE.

CAUTION!



Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. The color associated with Caution is YELLOW.

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MACHINE SPECIFICATIONS

IMPLEMENT DIMENSIONS

Metric Dimensions (Meters)

BASE MACHINE	NO. OF SHANKS 7.2" SPC	NO. OF SHANKS 9" SPC	NO. OF SHANKS 12" SPC	WIDTH OF CUT 7.2" SPC	WIDTH OF CUT 9" SPC	WIDTH OF CUT 12" SPC	WIDTH OF CUT 14.4" SPC	TRANS. WIDTH	TRANS. HEIGHT	AIR DRILL DEPTH
8.2	45	37	27	8.2	8.5	8.2	8.4	6.2	3.5	8.8
10.1	55	45	33	10.1	10.3	10.1	10.2	6.2	4.4	8.8
11.9	65	53	39	11.9	12.1	11.9	12.1	6.2	5.3	8.8
13.7	75	61	45	13.7	14.0	13.7	13.9	6.2	4.2	8.8
15.5	85	69	51	15.5	15.8	15.5	15.7	6.2	5.2	8.8
17.4	95	77	57	17.4	17.6	17.4	17.6	6.2	5.2	8.8

Imperial Dimensions (Feet)

BASE MACHINE	NO. OF SHANKS 7.2" SPC	NO. OF SHANKS 9" SPC	NO. OF SHANKS 12" SPC	WIDTH OF CUT 7.2" SPC	WIDTH OF CUT 9" SPC	WIDTH OF CUT 12" SPC	WIDTH OF CUT 14.4" SPC	TRANS. WIDTH	TRANS. HEIGHT	AIR DRILL DEPTH
27	45	37	27	27.0	27.8	27.0	27.6	20'6"	11'6"	29'
33	55	45	33	33.0	33.8	33.0	33.6	20'6"	14'6"	29'
39	65	53	39	39.0	39.8	39.0	39.6	20'6"	17'6"	29'
45	75	61	45	45.0	45.8	45.0	45.6	20'6"	13'11"	29'
51	85	68	51	51.0	51.8	51.0	51.6	20'6"	16'11"	29'
57	95	77	57	57.0	57.8	57.0	57.6	20'6"	16'11"	29'

NOTE: Specifications subject to change without notice.

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	GRADE 2*				GRADE 5, 5.1, OR 5.2				GRADE 8 OR 8.2				L9 (ALLOY)			
	Dry **		Lubricated**		Dry **		Lubricated**		Dry **		Lubricated**		Head		Nut	
SIZE	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft	N·m	lbf·ft
1/4 UNF	7.5	5.5	5.7	4.2	10.8	8	8.5	6.3	16.3	12	12.2	9	13.6	10	14.9	11
1/4 UNC	8.5	6.3	6.4	4.7	13.6	10	9.8	7.2	19	14	13.6	10	16.3	12	17.6	13
5/16 UNF	15	11	11	8	23	17	18	13	33	24	24	18	26	19	28	21
5/16 UNC	16	12	12	9	26	19	19	14	37	27	27	20	27	20	31	23
3/8 UNF	27	20	20	15	41	30	31	23	61	45	47	35	41	30	45	33
3/8 UNC	31	23	23	17	47	35	34	25	68	50	47	35	47	35	52	38
7/16 UNF	43	32	33	24	68	50	47	35	95	70	68	50	75	55	81	60
7/16 UNC	49	36	37	27	75	55	54	40	108	80	81	60	81	60	88	65
1/2 UNF	68	50	47	35	102	75	75	55	149	110	108	80	115	85	129	95
1/2 UNC	75	55	54	40	115	85	88	65	163	120	122	90	129	95	142	105
9/16 UNF	95	70	75	55	149	110	108	80	203	150	149	110	163	120	190	140
9/16 UNC	108	80	81	60	163	120	122	90	231	170	176	130	183	135	203	150
5/8 UNF	136	100	102	75	203	150	149	110	285	210	217	160	231	170	251	185
5/8 UNC	149	110	115	85	231	170	176	130	325	240	244	180	258	190	278	205
3/4 UNF	237	175	176	130	353	260	271	200	515	380	380	280	359	265	393	290
3/4 UNC	271	200	190	140	407	300	298	220	570	420	420	310	447	330	481	355
7/8 UNF	231	170	170	125	583	430	434	320	814	600	610	450	644	475	685	505
7/8 UNC	244	180	190	140	637	470	475	350	909	670	678	500	705	520	793	585
1 UNF	339	250	258	190	868	640	651	480	1234	910	922	680	746	550	1051	775
1 UNC	380	280	285	210	976	720	732	540	1383	1020	1031	760	949	700	1220	900
1-1/8 UNF	475	350	366	270	1071	790	800	590	1749	1290	1315	970	1390	1025	1559	1150
1-1/8 UNC	542	400	407	300	1207	890	909	670	1953	1440	1464	1080	1559	1150	1797	1325
1-1/4 UNF	678	500	515	380	1519	1120	1139	840	2468	1820	1844	1360	1898	1400	2170	1600
1-1/4 UNC	746	550	570	420	1681	1240	1261	930	2726	2010	2048	1510	2170	1600	2373	1750
1-1/2 UNF	1180	870	881	650	2644	1950	1980	1460	4285	3160	3214	2370	3932	2900	4407	3250
1-1/2 UNC	1329	980	990	730	2983	2200	2224	1640	4827	3560	3621	2670	4475	3300	4949	3650

Bolt Torque Information

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically. Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

*** "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.*

** Grade 2 applies for hex caps (not hex bolts) up to 6" (152 mm) long. Grade 1 applies for hex cap screws over 6" (152 mm) long, and for all other types of bolts and screws of any length.*

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GREASE LOCATIONS

NOTE: The grease locations have color coded decals that contain information as to the frequency of lubrication. The following color coding is for grease decals:

IMPORTANT: Preventive maintenance, such as greasing the required locations at the correct times, making the correct adjustments and greasing the machine thoroughly before storing will help to avoid costly repairs.

	COLOR CODING			
	WHITE	**LIGHT BLUE**	**SILVER**	**LIGHT GREEN**
GREASE DECAL				
FREQUENCY OF LUBRICATION	10 Hours (Daily)	50 Hours (Weekly)	100 Hours (Semi-Annually)	200 Hours (Yearly)

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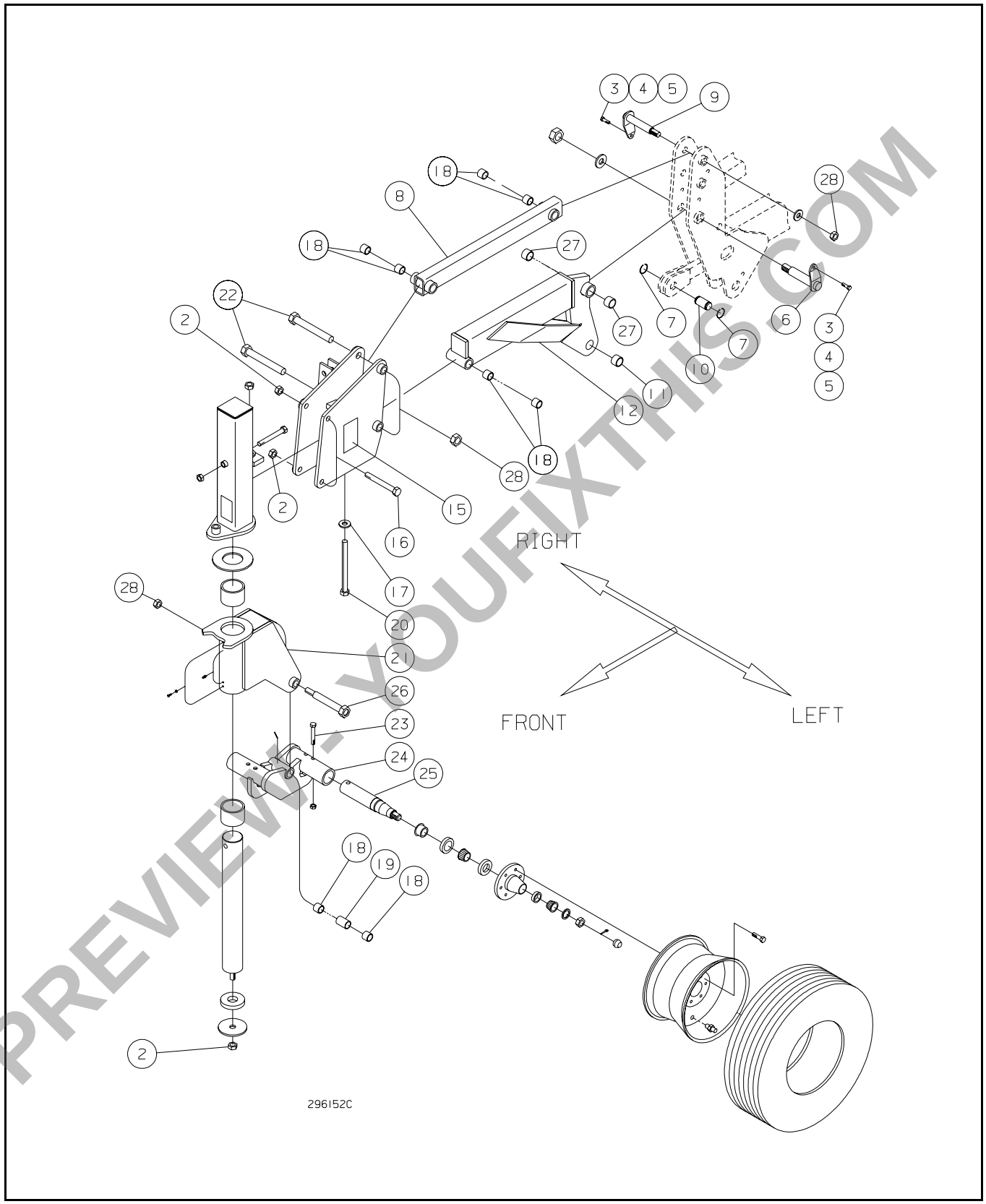
TROUBLESHOOTING TABLES

NOTE: For troubleshooting problems with your specific opener, refer to the operator's manual for that opener.

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
Shovels behind tractor wheels not entering ground.	1. Soil has been compressed so the sweep does not enter the same amount of soil.	1. Lower the shank to enter the suitable amount of soil. Optional spacer blocks are available which will lower the shanks. Contact the parts department.
On 5-section machines with harrows mounted, the harrows interfere with each other when winging up.	1. Harrows are locked in the raised position.	1. Harrows may interfere with each other if locked in the raised position on some 5-section machines. When winging up, place the harrows in the lowered position.
Front shovels not cutting as deep as rear shovels.	1. Drill is not level. 2. Incorrect tire pressures.	1. Refer to Adjustments Section to level drill. 2. Inflate tires to correct pressure.
Drill not cutting evenly from side to side.	1. Cultivator is not level. 2. Incorrect tire pressures. 3. Incorrect sweep pitch. 4. Trips fastened to frame incorrectly. 5. Mud buildup on tires.	1. Refer to Adjustments Section to level drill. 2. Inflate tires to correct pressure. 3. Refer to Adjustments Section to adjust sweep pitch. 4. Ensure trip is square on frame and entire trip mount face contacts frame. 5. Mud scrapers are required for seeding. See your dealer.

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Heavy Caster Assembly - First Serial Range

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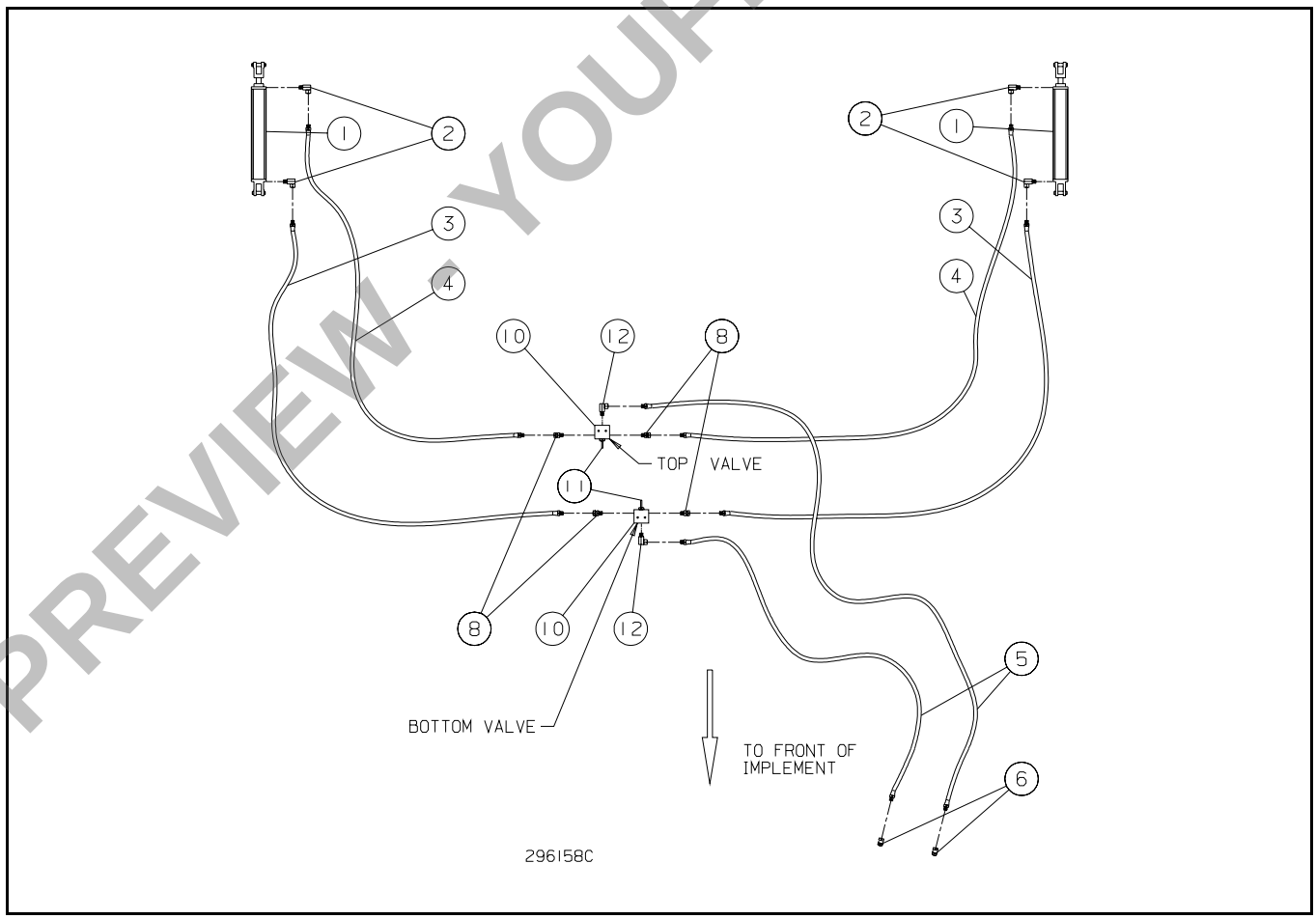
DEPTH CONTROL

DEPTH CONTROL HYDRAULICS - 3 AND 5-SECTION

First Serial Range: AD.A0000-K038301 to AD.A0000-K038330

REF	DESCRIPTION	REF	DESCRIPTION
1	CYLINDER - 3" X 16" - PRINCE (27' and 33' Machines)	5	HOSE, HYD - .5" X 330" ~ .5" MPT X .5" MPT (3 section Machines) (Used after Dec. 23, 1998)
1	CYLINDER - 4" X 16" - PRINCE (39', 45', 57' Machines)	6	FITTING, PIONEER COUPLER TIP - .5"
2	FITTING, HYDRAULIC -90 DEG SWIVEL ADAPTER	8	FITTING, HYDRAULIC - SWIVEL ADAPTER
3	HOSE, HYD - .375" X 114" ~ .5" MPT X .5" MPT (Used after Dec. 23, 1998)	10	VALVE BODY, DEPTH STOP
4	HOSE, HYD - .375" X 136" ~ .5" MPT X .5" MPT (Used after Dec. 23, 1998)	11	VALVE CARTRIDGE, DEPTH STOP
5	HOSE, HYD - .5" X 372" ~ .5" MPT X .5" MPT (5 Section Machines) (Used after Dec. 23, 1998)	12	FITTING, HYDRAULIC - 90 DEG SWIVEL ELBOW

Depth Control Hydraulics Parts - First Serial Range



Depth Control Hydraulics - 3 and 5-Section -First Serial Range

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CASTER HUB AND SPINDLE MAINTENANCE

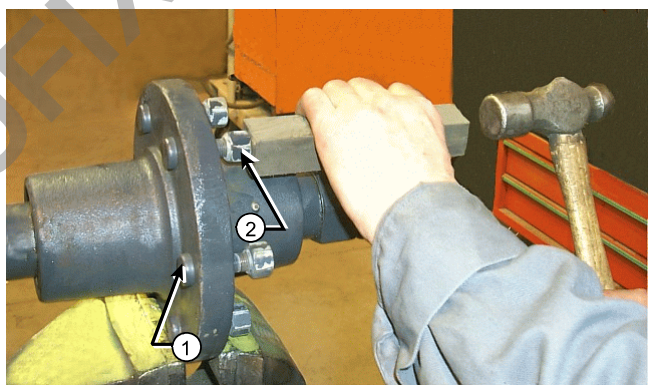
RE-PACKING THE BEARINGS

NOTE: For assembly of hubs for three and five-section implements and caster, see the assembly pages following the bearing re-packing procedure.

1. Remove tire and inspect studs (1), nuts (2), and tire for damage. Repair or replace as required.

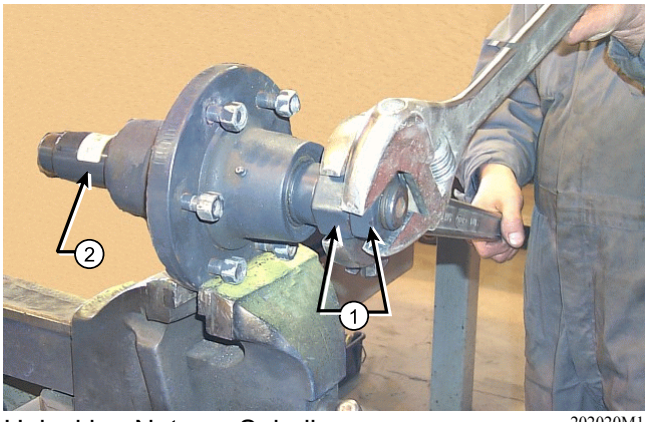


Assembled Wheel with Hub 202017M1



Removing Nuts and Studs 202018M1

2. Undo the locknut and adjusting nut (1) on one end of the spindle (2).



Unlocking Nuts on Spindle 202020M1

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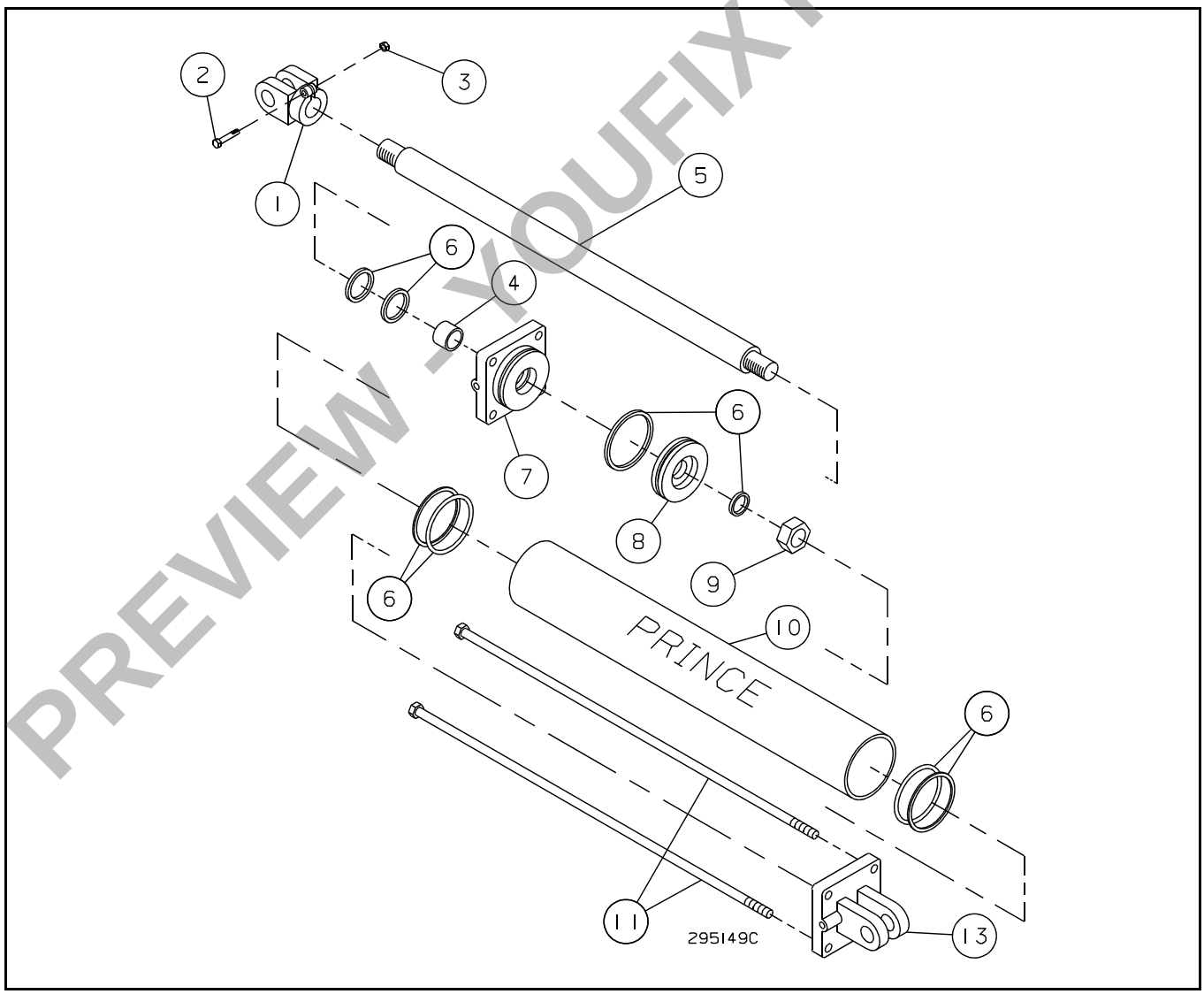
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3" X 8" AND 3" X 24" HYDRAULIC CYLINDER (PRINCE)

Serial Range: AD.A0000-K039601 to AD.B0000
AD-097701 to AD-110500

REF	DESCRIPTION	REF	DESCRIPTION
0	CYLINDER - 3" X 8" - PRINCE	6	CYLINDER REPAIR KIT
0	CYLINDER - 3" X 24" - PRINCE	7	CYLINDER ROD CAP
1	CYLINDER CLEVIS	8	CYLINDER PISTON
2	BOLT .375 X 2.5 GR. 5	9	CYLINDER PISTON NUT
3	LOCKNUT .375" UNC	10	CYLINDER TUBE
4	CYLINDER ROD CAP WEAR RING	11	CYLINDER TIE ROD
5	CYLINDER SHAFT	13	CYLINDER CLEVIS CAP

3" X 8" and 3" X 24" Hydraulic Cylinder Parts (Prince)



3" X 8" and 3" X 24" Cylinder (Prince)

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