Front-Wheel Drive Axles 730, 733, 740, 745 and 750

COMPONENT TECHNICAL MANUAL

Front-Wheel Drive Axles 730, 733, 740, 745 and 750

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John Deere Werke Mannheim
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INDX

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Recognize Safety Information

This is a safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



T81389 –UN–07DEC88

DX,ALERT –19–29SEP98–1/1

“Important” - Information

Information marked as IMPORTANT points out problems that may lead to machine damage. By following the directions given, these problems can be avoided.

LX,CRA05 002885 –19–09APR92–1/1

“Note” - Information

When marked with NOTE the information given is more detailed or contains restrictions to directions given previously. On the other hand useful information may be given belonging to certain instructions without being directly connected to them.

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Prevent Machine Runaway

Avoid possible injury or death from machinery runaway.

Do not start engine by shorting across starter terminals. Machine will start in gear if normal circuitry is bypassed.

NEVER start engine while standing on ground. Start engine only from operator’s seat, with transmission in neutral or park.



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DX,BYPAS1 –19–29SEP98–1/1

Axle options

Tractors (not for North America)	730	733	740	745	750
6020	X				
6120 and 6220	X[a]				
6320 and 6420	X	X[b, a, c, d]			
6420S		X[a, c, d]			
6520 and 6620			X[a, c, d]		
6820				X[a, c, d]	
6920 and 6920S					X[a, c, d]
6215	X				
6515			X		
SE tractors: 6020, 6120, 6220, 6320 and 6420	X				
SE tractors: 6520 and 6620			X		
Tractors (North America)	**730**	**733**	**740**	**745**	**750**
6120 and 6220	X[a]				
6320		X[a, c]			
6420		X[a, c, d]			
6215 and 6415	X				
6615 and 6715			X		
6120L, 6220L, 6320L and 6420L	X				
6320L, 6420L and 6520L		X			
7220 and 7320			X[a, d]		
7420				X[a, d]	
7520					X[a, d]
[a]also available with TLS					
[b]also available as narrow track					
[c]also available with TLS and multi-disk brake					
[d]also available with AutoTrac					

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Front-Wheel-Drive Axles - Torques for Bolts and Nuts

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. Torque values listed are for general use only.

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Use only a torque wrench to tighten bolts and nuts.

Metric ISO Standard Threads (N•m)						
Grade	**8.8**		**10.9**		**12.9**	
Loctite	**242**	**270**	**242**	**270**	**242**	**270**
Dimension	**N•m**	**N•m**	**N•m**	**N•m**	**N•m**	**N•m**
M6x1	9-10	10-11	14-16	15-17	16-18	18-20
M8x1.25	24-26	26-28	34-38	37-40	39-43	44-48
M10x1.5	48-53	52-58	68-75	73-81	80-88	88-97
M12x1.75	82-91	90-100	116-128	126-139	139-153	152-168
M14x2	129-143	143-158	182-202	200-221	221-244	238-263
M16x2	200-221	219-242	283-312	309-341	337-373	371-410
M18x2.5	276-305	299-331	390-431	428-473	466-515	509-562
M20x2.5	390-431	428-473	553-611	603-667	660-730	722-798
M22x2.5	523-578	575-635	746-824	817-903	893-987	974-1076
M24x3	675-746	732-809	950-1050	1040-1150	1140-1260	1240-1370
M27x3	998-1103	1088-1202	1411-1559	1539-1701	1710-1890	1838-2032
M30x3.5	1378-1523	1473-1628	1914-2115	2085-2305	2280-2520	2494-2757

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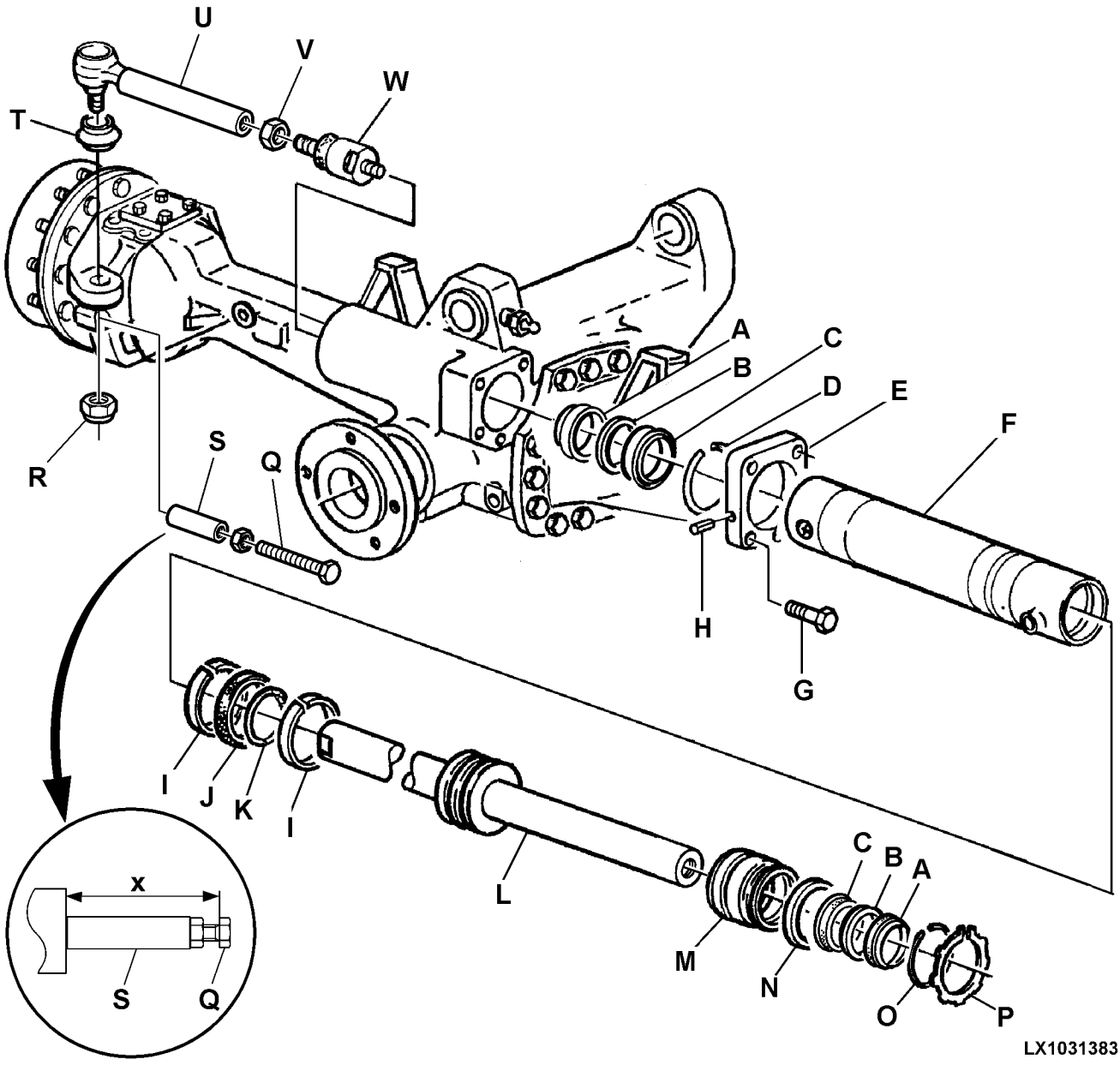
Specifications

Item	Measurement	Specification
Steering cylinder on axle housing, cap screws	Torque	129 to 143 N•m 95 to 105 lb-ft
Tie-rods on piston rod		
730	Torque	240 to 270 N•m 177 to 199 lb-ft
733, 740, 745, 750	Torque	360 to 400 N•m 265 to 295 lb-ft
Tie-rod to knuckle housing, self-locking nut		
730, 733	Torque	200 to 220 N•m 148 to 162 lb-ft
740, 745, 750	Torque	350 to 390 N•m 258 to 287 lb-ft
Tie-rods, locknut		
730	Torque	220 to 240 N•m 162 to 177 lb-ft
733, 740, 745, 750	Torque	328 to 363 N•m 242 to 267 lb-ft
Front-wheel drive axle	Toe-in	1.5 mm 0.06 in.
Steering angle, locknut on adjusting screw	Torque	120 N•m 89 lb-ft

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Steering Cylinder and Tie-Rods — Exploded View



A—Wiper ring
B—Back-up ring
C—Grooved ring
D—Snap ring
E—Flange
F—Cylinder sleeve
G—Cap screw
H—Spring pin
I—Guide ring
J—Seal ring
K—O-ring
L—Piston rod
M—Guide
N—Seal ring
O—Snap ring
P—Snap ring
Q—Cap screw
R—Self-locking nut
S—Bushing[1]
T—Cap
U—Tie-rod (2 used)
V—Locknut (2 used)
W—Pivot (2 used)

[1]Only if dimension (x) is 90 mm (3.5 in.) or more.

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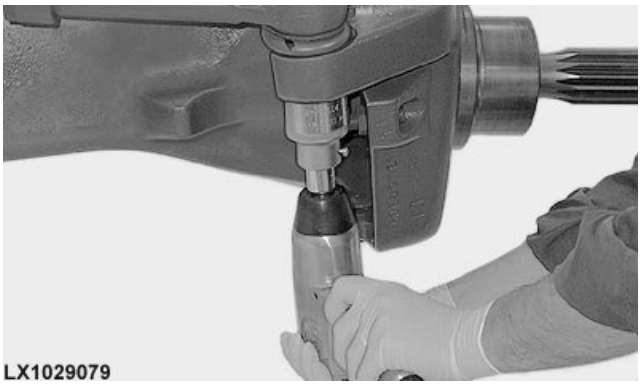
NOTE: 730, 733 and 740 axles have the axle housing and steering cylinder transposed (mirror-image).

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Removing the Tie Rods

CAUTION: Follow safety and repair instructions, see "General Safety and Repair Information" in Group 01.

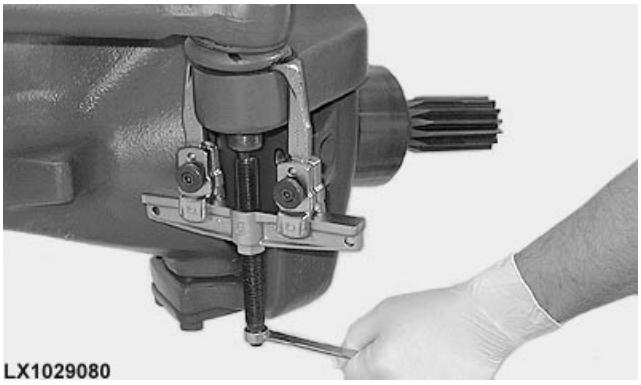
1. Remove self-locking nut.



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2. Press tie rod out of knuckle housing.



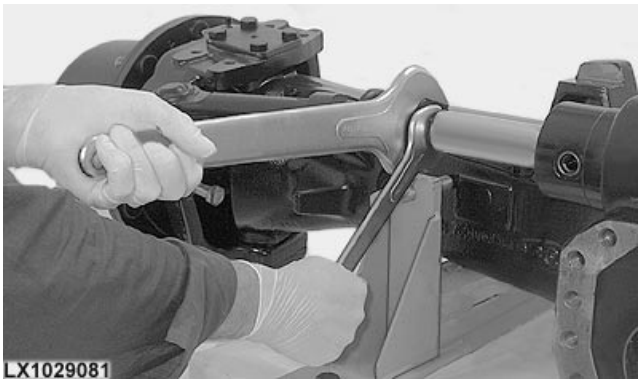
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NOTE: Thread of tie rod is locked in position with thread lock L41475 (LOCTITE® 243).

3. Separate tie rod and piston rod.

NOTE: Install tie rods, see "Installing the Tie Rods" in this Group.



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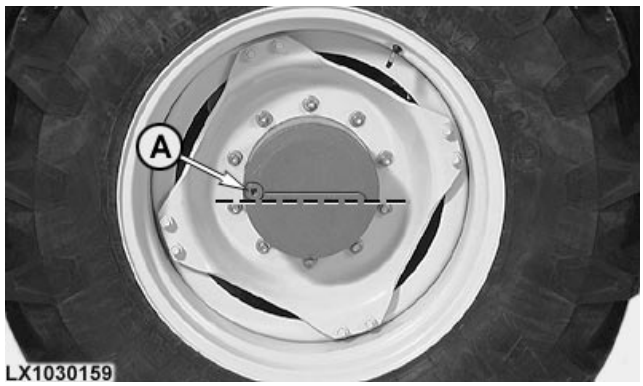
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Planetary Drive - Fill With Oil

CAUTION: Follow safety and repair instructions, see "General Safety and Repair Information" in Group 01.

IMPORTANT: Exclusively use oil types specified in the relevant tractor Technical Manual. Refer to "Front Wheel Drive Axle Oil" and "Capacities" in Technical Manual "Repair", Section 10, Group 05.



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1. Axle must be in horizontal position.
2. Plug (A) must be in the position shown.
3. Fill with oil until the level comes up to the lower edge of plug bore (A).
4. Install screw plug with new O-ring.

Specification	
Screw plug—Torque	90 N•m 66 lb-ft

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Differential - check ring gear backlash and load pattern

1. Turn the drive pinion several times in each direction.
2. Install a dial indicator and suitable device. Dimension (a) 50 mm (1.968 in.).
3. Measure backlash.

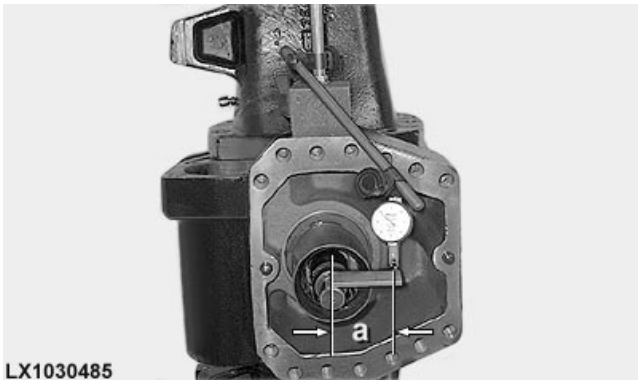
Specification

730 and 733—Backlash	0.27 to 0.35 mm
	0.0106 to 0.0138 in.
740—Backlash	0.25 to 0.33 mm
	0.0098 to 0.0130 in.
745 and 750—Backlash	0.22 to 0.28 mm
	0.0087 to 0.0110 in.

4. If necessary, correct backlash by moving an appropriate shim. Do not add or remove shims. See "Differential - bearing preload adjustment", steps 9 and 10.
   - Not enough backlash: Move shim from the rear side of the ring gear to the front side (toothed side).
   - Too much backlash: Move shim from the front side (toothed side) of the ring gear to the rear side.
5. Remove axle housing and differential again.
6. Compare ring gear load pattern on both sides of the teeth with the illustration.

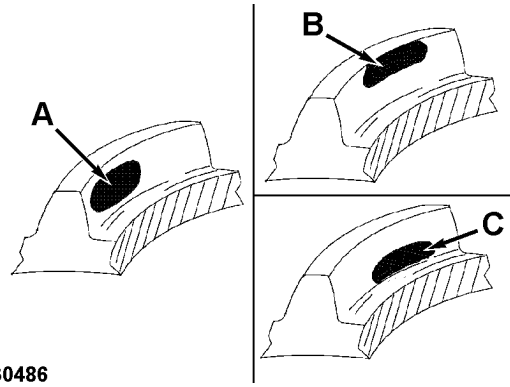
NOTE: If differences occur, recheck all adjustments carried out so far on bevel pinion drive shaft and on differential.

7. Install axle housing, see reference “Installing the Axle Housing” in this Group.



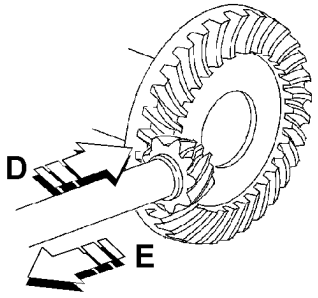
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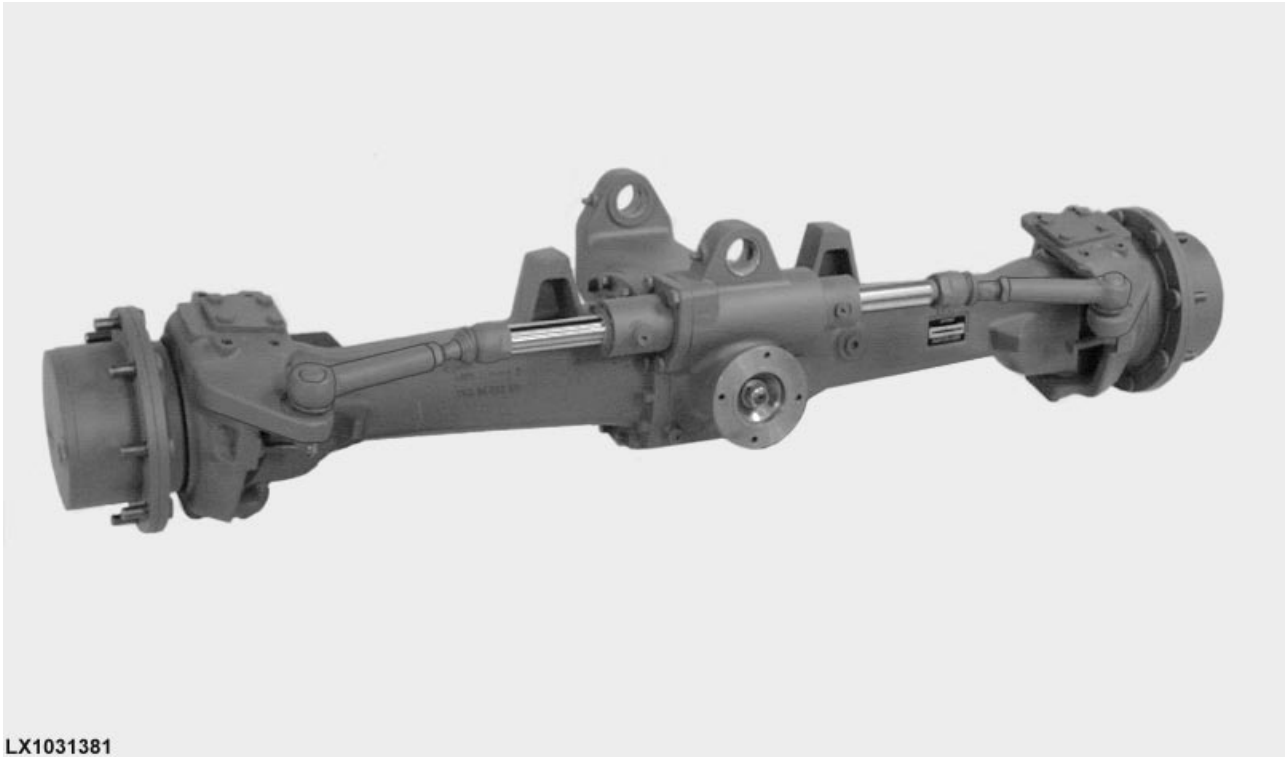
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A—Ideal load pattern
B—Teeth distance must be decreased
C—Teeth distance must be increased
D—Decrease distance (pattern B)
E—Increase distance (pattern C)

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Front-Wheel Drive Axles - Survey



Standard 730

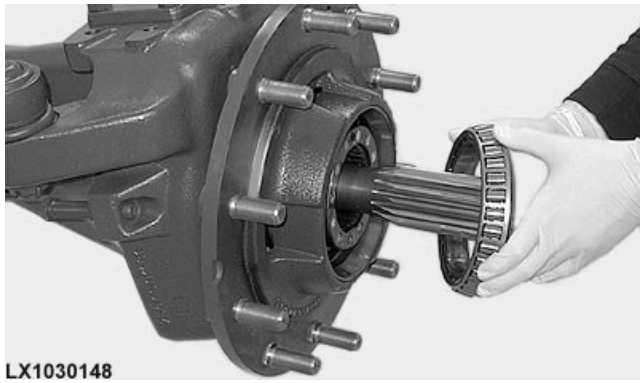


750 with TLS and multi-disk brake

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2. Install the tapered roller bearing cone.

3. Install hollow ring gear, see "Planetary Drive Installation (Without Multi-Disk Brake)" or "Planetary Drive and Multi-Disk Brake Installation" in this Group.



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