

Trailer Brake Provision Kit

BSJ10114



JOHN DEERE

INSTALLATION INSTRUCTIONS

SU45911 28NOV19 (ENGLISH)

**5036D, 5038D, 5039D, 5042D, 5045D, 5050D, 5105
and 5305 (075553-) Tractors**

**John Deere India Pvt. Ltd
SU45911 (28NOV19)**

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Moline, Illinois

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A John Deere ILLUSTRATION™ Manual

SU45911-19-28NOV19

Introduction

IMPORTANT: Read through this instruction thoroughly and familiarize yourself with the tractor before installing kit.

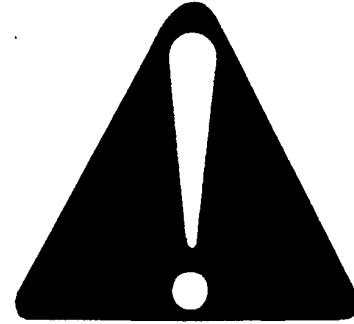
This instruction demonstrates the procedure to install trailer brake provision kit on 5038D, 5039D, 5042D, 5045D and 5050D Tractors equipped with JD rockshaft..

AK50421,00000BB -19-06AUG14-1/1

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—28JUN13

DX,ALERT -19-29SEP98-1/1

Understand Signal Words

DANGER; The signal word DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING; The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION; The signal word CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices associated with events which could lead to personal injury.

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards. DANGER or WARNING safety signs are located near specific hazards. General



WARNING

CAUTION

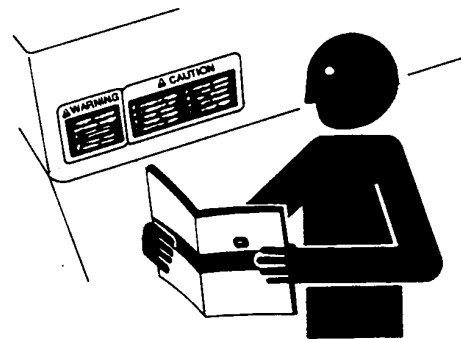
precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

TS187 —19—30SEP88

DX,SIGNAL -19-05OCT16-1/1

Follow Safety Instructions

Carefully read all safety messages in this instruction. Read the product operators manual for operating instructions and safety messages. Do not let anyone operate without instruction. (A copy of the operators manual may also be available from the Service ADVISOR™ application.)



TS201 —UN—15APR13

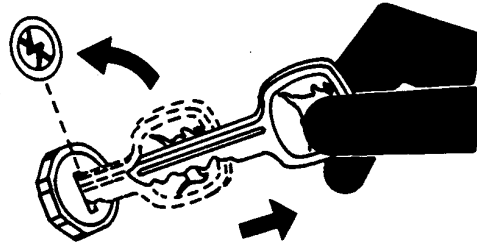
Service ADVISOR is a trademark of Deere & Company

DX,READ,INS -19-23JUN09-1/1

Park Machine Safely

Before working on the machine:

- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.



TS230 —UN—24MAY89

DX,PARK -19-04JUN90-1/1

Avoid High-Pressure Fluids

Inspect hydraulic hoses periodically – at least once per year – for leakage, kinking, cuts, cracks, abrasion, blisters, corrosion, exposed wire braid or any other signs of wear or damage.

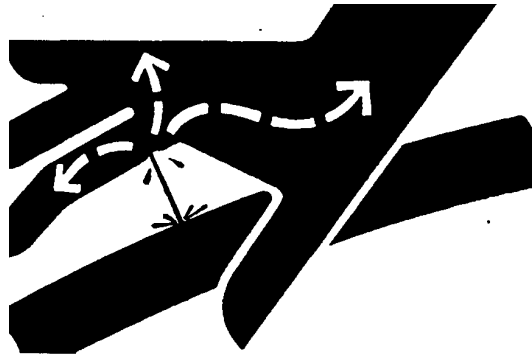
Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar



X9811 —UN—23AUG88

with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

DX,FLUID -19-12OCT11-1/1

Wash Machine After Unloading

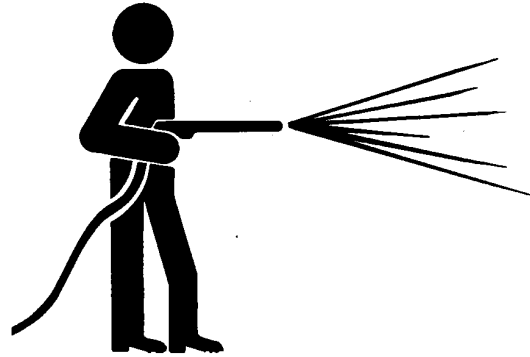
IMPORTANT: Reduce corrosion from road salt and sea salt. Promptly wash equipment delivered by truck during winter months or delivered by cargo ship.

Avoid malfunction or damage to machine components. Do not direct high-pressure spray at electronic or electrical components and connectors, bearings, hydraulic seals, fuel injection pumps, or other sensitive components. Reduce water pressure to wash sensitive components.

Avoid water penetration behind seals and similar components. Do not direct spray on these components at an angle less than 45°.

Avoid discoloration of machine paint. Do not use strong soaps, chemical detergents, or cleaning agents that contain acids, caustics, or abrasives. Do not allow cleaning agents to dry on machine. Promptly rinse machine after washing with a cleaning agent.

Use a top-to-bottom wash sequence. Wash behind panels and in hidden areas where salt can accumulate during transport.



If a cleaning agent is used, the agent must be the correct concentration. Do not allow cleaning agent to dry on machine, promptly rinse from top to bottom. Your John Deere dealer has cleaners which are compatible with your equipment and which are recommended to remove protective shipping coatings.

Incorrect detergent, excessive concentration, a delay in rinsing, or incomplete rinsing can discolor paint after delivery.

DX,WASH -19-14MAR14-1/1

T6642EJ —UN—18OCT88

Transmission and Hydraulic Oil

Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oils are preferred:

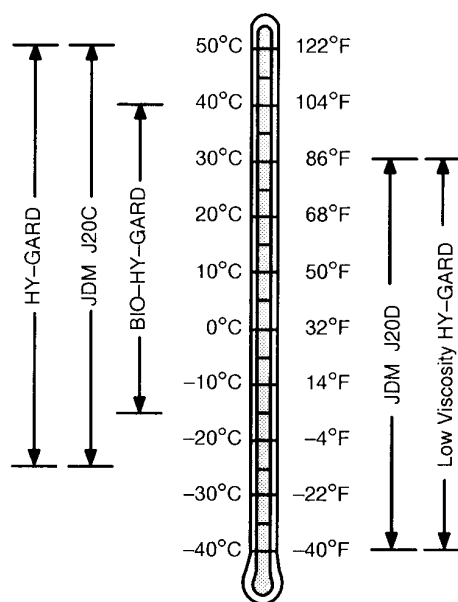
- John Deere HY-GARD™
- John Deere Low Viscosity HY-GARD™

Other oils may be used if they meet one of the following:

- John Deere Standard JDM J20C
- John Deere Standard JDM J20D

Use the following oil when a biodegradable fluid is required:

- John Deere ¹BIO-HY-GARD™



HY-GARD is a trademark of Deere & Company
BIO-HY-GARD is a trademark of Deere & Company

¹meets or exceeds the minimum biodegradability of 80% within 21 days according to CEC-L-33-T-82 test method. BIO-HY-GARD should not be mixed with mineral oils because this reduces the biodegradability and makes proper oil recycling impossible.

DX,ANT11 -19-02DEC02-1/1

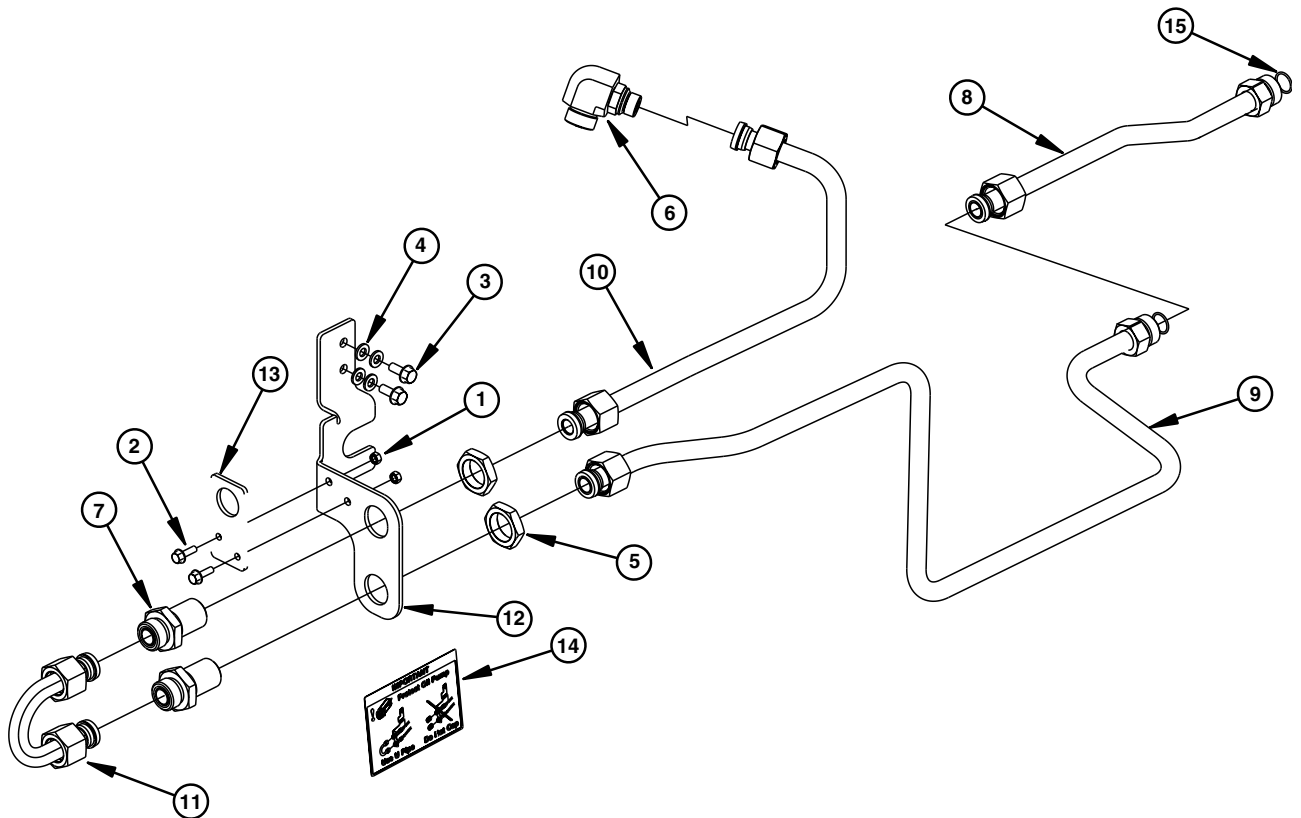
TS1651—UN—14MAR96

Prepare Tractor

1. Park tractor on flat level surface and engage park brake.
2. Turn engine "OFF" and remove key. Place wheel chocks and wooden blocks in front of and behind both front tires.
3. Disconnect negative (—) battery cable.
4. Open rear floor mat.
5. Remove an opening from the rear side of the operator station to access rockshaft oil lines.
6. Remove right side rear tire.

AK50421,0000095 -19-25JUL14-1/1

Kit Parts List



Item	Part Number	Description	Quantity
1	14M7272	NUT	2
2	19M7862	SCREW	2
3	19M7866	SCREW	2
4	24M7238	WASHER	4
5	38H5094	NUT	2
6	61M5066	Elbow Fitting With O-Ring	1
7	61M5219	Union Fitting With O-Ring	2
8	SJ23011	HYDRAULIC OIL LINE	1
9	SJ23012	HYDRAULIC OIL LINE	1
10	SJ23013	HYDRAULIC OIL LINE (RETURN)	1
11	SJ23014	U PIPE	1
12	SJ23016	BRACKET	1
13	SU40130	BRACKET	1
14	SU42995	LABEL, INFORMATION TBV	1
15	T77858	O RING	2

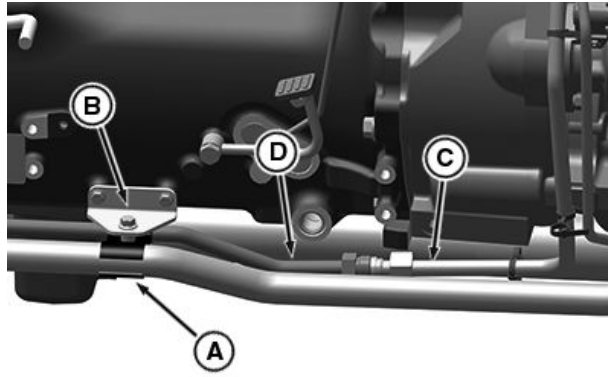
SJ15074.00006F1 -19-04JUL19-1/1

APY17646 —UN—04JUL19

Disconnect Pump to Rockshaft Oil Line

A—Clamp
B—Bracket

C—Pump-to-Inlet Housing
Supply Line
D—Pump-to-Inlet Housing
Pressure Line



APY17647—UN—04JUL19

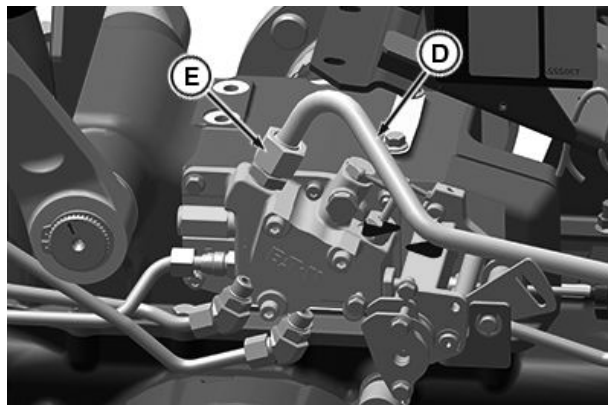
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1. Remove clamp (A) from the bracket (B) on transmission.
2. Disconnect hydraulic pump to rockshaft inlet oil line (D) from the hydraulic oil line oil line (C).
3. Remove tube nut (E) to disconnect other end of rockshaft inlet oil line (D).

NOTE: To remove fitting (K) it is necessary to remove fuel tank.

D—Pump-to-Inlet Housing
Pressure Line

E—Tube Nut



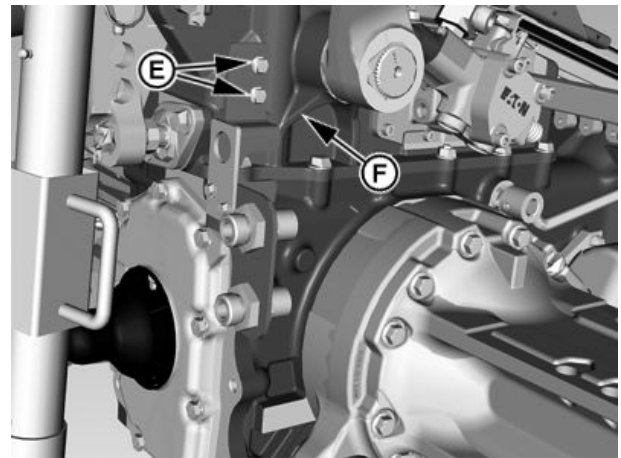
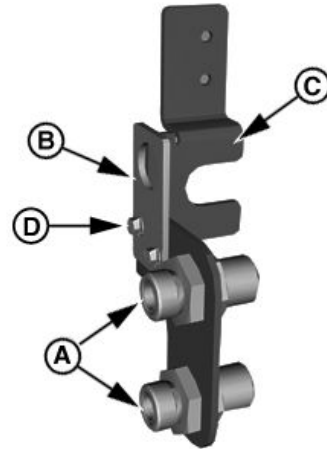
APY17648—UN—04JUL19

SJ15074,00006F2 -19-04JUL19-2/2

Assemble and Install Trailer Brake Valve Bracket On Tractor

1. Assemble two adapters (A) on bracket (C) as shown.
2. Install bracket (B) on bracket (C) with help of cap screws (D)
3. Install the assembled bracket (C) on rockshaft case (F) with help of cap screws (E), and tighten them as per specification.

A—Adapter (2 Used)	D—Cap Screw (2)
B—Bracket (For Trailer Return Line)	E—Cap Screw (2)
C—Bracket (Trailer Brake valve)	F—Rockshaft Case



PY20633 —UN—25JUL14

PY20634 —UN—25JUL14

AK50421,000009A -19-25JUL14-1/1

Install Hydraulic Oil Lines (Hydraulic Pump To Brake Valve)

1. Install hydraulic oil line (A) to hydraulic oil line (C) coming from hydraulic pump and fix it using tube nut (G).
2. Connect other end of oil line (A) to oil line (B) which is routed towards trailer brake valve adapter.

NOTE: While installing tube nuts (G) on hydraulic line (A) Ensure that O-rings are used (refer kit part list for O ring details.).

3. Fix other end of oil line (B) to trailer brake valve adapter and tighten it using tube nut (G).

Specification

Trailer Brake Valve Oil

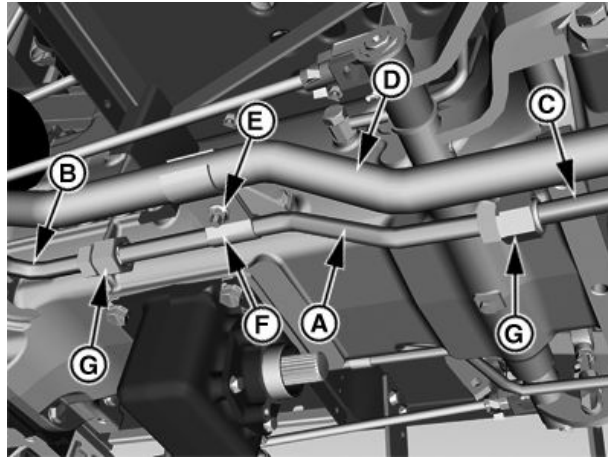
Line Mounting Tube

Nut—Torque..... 50 N·m (37 lb-ft)

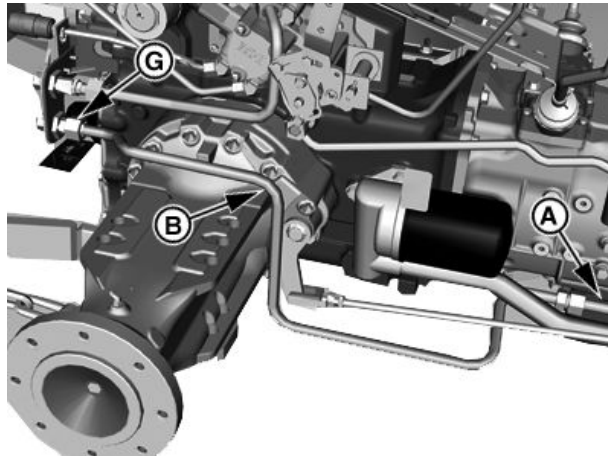
4. Use clamp (F) to hold oil line (A) and hydraulic filter oil line (D) together.
5. Fix clamp (F) to bracket (H) with cap screw (I) and nut (E).

A—Hydraulic Oil Line
B—Hydraulic Oil Line
C—Hydraulic Pump Oil Line
D—Hydraulic Filter Oil Line
E—Nut

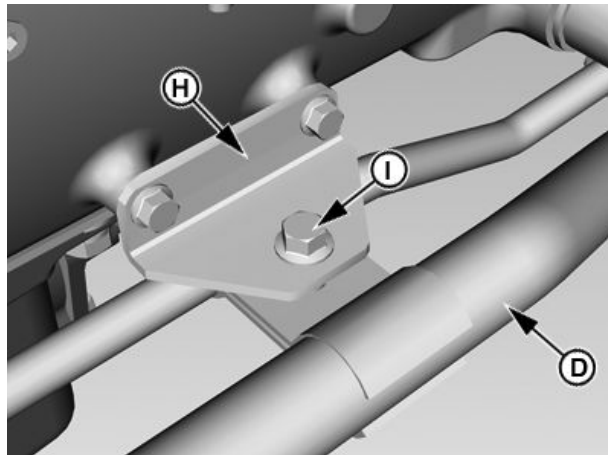
F—Clamp
G—Tube Nut
H—Bracket
I—Cap Screw



PY20635 —UN—25JUL14



PY20637 —UN—30JUL14



PY20636 —UN—25JUL14

AK50421,000009B -19-06AUG14-1/1

Install Trailer Brake Valve Carry Over Oil Line

1. Install trailer brake valve carry over oil line (A) to rockshaft control valve elbow (B) at one end as shown, and tighten it with tube nut (C)
2. Other end of oil line (A) should be connected to trailer brake valve adapter (D) as shown, and tighten it with tube nut (C).

IMPORTANT: Brake line Pressure available at port (D) (Adapter) is unregulated. The trailer brake valve's pressure relief shall not exceed 205+/-5 bar and shall not impact the tractor's hydraulic system specification when trailer brakes are not actuated. If pressure exceeds the recommended level it will result in damage to Tractor system.

3. Install U pipe to the valve port as shown and tight it with tube nut (C) as per the specification.

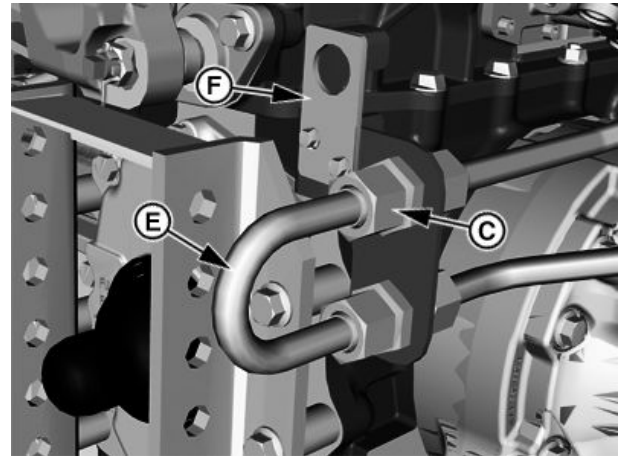
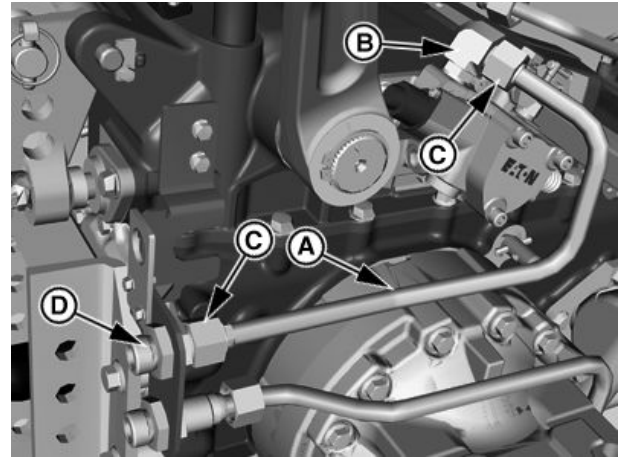
Specification

Trailer Brake Valve Oil
Line Mounting Tube
Nut—Torque..... 50 N·m (37 lb-ft)

NOTE: Oil line mounting plate (F) is provided is applicable in tipping trolley application, through which tipping trolley return oil line will pass.

NOTE: Thread size for connector Pressure & carry over port to connect the brake valve Hoses to KIT is 1-3/16-12 UN.

A—Hydraulic Oil Line (Carry Over Oil Line)	D—Trailer Brake Valve Adapter
B—Elbow Fitting	E—U Pipe
C—Tube Nut	F—Oil Line Mounting Plate



PY20638 —UN—30JUL14

PY20639 —UN—30JUL14

AK50421,00000C3 -19-25AUG14-1/1

Provision for Trailer Brake Valve Connection at Brake Pedal

1. Plate (C) provided on LHS brake pedal (A) as a provision for attaching trailer brake attaching cable.
2. John Deere recommends connection of trailer brake operating cable in the slot (B) shown (on plate C), and to use yoke type cable connector.

IMPORTANT: Avoid play in cable connection from fixed point to brake pedal connection point.

IMPORTANT: Trailer brake should not actuate at tractor brake pedal free play condition & Braking should be synchronised such that Trailer Brake should engage first.

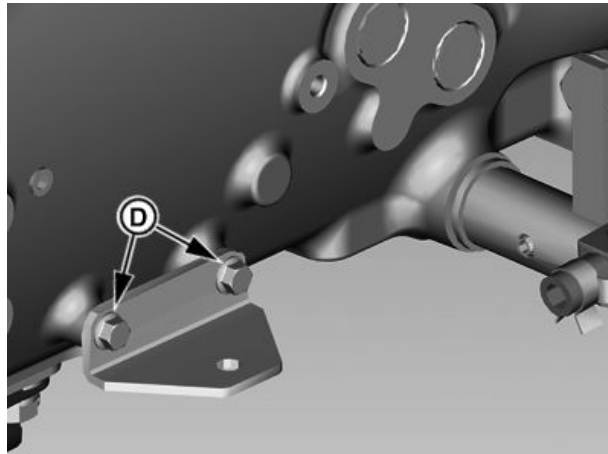
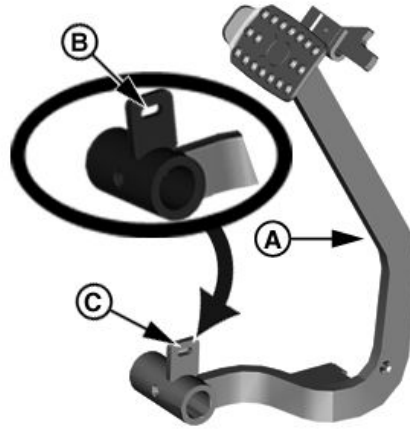
NOTE: Refer operator manual for brake pedal free play adjustment.

3. John Deere recommends the location shown (D) for cable anchorage bracket.

NOTE: For step 3 Standard Thread engagement has to be maintained for mounting the cable anchorage Bracket.

A—Brake pedal
B—Slot

C—Weld Plate
D—Anchorage Points



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PY20640 —UN—13AUG14

PY20647 —UN—31JUL14

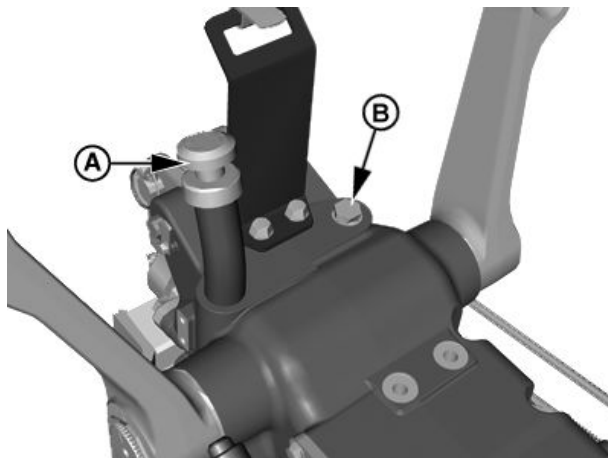
Tank Line Provision On Rockshaft

Oil line port (B) is given for connecting Trailer Brake Valve Tank line to Transmission housing near oil filler port (A).

NOTE: M18x1.5mm size fitting has to be used for routing.

A—Oil Filler Port

B—Oil Line Port



AK50421,00000A0 -19-05AUG14-1/1

PY20642 —UN—30JUL14

Top up the oil & observe for oil level

1. Check level of hydraulic oil at sight glass. Make sure that the oil level should be full in level mark (B) as shown.

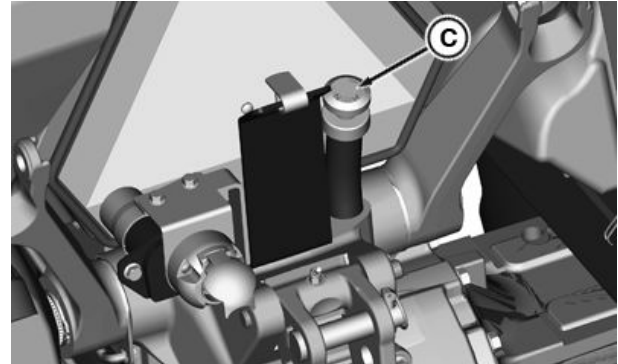
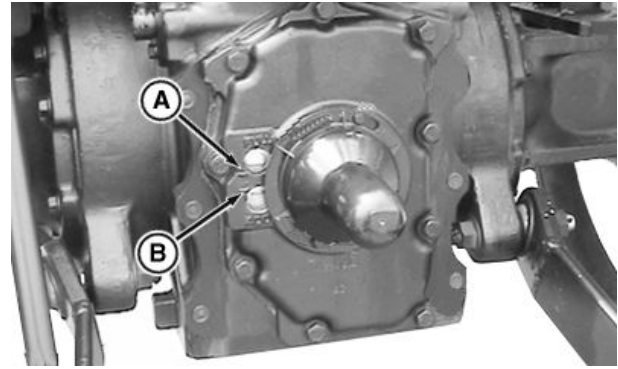
NOTE: As long as Lower window is full, there is no requirement of oil top up. Upper window is the full level, beyond that oil is not required to be filled.

2. Add oil to filler port (C) if lower glass window (B) shows an empty space.

A—Hydraulic Oil Full Level Mark

B—Hydraulic Oil Low Level Mark

C—Hydraulic Oil Filler Port



PY16778 —UN—07JAN13

PY15833 —UN—09JUL13

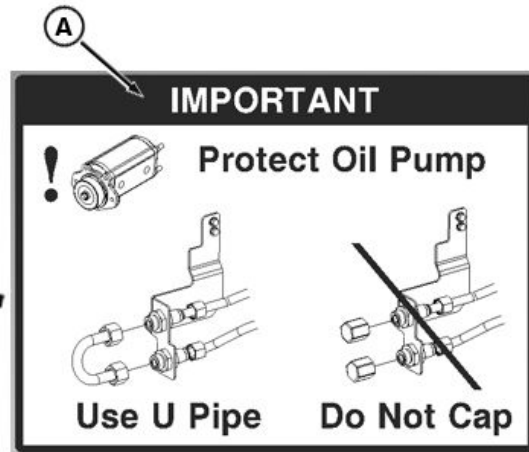
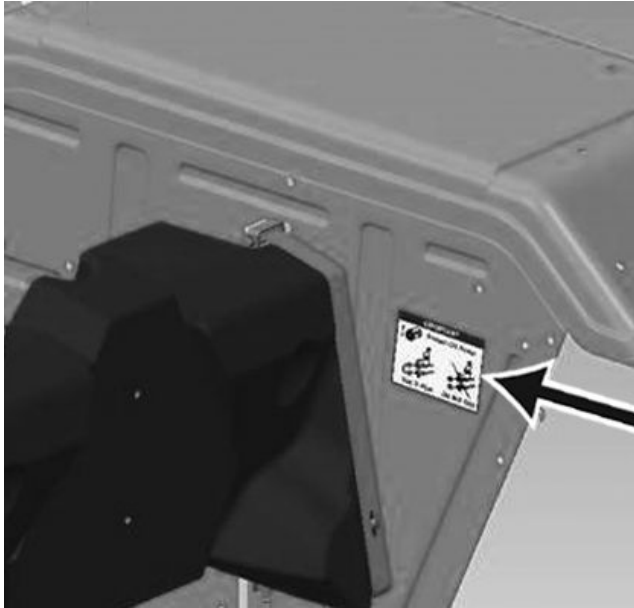
AK50421,00000A6 -19-05AUG14-1/1

Instruction

It is recommended to use proportionate valve in trailer brake application.

AK50421,00000AC -19-31JUL14-1/1

Use Of Information Label To Protect Oil Pump



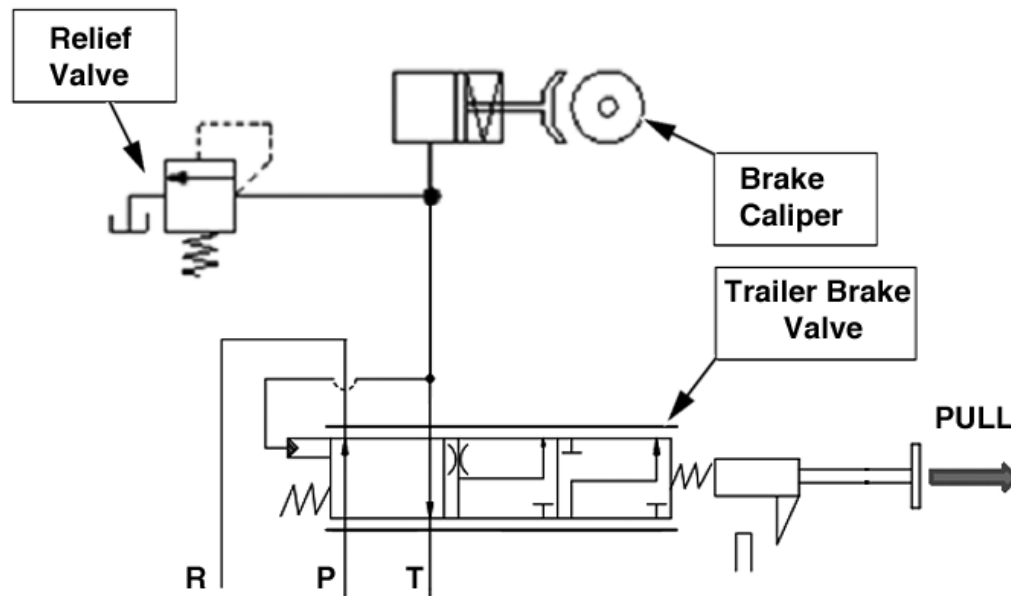
A—Information Label

Use information label (A) on rear portion of right side fender as shown.

PY22827 —UN—18FEB15

AK50421,00001BD -19-18FEB15-1/1

Connection of Proportional Valve In TBV Application



Proportional valve

P—Pressure Port

R—Carry Over Port

T—Tank Port

1. As shown in schematic for proportional valve in TBV application, 3 position 4 port valve is used for braking system.
2. Neutral position of the valve will allow tractor pump flow to go back to Tractor Hydraulic system (P to R). When braking is done the Tractor pump flow is directed to Brake system.
3. For a prolonged braking condition, the pilot oil from brake line will push the spool towards neutral condition ensuring enough oil for tractor system.
4. Separate Relief has to be provided in Brake line to safeguard the Brake Hydraulic system on Trailer. Setting of this relief will depend on Brake system capability on trailer

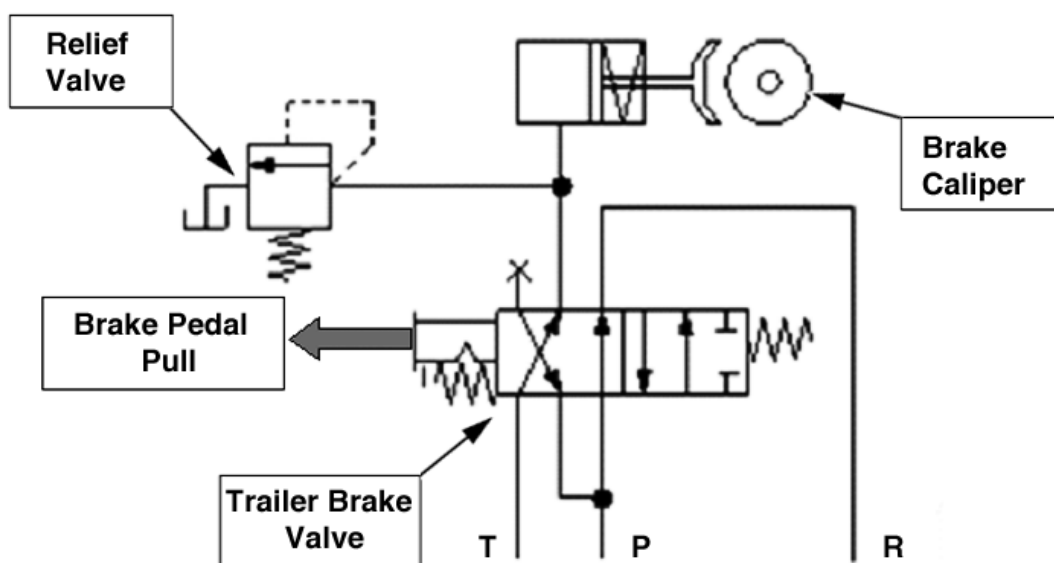
IMPORTANT: As shown in schematic relief valve has to be given in the brake line to safeguard the brake system on trailer. Setting of this relief will depend on Brake system capability on trailer (Should not exceed the maximum tractor system pressure).

5. This valve arrangement will operate tipping operation on slope without any issues.
6. Provision available on Tractor is for Pull Type Brake Valve & Suitable Cable arrangement has to be used if Push type valves are used.

AK50421,00000AE -19-13AUG14-1/1

PY20646 —UN—05AUG14

Connection of Manual Directional Control Valve In TBV Application



Manual Directional valve

P—Pressure Port

R—Carry Over Port

T—Tank Port

Though we can achieve Braking performances with Manual directional control Valve, tipping operation on a slope will be difficult as Brake usage will result in cut off of oil to rockshaft system. So either there will be slow tipping or no tipping when trailer brakes are applied on a slope.

IMPORTANT: As shown in schematic relief valve has to be given in the brake line to safeguard

the brake system on trailer. Setting of this relief will depend on Brake system capability on trailer (Should not exceed the maximum tractor system pressure).

PY20645 —JUN—05AUG14

AK50421,00000B8 -19-13AUG14-1/1

Recommendation For Trailer Brake Valve

Following technical specifications has to be taken care while selection of trailer brake valve

5038D, 5039D, 5042D, 5045D and 5050D Tractors		
Item	Description	Specification
1	Flow Capacity (LPM)	50 LPM (Max)
2	Maximum Operating Pressure (Bar)	0-210 bar
3	Pressure Drop Across P to R (Bar)	1-1.5 bar
4	Port Size (P/R/T)	M22 or 1/2"BSP or Equivalent
5	Cleanliness	NAS9
6	Operating Temperature Range (° C)	-5 to 120
7	Spool Type (For Braking)	Pull ^a
8	Spool Stroke (mm)	5 mm ^b
9	Spool Pull Force (kg)	20 kg (Max)
10	Tank Pressure (Bar)	0.5 bar (Max)
11	Dead Band (mm)	1 mm

^aIf push type valves are used, then suitable change in cable arrangements have to be made by Trailer Manufacturer.

^bFor Spool strokes higher or lower than 5mm, suitable arrangement has to be done by Trailer Manufacturer.

AK50421,00000AF -19-13AUG14-1/1

